

**Model Aquatic Health Code
Lifeguarding and Bather Supervision Module ANNEX Draft Sections for
the First 60-day Review**

**Posted for Public Comment on 05/31/2012
Currently Open for Public Comment that Closes on 10/14/2012**

In an attempt to speed the review process along, the MAHC steering committee has decided to release MAHC draft modules prior to their being fully complete and formatted. These drafts will continue to be edited and revised while being posted for public comment. The complete versions of the drafts will also be available for public comment again when all MAHC modules are posted for final public comment. The MAHC committees appreciate your patience with the review process and commitment to this endeavor as we all seek to produce the best aquatic health code possible.

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MAHC Lifeguarding and Bather Supervision Module Abstract

Health and safety issues related to bather supervision and lifeguarding for both the patron and the potential rescuer of an aquatic facility are increasingly being documented. The Lifeguarding and Bather Supervision Module is a first step towards improving the consistency in training, lifeguard management and supervision, lifeguard competency for guarded facilities and proper bather supervision at unguarded facilities. The Lifeguarding and Bather Supervision Module contains requirements for unguarded and guarded aquatics along with the training necessary to be a qualified lifeguard. The module includes:

- 1) Standards for which aquatic facilities need to be guarded and which may not need to have professional lifeguard supervision but are still supervised.
- 2) An Aquatic Facilities Safety Plan guide including pre-service, in-service, staffing, single lifeguard, lifeguard management and Emergency Action Plan requirements.
- 3) Requirements for aquatic facilities to define, diagram, and document required zones of patron surveillance.
- 4) Determination of what constitutes proper staffing by the ability of the lifeguard to reach all areas of their zone of patron surveillance within a certain time frame.
- 5) Required lifesaving equipment, communications standards, and general requirements for lifeguards and lifeguard supervision/management training.

The following will be information to provide sound reasoning behind the recommendations presented in this document. It is developed in the interest of protecting the health and safety of patrons and employees of recreational aquatic venues. This portion of the Model Aquatic Health Code deals directly with providing individuals who have been classified as professional rescuers in an aquatic venue to first, prevent injury and reduce risk and, secondly, appropriately respond to incidents when they happen. The duties of an aquatic venue lifeguard have been compared to a number of other occupations including comparing the role of the police officer to that of a lifeguard at a swimming pool.¹ “The majority of the time, the task is very sedentary, sitting and watching. A quadriplegic could do it; until someone needs rescuing. Then the quadriplegic could not perform the required functions. It does not often happen to a lifeguard that someone needs rescuing, perhaps 0.1 per cent of the time. But the ability to jump into the water and save the drowning victim is critical to the job. This is the reason why there has been someone sitting and watching for the other 99.9 per cent of the time”. Bonneau and Brown’s position is that, because the disabled lifeguard is unable to perform the critical and essential part of the job, he is incapable of doing the job of lifeguard. Even if he can do 99.9 per cent of the job, he should not be employed as a lifeguard.² The perception of the public is that all lifeguards can perform all that is

¹ Trottier A, Brown J. Police health : a physician's guide for the assessment of police officers: 1994. Ottawa, Canada : Canadian Communication Group, 1993.

² Bonneau J, Brown J. Physical ability, fitness and police work. J Clin Forensic Med. 1995;2(3):157-64. *“This information is distributed solely for the purpose of pre dissemination public comment under applicable information quality guidelines. It has not been formally disseminated by the Centers for Disease Control and Prevention. It does not represent and should not be construed to represent any agency determination or policy.”*

critical and essential to their job set. Unfortunately this has been proven time and time again not to be true.

Dr. Jerome H. Modell has had the opportunity to review over 500 cases of death from drowning that resulted in litigation. Many of these deaths resulted from omissions of basic safety precautions such as absent or inadequate pool fencing, unattended young children at water sites, faulty pool design resulting in victims becoming trapped below the surface of the water, poor pool maintenance resulting in murky or cloudy water that obscured sight of submerged bodies, lifeguards being distracted by socializing with others and doing other chores such as manning admission booths and doing housekeeping chores while on lifeguard duty, and poorly trained lifeguards who did not recognize a person in trouble in the water or had not been properly trained in rescue and resuscitation techniques. Clearly, these are all correctable issues that would prevent avoidable drowning deaths with little additional effort. We anticipate that if pool and water safety standards are more strictly enforced, and as lifeguards continue to become better trained and adhere to important basic principles of surveillance, rescue, and resuscitation, the death rate in public aquatic facilities will continue to decline.” The goal in this attempt is to make sure pool owner and operators have the best practice guidelines for guarded and unguarded pools as tools to make aquatic venues safer for the patrons that use them.

MAHC Lifeguarding and Bather Supervision Module Review Guidance

The **[Model Aquatic Health Code \(MAHC\) Steering](http://www.cdc.gov/healthywater/swimming/pools/mahc/steering-committee/)** (<http://www.cdc.gov/healthywater/swimming/pools/mahc/steering-committee/>) **and [Technical](http://www.cdc.gov/healthywater/swimming/pools/mahc/technical-committee/)** (<http://www.cdc.gov/healthywater/swimming/pools/mahc/technical-committee/>) **Committees** appreciate your willingness to review this draft MAHC module. Your unique perspectives and science-based suggestions will help ensure that the best available standards and practices for protecting aquatic public health are available for adoption by state and local environmental health programs.

Review Reminders:

- Please download and use the **[MAHC Comment Form](http://www.cdc.gov/healthywater/swimming/pools/mahc/structure-content/)** (<http://www.cdc.gov/healthywater/swimming/pools/mahc/structure-content/>) to submit your detailed, succinct comments and suggested edits. Return your review form by 10/14/2012, as an email attachment to **MAHC@cdc.gov**.
- If part of a larger group or organization, please consolidate comments to speed the MAHC response time to public comments.
- To provide context for this module review, please consult the **[MAHC Strawman Outline](http://www.cdc.gov/healthywater/pdf/swimming/pools/mahc/structure-content/mahc-strawman.pdf)** (<http://www.cdc.gov/healthywater/pdf/swimming/pools/mahc/structure-content/mahc-strawman.pdf>). Section headers of related content have been included in this draft module to assist reviewers to see where each section fits

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into the overall MAHC structure. Additional MAHC draft modules that contain this content will be or already have been posted for your review.

- The complete draft MAHC, with all of the individual module review comments addressed will be posted again for a final review and comment before MAHC publication. This will enable reviewers to review modules in the context of other modules and sections that may not have been possible during the initial individual module review.
- The published MAHC will be regularly updated through a collaborative all-stakeholder process.

Please address any questions you may have about MAHC or the review process to MAHC@cdc.gov. You may also request to be on the direct email list for alerts (“Get Email Updates” is in a box on the right hand side of the Healthy Swimming website at www.cdc.gov/healthyswimming) on the other draft MAHC modules as they are released for public comment.

Thank you again, and we look forward to your help in this endeavor.
Sincerely,

Douglas C. Sackett, Director
MAHC Steering Committee

The Lifeguarding and Bather Supervision Code Module shows a Table of Contents giving the context of the Lifeguarding and Bather Supervision Design, Construction, Operation and Maintenance in the overall Model Aquatic Health Code’s Strawman Outline (<http://www.cdc.gov/healthywater/pdf/swimming/pools/mahc/structure-content/mahc-strawman.pdf>).

Reviewer Note on Module Section Numbering:

Please use the specific section numbers to make your comments on this Draft Model Aquatic Health Code module. These numbers may eventually change during the editing of the compiled Draft that will be issued for a final round of comments.

Reviewer Note on the MAHC Annex

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Rationale

The annex is provided to:

- (a) Give explanations, data, and references to support why specific recommendations are made;
- (b) Discuss the rationale for making the code content decisions;
- (c) Provide a discussion of the scientific basis for selecting certain criteria, as well as discuss why other scientific data may not have been selected, e.g. due to data inconsistencies;
- (d) State areas where additional research may be needed;
- (e) Discuss and explain terminology used; and
- (f) Provide additional material that may not have been appropriately placed in the main body of the model code language. This could include summaries of scientific studies, charts, graphs, or other illustrative materials.

Content

The annexes accompanying the code sections are intended to provide support and assistance to those charged with applying and using Model Aquatic Health Code provisions. No reference is made in the text of a code provision to the annexes which support its requirements. This is necessary in order to keep future laws or other requirements based on the Model Aquatic Health Code straightforward. However, the annexes are provided specifically to assist users in understanding and applying the provisions uniformly and effectively. They are not intended to be exhaustive reviews of the scientific or other literature but should contain enough information and references to guide the reader to more extensive information and review.

It is, therefore, important for reviewers and users to preview the subject and essence of each of the annexes before using the document. Some of the annexes (e.g., References, Public Health Rationale) are structured to present the information in a column format similar to the code section to which they apply. Other annexes or appendices provide information and materials intended to be helpful to the user such as model forms that can be used, recreational water illness outbreak response guidelines, and guidelines for facility inspection.

Appendices

Additional information that falls outside the flow of the annex may be included in the Model Aquatic Health Code Annex

Acronyms in this Module: See the Lifeguarding and Bather Supervision Module, Code Section

Glossary Terms in this Module: See the Lifeguarding and Bather Supervision Module, Code Section

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Preface: This document does not address all health and safety concerns, if any, associated with its use. It is the responsibility of the user of this document to establish appropriate health and safety practices and determine the applicability of regulatory limitations prior to each use.

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Model Aquatic Health Code
Lifeguarding and Bather Supervision Module Code
4.0 Design and Construction Annex

Keyword	Section	Annex
	4.0	Design Standards and Construction
	4.1	Plan Submittal
	4.2	Materials
	4.3	Equipment Standards
	4.4	Pool Operation and Facility Maintenance
	4.5	Pool Structure
	4.6	Indoor/Outdoor Environment
	4.6.1	Lighting
	4.6.2	Ventilation
	4.6.3	Electrical
	4.6.4	Heating
	4.6.5	First Aid Station
<i>First Aid Station</i>		The First Aid Station is a convenient and designated location that can be maintained and kept clean for use when bathers with minor injuries and/or illness need to be provided first aid care. The first aid station must be easy to locate and must have first aid supplies to care for minor injuries and more serious injuries until emergency assistance can arrive.
<i>Signage</i>	4.6.5.1	Effective signage must communicate where first aid assistance can be obtained. This is especially important in smaller aquatic venues and at aquatic venues not requiring lifeguards where the first aid station might be outside the immediate pool area. Signage is also important at very large aquatic venues where the first aid station might be harder to find. Effective signage should follow the standards established by ICC A117.1-2009 and ADA Accessibility Guidelines including sign height, raised or Braille lettering, and placement.
<i>Emergency Communication Equipment</i>	4.6.5.2	The first aid station must be provided with the tools necessary for rapid and effective emergency communication. These tools might include a telephone, emergency band radio or other effective means of communication. Post contact information for emergency personnel and the emergency notification list for the aquatic venue.

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Supplies 4.6.5.3 The first aid supply list is based on the ANSI /ISEA Z308.1-2009 standard for a Workplace First Aid Basic Kit. The listed contents are based on the minimum size for a small workplace. In almost all cases the minimum contents will need to be increased to provide supplies based on:

- The maximum number of bathers and staff at the pool;
- The anticipated or actual number and types of injuries;
- Providing enough supplies to handle a reasonably significant injury;
- Providing enough supplies that the kit does not need continuous restocking. There should be enough supplies to last between first aid kit supply inspections, plus the time needed to obtain and replace the supplies. The contents should be inspected and resupplied often enough to maintain the supplies in good condition.

Additional Supplies 4.6.5.4 Below is a list of additional supplies the technical committee developed that are anticipated to be needed in an aquatic environment including the contents for a bodily fluid cleanup kit.

<i>Minimum Requirements for First Aid Supplies</i>		
ANSI/ISEA Z308.1-2009 Workplace First Aid Kit Items	Minimum quantity	Recommended Per each 100 bathers (capacity)**
Absorbent compress, 32 sq. in. (206 sq. cm.) with no side smaller than 4 in. (10 cm.)	1	6
Adhesive bandages, 1 in. x 3 in. (2.5 cm. x 7.5 cm.)	16	50 (assorted)
Adhesive tape, 3/8 in. x 2.5 yd. (2.3 m) total	1	3 rolls
Antibiotic treatment, 0.14 oz. (0.5 g)	6	6
Antiseptic, 0.14 fl. oz. (0.5 g) Application	10	24
Burn treatment, 1/32 oz. (0.9 g) application	6	6
First-aid guide	1	1
Medical exam gloves*	1 box*	50 pair gloves assorted sizes*
Sterile pads, 3 in. x 3 in. (7.5 x 7.5 cm.)	4	12

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Additional Supplies, Cont.

Triangular bandage, 40 in. x 40 in. x 56 in. (101 cm. x 101 cm. x 142 cm.)	1	1
<i>Pool Specific Items (additional required)</i>		
Biohazard disposal bag (properly identified)	1 bag	More than 1 bag
Large absorbent compress, at least 8 x 10 inches (200 x 250 mm)	1	1
Cold Pack, at least 4 x 5 in. (100 x 125 mm)	1	3
Hand Sanitizer – 4 oz. (minimum 61% ethyl alcohol) or equivalent	1 bottle	1 bottle
Elastic wrap, 2-inch by 15-feet (50 mm by 1500 mm)	2	2
Emergency Blanket (Protected from water damage)	1	Maximum 1
Scissors	1	1
Bag Valve Mask (Ambu-Bag)	1	Maximum 1
Face Shield	2	Maximum 2
Biohazard Bag	3	3
Disposable Gown & Mask (Bloodborne pathogens)	3	3
Personal bloodborne pathogen protection kit, with CPR valve faceshield, gloves, antiseptic wipes, non-latex gloves, etc.	1 per guard or responder	1 per guard or responder
<p>*Do not use latex gloves. Gloves should be vinyl or nitrile and non-powdered. Fit is important. It is recommended that 4 to 6 mil. gloves be used.</p>		
<p>**Quantities can be adjusted as usage amounts are determined. Small amounts require frequent restocking. Large amounts of supplies can deteriorate from heat, age and humidity.</p>		

Bloodborne Pathogen – Bodily Fluid Cleanup Kit

Bloodborne Pathogen – Bodily Fluid Cleanup Kit**

The Committee chose to compile this list after reviewing the contents of several kits that were commonly available.

One complete OSHA bloodborne pathogen kit is needed.

Example of minimum suggested contents:

- Disposable gloves*
- Disposal gown or apron, facemask, shoe covers
- Face Shield
- Anti-microbial wipes
- Biohazard Bag
- Disinfectant (ex. calcium hypochlorite packet – 1 oz)
- Absorbent materials or fluid solidifier (~20gm.)
- Scoops for solidified material

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- Scraper
- Instructions for use

* **Do not use latex gloves.** Gloves should be vinyl or nitrile and non-powdered. Fit is important. It is recommended that 4 to 6 mil. gloves be used.

** It is suggested that a kit be assembled, put in a container and sealed to assure the contents are still intact when needed. After use, a new kit is provided or the container is restocked and resealed.

<i>Stocked</i>	4.6.5.5	The supplies must be stored at the first aid station. If the venue is large and has multiple lifeguards, it is also recommended that supplies be provided at locations where they can be quickly accessed by staff responding to emergencies. The supplies must be stored in such a manner to protect them from moisture and extremes of heat and cold that will cause deterioration. Supplies must be periodically checked for expiration dates and replaced as needed.
<i>New Construction</i>	4.6.5.6	Planning for new facilities should take into account the type of venues offered and the expected number of patrons to help determine the size and number of first aid stations needed.
<i>Prior Construction</i>	4.6.5.7	All current and future aquatic facilities need to have first stations properly identified and supplied.
	4.7	Recirculation and Water Treatment
	4.8	Decks and Equipment
	4.8.1	Decks
	4.8.2	Diving Boards and Platforms
	4.8.3	Starting Blocks
	4.8.4	Deck Slides
<i>Equipment</i>	4.8.5	Lifeguard-Related Equipment
<i>Chairs and Stands</i>	4.8.5.1	<i>Chairs and Stands</i>
<i>Chairs and Stands</i>	4.8.5.1.1	<p>Pools that provide lifeguards should provide chairs or stands. The chair/stand serves as a:</p> <ul style="list-style-type: none"> • Base of operations; • Elevated seating or stand to increase underwater visibility for the guards.

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The chairs/stands must be designed:

- To be safe, with no sharp edges or protrusions;
- To be made of sturdy, durable materials;
- Resistant to vandalism, fire, weather and graffiti;
- Does not include any breakable glass or plastics or other such potential hazards.
- The steps, handrails, observation deck and chair are designed to be resistant to the normal wear and tear of use.
- Made of UV resistant materials.

The chairs/stand must:

- Provide a raised observation area for the lifeguard;
- Provide enough height to elevate the average lifeguard to an eye level above the heads of the bathers.
- Minimize the effects of glare. Where glare is a problem the venue may want to consider higher stands to help reduce/minimize the effects of the glare.
- Provide for lifeguard safety (height, handrails, etc.);
- Provide ease of dismount (able to exit easily and safely).

The location of the chairs must give the lifeguards complete visibility to all parts of the pool area. The number of chairs is determined by the water surface size, the anticipated bather load, and the ability to provide complete surveillance of the zone.

<i>UV protection for Chair and Stands</i>	4.8.5.1.2	Provide, in those situations where sun is a factor, the ability to use with sun protective devices.
<i>Required Equipment</i>	4.8.5.2	<i>Required Equipment</i>
<i>Listed</i>	4.8.5.2.1	Aquatic facilities shall provide the equipment listed under the following subsection 4.8.5.2 and maintain it in good working order.
<i>Spinal Injury Board</i>	4.8.5.2.2	At pools providing lifeguards, a spinal injury board must be provided that is constructed of impermeable material, easily sanitized/disinfected, with a head immobilizer, and a

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minimum of 3 body straps. The aquatic venue must provide boards that meet the standards of the local Emergency Medical Services provider.

Boards must be properly maintained and in good repair (An example is using a wooden backboard that is worn so the wood is exposed and no longer cleanable. In this case refinishing it with a waterproof finish should again make it cleanable.)

*Rescue
Throwing
Device*

4.8.5.2.3

A rescue throwing device is a buoyant life ring, torpedo buoy or other easily thrown buoyant device that is designed for such use. Fifty feet (15.24 m) of ¼ inch (6.35 mm) minimum rope securely attached to the device is required. The device must be kept ready for use, and the rope must be coiled to prevent tangles and to facilitate throwing the device.

At least one such device must be provided at any pool allowed to have only one lifeguard on duty.

Before using, uncoil enough rope to step on the end of the rope to prevent it following the throwing device into the pool. Often there is a knot or ball on the end to help with this. Throwing the device to the swimmer is quite difficult. It is best to throw it well past the swimmer and then draw the device back for them to grab. This allows the rescuer the flexibility to direct the device to the swimmer by moving back and forth along the pool edge while drawing in the excess rope.

Reaching Pole

4.8.5.2.4

A reaching pole, shepherd's crook or life hook is a handy rescue device particularly for non-trained individuals and pools staffed with single-lifeguards. Use of the pole is often taught during swim lessons.

The pole is intended to reach out to a swimmer in distress and to allow them to grab a hold of the pole. The pole should be submerged when introducing it to the swimmer to prevent injury. In some cases the "hook" can be used to encircle a non-responsive swimmer to draw them to the side. Do not hook the bather's neck; submerge the hook and encircle their chest or even buttocks Use of the device involves reaching out to the swimmer and then pulling the pole straight back to the side, along with the swimmer. The pole cannot be swung around to the side as the strength required exceeds that of most people, and the pole is not that

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durable.

Since the pole is pulled back to the side, a telescoping pole is not appropriate as it can pull apart. This Code asks for a 12 to 16-foot (3.66-4.88 m) pole. Ideally the pole can reach to the middle of many smaller pools making the entire pool reachable from the side with the pole. In some indoor pools, with narrow decks and low ceilings, the longer 16-foot pole is not useable as there is not room enough to retrieve the swimmer to the pool edge; the wall and ceiling are in the way. In these pools, it is recommended that a shorter pole be provided, while trying to keep it as long as possible. In most pools there should be enough room to use a pole at least 12 feet (3.66 m) long.

The pole must be equipped with a “lifhook” or “shepherd’s crook”. For safety, the hook must be a looped frame-type hook, not the single metal hook. The hook protects the swimmer from being injured by the pole, as well as allows a non-responsive swimmer to be pulled in. In addition the pole should be inspected periodically to replace the pole if any stress damage, sharp edges, or bolts that can injure a swimmer are noted. To prevent injury, use only the hook attachment bolts supplied by the manufacturer. This will prevent hooks and snags, caused by using the improper bolts, which can injure the swimmer.

Non-electrical
Conducting
Materials

4.8.5.2.4.1

While the pole should be constructed of non-electrical conducting materials, it is wise for the rescuer to check behind and above them to note and avoid any points where electrical contact can be made while using the pole.

Communication
Device

4.8.5.2.5

A telephone or other communication device must be provided that is hard-wired and capable of reaching 911 or other emergency notification system.

Today many swimmers carry cell-telephones. It is easy to assume a cell telephone will be available at the pool for emergency use. Unfortunately, when one is needed it is easy to find that one is not available, it isn’t charged, or it gets wet during the emergency and does not work. A hard wired system is more reliable and there when it is needed.

The telephone must be available to all aquatic venue users for use in an emergency, anytime the pool is open for use. Pay telephones must be able to dial 911 without the use of

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coins or cards and maintained in an operable condition.

4.9 **Filter/Equipment Room**
4.10 **Hygiene Facilities**

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Model Aquatic Health Code Lifeguarding and Bather Supervision Module 5.0 Operation and Maintenance Annex

Keyword	Section	Annex
	5.0	Operation and Maintenance
	5.1	Plan Submittal
	5.2	Materials
	5.3	Equipment Standards
	5.4	Pool Operation and Facility Maintenance
	5.5	Pool Structure
	5.6	Indoor / Outdoor Environment
	5.7	Recirculation and Water Treatment
	5.8	Decks and Equipment
	5.8.1	Decks
	5.8.2	Diving Boards and Platforms
	5.8.3	Starting Blocks
	5.8.4	Deck Slides
<i>Supplies and Equipment</i>	5.8.5	Lifeguard-Related Equipment and Supplies
<i>Chairs and Stands</i>	5.8.5.1	<i>Chairs and Stands</i>
<i>Defined</i>	5.8.5.1.1	Inspecting the chair routinely and maintaining the chair in good condition and safe for lifeguards to use.
<i>Required Equipment</i>	5.8.5.2	<i>Required Equipment</i>
<i>Listed</i>	5.8.5.2.1	All required safety and lifeguarding equipment needs to be present and in good working order before the facility is opened to the public.
<i>Identification</i>	5.8.5.2.2	Identification of lifeguards and other safety team members is crucial for emergency situations to be taken care of as quickly as possible. There should be no delay in care because a patron is unable to find a member of the aquatic venue safety team. Distinct uniforms are a standard in most industries to identify workers and their assigned tasks.
<i>Rescue Tubes</i>	5.8.5.2.3	Each aquatic venue must make its own risk determination. At a minimum a lifeguard conducting patron surveillance must have a rescue tube immediately available for use.

Controversy exists as to whether the tube is necessary

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Keyword	Section	Annex
		for all shallow water rescues. There is always a risk that the victim can overwhelm a responding lifeguard, but the increase in response speed may offset that risk. In any case, the aquatic venue must follow the recommendations of the lifeguard certifying agency.
<i>Rescue Tubes</i>	5.8.5.2.3.1	<p>In deeper water, the lifeguard might likely make a swimming rescue. Lifeguard training agencies have determined that the use of a rescue tube makes rescues safer for both the victim and the rescuer. The rescue tube provides a barrier between the victim and the rescuer as well as a handhold for both during a rescue. Being properly prepared to respond to an emergency, requires wearing the harness strap attached to the rescue tube and keeping the rescue tube in a position and location where it can be immediately used.</p> <p>Wearing the strap and sitting with the tube at the lifeguard's feet, or in any other position except properly held, can lead to situations where a lifeguard is injured or cannot respond because the tube's strap is wrapped around handrails, chair pedestals or other hazards. The pool management must make sure the lifeguards are holding the rescue tube in a manner taught and accepted by the lifeguard training agency.</p>
<i>Rescue Tubes</i>	5.8.5.2.3.2	<p>Training agencies and the ANSI standards for aquatic venue facilities all speak to the type of equipment needed for various types of rescue. This would include what type equipment the lifeguard could use in their area of patron surveillance for a patron rescue.</p>

ANSI/APSP 9

- **20.4.3.2 Reaching victim.** Lifeguards, attendants, and staff assigned to maintain guest surveillance in aquatic facilities shall be positioned and provided equipment in order to reach the victim within 20 seconds of identification of a trauma or incident.
- **20.4.4 Equipment.** For staffed lifeguard stations, where lifeguard equipment is required by local code or function of the lifeguard station, the equipment shall conform to 20.4.4.1 – 20.4.4.5.

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Keyword	Section	Annex
		<ul style="list-style-type: none"> • 20.4.4.1 Convenient location. Equipment shall be conspicuously displayed and conveniently on hand at all times. • 20.4.4.2 Rescue tube. If a rescue tube is required by function of the lifeguard workstation, the lifeguard should wear the strap of the device. • 20.4.4.3 Personal protective equipment. Each staff location shall provide OSHA stipulated personal protective equipment. • 20.4.4.4 Disease transmission. Equipment to reduce staff exposure to transmission of disease shall be available for use in breathing assistance or CPR. • 20.4.4.5 Backboard. A backboard or other appropriate immobilizing device shall be available that is equipped to permit care of suspected spinal injuries.
UV Protection	5.8.5.2.4	<p>Protection from ultraviolet light (UV) radiation is a necessary part of lifeguarding at aquatic venues where the lifeguard is exposed to the sun. Gone are the days when the objective of the lifeguard was to get as deep a tan as possible. Today, sun exposure, especially when the skin becomes burned, increases significantly the risk of skin cancers.</p> <p>Damage is caused by both UVA and UVB rays, with growing evidence of the danger of UVA rays. Most traditional sunscreens provide mainly UVB protection. These products appear to reduce the risk of squamous cell and basal cell carcinoma as well as actinic keratosis. There are mixed results about traditional sunscreen's ability to reduce malignant melanomas, the most dangerous form of skin cancer and the leading cause of death from skin disease.</p> <p>In a recent study by the Wellcome Trust Sanger Institute of melanoma DNA, it was noted that the melanoma DNA contained 33,000 mutations, many of which may have come from ultraviolet light exposure.³</p>

³ Pleasance ED et al. A comprehensive catalogue of somatic mutations from a human cancer genome. *Nature*. 2010;463:7278;191-6. PUBMED:20016485; DOI:10.1038/nature08658.

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The best sunscreens available at the present time are broad spectrum or full spectrum and are usually so labeled. More will probably become available as new Food and Drug Administration rules are implemented.⁴ These protect against both UVA and UVB rays. Because SPF ratings only measure UVB effectiveness there is a lot of variability UVA protection in sunscreens. Most experts recommend a sunscreen with an SPF of at least 30.

To obtain the best broad-spectrum protection the American Academy of Dermatology recommends sunscreens that contain any of the following products: avobenzene, cinoxate, ecamsule, menthylantranilate, octyl methoxycinnamate, octyl salicylate, oxybensone, or sulibenzene. Some sunscreens may use zinc oxide and titanium dioxide as “inorganic” mineral based ingredients.

There are some questions about the health effects of some of the screening chemicals, but the benefits seem to outweigh the hazards. Of course, to minimize exposure to these chemicals, wear protective clothing, hats, use sunblocking umbrellas, or any other means to avoid exposure to UV light. Protection is also needed from reflected exposure. Light-skinned individuals can be particularly sensitive to both direct as well as indirect exposure to the sun’s UV rays.⁵

Polarized Eyewear

5.8.5.2.5

Glare and reflected sunlight off the water surface can cause significant visibility problems for lifeguards. Lifeguards working at outdoor venues are recommended to wear polarized eye wear to reduce glare. The use of UV protective eyewear should be a part of any sun exposure awareness training.

The polarization process decreases light transmission by at least half. In some cases, using polarized eyewear with an added tint to block even more light

⁴ 21 CFR Parts 201 and 310, Labeling and Effectiveness Testing; Sunscreen Drug Products for Over-the-Counter Human Use.

⁵ IARC monographs on the evaluation of carcinogenic risks to humans. Solar and ultraviolet radiation. IARC Monogr Eval Carcinog Risks Hum. 1992;55:1-316. PMID:1345607

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may be helpful.

Polarized eyewear can also help indoor pool guards to eliminate glare from the water. It is useful to test the eyewear before using them, as some indoor sources of glare are blocked easier than glare from other sources, but the polarized lens are often helpful.

Polarized 3-D glasses must not be used. Some guards will be tempted to push the limits. The 3-D effect is produced by orienting the polarization of each of the lenses at 90 degrees from each other. Using these under normal conditions can be disorienting and can disrupt normal vision.

Personal
Protection
Equipment

5.8.5.2.6

OSHA Bloodborne Pathogen Regulations⁶, require that the employer establish and implement a written exposure control plan designed to protect employees, with possible occupational exposures, to minimize or eliminate those employee exposures. The exposure control plan must be reviewed and updated yearly.

Appropriate personal protective equipment (PPE) must be provided to all employees that have possible occupational exposures.

1910.1030(d)(3)(i) Provision. When there is occupational exposure, the employer shall provide, at no cost to the employee, appropriate personal protective equipment such as, but not limited to, gloves, gowns, laboratory coats, face shields or masks and eye protection, and mouthpieces, resuscitation bags, pocket masks, or other ventilation devices. Personal protective equipment will be considered "appropriate" only if it does not permit blood or other potentially infectious materials to pass through to or reach the employee's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the

⁶ 29 CFR 1910.1030, Toxic and Hazardous Substances – Bloodborne Pathogens

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protective equipment will be used.

1910.1030(d)(3)(ii) Use. The employer shall ensure that the employee uses appropriate personal protective equipment unless the employer shows that the employee temporarily and briefly declined to use personal protective equipment when, under rare and extraordinary circumstances, it was the employee's professional judgment that in the specific instance its use would have prevented the delivery of health care or public safety services or would have posed an increased hazard to the safety of the worker or co-worker. When the employee makes this judgment, the circumstances shall be investigated and documented in order to determine whether changes can be instituted to prevent such occurrences in the future.

1910.1030(d)(3)(iii) Accessibility. The employer shall ensure that appropriate personal protective equipment in the appropriate sizes is readily accessible at the worksite or is issued to employees. Hypoallergenic gloves, glove liners, powderless gloves, or other similar alternatives shall be readily accessible to those employees who are allergic to the gloves normally provided.

(http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051)

Due to the nature of the lifeguard's work, many employers provide some emergency protective equipment for the lifeguard to carry. This usually includes at least a pair of disposable protective gloves (non-latex is recommended), a CPR face mask or microshield.

ANSI/APSP 9

- **20.4.3.2 Reaching victim.** Lifeguards, attendants, and staff assigned to maintain guest surveillance in aquatic facilities shall be positioned and provided equipment in order to reach the victim within 20 seconds of

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Keyword	Section	Annex
Signaling Device	5.8.5.2.7	<p>identification of a trauma or incident.</p> <ul style="list-style-type: none">• 20.4.4 Equipment. For staffed lifeguard stations, where lifeguard equipment is required by local code or function of the lifeguard station, the equipment shall conform to 20.4.4.1 – 20.4.4.5.• 20.4.4.1 Convenient location. Equipment shall be conspicuously displayed and conveniently on hand at all times.• 20.4.4.2 Rescue tube. If a rescue tube is required by function of the lifeguard workstation, the lifeguard should wear the strap of the device.• 20.4.4.3 Personal protective equipment. Each staff location shall provide OSHA stipulated personal protective equipment.• 20.4.4.4 Disease transmission. Equipment to reduce staff exposure to transmission of disease shall be available for use in breathing assistance or CPR.• 20.4.4.5 Backboard. A backboard or other appropriate immobilizing device shall be available that is equipped to permit care of suspected spinal injuries <p>Signals are used by all lifeguards to communicate emergency and non-emergency information. The devices and their use can vary depending on the venue and its management. Because of the noise, whistles, hand signals, emergency buttons, radios, and telephone handsets are used to provide more effective communication.</p> <p>The most basic communication method used by lifeguards is a combination of whistle blasts and hand signals to communicate with each other, the patrons and the pool supervisor. Whistle signals can communicate when to clear the pool, get another guard's or supervisor's attention and communicate emergencies, both minor and major. When attention is gained, more detailed information can be communicated with standard hand signals and pointing.</p> <p>More sophisticated communication systems can incorporate emergency buttons, radio devices, telephone handsets and PA systems. These systems</p>

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		<p>are often necessary in larger aquatic venues, in facilities with multiple pools and in facilities that may have only a single guard to summon assistance.</p> <p>Communication techniques and procedures must be practiced and reviewed regularly during in-service training to remain efficient and effective. Revised as needed.</p>
<i>First Aid Supplies</i>	5.8.5.2.8	The supplies must be stored in such a manner to protect them from moisture and extremes of heat and cold that will cause them to deteriorate. Supplies must be periodically checked for expiration dates and replaced as needed.
<i>No Lifeguards</i>	5.8.5.3	<i>Aquatic Facilities without Lifeguards</i>
<i>Safety Plan</i>	5.8.5.3.1	This section defines the contents that are needed in an aquatic venue safety plan for facilities without a lifeguard.
<i>Operator Safety Training</i>	5.8.5.3.2	This section requires a person responsible for the operation and maintenance of an unguarded swimming pool to have at a minimum Bloodborne Pathogen, CPR/AED, and First Aid Training. The trained person may or may not be the maintenance person of the pool. The trained person should be the person most likely to be available and accountable for the surveillance of the pool. This may be a maintenance person, front desk clerk, or rental office manager; persons often close to and present when the pool is open. This person would be the person expected to respond to emergencies, and most likely to be exposed to bodily fluids.
<i>Emergency Communication System</i>	5.8.5.3.3	<p>Having a reliable telephone available during an emergency is important. Frequently cellular telephones, cordless telephones and other self-powered devices are not ready for use. Having a hard wired telephone provides that reliability.</p> <p>Alternate systems are allowed with approval of the regulatory authority in situations when a telephone will not work, and an alternate means of communication is available. Some alternate communication systems might include handset of intercoms to a location that is</p>

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		<p>constantly manned whenever the pool is open for use (e.g. a front desk at a hotel, the check in desk at a fitness club, or other continuously manned location); a commercial emergency contact device that connects to a monitoring service, or directly to 911 dispatch; devices that alert multiple staff on site when activated (e.g. pagers systems, cellular telephone systems and radio communication alert systems).</p>

In any case, the communication system will be immediately accessible at any time the pool is open. Accessible telephones that are in close proximity of the pool are acceptable if: they can be easily seen from the pool deck, or directional signage is provided in the pool area; are located within a reasonable distance from the pool (This will vary depending on each individual facility, but in no case should they be more than about 100 feet (30.48 m) away in a direct line of travel.); they are able to dial 911 or a continuously monitored location without the use of coins, cards or codes.

Local
Emergency
Response

5.8.5.3.3.1 There needs to be the ability to contact the proper emergency agency for the situation at hand as quickly as possible. The response time by the proper emergency agency has been shown to make a difference in patient outcome.

EMS World Response Time Standards
<http://www.emsworld.com/article/10324786/ems-response-time-standards>

Emergency
Telephone

5.8.5.3.3.2 Signage must be posted at the telephone or communication device with emergency contact number(s) or procedures and the address of the aquatic venue. Often a person in an emergency situation can be confused, so having the emergency number(s) at the telephone, makes responding easier. Also, in many cases, the caller will not know the address of the pool or any special instructions regarding access.

Emergency
Response
Equipment

5.8.5.3.4 Below is a list of aquatic safety equipment that is considered standard in the aquatic industry and is found in a majority of state and local codes for aquatic venues.

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Throwing Device 5.8.5.3.4.1 A rescue throwing device is a buoyant life ring, torpedo buoy or other easily thrown buoyant device that is designed for such use. Fifty feet of ¼ inch (6.35 mm) minimum rope securely attached to the device is required. The device must be kept ready for use, and the rope must be coiled to prevent tangles and to facilitate throwing the device.

At least one such device must be provided at any pool with no lifeguard or only one lifeguard on duty.

Then before using, uncoil enough rope to step on the end of the rope to prevent it following the throwing device into the pool. Often there is a knot or ball on the end to help with this. Throwing the device to the swimmer is quite difficult. It is best to throw it well past the swimmer and then draw the device back for them to grab. This allows the rescuer the flexibility to direct the device to the swimmer by moving back and forth along the pool edge while drawing in the excess rope.

Reaching Pole 5.8.5.3.4.2 A reaching pole, shepherd's crook or life hook is a handy rescue device particularly for non-trained individuals or when there is only one lifeguard. Use of the pole is often taught during swim lessons.

The pole is intended to reach out to a swimmer in distress and to allow them to grab a hold of the pole. The pole should be submerged when introducing it to the swimmer to prevent injury. In some cases the "hook" can be used to encircle a non-responsive swimmer to draw them to the side. Do not hook the bather's neck; submerge the hook and encircle their chest or even buttocks. Use of the device involves reaching out to the swimmer and then pulling the pole straight back to the side, along with the swimmer. The pole cannot be swung around to the side as the strength required exceeds that of most people, and the pole is not that durable.

Since the pole is pulled back to the side, a telescoping pole is not appropriate as it can pull apart. This Code asks for a 12 to 16-foot (3.66-4.88 m) pole. Ideally the pole can reach to the middle of many pools making the

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entire pool reachable from the side with the pole. In some indoor pools, with narrow decks and low ceilings, the longer 16-foot (4.88 m) pole is not useable as there is not room enough to retrieve the swimmer to the pool edge; the wall and ceiling are in the way. In these pools, it is recommended that a shorter pole be provided, while trying to keep it as long as possible. In most pools there should be enough room to use a pole at least 12 feet (3.88 m) long.

The pole must be equipped with a “lifhook” or “shepherd’s crook”. For safety, the hook must be a looped frame-type hook, not the single metal hook. The hook protects the swimmer from being injured by the pole, as well as allows a non-responsive swimmer to be pulled in. In addition the pole should be inspected periodically to replace the pole if any stress damage, sharp edges, or bolts that can injure a swimmer are noted. To prevent injury, use only the hook attachment bolts supplied by the manufacturer. This will prevent hooks and snags, from using the improper bolts, which can injure the swimmer.

Please Note: While the pole should be constructed of non-electrical conducting materials, it is wise for the rescuer to check behind and above them to note and avoid any points where electrical contact can be made while using the pole.

Posters

5.8.5.3.4.3

CPR performed by bystanders has been shown to improve outcomes in drowning victims.⁷ CPR started immediately on a drowning victim instead of waiting until emergency responders arrive will have a significant effect on the potential for brain damage in the victim. First aid preformed on a victim immediately after an incident also has the potential to save a life. Control of bleeding wounds not only helps the survival of the victim, but can keep the environment safer for other patrons.

Explaining to patrons the basics of Recreational Water

⁷ Kyriacou DN, et al. Effect of immediate resuscitation on children with submersion injury. *Pediatrics*. 1994;94 (2):137-142.

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Keyword	Section	Annex
Hours of Operation	5.8.5.3.5	<p>Illnesses (RWIs) and Prevention of RWIs is important to the safe operation of today's facilities. Patrons need to be educated to what RWIs are, how they are transmitted, and how they can be prevented.</p> <p>Posters of CPR and first aid explaining basic procedures for each can be reviewed in seconds and give the provider enough knowledge to assist the victim until emergency responders arrive. Posters made available to patrons can educate patrons to recognize instances of potential causes of RWI, and the prevention and spread of RWI.</p> <p>Information for CPR, First Aid, and RWI can be found at but not limited to, http://www.cdc.gov/healthyswimming, http://www.redcross.org/en, and http://www.heart.org/HEARTORG.</p>
Closure Items	5.8.5.3.6	<p>Operating hours for an aquatic facility should be posted and clearly visible at the venue, especially when the venue is not attended at all times by an operator or lifeguard. For example, a swimming pool which is not provided with adequate artificial lighting is not safe for swimming when dark.</p> <p>A sign indicating reasons requiring closure especially at venues where an operator or lifeguard is not present should be posted listing specific incidents which would require the venue to immediately close. Examples of such incidents include fecal and vomit. A contact number should be provided to notify the owner/operator of an incident.</p>
Contact Number	5.8.5.3.7	<p>An owner/operator contact number must be provided for notification of water quality and venue safety concerns. At venues where operators are not present at all times, it is important for patrons to be able to contact the owner/operator when water quality has been compromised (ex. Cloudy water, fecal matter, and/or other closure issues). A hard-wired telephone should also be provided for the patrons to use to make contact. Not all people have cell telephones, and cell telephones do not operate in all locales. Cordless telephones can be left off chargers and have dead batteries.</p>

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Keyword
Management
Response

Section
5.8.5.3.7.1

Annex
Management must be in position to act as quickly as possible to any aquatic venue issue.

DRAFT

Model Aquatic Health Code Lifeguarding and Bather Supervision Module 6.0 Policies and Management Annex

Keyword	Section	Annex
	6.0	Policies and Management
	6.1	Operator Training
<i>Lifeguard Training</i>	6.2	Lifeguard Training
<i>Qualifications and Certification</i>	6.2.1	Lifeguard Qualifications and Certification

Every day, about ten people die from unintentional drowning. Of these, two are children aged 14 or younger. Drowning is the sixth leading cause of unintentional injury death for people of all ages, and the second leading cause of death for children ages 1 to 14 years. In 2007, there were 3,443 fatal unintentional drownings (non-boating related) in the United States, averaging ten deaths per day. An additional 496 people died from drowning in boating-related incidents. More than one in five people who die from drowning are children 14 and younger. For every child who dies from drowning, another four received emergency department care for nonfatal submersion injuries. More than 55% of drowning victims treated in emergency departments require hospitalization or transfer for higher levels of care (compared to a hospitalization rate of 3-5% for all unintentional injuries). These injuries can be severe.

Nonfatal drownings can cause brain damage that may result in long-term disabilities including memory problems, learning disabilities, and permanent loss of basic functioning (e.g., permanent vegetative state).^{8,9,10} Appropriately trained lifeguards can reduce this risk at public aquatic venues.

⁸ CDC. Unintentional Drowning: Fact Sheet. <http://www.cdc.gov/HomeandRecreationalSafety/Water-Safety/waterinjuries-factsheet.html>.

⁹ Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. [cited 2011 Apr 6]. Available from: URL: <http://www.cdc.gov/injury/wisqars>.

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Keyword	Section	Annex
Training Course	6.2.1.1	The duties of a lifeguard require specific skills and knowledge. While some of the skills and knowledge can be acquired through independent study, the understanding needed to apply this information can only be found through a properly developed training course which includes practical water skills and tests. Pre-employment testing as well as scheduled training is needed to verify that a lifeguard is qualified for the environment they are guarding. Any course must be accepted by the AHJ before its certification will be valid in the agency's jurisdiction.
Essential Topics	6.2.2	Essential Topics in Lifeguard Training Courses
Course Work	6.2.2.1	Course Work
Course Work	6.2.2.1.1	This section defines a broad scope of lifeguard training which is further described in the sections below. These topics are universally found in all currently recognized national lifeguard training programs.
Hazards and Prevention	6.2.2.2	Hazard Identification and Injury Prevention
	6.2.2.2.1	Lifeguards have an obligation to know and understand common hazards associated with aquatic venues, and how they may be mitigated or prevented. A vital component of this obligation is to provide patron surveillance, commonly referred to as scanning. In order to prevent injuries, a lifeguard must be taught to use scanning strategies and techniques to be able to see and identify the emergency. This instruction is incomplete without also teaching lifeguards how to identify factors and circumstances which cause victim recognition to become impeded. The United States Lifeguarding Standards Coalition recommended at the level of a "Guideline" that Lifeguard certifying agencies and supervisors should provide training programs and in-service protocols

¹⁰ Centers for Disease Control and Prevention. Wide-ranging OnLine Data for Epidemiologic Research (WONDER) [online]. (2010) Available from URL: <http://wonder.cdc.gov/mortsql.html>.
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that cover the following:

- Emphasize scanning all fields within a scanning zone using maximal head movements.
- Require new lifeguards to practice scanning with supervision and feedback.
- Emphasize that when individuals within a population are similar in appearance, it takes longer to identify potential drowning incidents.
- Inform lifeguards that distractions greatly affect the scanning process.
- When training aquatic supervisors, include information regarding the benefits of supervision and frequent encouragement.

See the Appendix “Scientific Review and Evidence Grading Guideline Definitions for Evidence-Based Statements” from The United States Lifeguarding Standards Coalition, which defines the terms used below.

Consensus Recommendation

Evidence is insufficient to make a recommendation for or against specific lifeguard scanning techniques.

Standards

None

Guidelines – see above

Options

A plan should be in place to provide backup support when rule enforcement duties or incidents affect the ability of a lifeguard to effectively scan.

Because scanners tend to observe what is in front of the total viewing area and less time searching areas to the right and left of the visual field, lifeguard employers should consider reducing the field of view assigned to lifeguards. This could be done by placing lifeguards closer together along a linear beach or at the corners of a pool versus along the sides.

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		Since the probability of finding a target decreases as the number of patrons increases, consider increasing the lifeguard staff and dividing scanning responsibilities among them when the number of patrons rises.

No Recommendations

Emergency Response

6.2.2.3 *Emergency Response*

6.2.2.3.1 Lifeguards should have a clear understanding of the responsibilities and actions of not only the physical skills, but the cognitive and decision making skills involved in an emergency response. Training agencies should develop appropriate skills to address the variety of water depths in which a victim may be found. These skills should be trained not only for the technical aspects of the skill, but also how the skill is incorporated into a venue's Emergency Action Plan. Training agencies are encouraged not to limit emergency response training to the water itself. While larger aquatic venues may incorporate a dedicated emergency response staff, such as Emergency Medical Technicians (EMTs), in any land based response, many facilities lack the funds necessary to make the use of EMTs for land based emergencies universal among all venues. This results in the lifeguard being responsible for not only water-based emergencies, but land-based emergencies as well.

CPR/AED

6.2.2.4 *Cardiopulmonary Resuscitation (CPR/AED)*

6.2.2.4.1 Lifeguards should be competent in a variety of CPR/AED and first aid skills. The predominant body for the research of such skills is the International Liaison Commission on Resuscitation (ILCOR). ILCOR currently reviews available research every 5 years and is composed of physicians and medical researchers from across the globe.

First Aid

6.2.2.5 *First Aid*

6.2.2.5.1 The application of first aid skills is currently reviewed and recommended through the National First Aid

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Keyword	Section	Annex
		Science Advisory Board. As of the development of this Code, these organizations are the leading agencies in regards to treatment recommendations for resuscitation and injuries.
<i>Legal Issues</i>	6.2.2.6	<i>Legal Issues in Lifeguarding</i>
	6.2.2.6.1	Lifeguards are considered public safety personnel by the public at large. This recognition results in legal exposures commonly seen among healthcare and traditional emergency response workers such as paramedics, firefighters, and police officers. This, in addition to an increasingly litigious society, requires the lifeguard to have basic understandings of critical legal concepts such as consent, refusal of care and negligence. Legal topics to be covered are not limited to these listed topics. Training agencies are strongly recommended to add topics based on the typical environment in which the trained lifeguard will be employed.
<i>General Requirements</i>	6.2.3	<i>General Requirements for Lifeguard Training</i>
<i>Course Providers</i>	6.2.3.1	<i>Course Providers</i>
<i>Certifications</i>	6.2.3.1.1	Prior to the late 1970's, there were limited agencies that offered certification courses in lifeguard training. Over the last three decades numerous new agencies have emerged. While some have been at the national level, several have been more regional based. There needs to be a review of all training programs by the AHJ for approval.
<i>Content and Delivery</i>	6.2.3.2	<i>Course Content and Delivery</i>
<i>Standardized and Comprehensive</i>	6.2.3.2.1	Standardized delivery systems with comprehensible materials are essential to the implementation of a lifeguard training program. Such delivery systems are also critical to maintaining instructional quality.
<i>Skills Practice</i>	6.2.3.2.2	While much of the necessary knowledge may be obtained through self-directed study, especially in an interactive online format, such courses take the eye of the experienced instructor in providing individualized learning approaches to skill mastery by

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		the student. In and out of water skill practices, under an instructor’s supervision, are also necessary for the student to develop an understanding of the various needs in an emergency through instructor led simulations and scenarios.
<i>Proficiency</i>	6.2.3.2.3	The training agency shall design the course so that not only physical and cognitive skills are tested, but will also reasonably ensure that the student has the ability to apply these skills in an actual lifeguarding setting appropriate to the environment in which they will provide patron surveillance.
<i>Course Length</i>	6.2.3.3	<i>Course Length</i>
<i>Sufficient Time</i>	6.2.3.3.1	This Code does not prescribe a particular length of time for courses. Instead, this Code is more performance based by requiring that all of the essential topics in 6.2 are covered by the training agency. National lifeguard training courses currently range from approximately 12 to 36 hours based on the type of training received (shallow water lifeguard, a generic pool lifeguard, waterpark lifeguard, and waterfront lifeguard) and the AHJ approval. Numerous factors make a uniform course length difficult to specify. Pre-existing knowledge, student to teacher ratio, internet based learning formats, and course level are examples of these factors.
<i>Instructor Requirements</i>	6.2.3.4	<i>Instructor Requirements</i>
<i>Minimum Prerequisites</i>	6.2.3.4.1	The creation of minimum instructor prerequisites is a crucial piece to insure quality and consistency for the training agency.
<i>Experienced</i>	6.2.3.4.2	Practical applications of skills and knowledge are critical to the learning process of the student. Also critical is an instructor who understands the demands, stresses, and practical application of skills that can only be gained from actual lifeguarding experience or the benefit of extensive training in an aquatic facility environment. Instructors who lack such experiences are unable to fully understand the requirements and demands of a lifeguarding position and will be unable to provide adequate insight to students on how to

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		apply the skills and knowledge found in the training agency curriculum.
Completed Training	6.2.3.4.3	It is necessary that lifeguard instructors have a firm understanding of the course they will be teaching. While it may be possible for an individual to pass a lifeguard instructor course without first taking a basic course, such an instructor would lack a firm understanding of the skills required by the training agency. It should be noted however, that training agencies should have the ability to create curriculum that would allow an individual from another training agency, or an individual who chooses to take an alternative to a full basic level course, to become instructors.
Certified Instructors	6.2.3.4.4	In order for lifeguard training agencies to maintain quality and consistency, a process must be in place that allows for the agency to monitor course offerings. The instruction of a course by an individual not directly authorized by the training agency is extremely problematic and risks the quality controls established by the training agency. This also places public safety at risk, in that the unauthorized instructor may not be fully qualified to teach the materials as intended. It also affects the training agency in that there is no direct recourse against an unauthorized, and unqualified, instructor. Lifeguard certifications, obtained from a lifeguard training course taught by an instructor who is not currently certified or authorized by the training agency to teach lifeguarding courses, will not be recognized as certified or trained by the AHJ per 6.2.3.1.
Standardized	6.2.3.4.5	A standardized method of training allows for greater consistency and quality control by the training agency. A specific method is not being recommended by this Code.
Quality Control	6.2.3.4.6	Training agencies and organizations, both within and outside of the aquatics industry, require a method of ensuring quality instruction is being provided by the authorized instructor. Such quality instruction is crucial to the survival of the agency and, in the case of lifeguard training, crucial to the safety and well-

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		being of millions of swimmers every year. Training agencies must have procedures that allow for the correction, remediation and, if necessary, the revocation of instructor credentials.
<i>Final Exam</i>	6.2.3.5	<i>Final Exam</i>
<i>Requirements</i>	6.2.3.5.1	The readiness of lifeguard candidates to respond to aquatic based emergencies should be assessed thoroughly for skill mastery, knowledge, and practical application prior to being issued a certificate. In regards to a written exam, all nationally recognized training agencies currently require an 80% completion as the minimum threshold for passing.
<i>Physically Present</i>	6.2.3.5.2	The physical presence of the instructor of record assures that students are evaluated accordingly in both cognitive and physical testing. This also significantly reduces the risk of individuals becoming certified who lack the basic skills and knowledge necessary through either acts of omission caused by the substitution of another individual to provide testing, or by student fraud.
<i>Course Certificates</i>	6.2.3.6	<i>Course Certificates</i>
<i>Documentation</i>	6.2.3.6.1	In order to assure compliance with 6.2.3.9.1 of this Code, requiring the expiration date of the certification allows employers and the AHJ to be reasonably sure that the skills and knowledge of the lifeguard remain adequate. It should be noted that employers of lifeguards, and AHJ officials, vary in understanding of lifeguard training protocol. Providing the level of training lessens the chance that a lifeguard is employed at a facility without the necessary skills and knowledge needed to effectively protect swimmers and respond to emergencies specific to that venue. Examples of level of training include: Lifeguard, Waterpark Lifeguard, Waterfront Lifeguard, and Shallow Water Lifeguard. Such descriptions are not necessarily universal among all current training agencies.
<i>State Restrictions</i>	6.2.3.6.2	Clearly stating the restrictions on water depth for which the lifeguard is qualified allows the employer

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		and the AHJ to quickly ascertain the basic abilities of the lifeguard and their ability to care for all emergency situations that will be reasonably expected in that venue.
Shallow Water	6.2.3.6.3	Certification card should clearly state if the lifeguard is limited to guarding only shallow water/five (5) feet or less.
Not Over 5 Feet	6.2.3.6.4	The shallow lifeguard is not qualified by their training agency to be stationed in a venue that has water greater than 5 feet (1.52 m) of depth. If any part of the venue has a depth of water greater than 5 feet, the shallow water lifeguard is not qualified for patron surveillance in that body of water.
Deep Water	6.2.3.6.5	Responding to emergencies in water depths greater than 5 feet (1.52 m) may require more specific skills and physical abilities. These skills and abilities may only be adequately learned, developed and assessed by realistic training. It is the responsibility of the employer to ensure the lifeguards can make rescues in their facility specific environment.
Instructor Identified	6.2.3.6.6	The ability to identify the instructor allows for higher quality control by the training agency. It also aids in the prevention of fraudulent certifications.
Continuing Education	6.2.3.7	Continuing Education
Specialized Training Programs	6.2.3.7.1	Aquatic venues are becoming increasingly specialized and even complex with the relatively rapid developments in multi-attraction and specific-use aquatic venues. It is safe to assume that, as technology develops and improves so will the ability of pool designers to create even more specific venues than what is currently found. Training agencies need to retain the ability to recognize the emergence of such facilities and adapt the traditional skills and knowledge of the lifeguard to such environments.
Certificate Renewal	6.2.3.8	Certificate Renewal
Renewal	6.2.3.8.1	A review course can also be described as a

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		<p>recertification course. Review / Recertification courses are abbreviated courses designed to be used to ensure a currently certified lifeguard has the necessary skills and knowledge to perform essential competencies required of the training agency.</p>
<i>Accepted Courses</i>	6.2.3.8.2	<p>Training agencies should retain the right to devise alternative ways for a lifeguard to renew certification. As an example, the completion of a more advanced course and/or instructor course.</p>
<i>Recertification</i>	6.2.3.8.3	<p>Although some skills and information are universal to all lifeguard training agencies, there are differences in physical skills. A lifeguard attempting to recertify through a different agency is not likely to have ample time to master these different physical skills. This should not be confused with “crossover” type courses which are specifically designed to teach a currently certified lifeguard the different skills and information from another training agency.</p>
<i>Challenge Program</i>	6.2.3.8.4	<p>A challenge course is one in which a lifeguard demonstrates the essential skills and knowledge required by the training agency. This demonstration is performed without prior review and/or instruction at the time of the challenge by the instructor. Prompting or coaching is not performed unless necessary to adequately assess skill level (i.e. “the victim is not breathing”).</p>
<i>Length of Validity</i>	6.2.3.9	<i>Length of Certificate Validity</i>
<i>Number of Years</i>	6.2.3.9.1	<p>The United States Lifeguarding Standards Coalition final report, the scientific review by the American Red Cross and the technical committee agree that lifeguarding skills need to be refreshed as often as possible. The time periods listed in this Code are acceptable only if ongoing in-service and pre-service standards are followed.</p> <ul style="list-style-type: none"> • The United States Lifeguard Standards Coalition report http://www.lifeguardstandards.org/pdf/USLSC_FINAL_APPROVAL_1-31-11.pdf

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- CPR Retention review by the American Red Cross
<http://www.instructorscorner.org/media/resources/SAC/Reviews/CPR%20Skill%20Retention.pdf>

Supervision
and
Management
Training

6.2.4

Essential Topics for Lifeguard Supervision and Management Training

As of the writing of this Code, lifeguard supervision and management training courses are limited. In the development of this Code, the Technical Committee recognizes the importance of ongoing aquatic venue supervision with adequate training in injury prevention and response. What constitutes supervisor and management training was heavily discussed. The concept of “supervisor training” lends itself to far more than simply scheduling lifeguards and performing essential functions of the lifeguard as needed. What are required skills for the supervisor include staff management skills, customer management skills, decision making skills, knowledge of labor laws, knowledge of aquatic industry standards, fiscal management, filtration and sanitation, water chemistry, and operation of mechanical equipment. This list is obviously not comprehensive. This leads to a main concern in the development of an aquatic supervisor course which is course length. To develop a course which incorporates working knowledge of all these listed skills and information sets may not be feasible for the target audience. Training agencies are encouraged to develop a system of training aquatic supervisors that incorporates some or all of this information, as it fits with the training philosophy of that agency. This may include a variety of levels that address this information in various ways and as appropriate for the intended audience of each level course. The skills and knowledge found in this section are considered by the Technical Committee to be essential to any aquatic supervisor training course, regardless of intended depth of scope.

Elements

6.2.4.1

The aquatic supervisor plays an essential role in the necessary response to an emergency in the aquatic venue. Any supervisor training program should

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		<p>incorporate appropriate information and skills that would allow the aquatic supervisor to carry out the necessary duties and decisions that will be required of him or her. Although some of the duties are the same, these duties and decisions should not be considered equal to those of the lifeguard and should incorporate advanced knowledge and skills. These skills are currently undefined. Training agencies should carefully consider what additional skills to include based on the target audience of the training agency.</p>
<i>Additional Skills</i>	6.2.4.2	<p>Aquatic supervisor responsibilities are just as critical to the safety of all aquatic venue patrons as those of the lifeguard. It is essential that aquatic supervisors have a working knowledge beyond the fundamentals taught in the typical lifeguard training course, including how to evaluate the performance of the lifeguard's essential functions, to implement improvement strategies, and also to plan, prepare, and implement the necessary functions, duties, and responsibilities of the lifeguard.</p>
<i>Legal Issues</i>	6.2.4.3	<p>While these topics are covered in basic lifeguard training programs, it is the responsibility of the aquatic supervisor to ensure that such legal concepts are observed at the aquatic venue. The aquatic supervisor should not just be able to define these issues, but also understand strategies to comply with the commonly found legal responsibilities associated with managing an aquatic venue. Such as: duty to act; standard of care; negligence, consent; refusal of care; abandonment; confidentiality; and documentation.</p>
<i>Facility Staffing</i>	6.3	Aquatic Facility Staffing
<i>Requirements and Availability</i>	6.3.1	Staff Requirements and Availability
<i>Aquatic Supervisor</i>	6.3.1.1	<p>Recognized training agencies on aquatic venue operations requiring lifeguards mandate the need for lifeguard supervision and management.</p>
<i>Training and Experience</i>	6.3.1.2	<p>The United States Lifeguarding Standards Coalition recommended at the level of a "Standard" that</p>

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“supervision of lifeguards should include regular contact and encouragement.” In order for the proper hiring, pre-service training, in-service training, evaluations, and management it is ideal to have someone that has the experience and/or training in lifeguard supervision.

See the Appendix “Scientific Review and Evidence Grading Guideline Definitions for Evidence-Based Statements” from The United States Lifeguarding Standards Coalition, which defines the terms used below.

Consensus Recommendation

Standards

Supervision and regular encouragement during each 30 minutes of watch improve vigilance; therefore, supervision of lifeguards should include regular contact and encouragement.

Guidelines

Because sleep deprivation decreases vigilance even after a recovery night of sleep, training and in-service protocols should emphasize the need for lifeguards to obtain a full night’s sleep before assuming lifeguard duties.

Lifeguard employers should screen candidates for untreated sleep apnea because these individuals have a decreased ability to maintain vigilance. This could be ascertained on applications for employment. Reasonable steps should be taken to protect lifeguards from high ambient temperatures. Steps might include providing sun protection for outdoor activities (e.g., sun shades, protective clothing), using air conditioning and adjusting indoor temperatures, and/or decreasing the length of shifts.

Training relating to the use of different intervention options should be incorporated.

Options

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Consumption of caffeinated, non-sugared drinks has been demonstrated to benefit vigilance. (Note: Negative health impacts of caffeine, if any, were not reviewed.)

Use of recreational drugs among lifeguards should be prohibited because chronic use decreases vigilance, even when the user is not under the influence.

Aerobic exercise can positively impact a subsequent vigilance task. Lifeguards should consider including exercise periods during their breaks as a way to subsequently improve vigilance.

Aquatic facilities should incorporate into their operational plans the foregoing evidence-based interventions that positively influence vigilance (Standards, Guidelines, and Options above).

No Recommendations

Comments

While the option is provided that drug use should be prohibited, no recommendation could be made regarding the appropriate way to enforce or monitor employees.

Not enough evidence exists for recommendations to be made regarding the consumption of sugared drinks and lifeguard vigilance.

Not enough evidence supports the benefits of a meeting held mid-season (summer) to discuss the importance of the lifeguard function, the negative outcomes of error, and ways to improve performance and short term lifeguard vigilance.

Brief Report: A Brief Intervention to Improve Lifeguard Surveillance at a Public Swimming Pool
<http://jpepsy.oxfordjournals.org/content/32/7/862.full>¹¹

¹¹ Schwebel DC, et al. Brief report: a brief intervention to improve lifeguard surveillance at a public swimming pool. J Pediatr Psychol. 2007;32(7):862-8.

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ANSI/APSP-1 2003

- **22.2.6** Managers of public pools shall maintain an emergency action plan similar to the one outlined by the American Red Cross or YMCA or comparable aquatic safety organization manuals. The plan should include a “Contamination Evacuation Plan”, “Chemical Emergency Evacuation Plan”, “Emergency Crisis Plan”, “Water Rescue and Injury Emergency Plan”, “Drill Procedures for Emergency Situations,” and other emergency plans and safety programs. These shall be practiced during in-service training and drills.

Minimum Age 6.3.1.3

The Technical Committee agreed that 18 and above was an adequate age level to consider a person as being mature enough for this position. This was a starting point but many other factors with regard to experience, training, management skills and others were equally or more important.

Emergency Action Plan 6.3.1.4

The ANSI 9 standards for Aquatic Recreation Facilities and recommendations from the major training agencies stress the need for the ability to respond properly and in a timely manner in the event of an emergency.

ANSI/APSP 9 - 20.3.2

- **Training for victim recognition and response.** Pools shall conduct pre-season and ongoing in-service training programs for all lifeguards, attendants, pool operators, and other aquatic personnel. Such programs should include drills aimed at raising the awareness of facility surveillance, victim recognition, emergency response, CPR/water drills, and simulations incorporating daily challenges. In addition, in-service training needs to be documented.

ANSI/APSP 9 - 20.6.2

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- **Staff responsibilities.** Staff shall be trained by the facility to activate the Emergency Action Plan including notification of the nearest authorities that provide emergency assistance and rescue and medical response services.

Trauma
Identification
Training

6.3.1.5

Aquatic supervisors and lifeguards need to have the knowledge and ability to recognize when advanced medical help is needed that is beyond their training in first aid and CPR/AED.

Additional
Training

6.3.1.6

Lifeguarding training agencies provide additional training for scanning and vigilance because of the importance of this issue. ANSI/APSP 9 addresses this by stating there should be pre-season and ongoing in-service training including facility surveillance and victim recognition.

ANSI/APSP 9 - 20.3.2

- **Training for victim recognition and response.** Pools shall conduct pre-season and ongoing in-service training programs for all lifeguards, attendants, pool operators, and other aquatic personnel. Such programs should include drills aimed at raising the awareness of facility surveillance, victim recognition, emergency response, CPR/water drills, and simulations incorporating daily challenges. In addition, in-service training needs to be documented.
- All lifeguarding training agencies require or suggest that there should be pre-season and ongoing in-service training at all aquatic venues. Therefore there needs to be individuals in place with the ability to conduct and monitor such training. ANSI 9 requires that this training shall take place and be documented.

ANSI/APSP 9 - 20.3.2

Training for victim recognition and response.

Pools shall conduct pre-season and ongoing in-

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Keyword	Section	Annex
		<p>service training programs for all lifeguards, attendants, pool operators, and other aquatic personnel. Such programs should include drills aimed at raising the awareness of facility surveillance, victim recognition, emergency response, CPR/water drills, and simulations incorporating daily challenges. In addition, in-service training needs to be documented.</p> <p>All lifeguarding training agencies require or suggest that steps should be taken to provide for preventative lifeguarding. Preventative lifeguarding is designed to prevent incidents and injuries to both aquatic venue patrons and staff.</p>
<i>Demonstrate Knowledge</i>	6.3.1.7	<p>The lifeguard supervisor would be responsible to make sure the lifeguards and other members of the aquatic safety team are in compliance with this Code.</p> <p><i>Oregon Codes</i></p> <p>(f) Performance Evaluation. At the time of hire and at least once yearly, each lifeguard's on deck, on duty performance must be evaluated. The certified pool supervisor, responsible supervisor, or other designated management personnel may conduct the evaluation, and provide documentation of the lifeguard's performance. Performance evaluation deficiencies should be used to organize in-service training.</p> <p>Note: Lifeguards who cannot demonstrate proficiency in their lifeguarding skills may be a danger to the bathers and to themselves. Serious deficiencies that are not immediately corrected may cause the serious injury or death of a bather, the lifeguard, or other staff member.</p>
<i>Demonstrate Knowledge</i>	6.3.1.8	<p>The owner/operator would be responsible to insure that the lifeguard supervisor's skills would be at or beyond the level required by this Code. The AHJ would have the right to verify this to be true.</p>
<i>Number of Guards</i>	6.3.2	Number of Lifeguards and Lifeguard Stations
<i>View Zone</i>	6.3.2.1	Both the ANSI/APSP 1 Public Swimming Pools and

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		ANSI/APSP 9 standards state that the lifeguard “shall be positioned and provided equipment in order to reach the victim within 20 seconds of identification of a trauma or incident.” Some training agencies have mandated this in their management programs. Currently many lifeguards are being held to this standard in a court of law.

Reach	6.3.2.2	ANSI/APSP 1
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- **22.2.5** Public pool facilities shall maintain preseason and ongoing in-service training programs for all lifeguards, pool operators, and other aquatic personnel. Such programs shall include lifeguard alertness/response drills and performance “audits” based on the 10/20 rule.

ANSI/APSP 9

- **20.4.3.2 Reaching victim.** Lifeguards, attendants, and staff assigned to maintain guest surveillance in aquatic facilities shall be positioned and provided equipment in order to reach the victim within 20 seconds of identification of a trauma or incident.

Staff Requirements and Availability	6.3.3	Lifeguards: Staff Requirements and Availability
Surveillance	6.3.3.1	Aquatic venues with any of the following environmental factors are required to have a lifeguard(s) conducting patron surveillance at all times the aquatic facility is open: This list includes but shall not be limited to the following:

- 1) Since the Technical Committee is limiting the depth to 5 feet (1.52 m) for pools that possibly may not have trained lifeguards on duty. The age of 14 is used because of the height averages for this age group. The Committee still thinks that all depths of water can be dangerous but thinks this is safer than what is currently in place.
- 2) This type of demographic group historically has been a source of numerous drowning

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- situations. Proper supervision is a must for this type of aquatic venue patron.
- 3) Any type of training in an aquatic venue is designed to push the student's limit of their level of watermanship. Because of this and due the fact that the instructor/student ratio is normally greater than 1 to 1, non-instructional personnel need to be in place to provide proper surveillance.
 - 4) The Committee considered that a 5 foot depth was the deepest that most adults could stand in and touch the bottom. There is not universal consensus at the state level on this depth and final decisions may be driven by aquatic venue type and particular state experience. Picking this depth may also drive further data analysis and decision-making about unguarded pool depths and drive a reduction in the depths chosen for use in new construction. The Committee was trying to build a reasonable time frame in which pools need to come into compliance. The Committee agreed that 5 years was a reasonable time for expecting compliance. The Technical Committee has a sense of the hardship this will have on a number of facilities, but thinks it necessary to help prevent some of the deaths cause by the depth and lack of lifeguard supervision.
 - 5) Aquatic venues with distances greater than what it is reasonable for safety equipment to be used from the deck need to be supervised with lifeguards. Aquatic rescue throwing devices have been found to have a reasonable ability to reach 30 feet (9.14 m) in distance or less by untrained individuals. This is from experts with years of instructional observation.
 - 6) Anywhere there is moving water there is a greater chance for a patron to be moved by the force of the water in an unwanted manner. This could include moving the patron a distance from safety, causing the patron to lose their balance and have a sudden submersion, and other disruptive problems. The Committee agrees these venues need to have lifeguarded supervision.

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Additional Staff	6.3.3.2	<p>7) Anywhere a patron is moving, at even a low velocity, for entry into the water there is a greater chance for a patron to be left in an unwanted position. This could include the patron losing their balance and have a sudden submersion, and other disruptive problems. The Committee agrees these venues need to have lifeguarded supervision.</p> <p>8) There should be absolutely no head first entries in the water in 5 feet (1.52 m) of water or less from the deck or any elevations without proper training and lifeguard supervision. The American Red Cross suggests in their courses that there should be no head first entries in less than 9 feet (2.74 m) of water depth.</p>
Response Time	6.3.3.3	<p>Major training agencies and ANSI/APSP standards for public pools and aquatic recreational facilities all mandate that lifeguards and safety team members be trained properly to respond. In a single-guarded facility when a lifeguard responds to a patron in distress the facility becomes an unguarded facility for the rest of the patrons and it would be likely that the lifeguard needs additional assistance to extract a person from a pool. Having a member of the safety team respond to the facility as quickly as possible is imperative. The Committee agreed that one minute response time was critical to the safety of the other patrons, the lifeguard and the victim needing assistance. The additional person could be someone else at the facility that is not normally an aquatics staff person but is “on call” for an emergency.</p> <p>Major training agencies and ANSI/APSP standards for public pools and aquatic recreational facilities all mandate that lifeguards and safety team members be trained properly to respond. In a single-guarded facility when a lifeguard responds to a patron in distress the facility becomes an unguarded facility for the rest of the patrons. Having a member of the safety team respond to the facility as quickly as possible is imperative. The Committee agreed that one minute response time was critical to the safety of the other patrons, the lifeguard and the victim needing assistance.</p>

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ANSI/APSP 9

- **20.3.1** When they are provided, staff shall be trained to assist or rescue persons in conditions appropriate to the responsibilities of their assigned station. Lifeguards and attendants assigned to dispatch duties shall be trained to assist or rescue persons in conditions appropriate to the responsibilities of their assigned station.”

ANSI/APSP 9 - 20.6 Emergency action plan (EAP)

- **20.6.1 Types of plans.** Facility managers shall maintain an emergency action plan (EAP) similar to the one outlined by the American Red Cross, The National Pool and Waterpark Lifeguard Training Program, or other recognized aquatic safety organizations or companies.
- **20.6.2 Staff responsibilities.** Staff shall be trained by the facility to activate the Emergency Action Plan including notification of the nearest authorities that provide emergency assistance and rescue and medical response services.

ANSI/APSP -1 2003

- **22.2.6** Managers of public pools shall maintain an emergency action plan similar to the one outlined by the American Red Cross or YMCA or comparable aquatic safety organization manuals. The plan should include a “Contamination Evacuation Plan”, “Chemical Emergency Evacuation Plan”, “Emergency Crisis Plan”, “Water Rescue and Injury Emergency Plan”, “Drill Procedures for Emergency Situations,” and other emergency plans and safety programs. These shall be practiced during in-service training and drills.

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- **22.2.1** A CPR-certified person shall be on the premises when the pool is in use.

The Technical Committee agreed that if a lifeguard was involved in a rescue in a single-guarded facility this would constitute the facility becoming unguarded.

Surveillance Zones 6.3.3.4

The Committee thought that one of the problems in aquatic venue management is for lifeguards to understand what their zone of patron surveillance includes.

Training agencies and the ANSI standards for aquatic venue facilities speak to “lifeguards understanding their responsibilities to their assigned stations.” This would include what area of the aquatic venue is their area for patron surveillance.

ANSI/APSP 9 - Staff training

- **20.3.1** When they are provided, staff shall be trained to assist or rescue persons in conditions appropriate to the responsibilities of their assigned station.

Lifeguard Position 6.3.3.4.1

Training agencies and the ANSI standards for aquatic venue facilities speak to “lifeguards understanding their responsibilities to their assigned stations.” This would include what type position the lifeguard could be in for their area for patron surveillance.

ANSI/APSP 9 - Staff training

- **20.3.1** When they are provided, staff shall be trained to assist or rescue persons in conditions appropriate to the responsibilities of their assigned station.

General Requirements 6.3.4

General Requirements for all Aquatic Facility Lifeguards

Pre-Service Requirements 6.3.4.1

Pre-Service Requirements

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Rescue Skills	6.3.4.1.1	It is imperative that all lifeguards hired are currently able to perform the duty of proper patron surveillance and the execution of any necessary rescue needed. Aquatic venues need to assess the lifeguard's ability to perform the job skills necessary to be lifeguard at their venue before allowing the lifeguard to be on duty. Training during pre-service will allow the lifeguard to become trained in the Safety Plans of the venue.

ANSI/APSP 9 - 20.6 Emergency action plan (EAP)

- **20.6.1 Types of plans.** Facility managers shall maintain an emergency action plan (EAP) similar to the one outlined by the American Red Cross, The National Pool and Waterpark Lifeguard Training Program, or other recognized aquatic safety organizations or companies.
- **20.6.2 Staff responsibilities.** Staff shall be trained by the facility to activate the Emergency Action Plan including notification of the nearest authorities that provide emergency assistance and rescue and medical response services.

ANSI/APSP -1 2003

- **22.2.6** Managers of public pools shall maintain an emergency action plan similar to the one outlined by the American Red Cross or YMCA or comparable aquatic safety organization manuals. The plan should include a "Contamination Evacuation Plan", "Chemical Emergency Evacuation Plan", "Emergency Crisis Plan", "Water Rescue and Injury Emergency Plan", "Drill Procedures for Emergency Situations," and other emergency plans and safety programs. These shall be practiced during in-service training and drills.

Safety Training	6.3.4.1.2	It is imperative that all lifeguards hired are currently able to perform the duty of proper patron surveillance
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and the execution of any necessary rescue needed. Aquatic venues need to assess the lifeguard's ability to perform the job skills necessary to be lifeguard at their venue before allowing the lifeguard to be on duty. Training during pre-service will allow the lifeguard to become trained in the Safety Plans of the venue.

ANSI/APSP 9 - 20.6 Emergency action plan (EAP)

- **20.6.1 Types of plans.** Facility managers shall maintain an emergency action plan (EAP) similar to the one outlined by the American Red Cross, The National Pool and Waterpark Lifeguard Training Program, or other recognized aquatic safety organizations or companies.
- **20.6.2 Staff responsibilities.** Staff shall be trained by the facility to activate the Emergency Action Plan including notification of the nearest authorities that provide emergency assistance and rescue and medical response services.

ANSI/NSPI-1 2003

- **22.2.6** Managers of public pools shall maintain an emergency action plan similar to the one outlined by the American Red Cross or YMCA or comparable aquatic safety organization manuals. The plan should include a "Contamination Evacuation Plan", "Chemical Emergency Evacuation Plan", "Emergency Crisis Plan", "Water Rescue and Injury Emergency Plan", "Drill Procedures for Emergency Situations," and other emergency plans and safety programs. These shall be practiced during in-service training and drills.

OSHA and all training agencies require that employees have training, knowledge and the proper equipment to protect the employee and the patron against disease transmission. This level of awareness must be in place before active patron surveillance

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takes place.

OSHA Personal Protective Equipment

- **1910.1030(d)(3)(i)** Provision. When there is occupational exposure, the employer shall provide, at no cost to the employee, appropriate personal protective equipment such as, but not limited to, gloves, gowns, laboratory coats, face shields or masks and eye protection, and mouthpieces, resuscitation bags, pocket masks, or other ventilation devices. Personal protective equipment will be considered "appropriate" only if it does not permit blood or other potentially infectious materials to pass through to or reach the employee's work clothes, street clothes, undergarments, skin, eyes, mouth, or other mucous membranes under normal conditions of use and for the duration of time which the protective equipment will be used

ANSI/APSP 9

- **20.4.4.3 Personal protective equipment.** Each staff location shall provide OSHA stipulated personal protective equipment.
- **20.4.4.4 Disease transmission.** Equipment to reduce staff exposure to transmission of disease shall be available for use in breathing assistance or CPR.

Oregon Codes

Pool Staff Training & Safety 333-060-0209

- (1) **Bloodborne Pathogens.** The pool operator must provide the training, equipment, medical services, and written procedures and protocols needed to protect the pool staff against bloodborne pathogens. Lifeguards would be expected to have the potential to come into accidental contact with bodily fluids during their

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regular duties.

Note: OSHA requires compliance with 29 CFR 1910.1030, Bloodborne Pathogen Standard.

(2) Automatic External Defibrillators (AEDs). When an operator provides AED equipment at the pool, they must train the staff on the use and operation of the equipment including periodic training drills to assure continued staff competency.

(3) Oxygen Equipment. When an operator provides oxygen equipment at the pool, they must train the staff on the use and operation of the equipment including periodic training drills to assure continued staff competency.

Water Rescue
Documentation

6.3.4.1.3

It is imperative that all lifeguards hired are currently able to perform the duty of proper patron surveillance and the execution of any necessary rescue needed. Aquatic venues need to assess the lifeguard's ability to perform the job skills necessary to be lifeguard at their venue before allowing the lifeguard to be on duty. Training during pre-service will allow the lifeguard to become trained in the Safety Plans of the venue.

ANSI/APSP 9 - 20.6 Emergency action plan (EAP)

- **20.6.1 Types of plans.** Facility managers shall maintain an emergency action plan (EAP) similar to the one outlined by the American Red Cross, The National Pool and Waterpark Lifeguard Training Program, or other recognized aquatic safety organizations or companies.
- **20.6.2 Staff responsibilities.** Staff shall be trained by the facility to activate the Emergency Action Plan including notification of the nearest authorities that provide emergency assistance and rescue and medical response services.

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- **22.2.6** Managers of public pools shall maintain an emergency action plan similar to the one outlined by the American Red Cross or YMCA or comparable aquatic safety organization manuals. The plan should include a “Contamination Evacuation Plan,” “Chemical Emergency Evacuation Plan,” “Emergency Crisis Plan,” “Water Rescue and Injury Emergency Plan,” “Drill Procedures for Emergency Situations,” and other emergency plans and safety programs. These shall be practiced during in-service training and drills.

EAP
Documentation

6.3.4.1.4

It is imperative that all lifeguards hired are currently able to perform the duty of proper patron surveillance and the execution of any necessary rescue needed. Aquatic venues need to assess the lifeguard’s ability to perform the job skills necessary to be lifeguard at their venue before allowing the lifeguard to be on duty. Training during pre-service will allow the lifeguard to become trained in the Safety Plans of the venue.

ANSI/APSP 9 - 20.6 Emergency action plan (EAP)

- **20.6.1 Types of plans.** Facility managers shall maintain an emergency action plan (EAP) similar to the one outlined by the American Red Cross, The National Pool and Waterpark Lifeguard Training Program, or other recognized aquatic safety organizations or companies.
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Keyword	Section	Annex
		<ul style="list-style-type: none">• 22.2.6 Managers of public pools shall maintain an emergency action plan similar to the one outlined by the American Red Cross or YMCA or comparable aquatic safety organization manuals. The plan should include a “Contamination Evacuation Plan”, “Chemical Emergency Evacuation Plan,” “Emergency Crisis Plan,” “Water Rescue and Injury Emergency Plan,” “Drill Procedures for Emergency Situations,” and other emergency plans and safety programs. These shall be practiced during in-service training and drills.
Emergency Closure Documentation	6.3.4.1.5	Lifeguards are the front line personnel at an aquatic venue to witness most of the situations in which a venue should be closed. The lifeguard must be aware of these emergency closure issues in order to enforce them. Issues such as inability to see the bottom or main drains, fecal accidents, weather and others developed by the Code.
Direct Surveillance	6.3.4.1.6	The RID (Recognition, Intrusion, Distraction) Factor has been accepted by all lifeguarding agencies as a major contributor to drowning in guarded venues. Nothing should be allowed to interfere with a lifeguard’s duty to perform patron surveillance. The Committee all agreed that lifeguards performing patron surveillance should not be doing other tasks that could distract them.
		Oregon DUTIES. When on duty, a lifeguard shall scan and supervise the pool with no other distracting activities such as cleaning, water testing, or minimal unnecessary conversing with patrons.
Distractions	6.3.4.1.7	The RID (Recognition, Intrusion, Distraction) Factor has been accepted by all lifeguarding agencies as a major contributor to drowning in guarded venues. Nothing should be allowed to interfere with a lifeguard’s duty to perform patron surveillance.

Oregon

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DUTIES. When on duty, a lifeguard shall scan and supervise the pool with no other distracting activities such as cleaning, water testing, or minimal unnecessary conversing with patrons.

Competency
Demonstration

6.3.4.1.8

The United States Lifesaving Standards Coalition's highest category level of a "Standard" stated that all lifeguards must meet and maintain a minimum level of fitness to perform the job of a lifeguard.

See the Appendix "Scientific Review and Evidence Grading Guideline Definitions for Evidence-Based Statements" from The United States Lifeguarding Standards Coalition, which defines the terms used below.

**USLSC
Standards**

Aquatic managers should ensure that all employed lifeguards meet the minimum level of fitness required for the lifeguard PSS (Physical Skill Set). This should be assessed by requiring successful completion of a timed venue-specific water rescue competency test (WRCT), which includes, but is not limited to, the following:

- Safely entering the water from a lifeguard station/elevated stand
- Performing a rapid approach to the victim
- Descending to the deepest part of the venue (not to exceed 20 feet (6.1m))
- Retrieving the victim (an adult submersible manikin or equivalent)
- Returning the victim to safety
- Safely removing the victim (with the help of other staff if based on the specific venue emergency action plan) to a position of safe access for emergency medical services
- Performing CPR for a period of 9 minutes (average US response time) or the documented response time of the venue, whichever is less
- Performing the components of the WRCT, as

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described earlier, in a continuous non-interrupted sequence.

Guidelines

Aquatic managers should test all employed lifeguards at least once every 10 to 12 weeks to ensure maintenance of the PSS and fitness. Aquatic managers should provide for, or require, adequate specific exercise by employed lifeguards to ensure the maintenance of the minimum level of fitness required by the PSS. This should be in the form of in-service training or exercise programming.

Options

Laboratory fitness testing may be used for fitness

United States Lifeguard Standard Coalition report
http://www.lifeguardstandards.org/pdf/USLSC_FINAL_APPROVAL_1-31-11.pdf

Oregon Codes

Performance Evaluation. At the time of hire and at least once yearly, each lifeguard's on deck, on duty performance must be evaluated. The certified pool supervisor, responsible supervisor, or other designated management personnel may conduct the evaluation, and provide documentation of the lifeguard's performance. Performance evaluation deficiencies should be used to organize in-service training.

Note: Lifeguards who cannot demonstrate proficiency in their lifeguarding skills may be a danger to the bathers and to themselves. Serious deficiencies that are not immediately corrected may cause the serious injury or death of a bather, the lifeguard, or other staff member.

ANSI/APSP 1

- **22.2.5** Public pool facilities shall maintain preseason and ongoing "in-service" training programs for all lifeguards, pool operators, and other aquatic personnel. Such programs shall

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include lifeguard alertness/response drills and performance “audits” based on the 10/20 rule.

ANSI/APSP 9

- **20.4.3.2 Reaching victim.** Lifeguards, attendants, and staff assigned to maintain guest surveillance in aquatic facilities shall be positioned and provided equipment in order to reach the victim within 20 seconds of identification of a trauma or incident.

Schultz and colleagues showed that in order to do CPR at 80 compressions a minute (training now requires 100 compressions a minute) over a 10 minute period the METS required to perform this task was 4.6 ± 0.7 ¹². One would expect this number to increase using the current protocol for CPR. The following is work done by Dr. Timothy Lightfoot PHD: “a) If someone swims 500 yards (457.2 m) in 10 minutes, they are exerting 8 METs/min (so, almost doubles the CPR cost); Similar levels of exertion are given by:

- Running at 5 mph on a level grade; (running 1 mile in 12 min or 0.8 mile in 10 mins.)
- Riding a bicycle at 14 mph on level grade; (riding 2.3 miles in 10 mins.).

If the metabolic cost of doing CPR is about 4.75 METS, then guards that are able to do the above tasks, should be able to do CPR almost indefinitely BECAUSE (and this is important), the metabolic cost of doing CPR is only 60% of the cost of the above exercise. Importantly, this means that when doing CPR, the metabolic cost is not so intense that they will be doing effort that will increase the amount of lactate in their blood (i.e. they won't go above lactate threshold) and if they stay below lactate threshold (60-65% max intensity) they should be able to do

¹² Shultz JJ, et al. Comparison of exertion required to perform standard and active compression-decompression cardiopulmonary resuscitation. Resuscitation. 1995 Feb;29(1):23-31.

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CPR a long time.”

One must remember the lifeguard performing CPR may have had to run, swim, retrieve, swim back, and extricate the victim all before starting CPR. We are allowing the 12 minute time period because there will be two guards trained in CPR, that they can replace each other on the compressions if they become exhausted before EMS arrives.

The United States national average response time for a BLS ambulance is 10 minutes. Paramedics are 12-15 minutes, according to answers.com.

The International Lifesaving Federation and other lifeguarding agencies require all pool lifeguards to be able to perform a combined rescue skill with equipment in order to meet the level needed to be a pool lifeguard. All lifeguard training agencies train their lifeguards that they must be able ready to recognize, respond, rescue and resuscitate a victim as quickly as possible. The lifeguard must be able to perform all of these skills at all times.

INTERNATIONAL LIFE SAVING FEDERATION POOL LIFEGUARD REQUIREMENTS

LEARNING OUTCOME 2: Demonstrate combined rescue without equipment.

Assessment Criteria:

2.1 Consecutively perform combined rescue technique in the following sequence in less than two (2) minutes:

- lifesaving entry (stride jump, slide entry); then,
- 25m (82 ft) freestyle with head above the water;
- surface dive to adult dummy/person (minimum depth of 1.5m (4.9 ft));
- lift the dummy/person and tow minimum of 25m (82 ft) to the edge of pool;
- lift the person out of the pool.

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Royal Lifesaving Society Pool Lifeguard

5. Non-Contact Tow

- A conscious weak swimmer is in difficulty 25 m (82 ft) from the point of entry. A rigid aid is available.
- Perform a 25 meter swim and a 25 meter non-contact rescue.
- Assist the swimmer to climb out.
- A time limit of 1 minute shall apply from the starting signal to the rescuer touching the side after completing the tow.

Royal Lifesaving Society Pool Lifeguard

7. Recover and Resuscitate

A drowning person is on the pool floor:

- Enter the water from the poolside;
- Recover from the pool floor the person simulating unconsciousness;
- Tow the person to the nearest point of support;
- Commence rescue breathing;
- Land the person;
- Place the person in the lateral position;
- Indicate follow up emergency procedures.
- The test will be conducted at the deepest part of the pool in which the test is taken.

*Rescue
Response
Time*

6.3.4.1.8.1 The United States Lifesaving Standards Coalition highest category level of a “Standard” that all lifeguards must meet and maintain a minimum level of fitness to perform the job of a lifeguard.

See the Appendix “Scientific Review and Evidence Grading Guideline Definitions for Evidence-Based Statements” from The United States Lifeguarding Standards Coalition, which defines the terms used below.

The International Lifesaving Federation and other lifeguarding agencies require all pool lifeguards to be able to perform a combined rescue skill with

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Keyword	Section	Annex
Zone	6.3.4.1.8.2	<p>equipment in order to meet the level needed to be a pool lifeguard. All lifeguard training agencies train their lifeguards that they must be able and ready to recognize, respond, rescue and resuscitate a victim as quickly as possible. The lifeguard must be able to perform all of these skills at all times.</p>
Extrication	6.3.4.1.8.3	<p>The United States Lifesaving Standards Coalition highest category level of a “Standard” that all lifeguards must meet and maintain a minimum level of fitness to perform the job of a lifeguard.</p> <p>See the Appendix “Scientific Review and Evidence Grading Guideline Definitions for Evidence-Based Statements” from The United States Lifeguarding Standards Coalition, which defines the terms used below.</p> <p>The International Lifesaving Federation and other lifeguarding agencies require all pool lifeguards to be able to perform a combined rescue skill with equipment in order to meet the level needed to be a pool lifeguard. All lifeguard training agencies train their lifeguards that they must be able and ready to recognize, respond, rescue and resuscitate a victim as quickly as possible. The lifeguard must be able to perform all of these skills at all times.</p>

Keyword	Section	Annex
Resuscitation Skills	6.3.4.1.8.4	recognize, respond, rescue and resuscitate a victim as quickly as possible. The lifeguard must be able to perform all of these skills at all times.
Resuscitation Skills	6.3.4.1.8.4	All lifeguard training agencies require lifeguards to be trained in emergency response, cardio-pulmonary resuscitation and first aid scenarios. This type of training is also part of the emergency response training that is required in the ANSI standards for public pool and aquatic recreational facilities for in-service training. The Committee agrees that this review of training done at the aquatic venue needs to be as specific for the venue as possible.
Resuscitation Skills	6.3.4.1.8.4	<p data-bbox="574 743 786 772"><i>ANSI/APSP 1-9</i></p> <ul data-bbox="623 821 1325 1625" style="list-style-type: none"><li data-bbox="623 821 1325 961">• 20.3.4 First aid and CPR. A person certified in first aid and CPR shall be on the premises whenever the facility is open for public occupancy.<li data-bbox="623 1003 1325 1108">• 20.3.4.1 There shall be a conspicuous sign posted stating the alternatives available for notifying this person of an emergency.<li data-bbox="623 1150 1325 1625">• 20.3.4.2 CPR training shall include treatment of adults, children, and infants. “Many young Americans enter the work force with lifeguarding as one of their first jobs. In order to avoid the trauma associated with loss of life under their supervision, it is absolutely essential that they be provided with the best set of skills possible to do the job.¹³” The Committee agrees that complete training and pre-employment evaluations need to be conducted on every lifeguard to make sure they can protect the health and safety of patrons using recreational water venues.
Emergency Response Training	6.3.4.1.8.5	All lifeguard training agencies require lifeguards to be trained in emergency response, cardio-pulmonary resuscitation and first aid scenarios. This type of

¹³ John Hunsucker, 1994

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Identify Zones	6.3.4.1.8.6	training is also part of the emergency response training that is required in the ANSI standards for public pool and aquatic recreational facilities for in-service training. The review of training done at the aquatic venue needs to be as specific for the venue as possible.
Corrective Lenses	6.3.4.1.9	<p data-bbox="573 485 1334 737">One of the problems in aquatic venue management is for lifeguards to understand their zone(s) of patron surveillance. Training agencies and the ANSI standards for aquatic venue facilities speak to “lifeguards understanding their responsibilities to their assigned stations.” This would include what area of the aquatic venue is their area for patron surveillance.</p> <p data-bbox="573 779 971 808"><i>ANSI/APSP 9 - Staff training</i></p> <ul data-bbox="623 856 1328 997" style="list-style-type: none">• 20.3.1 When they are provided, staff shall be trained to assist or rescue persons in conditions appropriate to the responsibilities of their assigned station. <p data-bbox="573 1037 1312 1360">The Committee agreed that since there is no established guideline for vision needed for the job of a lifeguard that if the individual lifeguard has corrected vision via lenses that they should wear them while conducting patron surveillance. Further research needs to be done in this area. Some professions require a minimum vision standard non-corrected while others accept corrected to a certain level.</p> <p data-bbox="573 1402 1289 1577">See the Appendix “Scientific Review and Evidence Grading Guideline Definitions for Evidence-Based Statements” from The United States Lifeguarding Standards Coalition, which defines the terms used below.</p> <p data-bbox="573 1619 732 1690">USLSC – Standards</p> <p data-bbox="573 1696 651 1726">None</p> <p data-bbox="573 1732 737 1761">Guidelines</p> <p data-bbox="573 1768 1297 1837">A minimum vision standard for lifeguards should be identified and instituted.</p>

Keyword	Section	Annex
		Options Each facility is encouraged to require testing of corrected and uncorrected vision and to then develop appropriate standards for their venues. ¹⁴ United States Lifeguard Standard Coalition Report http://www.lifeguardstandards.org/pdf/USLSC_FINAL_APPROVAL_1-31-11.pdf
Emergency Response Qualifications	6.3.4.1.10	Proper instruction and instructions within the guidelines of current medical science is essential. The committee agrees that that standards set forth by the ILCOR, ECC, the American Heart Association and the American Red Cross need to be followed regarding in and out water resuscitation.
Emergency Closure	6.3.4.1.11	All aquatic venues can become a risk to patron safety. Lifeguards being the front line personnel at the venue need to be aware of what constitutes a risk to patron safety. Procedures must be in place to immediately suspend patron activities. Center for Disease Control and Prevention http://www.cdc.gov/healthywater/pdf/swimming/pools/fecal-incident-response-recommendations.pdf <i>ANSI/APSP -1 2003</i> <ul style="list-style-type: none">• 22.2.6 Managers of public pools shall maintain an emergency action plan similar to the one outlined by the American Red Cross or YMCA or comparable aquatic safety organization manuals. The plan should include a “Contamination Evacuation Plan,” “Chemical Emergency Evacuation Plan,” “Emergency Crisis Plan,” “Water Rescue and Injury Emergency Plan,” “Drill Procedures for Emergency Situations,” and other emergency plans and safety programs. These shall be practiced during in-service training and drills.

¹⁴ Seiller, Barry L. (1996, February 1). Lifeguard vision project: oh, say, can they see? *The Free Library*. (1996). Retrieved November 22, 2009 from [http://www.thefreelibrary.com/Lifeguard vision project: oh, say, can they see?-a018031145](http://www.thefreelibrary.com/Lifeguard+vision+project:+oh,+say,+can+they+see?-a018031145)

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Contamination Response	6.3.4.1.12	The lifeguards are the front line personnel in seeing the ever changing conditions in an aquatic venue. The lifeguards are constantly scanning the water and can determine when the bottom or main drain of the aquatic venue is not visible. They will see when there is a possible fecal incident in the venue along with other closure issues. The lifeguards need to understand what the closures issues are in order to enforce or recommend closure of a venue.

In-Service Training	6.3.4.2	<i>In-Service Training</i> The United States Lifeguarding Standards Coalition final report, the scientific review by the American Red Cross and the Technical Committee agree that lifeguarding skills need to be refreshed as often as possible.
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- United States Lifeguard Standard Coalition report
http://www.lifeguardstandards.org/pdf/USLSC_FINAL_APPROVAL_1-31-11.pdf
- CPR Retention review
<http://www.instructorscorner.org/media/resources/SAC/Reviews/CPR%20Skill%20Retention.pdf>

ANSI/APSP -1 2003

- **22.2.6** Managers of public pools shall maintain an emergency action plan similar to the one outlined by the American Red Cross or YMCA or comparable aquatic safety organization manuals. The plan should include a “Contamination Evacuation Plan,” “Chemical Emergency Evacuation Plan,” “Emergency Crisis Plan,” “Water Rescue and Injury Emergency Plan,” “Drill Procedures for Emergency Situations,” and other emergency plans and safety programs. These shall be practiced during in-service training and drills.

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Texas State Codes

- 6) pool facilities shall provide alertness/response drills and other training including documentation of the following:
 - a) a pre-season training program;
 - b) a continual "in-service" training program for all lifeguards, and other aquatic personnel totaling a minimum 60 minutes per week;
 - c) performance "audits" as recommended by the ARC or YMCA or equivalent aquatic safety organization; and
 - d) an emergency action plan similar to the one outlined by the ARC or YMCA or equivalent aquatic safety organization;
- 7) management at each facility shall maintain a current file with each staff person's current certification including expiration dates;
- 8) owners shall allow lifeguards to have sufficient break time from guarding activities as recommended by the ARC or YMCA or equivalent aquatic safety organization.

NEHA

Lifeguards shall hold current, nationally recognized, certification in lifeguarding, adult/child/infant CPR, and first aid. Pool facilities, water recreation attractions and natural bathing places providing lifeguard service shall provide alertness/response drills and other training, including documentation of the following: a pre-season training program, a continual "in service" training program for all lifeguards and other aquatic personnel at a minimum of 1 hour per week, and performance "audits" based on the 10/20 rule as recommended by the ARC or YMCA, or equivalent aquatic safety organization.

Pennsylvania

H. Public bathing places which require more than one lifeguard on duty while operating must insure that a lifeguard supervisor or some other person identified by the pool manager/owner/operator provide the following: (1) Supervision and training of lifeguard

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		<p>staff. (2) Testing and interviewing prospective lifeguard applicants. (3) Provide pre-season and in service training and test the rescue skills of the lifeguard through planned training exercises.</p>
		<p>Washington Operators shall ensure that lifeguards, shallow water lifeguards, and swim coaches receive ongoing training of emergency response skills.</p>
		<p>Oregon Lifeguard Supervision & Training 333-060-0208 Lifeguard Supervision & Training</p>
		<p>(1) TRAINING. A qualified lifeguard must be currently certificated in lifeguarding, first-aid and CPR as defined in OAR 333-060-0015(13), as well as having regular in-service training and training as required by 333-060-0208(4) and 333-060-0209.</p>
<p><i>Documented Training</i></p>	<p>6.3.4.2.1</p>	<p>All training agencies support the need for ongoing in-service training. Both ANSI/APSP 1 and 9 state that certain topics be covered in this training. At least one state code requires at least 4 hours of in-service a month. Other states require that in-service training be documented and signed. The Committee agrees that all aquatic venues should have an ongoing in-service program for their aquatic safety team members. These in-service trainings should include all the venue safety plans and in and out of water rescue skills. Documentation is crucial to prove that the in-service training took place, identifies the topics covered, who was in attendance and the date and time of the training.</p>
<p><i>Emergency Procedure Training</i></p>	<p>6.3.4.2.2</p>	<p>The Committee agrees that all aquatic venues should have an ongoing in-service program for their aquatic safety team members. These in-service training should include all the venue safety plans and in and out of water rescue skills.</p>
<p><i>Training Documentation</i></p>	<p>6.3.4.2.2.1</p>	<p>The Committee agrees that all aquatic venues should have an ongoing in-service program that is properly documented.</p>

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Kept on File	6.3.4.2.2.2	Requiring that the documentation of training be kept of file will help the AHJ determine compliance with the Code. The aquatic venue will be better protected if litigation takes place if proper documentation is available than if it were not.
Performance Quality	6.3.4.2.3	The aquatic venue owner/operator is the responsible party for the proper management and code compliance. Thus they would be responsible to make sure the lifeguards and other members of the aquatic safety team are in compliance with the code.

Oregon Codes

(f) Performance Evaluation. At the time of hire and at least once yearly, each lifeguard's on deck, on duty performance must be evaluated. The certified pool supervisor, responsible supervisor, or other designated management personnel may conduct the evaluation, and provide documentation of the lifeguard's performance. Performance evaluation deficiencies should be used to organize in-service training.

Note: Lifeguards who cannot demonstrate proficiency in their lifeguarding skills may be a danger to the bathers and to themselves. Serious deficiencies that are not immediately corrected may cause the serious injury or death of a bather, the lifeguard, or other staff member.

Inspections	6.3.4.2.4	The AHJ needs to have the ability to review an aquatic venue to make sure it is in compliance with the code.
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Oregon Codes

(f) Performance Evaluation. At the time of hire and at least once yearly, each lifeguard's on deck, on duty performance must be evaluated. The certified pool supervisor, responsible supervisor, or other designated management personnel may conduct the evaluation, and provide documentation of the lifeguard's performance. Performance evaluation deficiencies should be used to organize in-

Keyword Section Annex

service training.

Note: Lifeguards who cannot demonstrate proficiency in their lifeguarding skills may be a danger to the bathers and to themselves. Serious deficiencies that are not immediately corrected may cause the serious injury or death of a bather, the lifeguard, or other staff member.

Staff
Management

6.3.5 **Staff Management**

Lifeguard
Rotation

6.3.5.1 **Lifeguard Rotation Plan and Procedures**

Having a sound lifeguard rotation plan and procedures is crucial to the ability of the lifeguards to be effective in patron surveillance. Many studies have shown the decrease in the ability to stay on task following little or no break from the task.

The American Red Cross recommends a 15-minute break every hour. However never reduce the number of guards on patron surveillance. If two lifeguards are on duty and one lifeguard takes a break, bring on a replacement lifeguard instead of decreasing the number.

- The United States Lifeguard Standards Coalition report:
http://lifeguardstandards.org/pdf/USLSC_FINAL_APPROVAL_1-31-11.pdf
- Prevention of Drowning: visual scanning the attention span in lifeguards:
<http://www.lifelink.ca/resources/ScanningArticle.pdf>
- Effective Lifeguard Rotation video – The Redwoods Group:
<http://www.youtube.com/watch?v=Gm0iGL1hW0M>

Oregon

- a. Rotation. Lifeguards must change duty stations at least hourly. The intent of this requirement is to maintain vigilance, if one guard is on duty a major shift in position or activity is required and

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		<p>suggested much more frequently than hourly. (e.g. changing sides of the pool, walking instead of sitting, etc.)</p> <p>b. Breaks. Lifeguards are to be allowed breaks in accordance with Oregon Bureau of Labor and Industry standards. More frequent breaks are recommended when the weather is very hot, extremely sunny, or the patron loading is very high.</p>
		<p>Researcher N.H. Mackworth developed the visual sensitivity loss model. Using classic clock task experiments, signal detection performance often declined during the first half hour of the watch. Later experiments found five- to 10-minute breaks reset the vigilance level to its original point.^{15,16}</p>
<i>Defined</i>	6.3.5.1.1	During the rotation of lifeguards there can be a lapse of patron surveillance if not done correctly. Because of this the rotation system must be practiced and evaluated as to eliminate or minimize the lapse of patron surveillance time.
<i>Establish</i>	6.3.5.1.1.1	To maintain the most effective method of lifeguard rotation it must be documented so that it is repeatable. The document would also be used in the development of an assessment tool to reevaluate lifeguard performance of this task.
<i>Identify Zones</i>	6.3.5.1.1.2	The Technical Committee agreed that having identified zones of patron surveillance was one of the most needed components for all aquatic venues. Lifeguards should be able to determine their area of responsibility and be able to focus on that area. With the proper coverage all areas of the aquatic venue needing to be covered would be assigned.
<i>Diagrams</i>	6.3.5.1.1.3	The Committee identified that one of the problems in aquatic venue management is for lifeguards to

¹⁵ Mackworth NH. Researches in the measurement of human performance. MRC spec. Report 268 HMSO, 1950.

¹⁶ Lichstein KL, Riedel BW, Richman SL. The Mackworth Clock Test: a computerized version. J Psychol. 2000 Mar;134(2):153-61.

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Keyword	Section	Annex
Non-Patron Surveillance	6.3.5.1.1.4	<p>understand their zone of patron surveillance. Training agencies and the ANSI standards for aquatic venue facilities speak to “lifeguards understanding their responsibilities to their assigned stations.” This would include what area of the aquatic venue is their area for patron surveillance.</p> <p>Studies have documented the effect of critical and non-critical signals on maintaining vigilance in tasks; these may be useful in understanding lifeguarding duties. Jerison and Pickett demonstrated that a high number of critical signals could be processed by the lifeguard for up to 60 minutes with tolerable effects on vigilance.¹⁷ However, the study found that low numbers of critical signals indicated that detrimental effects on vigilance occurred after only 20 minutes.¹⁷ This study also referenced the Mackworth Clock Test, commissioned in 1950 by the British Royal Navy, which found that optimal vigilance cannot be maintained for more than 30 minutes.¹⁵ Researcher N.H. Mackworth developed the visual sensitivity loss model. Using classic clock task experiments, signal detection performance often declined during the first half hour of the watch. Later experiments found five- to 10-minute breaks reset the vigilance level to its original point.¹⁵</p> <p><i>Oregon</i></p> <ol style="list-style-type: none"> a. Rotation. Lifeguards must change duty stations at least hourly. The intent of this requirement is to maintain vigilance, if one guard is on duty a major shift in position or activity is required and suggested much more frequently than hourly. (e.g. changing sides of the pool, walking instead of sitting, etc.) b. Breaks. Lifeguards are to be allowed breaks in accordance with Oregon Bureau of Labor and Industry standards. More frequent breaks are recommended when the weather is very hot, extremely sunny, or the patron loading is very

¹⁷ Jerison HJ, Pickett RM. Vigilance: The Importance of the Elicited Observing Rate. *Science*. 1964;143(3609):970-1.

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high.

The American Red Cross recommends a 15-minute break every hour. However never reduce the number of guards on patron surveillance. If two lifeguards are on duty and one lifeguard takes a break, bring on a replacement lifeguard instead of decreasing the number doing surveillance.

Non-Patron
Surveillance

6.3.5.1.1.5

Studies have documented the effect of critical and non-critical signals on maintaining vigilance in tasks; these may be useful in understanding lifeguarding duties. Jerison and Pickett demonstrated that a high number of critical signals could be processed by the lifeguard for up to 60 minutes with tolerable effects on vigilance.¹⁷ However, the study found that low numbers of critical signals indicated that detrimental effects on vigilance occurred after only 20 minutes.¹⁷ This study also referenced the Mackworth Clock Test, commissioned in 1950 by the British Royal Navy, which found that optimal vigilance cannot be maintained for more than 30 minutes.¹⁸ Researcher N.H. Mackworth developed the visual sensitivity loss model. Using classic clock task experiments, signal detection performance often declined during the first half hour of the watch. Later experiments found five- to 10-minute breaks reset the vigilance level to its original point.¹⁸

- Report from the United States Lifeguard Standard Coalition:
http://lifeguardstandards.org/pdf/USLSC_FINAL_APPROVAL_1-31-11.pdf

Safety Plan

6.3.5.2

Aquatic Facility Safety Plan and Procedures

The Committee agreed that there needs to be an aquatic safety plan that is specific to the aquatic venue. Training agencies, ANSI standards for public swimming pools and aquatic recreation facility all speak having plans written, rehearsed and reviewed for emergency action plans. The Committee agreed that there are other types of plans that are necessary for all aquatic venues. Those additional plans would include but not limited to: Pre-Service, In-Service,

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Keyword

Section

Annex

Lifeguard Rotation, Lifeguard Supervision and Management, Staffing, Emergency Action Plan.

ANSI/APSP-1 2003

- **22.2.6** Managers of public pools shall maintain an emergency action plan similar to the one outlined by the American Red Cross or YMCA or comparable aquatic safety organization manuals. The plan should include a “Contamination Evacuation Plan,” “Chemical Emergency Evacuation Plan,” “Emergency Crisis Plan,” “Water Rescue and Injury Emergency Plan,” “Drill Procedures for Emergency Situations,” and other emergency plans and safety programs. These shall be practiced during in-service training and drills.

ANSI/APSP -9 20.6 Emergency action plan (EAP)

- **20.6.1 Types of plans.** Facility managers shall maintain an emergency action plan (EAP) similar to the one outlined by the American Red Cross, The National Pool and Waterpark Lifeguard Training Program, or other recognized aquatic safety organizations or companies.
- **20.6.2 Staff responsibilities.** Staff shall be trained by the facility to activate the Emergency Action Plan including notification of the nearest authorities that provide emergency assistance and rescue and medical response services.

NOTE – Pools should have entrance and exit configurations to meet lifeguard/staff functions.

EAP Training

6.3.5.2.1

ANSI/APSP -1 2003

- **22.2.6** Managers of public pools shall maintain an emergency action plan similar to the one outlined by the American Red Cross or YMCA or comparable aquatic safety organization

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Keyword	Section	Annex
		<p>manuals. The plan should include a “Contamination Evacuation Plan,” “Chemical Emergency Evacuation Plan,” “Emergency Crisis Plan,” “Water Rescue and Injury Emergency Plan,” “Drill Procedures for Emergency Situations,” and other emergency plans and safety programs. These shall be practiced during in-service training and drills.</p>

ANSI/APSP 20.6 Emergency action plan (EAP)

- **20.6.1 Types of plans.** Facility managers shall maintain an emergency action plan (EAP) similar to the one outlined by the American Red Cross, The National Pool and Waterpark Lifeguard Training Program, or other recognized aquatic safety organizations or companies.
- **20.6.2 Staff responsibilities.** Staff shall be trained by the facility to activate the Emergency Action Plan including notification of the nearest authorities that provide emergency assistance and rescue and medical response services.

NOTE – Pools should have entrance and exit configurations to meet lifeguard/staff functions

<i>Policy and Procedure Training</i>	6.3.5.2.2	The Committee agreed that there needs to be an aquatic safety plan that contains policies and procedures specific to the aquatic venue.
<i>Safety Plan</i>	6.3.5.2.3	The Committee agreed that there needs to be an aquatic safety plan that conforms to this Code.
<i>On File</i>	6.3.5.2.3.1	The Committee agreed that there needs to be an aquatic safety plan that is retained and available for review by the AHJ.
<i>Include</i>	6.3.5.2.3.2	The Committee agreed that there needs to be an aquatic safety plan that is specific to the aquatic venue. The Committee agreed that there are other types of plans that are necessary for all aquatic venues. Those additional plans would include but not

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Keyword	Section	Annex
		limited to: Pre-Service. In-Service, Lifeguard Rotation, Lifeguard Supervision and Management, Staffing, Emergency Action Plan.
<i>Lifeguard Documentation</i>	6.3.5.2.3.3	The Committee agreed that there needs to be documentation of water rescue competency of the lifeguard that is retained and available for review by the AHJ.
<i>Emergency Closure Policy</i>	6.3.5.2.3.4	The Committee agreed that there needs to be an emergency closure policy that is retained and available for review by the AHJ.
<i>In-Service Documentation</i>	6.3.5.2.3.5	The Committee agreed that there needs to be in-service training documentation that is retained and available for review by the AHJ.
<i>Emergency Action Plan</i>	6.3.5.2.3.6	The Committee agreed that there needs to be an aquatic safety plan that is specific to the aquatic venue. Training agencies, ANSI standards for public swimming pools and aquatic recreation facility all speak having plans written, rehearsed and reviewed for emergency action.

A Note About Resources:

The resources used in all MAHC modules come from peer-reviewed journals and government publications. No company-endorsed publications have been permitted to be used as a basis for writing code or annex materials.

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- 29 CFR 1910.1030
- ANSI/APSP-1 2003
- ANSI/APSP 1-9
- ANSI/APSP 9
- ANSI /ISEA Z308.1-2009
- ICC A117.1-2009
- International Life Saving Federation Pool Lifeguard Requirements
- Oregon State Code
- OSHA
- Royal Lifesaving Society Pool Lifeguard
- Texas State Code
- United States Lifeguard Standards Coalition (USLSC)

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Additional Resources

- The United States Lifeguard Standards Coalition report: http://www.lifeguardstandards.org/pdf/USLSC_FINAL_APPROVAL_1-31-11.pdf

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- EMS World Response Time Standards:
<http://www.emsworld.com/article/10324786/ems-response-time-standards>
- OSHA Standards for Toxic and Hazardous Substances:
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051
- CPR Retention review by the American Red Cross:
<http://www.instructorscorner.org/media/resources/SAC/Reviews/CPR%20Skill%20Retention.pdf>
- Brief Report: A Brief Intervention to Improve Lifeguard Surveillance at a Public Swimming Pool: <http://jpepsy.oxfordjournals.org/content/32/7/862.full>
- Prevention of Drowning: Visual scanning the attention span in lifeguards:
<http://www.lifelink.ca/resources/ScanningArticle.pdf>
- Effective Lifeguard Rotation video – The Redwoods Group:
<http://www.youtube.com/watch?v=Gm0iGL1hWoM>
- Center for Disease Control and Prevention Fecal Incident Response Recommendations: <http://www.cdc.gov/healthywater/pdf/swimming/pools/fecal-incident-response-recommendations.pdf>

Appendix

The United States Lifeguarding Standards Coalition developed the following “Scientific Review and Evidence Grading Guideline Definitions for Evidence-Based Statements” in their January 2011 report

(http://www.lifeguardstandards.org/pdf/USLSC_FINAL_APPROVAL_1-31-11.pdf)

Statement	Definition	Implication
Standard	The anticipated benefits of the recommended intervention clearly exceed the harms, and the quality of the supporting evidence is excellent. In some clearly identified circumstances, strong recommendations may be made when high-quality evidence is impossible to obtain but the anticipated benefits strongly outweigh the harms.	Follow unless a clear and compelling rationale for an alternative approach is present.
Guideline	The anticipated benefits exceed the harms, but the quality of evidence is not as strong. In some clearly identified circumstances, recommendations may be made when high-quality evidence is impossible to obtain but the anticipated benefits outweigh the harms.	Prudent to follow but remain alert to new information.
Option	Courses that may be taken when either the quality of evidence is suspect, or the level or volume of evidence is small, or carefully performed studies have shown little clear advantage to one approach over another.	Consider in decision-making.
No recommendation	A lack of pertinent evidence; the anticipated balance of benefits and harms is unclear.	Remain alert to new published evidence that clarifies the balance of benefit versus harm.

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