

United States Lifeguard Standards Coalition Evidence Review

On the following pages, you will find a primary question (and in some cases ancillary questions), reviewed by the United States Lifeguard Standards Coalition (USLSC), the draft consensus recommendation of the USLSC, and the Scientific Review Forms (usually two) that detail the specific evidence upon which the consensus recommendation was based.

In most cases, for each question, two independent investigators researched existing evidence, including scientific research and other material, related to the question. Each investigator then completed a Scientific Review Form, listing the evidence and an evidence summary. The level and quality of evidence was rated using a standardized evidence evaluation process. The evidence reviewed included, but was not limited to, the following:

- a. Population-based studies
- b. Epidemiological studies
- c. Case-control studies
- d. Historic research
- e. Case studies
- f. Large observational studies
- g. Review of past research summaries, and
- h. Extrapolations from existing data collected for other purposes

The scientific reviews were presented to the entire USLSC. Each topic was presented, discussed and critiqued by the assembled experts until consensus was reached.

You are invited to comment on this question (as well as the others) and particularly whether you believe that the evidence adequately supports the consensus recommendation. If you are aware of any additional evidence (e.g. scientific research) that was not considered by the Lifeguard Standards Coalition, please list that evidence in your comments. In any comments you choose to make, please be sure to cite the line number, if you are referring to specific wording of the item.

Before commenting, please review the document in full. This includes an initial document, which contains the question or questions investigated and the consensus recommendation. This is followed, in most cases, by two Scientific Review Forms, which list the evidence that was considered in arriving at the consensus recommendation.

Thank you for your time and consideration in reviewing this question. The deadline for comments is December 12, 2009.

1 USE OF EQUIPMENT

2 **Question**

- 3 • Is there evidence to support recommending use of equipment during aquatic rescues for
4 lifeguards?

6 **Ancillary Question**

- 7 • Are there methods of performance using standard rescue equipment that are more
8 efficient than others?

10 **Introduction**

11 The long history of lifesaving has included both the use and lack of use of lifesaving
12 equipment. However, very little research has been done to recommend what type of
13 equipment would constitute best practice. Over the years, the pioneers of modern-day
14 lifeguarding developed workable equipment. Almost all contemporary lifeguarding entities
15 recommend the use of some type of flotation device when conducting a rescue, to reduce the
16 risk to both the rescuer and the victim. Today, lifeguards have a variety of equipment, most
17 of which was originally designed for beachfront environments, that have made rescue of
18 victims (distressed, passive, submerged, or active) safer, faster, and more efficient.

20 **Evidence Summary**

21 Nothing relevant was identified in a search (of nine databases) using the terms lifeguard
22 equipment, lifesaving equipment, water rescue equipment, and guard equipment.

24 Information was gathered by evaluating the equipment used by the most widely recognized
25 lifeguard training agencies. In addition, lifeguard training manuals were reviewed for
26 statements or research justifying use of the equipment.

28 Results showed consensus among the vast majority of lifesaving organizations that efficacy
29 of in-water rescue (surf, nonsurf open water, or pool environments) is increased by the use of
30 equipment when appropriate training has been conducted by a qualified instructor for
31 lifeguard candidates. Because this recommendation is widely published in textbooks and
32 training materials, it is supported by an LOE of 5.

34 In short, there is a consensus of expert opinion for the use of equipment for in-water rescue.
35 There is not enough evidence to recommend specific equipment to be used or to distinguish
36 between equipment designed for a specific purpose.

38 **Consensus Recommendation**

39 It is recommended that appropriate equipment be used for in-water rescue, provided the
40 rescuer has received proper training specific to its use.

41 **Standards:**

42 **Guidelines:**

43 **Options:**

- 44 • It is recommended that appropriate equipment be used for in water rescue,
45 provided the rescuer has received proper training specific to its use.

Unites States Lifeguarding Standard Coalition
Scientific Review Form

Author: Peter Davis	Organization Representing: USLA
Question: Lifeguard Equipment	Date Submitted: 10-22-07

Question and Sub-Questions:

This should include the major question originally planned and any changes which occurred during the review process. Please also list any original sub-questions and the changes and those added during the review process.

1. Is there evidence to support recommending use of equipment during aquatic rescues for lifeguards?
2. (sub question)- When comparing different types of comparable equipment (eg. Rescue tube vs. Burnside can), which is more effective in which environments?

Introduction/Background:

Provide any relevant background on the subject and the need to address this question.

While there has been a long history of lifesaving that involved both the use of and lack of use of lifesaving equipment, there has been very little research done to recommend what type of equipment would constitute best practice. Almost all contemporary Lifeguarding entities recommend the use of some type of flotation device when effecting a rescue, both to reduce the risk to the rescuer and the victim.

Evidence Identification and Review

List the approach to gathering evidence. This should include any electronic databases searched with the terms used and numbers of articles found and reviewed. Also list any reports, prior evidence reviews analyzed and/or position papers evaluated.

I searched the following data bases with the terms “lifeguard equipment”, “lifesaving equipment”, “water rescue equipment”, “guard equipment”.

11. Pub Med
12. Google
13. Academic Search Complete (EBCSCO)
14. Business and Source Premier
15. Health and Wellness Resource Academic Center
16. Social Sciences (CSA)

17. MEDLINE
18. ERIC
19. Sport Discus
20. Science Direct

I was unable to find anything that addressed our question. I then wrote to contacts in a number of lifesaving organizations including but not limited to the following:

1. United States Lifesaving Association
2. Royal Lifesaving UK
3. Royal Lifesaving Australia
4. Surf Lifesaving Australia
5. Irish Lifesaving
6. DLRG (German lifesaving federation)

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Summary of Key Articles/Literature/Reports/Data Found and Level of Evidence

(Please fill in the following table for articles that were used to create your recommendations and/or guidelines)

Author(s) and Year published	Full reference	Summary of Article (if abstract available, first past abstract and then provide your summary)	Level of Evidence (Using table below)

Level of Evidence	Criteria
Level 1a	Population based studies, randomized prospective studies
Level 1b	Large non-population based epidemiological studies, meta-analysis or small randomized prospective studies
Level 2	<u>Prospective Studies</u> which can include, controlled, non-randomized, epidemiological, cohort or case-control studies
Level 3a	<u>Historic</u> which can include epidemiological, non-randomized, cohort or case-control studies
Level 3b	<u>Case series</u> : subjects compiled in serial fashion without control group, convenience sample, epidemiological studies, observational studies
Level 3c	Mannequin, animal studies or mechanical model studies
Level 4	Peer-reviewed works which include state of the art articles, review articles, organizational statements or guidelines, editorials, or consensus statements
Level 5	Non-peer reviewed published opinions, such as textbooks, official organizational publications, guidelines and policy statements and consensus statements
Level 6	Common practices accepted before evidence-based guidelines or common sense
Level 1-6E	Extrapolations from evidence which is for other purposes, theoretical analyses which is on-point with question being asked. Modifier E applied because extrapolated but ranked based on type of study.

Summary Table of Evidence

Place all the evidence listed in the previous sections in one of the following three columns using the follow approach:

- 49. Place each article or report in one of the columns and in its own row*
- 50. List articles with highest level of evidence first*
- 51. In box place name of lead author and in parenthesis year published*
- 52. In addition in each box put a one to two sentence summary of how the article either support, opposes or has no position with regard to the question(s)*

Supportive of Recommendation	Opposing Recommendation	No Position

Textual Summary of Evidence:

Please provide a textual summary of the all of the evidence reviewed and explain in detail how these lead to the guidelines, recommendations and/or options which you are proposing

Since I was unable to obtain any information about scientific research addressing this question, my recommendation is that we follow what the majority of lifesaving associations are doing until such time that we encounter significant evidence that disputes what the standards are at this time.

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Preliminary Brief Evidence Summary and Guideline Document Section:

Please provide a brief summary of the evidence from the previous section using the template language below and summarize the recommendation also using the template language. Then place each of the recommendations in the table at the end. Descriptions of how to determine the strength of the recommendations are listed below.

Recommendations and Strength (using table below):

Standards:

Guidelines:

There is expert opinion and consensus that the standard lifeguard equipment for rescues in pools, water parks, and the flat water environment, and the surf environment be the lifesaving tube. For rescues where the rescuer does not enter the water the standard should be a ring buoy with attached rope, or a pole.

Options:

In the open water environment, options could include the use of fins, Burnside cans, rescue boats, surf boats, landlines, rescue boards, personal water craft (with attached sled), or any other device or piece of equipment that has effectively saved lives through the years with minimal risk to the rescuers or victims.

No Recommendations: No recommendations should be made by this working group at this time for rescue in the swift water environment or for SCUBA rescues, as these are very specialized fields that are beyond the scope of this project.

Guideline Definitions for Evidence-Based Statements

Statement	Definition	Implication
Standard	A standard in favor of a particular action is made when 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 recommendation standards may be made when high-quality evidence is impossible to obtain and the anticipated benefits strongly outweigh the harms.	One should follow a strong recommendation unless a clear and compelling rationale for an alternative approach is present.
Guideline	A guideline in favor of a particular action is made when the anticipated benefits exceed the harms but the quality of evidence is not as strong. Again, in some clearly identified circumstances, recommendations may be made when high quality evidence is impossible to obtain but the anticipated	One would be prudent to follow a recommendation but should remain alert to new information.

	benefits outweigh the harms.	
Option	Options define courses that may be taken when either the quality of evidence is suspect or, level and volume of evidence is small or carefully performed studies have shown little clear advantage to one approach over another.	One should consider the option in their decision-making.
No recommendation	No recommendation indicates that there is a lack of pertinent evidence and that the anticipated balance of benefits and harms is presently unclear.	One should be alert to new published evidence that clarifies the balance of benefit versus harm

Attach Any Lists, Tables or Summaries Created As Part Of This Review

(Please include any tables, lists of items or procedures and tables which you created as part of the review that would be helpful for final analysis or publication in the final document)

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Unites States Lifeguarding Standard Coalition
Scientific Review Form

Author: Terri Lees	Organization Representing: YMCA of the USA
Question: Is there evidence to support recommending use of equipment during aquatic rescues for lifeguards?	Date Submitted:

Question and Sub-Questions:

Is there evidence to support recommending use of equipment during aquatic rescues for lifeguards?

Are there methods of performance using standard rescue equipment that are more efficient than others currently used in the field?

Introduction/Background:

On of the greatest challenges that lifesavers of the past faced was managing a panicky and sometimes struggling victim. Over the years, the pioneers of modern day lifeguarding developed workable equipment that helped overcome these struggles. Today, lifeguards have a variety of equipment, most of which was originally designed for beach front water environments but have made rescuing a victim (distressed, passive, submerged, active) safer, faster and more efficient.

In addition, over the past 10-15 years, medical advances and the simplification of emergency medical devices such as AED's and Oxygen delivery systems have helped lifeguards improve the chances of survival of drowning and near drowning victims. It seems that the question given above (based on a review of agency statements in support of equipment based rescues) is much too broad and that we should be looking at the specific methods of rescue described for each of these pieces of equipment by various lifeguard training agencies to see if there is evidence to support one method as faster, safer, and/or more effective than another while using the same or comparable equipment.

Evidence Identification and Review

- 1. Comparison chart of equipment used by the most widely recognized lifeguard training agencies.*
- 2. Reviewed lifeguard training manuals for statements or research justifying use of said equipment*
- 3. Searched for any research references detailing the benefits and or limitations of certain lifeguard rescue equipment. (pub med, contacted agency administrators)*

Resource List

American Red Cross, 2007. *Lifeguarding*. 3rd edition. American Red Cross and StayWell.

Brewster, B. Chris., editor, 2003. *Open Water Lifesaving: The United States Lifesaving Association Manual*. Pearson Custom Publishing.

Ellis & Associates 2007. *International Lifeguard Training Program™*. 3rd edition. Jones and Bartlett Publishers Inc.

Lifesaving Society 1997. *Boat rescues for first responders*. Les Editions Alerte Inc.

LeClerc, T. 1997. "A Comparison of American Red Cross and YMCA Preferred Approach Methods Used To Rescue Near-Drowning Victims." Unpublished Masters Thesis.

McCloy, J. and J. Dodson, editors. 1981. "Guidelines for establishing open-water recreational beach standards". Proceedings of a conference, April 16-18, 1980. Galveston, TX.

White, Jill, and Star Fish Aquatic Institute, 2006. *StarGuard: Best Practices for Lifeguards*, 3rd edition. Human Kinetic Publishing.

YMCA of the USA .2001. *On the guard II*, 4th edition. Published for the YMCA of the USA by Human Kinetics Publishers Inc.

Summary Table of Evidence

Supportive of Recommendation	Opposing Recommendation	No Position
LeClerc, T. (1997) <i>Because time is of the essence, we should be using techniques that have been proven faster.</i>		
McCloy, J. editor. (1981). <i>Each lifeguard should be provided with equipment designed to increase effectiveness in prevention, rescue and medical treatment.</i>		
American Red Cross (2007). <i>"The use of rescue equipment makes the rescue safer for both the lifeguard and the victim." P.59</i>		
Brewster, B. Chris., editor,		

<p>(2003). <i>Using equipment has the following advantages: supporting the victim, lifeguard safety, speed, increased efficiency, identification by the public, victim avoidance, rescue multiple victims.</i></p>		
<p>Ellis & Associates (2007) <i>Equipment helps minimize personal danger. The rescue tube can support up to 5 people and helps when positioning the victim for in-water rescue breathing is necessary.</i></p>		
<p>Lifesaving Society (1997) <i>The following comments identify advantages of a variety of equipment: visible to the public, makes it easier to handle the victim, carry many victims, maneuverable, speed, handles that the victim can hang on to.</i></p>		
<p>White, Jill (2006) <i>“Always use the rescue tube when making a rescue.” p.75</i></p>		
<p>YMCA of the USA (2001) <i>The following are comments made justifying the use of rescue equipment: Easier to carry and helpful in multiple victim rescues, especially effective when victims are difficult to remove, stabilizes a victim’s head and neck very effectively.</i></p>		

Textual Summary of Evidence:

Textural Summary

It is obvious from the table included with this report that there are no opposing opinions about whether or not to use rescue equipment. The justification statements presented in the Table identify the many advantages of using the variety of equipment available for protection and rescue. Although there is disagreement among the agencies about how best to use the equipment, in general they agree that the advantages far out way the disadvantages of any single piece of equipment. The following comments that support the use and are similar among the agencies: makes it easier to rescue, improved handling of the victim, victim avoidance, safe for the lifeguard and victim, faster, more efficient, support multiple victims, protects from blood and bodily fluids.

Research on the sub question is very limited indeed. Only one article came up in the search and it is an unpublished master's thesis. LeClerc, T. 1997, concluded that some methods of approaching a victim with a rescue tube are faster than others. It seems logical that if there are faster ways to reach the victim that we should be recommending them. However, it is important to consider the environment and the preferences and strengths of the lifeguard. With further study, this Coalition may be able to make a "recommendation" but it remains to be seen if the evidence will have the strength to support a "standard".

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Preliminary Guideline Document Section:

Place your suggested recommendations into one or more of the three categories listed below and then briefly summarize the issue, your overall recommendations including answers to the question which was addressed as we should included it in the final document

Recommendations and Strength (using table below):

Standards:

- Each lifeguard should be provided with equipment designed to increase effectiveness in prevention, rescue and medical treatment.
There were no opposing opinions from any of the major certifying agencies. Each agency supported the idea that the advantages of rescue equipment far out weigh the disadvantages.

Guidelines:

- The minimum equipment that should be made available to lifeguards regardless of facility should include: rescue tube/buoy, personal protective equipment, backboard with head immobilizer and a minimum of 3 straps, AED, supplemental oxygen.
There is strong evidence of consensus in the matter of the above mentioned equipment and they seem to be appropriate and recommended universally.

Options:

- Optional inclusion of cervical collars and manual suction.
There was no consensus on the use or non use of these pieces of equipment. However, when considering the advancements in the equipment and the importance of these pieces of equipment in protection and rescue, it would seem logical to include them in the guidelines.

No Recommendations:

Guideline Definitions for Evidence-Based Statements

Statement	Definition	Implication
Standard	A standard in favor of a particular action is made when 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 recommendation standards may be made when high-quality evidence is impossible to obtain and the anticipated benefits strongly outweigh the harms.	One should follow a strong recommendation unless a clear and compelling rationale for an alternative approach is present.
Guideline	A guideline in favor of a particular action is made when the anticipated benefits exceed	One would be prudent to follow a recommendation but

	the harms but the quality of evidence is not as strong. Again, in some clearly identified circumstances, recommendations may be made when high quality evidence is impossible to obtain but the anticipated benefits outweigh the harms.	should remain alert to new information.
Option	Options define courses that may be taken when either the quality of evidence is suspect or, level and volume of evidence is small or carefully performed studies have shown little clear advantage to one approach over another.	One should consider the option in their decision-making.
No recommendation	No recommendation indicates that there is a lack of pertinent evidence and that the anticipated balance of benefits and harms is presently unclear.	One should be alert to new published evidence that clarifies the balance of benefit versus harm

Attach Any Lists, Tables or Summaries Created As Part Of This Review

- *Comparison of equipment used by various agencies and statements in support of equipment based rescues.*

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Unites States Lifeguarding Standard Coalition
Scientific Review Form

Author: Rhonda Mickelson	Organization Representing: American Camp Association
Question: Is there evidence to support recommending use of equipment during aquatic rescues for lifeguards?	Date Submitted: November 20, 2007

Question and Sub-Questions:

Is there evidence to support recommending use of equipment during aquatic rescues for lifeguards?

Introduction/Background:

Provide any relevant background on the subject and the need to address this question.

While the use of various pieces of lifesaving equipment has been taught as part of lifesaving courses for years, there has been little to no research compiled as to the effectiveness of this equipment. Is using a rescue tube “better” than a ring buoy? Should the floatation device be carried a specific way? If only one piece of equipment were available, what is the BEST piece?

After much searching, these questions remain. And, while there is little evidence to identify one specific piece of equipment, there is some consistency among what equipment is required by State and County regulatory bodies.

The chart following this Review Form outlines several State Regulations.

Evidence Identification and Review

List the approach to gathering evidence. This should include any electronic databases searched with the terms used and numbers of articles found and reviewed. Also list any reports, prior evidence reviews analyzed and/or position papers evaluated.

Search Databases:

21. Pub Med
22. Google
23. Academic Search Complete (EBCSCO)
24. Health and Wellness Resource Academic Center
25. Social Sciences (CSA)
26. MEDLINE
27. ERIC
28. Sport Discus
29. Science Direct

Search Terms:

1. Lifesaving Equipment
2. Lifesaving

3. Rescue Equipment
4. Lifeguarding
5. Water safety

Reviewed websites for the 20 states and was able to access regulations for 13. See chart below.

Summary of Key Articles/Literature/Reports/Data Found and Level of Evidence

(Please fill in the following table for articles that were used to create your recommendations and/or guidelines)

Author(s) and Year published	Full reference	Summary of Article (if abstract available, first past abstract and then provide your summary	Level of Evidence (Using table below)
Tomas Alejandro Leclerc, 2007	A Comparison of American Red Cross and YMCA- Preferred Approach Methods Used to Rescue Near-Drowning Victims, published in the <i>International Journal of Aquatic Research and Education</i> , Feb. 2007, Vol. 1, Issue 1, pp 34-42	<p>The purpose of this study was to determine the difference in time that it will take a rescuer to swim different distances to a near-drowning victim with a rescue tube, using preferred YMCA and American Red Cross approach methods. The skills that were timed included YMCA and Red Cross approach skills w/ a rescue tube using the modified breaststroke and front-crawl stroke. Three different events were timed using the two different approach strokes, for a total of 10 trials. It was assumed that the victim in this study was a passive victim facing away from the rescuer. This positioning was adopted to equalize the approach distance for both the YMCA and Red Cross in order to eliminate the requirement of swimming behind the victim in all Red Cross approaches. Because the victim's back was toward the rescuer, the approach method was directly from the rear. A comparison of mean times was also made between the lifeguard and non lifeguard groups. In four out of five comparisons between Red Cross and YMCA methods, the YMCA method was faster ($p < .05$). It was concluded that the rescue tube resulted in increased water resistance when it was positioned across the rescuer's chest.</p>	Level 2, <u>Prospective Studies</u> which can include, controlled, non-randomized, epidemiological, cohort or case-control studies
States Listed In Chart	Various State Regulatory Agencies	<p>This article actually discusses the most efficient approach method used while using a piece of rescue equipment. One of the premises is that the use of equipment (either rescue tube or rescue buoy) is beneficial as the tube (or buoy) provides increased safety for the guard and enables them to begin assessment of breathing of</p>	All are level 6 – common practices

		<p>an unconscious victim. It also provides flotation and stability.</p> <p>Common rescue equipment listed in chart:</p> <ol style="list-style-type: none"> 1. Shepherd's pole 2. Rescue buoy w/ 50' rope OR 3. Rescue Tube 	
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Level of Evidence	Criteria
Level 1a	Population based studies, randomized prospective studies
Level 1b	Large non-population based epidemiological studies, meta-analysis or small randomized prospective studies
Level 2	<u>Prospective Studies</u> which can include, controlled, non-randomized, epidemiological, cohort or case-control studies
Level 3a	<u>Historic</u> which can include epidemiological, non-randomized, cohort or case-control studies
Level 3b	<u>Case series</u> : subjects compiled in serial fashion without control group, convenience sample, epidemiological studies, observational studies
Level 3c	Mannequin, animal studies or mechanical model studies
Level 4	Peer-reviewed works which include state of the art articles, review articles, organizational statements or guidelines, editorials, or consensus statements
Level 5	Non-peer reviewed published opinions, such as textbooks, official organizational publications, guidelines and policy statements and consensus statements
Level 6	Common practices accepted before evidence-based guidelines or common sense
Level 1-6E	Extrapolations from evidence which is for other purposes, theoretical analyses which is on-point with question being asked. Modifier E applied because extrapolated but ranked based on type of study.

Summary Table of Evidence

Place all the evidence listed in the previous sections in one of the following three columns using the follow approach:

53. Place each article or report in one of the columns and in its own row
54. List articles with highest level of evidence first
55. In box place name of lead author and in parenthesis year published
56. In addition in each box put a one to two sentence summary of how the article either support, opposes or has no position with regard to the question(s)

Supportive of Recommendation	Opposing Recommendation	No Position
12 of the 13 States/Counties require recommended equipment		LeClerc

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Textual Summary of Evidence:

I reviewed State and County regulations governing public swimming pools (accessed information on 13 of the 20 states searched). The common pieces of equipment required by 12 of the 13 reviewed led to the recommendation. Various other pieces of equipment were mentioned but not to the extent to be included in the recommendation.

Preliminary Brief Evidence Summary and Guideline Document Section:

Evidence from one study with a Level 2 criteria and the review of thirteen state/county swimming pool regulations with a Level 6 criteria suggest the use of a “shepherd’s crook” and rescue buoy/tube at public swimming pools.

Therefore, it is recommended that these use of these items (shepherd’s crook and rescue buoy/tube) for the swimming pool environment be a guideline.

Recommendations and Strength (using table below):

Standards:

Guidelines: All swimming pools should be equipped w/ rescue buoys or rescue tubes and shepherd’s crooks/poles.

Options:

No Recommendations:

Guideline Definitions for Evidence-Based Statements

Statement	Definition	Implication
Standard	A standard in favor of a particular action is made when 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 recommendation standards may be made when high-quality evidence is impossible to obtain and the anticipated benefits strongly outweigh the harms.	One should follow a strong recommendation unless a clear and compelling rationale for an alternative approach is present.
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Option	Options define courses that may be taken when either the quality of evidence is suspect or, level and volume of evidence is small or carefully performed studies have shown little clear advantage to one approach over another.	One should consider the option in their decision-making.
No recommendation	No recommendation indicates that there is a lack of pertinent evidence and that the anticipated balance of benefits and harms is presently unclear.	One should be alert to new published evidence that clarifies the balance of benefit versus harm

Attach Any Lists, Tables or Summaries Created As Part of This Review

(Please include any tables, lists of items or procedures and tables which you created as part of the review that would be helpful for final analysis or publication in the final document): SEE BELOW

State/County	Regulation	Size Pool	Required equipment	Other
Minnesota	Safety Requirement - Lifesaving Equipment: MN Department of Health Website	Larger than 2,250 operated for unorganized use	<ul style="list-style-type: none"> Elevated platform Chair Ring buoy attached to 3/16" manila rope or equivalent material 1.5 times the width of the pool Rescue tube may be used when lifeguard is present. Life pole or shepherd's crook-type pole having blunted ends and a min. fixed length of 12 feet. 	Pool must be closed when this equipment is not available
New York State	Current requirements for swimming pools contained in the Uniform fire prevention & Bldg. Code (July 2007)	Any size other than a hot tub or spa	<p>Every swimming pool installed, constructed or substantially modified after Dec. 14, 2006 must be equipped w/ an approved pool alarm which:</p> <ul style="list-style-type: none"> Capable of detecting a child entering the water and giving an audible alarms when it detects a child entering the water Is audible poolside and at another location on the premises where the pool is located Is installed, used and maintained in accordance w/ the manufacturer's instructions Is classified to reference standard ASTM F2208 Is not an alarm device which is located on person(s) or which is dependent on device(s) located on person(s) for its proper operation. <p>A pool alarm must be capable of detecting entry into the water at any point on the surface of the swimming pool.</p>	
North Carolina (state)	NC Dept. of Environment	Initial size not specified	A unit of lifesaving equipment shall be conspicuously and conveniently on hand at	Pools larger than 3000

	and Natural Resources 15A NCAC 18A .2500, Printed by NC DENR July 2006.		<p>all times. A unit consists of:</p> <ul style="list-style-type: none"> • A fixed length pole not less than 12' long w/ body hook attached. • Min. ¼" diameter throwing rope as long as 1 and 1.5 the maximum width of the pool or 50', whichever is less, attached to a US Coast Guard approved ring buoy. • A rescue tube or rescue can shall be accepted as a substitute for the ring buoy where it is accompanied by a lifeguard who has been trained to use it properly. <p>Also required: Sign prohibiting pets and glass containers</p> <ul style="list-style-type: none"> • Telephone capable of directly dialing 911 or other emergency notification system shall be provided and accessible to all pool users. 	square feet shall have two units
Michigan (state)	Excerpts from the Public Health Code, Public Act and Rules Governing Public Swimming Pools, Act 368 of 1978. <u>Safety Equipment Required R 325.2165</u>	No pool size specified	<p>Pool owner shall equip a swimming pool:</p> <ul style="list-style-type: none"> • With an acceptable long spine-board that has a min. of 3 ties, runners & a head immobilizer. • With a first aid kit which is used primarily to treat small cuts, bruises, burns (Regulation states what FA kit should include). • With a kit to clean up blood spills which consists of as a min., a pair of medical-grade latex gloves and an antimicrobial hand wipe. • With a 1-piece, 12-foot long rescue pool which has blunt ends and which may have a shepherd's crook. • ¼" diameter throw rope as long as 1 ½ times the maximum width of the pool or 50 feet (whichever is less), w/ one end attached to a 19-inch ring buoy or rescue bag. • For pools w/ guards, the following should be provide: megaphone or public address; one whistle per guard; one rescue tube per guard on duty where water is more than 3.5'; 1 resuscitation mask/lifeguard on duty. 	
Maricopa County, Arizona	Maricopa County Environmental Health Code, Chapter VI; Bathing Places-Public and Semi-public Pools, Section 6, Public	Public pools shall have at least one guard on duty for each 2000 sq. ft. of pool surface OR 150 bathers or as approved by	<ul style="list-style-type: none"> • Each public pool shall have at least 1 lifeguard chair for each 2000 sq. feet of pool surface or 150 bathers. Must be closer to the deeper portion of the pool and provide clear, unobstructed view of pool bottom. • Must have at least 2 Coast Guard approved ring buoys, each w/ 50 feet of ¼ inch rope attached and 1 shepherd's crook mounted on a rigid 16-foot pole. 	

	Swimming Pools.	the Dept.	<ul style="list-style-type: none"> A lifeline shall be installed across each public pool at the point where the floor slope begins to exceed 1 foot in 10 feet whenever the pool is open for use by the general public. The lifeline shall be $\frac{3}{4}$ inch minimum diameter and supported by floats spaced at intervals not greater than 7 feet. 	
Alachua County, Florida (pools are regulated by county in Florida)	Alachua County Health Department, Chapter 64E Public Swimming Pools and Bathing Places	All pools greater than 200 square feet.	<ul style="list-style-type: none"> All pools shall be provided w/ a shepherd's hook securely attached to a one piece pole not less than 16 feet in length AND At least one 18" diameter lifesaving ring w/ sufficient rope attached to reach all parts of the pool from the pool deck. Pools greater than 50' in length shall have multiple units w/ at least one shepherd's hook and one lifesaving ring located along each of the longer sides of the pool. 	
Delaware – STATE	Rules 4464 Public Swimming Pools	<p>Any pool greater than 4 foot in depth</p> <p>For pools w/out a guard (Exempt by 16 Delaware Code)</p>	<ul style="list-style-type: none"> Telephone, within or immediately adjacent to the pool fence or room, with appropriate emergency numbers posted nearby. Two blankets Rigid backboard w/ at least 3 attached ties which is compatible for transport and meets the design requirements of EMS. One rescue tube for each guard on duty One or more lightweight poles at least 12' and not more than 15' feet long and equipped w/ a shepherd's hook. One ring buoy at least 18" – 24" in diameter attached to at least 50' of rope. 	
Pennsylvania	Chapter 18, Public Swimming and Bathing Places	All public bathing places	<ul style="list-style-type: none"> One or more reaching devices. These devices may include, but are not limited to, poles and reasonable means to extend a person's reach. Flotation devices: One or more buoys, life jackets or flotation devices that can support an adult in water. First Aid Kit: A standard 24-unit first kit, filled and readily accessible for emergency use. 	
Kansas	28-4-92 License Fees – General Regulations (covering child care facilities in the state of Kansas)	Pool more than 6 feet in width, length or diameter	<ul style="list-style-type: none"> Ring buoy sufficient to reach from the center of the pool from its edge Rope or shepherd's hook sufficient to reach the center of the pool from its edge. 	
Kansas (continued)	Kansas			

	Department of Health and Environment New Temporary Regulation Lodging Establishments 28-36-84; 8-27-07		<ul style="list-style-type: none"> • Each swimming pool or RWF shall have lifesaving equipment, consisting of at least one U.S. coast guard-approved flotation device that can be thrown into the water and at least one reaching device. • The flotation device shall be attached to a rope that is at least as long as one and one-half times the maximum width of the swimming pool or RWF. If a lifeguard is on duty, life-saving rescue equipment, including rescue tubes, may also be used. • The reaching device shall be a life pole or a shepherd's crook-type of pole, with a minimum length of 12 feet. • Each lifesaving device shall be located in a conspicuous place and shall be accessible. The lifeguard personnel shall keep their rescue equipment close for immediate use. 	
Iowa	Department of Public Health Division of Environmental Health Swimming Pool and Spa Program.	For each 1500 square ft of water surface	<ul style="list-style-type: none"> • US Coast Guard-recognized ring buoy fitted w/ 1/4" diameter line w/ a length of at least 1/2 the width of the pool but no more than 60 feet OR • A life pole or a shepherd's crook of at least 8' in length and having blunted ends OR • A rescue buoy made of lightweight, hard, buoyant plastic w/ molded handgrips along each side and provide w/ a 4-to 6-ft. tow rope and shoulder strap OR • A rescue tube made of a soft, strong foam material 3" by 6" by 40" with a molded strap providing a ring at one end and a hook at the other. Attached to the end with the ring shall be a 6-ft-long towline or shoulder strap: OR • Any other piece of rescue equipment approved by the department. • A swimming pool should also have a first aid kit, disposable gloves and chemical compresses. • Pools should also have a spine board w/ straps and a head immobilizer. • Telephone for emergency should be available/accessible at pools w/ guards and those without. 	
New Jersey	New Jersey Department of Health and Senior Services EHS-13 Public		<p>Emergency equipment for swimming pools. Provided with:</p> <ul style="list-style-type: none"> • Two or more assist poles or life hooks; • One or more rescue tubes for each lifeguard on duty; <ul style="list-style-type: none"> ○ Specially exempt facilities, at 	

	Recreational Bathing INSPECTION OF SWIMMING POOLS checklist		<p>least two rings or rescue buoys.</p> <ul style="list-style-type: none"> • A first aid kit provided, available at all times during bathing periods and fully restocked within 24 hours of use; • Spine board with ties, head restraints and/or straps. • An emergency care area for pools >500 or more patrons. • Means of communication near the lifeguard station for emergency use. 	
Washington	<p>Water Recreation Facilities</p> <p>Chapter 246-260 Washington Administrative Code</p> <p>Rules and Regulations of the Washington State Board of Health</p> <p>October 31, 2004</p> <p>Page 29,30</p>	Pools greater than 1500 square feet surface	<p>Emergency equipment. Owners shall provide first aid and have emergency equipment readily available at swimming pool facilities during operating hours, including:</p> <p>A telephone within the facility for general use pools;</p> <p>A telephone accessible within one minute for limited use pool facilities;</p> <p>A suitable area to accommodate persons requiring first-aid treatment;</p> <p>A standard 16-unit first-aid kit (see Appendix C, Table); and</p> <p>A blanket reserved for emergency use.</p> <p>For facilities with lifeguards:</p> <p>A rescue tube or rescue buoy at each pool lifeguard station; and</p> <p>A backboard with means to secure a victim to a board and immobilize head, neck, and back.</p> <p>For pool facilities without lifeguards:</p> <p>A reaching pole at least twelve feet long with a double crook life hook;</p> <p>A reaching pole at least twelve feet long for every fifteen hundred square feet of pool surface area; and</p> <p>A throwing buoy, throw-rope bag, or other similar device with a rope the width of the pool or fifty feet long, whichever is less, for reaching and retrieving a victim.</p>	
Utah	<p>Rule R392-302. Design, Construction and Operation of Public Pools. As in effect on November 1, 2007</p>		<p>A public pool where a lifeguard is required under Subsection R392-302-30(2) shall provide for a minimum number of elevated lifeguard chair(s) in accordance with Table 2. Lifeguard chair(s) shall be located to provide a clear unobstructed view of the pool bottom by lifeguards on duty.</p> <p>(2) A public pool must have at least one unit of lifesaving equipment. One unit of lifesaving equipment must consist of the following: a Coast Guard-approved ring buoy with an attached rope equal in length to the maximum width of the pool plus 10 feet, American Red Cross-approved rescue tube; a life pole or shepherd's crook type pole with</p>	

			<p>blunted ends and a minimum length of 12 feet, 3.66 meters. The facility operator may substitute a rescue tube for a ring buoy where lifeguard service is provided.</p> <p>Additional units must be provided at the rate of one for each 2,000 square feet, 185.8 square meters, of surface area or fraction thereof. The operator of a pool that has lifeguard services shall provide at least one backboard designed with straps and head stabilization capability.</p> <p>(3) A public pool must be equipped with a Utah Department of Health standard 27-unit first aid kit</p>	
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