

Keeping Their Guard Up



Tom Griffiths

by **TOM GRIFFITHS, E.D.**
HANS VOGELSONG, PH.D.
DONALD STEEL, PH.D.
Special to Aquatics International

Since 1994, researchers at Penn State University in University Park, Pa., have been identifying lifeguard behaviors as reported by guards themselves. For our 1998 study, we mailed 10,000 surveys to lifeguard supervisors in the United States, Canada, Australia and New Zealand. The supervisors monitored their guards' completion of the surveys, and 2,082 surveys were returned.

The survey focused on guard certification, training and rescues. We were encouraged that the majority of guards believe their training to be sufficient, and most guards are confident in making rescues. As expected, a high percentage of guards believe that the best training occurs on the job, with CPR and backboarding training receiving high marks.

Our results show, however, that there is still room for improvement. A small, though significant, percentage of guards believes they received less than sufficient training in specific rescue techniques. Considering that more than half of the surveyed guards reported making a rescue in a two-year period, with some making more than six rescues, a lot of guards are performing rescues without total confidence.

This was the first time we included data from outside North America, and this inclusion affected our results.

A 1998 lifeguard survey reveals that most guards are satisfied with their training and confident in their rescues. But even a small percentage of ill-prepared guards can put the swimming public at risk.

Figure 1

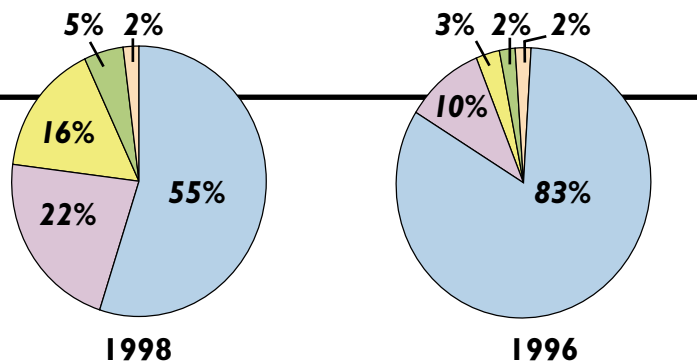
Guard Characteristics

	North America	Australia/ New Zealand	Total
Type of facility			
Outdoor pool	45%	9%	42%
Indoor pool	27%	8%	25%
Waterpark	16%	0.5%	15%
Ocean	8%	82%	14%
Lake/river	4%	0.5%	4%
Age			
15-17	32%	3%	30%
18-19	22%	21%	22%
20-22	25%	29%	25%
23-30	13%	40%	15%
>30	8%	7%	8%
Gender			
Male	49%	72%	51%
Female	51%	28%	49%
Type of employment			
Seasonal	79%	82%	79%
Career	21%	18%	21%
Months of experience			
0-4	30%	11%	28%
5-12	24%	13%	24%
13-36	23%	40%	24%
>36	23%	36%	24%

Figure 2 Certification

Certifying agency

- American Red Cross
- Ellis and Associates
- YMCA
- Lifesaving societies (Canada, Australia)
- Other



Unusually strong surf in Australia in 1998 resulted in high rates of rescues and fatalities in that country, which raised the overall percentages in our survey.

The value of training

Because most lifeguards are relatively young and have limited experience, the quality of certification and training affects their ability and confidence to make rescues.

Figure 1 shows the demographics of our young respondents. For work experience, note that the months of experience aren't necessarily consecutive; seasonal guards make up 79 percent of the sample.

A much higher percentage of the Australian and New Zealand guards are males, and they're significantly older and more experienced than North American guards. By including Australian and New Zealand guards, we also received a greater variety of responses regarding certifying agencies than in past surveys (Figure 2).

We're pleased to report that approximately half of the surveyed guards hold certifications from more than one agency. This is a real credit to our

Figure 3 Most Valuable Agencies

Most valuable training agency

- American Red Cross
- Ellis and Associates
- YMCA
- Lifesaving societies
- Other

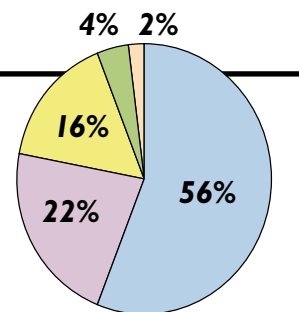


Figure 4 Comparison of Rescue Confidence with and without Equipment

Confidence level

- Very confident
- Fairly confident
- Not sure
- Not very confident (0%)
- Very unconfident

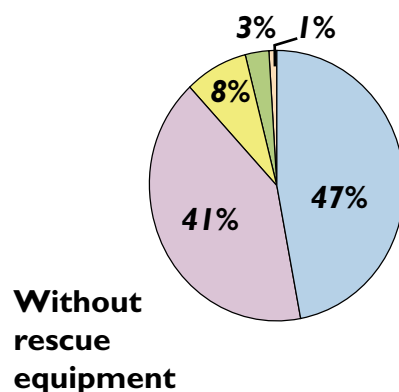
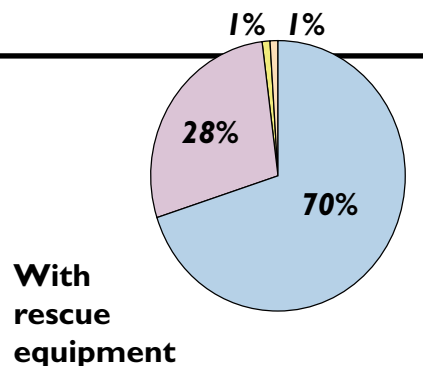
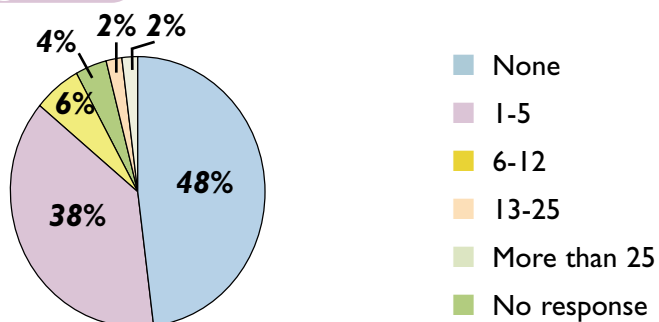


Figure 5 Number of Rescues Made



young lifesaving professionals, as cross-certification can represent nearly 100 hours of training.

Among guards certified by both the American Red Cross and Ellis & Associates, a surprisingly high percentage rated ARC training as more valuable than E&A training (Figure 3). This contrasts results from our 1996 study, which revealed that 60 percent of E&A-certified guards ranked the agency as "very good" compared to 48 percent ranking ARC as "very good."

No matter which certifying agency, two-thirds of the guards responded that they received better training on the job than they did in their certification courses. This underscores the importance of on-the-job, or in-service, training. We speculate that real-life situations provided at the pool or beach hold more relevance for guards than information in training manuals or classrooms.

In light of this, certification programs could consider making their courses more realistic, perhaps through visits to guarded facilities. We also remind supervisors that just because guards are certified, they aren't always adequately trained for the particular environment — job-site orientations and continuous, quality in-service training make the difference.

To the rescue

In most situations, a 93 percent approval rating would be considered good. But 7 percent of guards responded that their rescue training was less than sufficient, which translates to a lot of swimmers supervised by unprepared guards. Seven percent of our sample represents



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approximately 140 guards who were either dissatisfied with or uncertain of their rescue training, and it's likely that many of these 140 will someday face a res-

cue situation if they haven't already.

Because the type and amount of available rescue equipment varies from setting to setting, it's important that guards are able to make safe and efficient rescues with or without rescue equipment. Survey results show, however, that nearly one quarter of the guards believed their training without rescue equipment was less than sufficient, and that guards were overwhelmingly more confident making rescues with equipment rather than without (Figure 4).

When asked about rescue preferences, 43 percent preferred making a rescue with equipment and 7 percent without, with 49 percent stating that it

Figure 6

Rescue Settings

Made a real life rescue?

Type of facility	Yes		No	
	#	%	#	%
Indoor Pool	267	55	222	45
Outdoor Pool	361	44	460	56
Waterpark	136	46	189	54
Lake/River	38	51	36	49
Ocean	194	72	75	28

Figure 7

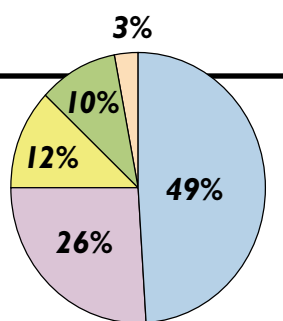
Comparisons of Results from Different Resuscitation Methods

Resuscitation method	Victim regained normal breathing during resuscitation		Victim was either hospitalized, suffered permanent damage or died	
	#	%	#	%
Standard procedures	121	60	81	40
Heimlich	20	95	1	5
Both CPR & Heimlich	22	69	10	31
Mechanical resuscitation	14	19	59	81
Automatic defibrillation	3	30	158	47

Figure 8 Results of Most Recent Resuscitation Efforts (438 total efforts)

Resuscitation outcome

- Victim regained regular breathing
- Victim hospitalized but recovered
- Victim lived with permanent damage
- Victim died
- Victim status unknown



depends on the situation. (One percent was unsure.) This result is surprising because ARC and E&A certified the majority of respondents, and neither of these agencies provide training in non-equipment rescues.

Ideally, guards should feel confident making rescues with or without equipment, and they should receive equal training in both practices. Agencies should provide training that addresses rescues in a variety of settings and circumstances, including situations when rescue equipment isn't available.

Half the guards surveyed claimed to have rescued a person who would have drowned without their assistance, proving that guards are more than just required window dressing, as some people still think. Respondents also told us how many active-drowning rescues they made during 1997 and 1998 (Figure 5).

Interestingly, indoor pool guards experienced the second highest rescue rate behind rescues in the ocean environment (Figure 6). This refutes a perception that indoor guards are less likely than outdoor guards to perform a

rescue. This perception is based on the larger outdoor bather loads; indoor pools, however, are usually open year-round, whereas outdoor pools, beaches, lakes and rivers are often open during just the summer months.

How effective were all these rescues? According to our respondents, quite effective — 93 percent stated that the bather in their most recent rescue fully recovered. Only 1.5 percent of bathers rescued by lifeguards died, while 2 percent were hospitalized with injuries and 3 percent were classified as "unknown status." Unfortunately, 1.5 percent in this sample translates to 19 or 20 lives lost, underscoring the stressful situation in which guards work.

Resuscitation and spinal injuries

More than any other skill, guards responded that they're most satisfied with their CPR training. In fact, 96 percent of the guards believed their CPR training to be sufficient; 1 percent

believed it was not sufficient, and 3 percent responded "not sure." We commend the agencies for their thorough training and encourage them to continue their efforts in this area.

Competent CPR skills are crucial when considering that 12 percent of the surveyed guards attempted to resuscitate a nonbreathing drowning victim in the two-year period. This 12 percent represents approximately 250 victims in this sample alone who required resuscitation; we can only imagine how many individuals actually received resuscitation from guards around the world.

The resuscitation methods used by these guards vary. Of particular interest is the use of the Heimlich maneuver, especially in light of Ellis & Associates — the only guard-training agency to advocate use of the Heimlich maneuver — reversing its protocol in March and no longer advocating abdominal thrusts.

Interestingly, responses from guards regarding their use of the Heimlich maneuver contrast the success rates they report. While 49 percent of guards using the maneuver responded that they applied it as their initial resuscitation effort, only 22 percent replied that they would use it as their initial effort in a future rescue. This response could lead us to assume that the guards were unsatisfied with their procedures, or that the procedures were unsuccessful.

When asked about resuscitation results, however, guards responded that 95 percent of the nonbreathing victims who received only the Heimlich maneuver recovered and resumed normal breathing, compared to 60 percent of victims who received standard resus-



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Figure 9

Comparison of Backboarding Confidence Across Certification Agencies

Agency	Very Confident	Somewhat Confident	Not Sure	Not Very Confident	Very Unconfident
American Red Cross	63%	34%	2%	1%	<1%
Ellis and Associates	55%	40%	4%	1%	<1%
Other	63%	26%	6%	3%	2%

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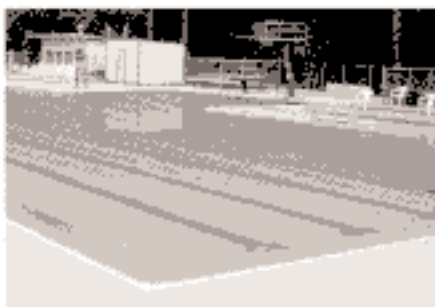
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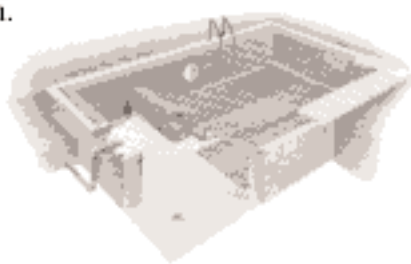


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citation methods (Figure 7).

The maneuver itself, however, may not be the only reason guards who used it were successful. Ellis guards work predominately at waterparks, where the response time in an emergency is extremely fast: A waterpark guard can reach a drowning victim much faster than an ocean guard can.

The slower response time of ocean guards may also factor in the high fatality rate in our sample (Figure 8). It's startling that more than 26 percent, approximately 114 people, died following rescue attempts. The high number of ocean guards involved in the study probably affected these results. Another factor is that the resuscitation attempts were also surely made on nondrowning victims such as those suffering heart attacks, strokes and other traumatic events.

Spinal injuries represent another concern for guards. A surprisingly high 27 percent of our respondents reported that they treated a victim with a suspected spinal injury in the two-year period. Again, this high number could be due to the large percentage of ocean lifeguards in our survey and the fact that Australia experienced extraordinarily heavy surf in summer 1998. The heavy surf resulted in nearly twice the number of serious accidents at Australian beaches during that year.

Despite the high number of suspected spinal injuries reported, only 4 percent of victims suffered permanent disabilities (quadriplegia or paraplegia) from their suspected injuries. This means that guards are cautious when treating victims, and they implement proper spinal cord rescue procedures for many victims who have not seriously injured themselves. This is supported by the fact that 74 percent of the guards placed suspected spinal injury victims on a backboard. The tendency to err on the side of caution is the proper protocol.

Despite 92 percent of the guards reporting that their backboarding training was adequate, only 62 percent indicated that they were "very confident" in their abilities to properly, safely and effectively backboard a victim. Perhaps this indicates that trainers should provide more or better practice sessions on backboarding. Furthermore, backboarding confidence varied among guards certified by different agencies (Figure 9).

The possibility exists, however, that some guards may prioritize spinal management over resuscitation for an

unconscious, nonbreathing victim in the water. This could be a result of the extensive backboarding training received both in lifeguard courses and during in-service training. Guards may misinterpret the amount of time spent on backboard training to mean that such training is the most important accident-management procedure.

Additionally, many lifeguard experts speculate that guards are increasingly using spinal injury management as a defense mechanism against the need to apply rescue breathing, which young guards find distasteful. Resuscitation must always take precedence over spinal injury management for non-breathing, unconscious victims. ●

Tom Griffiths, Ed.D., is director of aquatics and safety officer for intercollegiate athletics at Penn State University in University Park, Pa. Hans Vogel song, Ph.D., is an assistant professor in the Recreation and Leisure Studies Department at East Carolina University in Greenville, N.C. Donald Steel, Ph.D., is a sports psychologist at the University of Maryland in College Park.

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