NATIONAL AQUATIC SAFETY COMPANY

Our Mission:

To Reduce the Loss of Life Due to Drowning

Lifeguard Textbook

Written By the Staff Of
The National Aquatics Safety Company, LLC

Introduction:

The National Aquatic Safety Company was founded in 1974 by Dr. John Hunsucker with the mission:

To Reduce The Loss Of Life Due To Drowning.

During its history, NASCO has taught tens of thousands of students in their effort to fulfill this mission. The programs of the company were developed over many years of research and contributions from individuals too numerous to name. It goes without saying that their contributions have made NASCO what it is today, a leader and innovator in safety for the aquatics and amusement park industry. As a leader and innovator in safety for the aquatics and amusement park industry, NASCO will continue introducing innovative courses, safety techniques, procedures, and training into the new millennium.

NASCO Lifeguard Manual

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CHAPTER 1: DROWNING AND AQUATIC EMERGENCIES

Drowning Statistics

In general, about 3-4 thousand Americans die in fatal unintentional drowning every year. This doesn't seem like a very large number until you realize that about one seventh as many people drown as die in automobile accidents. According to one study, people drowning in vehicles constitute approximately 5% of those people who drown annually. According to the National Safety Council drowning is the second leading cause of accidental death in young Americans and the third leading cause for older Americans. Perhaps more important, drowning is the leading cause of accidental death in children four years of age and younger. As the reader is probably aware, automobile accidents are the leading cause of death and slips and falls are either number 2 or 3 depending on age. So drowning is a serious problem

In a 1984 survey of Texas public pools, NASCO found that approximately 1 person drowns for every 142,000 guests statewide. The CDC drowning data shows approximately 0.62 fatalities per 100K in pools (1 in approximately 162,000 swimmers). Since most public pools average about 20,000 guests per season, this equates to an average of 1 drowning every 7 years. Therefore, the probability of a lifeguard being involved in a rescue sometime in their career is relatively high. According to a Michigan State Police study, about 350 people drown per year in vehicles. This constitutes approximately 5% of those people who drown annually. The magnitude of this number is such that, again, a professional responder has a high probability of being involved with a vehicle immersion drowning.

It should be noted that these statistics are probably conservative. Many times the cause of death will be listed as heart failure or some other cause and the mechanism of death, for example drowning, may not be mentioned. While the data reporting system is improving, there is still a long way to go before the numbers become reliable.

The Definition of Drowning

Webster defines the word drown as follows: "suffocate in water". For many authorities, unless the victim dies, it is not considered a drowning. Much in agreement with Webster's definition, NASCO defines drowning as the loss of spontaneous respiration due to the presence of fluid. Note that this definition is similar to the definition of clinical death, which is defined as the loss of respiration and circulation. The reason for this definition is to encourage people to separate the mechanism of injury, in this case drowning, from the result, which in many cases is death. If a victim is pulled from the water and is not breathing, then under the NASCO definition, they have drowned, regardless if respiration is restored.

The reader should be cautioned again that many authorities still do not use this definition. Therefore, all drowning victims who were resuscitated may not make it into the database. For medical authorities, drowning is often thought of as a condition or physical state of the victim. For lifeguards, drowning is a process which starts with the condition of the victim being unable to maintain themselves comfortably in the water, while the medical community is concerned with the different stages of physical impairment in the victim. This difference in approach may account for

some of the confusion in the data.

Another related definition is that of a drowning event. If a rescuer revives the victim, many authorities define this as a drowning event. NASCO, on the other hand, defines a drowning event as a life-threatening emergency that has a high potential for becoming a drowning, particularly unless some intervention occurs. This intervention could involve the actions of another party, such as a trained rescuer, other swimmers in the vicinity or even perhaps the victim being able to help himself.

While the definition of a drowning event is relative to interpretation that of drowning is very clearly defined under the NASCO guidelines. We at NASCO feel the primary focus of the lifeguard is the prevention of the loss of spontaneous respiration, in other words the prevention of drowning.

Location

While location is discussed in further detail elsewhere in this text, it should be noted that many if not most drowning occur very close to safety. Someone stepping into a hole or falling into deep water is quite common. The victim's survival depends on the rescuer or even the victim himself understanding how and being capable of performing the rescue.

Many drownings occur in shallow water. Here shallow water is defined as water less than 5 feet deep. It is not uncommon to hear of infants drowning in dog dishes or mop buckets. People fall while in the water and panic or are just unable to recover their balance and standing. They can be entrapped in an automobile or sewer. As you can see, there are numerous ways people can and do drown in shallow water and it happens far too often.

As we all know, one of the most dangerous places around the home is the back yard pool. Almost everyone knows of at least one family who has lost a child in their home pool. Fences, protective barriers, alarms are good as a secondary guardian; however, none of these can replace the watchful eye of a parent/guardian.

The Epiglottis in Drowning

The epiglottis is a valve in the airway that closes when it comes into contact with anything that has a greater consistency than air. When water or any other foreign matter goes into the airway, the epiglottis seals the airway to prevent its entrance into the lungs. During a drowning there may or may not be water in the lungs depending on which quits first, the desire to breathe or the ability of the epiglottis to effectively seal off the lungs. Water can also enter the lungs during the victims struggle to survive. Drowning where water enters the lungs is unfortunately more severe. Water in the lungs often means that the victim has been under water so long that the epiglottis has opened and the victim has breathed in water. It will be harder to bring back spontaneous respiration. Remember, even if normal breathing is restored, delayed death from pneumonia or other complications can occur due to the victim having breathed fluid. Any drowning victim who may have aspirated water, or inhaled water needs to be seen by a doctor as soon as possible.

The Loss of Spontaneous Respiration

A comment on the term "Loss of Spontaneous Respiration (LSR)" may be appropriate here. Medical terminology has a number of phrases concerning respiratory issues in the water, respiratory failure, laryngospasm, drowning without aspiration, etc. A lifeguard isn't trained to

make those distinctions. All he knows is that the victim is in trouble, that they have lost consciousness and/or they aren't breathing.

However, for lifeguards, drowning is a process that may or may not result in an LSR fatality. Many of the best rescues occur before the victim's airway goes below the level of the water- when they are starting to lose their ability to swim effectively. A description of effective scanning patterns and the factors used for identification of a swimmer that needs rescue can be found in Chapters 4 and 5 of this textbook. This, as much as anything, may help to distinguish the lifeguard approach to drowning as opposed to the medical approach. For lifeguards, drowning is a process which starts with the condition of the victim being unable to maintain themselves comfortably in the water, while the medical community is concerned with the different stages of physical impairment in the victim.

Who Are the Drowning Victims and Where Are They Found?

The guarded aquatic facilities where the NASCO rescue protocol is used have a fatality rate of 0.0063 per 100,000 guests or 1 fatality in about 15.9 million guests. These results can be compared to the 1983 drowning rate of guarded public pools in Texas of 0.7 fatalities per 100,000 (1 in approximately 142,000 guests)and the CDC drowning data that shows approximately 0.62 fatalities per 100K in pools (1 in approximately 162,000 swimmers). Using the more conservative CDC rate, that means that the drowning rate for guarded aquatic facilities where NASCO's rescue protocol is in use is only 1.02% of the drowning rate for all US pools in 2000 or about 1/100 of the CDC drowning rate.

In a waterpark during a typical season 62.6% of the rescues will be children under the age of 12 as well as 53.2% of LSR rescues. In a waterpark during a typical season 42% of the rescues will occur in 1.52m (5 ft.) of water or less as well as 65.6% of the LSR rescues.

This means that more than half of the rescues occur to children 12 years of age or less and more than half of the rescues occur in 5 feet of water or less. Lifeguards need to understand how vulnerable children are in the water and to act accordingly. This also emphasizes the need for strict parental supervision for children 12 and under in an aquatic environment. Also shallow water is not "safe" water. Shallow water has to be watched just as carefully as deep water.

An analysis of historical data shows that for guards in a complex facility, that each guard can expect to make between one and two rescues each season. In addition, a complex facility can expect to make one rescue a day.

Several Victims

Quite often more than one victim is involved in a single drowning incident. This multiple victim scenario may have resulted from the failed attempts of would be rescuers. This is one of the reasons crowd control is so important at a rescue scene. The typical scenario is someone gets into trouble, quite often a child, then one or more "would be rescuers" enters the water in an attempt to help. Because of their inability to swim, lack of formal training or no knowledge of the environment, such as currents, waves, etc., these well-intentioned "rescuers" become victims.

Other Aquatic Emergencies

People can become injured in countless ways while in or around the water. Cuts, bruises,

fractures, electrocution, exposure to natural and man-made poisons just to mention a few, can occur in the aquatic environment. As the lifeguard, you must first try to identify any situation that might cause injury, prevent it if possible and secondly, you should be prepared to handle the emergencies that are presented to you.

The Next Victim

Remember, without training, practice and conditioning the rescuer has a very good chance of becoming the next victim. Water rescues, particularly the bad ones, are among the most physically and sometimes emotionally demanding rescues

Any water rescue is done at risk to the lifeguard's life. How much the lifeguard is at risk is determined by the ability of the lifeguard and the environment in which the rescue is performed. To this end, the professional lifeguard is encouraged to get as much training from as many different agencies and people as possible. As an additional comment, there is not just one right way to rescue a victim. Different agencies and different programs will teach different techniques and methods. The more of these you know the safer you; the lifeguard will become, and the chances of the victim's survival will increase.

CHAPTER 2: GENERAL PRINCIPLES

The intention of this chapter is to discuss some general principles, which, for the most part will be discussed in greater detail throughout the rest of the text. However, they are set aside here for emphasis and to remind the guard of some of the more important concepts in water rescue. The rest of the material should be read to provide greater comprehension and definition to the concepts.

Responsibilities of a Lifeguard – Ethical, Professional, and Legal

Once a person becomes a lifeguard there are several responsibilities imposed on them by both being a guard and by working at a job for pay. The first, and perhaps the most important of these, is that a guard has a moral responsibility to act in a manner that protects the people under their care and supervision. This imposes a higher code of conduct on lifeguards, particularly around the water. One of the definitions of moral is to be operant on one's conscience. Another way to think of moral responsibility is to do what is basically right or appropriate. If people get hurt while under a guard's care or supervision due to inappropriate action on the guard's part, the conscience of the guard may be severely affected.

Lifeguards also have a professional responsibility. This responsibility is imposed on them both by the profession of guarding and by the fact that a lifeguard is working for wages. This responsibility includes concepts that are related to having a good work ethic such as being on time and being in the right uniform. However, it includes much more. When you work for wages, you have a responsibility to follow the procedures, policies, and protocols established by your employer. To do otherwise is, in some sense, cheating your employer out of what they paid you for. Perhaps deeper than this is the concept of being true to the profession of lifeguarding. As one lifeguard instructor once said, "Lifeguarding is not just our job, it is what we are".

Lifeguards also have a legal responsibility to act in the proper and prescribed manner. If a lifeguard chooses not to act or acts in a way that could be harmful to another person then there is the possibility of legal action being taken against the guard. While everyone is responsible for their actions in both a moral and legal sense, guards have a higher responsibility imposed on them by both their profession and by their status as being paid to be a lifeguard. Different states, provinces, and countries have different legal codes and laws. All of these laws impose on the guard the burden to follow the established procedures.

Perhaps the responsibilities of a guard might be summed up as saying; we all have the responsibility to do our best at the job of lifeguarding. If a lifeguard does their best, then most of the ethical, professional, and legal issues will take care of themselves.

Adapt the Course to Your Facility

All a lifeguard course can teach are the skills and theory of lifeguarding and perhaps a bit of what we will call the right attitude or mind set. Once you learn the skills, they may have to be adapted to your local and state regulatory agencies, to the facility and its procedures, to the type of people who attend your facility, to your equipment and to the abilities of the rest of the staff. A lifeguard course is the beginning of the learning cycle, not the end. Expect to see some major changes in what you learned in the course when you get to the actual application of the skills.

In-Service Requirements

The purpose of in-service training is to reinforce the skills learned in an initial lifeguard course so that the lifeguard will be confident in their abilities. Another advantage of participating in regularly scheduled in-service trainings is that the lifeguards are able to learn about what types of incidents are occurring at their facility and how to effectively prevent them from occurring in the future.

Because of the advantages realized by having lifeguards participate in regularly scheduled in-service trainings, most states have developed health and safety standards that require in-service training as part of the state's minimum safety standards for aquatic facility operations. Additionally, local ordinances may also require lifeguards to participate in at least four (4) hours of in-service training a month. This by the way is the Industry Standard and it is as important to the over-all safety of the facility and to the safety and well-being of the lifeguard, as any other piece of rescue equipment. The lifeguards and aquatic facility should both be aware of the local and state requirements for in service trainings and be sure that these requirements are being met.

For these and other reasons, the NASCO standard is that a facility will conduct no less than 4 hours of in-service training per month. Realize that this is the minimum requirement and most facilities will conduct one hour per week. This training should be documented as to topic and attendance.

Water Kills

This is a rather elementary concept but one that is often forgotten. Man is not by nature able to survive without breathing at regular intervals. Unfortunately, the rescuer most likely to forget this is the rescuer that is the most comfortable in the water. Every water rescue involves some risk to the rescuer whether it is hypothermia, minor abrasions or drowning. The health of the rescuer is also often in danger from infectious diseases carried by the water or the victim. To forget that water can kill is a certain recipe for disaster. The rescuer who is not apprehensive about the water, the rescuer who is so comfortable in their ability to rescue that they lose sight of the risk involved is the rescuer most likely to encounter problems during a rescue. They put themselves, their partner and their victims at risk. It is the smart rescuer that has the utmost respect for the water and recognizes the threat posed by any victim. Remember that everyone involved in a water rescue is a potential victim.

Learn To Swim

There are many excellent reasons to be a good swimmer, including quality of life from being in good physical shape and a greater sense of comfort while swimming. However, the major swimming requirement for a lifeguard in an aquatic facility is that they be able to follow the rescue protocol and get to every part of their area of responsibility, including taking a victim off the bottom in the deepest water for which they are responsible, retrieve a victim using the provided equipment, and working as part of a team. If you are asked how far you can swim and you don't answer in days, then you can't really swim. A good water person can continue to swim until they die of dehydration. A good water person can swim to the bottom of the deepest water in their facility and, once there, still be able to do a rescue. You will never work harder in your life than you will just trying to take a victim a short distance in the water. Being able to swim and being in good condition increases your value to the rescue effort and increases the chances of a successful rescue. Several national

organizations such as the American Red Cross teach swimming. This is not something that should be put off. Learning to swim and swim well also has value in your personal life. It not only opens up numerous recreational activities, it also increases your ability to take care of your family and friends while in an aquatic environment.

Preventive Lifeguarding

This refers to the ability to think ahead of what might or could cause an incident and the ability to prevent it from occurring. In the medical profession, they teach new physicians a simple concept: "If you don't consider the diagnosis, then you won't make the diagnosis." If you don't consider how people can get hurt at your facility, the only thing you will be capable of is reacting once they are hurt. It is far better to stop the incident before it occurs. Consider every guest a potential victim.

Never Rescue Alone

If you are taking care of a victim, who is going to take care of you? It is the rare circumstance where a trained guard should undertake a difficult water rescue without some sort of backup. Even if you get the victim and don't get yourself in trouble, you may be so tired from the rescue that you will be unable to care for the victim. So if one guard is good, more is better.

Plan the Whole Rescue

What is going to happen when you get to the victim? When you get the victim to the side, what then? What are the alternatives? Think the whole rescue through to the end. This is done very quickly, but it must be done. In-service training drills are invaluable in preparing, not only the lifeguard but also all staff members for assigned duties during an emergency. During these training drills develop alternatives and figure out how to best use bystanders for assistance should the need arise.

Plan "A" Never Works

Something almost always goes wrong or doesn't work the way the rescuer thought or practiced. Even if what you are doing seems to be working, let part of your mind be developing alternatives. Here, again, training and experience are the keys the guard who has only one plan may possibly be the next victim.

Know the Emergency Action Plan (EAP) For Your Facility

The emergency action plan is a plan that tells what to do, when to do it and who should do it in an emergency. It is a detailed plan that specifies roles and procedures. Each guard and employee should know the EAP for their facility.

Activate the System

If possible, activate the emergency system as soon as possible with a critical incident. CPR experience points this out. Even with CPR, if you do not have high tech life support available, the victim is in trouble. During any crisis, it can get very lonely in the water or on the deck. Activate the system and at least you know help is coming.

In order to activate the system, you have to know how. Where is the phone? What number do you call for your area? Has the emergency medical response team ever been to your facility? A real emergency should not be the first time they make a run. A practice run should be performed early in the season, each season, not only to acquaint the team with staff members and the facility, but also to determine the length of time required for the team to travel to the facility. You also need

to know what supervisor or manager to notify in case of an incident.

Use Bystanders If You Need To

Sometimes you may have to use bystanders to help with a rescue. Therefore, you need to plan ahead on how to best utilize bystanders and what to expect from them during a rescue. Sometimes they can get out of control. This leads to the next point.

Take Control of Your Rescue

Be positive in your approach. Remember that you have the training and ability to deal with a water emergency. When working with bystanders, identify yourself as a lifeguard. A statement such as "I am a lifeguard and I can take care of them" helps. Not only does this calm family members and bystanders, it also helps in enlisting their cooperation if need be. Wearing the proper uniform also helps identify you as a guard.

Time Is Your Enemy

While there is some confusion about the definition of drowning, there is one thing that all the authorities agree on. The most important variable when respiration has been lost is the time to intervention. The quicker you can begin your intervention to restore respiration, then the better chance that the victim has. To this end, once the victim is on the deck, the intervention should be virtually continuous with no gaps in the patient care.

In addition, it isn't all that rare for a swimmer to start drowning as soon as they get into the water. See cases 11 and 12 for examples.

RETROG

This acronym stands for ***reach, throw, row and go***. It is from the early Red Cross programs but the principle is still valid. The intent here is to do the rescue with the least chance for loss of life, particularly to the rescuer and for the most chance of success, particularly for the victim. Your first attempt should be to reach with your voice. Many victims are capable of self-help when given direction. Failing this, reaching without entering the water with an extension is your next best choice. Remember many victims drown within 15 feet of safety. If you have nothing to extend, then throwing something to the victim is you next best choice. Learn how to throw a line safely and accurately. A victim on the end of a line is coming to safety with little risk to the rescuer. This is probably not going to be your choice of rescue, but frequent users of your facility could be taught to use the ring buoy with a line attached.

Devices such as reach poles and ring buoys are required to be present in aquatic facilities. You can also throw a rescue tube and hold on to the strap if the victim is close. If you have nothing to throw, then going by boat is your next best choice. While this is normally not going to apply to lifeguards, some pools or waterfronts are so large that they have a boat available. Be careful with boats, only a guard trained in their use can effectively use one to perform a rescue.

Trained professional lifeguards would not dream of entering the water to perform a rescue without equipment. A bad victim can make for a bad day; a rescue tube can turn that bad day into a better one.

Maybe RETROG is out of date, but the sense or intent is still valid. The rescue must always be done with as little risk as possible and with the greatest chance of success as possible.

First Take Care of You, Then Your Buddy and Then and Only Then the Victim

These are the priorities in a rescue: you, your partner and then the victim. The reason for this prioritization is perhaps obvious. If you are not in good shape then not only will you be of little or no use to the victim, but you in turn may become a victim.

For a moment, think about the person with whom you work and their function during a rescue. If you are comfortable with the fact that your partner will do everything possible to take care of you, then you are much more likely to be an effective and aggressive rescuer. If, on the other hand, you are not comfortable with your buddy and he has reservations about your abilities, then the rescue procedure and certainly the safety of you and the victim will be adversely affected.

Would Be Rescuers Often Become Victims

Many drownings occur because a well-intentioned bystander or rescuer undertook a rescue for which they were neither trained nor conditioned. Many multiple drownings involve a family member attempting to help a victim. To undertake a water rescue without training, conditioning and the right equipment makes as much sense as a fireman running into a burning building without training and the right equipment. Learn your equipment and your capabilities. Improve your conditioning. Learn how to activate your Emergency Action Plan to get back-up and assistance.

The Objective in Water Rescue Is To Get the Victim Nose Up, Stable and Breathing

The objective is not to get the victim out of the water unless being in the water poses a life-threatening emergency. Many victims are injured because the rescuer loses sight of this objective and drags the victim out of the water. This can cause injuries from minor abrasions to paralysis if the spinal column was involved. If you get the victim to a nose up, stable and breathing position, then you has time to prepare and think through the best way to complete the rescue and extrication.

Stable

For NASCO lifeguards, stable is defined as having the victim in a place of no further harm. In a catch pool, for example, dispatch has to be stopped if there is a danger of collision. With neck and back injuries, stable may well mean the victim is in a position where the spine can no longer move such as being in a strong stabilization or on a board. In shallow water, it can mean that the rescuer stands up while supporting the victim's head out of the water.

If They Are Not Breathing, Get Them Out As Quickly and Safely As You Can

If you can get them nose up, stable and breathing in the water then pause and consider your options. If on the other hand you cannot get them breathing or are unsure of their respiratory status, then get them out as quickly as you safely can. There is a school of thought that says resuscitation is more effective on the deck. Whether this is true is a moot point. What is undeniable is that resuscitation is easier to do on the deck simply because the guard or guards can get to the victim easier. Also, on the deck is where a better assessment can occur.

Shorten the Time to Intervention

One of the few things that authorities agree on is that shortening the time to intervention increases the chance of survival. Finding ways to shorten the time to intervention is very important. The location of equipment, the method of extrication, the location and placement of lifeguards are all factors to consider. Consider how time can work against the rescue. If it takes 15 seconds to see the victim, 20 seconds to get to the victim, 20 seconds to get back with the victim, 30 seconds to extricate the victim, and 5 seconds to get gloves on, then the time already exceeds a minute and a half without anything being done to restore respiration. Practicing ways to shorten time to intervention is a valuable use of training time.

The Worst Thing That You Can Do If A Victim Needs CPR Is To Do Nothing.

Many authorities define biological death as the absence of breathing and circulation. Without intervention, the victim in most cases will not recover. There is no injury that you can do to the victim by doing CPR that can produce a more serious condition than death. In addition, doing nothing will harm you by making you feel bad about your absence of action.

Check, Yell, Airway, Breath and Press.

While the rates and sequence of CPR are important, the most important things are to check to see if the victim needs CPR, to activate the system to get help on the way, to get air into the victim, and to start getting some circulation by doing chest compressions. Do not let the sequence intimidate you to the point where you do nothing.

Slips, Falls and Hypothermia

In general, slips, falls and hypothermia are bigger problems at aquatic facilities than drowning. More people are injured, even lifeguards, by slips and falls than drown. More people die from hypothermia in the water, particularly rescuers, than drown. Slips and falls are the most common accident around pools and are the second or third leading cause of accidental death depending on the age of the victim.

Victims Don't Go To Victim School

Anytime anyone says that victims always do something in particular, they are wrong. Victims and their behavior are as individual as snowflakes. They are unpredictable in action and in symptoms. Be careful, and expect the unexpected.

Know the Pool

Look at the area where you are likely to be doing a rescue and learn its hazards. Find out where it breaks from shallow to deep and the angle of incline of the break. Find the drains and know where the emergency cut-off switch to the pumps is located. Know the hazards and plan what you might do in a particular situation prior to it happening. Go find and think about every place that you may have to do a rescue or an assist. This does not just pertain to the water. The whole facility should be considered. Take particular note of potential hazards. To be forewarned is to be forearmed.

Drain Entrapment and Inflow Problems

A major problem with many pools, particularly older pools occurs with drains. Some drains have enough suction to hold a victim to the drain. Long hair is especially dangerous around drains. In some extreme cases, children have been disemboweled by sitting on a drain. These drownings occur much too frequently. These can occur even if the cover is securely attached. Never let guests near the drains, especially if the drain's surface area is quite small. If you must get close to a drain, to retrieve an object for example, be very careful not to get too close. There has been legislation passed that is meant to reduce the likelihood of these types of incidents. An example of this type of legislation is the Virginia Graeme Baker Pool and Spa Safety Act that requires that all pool drain covers meet specific standards for size and durability (ASME/ANSI A 112.19.8).

Inflows in the pool can also cause a problem if a great deal of water is jetting into the pool in a small concentrated stream. Children love to sit on pool returns. Allowing them to do so can cause the child to suffer anal or vaginal tears. So keep them away from these, especially the ones on the bottom of the pool.

Only Fools Rush In Where Angels Fear To Tread

As with any other rescue, a water rescue requires that you must be both trained and conditioned. What is required is training with on-going practice, physical conditioning and a bit of forethought. While practice may not make perfect, it sure beats total ignorance.

If you prevent the accident then you don't have to make a rescue. This is rather obvious. If you can stop risky behavior by consistent, uniform and fair enforcement of the rules, then you are helping to prevent accidents. Think ahead. For example, that extra bounce on the diving board may be okay 99 out of 100 times. But 1 out of 100 could lead to a concussion.

If You Don't See It, Then Nothing Else Matters

Even more important than prevention is the ability to see and recognize an event. Without the ability to see, you cannot possibly prevent.

If The Head Is Not Turning Then You Are Not Scanning

This will be discussed in detail later. However, the important concept is that the head must keep moving if you are going to see and recognize everything that happens in your pool.

Drowning Can Be Quick

As mentioned elsewhere in this text, a drowning can occur in as little as 38 seconds. A 38- second holiday on a guard's part can lead to someone's child not growing up.

Sinking Time

Another thing to think about is that a drowning swimmer usually doesn't stay on the surface for very long. Transition time from the surface of eight feet of water to the bottom is very fast: 4 to 8 seconds. This means that you have to vigilant and ready to react at all times you are on duty.

Not All of the Symptoms Need To Be There

Sometimes none of the traditional symptoms are present, sometimes a few are and sometimes all are. This leads to the next consideration.

If You Don't Know, Go!

It is far better to go into the water when you don't have to than to not go when you should have gone. If you see anything that you don't understand, sort it out in the water. Don't sit in the guard chair and wonder.

The Five Functions of a Lifeguard

There are basically five functions that a guard has to perform in their lifesaving role. These are listed both in the order in which they will occur and in the order in which effort should be concentrated.

RECOGNITION

The things which a lifeguard must be able to recognize include victims, as well as high-risk areas, high-risk guests, high-risk times, and high risk behavior. Remember that if the guard doesn't see it, nothing else matters. The task begins and ends with this recognition. This concept is covered more thoroughly later in the text.

PREVENTION

Once a high risk issue has been identified, the next step is to prevent a victim or incident from occurring.

RESCUE

This is only the third most important thing that a guard does. The two most important are to recognize and prevent. This is also the one function that is the easiest to learn and to perform. Do not concentrate or overemphasize this function at the expense of the other guarding responsibilities.

INITIATION

This means to activate the support system that exists at your facility. As a reminder, CPR is a temporary means of circulating blood rich with oxygen throughout the body in an effort to prolong the time between clinical death and irreversible biological death. Said another way, CPR does not save lives; it only delays death. Therefore, it is most important that help be on the way to provide the advanced life support care that a victim might need. So, if you have a victim, get the system in action. This can involve blowing a whistle, making a phone call, using a radio or some other means of communication. Support can come from the management structure or from EMT's but the system must be activated.

SUPPORT

What do you do when either the EMT or management gets there? The answer is? ***Do what you are told to do***. Do not substitute your judgment for theirs. You are in control of the rescue until they arrive, but when they do arrive, the rescue is carried forth under their protocol, not under yours. Rely on their maturity and experience to keep the rescue moving in the right direction. You may be involved in other support functions like crowd control or directing an ambulance to the site. Your support role should be identified in the emergency action plan of your facility.

The drowning sequence, time, CPR, and AED'S

The drowning sequence can be described in a simplified fashion as:

1st – Something prevents the victim from taking a breath. This is usually mechanical, such as the presence of water preventing the victim from breathing as when the victim's head is underwater, but it can be physiological such as an illness like a heart attack.

2nd – The victim loses the ability to breath and spontaneous respiration ceases.

3rd – The heart stops.

4th - Death

While no one knows the time it takes for a victim to progress through these stages and surely they vary due to many factors such as the condition of the victim or of the environment, a rough time line whose only use may be in training is

Two minutes without respiration, the victim is in serious trouble and spontaneous respiration either has ceased or is about to cease.

After four minutes; it is more than likely that spontaneous respiration has stopped and quite likely the heart is not functioning in a normal rhythm.

Six minutes and more, the heart has likely stopped and death is imminent.

These progression times can be much, much shorter so their only value is to provide time goals in training.

Here are some important points to consider.

- If the victim's heart stops, there is only a very small chance that they will survive even with effective CPR. Most of the research done on CPR shows less than a 10% survival rate for victims whose heart has stopped.
- An AED probably will not be useful in a drowning victim. An AED is used to convert an irregular heartbeat to an effective heartbeat. Fibrillation is defined as rapid irregular contractions of the heart muscle. While fibrillation does not seem to be a common symptom of drowning there may be a small chance that some other factor will make an AED useful.

- For these and other reasons, it is imperative that attempts to restore respiration be started as soon as possible. If restoration attempts are begun before the heart stops, the victim has a much better chance of survival.
- **Even if the chances of survival are poor because of elapsed time, start CPR as soon as possible. Utilize an AED if one is available.**
- Shortening the time to intervention is critical.
- Recent research seems to indicate that the victim has a much better chance to survive, even with advanced life support on the scene, if the victim reaches hospital care as soon as possible.
- **Make sure your training on the EAP minimizes the time required for the EMS to transport the victim to the hospital.**

CHAPTER 3: HEALTH, WELLNESS, & PERSONAL HYGIENE FOR LIFEGUARD

History

Prior to the 1800's, if you weren't sick you were considered not only lucky, but also "Healthy." Poor health was associated with poor hygiene, so certain stigmas were attached with illness and disease. So by the early 1900's, health became synonymous with "good hygiene." Over time, the word "health" has come to mean much more than good hygiene. In 1942, the World Health Organization (WHO) defined health as the "state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity." Although the WHO's definition took health to a level far beyond good hygiene, in the 1960's critics argued that this definition was still inadequate. Critics said health was much more than a measure of the physical, mental, and social aspects of life and that there are contributions of environmental, emotional, and occupational factors that contribute to not only the number of years a person lives, but also to their quality of life. Today, the most widely accepted definition of health is that "health is a dynamic, ever-changing process of trying to achieve your individual potential in the physical, social, emotional, mental, occupational, and environmental dimensions."

What Is Health?

Health is a process of trying to achieve your individual potential in the physical, social, emotional, mental, occupational, and environmental dimensions

What Is Wellness?

Wellness is the achievement of the highest level of health possible in each of the six components of health.

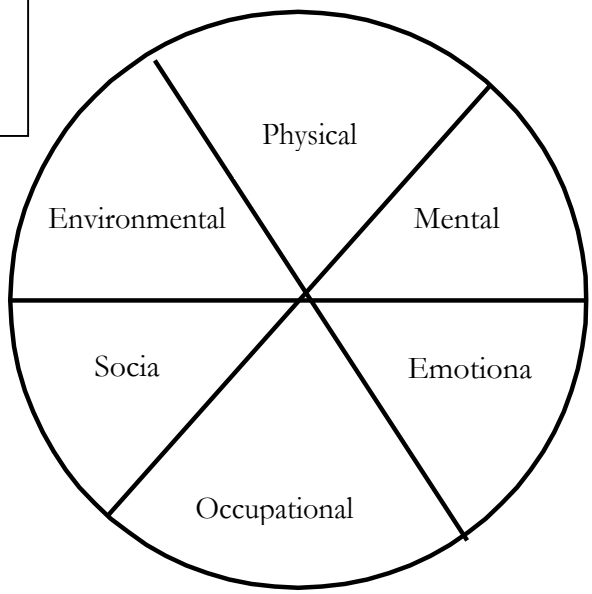
How Is This Relevant To Lifeguards?

Health and wellness is extremely important. Take a few moments and try to come up with something more important than your health. Think about it. The fact is there is nothing more important than your health. Not just in lifeguarding, but in life.

The purpose of teaching health, wellness and personal hygiene to lifeguards is to get you, as a guard, to think about how focusing on each of these six elements could enhance your performance as a lifeguard. Breaking it down will allow you to become more aware of what you're doing and how to improve it, and become a more effective lifeguard.

The Six Components of Wellness

EACH COMPONENT IS EQUALLY IMPORTANT.



EACH COMPONENT CAN AFFECT ALL THE OTHERS

What Is Physical Health?

Physical health has many aspects to be considered including body composition, strength, endurance, and cardio-vascular conditioning. It also includes an individual's susceptibility to injury, illness, and disease.

Why Is Physical Health Important For Lifeguards? And What Can Lifeguards Do To Enhance Their Physical Well-Being?

Since lifeguards are battling the elements of the external environment day in and day out, special attention should be given to the following factors that can affect one's physical well-being. In addition to battling the elements, lifeguarding is an extremely physical job. It is physical in the sense that you come in close contact with many different people. These simple facts make lifeguards more susceptible to illness than the average person. Knowledge of these risks and proper maintenance and prevention can make all the difference in a healthy summer, or possibly becoming ill and having it affect you for the rest of your life.

The following is a list of hazards that may inhibit a lifeguards ability to stay healthy, and effective while on duty:

Hazards:

Dehydration
Hazards that effect the skin
Not maintaining proper nail care in the aquatic environment
Heat related illnesses
Hazards associated with hypothermia and being cold
Failing to properly care for one's ears
Not preventing back strains during lifting
Failure to properly handle and store chemicals commonly found around aquatic facilities
Exposure to excrement in the water
Exposure to Blood Borne Pathogens
Exposures to communicable disease and failure to use basic common sense with regards to personnel hygiene
Exposures to infections
Not being careful when using commercial products and prescriptions while working in the heat and sun
Poor cardio-vascular conditioning
Lack of strength and conditioning can adversely affect rescue efforts

DEHYDRATION

If you are working hard, you will sweat even if you are in the water. Common symptoms of dehydration include headaches, dry mucous membranes and difficulty going to the bathroom. A simple self-test is to pinch a fold of skin on your forearm and see if it stands up after pinching. If so, your fluid level is too low. If you are not urinating when going to the bathroom every couple of hours, you may be dehydrated. More fluids are better than less. Some of the commercial sports drinks seem to work well with dehydration. Another sign is if you have a headache every day when you leave work; it may possibly be the result of dehydration. Try increasing your fluid intake, it may eliminate this problem. Proper nutrition and rest are also helpful in the prevention of dehydration.

HAZARDS that EFFECT the SKIN

Prolonged exposure to moisture creates several problems. One is that the skin becomes soft and more susceptible to laceration. Skin that has been wet for a considerable period of time cuts easier than dry skin and the wound is larger. This is one reason that lacerations are very common around aquatic facilities.

Another problem that skin has with moisture is fungus. Wet, moist skin makes an excellent medium for fungal growth. This problem sometimes known as jock strap itch or athletes foot can occur in the groin, buttocks, feet, and armpits. It is caused by moisture and not necessarily by water borne agents. Drying the body after exposure to sustained moisture is essential to prevent this. Just drying off with a towel may not be enough. Baby powder or cornstarch does a good job by helping to absorb moisture. There are other commercial preparations that can help with this problem. This is one time when it is definitely true that an ounce of prevention is worth a pound of cure. Just changing suits after an in-service training or periodically during your shift

may also help. One thing that may lead to a problem is to put socks and shoes on a foot that has been wet all day. This provides an excellent moist medium for fungal growth. Leaving off the socks or wearing an open shoe or sandal can reduce the problem.

Repeated exposure to water can cause the skin to dry out and itch. As a simple test, if scratching the forearm leaves a track the skin is dry. A tub bath with a cap full of baby oil or some other skin moisturizing product will help with this problem. Don't forget to clean the oil from the tub afterwards. Moisturizers should be used on a daily basis. Keeping your body well hydrated is also essential.

EXPOSURE to the SUN/WIND

As the reader is aware, exposure to the sun can cause skin cancer. Repeated exposure of course increases the risk. For this reason, using a good sunscreen is essential. Hats, visors and other protection should be utilized whenever possible to minimize exposure to the sun.

Be careful about using sunscreen, especially on tender areas such as your face or the underside of your forearms. You may experience an adverse reaction to it even if you have previously used the exact same product. Put a small amount on a tender area; if it stings or has a topical reaction don't use it. When using any sunscreen remember to follow the manufacturer's recommendations, as directions often differ from product to product. Being around the water intensifies the harmful effect of the sun. Even with a good tan, the sun may blister the rescuer. This can also happen on a cloudy day. Realize that when you are in the sun, you are cooking.

The sun also causes glare. Long exposure to glare can injure the eye. A hat and sunglasses can help. Additionally, polarized glasses can make it easier to see into the water if the water is relatively clear.

There are several factors may play a part in eye sight damage and/or potential loss of sight in lifeguards that include genetics; the color of the eye (lighter color eyes are more susceptible to damage), and the length of time exposed to sunlight (this includes the indirect light of the glare bouncing off the water). A few ways to manage your risk would be to protect your eyes with a pair of quality made sunglasses with polarized lenses that do not allow light to creep in on the sides or top/bottom of the frames, also include items in your diet that promote eye care health and have annually eye exams that look at the entirety of your eye.

Wind can blister your skin as well as the sun. A strong wind blowing all day may, at the least, blister your lips. Use the commercial products that exist to help minimize this effect.

CARE for TOE NAILS and FINGER NAILS in an AQUATIC ENVIRONMENT

Just as the water softens the skin, it also can soften the nails. Peeled back fingernails, split nails and even having a nail ripped off are not uncommon. Keeping the nails cut extremely short and relatively square is a preventive measure. Toenails also need attention and can cause problems. While they don't have the same tendency to get ripped off in a rescue, ingrown toenails can be a major problem. Again, short and square is the answer. Also, be sure to dry the foot as soon as possible.

Another problem with long fingernails/toenails is that they can scratch a victim during a rescue. Since the lifeguard's job is to take care of the victim, anything, which might cause harm, should be eliminated.

HEAT RELATED ILLNESSES

Lifeguarding can be hot work as it often entails extended periods of time in the sun. Both management and the guards must be aware of the potential for heat-related problems. In fact guards can experience a loss of effectiveness as a result of prolonged exposure to the sun and to heat.

A common problem with lifeguards is heat exhaustion. One of the major symptoms of heat exhaustion is pale, clammy skin. Other symptoms include nausea, anxiety, excessive sweating and gradual weakness. If unrecognized and no intervention is taken, fainting may result. This can be a serious problem especially if the guard is on the stand. An irregular pulse rate or respiratory rate can also be present as well as a headache. Getting out of the sun and taking fluids while reducing the exposure to heat will usually reduce the problem. However, the problem can degenerate into heat stroke, which is a much more serious problem. At this time, the victim no longer has the ability to perspire, which prevents the body from cooling itself. Bright red skin and this loss of sweating mark heat stroke. The skin is hot, red and dry. If heat stroke occurs, the victim needs to be removed from the sun immediately and the emergency medical system needs to be activated as heat stroke is life threatening.

HAZARDS ASSOCIATED with HYPOTHERNIA and BEING COLD

This is one of the major killers around the water. While the problem usually does not get out of control with guards, the potential exists. The symptoms are very similar to intoxication. They include violent shivering and chill bumps, disorientation and loss of motor control of the muscles to name a few.

Most people do not seem to understand that prolonged exposure to the water will make the rescuer cold, even in the summer. Being a guard on duty in the rain can cause the guard to get extremely cold. It is not uncommon to lose feeling in the fingers and hands due to the cold. The temples seem to be a place of rapid heat loss. Keep your head as dry and warm as possible to reduce the impact of cold weather. The wrists are another place where heat loss is rapid. Standing with your wrists under your arms can help to reduce the heat loss. A valuable piece of personal equipment for a guard is a raincoat.

Since the loss of motor control is an early symptom of hypothermia, the self-test for hypothermia consists of touching the little finger to the thumb. If you cannot do this then it is time to get warmer.

FAILURE to PROPERLY CARE for ONE'S EARS

There are two hazards that can affect your ears. They are ear squeeze and ear infections.

EAR SQUEEZE

When you go beneath the water surface the weight of the water causes the pressure on the eardrum to increase, the greater the depth the greater the pressure. In most guarding situations and with most guards, the depth of the water is not deep enough to cause a problem. However, if you descend and experience pain in your ear stop and return to the surface. If you experience ear squeeze you must learn to clear you ears. Clearing your ears simply consists of equalizing the pressure on both sides of the eardrum as you submerge. By pinching the nose and blowing gently most people can equalize the pressure and prevent ear squeeze. This is done as you are descending before you first feel the squeeze. The way you find the depth that will cause ear squeeze is by

practice. If extreme pain in the ear is felt as you submerge and you do not equalize the pressure this may result in damage to the eardrum.

Most guards have little or no problem with ear squeeze. However, you need to know the symptoms and how to reduce the impact in the rare case that it may become a problem.

EAR INFECTIONS

Retained moisture in the ears may cause ear infections. Doing flip turns in lap swimming or just swimming and being in the water can cause moisture in the ear. The deeper you go under the water, the farther the water enters the ear canal. Alcohol is a drying agent. It mixes with the water and then evaporates taking the water with it out of the ear. Many swimmers and lifeguards use alcohol in their ears about twice a week; more frequently than this can remove too much ear wax. So if you dry your ear, don't do it too often. When using alcohol in the ear, caution should be taken. If there is any reason to expect an adverse reaction, then check with your doctor. Use an eyedropper and turn the head to the side to place the alcohol in the ear. Be careful not to get the alcohol in your eyes. A few drops of mineral oil in the ear prior to entering the water is a great preventative measure against the accumulation of moisture. There are many commercial products available that deal with "swimmer's ear" problems. If there is extreme pain, swelling, redness, heat or tenderness associated with the ear, it is time to see a physician. Ear infections may lead to serious health problems and can deteriorate rapidly.

BACK STRAIN

Lifting a victim out of the water can cause back problems. A guard must learn how to lift properly. One of the best ways to avoid back strain in doing a lift is to look up and then pick up. By looking up causes you to tuck your rear end under your body. This causes you to use your leg muscles instead of your back when lifting. You should use as much of your leg muscles and as little of you back muscles as possible in order to protect the back.

CHEMICALS

Many of the chemicals used around a pool can be hazardous to one's health. One of the most common problems is chlorine. If gas chlorine is used by the facility, then great care must be exercised when working with this chlorine system. Any staff member whose duties include handling or working with chlorine gas should receive special training, which is beyond the scope of this text. In addition, special equipment such as a gas mask (SCBA) and training all employees of the facility to use it is required since no one can enter a chlorine gas cloud to make a rescue without this equipment.

Many chemical agents are harmful with initial or prolonged exposure. Possible injuries include respiratory and skin problems. This is one reason why rubber gloves should be worn when cleaning the facility or working with chemicals used in the maintenance of an aquatic facility. Everyone at the facility should be aware of the potential hazards posed by the chemicals on site as well as the immediate first aid for exposure to these chemicals.

A Safety Data Sheet (SDS), formerly known as, Materials Safety Data Sheet (MSDS) should be at the facility for all chemicals present and kept in a binder or manual for review. Proper handling, emergency treatment for exposure and all other pertinent information on all chemicals, including common cleansers, must be in this manual. The number for Poison Control should also be posted with other emergency phone numbers.

EXCREMENT in the WATER

Almost every aquatic facility will experience having excrement in the water. A small child going to the bathroom in the water is usually the cause. The excrement can cause e-coli or cryptosporidium problems. Be very careful when cleaning this and try to avoid exposure to water that may have been affected. The problem can become more severe if you have a break in the skin, or accidentally ingest a small amount of contaminated water. The Center for Disease Control (CDC) has recommendations for reducing the spread of Recreational Water Illnesses (RWI's) which may be beneficial, your facility should have a definite policy on how to remove excrement and sanitize the facility.

BLOOD BORNE PATHOGENS

A pathogen is defined as an agent that causes disease. There are many, many pathogens carried in the blood stream. The two most common ones that lifeguards may encounter are the hepatitis-B virus (HBV) and the human immunodeficiency virus (HIV).What needs to be emphasized at this point is that the lifeguard must practice Universal Precautions each and every time there is contact with blood or body fluids. Everyone must be considered a potential carrier. These pathogens cause infection by entering the body in a variety of ways. Some of these are: open cuts, nicks, skin abrasions, dermatitis, and acne and through the mucous membranes of your mouth, eyes and nose.

One of the most effective work practice controls is to wear protective equipment when dealing with a situation that may place you in harm's way. Examples of personal protective equipment are:

Gloves
Protective barrier CPR masks
Protective eye wear
Closed toe water resistant footwear

One of the most effective work practice controls is to wash your hands if skin or mucous membranes have come into contact with blood or other body fluids. Hand washing keeps you from transferring contamination from your hands to other areas of your body. Every time you remove your gloves, wash your hands with a non-abrasive soap and running water as soon as possible. Dispose of gloves in a proper receptacle.

If you are asked to clean up blood or body fluids; one must remember to:

- °Wear appropriate personal protective equipment
- °Use a solution of one part bleach to ten parts water
- °Disinfect mops and cleaning tools after the job is completed
- °Gloves should be removed when they become contaminated or damaged, or immediately after completing the task and disposed of properly.

Use the following procedure when removing gloves to insure no contamination occurs:

- ° With both hands gloved
- ° Peel one glove from top to bottom and hold it in the palm of the gloved hand.
- ° With the exposed hand, peel the second glove from the inside, tucking the first glove inside the second.
- ° Dispose of the bundle properly. Never touch the outside of the glove with bare skin.

Every time you remove your gloves after coming in contact with or cleaning a possible

body spill, wash your hands immediately with soap and running water. Each facility should be aware of the United States Federal Governments requirements for training and reducing the effects of accidental exposures to harmful blood borne pathogens. One such standard that must be followed is 29CFR 1910.1030, the Occupational Safety and Health Administration (OSHA) Blood Borne Pathogen Standard.

COMMUNICABLE DESEASES and COMMON SENSE

Keeping up with inoculations is imperative for lifeguards. As mentioned earlier, numerous pathogens are carried by water. In addition, guards work with the public and therefore are exposed to various problems associated with public work. A periodic trip to a physician knowledgeable in such matters is essential.

Almost every season, the story goes like this. The guards start off healthy. Then, almost like a wave several weeks later, a summer cold or the flu breaks out. More than likely the behavior that causes this is probably sharing water bottles or cups. Just the close proximity of all the guards can lead to the spreading of an illness. Use a little common sense. Be careful about sharing cups or anything that could pass germs. There are more serious problems than just the common cold. Hepatitis and Bacterial Meningitis are prime examples. A little discretion can lead to a healthier season.

INFECTION

Any break in the skin becomes a possible infection site. Even though the wound at some time may have been treated, going into the water has the potential to re-contaminate the wound. Some of these infections progress rapidly, particularly if excrement is present in the water. Look for red streaks, soreness, tenderness, pain, heat, swelling and discharge. If any of these exist, the time for the doctor is now, not when it is convenient, but now. Gangrene may occur in as little as 24 hours after infection.

If you ever have questions about an infectious disease either involving yourself or a guest at your facility, talk to your physician or contact the Center for Disease Control and Prevention (CDC) for accurate up-to-date information. CDC is located in Atlanta, Georgia and the web-site address is www.cdc.gov.

BE CAREFUL WHEN USING COMMERCIAL PRODUCTS and PRESCRIPTIONS WHILE WORKING in the HEAT and SUN

Guards must follow all directions on any and all commercially manufactured health care products and prescription drugs they use. This includes sunscreens, products for the ear and medication for the eye. In addition, some of these have adverse effects when exposed to chlorine. With prescription drugs, be sure to check with your doctor to see if exposure to the sun or the water will have an adverse effect. As an example, some antibiotics require that you not be exposed to the sun. Another type of prescription may cause you to become sleepy or drowsy which inhibits your ability to remain vigilant.

A LACK of STRENGTH and CARDIO-VASCULAR CONDITIONING CAN ADVERSELY AFFECT RESCUE EFFORTS

The rescue is only half over when you reach the victim. If you are in poor cardio-vascular condition, there is a good chance you will be out of breath after swimming to the victim. If this is

the case, then you will not be able to effectively complete the rescue. You may not be able to direct other guards or by-standers in the instance that you need assistance, and you may not be able to effectively deliver rescue breaths or perform CPR. For these reasons, it is imperative that a lifeguard be a strong swimmer. In order to be a strong swimmer, you must be in good cardio-vascular condition.

Lifeguarding is hard work but making a rescue is even harder. The rescuer must be conditioned for the emergency and the work involved. Training and physical conditioning are essential. Strained muscles and other such exertion injuries are common for rescuers.

There will be times when you are required to rescue victims that are bigger than you. The victim may be aggressive which will make it more difficult. Also, rescuing a passive victim from the bottom of the pool is extremely difficult, especially when the victim is twice your size.

A regular exercise and/or conditioning program will help you develop and maintain your strength, endurance, and cardio-vascular condition. Activities like swimming laps, running, walking, and weight training can all help you enhance your physical condition. Also avoid substances that are not conducive to good physical health. This includes drugs and supplements that are illegal and can impair your judgment, and those that enhance muscle growth and development (steroids) because the short term and long term effects are unknown.

Your future is determined now. You must take proper care of your body, guard it against harm or suffer the consequences, if not immediately, then certainly in the future.

What Is Mental Health?

Mental health refers to the ability to learn new concepts and ideas, to apply those concepts and ideas, and to utilize your intellectual capability to guide you in the decision making process to solve problems. Also included in mental health are the ability to maintain focus and concentration.

Mental Health and the Responsibilities of a Lifeguard

One of the best things that you can do to help maintain your mental health is to do your best to live up to the responsibilities of a lifeguard. Recall that you have ethical, moral, and legal responsibilities to fulfill when you work as a guard. If an event does occur where someone gets hurt, you will feel much better about yourself if you have done all that you can to live up to these responsibilities. This will go a long way towards maintaining your mental health.

Why Is Mental Health Important To Lifeguards?

Your ability to learn new concepts related to lifeguarding is imperative. This includes things such as AR/CPR, Emergency Action Plans, water safety skills and rescues, and the standard operating procedures of your facility. You must be able to adapt your general lifeguarding knowledge to the specific needs of your facility.

As a lifeguard, critical thinking is essential. You must be able to take the skills and knowledge you've been given and use it to "work the problem". Incidences at aquatic facilities never happen the way you expect them to. This means you must think on your feet, and be able to respond quickly with the appropriate care initiated for the given situation. The ability to stay focused is extremely important when you are on duty. You have to watch your water. For whenever you are on duty, you are assuming responsibility for everyone in your area. As such, you cannot be distracted for any reason. ***You do not have that luxury.*** When you are on duty, you cannot allow your scanning to be interrupted or your focus to be diminished. You cannot let what

may be going on around you, or thoughts about things going on in your personal life (or any other situation) take your attention away from you area. You must not fall into the lifeguard trap of seeing what you expect to see, and having your attention drawn to where the action is occurring and miss the long term immersion drowning. Again, you do not have that luxury.

What Can Lifeguards Do To Enhance Their Mental Well-Being?

Practicing your skills on a regular basis will help you recall them in an emergency. You should practice them so that they become second nature, and then practice them some more.

Creating scenarios in your mind and thinking them through step-by-step will help you prepare for incidences that may arise at your facility. Much like an athlete would anticipate what his or her actions will be given a change in a game situation. In lifeguarding, the scenario may go something like this: what will I do if the guard to the left of me surfaces with a passive 7 year old child, what do I do 1st, 2nd, 3rd, etc.

What Is Social Health?

Social health refers to the ability to have satisfying relationships and social interactions with others. This includes the ability to adapt to various social situations and social behaviors.

Why Is Social Health Important To Lifeguards?

Knowing that your fellow guards, leads, supervisors, and managers will support you and help you be successful is important in the day-to-day operations of your facility. The lifeguards and park management should function as a team.

You will encounter many different guests at your facility. Your level of professionalism will affect how well you communicate and interact with them and will determine how effective you will be at enforcing the rules, and keeping the guests safe. For example, you would not speak to a 4 year old the same way you would speak to a 14 year old. Nor would you speak to a 40 year old the same way you speak to a 14 year old.

What Can Lifeguards Do To Enhance Their Social Health?

Ask each other different questions. Share information with each other. Tell each other your concerns about being on duty and learn from each other's experiences

Get to know your leads and supervisors, even your managers. Learn from their experience. You can learn a lot by simply talking to them, and listening.

Go on break with different people. This will give you an opportunity to get to know everyone. Talk to each other about things. The better you know the people you work with, the more fun your job will be. If you're having fun, this will be evident to the guests and create a fun environment for them as well.

Try to meet every guard at your facility. You should not only know their names, but also try to learn a little about them. Some good "ice-breakers" are sharing with each other where you're from and why you wanted to become a lifeguard. You can get to know your leads and supervisors the same way. You will likely find that although you may come from different places and have different backgrounds that you have common goals when it comes to lifeguarding.

What Is Emotional Health?

Emotional health refers to the "Feeling" component of health and includes the ability to express your feelings in an appropriate manner. Also included in this section or category are self-confidence and self-efficacy (a belief that you can actually do what you are trying to do), and also trust and have confidence in others.

Why Is Emotional Health Important To Lifeguards?

Lifeguards are faced with many challenges every time they go on duty. You sometimes encounter guests that may be very angry and may be somewhat hostile towards you. Since lifeguarding is so physically demanding, you may be more emotional than usual if your body becomes fatigued. In addition, rescuing a victim is a very emotional experience. It can become especially emotional if a lifeguard actually gives rescue breaths. Delivering rescue breaths can be quite overwhelming, emotionally, because it is a very intimidating act.

What Can Lifeguards Do To Enhance Their Emotional Health

Confidence in your skills will reassure you when you're dealing with the emotional stress of a rescue. When you ask yourself the question: "Did I do the best I could?" the answer should be "yes". Feeling comfortable and confident in your skills, and practicing on a regular basis (a minimum of 4 hour a month) will help you should the need arise, and afterwards, you will be able to effectively handle the stress associated with a difficult rescue.

Social support is also important. It is okay to discuss your feelings about a rescue, or even an angry guest, with your fellow guards, leads and supervisors. In fact, it is encouraged. Talking to them about the way you feel will help you cope with the emotional stress involved. Do not discuss these things within earshot of guests, or others not associated with your department.

Knowing and understanding the rules will make it easier for you to be calm and confident when explaining rules to guests.

The lifeguard's emotional health is enhanced by the support of other lifeguards, and management. It is further developed by the confidence that one gains from participating in In-Services, and sharing common goals with other lifeguards.

What Is Occupational Health?

Your occupation is what you do to make a living, in other words it's your job. Occupational wellness refers to your sense of purpose at your job. It prompts the questions: "Does my job provide any personal fulfillment?" "Is what I am doing important?"

Why Is Occupational Health Important To Lifeguards?

It is imperative that lifeguards understand that what they are doing when they are on duty in extremely important. It is important that lifeguards believe that. When you are on duty, it's not about you anymore. It is about keeping everyone in your area safe. What you do does makes a difference.

What Can Lifeguards Do To Enhance Their Occupational Health?

Your sense of purpose comes from with-in. It isn't really something you can learn, and if

you do not believe that you make a difference as a lifeguard, then you should begin looking for another vocation. However, if you're not convinced that your job as a lifeguard is important, consider the consequences of an aquatic accident. It makes a difference if you're at work. Take pride in what you do. Often, you will be the only thing between a fun day at the pool and the tragic drowning of a guest.

What Is Environmental Health?

Environmental health refers to an appreciation for your surroundings. It is the respect one has for their environment and their efforts to improve (and maintain) the environmental condition. When considering your "surroundings", remember the people you surround yourself with as well.

Why Is Environmental Health Important To Lifeguards?

Your environment creates a mind-set and a perception of your work place. For example, assume the facility in which you work is dirty and has trash all around. The guests will assume that since cleanliness isn't a priority, then safety probably does not rate very high either. It is difficult for a lifeguard to maintain credibility when the area that they work is not clean and professional in appearance. This perception of professionalism effects lifeguards as well. For no lifeguard enjoys getting on a stand where the guard before them has left their trash, water bottle, or a puddle of sweat in the seat of the lifeguard stand. Lifeguards don't want to work at a dirty facility any more than guests want to visit a dirty facility.

What Can Lifeguards Do To Enhance Their Environmental Well- Being?

If you see trash, pick it up. Remember, if it looks trashy to you, then it looks trashy to guests. Do not leave water bottles, cups, or any other trash on your lifeguard stand. Keep the rescue equipment in good condition, and report damaged or missing rescue equipment to management. Do not pick at your rescue tube, if you damage your equipment, it will be of little use to you when the need arises. If you see something at your facility that needs to be repaired or could be a potential hazard to guests or other lifeguards, point it out to a supervisor or member of management.

Another way that a lifeguard may improve their environmental well-being is to associate with others who will help support and encourage them in their efforts to be a better lifeguard. Do not seek council with those that wish to belittle your efforts and diminish your value. Do not be a product of a poor environment. Instead, seek out those who share your values and can help you to be successful.

Summary of Wellness

It is important that you constantly strive to reach your highest potential in each of these areas. Remember, that obtaining good health is a process. Finding a balance among these six components of health will improve your performance as a lifeguard and your over-all quality of life. Understand that this process takes time and is not something to be measured against others, but only against yourself and your individual potential.

Some Final Thoughts…

It was mentioned earlier in the text, but it should be said again. Now is the time that your future is determined. You must take proper care of your body. Guard it against harm, or suffer the consequences immediately, in the future, or both.

CHAPTER 4: VICTIM RECOGNITION AND VICTIM BEHAVIOR

The purpose of this chapter is to discuss how to recognize victims and to give some insight into how victims behave. General principles of working with victims will also be discussed. The rescuer must know how to recognize victims, what to expect from a victim and have some insight on how to work with a victim.

Location

Victims can of course be almost anywhere there is water. They end up in drains, culverts, vehicles, pools and even trees. They can be found in shallow or deep water, in flat or moving water, in clear or murky water. They can drown, suffer some other traumatic injury such as spinal column fracture or be trapped by water flow. Even though they can be found most anywhere in most any situation, some common denominators apply.

A victim in deep water will usually be either on the surface, on the bottom or in transition. Transition time from the surface of eight feet of water to the bottom is very fast: 4 to 8 seconds. The reason for this is that the human body either floats or sinks depending on how the weight of the victim compares to the weight of an equal volume of water. If the weight of the water displaced by the victim is heavier than the weight of the victim, as is common with a victim with air in their lungs, the victim will be on or near the surface. As the air in the lungs is expelled, the victim sinks all the way to the bottom. It would be a very rare case for the victim's weight and the water's weight to be exactly equal. So regardless of the depth and regardless of the water temperature, the victim goes all the way to the bottom once they quit making motions to keep themselves afloat and the air is displaced from their lungs. The rate at which the victim will descend to the bottom will depend to some degree on the floatation of the victim's body. Still, once they start down, they will go all the way down.

Sometimes, a victim can get into a posture called a yo-yo. They come up and they go down, rather like a yo-yo. They struggle up, get a little air and then go down. Despite folk rumor, they don't go down just three times. They may go down once or a bunch. Still, if they are not on the surface, look on the bottom.

Common sense can also help to locate a victim. Knowing the swimming ability and the floatation characteristics of the victim can help find the victim in deep or dark water. These floatation characteristics such as age, height and weight also help to determine how heavy a victim will be in the water. This is very important when taking a victim off the bottom. A moment's consideration of known characteristics of the victim along with a consideration of the water depth can assist the lifeguard in determining his rescue strategy. A usually unreliable source is the eyewitnesses on sight. They become emotionally involved. They desperately wish for the victim to survive. So they sometimes give the victim unbelievable abilities. Common sense and a rational guess are the best choices to locate the victim on the bottom in deep or dark water if the victim cannot be seen.

Floatation Characteristics

Four factors determine the ability to float. Age, sex, body type and ethnic background are

the primary determining factors. When you are born, you have little or no muscle development. As you get older, muscles develop and the weight of the body as compared to the volume of the body goes up and the ability to float goes down. This usually starts with the onset of puberty. When you get older, say in one's late fifties, the same thing happens in reverse. You lose muscle tone and the ability to float increases.

The second characteristic is sex. Women float better than men. Again, weight per volume is the reason. In fact, most women can float. However, every year, some people manage to drown on the surface.

The third characteristic is body type. Long, lean and muscular may increase the weight per volume to a point where the victim sinks. Teenaged boys are a good example of victims in this category.

The last characteristic is ethnic background. There is evidence that some ethnic groups have denser bones. Please see the section on ethnic background in the High Risk Victims section. A person with denser bones and a well-developed body will usually be a sinker.

How Much Time Does It Take To Drown?

A number that is often quoted is 4 to 6 minutes. This comes from the early days of aquatic education and in our opinion refers to the fact that the average victim is felt to suffer irreversible damage in 4 to 6 minutes. However, the quickest drowning that NASCO has ever worked occurred in 38 seconds to a 7-year-old boy. In this particular case, the child's head was under water for a total of 38 seconds. So drowning can be quick.

Victims Don't Go To Victim School?

Anybody, who says that victims always do something or look a particular way, just hasn't seen enough victims. Victims do not know how they are supposed to look or act. Correspondingly, they can assume almost any or no symptoms. They can act almost any way. Expect the unexpected. Look for the unusual.

Having said all this, there are some common symptoms of victims.

Signs and Symptoms of Surface Victims

There are five main keys that many victims on or near the surface exhibit. They are: facial expression, irregular motion including the absence of motion, loss of body position, a head back nose up posture and no leg kick.

Facial Expressions:

Terror is many times exhibited through the expression on the face. Look for wide eyes with a lot of white showing. The face may be pinched and drawn. They may look as if they are over the edge of emotional control. They just look scared. All of these are signs that the victim is in an environment that they cannot control.

Irregular Motion Including the Absence of Motion:

What the victim is doing does not look like swimming. A flapping of the arms similar to a side-straddle-hop may occur. A pawing action is not uncommon. They may look as if they are trying to crawl or climb out of the water.

Included in this symptom is the absence of motion. It is very difficult for even a trained swimmer to remain absolutely motionless in a floating position on the surface. Lifeguards use a

10-second rule. If a person does not move in 10 seconds, the guard intervenes. It should be understood, the "10-seconds rule" is the maximum, and it is used as a "Break Point" or a "Go/No-Go Threshold." If a lifeguard sees something that they do not understand and have an "overwhelming urge" to investigate an unusual situation, then they should activate their EAP and insure that the incident is non-life threatening. It is better to investigate a non-event, than to wait and find out it is a life-threatening situation. This will also be discussed in the sections on mystery drowning and the 447.

Loss of Body Position:

Most, but not all, victims drown in the vertical position. Once a swimmer goes vertical and starts fighting the water, they may become a victim. Remember though, some people who float can drown in the horizontal position.

Head Back, Nose Up:

Look at the nose of the victim. The position of the head controls the position of the body in the water. As the head goes back and the nose goes up, the victim goes to the vertical position. This may be the start of the drowning process.

Watch children playing in chest deep water. Those that play with their nose pointed up are usually uncomfortable in the water. They don't like the water in their face. This is a dead giveaway of a potential victim.

No Leg Kick:

Swimmers kick. Victims usually don't. The absence of leg action implies that the person is using only their arms to keep themselves on or near the surface. If they can kick, they can swim.

In spite of all that has been said, remember; victims don't go to victim school.

The Mystery Drowning

NASCO has worked several drowning cases where a victim has drowned in plain sight on the surface and sometimes right in front of a lifeguard or family member. We call these a mystery or symptom less drowning. While we will never know exactly what happened, the scenario may be similar to the following possible explanation.

A child, usually a girl around seven years old, is playing in chest to chin deep water. As do most children, she is exploring and bouncing around in the water. She doesn't swim and is playing with her head back and her nose up. She bounces a little too deep and gasps for air but breaths in water. The water goes into the larynx which, in turn, spasms. The girl falls face forward on the surface of the water. Then, for whatever the reason, the girl doesn't move. Maybe she is too frightened to move. Maybe the trauma of the spasm renders her unconscious. Maybe, like many children in trouble, she freezes while she waits for an adult to help her. But she just doesn't move. An observer doesn't see a terrorized facial expression; her face is in the water. There is no motion. There is no loss of body position. She is young, female and so she floats. So no one comes to her aid. She will hang there until her tidal air escapes and then slowly sink to the bottom. By this time, the girl has been without oxygen for so long that her survival chances, even with immediate intervention, aren't good.

The 447

We have worked so many cases with these characteristics that we have given the case a name. Here, a child about 7 years old that is about 4 feet tall drowns in about 4 feet of water. Perhaps the reason that cases of this type stick in our memory is that the drowning of a child is such a tragedy.

Never forget that many drownings occur in shallow water or very close to safety. In some environments, shallow water accounts for more than half of the victims.

Submerged Victims

Color Variation:

To locate a victim from the surface with the victim on the bottom is very difficult. If the rescuer can see into the water at all, look for color changes, smudges or flashes of light. Sometimes the difference in color between the bathing suit and the skin will stand out. Sometimes you can see the difference in color, a shade or difference in tint between the skin of the victim and the bottom.

Elevated Chest, Drooping Head:

Many times there will be a little bit of air left in the victim's lungs and this will cause the chest to rise slightly off the bottom. If this occurs, the head may hang down since the head is the densest part of the body.

Sometimes Tiny Bubbles/Vomit Stream:

There will be air still escaping from the victim. This can be a slight trickle of air. Look for bubbles or even very small bubbles rising from the bottom.

Sometimes when a victim is on the bottom they can emit a stream of vomit which often floats in a stream out of the victim's mouth and up to the surface.

Motionless:

Many victims on the bottom will be motionless. While not all are motionless, a person on the bottom that does not move within 10 seconds will, in most cases, need the help of a lifeguard.

If you cannot see anything from the top and you have reason to believe or suspect that there is a victim on the bottom, then before entering the water, stop and think. Work out where you think the victim might be. Your best chance is in a circle of probability centered on the last surface sighting of the victim and with a radius of 15 to 20 feet. When victims go down, they do not tend to move very much. They hang on different things on the bottom. This is often true even with a current. In a pool, they may slide down the bottom to the deepest part. However, your best chance on a first look is still in the circle. If you cannot see them and don't find them in this circle of probability or along the deepest part of the pool, then you will have to do a systematic search of the bottom.

More on Victims

3-3'S:

A victim that occurs fairly often is a child 3 years of age or less in three feet of water or less

a 3-3. The water is shallow so no one is really frightened of the water therefore they do not pay as close attention to children as perhaps they should. The child slips away and is found floating face down in a motionless position. This is one of the reasons that kiddie pools and play structures can be so dangerous. Remember that drowning is one of the leading causes of death for this age group. To a three-year-old, shallow water can be quite dangerous.

Face Up, Horizontal, On the Surface:

Over the last several years, a unique victim has occurred. The victim, usually a younger person, is found face up on the surface in a horizontal position. There have been 4 such incidents in the last several years. Each was first contacted by a guest. What keyed the guest to the victim's inability to breathe was the fact that bubbles were coming out of the nose of the victim. This is a good reminder to guards that anything unusual should be investigated. It also serves as a reminder to remember that the absence of motion is a key to victim distress. A guest wearing a lifejacket should be watched closely, the wearer may be motionless. If a lifejacket does not fit properly, then it may be a significant hazard for the small non-swimmer whose mouth and nose may be under water.

Scared Motionless:

Another unusual incident that occurs quickly is the loss of the ability to breath. This seems to occur in children. What seems to happen is that the child gets into a difficult situation where they either cannot or at least feel that they cannot get their head above water. In this case, the victim can literally be frightened to the point where they are unable to breathe on their own. This may account for some of the quick drownings that have been reported.

Hyper-Ventilation and "Breath-Holding Games"

Every season there are instances where an accomplished swimmer has attempted to swim under water a great distance, or hold their breath for a long period of time and this desire has resulted in them becoming unconscious and requiring resuscitation. These occurrences occur at summer camps, flat water pools, water parks and even during swim practices where world-class athletes prepare for competition.

This is usually caused by the swimmer taking several deep breaths prior to emersion, which results in a higher level of Oxygen in the blood stream. The body's automatic defense system normally directs the body to take a breath when the body's blood system has a specific level of carbon dioxide, which triggers the signal to breath. When the swimmers body's blood level has a high level of oxygen and a low level of carbon dioxide, this delays the body's response to breath and results in the person "blacking out" or becoming unconscious. This has grave consequences when the swimmer "blacks out" under water and appears to just stop swimming.

Eventually, the body will regain control, and the blood's oxygen levels will return to normal ranges, however the signal to breathe will occur under water and the swimmer will still be unconscious and this normal breathing response will result in aspiration, or drowning.

This type of victim can be identified and in some cases informed of the hazards if the lifeguard can recognize this situation when a swimmer starts to hyper-ventilate on the side of the pool. The lifeguard can advise the swimmer of the hazards and ask that they put an end to such activities. The lifeguard can also suggest other activities that swimmers can participate rather than seeing who can hold their breath the longest under water. In many cases, the winner of this game

sometimes losses everything.

Handling a Victim

Be Careful

Any person who is in an irrational state of mind can hurt you. There are examples of trained lifeguards sustaining severe injuries including spinal injuries or suffering some other injury such as severe facial trauma all caused by victims. Never trust them. Never suppose they are going to do what you request. Always expect the unexpected.

Look At the Eyes

It is indeed true that the eyes are the windows to the soul. So look at their eyes to determine how much control they have. This also will give insight into their comprehension of what you are requesting. If they are on the edge, be very careful.

Talk to the Victim

The victim needs psychological reassurance. Tell the victim what you are going to do before you do it. Even if you feel they don't understand, talking to them can provide comfort to the victim. Talking to the victim also provides a tension release for the guard as well as providing an opportunity for the guard to confirm in their own mind the procedure to be followed. The victim may be mentally processing what you are saying even though they are incapable of reacting.

Forget Tarzan

Many people have seen the old Tarzan movies where he slugs or strikes the victim under water and knocks them unconscious. Regardless of Tarzan, it is virtually impossible to generate enough force to render someone unconscious by striking them under the water. For many reasons, nothing you do should ever cause harm to the victim. Striking a victim can turn a panicky victim into a mad panicky victim and make them even more difficult to manage. As an aside, if the rescue goes bad, then every mark on the victim must be explained. While forceful movements with the victim may be done inadvertently, intentional harmful movements are counterproductive and are totally unnecessary. If you have a bad victim, then a rear rescue is the rescue of choice. This is discussed in a later chapter.

CLIMBING

When you get to a victim in the water, many victims will try to climb on top of you. If you were smart enough to go into the water with floatation, this is no problem. A rescue tube will float both you and the victim. If you lose the floatation but feel comfortable with the situation, then many times you can just tell the victim to hang on and swim them back to safety.

Allow the water to help support the weight of the victim when possible. As an example, if you are on your rescue tube, a victim has you from the rear and has you submerged, simply roll over and continue swimming. This will put more of the victim under water and will put your face up in the air. Remember that the more of them that is in the water then the easier it is to swim with them.

In performing any of these procedures, remember to continually reassure the victim if possible while you are trying to keep them nose up. If none of this works, it may be time to get

away from the victim and get floatation, more help, or both.

Come From the Rear

Approaching a victim from the rear is the preferred method in most cases. This allows the rescuer to initiate contact with the victim rather than the other way about. Holding a victim from the rear is significantly safer than from the front. Remember that when the victim feels or senses that you are near they may turn around. Said one more time, be careful.

Nose Up, Stable and Breathing

Your objective in water rescues is to get the victim nose up, stable and breathing. It is almost never just to get the victim out of the water. Once you get to the NSB position, you have time to work out where to go from there. If there is some life-threatening emergency associated with staying in the water such as hypothermia or you can't provide for the necessary treatment of the victim, then get them out quickly but carefully. Remember that many victims are injured more by the way they are removed from the water than they are by the water.

If they are not breathing then get them out as quickly as possible. If you get them to the NSB position, then take your time and work out what procedure best provides the necessary care for the victim.

If They Are Not Breathing, Get Them Out As Quickly As Is Safely Possible

If the victim is not breathing, then get them to the deck as soon as you safely can. This will allow you to get to the victim and begin the resuscitation procedures. You may need help from bystanders to get them out of the water. If extrication is delayed, provide ventilation until extrication can be safely performed

It should be remembered that if compressions are required, they cannot be administered in the water.

CHILDREN

Many rescuers get in trouble with kids because they forget just how hard a child can hold on to you. A small boned forearm under your chin can cut off the airway very efficiently. Never suppose that because a victim is small that the rescue is going to be easy.

Notes:

CHAPTER 5: VIGILANCE

The most important task of the lifeguard, even before prevention, is that of vigilance. Vigilance is defined as the ability to see and recognize a singular event and then to take appropriate action. In the realm of guarding this means many things. Being alert, being aware, being able to recognize an event and then being capable of reacting correctly and immediately. The most important aspect of vigilance is scanning. To scan means to look in and on all the water in the zone of the guard. In this chapter we discuss how the eye works which helps to explain scanning and other related topics to the vigilance task.

The Eye

In your eye there are two types of receptor cells that are used to pick up the visual impulse. They are referred to as rods, and cones, and have very important functions with regard to signal detection. The ones directly behind the frontal plane are the ones that are for discrimination, these are cones. The ones on the side, rods, are important in peripheral vision and are for perceiving motion. This means that out of the corner of your eye you can see and sense motion.

A self-experiment is worth doing to illustrate the point. Hold your hands straight out to the side at shoulder height while looking straight ahead. You may or may not be able to sense that your fingers are there. When you wiggle your fingers you probably will sense their presence but you will not be able to count them.

The application of this to guarding is that you will not sense a motionless victim, either on the surface or submerged, unless you turn the head and get the sight picture in the frontal plane. If a victim is making a large amount of random motion you may get some sense of this without looking directly at them. Unfortunately, in a crowded pool, you cannot even count on this to work.

Because of the way the eye works, a motionless victim must be in the frontal plane of the eye, which is in the direct line of vision, for the guard to notice the victim. Imagine that you had a spotlight on the top of your head as you scan. If you get the spotlight on the victim, then you have a better chance of seeing the victim, particularly a motionless victim. A good drill to practice is to place your hands around your eyes as if you were holding an imaginary pair of binoculars. This way, your hands shield the peripheral vision of the eye. Then practice scanning a zone. This will help to instill the spot light concept and get you used to moving your head.

The Dangerous Place at the Guard's Feet

One of the most dangerous places in a pool is right at the guard's feet. It is very difficult to discipline yourself to look down. To this end, a quiet drowning, i.e., a drowning without much motion on the victim's part, right at the guard's feet can go unnoticed unless the guard is making an intentional "look-down" motion with their head in order to scan this area. There are many reasons why swimmers may congregate at the foot of a lifeguard stand. One of these is that the swimmer, for whatever reason, may feel vulnerable in the water and the lifeguard represents safety. With this being said, it is very important that the lifeguard remain ever vigilant in preventing a silent drowning right under their stand. This is done by "signing-off" their completed scan pattern with "a pronounced downward swing of the head with a bump at the midpoint" along the wall under their stand, usually at the lifeguard's feet, and thus the lifeguard will scan "that dangerous location" at their feet.

Keep the Head Moving

All of the above leads to the fundamental principle of scanning. The head must move. If the head is not moving then the guard has made a mistake and is counting on a great deal of motion during a drowning. The head must move.

Look On and In All of the Water

It is not enough to simply look at the water. The guard must actively search the water. This means to look not only at the surface, but also to look in all of the water all the way to the bottom.

Zones

In any pool, the management should designate a primary zone for each staffing configuration and different user load conditions. This area is the primary responsibility of the guard. The secondary zone of a guard is any water that they can see. While the guard should give their primary attention to their primary zone, this does not mean that they should ignore the rest of the facility. Other water, decks and anywhere a person may be involved in an accident also needs to be observed.

Every year, out-of-zone guards make numerous rescues. These are the exceptional guards that pick up an event outside their primary zone**.** So, if the guard can see it, they should look at it**.**

This concept is important enough to repeat –

The Primary Zone Of The Guard Is An Assigned Area The Lifeguard Must Watch.

The Secondary Zone Includes Everything Else At The Facility Within The Range Of Vision and Hearing.

Scanning Patterns: Background and Definitions

Two of the theoretical areas that bear on how a lifeguard sees and recognizes a drowning, are those of signal detection theory and vision.

Signal Detection Basics:

IDENTIFYING A SIGNAL:

In the lifeguard's case this refers to seeing a victim or an event that requires lifeguard intervention. If the signal is seen, this is called a hit and if not seen, then a miss. For our purposes, efficiency is defined as the ratio of hits to signals. As an example, if everything that should be seen were seen, this would be 100% efficient. Since a miss often leads to a drowning, anything less than 100% efficiency is unacceptable.

STRUCTURING THE SEARCH SPACE:

Signal detection theory has shown the differences between searching a structured area (organized and exhaustive) and searching an unstructured search area (random and non-exhaustive). If the space is organized, for example: a checkerboard, people tend to search from top to bottom and left to right and thus scan the whole area. However, if the visual space is not organized, example: a swimming pool, areas will likely be missed. Said another way, unless lifeguards are taught a pattern to use, the probability that they will miss significant portions of their area is very high. While other factors bear on their ability to detect a signal, the structure of the search is crucial to success and is, for the most part, more important than the other factors. For this reason, this manual will go over a number of effective and ineffective scanning patterns.

MAKING A SIGNAL CONSPICUOUS:

Another well know principle of signal detection theory is that the more conspicuous a signal, then the more likely that a hit will occur. Since a drowning victim's signals can't necessarily be made more conspicuous, the other option is to increase the sensitivity of the lifeguard to recognizing the signal. Training the lifeguard what to look for in a drowning victim can do this. While it is true that some victims can exhibit major symptoms of distress, such as those who suddenly find themselves in deep water or in a current, it is also true that many victims do not necessarily exhibit these symptoms. Some victims drown very quietly. Details of the symptoms of drowning can be found in the section on victims and victim recognition.

SIGNAL FREQUENCY:

The last principle of signal detection theory that is covered in this manual has to do with the frequency of the signal. It is well established that finding signals with a low frequency of occurrence is much more difficult than finding signals that occur with a high frequency. Said another way, if the signal is relatively rare, then the percent effectiveness is much lower than with a commonly occurring signal. If a lifeguard does not expect to find something, then the probability that they will miss the signal is very high. The section on Signal Frequency will deal with ways to increase both the frequency of the signal and the sensitivity of the lifeguard to the signal by using simulations and drills.

Vision Basics:

Vision is based on how the eye and brain collect and interpret light rays reflected off an object. The basic anatomy of the eye determines to a large degree the structure of a signal detection task. At the back of the eye where the light rays are focused are two different types of receptor cells, rods and cones. The cones are very dense at the immediate rear of the eye and the rods are dense along the sides of the back of the eye. The density of the cones declines along the back until there are mostly rods along the sides. (See Figure 1)

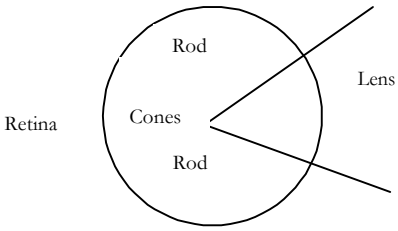


Figure 1 – Schematic of the Eye

Cones are used in focusing. Light rays contacting the cones are seen clearly. The rods, on the other hand, are good mostly for major motion and light.

This structure determines the three separate and distinct fields of vision. The three fields are the inner field, the middle field, and the outer field. (See Figure 2)

The inner field is a cone of sight (not to be confused with the eye's receptor cells called cones) with an angle of about 1 degree. An object must be located in this field in order to discriminate. That light in this field will then fall on the cone cells clustered at the very back of the eye. The eye will then focus on that object. In order to make the final determination if a person is drowning, the lifeguard must get the person in the inner field.

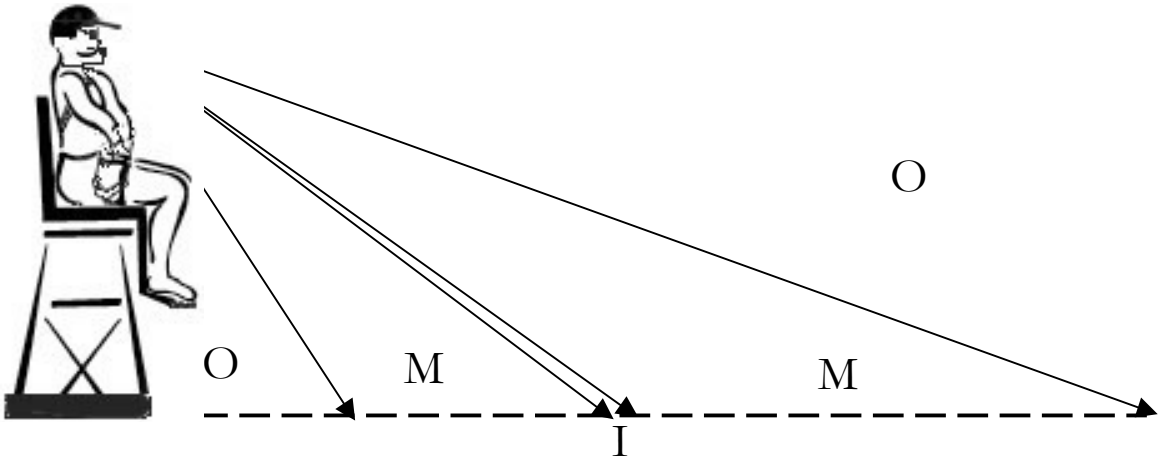


Figure 2: The Fields of View

Field of View - That Part of the Observable World That You Are Able To See at Any Given Moment

I=Inner Field - Angle of View of 1°
Sharp Vision, Excellent Color and Movement Perception

M=Middle Field – Angle of View from 1° to 40°
Blurry Vision, Ability to Perceive Color and Movement Well

O=Outer Field – Every Thing Else You See
Minimal Vision, Minimal Color Perception, Ability to See Some Movement

The middle field is a cone of sight with an angle of about 40 degrees. The light in this field will fall primarily on the rod cells. While objects in this field are not seen clearly, strong contrast and movements are noticed. In order to locate victims, the lifeguard must cover their entire zone with the middle field. Then once a weak signal is noticed, the lifeguard can bring the image into the inner field in order to focus and to see if the person is really in distress.

The outer field is everything else that is visible. About the only thing noticeable in this field is major motion. One of the common ways to miss a signal is to think that the outer field will detect victims. The only way this will be successful is if the victim is showing major signs of distress with a lot of motion. Quiet drownings and victims on the bottom will normally not be seen if they are only in the outer field.

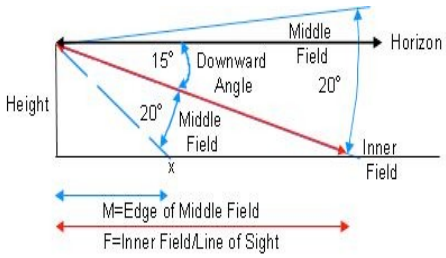
As an experiment to locate the boundary between the middle and the outer fields, hold your hands straight out horizontally at your sides with a certain number of fingers pointing straight up.

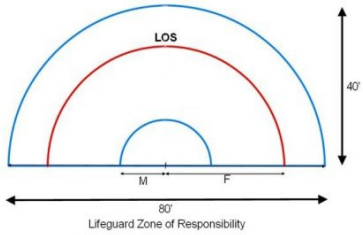
While looking straight ahead, bring your hands together if front of you until you can count the fingers and stop. While not exact, this will give a rough idea of the size of the vision cone that must be used to cover the entire zone.

Another ergonomic principle that is needed for this discussion is the line of sight as determined by the normal downward angle of neck/head posture. Most authors in the field consider 15 degrees to be a normal neck/head posture. This in turn determines the normal line of sight of 15 degrees. Therefore a line of sight of 15 degrees will be assumed throughout the rest of this manual. A 15-degree downward angle leads to a line of sight distance for the lifeguard denoted by F in Figure 3. Using a 40 degree middle field, with half above and half below the line of sight, the boundary of the middle field is denoted by M in Figure 3. This can be found by taking a 20-degree declination off of the line of sight. Note that the effective upper boundary of the middle field is at the horizon (See Figure 3), since 15 degrees down plus 20 degree up goes above the horizon. Based on typical lifeguard stands, the authors only assume that the lifeguard's eye is between 6 and 8 feet above the water's surface.

Figure 3: Downward Angle Schematic

height of guard's head above water (ft)	M (ft)	F (ft)	Full Zone(ft^2)
6	8.6	22.4	2,513
8	11.4	29.9	2,513





It is also important to remember that just because an area is within the inner or middle field of vision; it doesn't mean that the lifeguard can see enough detail to recognize a drowning. This is a function of visual acuity, defined as "the amount of fine detail that can be resolved" If a drowning victim is so far away that the lifeguard can't receive a signal, signal recognition is not possible. The distances that determine a lifeguard's zone of responsibility should not exceed the lifeguard's ability to see and recognize the characteristics of a drowning victim as described in Table 1. For the purpose of this manual, the authors have used a typical lifeguard zone of responsibility: a semicircle with a 40-foot radius. (See Figure 3)

Lifeguards can make several basic mistakes when they scan. One common mistake is to not cover the entire zone with the middle field of vision by using an inappropriate scanning pattern. Some of the scanning patterns shown in the following section will show how locations within a zone of responsibility can be missed. Another common mistake is to scan too quickly. The head must have a macro motion that is slow enough to allow the eye the time necessary to gather enough information about a location to identify a signal. A sweep that is too quick will not gather enough information to make that determination.

Complete Scans

These scans are the only ones recommended by NASCO. They will each cover 100% of the zone of responsibility out to the limit of the acuity of the eye for distinguishing the characteristics of a drowning victim.

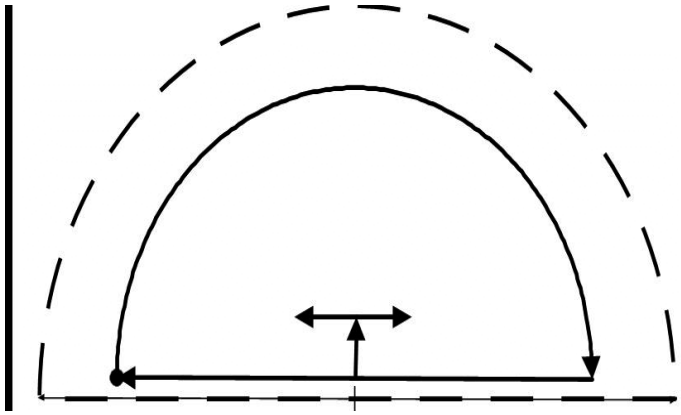
THE FULL ARC SCAN WITH PRONOUNCED DOWNWARD HEAD SWING AND A BUMP – ALSO CALLED THE "BASIC" SCAN

This scan can be defined as a scan that completes the 180 degrees about the arc described by the 15 degree down angle followed by a pronounced downward head swing, but with this scan the guard stops the downward head sweep when they are looking straight down in front of their feet and bumps their line of sight straight out perpendicular to the wall of the pool ending with a side-to-side look. The bump needs to go only 8 to 10 feet out. This scan is 100 % effective. Figure 4 shows the path of the scan.

Figure 4: Full Arc Scan with A Pronounced Downward Head Sweep and a Bump

Full Arc With Downward Head Sweep

Height of Head above (ft.	Downlook Angle	M	F	U=Upper Field(ft	Full Zone(f^2)	Area Covered(f^2)	Area Missed(f^2)	% Effective
6	15	8.	22.	Horizontal	2,51	2,51	0	100.0
8	15	11.	29.	Horizontal	2,51	2,51	0	100.0



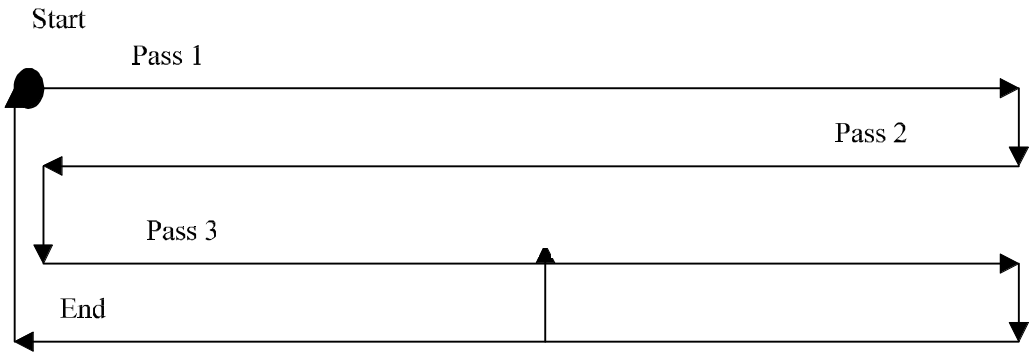
THE PARALLEL LINES SCAN WITH A PRONOUNCED DOWNWARD HEAD SWING AND A BUMP

This scan, if done right, is also 100% effective. The scan consists of parallel line scans followed by a pronounced downward head sweep. (See Figure 8) Starting at one corner with a 15 degree down look, a line is made to the other corner. Then the head is shifted down a bit and other line is swung back to the other side. These parallel lines are continued until the finish which is a pronounced down swing along the deck. Assuming equal spacing, a minimum of three lines and a

downward head swing gives 100% effectiveness along with a huge overlap of the middle fields. Three lines with a downward head swing also help to make the scan systematic as it always starts and ends at the same side after the guard bumps their line of sight straight out perpendicular to the wall of the pool ending with a side-to-side look. In this and the following, Coverage refers to the amount of overlap that is done during the scan cycle. This scan provides 290% coverage at the same time it is 100% effective (See table in Figure 5).

Figure 5: Parallel Lines Scan with A Pronounced Downward Head Swing and Bump

height of head above (ft	Lin	Downlook	F=Line Sight	% Covered	Total
6	4	15.0	22.	92.	Effective
6	3	22.4	21.	95.	100
6	2	38.7	7.	67.	Coverage
6	1	71.6	2.	35.	290

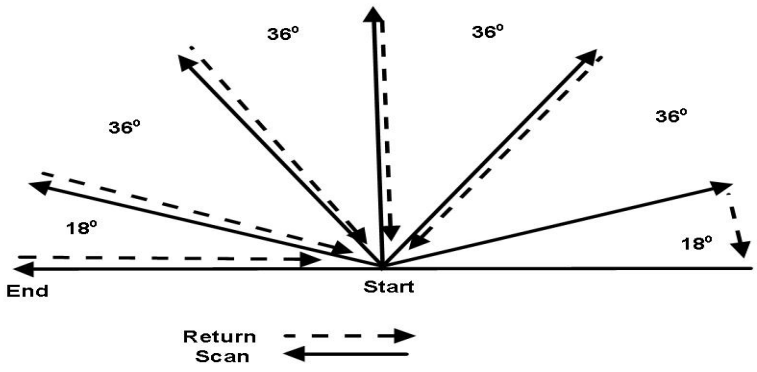


THE IN AND OUT OR SPOKE SCAN WITH PRONOUNCED DOWNWARD HEAD SWEEP AND A BUMP

This scan is also 100% effective if done correctly. Basically, this scan is a series of spokes starting at the lifeguard's feet and going to the outer perimeter of the zone. (See Figure 6). It should finish with a pronounced down sweep and a bump. Assuming that one of the spokes is going to be straight out from the feet perpendicular to the deck, an odd number of spokes is required. Five spokes is the minimum that is required to give complete coverage. This assumes the first spoke is a bit close to the deck, the second about half way to perpendicular, the third straight out, the four about half way on the other side, and the fifth a bit closer to the deck. The finish is a pronounced down sweep of the head during which the guard bumps their line of sight straight out perpendicular to the wall of the pool ending with a side-to-side look. This scan can be 100% effective with 132% coverage.

Figure 6: In and Out Spoke Scan with Pronounced Downward Head Sweep and Bump

height of head above (ft	Lin	Lower	13	Line 0f % Angle	Upper	Total
6	1	Dec		18	38	Effective 100
6	2	34		54	74	
6	3	70		90	110	
6	4	106		126	146	Coverage
6	5	142		162	Dec	



Other Scanning Patterns

There are many other patterns that a guard can use to scan a zone. The following describes a few of the more common ones.

BASIC WITH OVERLAP

This is normally used on a bigger zone such as a wave pool. The pattern is the same "D" that was described in the discussion of the basic pattern but here the guard makes a partial sweep and backs up a bit and then continues with a sweeping motion and then backs up a bit. This continues until the guard hits the far corner and finishes with the pronounced downward head sweep. As an example, look at your right shoulder as if you were starting a sweep at the right corner of your zone. Turn your head until you are looking straight forward, then backup half way to your shoulder. Then continue until you get half way between straight ahead and your left shoulder. Back up to straight ahead. Then continue to your left shoulder then back up half way to straight ahead. Then continue to the left corner and finish with a pronounced downward head sweep with a bump.

KICK POINT

This deals with a high-risk victim in your area. A way to increase the observation of a high-risk victim is to pick a certain point in your zone, usually a corner. When your scan hits that point, immediately cut to the high risk victim and insure that they are still okay and then go back to the kick point and resume your basic scanning pattern. This gets the high risk victim looked at twice in a scan, once when you pass over them in your normal scan and once when you hit the kick point.

What All Complete Patterns Have In Common: The Pronounced Downward Head Sweep With a Bump

The reader may have noticed that all of the recommended patterns finish with a pronounced downward head sweep with a bump. This is the mark of a professional guard; the fact that the head is always moving and they finish one complete sweep of their zone with a pronounced downward head sweep and a bump to clear their primary zone in at most 15 seconds. At the end of one complete cycle of scanning, the guard should be relatively comfortable that there is no victim either on the surface, on the bottom or anywhere in transition anywhere in their zone. Good guards will sign off on a complete scan with a pronounced downward swing of the head and a bump to insure that there is nothing at their feet or along the wall. This is the signature of a professional lifeguard. In essence, the guard has 15 seconds to check that all is well in their area. Then they start over. So every 15 seconds is one complete check.

Incomplete Scans –Do Not Use!

These are scans that are commonly done, but don't fully scan the entire zone of responsibility with the middle field. They are here for comparison purposes only. **THEY ARE NOT TO BE USED.**

THE PARTIAL ARC SCAN – AN INCOMPLETE SCAN

A partial arc scan will be defined, for the purpose of this manual, as a scan that goes from 45 degrees to the left of directly the guard to 45 degrees to the right with a 15 degree down angle following a circular arc. This is a common scanning pattern in lifeguarding. A partial arc scan will miss over half of lifeguard's zone of responsibility.

THE FULL ARC SCAN – AN INCOMPLETE SCAN

A full arc scan will be defined, for the purpose of this manual, as a scan that completes the 180 degrees about the arc described by the 15 degree down angle. This is, unfortunately, also a scanning pattern used by some lifeguards. Full arc scans will miss 5-8% of the lifeguard's zone of responsibility.

THE FULL ARC SCAN WITH A PRONOUNCED DOWNWARD HEAD SWEEP – AN INCOMPLETE SCAN

This is the same scan as the full arc but it is finished with a pronounced downward head sweep along the wall at the guard's feet. The down sweep goes from the corner at the end of the arc along the bottom of the arc just in front of the guard to the opposite corner. This scan misses between 1 and 2% of the zone of responsibility.

THE STUTTER SCAN: – AN INCOMPLETE SCAN

This is one of the most common mistakes in scanning. Here the guard focuses on one portion of the zone, usually towards the middle and just scans and rescans that portion. Doing this, they never get to the corners or the water along the base line at their feet.

ONE HANDED SCANNING: – AN INCOMPLETE SCAN

This is also a common mistake. What happens is that the guard looks at only one side of their zone. Perhaps this is due to a dominant eye. As an example, a guard may look predominantly at the water concentrating on the right half of their zone. This leaves the left side under protected.

CANARY SCAN: – AN INCOMPLETE SCAN

This is also a common mistake. The head bobs up and down while the eyes stay fixed in one plane. What happens is that the guard never looks at the sides of their zone, just the middle.

During The Scan

VICTIMS AND VICTIM RECOGNITION

A basic principle in physics, Archimedes Law, implies that a victim will either be on or near the surface of a pool of water or on the bottom of a pool of water. While it is true that some victims may be in transition from one place to the other, this transition is usually relatively rapid unless the victim is capable of finding some means to support him or herself in the water. For this reason drowning victims have been classified into two groups, surface victims and bottom victims. The following general characteristics for these two groups of drowning victims have been

determined by watching hundreds of rescues and from talking to lifeguards after a rescue about what keyed them to the fact that the person was in distress. Please note that victim's do not all drown in the same way or in the same place. That means that there will always be victims who present characteristics outside of the table provided. To this end, lifeguards should always be taught "If you don't know, go". A false alarm is always preferable to a miss.

These classifications are presented in summary form in Table 1. For the most part, the characteristics are presented with the most frequently seen characteristics occurring earlier in the list.

Table: 1 Recognizing Drowning Victims

Victims On Or Near The Surface	Victims On Or Near The Bottom
1. Facial Expression,	1. Unexplained Color Variation In Pool
2. Irregular Motion Including The Absence Of Motion	2. Elevated Chest / Drooping Head
3. Loss Of Body Position	3. Motionless
4. A Head Back Nose Up Posture	4. Bubbles/ Vomit Stream
5. No Leg Kick.	

ADDITIONAL INDICATORS OF POTENTIAL PROBLEMS:

As this manual has stated before, victims do not go to victim school. An experienced lifeguard will be able to recognize potential problems before they occur. Here are some examples of additional signals should draw a lifeguard's attention.

Children playing with their nose up in the air in shallow water. These are sometimes called dry heads. They have their nose up because they are uncomfortable with their face in the water.

People who show hesitancy when entering the water. They may take a step backward before entering as if they are getting their nerve up.

A non-swimmer accompanying a swimmer wading out into deeper waters. This has a high potential of becoming a double drowning. An adult with a child is a classic example.

People attempting to engage in horseplay. A good example here is teenaged boys.

People who are extremely overweight. They may have trouble standing if they lose their balance.

People who look uncomfortable in the water for any reason.

Children entering the pool from the deck into deep water.

Any unusual or unexpected behavior or activity

Anything out of the ordinary

SIGNAL FREQUENCY

As stated earlier in this manual, signal frequency (in this case an event requiring lifeguard intervention) has to occur often enough to ensure that the guard will be "primed" to recognize it. In order to be effective lifeguards have to have seen enough real drowning incidents or simulated drowning incidents to be ready to recognize the signal. Since surface victims are more conspicuous than bottom victims, this training strategy can stress (though not be limited to) finding something on the bottom.

Some unsuccessful strategies have included using a brightly colored object, such as the red ball drill, or an actual swimmer to simulate a victim. In the red ball drill, a red ball is thrown in the water and the lifeguard has a prescribed number of seconds to locate the ball. Because the visual part of the brain is programmed to see bright colors as a primary stimulus the red ball drill teaches the guard to look for red, not for victims. Live swimmers have a very difficult time being realistic enough to act the part of a drowning victim. Some of the major problems include the absence of a realistic facial expression, the fact that they usually are kicking vigorously to avoid really drowning and that a head back, nose up posture causes water to run up their nose.

A more effective strategy is use a manikin or silhouette to simulate a victim in the water. The problem of using a manikin is that it is difficult to sneak it past the guards. In fact, if the guards are so unaware that you can get the manikin or silhouette into the water without the guards seeing it, you may have discovered a basic scanning and recognition problem right there. Bottom silhouettes are, in our opinion, more effective since they are easier to hide from the guards. The silhouettes should be placed in the pools frequently enough to allow the guards enough successes to keep them sharp. Another advantage of using the silhouettes is that when a guard rescues one and comes to the surface, it does not look like a victim to the guests. Remember that guests come to a facility to relax and enjoy themselves, not to be disturbed or frightened

Another strategy is use tokens made for the drill. These tokens should be relatively dark in hue. It should be stressed again that using bright colors trains the guard to look for colors, not victims. A certain number of these tokens can be placed in the pools on a regular basis. It follows from current research that if the lifeguards know tokens are there and that they can be redeemed for rewards, such as drinks or food, they will be motivated to train themselves to look carefully over their areas. Posting successful guards' names will also help to motivate them.

Guards in every area of the park should be given the opportunity to find something If guards fall into the mindset of thinking that they will never see anything, then when a real drowning comes along, their chance of successfully seeing and recognizing the drowning will has been degraded due to poor signal frequency.

TIME AND VIGILANCE

One final result needs to be mentioned from signal detection theory. Almost all of the human factors studies that have been done on operators such as nuclear plant operators, airline pilots and truck drivers have shown that vigilance decreases exponentially after 30 minutes of concentration on the same task. This means that after 30 minutes in a position, the performance of

the lifeguard decreases rapidly. As a recommendation, 45 minutes in a position seems to be a maximum time for a lifeguard.

Points To Consider:

If you wish to reduce the chance of a lifeguard missing a victim, you need to teach the guard how to be successful at seeing and recognizing a victim. To do that, the lifeguard needs to learn how to look, what to look for, and then have those skills reinforced by giving the lifeguard successes at seeing and recognition using a simulation device or exercise. These basic skills have to be learned first and foremost. Only after these skills are part of the lifeguard's ability to monitor their zone of responsibility, should additional attention be given to other areas affecting vigilance degeneration.

An effective lifeguard needs to look at the corners of their water, the middle of their water, the water in front of their feet, the water along the wall, the bottom of their water, and the top of their water In other words, the lifeguard has to scan all the water. All of this has to be done to insure that there is no victim or potential problem in the water.

If any high-risk swimmers are located, mark their position in your mind. Continue with your scan pattern. During this process, double back quickly from time to time to check the high-risk victims or areas.

On a light use day, an exceptional guard will cover their entire primary zone in 10 to 12 seconds. When the user load goes up, the scan time will lengthen to 12 to 15 seconds.

As an aside, being too fast in the scan is almost as bad as being too slow. For most zones, scanning in less than 10 seconds usually means the guard is not searching the water. The places that are usually omitted in a scan that is too quick are the bottom and the area at the guard's feet.

Scanning is the periodical searching of the pool and the facility in the effort to either spot a potential problem before it occurs or to locate a person in distress. Learning to scan is learning to read the pool. In reading the pool you must use a methodical approach in order to insure that you look in and on the surface of all the water. When you read the pool, mark in your mind the people that you think might get into trouble. Again, try to anticipate potential problems before they occur.

Factors That Adversely Affect the Vigilance Task

There are several factors that will reduce the ability of the eye to see a victim or potential victim. The term visual acuity refers to the ability of the eye to see and differentiate objects. Virtually anything that affects pulse and respiration will reduce visual acuity.

TEMPERATURE

Being too hot or too cold will reduce the ability of the eye to see. The most common problem in guarding is being too hot. This is one of the many reasons umbrellas and hats are necessary.

DEHYDRATION

If the body needs water, the eye may not see as well. This is one of the reasons that guards should drink plenty of fluids.

STRESS

Anything, which produces stress, is a problem here. Common causes are a stressful rescue or personal problems. Guards who are under a stress load should bring this to the attention of their management. Light physical exercise can help to reduce stress in many people.

BOREDOM

When the guard gets bored, their attention starts to wander. They become less focused on the task of recognizing a hazard. This is one of the main reasons that guards should be rotated regularly.

CONVERSATION AND OTHER DISTRACTIONS

Anything that distracts a guard will adversely affect the vigilance task. Only a very rare person can focus or concentrate on two different things at once. If a guard is having a conversation with another guard, supervisor, or a guest, then less of their total attention is on the water. In many cases this will cause them to devote their total attention to the conversation. This same concept applies to other distractions. A typical example is when two other staff members are having a conversation close to a guard. The guard in stand will naturally devote part of their attention to this conversation.

EXHAUSTION

After doing a difficult physical task, it may take hours to recover full visual acuity. Not getting enough sleep is also a problem here. Just being tired can make a guard a liability as opposed to an asset because of reduced acuity.

DRUGS AND ALCOHOL

The effect of alcohol is well known. Visual acuity may be affected up to 24 hours after alcohol consumption even if it were only one drink. This is one of many reasons that guards should not overindulge in the use of alcohol.

The problems with drugs are even more acute. Regardless of any social problems that drugs might cause, most drugs will reduce acuity. Even some prescription drugs can cause a problem. As an addition to the acuity problem, users of recreational drugs do not possess the discipline required to be a guard.

The Five Keys to Tell When a Guard Is Not Scanning

There are five key indicators that can be used to tell if a guard is not scanning their water.

°The head is not moving.

°No pronounced downward swing of the head with a bump.

°Not picking up the corners during their scans

°Not using a consistent systematic scanning pattern.

°Not covering the entire zone in 15 seconds or less.

These are the keys that a guard should think about every time that they go on the stand. A supervisor can use these keys to tell if the guard is indeed scanning their area thoroughly.

Denial, Flight and Action

At this point, we need to take a small detour and discuss the usual reaction to a crisis situation. Most people and particularly those who are untrained or inexperienced go through a cycle when confronted with a crisis. The first reaction is denial. This means that they refuse to allow themselves to believe that the crisis is really happening. The next reaction is to run away from the event. This flight can be either mental or physical. The last reaction is action. Only after the person has worked their way through denial and flight can the action step occur.

When applied to lifeguarding, this means that the guard's first reaction will more than likely be denial. With a victim on the bottom for example, they may simply block out that the event is occurring (denial) or refuse to accept that it is occurring (flight is not reacting; the pause before going in). Flight can be mental as well as physical. It is difficult to accept the fact that you will have to act and act correctly or someone may die. A common scenario is having another guard say that they saw the victim but did not think they were in trouble. This can be an example of denial.

Working through denial and flight is where initial training reinforced by in-service training pays off. Experience is a big factor here also. Once the guard has made a difficult rescue and found out that their training was adequate to deal with the situation, the denial step will get shorter, that is, it will be worked through more quickly. It may never go away and that is normal. The trick is to get through denial and flight quickly and get to the action step.

The Standard "Lifeguard Trap"

The standard lifeguard trap has two parts: seeing what you expect to see and having your attention drawn to a more active area. The first of these, seeing what you expect to see, is related to the denial discussed previously. If you don't expect to see someone on the bottom of the pool then you may not see them. This may help to explain how a long immersion drowning goes unnoticed. A long immersion drowning is one in which the victim was under the water for a prolonged period of time. If you don't expect to see someone drowning in your pool, then you just may not see him or her. Avoiding this phenomenon is sometimes called taking a pro-active stance. This simply means to expect the worst and look for it.

The second part of the standard trap is to have your attention drawn to a more active area. As an example, a guard in the deep end may have their attention drawn to people going off the diving board and never look at their own feet. The base of a slide is another attention getter that may cause a guard to not check out all of the water in their zone. The most obvious and serious example of this trap occurs when you have a drowning victims on the bottom of the pool. The surface is where the action occurs. So the surface draws the attention of the guard and they never look at the bottom.

A typical way to fall into the trap occurs on a light user day. A guard may feel embarrassed or foolish looking at water that they feel has no people in it. Remember that the guard's job is to guarantee that there is no one anywhere in distress.

Defend the Water – Look At the Water, Not Just the People

If you just look at where the people are in the water, then you have fallen into the standard lifeguard trap. The guard must look at and in all of the water, regardless of whether they think people are there or not. A good guard will take it as a personal mission to defend their water, to insure that there is no victim anywhere in or on their water. While the people will demand much of the guard's attention, the good guard will not ignore that water they think may not have swimmers.

Counting

Counting the people in the pool is sometimes a good strategy. On the days or times when there are not many people in the pool, counting can be useful. If the guard counts and recounts this helps to insure that the scanning is going on. The guard must be sure not to fall into the trap of relying on counting and not looking at the rest of the zone, thereby falling into the trap.

Rotations

Since being tired or bored reduces visual acuity, lifeguards should not be left in one place too long. They need to rotate. This simply means changing from one position to another. In order to change positions, it is necessary for another guard to take the original guard's position. This has to happen in some manner that does not leave the pool undefended by being unobserved. In general, a rotation will start with one guard taking another's place. This guard then moves to another position replacing a different guard. One of the positions may be to go on break.

The longest a guard should be in any one position is 45 minutes and 30 minutes is better. This helps to reduce boredom and complacency thereby helping to increase vigilance. The actual exchange of positions must be done in such a way as to keep the water under continual observation.

There are two basic methods to do this. One has the incoming guard bring a tube with them and the other has the two guards exchanging the rescue tube.

Method 1

In the first method, the incoming guard brings a rescue tube with them and stands as close as possible to the outgoing guard. The outgoing guard does one last scan from the guard position while the incoming guard does their first scan. Both should pay particular attention to their feet and to the bottom of the pool. When both are satisfied that no one is in distress in the water or on the deck or particularly on the bottom, the outgoing guard moves out of the position and the incoming guard takes over. It is at this point that the outgoing guard verbally releases the zone to the incoming guard. This incoming guard should verbally accept responsibility for the zone. They both do one more scan. When both are satisfied, the outgoing guard then moves to the next position in the set of rotations.

Method 2

The only difference between Method 1 and Method 2 is in the second method, the incoming guard does not bring a tube with them and the two guards exchange the tube at the point where the old guard has finished their last scan and the new guard has finished their first scan.

Turbidity

Turbidity refers to the amount of suspended particles in the water. When the turbidity is high, then it is difficult to see through the water to see the bottom of the pool. As a general rule, lifeguards should be able to see the drains on the bottom of the pool. If they cannot see the drains, then they cannot see a victim on the bottom. This is a particularly dangerous situation. When the turbidity goes up to the point where the guard cannot see the drains, then consideration should be given to closing the pool. In some pools, this condition will start to develop in the late afternoon. A factor that may cause a sudden rise in turbidity is a slight decrease in the pool water temperature. In the late afternoon when the temperature drops slightly, guests have used the water all day. The filters may be falling a bit behind. The turbidity goes up. Lifeguards need to be particularly sensitive to this problem. As the turbidity goes up and it becomes more difficult to see the bottom of the pool, the vigilance task becomes more difficult. In a condition of this sort, guards have to be very sensitive as to who enters their zone. Said another way, if you cannot see the drains, you have a very dangerous situation.

High-risk Areas

There are numerous areas around an aquatic facility that are high-risk areas. A good guard will have thought about these before an emergency occurs.

AT THE GUARD'S FEET

This has already been discussed but it is worth revisiting. This is a hard place for most people to look. They just don't expect a victim to be that close to them.

ALONG THE BOTTOM EDGE OF THE POOL

This refers to the corner where the bottom of the pool meets the sidewall. This requires a pronounced downward look by the lifeguard.

ALONG THE TOP EDGE OF THE POOL

Children will hand walk down the edge and manage to slip off the edge into deep water. People bump their heads or other parts of their body on the edge or wall. People on the deck can slip and fall in the water. All of these factors make the top edge of the pool a high-risk area.

CORNERS OF THE POOL

Many times, poor swimmers will try to swim across the corner from one wall to another. Also, the corner of the pool is often the corner of the guard's zone.

DIVING BOARD

The board is a high-risk area in several ways. The obvious one is that someone will dive off the board and strike the bottom or another swimmer. However, the most common accident on a board involves the diver falling off the ladder or side of the diving board. Another common accident with less talented swimmers and those attempting to horseplay is to dive towards the side of the pool and strike the wall.

LADDERS

Slips and falls are the most common accident in any facility. Slipping on the ladder and maybe even getting a foot caught between the ladder and the wall can be a very bad accident. Loose steps, sharp edges, or poorly designed ladders can make the probability of a bad event ever greater.

THE BREAK

The break is the spot where the bottom of the pool starts getting remarkably deeper. The angle of the slope is sometimes so great that someone who may be trying to stand at the break actually slides into the deeper water. Most pools place a floating lifeline at the break. This not only provides a visual distinction between deep and shallow water, but can also assist a swimmer who has gotten into trouble.

THE FOUR FOOT LINE

This is the place in the pool where the water gets to the 4-foot depth. Remember the 4-4-7 rule? This is a victim who is about 4 feet tall, about 7 years of age and in about 4 feet of water. It is at the 4 foot level that the ability to swim becomes important for survival, particularly in younger swimmers.

ENTRANCE AND EXIT AREAS

These are the places where the guests first come into the pool area. Children particularly like to come into the area and then run and jump into the pool at full speed. If the water is deep, then this may be a high rescue area. If the water is shallow, then diving may lead to a spinal injury.

SLIDES

Slides have all of the problems that boards have and a few all their own. One problem is that is can be very easy to have a slider impact someone at the end of the slide. If the slide exits into deep water, this is going to be a high rescue area.

CORNERS OF ZONES

The extreme corners of zones are also a high-risk area. The primary reason is that guards have a hard time looking at the corners of their zone since this requires the most pronounced head sweep.

PLACES WHERE YOU DON'T THINK THERE ARE PEOPLE

This is a high-risk area for the obvious reason that it requires discipline to force yourself to look where you think there are no people. It is in these places that a long immersion drowning will usually occur.

High Risk Victims

Just as there are high-risk areas in an aquatic facility, there are high-risk victims that use the facility. Some of these have been mentioned before but they merit review.

FIRST TIMERS

The first time that a person uses a facility, they are more at risk simply because they are not exactly sure what they are getting into. The first time a guest uses a slides can be particularly risky. In flat pools, particular attention should be paid to guests that are new to the facility.

ECONOMIC CHALLENGED

These families with less income may not be able to afford aquatic activities such as swimming lessons. Correspondingly they may be poorer or inexperienced swimmers.

"4-4-7"

Again, these are children about 4 feet tall, in about 4 feet of water and about 7 years old.

UNATTENDED CHILDREN

It is not uncommon for children to become separated from their parents or guardians. In the aquatic environment this is major concern, the parents and guardians have the main responsibility of caring for and insuring for the safety of their children. Whenever a child is separated from their parent or guardian, the lifeguard can inquire where their guardians are, and see that they are sufficiently supervised by their parents or guardians.

HEAD BACK, NOSE UP – DRY HEADS

This refers to people, usually children, playing in the water with their head back and their nose up. This may mean that they are uncomfortable with water in their face. It may be indicative of a non-swimmer or a very poor swimmer.

ETHNIC BACKGROUND

There is some medical research that indicates blacks have a higher bone density then other ethnic groups. (David A. Barondess, Dorothy A. Nelson, And Sandra E. Schlaen, Whole Body Bone, Fat, and Lean Mass in Black and White Men, Journal of Bone and Mineral Research, June 1997, Volume 12, Number 6, Page 967)

While a higher bone density doesn't necessarily indicate how well or poorly a person might swim, bone density does have an effect on a swimmer's buoyancy. That in turn would affect how long a drowning victim stays on the surface before sinking to the bottom of the pool and how hard it will be to bring the victim to the surface during the rescue. This means that a black male with a well-developed body may sink faster and be more difficult to bring to the surface than someone with a different ethnic background.

TEENAGE MALES

This is a group of risk takers where the "macho spirit" is very obvious. Another problem is that they may not be aware that their body mass has increased significantly since their younger days. Water that they could dive into and not strike the bottom when they were younger and smaller may not be deep enough now. This may be one of the reasons this group is particularly at risk for spinal injuries caused by diving.

OVERWEIGHT INDIVIDUALS

The problem with this group is that they may not realize the restrictions their weight places on the activities that they can safely perform. This group may have particular trouble on slides since they may not be able to safely absorb the impact on landing. They may also have difficulty regaining their balance or resuming a standing position if they should find themselves in trouble. Older women in this group may also have the additional problem of weaker bones then when they were young.

ARROW SHAPES

This refers to people, usually males, who are tall, are narrow at the waist and torso and broad in the shoulders. On some slides, this body type can produce the maximum velocity. This group is also at risk in diving activities.

FOLLOWERS

This refers to children left unattended while their guardian moves into the water. The children tend to follow. A particularly dangerous area is the edge of zero depth water such as at a wave pool.

ELDERLY

While usually not at a high risk of drowning, elderly people are more prone to orthopedic type of injury particularly in using slides or attractions that involve a high velocity. They may also have medical conditions that can be aggravated by physical activity.

1 TO 3 YEAR OLDS

A greater number of toddlers (1 to 3 year olds) become LSR's (LSR's: Loss of Spontaneous Respiration) than their population predicts. More toddlers are found in aquatic facilities in a LSR condition than their representation in the number of rescues would predict. As an example, the percentage of toddles that are LSR's is about 6 times greater than the percentage of rescues that are toddlers.

High Risk Times

LIGHT DAY USE

On those days when not many guests are in the pool, guards have a very difficult time being vigilant. The thought process is something like; "there are not many people in the pool, so how could anyone get into trouble". Yet many times after an aquatic accident, or drowning, the investigation reveals that there were not many people in the pool.

THE START OF THE DAY

The pool is just "waking up". Guards are just getting into the routine of the day. Added to that is the fact that often, this is a light use time.

THE END OF THE DAY

Guards get tired. They are looking forward to other activities. Their attention starts to

wander. Guests may become more fatigued during this time.

THE START OF THE SEASON

Guards are just beginning to learn their jobs. Many will have never seen a person in distress before. Some of the new guards may have difficulty learning and doing acceptable scan patterns. Some of the guests may not have been swimming since the end of last season and may be out of condition.

THE END OF THE SEASON

This is often referred to as the "burnout time". Guards get tired. They get bored. They begin to look forward to activities after the guard job is over. A particularly dangerous mindset is "we haven't had a drowning yet, so we won't have one". Guests are becoming more accustomed to lifeguards and may begin to break safety rules more frequently.

SPECIAL EVENTS

Special Events include having large groups attending the facility because of such activities or occasions as day care group trips, school group trips, group buyouts, picnics and holidays. What makes this a high risk time is that attendance at the facility may be significantly increased over normal attendance. Additionally, ordinary operating procedures and processes may have been altered to accommodate the events.

High Risk Behavior

This normally involves breaking some rule of the facility. Common examples include running, jumping, and horseplay. A typical example is progressive bad behavior. A guest, usually a teenage male, comes down the slide on the tube the correct way the first time. The second time, they come down on their stomach. If the guard does not correct the behavior at that point, the next step is to come down the slide on their stomach on the tube. Then they try to dive into the catch pool. Due to the velocity and the shallow water, this can lead to serious spinal injuries, which could lead to paralysis or even death. It is very important that behavior such as this be stopped immediately before it progresses to the point of serious injury.

This is one of the main reasons that all of the rules of the facility must be enforced consistently each and every time with each and every guest on each and every day. This behavior is not exclusive to guests or pool patrons. Lifeguards and staff have been known to violate a facility's safety rules from time to time. This behavior is unacceptable, as the general public looks up to the lifeguard as an aquatic professional. Two outcomes may develop from this behavior. The first outcome is that the guests many lose respect for the lifeguards and may resist following future directions and instructions. The second outcome is that either guests or other guards may attempt the same unsafe behavior, resulting in a catastrophic outcome.

Guests Make More Rescues and Identify More Victims than Guards

A common occurrence is to have a guest point out a person in distress to a guard. While this is a bit scary, it is understandable. Quite often there are many more guests than guards. Some of the guests, particularly adults, are very sensitive to children needing help. So they bring this to the attention of the guard.

Another common incident is to have guests make a rescue and have the guard never see the distressed swimmer. One reason for this is that the guest is closer to the troubled swimmer and makes a rescue even before the situation deteriorates to the point where it would draw the attention of the guard.

CASES

The following cases are drawn from actual experiences and are used to emphasize the role and importance of proper scanning.

CASE 1

This was the standard "L" shaped pool with two guards up. The deep end was the short side of the "L" and there was one guard at the corner of the "L". The other was about two thirds of the way down the long side towards the shallow end. The "447" was about 20 feet closer to the shallow end guard than the rescuing guard. The shallow guard never saw the victim. The recovery was made by the guard farthest away who swam past the other guard to pull the victim off the bottom. The reason it is referred to, as a recovery as opposed to a rescue is that the child did not survive.

CASE 2

The pool did not open in the morning because of a rainstorm. After lunch, a guard went out to the pool to hang the rescue equipment on the stands. While working on one side, he saw what he thought was a smudge in the water. Upon going to the other side, he identified the smudge as a body and made the recovery. The victim had been in the water since the evening before. No one looked in the water at the close of the day. Even though several guards were at the pool that morning, none looked in the water when they came to work.

CASE 3

A wave pool had a lifeline down the middle separating the pool into two halves, one for swimmers and the other for the use of boogie boards. The boogie board side was closed during the afternoon since there were not many people in the facility. The victim was last seen in the afternoon. He was found in the early hours of the next morning on the boogie board side of the pool.

CASE 4

In a small older pool, a teenager got in trouble in the deep end. One of his buddies got in to help him and the pair became a double drowning. A third buddy got in and got the second one back to the bank. The original victim drowns. Neither lifeguard at the facility saw any of this. When notified by one of the boys that their friend was on the bottom, they tried to retrieve the victim but failed in their attempt, perhaps due to the turbidity of the water. The EMS attendant finally did the recovery when the ambulance arrived.

CASE 5

In a wave pool, a young swimmer swam up to the feet of a guard on the deep end and said that there was a victim on the bottom. The guard then asked the boy to swim down and touch the person on the bottom and see if the person moved. The boy came back and said that the person did not move. Then and only then did the guard get in the water to make a recovery.

CASE 6

A young girl went up a slide that had a 48-inch height requirement. Unfortunately, the girl was slightly less than 48 inches tall. So the guard, quite properly, would not let her slide down the slide. She went back down the stairs and hopped into the catch pool. The pool was a little less than 6 feet deep. A lady on the side of the pool saw the girl and thought that she was in trouble and yelled to a man next to her to pull her out. The man got her up slightly before the guard got there. Unfortunately, the little girl did not survive the incident. This was also a relatively fast drowning, which seemed to have occurred in between 30 seconds and a minute. This again points out that all of the water must be watched, not just the end of a slide.

CASE 7

This case is very similar to Case 6. Here the victim, a young child, simply went down the steps into the catch pool of a slide. The guard was focused on the end of the slide and never saw the girl. She too did not survive.

CASE 8

An adult left a small child on the beach of a wave pool telling the child to stay there until they returned. The child followed the adult into the water after a few minutes. The child was found in about 1.5 feet of water, was not breathing, and did not recover.

CASE 9

A lifeguard decided he knew enough about the park to violate the rules. After hours, he attempted to ride a slide standing up. Unfortunately, he will never stand again as he is now a paraplegic having been thrown some 80 feet out of the slide.

CASE 10

Immediately after two guards had changed positions in a rotation, a small boy swam up to one of the guards and said a girl was throwing up on the bottom. Neither guard was aware of the victim who was in 7 feet of water and about 20 feet directly in front of the guard stand. This absence of a hard bottom check in a rotation change may have cost the girl her life.

CASE 11

Two guards rotated at the top of a short steep slide into deep water just as two girls went down the slide. One girl got out, the other one did not. Neither guard checked to make sure that what went in came out. The absence of this simple check was a critical factor in not preventing her death.

CASE 12

A guard was seated on the stand at the deep end of an L shaped pool. Two very young children were taking turns jumping onto a kickboard from the side of the pool across from the guard and swimming back to the side holding onto the board. One child missed the board and went straight to the bottom of the deep end without surfacing. The other young child went to tell his parents, but they kept looking for the child on the deck. The lifeguard did not see the child entering the water and did not see the child on the bottom of the deep end.

CASE 13

A man came into the catch pool on an inner tube. He was holding his neck and complaining about pain in his neck and a loss of feeling in his extremities. The EMT was summoned and asked the man to get off of the tube and onto the backboard. The aquatics manager stopped the process there and would not let the man move. A back board was placed under the man, the tube was deflated and he was placed on the backboard and transported from the facility. Since he had to have several of his neck vertebrae fused, the fact that he can still walk and even play golf is very likely due to the intervention of the aquatics' manager.

CHAPTER 6: PEOPLE MANAGEMENT

The purpose of this chapter is to offer some guidelines about working with people. A fundamental part of a guard's job is to interact with the public. If this is done the right way, then the facility will run smoother and the job will be easier. If this interaction is done the wrong way then guests become dissatisfied and tend to not frequent the facility. If the guests are dissatisfied, at the very least they will make the guarding job more difficult and less enjoyable. A guard who does not know how to deal with people is a liability to a facility and will not be an effective guard.

Another time when interaction with people is important is during a rescue. Guards may need the help of the guests to care for the victim or to assist in removing the victim from the water. The guard does not want the guests to interfere with the care of a victim, so guards need to know how to deal with people.

Be Polite

This is perhaps the most fundamental part of people interaction. Rules have to be enforced and the lifeguard must do it. But nobody likes being told what to do. Being abrupt or rude will at best make any interaction between a guard and a guest ineffective. Take the time to say please and thank you. This is a very basic issue. A guard should always use the word please in giving directions to guests. A guard should never yell or shout at a guest unless there is eminent danger and there is no other way to communicate with the guest.

THE GUARD IS GIVING DIRECTIONS NOT ORDERS

The guard should watch their tone of voice and make sure that the tone is that of giving a direction. Even though sometimes the direction is given over and over again, the word please should be attached to the direction each time. There is a difference between "Don't run" and "Don't run please." Many aquatic facility managers will put it this way; "Nobody died and made you God when you became a guard".

A major mistake is made when the guard uses a derogatory or demeaning word to preface a direction. This is a clear indication that they are having God like feelings. An angry or arrogant tone is another indicator. Children look up to guards as a role model. An angry word can damage this image. Adults will be offended by harsh words. So the guard should keep the tone non-threatening and remember that they are giving directions

RULES HAVE REASONS

First, a guard should know the rules of the facility and the reason for each rule. These can range all the way from no running to the attire that a swimmer may wear. Once the guard knows the reasons, then they should seek to understand why the rule is a rule. As an example, suppose that the facility has a slide and that there is a preferred direction to exit at the end of the slide. If a guest goes the wrong way and the guard makes them cross back over in front of the slide it is clear that the guard does not understand why the exit rule is in place. The obvious reason for this rule is to get the slider out of the way of the next person. Bringing the last slider back across in front of the slide puts them in harm's way. So the guard needs to understand why the rule is a rule and enforce the intent of the rule as opposed to just blindly enforcing the rule

Rules Should Be the Same Day-To-Day, Guard-To-Guard and Guest-To-Guest

Nothing will cause more trouble at a facility than an inconsistent enforcement of the rules. Each day, the same rules should be applied the same way. Each guard should apply the rule the same way for each guest. As an example, suppose there is a height requirement to use a slide or board. One guard does not enforce this rule and allows a child to use the attraction. Then later another guard does not allow the child to use the same attraction because they do not meet the height requirement. While the first guard made the mistake, the second guard is going to have the difficult task of explaining to the parents why their child is restricted from the attraction. Children and some adults will try to take advantage of a guard in rule enforcement. Inconsistent rule enforcement is perhaps the leading cause of complaints in an aquatic facility. The guard should know the rules and their reasons and how the facility wants them enforced. Then the guard must enforce the rules the same way each and every time, each and every day, each and every guest.

Rules for Guests Are Rules for Guards

If there is a rule for the guests, it also applies to the guards. A guard should never violate one of the rules of the facility unless directly told to do so by management. In many facilities, violating a facility rule is cause for immediate discharge of the guard.

Behavior is learned. How the guards act will determine how the guests will act. If a guard violates a rule then the message transmitted to the guest is that it is okay for them to violate the rule.

Image

Part of being a guard is looking the part. This means being in proper uniform and looking and acting professionally. Right or wrong, many people form impressions based on the image of the guard. If the guard is poorly shaven or has long hair that is not tied back or long fingernails then they look as if they do not take the job seriously. So the guest may not take them seriously. A guard with a poor image is going to have trouble in enforcing facility rules in many cases.

A major part of image relates to language. Obscene language from a guard will create an image of being uneducated, untrained and uncaring. There is no excuse for the use of profane language in the public arena. The use of bad language often marks a lack of discipline. The guard's language must be appropriate.

Another part of image relates to behavior. Said again, **behavior is learned**. If a guard participates in horseplay then, again, it transmits the message that it is okay for the guest to participate in horseplay. If a guard does horse around, it is difficult for the public to take them as a serious professional lifeguard. If the guard is not disciplined enough to act with some decorum around the pool, then how can they be disciplined enough to supervise the use of a facility or perform a rescue?

Another part of behavior relates to interaction between the sexes. The public display of affection by guests makes many people uncomfortable. Boundaries must be set and enforced.

The Opposite Sex

The major rule in this case is hands off. Guards are physical people and enjoy physical activities. However, guard-to-guard interaction should always be appropriate and proper. The

behavior of a guard is always under the scrutiny of the general public and of management. Someone observes almost all actions. Inappropriate behavior will be noticed and will mark the guard as lacking both self-discipline and professionalism.

While this is important in guard-to-guard interaction, it is even more important in dealing with guests. An innuendo, an improper gesture, or an inappropriate touch with a guest can lead not only to the discharge of the guard but also to litigation against the guard and the facility.

Being a Good Employee

This is sometimes referred to as having a good work ethic. To adequately protect a facility requires dependability, trustworthiness, and discipline. Among other things this requires a guard to be mature enough to understand that they must come to work on time. Otherwise, someone else will be required to make up for the guard's absence. Knowing the rules and your job description and then committing to uphold the standards set forth by these parameters is also part of a good work ethic. This concept is related to the concept that if you take somebody's money to do a job, then you have a moral and ethical obligation to do the job to the best of your ability.

Many times, a guard will be told to do a task that they dislike or do not feel they should have to do. At this point, the guard should remember that it is not their responsibility to make that decision. They need to follow the directions of upper management to the best of their ability.

If you are asked to do something and don't know why you need to do what is requested, many supervisors would prefer that you ask why. Then, if you understand why, you will have a better chance of doing the task correctly. Be sure to ask in a diplomatic manner.

Being a good employee also means being well trained and prepared. This includes coming to work ready to work. Troubles and problems that occur outside the fence should, to the best of the guard's ability, be left outside the fence. Otherwise, the guard will not have the ability to concentrate on protecting the facility.

Following Established Procedures

This is very important to the running of a safe and efficient aquatic facility. The first step is to know the procedures. The next step is to be sure that you follow them exactly. Don't take short cuts and don't insert your own judgment or opinion for that of management. This refers not only to the rescue protocols but also to such things as cleaning the facility or, most especially to doing paper work. Many times, just reading a guard's handwriting becomes a difficult if not impossible task. So be sure you know what the procedures are and then follow them rigorously.

Dealing With an Angry Guest

This is one of the most difficult tasks that a guard will have to do, particularly if the guest is an adult. One of the most common scenarios that cause anger in a guest is inconsistent rule enforcement as was mentioned earlier. There are several tactics that a guard can take to try to defuse the situation. One is to offer an alternative. Suppose a guest is told that they cannot do something. Then, if possible the guard can suggest something that the guest can do. As an example, if they do not swim well enough for deep water, then the guard can stop them from entering the deep water and suggest that they use another area like a slide if one is present.

If the anger is caused by the enforcement of a rule, then the guard can appeal to higher authority by pointing out that the rule is made by the facility and that the guard has no choice but to enforce the rule. The guard can also suggest that the guest talk to upper management. This does not mean that the guard should say something to the effect of "Well if you don't like it, talk to the

boss" but rather something like, "I'm sorry, I have no choice but to enforce the rule. Perhaps you would prefer to discuss it with my manager."

Many times, when people are angry and complaining, they do not necessarily want the guard to do anything about the issue. They just want the guard to listen. So the guard should always listen to a complaint. Sometimes, it is even of value to take the time to write down the complaint and show the guest that you care enough about the problem to write it down to bring to management's attention at a later date.

If a guest comes to you with a problem, take the time to listen to the problem. Make sure you understand the problem. Ask questions to get details if you feel they will be helpful. Solve the problem if you can. If you cannot solve the problem, at least take the time to respectfully listen to the person, then pass it on to the proper authority that may be able to address the issue.

Above all, when dealing with anger, don't make it worse. Don't become angry in return. Don't become emotionally involved. Stay cool and be polite. Later, in private, is the time to let off steam. However, when dealing with a guest, DO NOT FORGET TO WATCH THE WATER, especially if you are in the lifeguard stand.

Use Bystanders If You Need To

In a rescue, the guard(s) may have to use bystanders to help with the victim. Many times the first person to a victim is a guest in the pool. It is essential that the guards take over the rescue and care of the victim.

In many cases, in order to take control, the guard must identify themselves as a guard. This is one of the reasons that a uniform is important. If a guest has a victim, the guard should say, "I am a lifeguard, I will take care of them," as they move in to take over the rescue. With younger guards and older guests, this can be a real problem. The guard must make a forceful direct move to exert control.

In using bystanders to help, after you have identified yourself as a lifeguard, tell them exactly what to do and when to do it. A place where you can use help in most cases is in removing the victim from the pool. Be specific. Directions such as: "Stand right beside me." "Reach under." "Do not lift until I say go. " "Be careful with their head" are required. A positive manner shows that you have the situation under control.

Sometimes, in spite of your best efforts, the guests will get out of control in a rescue. If this happens, protect the victim. At some point, the guest who has the victim will relinquish control. Keep trying to move them away from the victim while you protect the victim from additional harm. An example of this might occur in removing the victim from the water. The guest may just set the victim on the deck and then back off. If this happens, take care of the victim's head; watch the victim's head throughout the lift.

In some facilities, the guests come on a regular basis. If the guard knows them, then they have some idea of what to expect from them. This can help in choosing a guest to help in a particular way.

In a facility where there are few guards, a bystander may have to be used to activate the EMS. Make sure that the communication system is located in a place where it can be accessed and the directions to access it are clear. As an example, if a critical incident occurs in a pool where all of the staff is needed to care for the victim. One of the guards can say to a guest, "You go to the office and call 911". When the guest gets to the office, the phone must be obvious and any

particular directions to get an outside line must be clearly displayed. The address of the facility, directions on how to get to the facility, the phone number of the facility, and important emergency numbers should be posted by the telephone at each facility.

Crowd Control

If a rescue does occur, then people who are at the pool may get in the way of taking care of the victim. People are naturally curious. Many are concerned. Some may be emotionally involved with the victim. The guard doing the rescue, another guard, or a manager may have to keep the people back and away from the victim. If there is no other guard available, the guard who does the rescue may have to request that a bystander move the people back and away. If the victim is not breathing, consideration should be given to moving the guests out of the facility where they are not directly observing the care of the victim.

In some facilities consideration should be given to clearing the pool in the case that a critical incident occurs. The question is one of how many resources are available to care for the victim. As an example, if there are only two guards in the pool, clearing the pool if a drowning does occur is essential in order to free up the second guard to assist with the victim. However, if you have a critical incident, most of your resources should be focused on the care for that critical incident. The second guard makes sure the rescue is working before turning their attention to clearing the pool. The second guard must continually be alert to any changes in the rescue situation; some rescues can turn bad quite quickly.

Using Lifejackets

If your facility has lifejackets for the guests, look for people who should be wearing them. This is a prime example of preventive guarding. Take the time to help a parent fit their child into the proper jacket. If you see children who cannot swim, suggest to the adult with that child that they get them a jacket. This is a simple "people skill" that can go a long way towards both safeguarding the facility and towards creating a professional, positive and safe image to those who visit your facility.

CHAPTER 7: THE RESCUE IN PROGRESS

This chapter does not describe the techniques used in the rescue, which comes in a later chapter. However, this chapter is devoted to all of the support activities that must occur in a rescue situation. In particular, the communication system, the emergency medical system, the role of the other guards, and follow up procedures are discussed.

Communication Systems

A method of signifying that a rescue is in progress needs to be established. This alerts the other guards that a rescue is occurring and also notifies the on-site management that a rescue is in progress. Other situations arise where communication is also important.

ONE LONG, HARD BLAST OF THE WHISTLE

This is the common method used by lifeguards to signal that a victim has been identified and that the guard is going to engage in a rescue. The whistle should be blown forcibly so that everyone in the immediate area can hear the signal.

ONE SHORT BLAST OF THE WHISTLE

This is used when a guard is trying to get the attention of a guest. It is a quick blast of the whistle. Sometimes, a quick blast will not get the attention of the guest. In this case, care should be taken that frustration on the guard's part does not change the short quick blast into a long blast.

TWO SHORT BLASTS OF THE WHISTLE

When a guard needs to get the attention of another guard, use this signal. When a guard hears a double tweet, they should look around to see what other guard or manager is trying to get their attention.

MULTIPLE LONG WHISTLE BLASTS

Use this when requesting management attention for a major incident. Crowd control is one example.

EYE CONTACT

In most cases, it is necessary to get eye contact along with the whistle blast. Then the guard knows that the whistle was heard.

PATTING THE HEAD

This signal is used two different ways:

PATTING THE HEAD ON THE DECK

One way is when a guard has to leave a station momentarily and wants another guard to watch their area. Then they look in the direction of the guard that they wish to communicate with, usually the one to the left. The guard can double tweet on the whistle to get the other guard's

attention. Get eye contact. Pat himself or herself on the head until they see the other guard give some recognition that they understand, usually a nod of the head. The other guard will then watch their zone until they return.

PATTING THE HEAD IN THE WATER

The other use of the pat on the head is by a guard doing a rescue or in the water. The pat on the head, done with one or both hands, signifies that the guard in the water is okay and that everything is all right. As an example, a guard may think that a swimmer is in distress and enter the water. Once they arrive they find out that the swimmer is okay. At this point, a pat on the head signifies that everything is okay and that assistance is not needed.

A FIST IN THE AIR

This signal is also done by a guard in the water and means I need help. If the guard is incapable of making the rescue alone as in the case of multiple victims a fist in the air is appropriate. If the victim is not breathing, then a fist is appropriate. In most cases, the guard will not be able to give this signal since they will be actively involved in doing the rescue. So every guard in the area that can see the rescue should be alert and have the rescue under observation. This signal is also used by some facilities by the lifeguards on deck to signify the need for assistance. Possibly a manager or head lifeguard is needed to talk to a guest while the lifeguard is scanning their zone.

Using Bystanders

This has been discussed earlier, however it does merit repeating. Many times the use of bystanders will be required to care for a victim. Bystanders can help with crowd control, calling 911, assisting in getting a victim out of the water, spinal management, and helping to clear the pool. While the help of bystanders is important, it is essential that the guard keep control of the rescue. In order to do this, you must give the bystander complete instructions in a forceful tone. You should start, in most cases, with identifying yourself as a lifeguard. Then be sure to speak in a clear, concise, and positive manner. Speak with authority. Remember that you are the person trained to deal with this event. You are in charge.

You must monitor bystanders to see that they do exactly what you ask them to do and no more. Be sure you set limits on their actions. Tell them exactly what to do and when to do it.

The Second Guard

Once a rescue is in progress, what should the other guards be doing?

FIRST, MAKE SURE THAT THE GUARD DOING THE RESCUE HAS THE SITUATION UNDER CONTROL

This means that once you hear the long blast that designates a victim has been spotted and that a rescue has been initiated, check on the guard doing the rescue and make sure that they are not in any immediate distress other than the stress that a rescue naturally produces. Questions to ask include: Is the guard okay, does he have the victim's head up and out of the water, is the guard moving the victim to the extrication point?

CONTROL THE CROWD

This means several things. Many times other guests will become emotionally involved and their untrained actions may prevent the rescue from proceeding. Another thing that must be done is that the rest of the swimmers must still be watched to insure that someone else does not get into trouble. In a large system with numerous guards around a facility, this means that someone has to cover the zone of the guard and in some cases stopping slide dispatch may also be required.

THE GUARD TO THE LEFT OF THE GUARD DOING THE RESCUE HAS THE RESPONSIBILITY TO MAKE SURE THAT THE ZONE OF THE RESCUE GUARD AND THE RESCUE IS OBSERVED (UNLESS OTHERWISE DESIGNATED)

If a rescue occurs to your immediate right, then you have the responsibility to make sure that the rescue is going well, the guard does not need immediate help, and that both your zone and the zone of the rescue guard are both under your observation.

The Emergency Medical System (EMS)

The emergency medical system refers to the system that is in place to deal with an emergency such as a non-breathing victim. In big facilities, there may be an Emergency Medical Technician (EMT) or nurse on site. In smaller systems, the local ambulance or fire department may be the provider of emergency assistance.

Activate the Emergency Medical System

This is the first responsibility of the system after it has been determined that the incident is a critical incident. A critical incident is one that involves a life threatening situation, such as drowning, or a situation that has the potential to be very serious, such as a spinal injury. Once an incident has been determined to be critical, the EMS should be activated as soon as possible. This can occur in the assessment step. In some cases, an incident can be determined to be critical even before a formal assessment of the victim takes place.

As an example, in a two guard system, once it is determined that the guard doing the rescue has the victim and is moving to the extrication point and that the victim is not breathing, then the EMS should be activated. This is very important, especially in the case of cardiac arrest, as the chances for the victim's recovery increases with the use of advanced life support unavailable to the guard. The chance of survival decreases very quickly without this support. The emergency medical system must be activated as soon as possible. This may even occur before removing the victim from the water if determined by the guards' initial assessment.

Emergency Action Plan (EAP)

This simply refers to what has to be done and who is going to do it. One of the first components of an EAP is to specify under what circumstances the EAP is to be activated. With what type of victim or situation should the EAP be activated? Who should do it? In many systems the EAP is started by the long blast signifying a rescue in progress. Then EMS is notified by the on-site manager if it is determined that their presence is required. So, one of the first jobs of a guard, even before going on duty for the first time, is to know and understand the facility's EAP. The guard should know what their role is in each position at the facility. As an example, if a guard is working at the entrance to check guests into the facility, they may also be the one who is

responsible for bringing a backboard to the side of the pool. Later, that same guard may be working at the bottom of a slide and have an entirely different role. The roles may well change based on the location or duties of a guard.

All staff members of the facility, not just the lifeguards, should be aware of their duties required with the EAP. In-service training is imperative to having the EAP perform smoothly.

Notify Upper Management

The first responsibility is to take care of the victim and in so doing, activate the EAP. If the incident is determined to be a critical incident, then, upper level management needs to be notified. This notification should include the particulars of the incident and the results of the intervention taken. In big systems, there will usually be an on-site manager who will respond to the whistle. In smaller systems, the proper managerial personnel must be notified.

Prior to Making A Rescue

KNOW THE EAP

While this has already been discussed, its importance makes it worth repeating.

HAVE A COMMUNICATION LINK WITH EMS

In a small system, this means have the phone numbers by the phone. While each guard should know these numbers by heart, they should also be posted and visible by the phone. Remember that stress sometimes makes memory recall difficult. Also, a bystander may be required to use the phone, as the guards may be actively involved with the victim. Direction on how to get to the facility should also be posted by the phone.

KNOW WHO WILL RESPOND AND WHO OR WHAT ORGANIZATION TO EXPECT

This means the guard should know what type of support is coming from the activation of the EMS. The lifeguards need to know if the EMS responders are going to be on-site or come from off site.

KNOW HOW TO GET THE EMERGENCY RESPONSE TEAM TO THE VICTIM

Do gates have to be opened? Should someone be outside to meet and guide the responders? All of these questions should be answered in the EAP. It is recommended that the first time EMS comes to your facility it should be a practice run and not a real incident.

KNOW WHERE THE EQUIPMENT IS STORED, HOW TO GET IT, AND HOW TO USE IT

Where are the rubber gloves, the backboard and the artificial respiration masks? Who is responsible for getting the equipment? Again, while this should be part of the EAP, every guard needs to know this information.

Steps during a Rescue

Once a rescue is in progress, a sequence of events has to occur.

1. VICTIM IS IDENTIFIED AND THE RESCUE IS IN PROGRESS

This is of course, the first step. Refer to SECOND GUARD ACTION POINTS in the following section.

1. INSURE THAT THE RESCUER HAS THE SITUATION UNDER CONTROL

Make a quick check to insure that the guard is okay and that the victim is being moved to the extrication point.

2. MAKE A TEMPORARY ASSESSMENT OF WHETHER THE INCIDENT IS CRITICAL

Is this a simple rescue or is the victim not breathing?

3. ACTIVATE THE EMS IF THE SITUATION IS A CRITICAL INCIDENT

If the incident is determined to be critical, then activate the EMS.

4. MAKE SURE THAT THERE IS NO IMMEDIATE INTERFERENCE FROM THE CROWD

A quick check should be made that no other guests in the facility are interfering with the rescue. If it is not necessary to clear the pool, make sure all zones are covered.

5. OTHER GUARDS CAN ASSIST WITH THE RESCUE

Help remove the victim from the water. Bring the required equipment.

6. REASSESS THE VICTIM

Once on the deck, the victim needs to be reassessed. Use universal precautions when making any physical contact with the victim. If during this reassessment phase it is determined to be a critical incident, notify EMS. If the incident is not critical, remove the victim from the water and keep the victim under observation. You may have to require the victim to sit out so they can be observed. You may have to release them to a parent, guardian, or some other responsible adult.

7. ASSIST WITH THE TREATMENT OF THE VICTIM

Use bystanders to help if their help is needed such as in removing the victim from the water

8. CONTROL THE CROWD

Back other people up. Give the people working on the victim room to work. A recovering victim is often embarrassed by their situation and privacy should be provided.

9. INSURE THAT THE REST OF THE FACILITY IS SAFE

This may mean clearing the pool in smaller aquatic facilities. In any size facility, it means making sure that no other guest is in distress.

10. **MAKE WAY FOR THE RESPONSE TEAM**

This may mean going outside the facility to meet the support team that is coming.

11. **TURN THE PATIENT VICTIM OVER TO TRAINED MEDICAL HELP**

Once the EMT's arrive on scene, then support them. More than likely, the guard will just get out of their way and let them work on the patient.

12. **NOTIFY UPPER MANAGEMENT OR AUTHORITIES**

If an upper level supervisor is not on site, then they should be called at this point.

13. **GATHER DATA**

Your EAP should specify what data needs to be gathered in order to fill out accident and rescue reports. Guards may need to make a written statement in the event that the incident is critical. Be clear and concise in this report. Do not wait to complete your report, as the incident may not be as clear later. The interpretation formed by talking with others about the incident may also interfere with a clear, factual report.

Second Guard Action Points

There are many times when a second guard should become involved in the rescue process. The most obvious time is when the primary guard raises a fist in the air. Unfortunately, for many reasons, the primary guard may never make the "fist" signal. The following are keys to action that signify when the second guard should take an active role in the rescue process. If the second guard sees one of these keys they should respond immediately.

Keys to Action by the Second Guard

FIST IN THE AIR BY THE PRIMARY GUARD

A SURFACE DIVE BY THE PRIMARY GUARD

THE PRIMARY LIFEGUARD HAS RECOVERED A PASSIVE VICTIM AND IS BEGINNING RESCUE TECHNIQUES

A NECK AND BACK PROCEDURE BY THE PRIMARY GUARD

ANY TIME THAT THERE ARE TWO VICTIMS IN THE WATER

ANY TIME WHEN IT SEEMS AS IF THE PRIMARY GUARD IS IN TROUBLE OR NEEDS ASSISTANCE

CHAPTER 8: WATER RESCUE TECHNIQUES

The intent of this chapter is to discuss the actual techniques that will be used in making a rescue. Procedures that deal with first aid are covered in other chapters; this chapter deals primarily with the in-the-water rescue procedures.

Basically, the guard must enter the water, approach the victim, make contact with the victim, and then get the victim into a nose up, stable, and breathing position. On some occasions the victim must be removed from the water. Other rescues may involve spinal column consideration. Some may involve defensive moves by the guard. Basic procedures required to accomplish these objectives comprise the contents of this chapter. The emphasis, however, is on accomplishing the objectives of the techniques, not on the procedures themselves.

Water Entry

OBJECTIVE

To enter the water with the required equipment to perform a rescue in a manner that provides for the safety of the guard and the victim.

FUNDAMENTAL PRINCIPLES

Take the equipment, do not get injured or injure a guest by the equipment when getting into the water, fit the method of entry to the situation and the environment.

WATER ENTRY GUIDELINES

There are three primary methods used to enter the water: wade, compact jump, and slip in. Notice that diving is not a method used by guards to enter the water. The reason for this is that diving does not give the guard enough control or allow for having the rescue tube in the ready position among other problems.

WADE

This method is used when there is zero depth water and consists of wading through the water as rapidly and safely as possible to get to the victim. The rescue tube can either be carried in the hand or placed under the armpits.

COMPACT JUMP

This method is used for water that is deep enough to jump into from the guard position. A trained guard can use the compact jump in water as shallow as four feet provided the jump is done from the deck and not from a height greater than one foot above the water such as entering from a guard chair. When the guard is above the pool deck, such as in the guard chair, water at least five feet deep is required. If the height of entry or the depth of pool is an issue, consider another method of entry such as the slip in entry. Jumping from a height into shallow water can cause injury to the guard.

To do the jump, the guard first makes sure that the rescue tube strap is secured in their hand so as not to get entangled and that the slack is taken up. Making sure that the strap is not entangled, the guard jumps into the water with the tube under the armpits, the knees are bent, and the feet are flat. The intention is to hit the water as if there were some unknown obstruction in the water and to go no deeper than necessary.

SLIP IN

Waves can cause a victim's body to move. If there is a spinal involvement, then this movement may cause additional injury to the victim. So if spinal involvement is suspected, the guard should slip into the water making as little disturbance as is possible. Of course, the guard still needs to get to the victim as rapidly as possible. The guard must use their judgment in balancing the need for speed with the need for making as few waves as possible.

The slip in is also used in water that is so shallow that a jump might cause injury. As an example, if the guard is in a chair above the pool deck in shallow water, the guard should get out of the chair, go to the deck and then slip in rather than jump. Some guards may have trouble doing a compact jump in 5 feet of water. In this case the slip in should be used. Anytime you are in doubt that you can enter the water safely, use the slip in. It is the safest form of entry.

Approaching the Victim

OBJECTIVE

Get the guard and the equipment through the water to the victim and have the equipment in the ready position upon reaching the victim.

FUNDAMENTAL PRINCIPLES

Balance speed with the necessity of keeping the victim under observation. Have the equipment in the ready position upon reaching the victim.

GUIDELINES

Once in the water, the guard needs to get to the victim. Swimming to a victim is called approach stroking. A free style or breaststroke is preferred as these allow for both speed and observation of the victim. The rescue tube stays in the guard's armpits and the guard swims on top of the tube. This has the tube in the ready position when the guard reaches the victim. If the guard has a long distance to go to get to the victim, then a free style type stroke with the face in the water with the rescue tube trailing in the water may be a faster approach stroke for the guard. This all depends on the distance to be traveled and the guard's ability and preference. If the equipment has been trailing behind the rescuer, as they near the distressed swimmer, the lifeguard needs to pause, gather their equipment in a ready position under their armpits, and approach the distressed swimmer.

Basic Rescues

In any rescue in the water, there are three main objectives: to get the victim nose up, stable and breathing. You get victim's nose and face out of the water so that breathing is possible. You

get to a stable position where the situation will not deteriorate and where advanced care can be administered if necessary. For most victims in the water, getting them onto the deck rapidly is essential as it is only on the deck where definitive or advanced care can be administered. However, stable may be defined in different ways depending on the location. As an example, if a fracture is involved, getting to a stable position means to a posture which inhibits movement of the bone ends.

SHALLOW WATER RESCUE

When rescuing a victim in shallow water, the same basic principles apply as rescuing a victim in deeper water. You have to approach the victim in as safe a manner as possible and get the victim into a nose up, stable and breathing position. Many times this is as simple as grabbing the victim and standing up. Be sure to do so in such a manner which will not allow the victim to harm you with a flailing arm or a misdirected elbow. Keeping the rescue tube between you and the victim can help protect you when rescuing larger or more active victims.

DEEP WATER RESCUE

For victims in deeper water there are two rescues, the front rescue and the rear rescue, that are used so much that they are referred to as basic rescues. Most actual rescues will be done with one of these basic rescues. While the front rescue is more common, the rear rescue should be used for larger or more difficult victims. There are also basically two types of victims, those that are obviously breathing and those that are either passive or non-breathing.

Front Rescue

OBJECTIVE

To get the distressed swimmer into a nose up, stable, breathing posture when approaching the distressed swimmer from the front.

FUNDAMENTAL PRINCIPLES

Get the distressed swimmer on the rescue tube when approaching them from the front. Keep the tube between you and the distressed swimmer. Avoid being grabbed. Avoid harmful contact.

GUIDELINES

In order to accomplish the objective while using the fundamental principles, the guard approaches the distressed swimmer from the front with the tube extended. The guard pushes or extends the rescue tube into the distressed swimmer with the intention of getting the distressed swimmer to grab onto the rescue tube. In some cases, the guard may have to very carefully pull the distressed swimmer onto the tube. The guard should be careful of using too forceful a pull as this may allow the victim to come across the tube and grab the guard. If the guard positions their body slightly to the side instead of directly in front of the distressed swimmer, the non-swimmer will not be able to grab the guard as easily. Once the distressed swimmer has been secured, the rescuer should talk to the distressed swimmer to re-assure him while moving towards an extrication point.

Rear Rescue

OBJECTIVE

To get the victim into a nose up, stable, breathing posture when approaching the distressed swimmer from the rear while maintaining control of the rescue with minimal risk when dealing with larger or more difficult victims.

FUNDAMENTAL PRINCIPLES

To place the distressed swimmer on the rescue tube after approaching from them from the rear. Control the victim. Avoid harmful contact.

GUIDELINES

The guard approaches the victim from the rear. Reaches around the victim's chest, going under the arms, and grasps the victim firmly. Care should be taken to grasp the victim firmly enough so as to establish control but not so firm as to injure the victim. The full nelson position should be avoided since this has the potential of harming the victim, and increasing their anxiety. The guard can either bring their hands up over the shoulders of the victim or grab their own hands. The guard should tuck their head to one side or bury it behind the victim's back to avoid being butted by a rapid rear head movement of the victim. Once the victim has been secured, the rescuer should talk to the victim to re-assure him while moving towards an extrication point.

Multiple Victims

OBJECTIVE

To rescue two or more distressed swimmer by a single guard with a minimal risk.

FUNDAMENTAL PRINCIPLES

To get both distressed swimmers supported in a nose up and stable position. Do not get between the distressed swimmers.

GUIDELINES

Between 10 and 20% of the rescues that have been recorded deal with two or more victims. The usual situations are an adult and a child or two companions about the same age. While there is no smooth way to accomplish the objective, the basic idea is to get both victims supported. One hopes that help will arrive shortly, but that may not be the case.

There are two basic ways to accomplish this skill. One is to place the rescue tube between the victims while being very careful not to get yourself between them. Remember that if one of the victims is an adult and the other a child, the adult may be actively trying to get to the child. If you are in between them, they may go over the top of you to get to the child. Once the tube is between the victims, load one on the tube and then swim that victim and the tube to the other victim and let them grab across the tube.

Another method is to do a modified rear rescue on one victim and push them into the other one and let them grab each other. If you have trouble keeping the victim's nose out of the water, try to get more of the rescue tube submerged to help raise both distressed swimmers up out of the water.

Unconscious or Passive Victims

If an unconscious swimmer is not breathing, getting respiration restored is time critical. In order to restore respirations and circulation, the face must be out of the water and the airway cleared. In addition, remember that definitive care will only begin when the patient is on the deck. Move the patient rapidly to the extrication point.

Once on the deck, administer five (5) chest compressions while other rescuers are putting on gloves and bringing equipment. If universal precautions are not in place by the end of these five (5) compressions, keep doing compressions until they are in place. The goal here is twofold. One is to begin the normal CPR sequence as rapidly as possible. The other is to fill the time while waiting on universal precautions with something that is positive to restore respiration. Some agencies only do chest compressions in their lay person CPR protocol. There are also some studies that suggest that chest compressions are equally as effective in clearing the airway as abdominal thrusts. Other studies have shown that long periods of time when nothing is done for the patient is one of the major mistakes in administering CPR.

On the Deck

OBJECTIVE

To begin the resuscitation process once the patient has been placed on the pool deck. Initially start chest compressions as they do not need any equipment. So the chest compressions can be done while gloves and barrier masks are being obtained without delaying the first rescue breath. This is in essence, utilizing the established JAMA guidelines for "lay person CPR."

FUNDAMENTAL PRINCIPLES

By utilizing chest compressions for an unconscious, non-breathing victim who has been rescued from an aquatic environment, it provides an effective means of both beginning resuscitation and of removing water and other obstructions from the airway. It can also help to reduce the pressure of the abdomen on the diaphragm thereby allowing rescue breathing to be more effective. Once that airway is free of obstructions, spontaneous respiration may occur.

GUIDELINES

Once on deck and having determined that the victim is not breathing due to a drowning, five chest compressions are administered. This will begin the sequence and allow some time to get universal precautions in place. If there is a delay in getting universal precautions in place, continue chest compressions. The goal is to get into the Professional CPR sequence as quickly as possible while not allowing any time to be wasted. Remember to make sure that your Emergency Action Plan (EAP) is activated as quickly as possible with the priority placed on the contact with your Emergency Medical Service (EMS).

When the victim has been removed from the water, and further assessment reveals that he is still not breathing, continue with normal or regular CPR procedures.

Turn the head to the side away from your fellow lifeguards and administer a maximum of one set of five (5) Chest Compressions. Use one hand for a child and both hands for an adult. If spontaneous respiration does occur, stop compressions, and place the victim in the recovery position.

If spontaneous respiration does not occur following the administration of the chest compressions, initiate the AR/CPR protocol if universal precautions are in place. Otherwise continue chest compressions until they are in place and then initiate AR/CPR Protocol.

Victim Extrication

There will be times when it is necessary to get a victim out of the pool. In any case that involves loss of respiration; you must get them out quickly. In other cases, time may not be so critical. As an example, if a swimmer is injured but breathing, then you may need to get them on the deck, but can use a slower method. In all of the procedures that are discussed, it will be assumed that there are only two guards readily available. All of the other help will have to come from bystanders.

If possible, the victim should always be removed from the pool in shallow water. The major exceptions to this are when there is a very large pool with a long way to go to shallow water or at a diving well. The best way to avoid performing an extrication maneuver is to stop the incident before it occurs. Consider every guest a potential distressed swimmer or an aquatic incident in the making.

THE MOB DRAG

OBJECTIVE

To remove the patient from the water quickly due to the patient's respiratory arrest while protecting them from additional injury.

FUNDAMENTAL PRINCIPLES

Protect the patient's head and the rest of the patient's body, do not slip when you pull up, get the patient out quickly, use available help, protect your back from a lifting injury, and take control of the lifting effort.

GUIDELINES

This is used primarily for a non-breathing patient when time is of the essence. Get the patient to the side of the pool. If you are significantly bigger than the patient is, and then just lift them up onto the deck; this is sometimes called the set out. If not, try to keep the patient's head above water. If someone is close, they can hold on to the patient while you get out. Once out, direct someone else to grab one arm while you grab the other. If others are present, they can also grab onto the patient's arms. Another variation that works well with two guards is to have the guard on the deck hold the patient and get bystanders to help. The first guard stays in the water and lifts up on the patient's legs and lower body. The lifeguard that stays in the water should avoid straddling the patient's legs as the victim is placed on the deck. There is the potential for injury if the patient's legs make contact between the rescuer's legs. The Mob Drag is particularly effective if the planned extrication point is in shallow water. When you have enough help, pick straight up on the patient and then bend them over the deck. Be careful to pick them up high enough to get them out of the water at least to the knees before you bend them over the deck. Also be careful to keep your body balanced when you lift. If you get into a position where your feet are closer to the pool

than your hips, the feet may slip, causing you to drop on your rear on the deck. Remember to protect the patient's head when you are laying them down. If the patient is unconscious, then the head may droop and is in danger of hitting the deck. So grab the patient's head with one hand. The patient must be lifted far enough out of the water to have the hips well on the deck. Otherwise, rolling the patient may cause further injury to them.

If they are not far enough up, use a secondary lift. A secondary lift is done by having as many people as practical place their hands under the patient and moving the patient to the point where the hips are on the deck. Be careful and protect the patient's head and face. Then roll the victim over to position them for the chest compressions. Be very careful with this lift, as the potential for injury to either the rescuer or the patient is significant. That is why this type of lift is only used in a time-critical situation.

Some guards will get a better lift if one guard stays in the water and picks up the patient's legs and lower body as the guard on the deck lifts. Remember that you have to clear the patient above the edge of the deck higher than the hips before you lean them over the deck. Sometimes simply saying "Up,Up,Up,In,In,In,Head,Head,Head" will help the guards to remember the important points.

This lift will not work in a pool if the freeboard at the edge of the pool is too great. If the distance from the edge of the deck to the water is over a foot, this will be a difficult lift to do unless it is done in shallow water by strong guards with relatively small patients.

THREE OR MORE PERSON LIFT

OBJECTIVE

To remove the victim from the water while protecting the patient from additional harm and time is not too critical.

FUNDAMENTAL PRINCIPALS

Use available help, protect the patient's head and the rest of their body, and take control of the lifting action.

GUIDELINES

Hold the patient in the shallow water with the patient between you and the deck. Get all available help. You move to the head of the patient with the help of at least two others, lined up hip to hip with you and with the patient between all of you and the deck. Place the patient flat in the water. With the hand closest to the patient, reach under the top of the shoulders of the patient so that this hand supports their neck and head. Move the other hand a bit more towards the feet and reach under the patient. The other helpers, who are distributed down the patient's body, also reach under the patient with both hands. Take the patient's arm that is closest to the wall and place it across their chest, otherwise the patient's arm will get caught on the wall during the lift. When all of you are ready, then on your command, curl the patient up to your chest, move as close to the deck as you can get, and lay the patient down on top of the deck. Be very careful to support the patient's head so that it does not bump on the deck. Get someone to hold the patient's head while you get your hands out from underneath the patient. Get out and position the patient for the next step in your patient care protocol. The next step will of course depend on the situation and the

condition of the patient. If the deck is too high above the water, this procedure will not work and another procedure must be used.

BACKBOARD LIFT

OBJECTIVE

To get the patient out of the water when time is not critical and a backboard is available.

FUNDAMENTAL PRINCIPALS

Take control of the rescue and the lift, use help, have someone bring the board, protect the patient from harm, since time is not critical take the time to get well positioned before extricating.

GUIDELINES

Hold the patient in shallow water. Direct someone to bring the board. Direct others to help stabilize the patient. Slide the board under the patient from the feet end of the patient. Be sure to push the board down and float it up to the patient so that the patient is not moved too much. Get the patient balanced on the board. Be careful that extremities or hair is not hanging down or they may become injured during removal. Secure the patient to the backboard with the chest strap, if possible, to reduce the likelihood that the patient will slip off the board. When you have enough help to lift the board, either slide the board out on the deck or carry the patient up the steps. If you slide the board out, then slide the patient out head first make sure that when sliding the board on the deck it does not injure the patient. Carrying the patient out is a bit more difficult since you have to be very careful to move as a unit and do not trip. Also, strength is required to set the board gently down on the deck.

Artificial Respiration in the Water

There are only a few times when this skill should be used. If you cannot get the unconscious non-breathing swimmer out on the deck quickly, then you may have to ventilate them in the water. However, it is to be emphasized that you get the patient out on the deck and do AR there if you can get them to the deck quickly.

OBJECTIVE

To ventilate a patient in the water whenever you cannot get the patient on the deck quickly while protecting yourself from disease that can be caused by oral contact.

FUNDAMENTAL PRINCIPLES

Because you cannot get to the deck quickly, keep the victim's face out of the water, use a pocket mask of some type, and get air into the patient.

GUIDELINES

In deep water, get the victim supported on the rescue tube. Keep the patient's nose up out of the water. In deep water there are two different ways used to secure the patient to the tube so that you can ventilate them. In the do-se-do hold, from the side of the passive victim, use your foot hand, reach over the closest arm of the passive victim and either have the passive victim balanced on the rescue tube or grab the rescue tube. With your other hand position the pocket

mask on the patient. Be sure to get a good seal. This is a very strong control position but may be difficult for the smaller guard. The other method, over the back, has the passive victim balanced on the tube, face up. You come to the victim from the head side and reach both hands holding the mask to the passive victim's face and position the mask. Be sure to get a good seal. It may be hard to hold a passive victim whose feet sink when balanced on the tube.

In shallow water, simply get the mask on the passive victim and ventilate them. You can use the tube or discard it. The do-se-do position works here also. The over the back may be a bit more difficult.

Be sure and use the mask. While you are ventilating be sure that you are moving rapidly to an extrication point.

Submerged Victim Rescue

When the passive victim is on the bottom, some procedure must be used to get them to the surface. This is called a submerged victim rescue. The procedure described here is for rescues in deep water requiring a surface dive to get to the passive victim. In shallow water, simply pick the victim up off of the bottom

Since the unconscious victim is on the bottom, the victim either never could float or has lost enough air that they submerged to the bottom. This means they may be heavier in the water than you expect. For this reason, the guard should always expect a very heavy load. Also, the victim may be much more flexible than you suspect. For this reason, the guard should be sure and get a good grasp on the victim before starting up with the victim. Remember, almost everyone has at least 30 seconds of bottom time, i.e., the time you can hold your breath and be on the bottom. So take your time to get set before starting your upward ascent to the water's surface. Depending on the depth of the water and the length of the tube strap, there are 3 different versions of a submerged victim rescue.

OBJECTIVE

To retrieve a passive victim off of the bottom of the pool and into a nose up and stable position in order to begin the resuscitation process if needed.

FUNDAMENTAL PRINCIPLES

Get set before you start, avoid putting yourself into a dangerous position, get a good hold, use anything you can to get the victim to the top. Once on the surface, move to the extrication point.

GUIDELINES VERSION ONE

Used when the strap is long enough to allow you to reach the bottom with the strap on your shoulder. Once the passive victim is located, perform a surface dive to get to the rear of the victim. Any surface dive will do provided you can use it to get to the rear of the victim. The passive victim can be lying on the bottom in a face up or face down position or they can be almost vertical in the water. They can be conscious or unconscious. Sometimes it may be difficult to tell. Either way, look at the victim before and during the dive to make sure you get to the rear of the victim. This will help to prevent you from being grabbed by the victim. If they are face up on the bottom, come in from the head side of the victim along the bottom. If they are face down, come in straddling the victim. If they are vertical come into the victim from the rear. Use one hand to grab the victim any

way you can, but the armpit is a good choice. You can also use the cross-chest carry with your arm across one shoulder and under the other armpit of the victim. Then, provided the bottom is firm, get your feet on the bottom. Reach the other hand up and grab the strap of the rescue tube. When you are set and have a firm hold on the victim, push off of the bottom vigorously with the intent of getting the victim to the surface.

If you have the victim under the armpit, slide your hand through the armpit and pin the victim to your chest with your forearm. If you have the victim in the cross-chest carry, take your hand out of the armpit. This allows the hand that is not holding the victim to receive the strap as you feed it into this hand on your way up. This way you can use the tube to help you get up and have the tube close when you break the water's surface.

Once you break the surface, grab the tube and place it in the back of the victim. Then move the victim to the extrication point.

GUIDELINES VERSION TWO

Used when the water is too deep to allow you to reach the submerged victim and have adequate time to get positioned before you start up but the water is shallow enough to allow you to reach the victim with the strap in your hand. This procedure is the same as before with one major exception. Take the strap off and hold it in your hand. Many guards like this better than the first version even in 8 to 10 feet of water because it allows for a bit more bottom time since the tube is not pulling the guard to the surface.

GUIDELINES VERSION THREE

Used in very deep water; if you feel you cannot get to the victim with either version one or two, then with the strap in your hand, dive for the victim. When you meet the limitations of the strap let it go and let it hang down. Once you have the victim as described in version one, place your feet on the bottom of the pool and push off of the bottom towards the strap, not the water's surface. Then walk the strap to the top as described earlier.

SLIDE RESCUES

Water slides present some unique rescue problems. Basically, problems can occur either on the slide or at the end of the slide. There is always a strong possibility of orthopedic injury due to the speeds and forces involved with slides. An emergency action plan should be developed for each type of slide at your facility. In addition, extrication methods should be practiced.

OBJECTIVE

To get the victim into the nose up, stable, and breathing position without causing additional harm and without injuring the rescuer.

FUNDAMENTAL PRINCIPLES

Stop dispatch. Get to the victim without getting injured yourself. Remember that wet fiber glass is very slick. Activate the emergency action plan. Do not make the injury worse by moving the victim too quickly. The basic plan for approaching any victims with a suspected orthopedic injure is to:

°Identify yourself as a lifeguard

°Approach the victim from the un-injured side if possible

°Tell the victim what you are going to do before you do it. You do not necessarily have to get permission, but you do need to inform them about what is coming.

°Move the victim to a stable place without causing additional harm. Always expect the victim to become unconscious at any moment. So be prepared to catch them if they lose consciousness.

Always watch slides closely. What the guard sees or hears is often a key to the seriousness of the injury.

GUIDELINES FOR VICTIMS ON OR IN THE SLIDE

Once dispatch is stopped, get to the victim. It is usually safer to go up a slide than down. Bowl slides may require training and equipment to enter. If the victim is capable of walking, then scooting along the bottom of the slide may be safer than trying to stand up and walk. If a serious injury has occurred, it may be necessary to bring advanced care and extrication methods to the victim.

GUIDELINES FOR VICTIMS IN THE CATCH POOL

Always suspect orthopedic injury. Although spinal injury is usually the most serious, this also includes all other bones, joints and muscles, not just the spine. Use the four steps mentioned above in approaching the victim. Currents in the catch pool can make some paths in and out of the pool more favorable than others. If a victim is missing or not capable of being seen, look at the very end of the slide. Some slides have a back flow underneath the water back into the back wall that is capable of holding an unconscious person. A strong water flow, especially from a height, can also obscure a victim.

GUIDELINES FOR VICTIMS IN A RUN OUT

If a victim is partially in or completely in a run out, there is a strong chance of spinal injury. The goal here is to get the victim face up without disturbing the spine any more than necessary. Once their face is out of the water and they are stable and breathing, you have time to make a decision on how to best proceed. The best choice may be to wait until additional help arrives. Do not move the victim any more than necessary to get them to the nose up, stable, and breathing position.

Spinal Injuries, Rolls and Supports

If someone injures their spine in the water, then, in most cases, a forceful impact with something occurred. For this reason, many if not most spinal victims are in shallow water. The procedures described below are described as if they occurred in shallow water. However, if the procedure is performed in the deep water the same shallow water procedure may be followed with the guard having the rescue tube in their armpits. If one encounters a suspected spinal injury victim in water that has a significant current, or wave action then care must be used to insure that the movement of the water does not make the problem more severe. Catch pools for slides, wave

pools, endless or lazy rivers, and other aquatic attractions can have significant currents or wave action. Try to get the victim in line with the current or wave motion. If possible, get the victim's head into the current and the feet pointed down current. This will help to minimize the movement caused by the water. Most of the spinal victims that NASCO has been involved with have been face up and in shallow water. For this reason, a method for face up victims is described first.

FACE UP SPINAL SUPPORT

OBJECTIVE

To support a victim with a suspected spinal injury who is in a face up position.

FUNDAMENTAL PRINCIPLES

Move the victim as little as possible, maintain a nose up, stable, breathing posture, protect the victim from further injury, use help to maintain a stable position and to place the backboard, take control of the rescue.

GUIDELINES

Approach the victim carefully making as few waves as possible. If the victim is breathing and their nose is out of the water, movement of the spine is their greatest danger. Come into the victim from the side. Place the foot hand (the foot hand is the hand closest to the victim's feet, the head hand is the hand closest to the victim's head) under the hips. With the hand closest to the head, reach under the victim and place your forearm along their spine as you reach for their head. Grasp the head and exert gentle pressure towards the top of the head to help stabilize the neck. Remember you must exert gentle pressure on the spine if repositioning the head is necessary. Get help. You will have to tell those assisting you what to do and when to do it. The second guard will come in and place the palms of their hands over the victim's ears and exert gentle traction to keep the neck straight. The third guard or perhaps even a bystander will come and support the victim from the opposite side of the initial guard and reach under the victim. Then both the initial guard and the third guard/bystander will lean slightly into the victim, trapping them between your bodies. This will allow you to free up your hands to help place the victim on the board when the board gets there. Direct someone to bring the backboard. Direct someone else to call EMS in accordance with your EAP. Stay in this position with the victim until the backboard gets there. Then the person, who brought the board, sinks the board and comes into the victim from the feet. Then they allow the board to float up to the victim. If you must reposition the victim, then sink the board, do not move the victim. Once you have the victim in a stable position, take the time to do things right and to protect the victim's spine. If they are breathing, then you have time. Now you must secure the victim to the board. Start at the chest and move to the feet. Then secure the head. Be very careful of chinstraps as they can dislocate the victim's jaw. Do not use chinstraps unless they are required to secure the headpiece. Being strapped on a board is very uncomfortable. If you can pad under the victim's knees and under their feet, it will be more comfortable. Once the victim is secured to the board they are removed from the water headfirst. Once on deck, cover the victim, as they will get very cold. When EMS arrives, they may tape the victim to the board. Remember to monitor breathing and symptoms such as tingling or loss of feeling during all of this. Verbal reassurance of the victim is very important during the entire process.

FACE DOWN SPINAL ROLL

OBJECTIVE

To turn the patient into a face up position to monitor respiration and pulse; while protecting the spine as much as possible.

FUNDAMENTAL PRINCIPLES

Begin to move the victim before you roll them, protect the spine and particularly the neck from excess movement, and use help to support the victim, take control of the rescue

GUIDELINES

Approach the patient from either the front or the side. Care should be taken to balance the necessity for speed with that of making as few waves as possible. Grasp the patient's arms between the elbows and the armpits with both hands. Squeeze the patient's ears between their upper arms. Then move the patient in the direction of the patient's head. This will help to get the patient's feet off of the bottom and also help to straighten out the spine. Roll the patient up on your forearm. Once you have the patient nose up and relatively stable, get help. Someone will have to help hold the patient. Have them come towards the patient from the side opposite the one you are on and reach under the patient with both hands and support the patient. Have someone get the backboard and have someone else activate the EAP. From here, proceed as in a face up spinal patient.

Defenses

A victim may grab you or attempt to grab you when you are doing a rescue. How you react to this is called a defense. You may also have a victim that is difficult for one guard to handle. The best defense is to avoid being grabbed by keeping the rescue tube between you and the victim whenever possible. Even if you are careful, it is still possible to get grabbed. If it does happen, do not make the situation worse. Stay calm and use the tube to support you and the victim. If you have a difficult victim, you may have to put your fist in the air to signal for help.

THE LUNGE DEFENSE

The lunge defense is used when someone lunges across the rescue tube towards you. This is sometimes called the "Travis Maneuver" after its inventor. Realize that this maneuver does not take the place of the front rescue. The Travis maneuver is used only as a defense. You should never allow a victim to intentionally lunge at you.

OBJECTIVE

To protect yourself and provide for the safety of the victim and your safety when a victim lunges across the rescue tube at you.

FUNDAMENTAL PRINCIPLES

Move away from the victim rapidly, avoid getting either your head, whistle, or rescue strap getting grabbed, secure the victim to the tube.

GUIDELINES

When the victim lunges across the tube at you hold on to the tube. Throw your head down and back as you push the tube into the victim. The momentum of the victim should carry them over you. "Pop-up" behind the victim, leaving the tube in the front and in the victim's grasp. Reach around the victim from the rear and grab the tube. Secure the victim to the tube. Be careful to avoid a backward head butt by the victim. Reassure them if possible. Move to safety.

If the victim does succeed in grabbing you, then hold on to the tube and move into the victim and secure them to the tube. Be careful that the victim does not strike you with their elbow or knee.

GRABBED BY THE VICTIM

The "grabbed by the victim" defense is used when the victim grabs you in the water.

OBJECTIVE

To get you and the victim into a nose up, stable and breathing position after the victim has managed to grab you in the water.

FUNDAMENTAL PRINCIPLES

Do not make it worse. Do not use excessive force. Get on the rescue tube. Get yourself nose up.

GUIDELINES

This is not a time to struggle or use a strength move that may injure either you or the victim. Simply find your rescue tube and climb on it with the victim holding on to you. Watch your throat and face. A forearm under your chin can cause damage as can a head butt. Once you have the victim on the tube, reassure them and move them to safety.

If the victim buries you down in the water where you cannot breath, simply roll over on your back. This will put your nose up and allow you to breathe. From this position, swim the victim to safety while you are reassuring them.

If the victim gets you by the hair, pull their hand to your head with one hand while you use the other hand to climb on the rescue tube. This will help to keep your hair from being pulled out.

If you lose the tube, simply swim the victim to safety. Most guards can swim with a victim holding on to them a short distance, regardless of how they are held.

Taking the Victim Away From a Bystander

Many times a bystander is the first person to see a victim or to contact a victim. There are more guests than guards and they are closer to the victim. For this reason, a guard may actually have to take a victim away from another guest. The first thing to do when approaching a guest that has a victim in their grasp is to identify yourself as a guard. Then you must move aggressively to take the victim from the bystander and to get the victim into a nose up, stable and breathing posture. While the guest who has the victim may be older than you, you should be better trained to care for the victim. Sometimes you may have to place the guest on the tube also. Remember that if the victim is not breathing that you have to get air into them as quickly as possible. Hopefully by

this time another guard has come to help. Be careful that a guest does not injure the victim in trying to get the victim out of the water.

DIFFICULT VICTIM

A "difficult victim" rescue is used when the guard making the rescue cannot get the victim into the nose up, stable, breathing position without help from another lifeguard.

OBJECTIVE

To gain control of a difficult victim.

FUNDAMENTAL PRINCIPLES

Signal for help if you can, the second rescuer gets the victim in a rear rescue; both guards then get the victim to safety.

GUIDELINES

This procedure can be activated in one of two different ways. The guard in the water can signal for help with a fist in the air. Since it is not always possible to signal when you are working a "difficult victim;" another lifeguard that determines that the lifeguard in the water needs assistance can activate this procedure. The second guard comes into the victim from the rear and does a firm rear rescue. The second guard should make sure that the first guard is nose up and breathing. If the first guard is not nose up, then the second guard should do whatever is necessary to care for the first guard. Care of the first guard is more important than care of the victim. Once both the first guard and the victim are nose up, then both guards can move the victim to the extrication point.

The Second Guard

There are times when a second guard has to enter the water to help with a rescue. There are six keys to action by the second guard, that is, keys to tell the second guard when to get in and help.

KEY 1

When the rescuer holds up a fist. This is the signal for help.

KEY 2

When the rescue is out of control. If, in your opinion, the rescue is out of control then enter immediately and render assistance to the guard. They may not be able to hold up their fist.

KEY 3

Any time there are two or more victims in the water.

KEY 4

When you see artificial respirations, AR, in the water. This means that the guard is going to need help with the victim. If you see a lifeguard do a surface dive, then get ready to go in if the guard brings up a passive victim.

KEY 5

When you see a spinal support maneuver being initiated by a lifeguard. The guard is going to need help supporting the victim or stabilizing the head.

There may be other times when you have to enter the water to help. Use your best judgment. You will also have to use your judgment about if and when you should activate the Emergency Action Plan. Remember it is far better to go and not be needed than to be needed and not go.

KEY 6

When you see a surface dive by the primary guard. This is an indicator that they will be surfacing with a passive swimmer and will need support. If they surface and tap their head, then no assistance is needed. If the surface and do NOT tap their head, then they probably have a victim and your assistance is required. Activate your EAP and follow your protocols.

CHAPTER 9: FIRST AID AND CPR

The purpose of this chapter is to cover basic first aid for the more common incidences that occur in an aquatic facility. We have also included sections covering on Artificial Respiration/Rescue Breathing, Cardio-Pulmonary Resuscitation (AR/CPR), and the use of an Automated External Defibrillator (AED). For the purpose of teaching basic life support techniques here at NASCO, the terms Artificial Respiration (AR) and Rescue Breathing will mean the same thing. This section is designed for use by a lifeguard without advanced equipment, while waiting for the Emergency Medical Services (EMS) team to arrive. We at NASCO know that these skills will be taught to lifeguards of various ages, and that they need to master these skills so that they can be applied as needed. However, lifeguard management needs to be aware that there is no substitute for adult support if you have a very young workforce. In the case of a drowning victim with no life signs, those lifeguards will be under extreme pressure as they apply CPR.

As with all professions, the more you know the better you will be. It is to that end that we recommend you take a more advanced first aid course from other recognized health care agencies, or some other emergency medical course. This would not only help you on a professional level, but also in everyday encounters with sudden injury/illness of your family and friends.

Ready, Assessment and Action (RAA)

In all emergency situations the RAA places structure on your actions and should be followed each time an intervention is required. This applies to rescues as well as first aid procedures. Here, we will be using it in the context of first aid.

READY

As the name implies, get ready. Pause, take two deep breaths and calm yourself. That will help you to react in a rational manner. If the victim is conscious, they will react to your emotions. If you appear calm and in control, the victim is much more likely to trust you. Remember that your guest is not the only one who needs to have trust in your ability to deal with the situation. Family, bystanders and friends of the victim are also looking to you to be calm so they can trust you will do the right things. Stress uses up oxygen which in turn creates anxiety. Taking two breaths during the Ready Step can help to break this lack of oxygen cycle and give your mind a chance to catch up with what needs doing if you are feel overwhelmed by the situation, then slow down, take two deep breaths and try and relax. You will then be able to focus on the situation.

Make sure you have all the protective barriers that will be required. These may include, but are not limited to gloves and a barrier artificial respiration mask. Remember that quite often a guest may have made the initial contact with your victim. Be prepared to take control of the situation. A simple statement such as “I am the lifeguard” will convey control, but it must be stated in a firm convincing manner. Wearing your lifeguard uniform will also help in convincing a guest that you can render effective aid.

ASSESSMENT

Look at and evaluate the entire scene. A great deal of information may be obtained by

noting the location of the victim i.e. under the diving board, shallow end, deep end, on the deck, etc. Also note the position of the victim. Does the victim's body appear anatomically correct or are the limbs or spine at odd angles. Do not let the obvious interfere with a thorough assessment. For example, head wounds bleed profusely, however there may also be spinal involvement. If the victim is conscious and able to communicate in any way whether it be by voice or gesture listen to what is being said. The assessment must be done quickly and thoroughly. This will take practice, concentration and will require you to be prepared by being thoroughly trained and ready to act.

ACTION

After your assessment you must initiate immediate care. Priorities must be adhered to in life-threatening emergencies; these are rescue, breathing, bleeding and poison. After these have been considered, then concentrate on the care for injuries that are not immediately life threatening. Remember to reassess during the action step.

Non- Breathing Victim

If the assessment during the rescue is that the victim is not breathing, then immediately do five chest compressions on the deck. Then do a quick initial assessment of breathing and pulse. If the check indicates CPR should be initiated then follow the steps below:

1. If gloves and mask are available, start with 30 compressions and two breaths for adults and 15 compressions and two breaths for two-rescuer pediatric CPR until factors indicate that you should stop.

2. If equipment is not available, then continue with chest compressions only until equipment is available.

Once the equipment is in place, initiate CPR using the ABC (Airway, Breathing and Circulation) protocol. There are two basic principles that need to be emphasized when dealing with a victim determined to be non-breathing. First, it is imperative that the victim be removed from the water as quickly as possible so that effective chest thrusts and artificial respiration (AR) can be done. Always use universal precautions. The second principle is that your Emergency Action Plan (EAP) must be activated as quickly as possible with the priority placed on the contact with your Emergency Medical Service (EMS).

Utilizing chest compressions, for an unconscious and non-breathing victim, provides a way to immediately start resuscitation efforts. It also allows resuscitation efforts to be done while gloves and universal precautions are being put on by other rescuers in order to start artificial respiration. If there is an obstruction in the airway, chest compressions can help to remove the obstruction thereby allowing rescue breathing to be more effective. On a conscious victim, abdominal thrusts are also performed to remove obstructions from the airway. Once that airway is free of obstructions, spontaneous respiration may occur.

When the victim has been removed from the water and assessment reveals that he is not breathing perform five (5) chest compressions. Make sure that EMS has been activated.

- When you administer chest compressions, use two hands for an adult and one hand for a child.
- If spontaneous respiration does occur, place the victim in the recovery position.
- If spontaneous respiration does not occur following the administration of the chest compressions, begin artificial respiration.
- Any stoppage of CPR on a non-breathing victim should always be no more than 10 seconds, including checks and switching positions.
- To prepare for CPR, everyone must utilize Universal Precautions. (Gloves, protective barrier artificial respiration mask, eye protection).
- Each time the airway is opened during CPR, the rescuer should look for an object in the victim's mouth and if found, remove it. The time should be minimal and not delay going to the 30 chest compressions.
- Place the barrier mask in position.
- Lift and tilt the head so that the angle of the mask is back toward you, except for infants, who are placed in the neutral plus or "sniffing" position.
- Give two slow breaths, watching for chest rise. Make sure that the chest rises each time during ventilation. If you do not see the victim's chest rise and fall, reposition the head. If you are still unsuccessful in ventilating the victim using a mask or BVM, start performing chest thrusts or chest compressions to clear the airway.
- If the chest thrusts are not effective? Look for an obstruction in the victim's mouth every time you open the airway during CPR. If you see an obstruction, remove it.
- Check for a pulse (take no more than 10 seconds to check for a pulse)
- If the victim has a pulse and is not breathing, begin rescue breathing. One breath every five seconds for an adult and one breathe every three seconds for a child or infant.
- Check for breathing and pulse about every two minutes or five cycles, when you are changing the person doing compressions and checking pulse (compressions should be stopped for no more than 10 seconds, max); or whenever the patient's status changes (obstructions removed, vomiting, seizing, etc.)
- If pulse is present, continue artificial respiration until breathing is restored or EMS arrives and takes over. If breathing is restored, place the victim in the recovery position.
- Effective chest compressions are very tiring, so expect to change rescuers every two minutes or five cycles.

Bag Valve Mask

While most lifeguards will use a barrier device or mask (Seal Easy, etc.) to perform rescue breathing or artificial respirations, the bag-valve-mask, is also available to provide artificial respirations. The Journal of American Medical Association suggests that all healthcare providers master the use of the bag valve mask when providing artificial respirations.

Bag valve masks are very difficult for use by a lone rescuer during one person CPR due to time it takes to position, seal and operate a BVM. It is most effective when there are two rescuers who are trained and experienced.

The bag valve mask (BVM) is a self-inflating bag, one-way valve and a clear pliable facemask. During the administration of artificial respirations the BVM is more effective when

used by two lifeguards. One guard holds the face piece in position, maintaining a good seal, while the other lifeguard compresses the bag. In some situations, the lifeguard may be required to use the BVM by themselves. This can be particularly difficult in trying to maintain a good mask seal and at the same time squeeze the bag. The BVM can be attached to emergency oxygen increasing the amount of oxygen administered to the patient.

Bag valve masks are available in three sizes: adult, child and infant. The adult BVM holds approximately 1600 ml of air. The child size holds approximately 450 ml and the infant BVM holds approximately 130 ml of air. It is extremely important that the lifeguard use the appropriate sized BVM. Failure to use the right size BVM or closely supervise the amount of air going into the lungs can result in too much force or volume being delivered. This can cause excess air to enter the stomach or cause too much air in lungs. Either problem can cause the ventilation to be less effective. Some facilities only utilize on size BMV, to avoid such a significant complication, lifeguards must closely monitor and adjust respiration volume while using the BVM, by watching the chest rise and fall.

Bag Valve Mask

Procedure

To use the BVM, the lifeguard should:

°Ensure scene safety and take the necessary standard precautions.
°Open the airway.
°If trauma is suspected, use the jaw thrust technique to open and maintain the airway.
°Assess the need for rescue breathing/artificial respirations
°Select the proper sized mask
°Attach the mask to the proper sized BVM and connect emergency oxygen (if available set flow rate at 15 lpm)
°Position the top of the mask over the bridge of the guest's nose. Lower the mask over the mouth and upper chin.
°Securely hold the mask while lifting the guest's lower jaw with the fourth and fifth fingers.
°Maintain a seal between the mask and the guest's face.
°Have a second guard slowly squeeze the bag until chest rise is accomplished. Each respiration should take about 1 second. Prevent aggressive or rapid ventilations. Follow the appropriate rate and volume guidelines.
°Monitor chest rise and fall during each ventilation.

The NASCO AR/CPR procedures appear at the end of this chapter

The rescue protocol for a non-breathing victim is very important. For this reason, this is included at the end of the chapter. The steps should be memorized and practiced. It may be used as a quick reference guide at your facility.

Bleeding

Around an aquatic facility there are many accidents that can cause bleeding. The bleeding may be minor, such as an abrasion or small laceration from falling while running. Some are major, such as deep lacerations, puncture wounds, etc. These may occur from a guest hitting their head on the diving board, sudden impact on the edge of slides, or slips and falls to mention a few. When dealing with bleeding, remember that a little blood and a lot of water looks like a lot of blood so even a minor injury can look very bad.

Before ever dealing with a bleeding incident, be sure you observe universal precautions. Always take the time to put on your gloves. If the victim were going to bleed to death in the time that it takes to put on gloves, then you would not be able to help them anyway. But you could be exposed to a blood borne pathogen that could impact you the rest of your life.

Direct pressure can control most bleeding. First place a sterile pad over the wound and press. Place enough pressure on the wound to interrupt the flow of blood. If one pad is not enough, place another directly over the first without removing the first. This aids in the clotting process. Keep the pressure on the wound. If the bleeding is still not under control after direct pressure then activate the EMS.

Minor cuts and scrapes can be treated locally, but an incident report should be written. These injuries also occur when there is a slip or fall.

Be aware that bleeding from a cut or abrasion to the head may mean that there was a more serious head or neck injury. Follow your facility protocols for this type of accident. If there are any indications of a severe head injury, symptoms may include blurred vision, severe headache, unconsciousness, altered mental status, etc. If there is a severe head or neck injury, call EMS and document the incident as you would all injuries. It has been said before, but remember to use universal precautions and clean all blood/body spills immediately. This should be done with a 1:10 solution of bleach and water or an approved commercial cleanser. As a reminder all potentially infectious materials should be cleaned up immediately and disposed of properly.

Another common occurrence is that of a nosebleed. Rarely is this a medical emergency. It may result from injury, dry air, altitude, excessive sneezing, or high blood pressure. Have the victim sit upright with head slightly forward and apply pressure to the nose on both sides for 5 minutes, release, and repeat if necessary. If available, a rescuer may place an ice pack or cool compress over the ridge of the nose of the victim. This may help the small capillaries in the nose to constrict helping to reduce the blood flow. Seek medical attention should bleeding continue.

Poisons

Poison is defined as "any substance that kills or harms." What may be harmless to some is quite deadly to others, bee stings and peanuts are just a few examples. You must consider any chemical or insect at you facility poisonous. Your facility should also have the Safety Data Sheets (SDS) for all chemicals on site. These sheets list should not only cover the obvious pool chemicals, but also seemingly harmless cleansers used in the bathrooms. This allows for a quick source of reference rather than locating the container in the face of an emergency. Assessment of the victim will indicate if EMS is required. However, if the patient begins to demonstrate any difficulty

breathing, activate EMS immediately. The practice of identifying chemicals used and stored in the work place is required by the federal standards enforced by the United States Occupational Safety and Health Administration (OSHA) with regard to Hazardous Communication. One such standard is also known as "the right to know" standard and can be found in the Code of Federal Regulations, 29CFR 1910.1200. You should also have the telephone number of the local Poison Control Center posted. In the case of any ingested or topical poison, they will be able to tell you what to do while you are waiting for EMS.

You need to avoid contaminating yourself and others. If EMS is going to be delayed, any irritating or corrosive substance should be removed from the patient as rapidly as possible.

Topical exposure to poisons should immediately be flushed thoroughly with water. Anytime the eyes are involved, they also need to be washed and the victim needs to seek medical attention immediately.

Ingested poisons should be treated in the manner recommended by the Poison Control Center.

Severe allergic reactions to food or insect stings can be considered a form of poisoning. Symptoms can include itching, rashes, shortness of breath, etc. This may be a life-threatening situation. If significant symptoms appear, EMS has to be contacted immediately. Those facilities with chlorine gas need to be particularly careful. Chlorine is a greenish yellow gas with a characteristic pungent odor and is highly toxic. This toxin can take a route through the lungs irritating the respiratory tract. High doses of chlorine gas can cause death quite rapidly. All staff members at the facility should be trained in the use of the gas mask and the gas mask should not be stored near the chlorine tank. Remember that chlorine is heavier than air and will accumulate in low lying places such as pump rooms. If there is any doubt about a poison exposure, call your poison control center. Once again, let us stress if the victim is experiencing any difficulty breathing or any severe symptoms of any type activate the EMS immediately.

Heat Disorders

Often exposure to high temperatures or prolonged exposure to even moderate temperatures may lead to either excessive fluid loss (heat exhaustion) or to failure of the heat loss mechanism to function (heatstroke). Age, obesity, chronic alcoholism, debility, and many drugs increase susceptibility to heat illness, particularly heatstroke.

Though stemming from the same cause, heat exhaustion and heat stroke are sharply different.

Heat Exhaustion

Heat Exhaustion is caused by excessive fluid loss. Symptoms are gradual weakness, nausea, anxiety, excessive sweating and brief loss of consciousness. Some or all of these symptoms may occur. The victim will appear pale, grayish, have clammy skin and a low blood pressure. The treatment is fluid replacement, have water readily available for guests at all times.

Heat stroke

Heat Stroke is caused by the inadequacy or failure of the body's heat loss mechanism. Symptoms are headache, weakness, sudden loss of consciousness. Once again, some or all of these symptoms may occur. The victim will appear to be hot; the skin will appear to be very dry, and red.

The victim will be sweating very little with a hard and rapid pulse rate, and a very high temperature. The treatment for this condition is cooling the victim and immediate hospitalization. If you suspect heatstroke, activate EMS immediately.

Recovery Position

This is also referred to as the "fetal position". The victim is placed on their side, legs bent at the knees and either a pillow or their own arm supports the head. This position is conducive to recovery and reduces the likelihood that the victim will choke if they should happen to vomit. Once the victim is placed in the recovery position, the rescuer should monitor the victim's vital signs (breathing, circulation, and level of consciousness) while maintaining the victim's body temperature and provide privacy and reassurance.

Imbedded Objects

Sometimes lifeguards are told someone has "something in their eye." Anything to do with the eye should be treated seriously. Help the patient to keep from moving their eyes by standing in front of them, rather than above or to the side. If the eye is red and tearing or if you see something in it, call EMS and see if you can flush the eye with clean water. Don't use a fast stream of water, but pour the water gently and go from the eye near the nose so the water goes toward the ear. You don't want to wash anything into the other eye.

Splinters can be a problem around wooden structures. Any puncture wound has a high potential of infection. If the splinter is on the surface and can be easily removed with a tweezers, treat as your protocols indicate. If a splinter is deeply imbedded, it may need medical attention. Do as your facility protocols indicate.

Seizure

Signs of seizure include subtle indicators, such as a rapid blinking of the eyelids, to major indicators, such as vibration or trembling of the limbs. If a person has a seizure, do not try to restrain their trembling in any way. Do not place anything in their mouth, particularly not your hand. However, do pad under the head, elbows and feet to protect them from hard surfaces. This is a very tense situation, and the rescuer needs to remain calm and remember the objectives of the rescue, keep the victim head/nose up, stabilize and protect the victim from further harm, and maintain breathing. It may be very difficult to assess effective respirations during a seizure. However, once the episode passes, an initial assessment or recheck should be performed to evaluate the victim's vital signs and condition. After a major seizure, the victim will normally be very tired and require transport to the hospital.

Seizures in the water can be very serious, because the victim may slip under the water and start to drown. You don't have to remove them from the water during a seizure where the victim is moving a lot as long as you can support their head out of the water so that they are in a nose up, stable and breathing position. Remove them from the water when it is safe to do so.

Shock

Shock is a result of an insufficient delivery of oxygen and nutrients to the cells due to decreased perfusion or blood flow. When the body's organs do not receive enough blood, they fail to work properly. Shock may be a component in all medical emergencies, but should be of special concern in such emergencies as: bleeding, heat stroke, severe hypoglycemia (low blood sugar as in diabetes), dehydration, burns, severe allergic reactions, drug ingestion and traumatic head or spinal

injury. While the exact cause of shock may vary, the result is the same—decreased blood flow to body tissues.

Determining if a guest is beginning to show signs of shock requires careful assessment and a high index of suspicion. The skin is the largest organ of the body and is one of the first to be affected by shock. Normal skin is soft, warm and dry. Many shock states will cause the skin to feel cool and clammy and the skin color to become pale.

An increased heart rate may be another early indication of shock. The body is working harder to maintain perfusion to the heart and brain. The respiratory rate, the rate of breathing, also increases as the body fights to protect itself from shock. The victim may show signs of restlessness or irritability. Their level of consciousness should be carefully monitored. Deterioration of the level of consciousness requires immediate assistance from your local EMS provider.

Treatment for shock begins with early recognition of potential causes and signs. Emergency medical assistance should be summoned as soon as any shock state is identified. Keep your victim lying down. Control any external bleeding. Maintain the normal body temperature. Do not give the victim anything to eat or drink. Keep the victim as comfortable as possible and maintain a reassuring attitude.

Log Roll

There are times when it is necessary for the victim to be rolled from a face down position to one of face up. This is when the log roll is useful with the protection of the victim's head to be a primary focus during the roll.

To perform the log roll, kneel beside the victim, close to the head and chest. The hand closest to the head reaches under the base of the victim's head for support while the other hand reaches across the victim on the hip or shoulders whichever one will allow an easier roll. With one continuous motion pull the victim to you, the victim may end up in your lap; carefully remove yourself while supporting the head. Care should be taken to limit the spine's movement during this maneuver. If a spinal injury is suspected, then another person can roll the hips and legs while the primary rescuer rolls the shoulders and protects the head.

Orthopedic/Joint/Bone Injuries

Most major bone and/or joint injuries will be obvious on visual inspection. A major concern is that the victim may go into shock. As a general rule, unless some overriding reason is present, the victim should be moved as little as possible. This could include sitting the person on the steps or even leaving them in shallow water with a lifeguard while waiting for EMS to arrive. The objective is to get the victim to a safe and stable position with minimal movement. Certainly, the affected limb should be moved as little as possible. Symptoms of such an injury include, but are not limited to, pain, loss of motion, swelling, discoloration, bruising, and loss of sensation in the extremities, deformation, or distortion. Remember that extreme pain, and many of these injuries are extremely painful, is often accompanied by extreme nausea. In case of such an injury, activate the Emergency Action Plan as soon as possible. While waiting for support to arrive, keep the victim still and as comfortable as possible. Remember, if what you are doing hurts the victim, normally you should stop. Sprains and strains from slips and falls are also common around aquatic facilities. In the case of any serious joint injury, activate EMS Again; any injury needs to have an incident report written and filed.

Change in Level of Consciousness

One of the earliest indicators for a major medical problem is a change in the level of consciousness or altered mental status. A lifeguard may be asked to come over to a guest who "isn't acting right", acting "confused", has "fainted" or who "won't wake up." An easy way to assess how someone is doing is to ask them what their name is, if they know where they are, and if they know what day it is. If they can't answer those questions or are acting as if they are intoxicated, irrational, or even just "strange" you may have a serious situation. Depending on the seriousness of the situation you may need to call EMS. Many medical conditions can cause a change in the level of consciousness. These include heat-related illnesses, diabetes, stroke, heart attack, allergic reactions, blood loss, etc. Don't assume that someone is just intoxicated. Many medical conditions can look like "being drunk" or "being high. If in doubt, call your supervisor.

Follow your facility protocols for medical emergencies.

Final Thoughts

As the name emergency implies the action of the guard must be done immediately in a critical situation. Do not forget the RAA (ready, assessment, and action) steps. Know your EAP and follow it, activate EMS when necessary, don't make the situation worse, and use universal precautions as needed.

CARDIO-PULMONARY RESUSCITATION (CPR) - INTRODUCTION

This guideline is developed to provide a basic understanding of closed chest cardiac compressions to continue circulation of oxygen in blood with the intention of preventing the death of a person after the heart has stopped. This protocol is intended for use specific to an aquatic environment where the lifeguard is the provider of care for only a short time: until EMS arrives or other Advanced Life Support services who would assume care of the patient. We would like to emphasize that teaching a 16-year-old CPR is not a substitute for adult support.

The guidelines within this protocol are based upon the standards set by leading medical authorities. This guideline follows the same procedures as used by other recognized agencies. The procedures have been adapted for the specific use of lifeguards in an aquatic facility.

This protocol or a greater level of training in CPR should be included in every lifeguard training or retraining.

OVERVIEW

Cardio-pulmonary Resuscitation CPR is the act of artificially circulating oxygenated blood through the body. Without this circulation death will occur. The most vital organ in the body is the brain. Without the circulation provided by the heart and the oxygenation provided by the lungs, the brain will die in as little as four minutes.

The national standards for Emergency Medical Services (EMS) dictate that ambulance service should be available to most areas within eight to ten minutes. With that in mind, the purpose of this training is to be the link between rescue and EMS. CPR is different for different sized people. What is effective for an infant will not work for an adult. With that in mind, three distinctions are made to CPR: Adult, Child, and Infant. Another distinction is that between CPR and AR. AR is Artificial Respiration, and is the equivalent to CPR for a person who is not breathing but does have a pulse.

Lifeguards are considered to be emergency responders under OSHA guidelines (Occupational Safety and Health Administration of the U.S. Department of Labor - Standard Number 1910.1030). For this reason, they are held to different guidelines then that of a "Lay Rescuer" (generally a bystander) when doing Artificial Respirations/Rescue Breathing or CPR when on the job. The following guidelines for doing Artificial Respiration/Rescue Breathing and CPR are based on the '2015 American Heart Association (AHA) Guidelines for CPR (Cardiopulmonary Resuscitation) and ECC (Emergency Cardiovascular Care)' for Health Care Providers.

Definition of Adult, Child and Infant

This is important because AR and CPR are done differently depending on the age and physical development of a victim.

The AHA guidelines state that a child is "1 year to adolescent" and an adult is "adolescent and older." Because of the difficulty in defining adolescence, NASCO is using the following guidelines.

1 year or less – Infant

1 year to 8 years – Child

8 -14 years - This is a judgment call on whether the victim is a child or an adult. It depends on the physical development of the victim. The lifeguard needs to look at the victim for the presence of facial and body hair, size, height, weight and muscular development for males and the presence of body hair, size, height, weight, breasts and broader hips for females to decide if the victim is to be treated as a child or an adult. **NOTE: Don't delay giving CPR. If you can't decide, go with Adult CPR in order to give the victim the strongest, fastest compressions and fullest breaths.**

14 years and up - Adult

Procedure

Before approaching any person believed to be in distress, it is necessary to ensure that the area is safe for the rescuer. If a lifeguard succumbs to the same danger as the person to be assisted they are of no use to the victim and become another victim for others to help. Common hazards to check for include electric current, gas (chlorine or other), violent people, and debris. These are not all the items that can be dangerous in a scene, so it is important to always check for safety before approaching a victim. If it is believed to not be safe, EMS should be contacted immediately – a lifeguard should not act carelessly so as to endanger him or herself.

This protocol assumes the victim is on a flat surface, and on his or her back. If the person is still in the water, they must be extricated before initiating any CPR procedures. If the victim is not on his or her back, they must be so positioned once it is determined that they are not responsive. Appropriate measures to position the victim as such require that gentle care and caution is taken in the process of movement to prevent further injury. When necessary to roll a victim the roll should be done as a single movement to avoid unnecessary movement of the patient, especially the victim's spine (see Log Roll).

As stated before, there are three distinctions in the types of CPR. Those are Adult, Child and Infant.

Cardiac arrest from drowning follows the following protocol: An easy way to remember this is A-B-C. This stands for Airway, Breathing and Circulation. Each step has two parts: inspection and correction; or "Check it, Do it." While the specifics of each type (Adult, Child, and Infant) will be discussed below, the basic procedure is as follows:

AIRWAY:

CHECK IT: CHECK IF THE PATIENT IS NOT RESPONSIVE, IF SO ACTIVATE EMS AND MOVE ONTO "DO IT."

DO IT: OPEN THE AIRWAY AND MOVE ONTO "B."

BREATHING:

CHECK IT: IF THEY ARE UNRESPONSIVE AND NOT BREATHING NORMALLY OR GASPING THEN DO IT.

DO IT: IF NO SPONTANEOUS RESPIRATION PRESENT, ARTIFICIALLY VENTILATE AND MOVE ONTO "C." IF THE VICTIM IS BREATHING, MONITOR AND WAIT FOR EMS.

CIRCULATION;

CHECK IT: CHECK PULSE AT THE CAROTID OR BRACHIAL ARTERY FOR 10 SECONDS.

DO IT: IF A PULSE IS PRESENT, DO AR.IF NO PULSE, DO CPR.

Adult

Always put on your gloves first, as with all patient contact.

Check It: Check For Responsiveness

If the victim is not responsive it is time to take action. Because the person is not responsive, evaluation by advanced healthcare providers will be needed. An unresponsive person requires the immediate notification of EMS. At this point, activate EMS by following the EAP for the facility. In many systems a lifeguard will activate EMS by calling 911 (or local emergency number). If possible, attend to the victim while a co-worker or bystander calls but do not delay calling; the sooner called, the sooner EMS will arrive.

Do It: Open The Airway

The tongue is quite often obstructing the airway preventing spontaneous respiration. There are a few ways to open an airway. The easiest and most effective way of doing this is the head tilt & chin lift. The procedure requires that you tilt the head back and lift at the chin thereby extending the neck and dislodging the tongue from the opening of the airway. Caution must be taken not to over or hyperextend the neck. Due to the manipulation of the spinal column in the head tilt – chin lift method, the jaw thrust must be used if there is a suspected spinal injury. The jaw thrust accomplishes the same goal of opening the airway, but is not as easily accomplished as the head tilt. To open the airway with the jaw thrust the head is maintained in line with the body while the jaw is pulled forward by putting pressure on the back hinge of the jaw.

Check It: Checking For Breathing

This step is easy to accomplish: to check for breathing, determine if the victim is unresponsive and see if they are breathing normally. If they aren't breathing or gasping, go to do it.

Do It: Ventilate

If there is no ventilation present, it is necessary for you to breathe for the patient. This must be done with a barrier mask between the lifeguard and patient as part of universal precautions or a manual bag-valve mask (BVM) that inflates the lungs via a mechanical delivery instead of from the lifeguard's exhalation. While a BVM will deliver a full breath when doing AR, without one, the lifeguard must be conscious to deliver two full, deep breaths to the patient.

An important thing to remember during artificial respiration is to maintain a good seal on the mask, and an open airway. The seal between the mask and the patient must be tight or the air will escape instead of going into the lungs. If a seal is not good, simply remove the mask and reposition it, again tightly. If the airway becomes closed and air cannot reach the lungs, reposition the airway and continue with the process.

With a good seal on the mask and an open airway, the rescuer will give two ventilations by breathing into the patient slowly. Wait for the air to be exhaled before starting the next breath or if using a BVM squeeze the bag so that the chest fully rises, allow for the bag to re-inflate, and then squeeze again. In either case, if the air does not go in, reposition the head or repeat the jaw thrust maneuver and try again.

As stated earlier, the tongue is the most common obstruction and repositioning the head may open the airway.

If the repositioning and repeated ventilation attempts are not successful and the victim is unresponsive, do chest compressions.

Check It: Circulation And Pulse

Using your index and middle fingers, check for a pulse for no more than 10 seconds at the carotid artery in the patient's neck. This pulse can be felt on either side of the neck under the jaw. Only feel on one side of the neck at a time so as not to reduce or cut off circulation to the brain if a pulse is present. Be careful not to reach across the throat or exert pressure on the airway. If there is a pulse, but the patient is still not breathing continue AR. Ventilate the patient at the rate of one breath every five seconds.

Do It: Closed Chest Cardiac Compressions

When there is no pulse, it is necessary to circulate blood around the patient as well as breathe for them. This is accomplished by compressing the chest, forcing blood through the heart. To do this the rescuer must find the middle of the chest, about two inches above the xiphoid process along the patient's sternum. Place the hands over the sternum midway between the nipples on the nipple line. The rescuer needs to kneel beside the patient and place one palm at mid-sternum and the other hand on top of that.

The chest needs to be compressed directly downward, at least two (2") inches deep on the chest and no more than 2.4". This is done slightly faster than once a second; thirty times and then the patient must be ventilated twice. The goal is to get about five cycles of 30 compressions to two breaths in two minutes. The compressions rate should be at least 100 compressions per minute and no more than 120, allowing a full chest rise after each compression and about 1 second per respiration, feeling the air go into the victim and seeing the chest rise.

It is important to count out loud during a rescue sequence, whenever it is necessary to count, whether seconds, compressions, or ventilations. Vocalization of the procedure allows other lifeguards on scene and arriving EMS personnel to know exactly what is being done. It also helps the rescuer keep count. When counting seconds, count 1 and 2 and 3 and so on.

After every two minutes of care on any unresponsive person recheck their breathing and circulation for any change in status. Action should be taken to correct any problem findings. For example, if the patient was receiving AR and on re-check there is no pulse, CPR must be initiated.

Child

The child version of AR and CPR is the same procedure as adult except that because the size of a child is smaller there are several changes.

The first change is based on the size of the patient's lungs. Because they are smaller than an adult is, they will require slightly less air to fill. Consequently, the rescuer will not need to use as much volume for a child as an adult. Also, in the event of an obstructed airway and chest compression, only one hand is used and the compression is only one-third to one-half the depth of the chest. This change also holds true for the depth of cardiac compressions. Only one hand is used and the depth of the compression should be at least one third the front to back dimension of the chest. This is about 2 inches (5 cm) in most

children. The greatest change from adult to child is the ratio of chest compressions to breaths given for two rescuer CPR. In the child there are 30 compressions to 2 breaths for a single rescuer and 15 compressions to 2 breaths for two rescuers. If there is a pulse, but the child is not breathing, continue Artificial Respirations by giving one (1) breath every three (3) seconds

Infant

Infant AR and CPR have many changes from their Child and Adult counterparts, but still follow the ABC Check It, Do It format.

Check It: Check For Responsiveness.

Whenever checking the responsiveness of an infant, remember to never shake a baby. The rescuer needs to check for responsiveness by tickling the infant's foot if exposed, and/or the rescuer needs to use their hands and "clap" near the infant so as to startle them if they are asleep. If the infant patient is not responsive, activate EMS and move on to "Do It: Open the Airway"

Do It: Open The Airway.

In an infant this is done by putting the head into a neutral position with the nose forward. Because the nose is pointed out, this is referred to as "sniffing position." This position does not compromise nor manipulate the spine, so there is not an alternate position needed for suspected neck injuries.

Check It: Check For Breathing.

If no respirations: go to "Do It: Ventilate."

Do It: Ventilate.

If the infant is not breathing give two small puffs of air to inflate the lungs using a barrier mask. There are two important points to remember during infant AR. First, cover the mouth and nose of the patient. Secondly, the size of an infant's lung will only require a small amount of air to inflate. The amount of air found in the average adult's inflated cheeks is adequate to fill an infant's lungs. If the air does not go in reposition the airway and try again.

If re-positioning the head is not successful for a responsive infant with a severe obstruction. Use back blows and chest thrusts. If the infant becomes unresponsive do chest compressions.

Whenever the rescuer is performing back blows and chest compressions on a responsive infant with a severe obstruction, a great deal of care must be taken in supporting the patient's head in order to prevent head and neck injuries. The rescuer will need to support the infant's head by placing his thumb and index finger on the cheekbones of the infant in order to support the infant's head while performing back blows. The infant needs to be held in-line between the rescuer's arms face down with the head down slightly below the level of the feet. For stabilization the rescuer may support the arm below the infant against his or her thigh. With the infant in position the rescuer will administer five (5) back blows between the shoulder blades of the infant with the palm of his or her free hand. After that is done; the infant needs to be switched to be face up in the same position for a sequence of five (5) chest compressions. To administer these, the rescuer will need to cup the back of the infant's head in his hand and support the head while performing the chest

thrust. In order to perform effective chest thrust the rescuer needs to take two fingers and place them on the sternum just below the nipple line of the infant's chest. Compress one third to one half the depth of the chest at a 90° angle to the infant. After the five compressions the airway must be visually inspected to see if there is any debris. If there is something seen, it should be gently removed. Set the infant onto a level surface or continue with the infant resting on the forearm and attempt to administer two puffs of air.

Check It: Circulation And Pulse

Feel for a pulse for 10 seconds along the brachial artery in the arm. This artery can be felt between the biceps and the triceps muscles along the inside of the upper arm. If there is a pulse, continue ventilating at a rate of one puff of air every 3 seconds. If the pulse is absent, move on to "Do It".

Do It: Closed Chest Cardiac Compressions

The currently preferred method of delivering chest compressions to an infant is called the two thumb-encircling hands technique. To perform this technique, place the infant on its back (supine position) on a hard flat surface. While the first rescuer begins artificial respirations using the appropriate barrier device, the second rescuer slides both hands under the infant's back. Both hands encircle the infant's chest wall with the thumbs meeting on top in the center of the chest. Both thumbs simultaneously compress the sternum at least one-third the depth of the chest. Avoid lifting the infant's head higher than the rest of the body. A small pad can be used to slightly extend the infant's airway. Chest compressions continue at a rate of at least 100 compressions per minute and no more than 120, at a 30:2 ratio of compressions to ventilations for a single rescuer and a 15:2 ratio for two rescuers.

If there is an infant BVM available, a second lifeguard may operate it while the first rescuer continues chest compressions. If there are other lifeguards available, they can take over CPR by trading positions should one of the original rescuers becomes tired.

You can also do CPR for an infant in the same position and method as the chest compression was for a responsive infant with an obstructed airway. Find the middle of the sternum just below the nipple line and compress one third to one half the depth of the chest using two fingers for a single rescuer and two thumb encircling hands for two rescuers. Use a compression/ventilation ratio of 30 compressions to 2 puffs of air for a single rescuer and 15 compressions to 2 puffs of air for two rescuers. The compression rate for the chest compressions is at least 100 compressions per minute, and no more than 120. As with all CPR and AR, recheck the patient after every two minutes for any change in their status.

Multiple Rescuers

When there is more than one lifeguard available in an emergency situation the work can be divided among the rescuers. This is recommended as it speeds up the process of providing care. For example, in CPR one person can handle the ventilation and the other the compressions negating the need to move between head and the chest. The third person can also continually monitor the pulse at the carotid artery and hold the seal on a BVM. Usually for CPR no more than three rescuers are needed. Additional personnel and bystanders can be used for related tasks such as crowd control and directing the EMS to the site.

For Adult and Child CPR, it is recommended that when there are two rescuers the task of

CPR be divided into Airway and Compressions. If using a BVM and there is a third lifeguard, that person can maintain the airway and seal, the second can squeeze the bag and the first would perform the compressions. The third person can also continually monitor the pulse at the carotid artery, or if a forth rescuer is present; they can assist with monitoring the pulse.

With multiple lifeguards performing CPR the ratio of compression to breaths will be 30:2 for an adult, 15:2 for a child and 15:2 for an infant. All aspects remain the same as for 2 person CPR, including the need to reassess every two minutes. Because of the need for being synchronized, it is very important that the counts be vocalized. All responding lifeguards need to keep count of the compressions to ensure accuracy and the correct ratio. If one of the rescuers should become tired; or after 2 minutes, the rescuers can trade positions with the others by communicating the need to "trade" and "switch" tasks. Whenever trading takes place, reassess the victim before restarting CPR.

Choking

In the event of a conscious person with an airway obstruction abdominal thrusts should be utilized. This is abdominal thrusts for a person that is conscious and is usually performed while standing or sitting. Because the person is standing or sitting and not breathing, the lifeguard needs to be prepared to assist the person to the ground if they lose consciousness. If this should happen, begin the ABC process as would be done for any unresponsive victim.

The goal of performing abdominal thrusts is to open the airway before the person becomes unconscious. The procedure for adults and children is essentially the same: Confirm that they are choking and need aid. A person who is coughing should be encouraged to continue to cough to free the blockage. It is important to remember that if they can't breathe they can't talk. If the person is choking, stand behind them and grab them at mid waist, placing one fist at mid abdomen. Take one hand and make a fist and place it slightly above the belly button of the victim. If the victim is an adult take the other hand and place it over the fist for added force. For a child, use the free hand to support the child. With hands in appropriate position, administer thrusts in an upward and inward motion until the airway is clear or until the person loses consciousness.

Infant obstructed airway care is the same for a conscious baby as for an unconscious one.

Vocalization

When performing CPR it is important to vocalize the process for the following reasons. It helps to maintain the rhythm. It helps to show or establish control of the procedure. It informs other rescuers of the status of the procedure. Many times, it helps the mental state of the rescuers as well as providing reassurance to onlookers.

Equipment

Since some equipment requires the use of additional supplies, it is necessary to have them available to the lifeguard in case of an emergency. Body Substance Isolation (BSI) is essential to protect the lifeguard from infection and disease that can be contracted during the rendering of care. Consequently the lifeguard cannot perform the duties of the job safely without a CPR mask and appropriate medical gloves available to them for immediate use in an emergency. Other additional equipment such as a manual suction device (V-Vac), bag valve mask (BVM), oxygen (O_2), and an automated external defibrillator (AED), provided the guards are adequately trained to use them.

Automated External Defibrillator (AED)

PART 1- HOW THE HEART WORKS AND WHY IT IS IMPORTANT

The Heart is a very important organ in the body. It is the "pump" that moves oxygenated blood from the lungs throughout the body's circulatory system, so that all of the body's organs are sufficiently oxygenated and the organ's waste products, such as carbon dioxide, can return to the lungs to be exhaled out of the body.

This "pump" is made up of many complex muscles and cells that are highly specialized. Part of the sophistication of this "pump" is its electrical system. That's right, its electrical system. This electrical system insures that the heart beats in a specific rhythm. The heart's four chambers must open and close in a systematic manner to work properly. This electrical system causes the muscle to contract and force the blood that is in the heart out to the lungs and the rest of the body.

Whenever this "pump" is not working as efficiently as it should, either by sudden cardiac arrest, or other medical complications (such as when an immersion incident occurs) the body's vital organs (the brain, heart, lungs, kidneys, and liver) suffer from this lack of oxygen and corrective actions must be taken in order for the heart to return to its normal rhythm. The purpose of this information is not to distinguish between these different circumstances, only for the student to understand that heart complications and cardiac arrest are caused for a number of reasons. This information will help educate the participant on how to correct the body's ineffective circulation by aiding the heart's systematic rhythm through the use of an AED Unit.

The time following heart failure is the most critical for the victim. If the heart's electrical system that is causing an arrhythmia can be quickly restored to its normal rhythm, then the survival rate of the victim is greatly improved. An arrhythmia is whenever the heart is beating, or contracting in a manner other than the normal rhythm that produces efficient and effective blood circulation. Some arrhythmias are benign and do not cause any problems for the individual that has the arrhythmia, but during a heart failure incident, the condition is serious and needs to be quickly rectified by the use of an AED, along with advanced medical care and treatment. It should be noted that for every minute that passes after a victim's heart stops beating effectively, and an AED unit is not utilized, the chances of survival decrease by 7%-10%. With this being said, after ten minutes, the chances of recovery are about the same as if no AED unit was used; there is an approximately 2% survival rate with or without utilizing an AED unit.

PART 2 - WHEN AND WHERE TO USE THE AED UNIT

Whenever resuscitation efforts are being performed on any victim, the rescuer must evaluate the victim's condition and determine the presence or absence of normal respiration and circulation. Once this has been done, the rescuer can determine what actions must be taken to resuscitate the victim.

An AED unit should be used to resuscitate a victim when, and only when, the victim has been assessed and determined to have no pulse. Even in the case where CPR is already in progress, the victim must still be assessed for a pulse before using an AED. If the victim's condition dictates that an Automated External defibrillator (AED) is required, no signs of breathing and no pulse, then Cardio Pulmonary Resuscitation (CPR) should be performed while the equipment is being retrieved and prepared for use.

Although the AED unit can be used virtually anywhere, the rescuer should evaluate the

environment surrounding the victim and the area in which resuscitation efforts are being performed. This will help identify those instances that may contra-indicate the safe and effective use of the AED Unit. Contra-indications are those circumstances where the use of the AED unit would do more harm to the victim than good, such as:

a. When the victim is conscious.
b. When the victim is unconscious and has a pulse.
c. Whenever the victim is less than one year old.
d. When the victim is lying in water or any conductive surface or when the rescuers are in contact with such surfaces.
e. When there are flammable chemicals or materials in the area

Once it has been determined that it is safe to utilize the AED equipment and that no contra-indications exist; then the rescuer should continue with the rescue efforts while connecting the unit to the victim. It should be noted that although CPR is an important technique utilized to help artificially oxygenate and circulate the blood for the victim, it is not going to "re-start" the heart. The rescuer must insure that the EMS Service has been notified, and if an AED is present, it too should be turned on and properly connected to the victim as soon as possible.

When the AED unit is completely connected to the victim, the rescuers that are performing CPR must stop and listen to the prompts from the AED unit. It will inform and instruct the rescuers on what it is doing and what they need to do once the heart's rhythm has been analyzed.

PART 3- HOW TO SAFELY AND EFFECTIVELY USE THE AED UNIT

Before an AED Unit can be used in resuscitation efforts, it is imperative that one knows when to safely use it. An AED should be used on a victim if, and only if, the victim shows no signs of circulation. Once it has been determined that the victim does not have a pulse, turn on the AED and prepare it for use. CPR should be started and continue for two minutes if the arrest was not an out of the hospital witnessed arrest. If the arrest was witnessed, prepare and use the AED unit immediately. If you need to prepare the AED, start CPR until the unit is ready.

Before affixing the pads to the victim's chest, several considerations must be taken into account:

The victim's location. While it is true that you can shock a victim who is soaking wet (such as a victim of submersion), care must be taken to ensure that the victim is not lying in water (or any other conductive surface). This is because electricity takes the path of least resistance. If the victim is lying in water or on some other conductive surface, then the electricity may follow its path and deliver a less effective shock to the victim and possibly injure those rescuers and by-standers that are also touching the conductive surface. Avoid using the AED in an area where flammable liquids or materials are present. The electricity running through the AED unit could cause these chemicals to ignite. When necessary, move the victim to an area where it is safe to use the AED.

Is it safe to shock this victim? Remember that patients under 1 year old should not be shocked unless you have proper equipment. Check for medical patches (such as a nitroglycerin) under the victim's clothing. If a patch is present, carefully remove it before placing the AED pads. If the patch is not removed, it could possibly ignite. Also look for signs of an internal pacemaker. Most often there will be a scar on the victim's chest and the area of the chest in which the internal pacemaker exists will be slightly raised. Do not place the pads over the internal pacemaker. In addition, the victim must also be checked for medic alert tags, or any other metal chains on the

neck and wrist. If such things exist, remove them from the victim. They could cause the electrical current to be reduced and deliver a less effective shock.

Once you have determined that the area in which you're working is safe, and you've determined that it is safe to shock this particular victim, stop CPR and affix the pads to the victim's chest.

In order to properly affix the AED's pads to the skin, the victim's bare chest must be exposed. The victim's shirt and swim top, or bra, must be removed. Expose the chest by cutting away the victim's clothing with medical sheers. (Medical sheers should be stored inside the bag or case housing the AED unit). It is important that you use discretion and try to protect as much of the victim's privacy as possible, especially for female victims. By-standers who are not assisting with the rescue should be removed from the area.

If the victim is soaking wet, attempt to wipe the chest dry before affixing the pads. Do not use alcohol or any other chemicals to cleanse the chest. These chemicals are flammable and the current that passes through the AED pads could cause ignition.

In some cases, hair on the victim's chest will prevent the AED pads from making effective contact with the skin. When this is the case, a razor must be used in order to shave the chest and create an area where the AED pads can be affixed. The razor should be stored with the AED Unit along with the trauma shears.

When affixing the pads to the chest, place one pad on the victim's upper right chest and place the other pad on the lower left side of the victim's chest, just below the breast. Do not place the pads over the nipples. Most AED pads have a picture showing the proper location for placement. Again, do not affix the pads over medical patches, or any implanted devices such as internal pacemakers.

Once the pads are properly affixed to the victim's chest, connect the cables to the pads and plug the cables into the AED. Once the AED unit is connected, let the AED analyze the victim's heart rhythm by pushing the "analyze" button on the unit. Make sure no one is touching the victim while the AED is analyzing. If anyone is touching the victim, the AED may pick up the rhythm of those individuals and give a false reading. To ensure that no one is touching the victim, say "All clear. Everyone clear." The other rescuers should hold their hands up and reply, "All clear."

Once the AED is done analyzing the victim, the unit will respond in one of two ways.

Either the AED will respond, "No Shock Advised, Continue CPR", or it will respond "Shock Advised." (The exact verb-age may vary from unit to unit.)

If the AED advises that no shock is needed, leave the pads on the victim and check the victim for a pulse. If no pulse is found, continue CPR. After about one minute of CPR, push the analyze button again and wait for the AED to advise. Be sure that no one is touching while the AED is analyzing the victim's rhythm.

If the AED advises that a shock is needed, make sure no one is touching the patient. Again, say "All Clear, Everyone Clear." The rescuers should raise their hands away from the victim and say, "All Clear". Once everyone is clear, push the "shock" button. After the shock is given, most AEDs will automatically re-analyze the victim's rhythm. If not, push the "analyze" button again manually check the victim for a pulse and breathing. If the victim has a pulse and is breathing adequately, give oxygen and monitor the victim until EMS arrives. This victim will need to be transported to the hospital.

If the victim still has no pulse once the third shock has been delivered, continue CPR for

approximately one minute. After one minute, reanalyze the rhythm. Repeat the cycle of up to three stacked shocks if necessary.

PART 4- HOW TO PROPERLY STORE AND MAINTAIN THE AED UNIT

In order for the AED to be most effective, it must first be present at the scene ready for use. Therefore, the location that this unit is stored is very important. Additionally, the AED unit must also be in good working condition

The unit must be stored in a safe and secure location, so that it does not become damaged from the elements (sun, heat, rain, extreme cold temperatures). These conditions may adversely affect the usefulness of the unit. Another consideration should be the security of the unit. Do not store the unit where unauthorized individuals have ready access to the unit. These individuals may unintentionally break the unit or even steal it for its monetary value. It could also pose as a great danger if untrained individuals were able to gain access to the AED Unit, and cause harm to themselves or others by improperly using the equipment.

Some facilities store the units in the following locations:

- Medical Services (First-Aid Stations)
- By major attractions where the likelihood of needing the AED unit is high
- At security booths
- Radio base stations
- In the emergency response vehicle that will be responding to an cardiac emergency
- Located beside Supplemental Oxygen rescue equipment,
- Some theaters and other large meeting facilities.
- Beside the pool or attraction in a dry secure location.

There are other locations that meet the objective of being safe and secure. However, everyone that is expected to utilize, or retrieve the unit must know where it is stored and have unfettered access to the AED Unit.

In order for the AED unit to operate correctly whenever needed, there are some maintenance checks that are to be done on a daily, and monthly basis, and after each use following a cardiac arrest incident.

Daily:

- Check the status indicator. Verify that the battery power indicator is in the “ready” mode. Notify the AED coordinator if a problem is detected.
- Verify that all supplies and accessories as well as extra equipment items are present and are operational.

Monthly:

- Check to see that all supplies and accessories and extra equipment remain in good condition and that the expiration dates identified on the supplies has not passed.
- Visually inspect the exterior of the AED unit and connectors for signs of damage.
- Inspect the exterior of the AED unit and the connectors for signs of dirt or contamination. After use on each patient
- Check the supplies, accessories and extra equipment items for damage and re-evaluate the expiration dates. Also restock any items used during the incident.
- Recheck the operation of the AED unit and evaluate the condition of the battery prior to the unit returning to service.

- If the AED is equipped with a PC data card or some other means of capturing data with respect to the rescue, then it must be removed, promptly identified and delivered to appropriate personnel. Replace with another one prior to the AED unit being returned into service.
- A service card should be stored with the unit that indicates the date the unit was checked and the individual that checked the unit

NOTE:

This program is meant to thoroughly educate the aquatic professional about the benefits of using an AED in a timely manner in order to re-start the heart following an aquatic immersion incident. It is understood that this program is a general overview and that each facility will be responsible for obtaining their own medical director and follow the protocols that are prescribed by that medical director. Each state has various guidelines governing the use and accessibility of AED units, and each facility is better served by obtaining their state's specific guidelines from their medical director or medical control officer. The protocol furnished by the medical direction should be followed and supersedes anything in this training program.

Critical Elements of CPR

While all of the elements of CPR are important, there are five things which are critical. During the history of the development of CPR there have been numerous changes in speeds, ratios, compressions and other elements. However, five things have, for the most part remained constant. These are the five things that must be done if CPR is to be successful for both the victim and the rescuer. The five (5) critical elements in order are:

1. Get help coming
2. Protect yourself and the victim
3. Get a good airway
4. Do effective breaths
5. Do effective compressions

Some research has shown that CPR only works around 1 in 20 times. Other research has shown the three (3) major mistakes in doing CPR. These are:

1. Long intervals where nothing is done
2. Insufficient force and frequency in doing the chest compressions.
3. Not fully ventilating during rescue breathing

In doing the five critical elements mentioned above, try to avoid these three mistakes.

Additional research has shown that over 80% of the victims vomit during CPR and that over 90% have significant trauma done to the sternum and chest bones. Still, CPR is their best chance with a non-breathing victim on the deck.

NASCO Drowning AR/CPR Protocol

IF THE VICTIM IS NOT BREATHING THEN:

1. Open the airway and give the victim two rescue breaths.
2. If the rescue breaths do not go in, reposition the head and try again.
3. If the breaths still do not go in start chest compressions.
4. If the breaths go in, then check for a pulse.

IF THERE IS A PULSE:

1. Continue AR until EMS arrives or the victim recovers spontaneous respiration.

IF THERE IS NO PULSE:

1. Begin CPR.
2. Reassess the victim every two minutes or five cycles to determine the presence of pulse and respiration.

IF THE VICTIM RESPONDS, PLACE THEM IN THE RECOVERY POSITION AND MONITOR

AR/CPR Summary

1. A - Open Airway (head-tilt, chin-lift)
2. B –If no breathing, administer 2 rescue breaths
    A. If the chest rises and the air goes in, go to step 3.
    B. If chest doesn't rise and the air doesn't go in:
        1.) Re-tilt head
        2.) Administer 2 breaths. If breaths go in, go to step 3.
        3.) If chest doesn't rise and air doesn't go in, do chest compressions
        4.) If the airway was obstructed and then becomes unobstructed, look in the mouth for the obstruction and remove it, if possible.
3. Check pulse
    a) If there is no pulse, perform CPR. 1-person and 2-person 30 compressions to every 2 breaths (Adult)
    b) If there is no pulse, perform CPR. 1-person 30:2 for child and infant 2-person 15:2 breaths (for Child or Infant)
    c) If there is a pulse, but no breathing, perform AR (1 breathe every 5 seconds or 10-12 breaths per minute adult).
    d) If there is a pulse, but no breathing, perform AR (1 breathe every 3-5 seconds or 12-20 breaths per minute for an infant or child).

Cardiac And Respiratory Emergency Skills

Maneuver	Adult Adolescent (8-14 yrs.) and Above	Child Age 1 to Adolescent (8-14 yrs.)	Infant 1 month up to 1 year
Airway	Head Tilt, Jaw thrust if there is a suspected spinal injury	Head Tilt, Jaw thrust if there is a suspected spinal injury	Head Tilt, Jaw thrust if there is a suspected spinal injury
Breathing – Initial Rescue Breaths (See the chest rise)	2 full rescue breaths that cause chest to rise at 1 second per breath	2 breaths that cause chest to rise at 1 second per breath	2 puffs that cause chest to rise at 1 second per breath
Rescue Breathing without compressions(See the chest rise)	10-12 breaths per minute or 1 breath every 5 seconds	20 breaths per minute or approximately 1 breath every 3 seconds	20 breaths per minute or approximately 1 breath every 3 seconds
Rescue Breaths with Compression(See the chest rise)	Approximately 8-10 breaths per minute	Approximately 8-10 breaths per minute	Approximately 20 breaths per minute
Obstructed Airway (Responsive)	5 Abdominal Thrust (Conscious)	5 Abdominal Thrusts (Conscious)	5 Back Slaps and 5 Chest Compressions
Obstructed Airway (Unresponsive)	Chest Compressions (CPR)	Chest Compressions (CPR)	Chest Compressions (CPR)
Circulation Check the pulse for no more than 10 sec.	Check the Carotid Artery	Check the Carotid Artery	Check the Brachial Artery
Landmarks for Compression	Center of chest midway between nipples	Center of chest midway between nipples	Center of chest just below the nipple line
The Method Of Compression (Compressions need to be hard and fast with a complete chest recoil)	Two handed with one hand on top of the heel of the other hand	Two handed or one-handed with the heel of one hand depending on the size of the child or rescuer	Two Fingers for 1 or 2-person CPR. 2 thumb-encircling hands for 2 –Person CPR
Depth of Compression	Between 2”-2.4” inches	At least 1/3 of the chest depth	At least 1/3 of the chest depth
Rate of Compression	Between100-120 compressions per minute	Between 100-120 compressions per minute	Between 100-120 compressions per minute
Ration of Compressions to Rescue Breaths	1-Person CPR = 30:2 2-Person CPR = 30:2	1-Person CPR = 30:2 2-Person CPR = 15:2	1-Person CPR = 30:2 2-Person CPR = 15:2

CHAPTER 10: WATERPARK LIFEGUARDING

The objective of this chapter is to develop information that is unique to working in a waterpark. There are three separate and distinct guarding positions at a waterpark: slide dispatcher or attendant, shallow water lifeguard, and deep-water lifeguard. The information presented in this chapter is designed to help guards become familiar with what is required in each of these positions. In addition, there is information at the end of the chapter for use by operators of water rides in a hard ride environment.

Differences between Community Pools and Waterparks

There are several differences between the traditional community pool and the waterpark. Two of the major differences are the presence of moving water and the transient nature of the guests in the waterpark. Another is the fact that in many of the attractions, the guests are moving, sliding, or being carried along by the water. This allows for force or contact injuries. Perhaps the most obvious difference is the large variety of activities or attractions in a waterpark.

MOVING WATER

Because of the slides, wave pools and endless rivers, much of the water in the waterpark is moving. In the wave pool, the waves induce a current into the pool. Some of the current is just the water moving back off of the beach out to deeper water. In some wave pools there is a pronounced circulation that is produced in the pool. In some of the catch pools of water slides, there are major pronounced currents produced by the circulation of the water. Of course, lazy or endless rivers have an induced current, which is the main purpose of this attraction.

TRANSIENT POPULATION

In a normal community pool, many of the same guests come over and over during the swimming season. In most water parks, the guests are, for the most part, different every day. A few weeks into the season and the guards at community pools know the abilities of their guests. Since every guest is a stranger, the waterpark lifeguard has no prior knowledge about the ability of the guest to swim or take care of themselves in the water.

VELOCITY AND FORCE

In the usual community pool, the only velocity that a guest incurs is self-induced by running or diving. In most water parks, there are slides that cause a guest to move very rapidly as well as induced currents that may carry a guest along at a fair rate of speed.

While velocity in and of itself is not harmful, it does create the possibility of contact or force injuries. Guests can run into other guests, the sides or bottom of pools or into the sides or bottoms of slides. They can turn over on inner tubes. This is one of the reasons that some knowledge of contact injuries is important.

THE VARIETY OF ATTRACTIONS

There are numerous slides, rides and pools in a waterpark that normally are not in a community pool. The next section discusses most of these.

Types of Attractions

What constitutes a waterpark is difficult to define. Just the addition of a slide to a lap pool does not automatically turn the pool into a waterpark. For the purpose of this discussion, it is assumed that a waterpark has some significant collection of the attractions listed below.

SERPENTINE TUBE SLIDES

These are the slides that spiral. They are arguably the most common attraction in water parks. They can be as short as 30 feet in length with the normal slides being around 300 feet in length. The starting height varies but can be as high as 80 feet above grade for the longer slides. They are ridden in a tube similar to a tire inner tube. They can have either a catch pool at the bottom or a run out. Catch pools, in general are 3 to 5 feet deep. Run outs are shallow troughs of water that are only a few inches deep. They can be used with either single or multiple rider tubes. With double tubes, some slides require the heavier rider to be in the front and some require the heavier rider to be in the back. Your facility should adhere to the recommendations of the slide manufacturer or whatever practices that has been proven to be safe. The flume itself can be open or fully enclosed so that the rider's experience is one that is dark. In general, exit velocities on these types of flumes are between 10 and 20 mph.

Typical incidents on these slides include inversions in the flume (the rider or riders fall off of the tube in the flume), inversions in the catch pool (the tube flips in the catch pool), contact injuries (with either the flume or with another slider), and immersion or respiratory incidents (a respiratory incident is when a person has trouble breathing due to the presence of water usually splashed in their face). In general, injuries associated with this type of ride are contact injuries to the limbs or face. Typical injuries can include facial lacerations, dislocated shoulders or ankles, or even spinal column injury. However, these types of injuries are rare with most flumes having a very low incident rate of the order of one incident per million riders.

One of the factors that can lead to one slider running into another is improper dispatch. Care should be taken to follow the directions of the park in proper dispatch. One consideration is that smaller riders may go slower than larger ones. For this reason, on most flumes, a longer interval is required between dispatching after a small child. This gives the child a longer time on the flume since they may go slower.

Another factor that can lead to injury occurs with double tubes. If the park has a rule about which riding position to place the heavier guest, be sure and enforce the rule.

If there is a catch pool then there will be an induced current. The guard should wade around in this pool before having to guard the pool in order to find out how to get to a victim so that they do not have to fight the current.

SERPENTINE BODY FLUMES

These are similar to the serpentine tube slides discussed above. Although not usual, their terminal velocity can be faster getting up into the low 20's in mph. The same types of injuries tend to occur as do in serpentines. The guard should be more sensitive to immersion and respiratory incidents here because the rider generally lands in the water without the benefit of a tube. These can be ridden in numerous ways with the common ways being on the back or sitting up. Again care should be taken to follow the proper dispatch procedures set up by the park. In general, if a rider has a choice between riding in a flat, laying down position or riding in a sitting up position, they will go slower sitting up. Another factor that will determine the velocity that a Guest will travel is the type of clothing and the amount that they are wearing, this creates more resistance between the rider and the slide, thus causing the rider to travel much slower than other riders. One should also prevent guest from wearing aqua shoes since they have caused significant ankle and leg injuries as guest enter the catch pool due to the traction on the bottom of these shoes and the bottom of the pool. Due to the forces that are created on water slides, guest should not wear any eyewear, glasses or goggles unless otherwise stated by Facilities or the slide manufacturer. While this is not always true, it is generally true. Each slide should be tested to see whether this is true.

DRAGON TAIL BODY FLUMES

These slides are usually ridden without a tube and consist of a series of humps. Common slides have two or three humps. The riders will usually experience the sensation of lofting when they go over the humps. This is normal in the operation of the slide. The guard should be sensitive to contact injuries in these slides because of the lofting. There is also a chance of a rider getting a burn from the fiberglass, which is not wet. The rider coming out of the typical riding position normally causes this type of injury.

These flumes are normally ridden with the ankles crossed and the hands either behind the head or crossed on the chest. The ankles are crossed to prevent injury to the lower extremities. The terminal velocity on these flumes in almost always in the 20 mph range. Some are ridden with a mat in a head first position. However, a guard should be very careful to insure that guests ride the slide or flume only in the position that the park has determined to be safe. Diving into a flume, which is not designed for headfirst riding, can lead to serious injury.

The common exit point is a run out as opposed to a catch pool even though some do have catch pools. Guards should be very careful about crossing a run out or standing in a run out. Severe injuries can occur if a guard is standing in a run out and a guest hits them.

FREE FALL DROP SLIDES

These slides appear to drop straight down, particularly when viewed while riding. The typical slide has a 70-degree drop into a parabolic arc. The deceleration is normally done by a run out. These attractions are usually operated with the guest crossing their ankles and crossing their hands across their chest. If the rider does not keep the crossed ankle position, the rider can suffer a torn vagina or anus due to the force of the water in the run out. This injury is also fairly rare but can occur since the terminal velocity is normally in the low 30 mph range. This type of injury can occur to smaller riders so care should be taken to enforce any height or weight restrictions. As with any slide with a run out, care should be taken about standing in the run out or crossing the run out.

GANG SLIDES

These are usually relatively short wide slides and are ridden with and without tubes. Some have no humps and some have one or more. Some allow multiple riders, some only allow for a tube or slider at a time. Generally, because they are short, the terminal velocities will be less than 20 mph. On the slides that are ridden without a tube, the guard should be sensitive to contact injuries.

SHOTGUN SLIDES

These slides are typically short, steep slides that drop the slider into deep water. The depth of the catch pool can be as great as 12 feet. The slide usually ends some 4 to 6 feet above the water surface. Many of these slides tend to throw the rider out flat to the surface of the water resulting in a vigorous splash down flat on their back. These slides account for many of the rescues in water parks. One of the dangers for a guard here is that they will have their attention drawn exclusively to the end of the slide and not watch the entire catch pool. Since this is usually very deep water and most times is the deepest in the park, the guards should practice submerged victim rescues in this pool to promote efficiency in rescue.

SPECIALTY SLIDES

There are a large number of slides that do not fit the descriptions above. Some involve special effects, some simulate a surfing environment, and some are totally unique.

TYPICAL RESTRICTIONS FOR SLIDES

Many slides have a height restriction. A minimal height restriction can be required for several reasons. One is that height is related to age. If the rider must maintain a certain position or have sufficient body control and strength to safely participate, then a minimum height restriction may be imposed. Sometimes a minimum height restriction is imposed due to the depth of the catch pool.

Some slides have a maximum weight restriction. This is usually due to the fact that a heavier person may get into an uncontrolled position while riding. Two typical body types that can be restricted on certain flumes are overweight people and very tall and heavy people. The tall heavy slider can, on some flumes, obtain a very high velocity.

Guards should ask the park management about the reasons behind restrictions that are imposed on a slide. Many times the restrictions are imposed by the manufacturer. Sometimes the park imposed a restriction due to the incident history on the slide. All restrictions should be rigorously enforced. Not doing so can lead to serious injury of the slider.

If double tubes are used, there may be a restriction about where the heaviest rider is positioned in the tube. If there is such a restriction, be sure and enforce it.

LAZY OR ENDLESS RIVERS

These attractions are generally a shallow, long narrow pool that is connected to itself so that the rider can go around the river and get back to where they started. They vary in depth with common depths being from 2.5 feet to 4 feet. The current also varies from a gentle flow to a very vigorous flow that is too strong to remain stationary and can be too strong to swim or move against. These are used both with and without tubes. Most all of them have fixed access and exit points.

Some have a controlled ride in that the rider goes one time around and then out. Some allow the rider to stay on the river as long as they wish. If the rider is allowed to stay as long as they wish and if the river has unlimited access, then the river serves as a buffer for the waterpark. If the other attractions have long lines, then the guests can go to the river. Lifeguards can be stationary and stationed in chairs or they can have walking positions.

Typical injuries include contact injuries with the side and with the bottom of the lazy river. Some injuries occur with tube capsizing. Also, as with any water, there is the possibility of an immersion or respiratory incident.

WAVE POOLS

These are usually among the largest pools in the park. Since they are large, they tend to have one of the highest rescue rates in the parks. They are made to simulate the wave action found along the beach. They are generally fan-shaped with more shallow water than deep. The maximum depth varies with the common pools being 6 to 8 feet deep. Most go to a zero or near zero depth at the beach end. Most of these pools can vary the wave pattern. The wave cycles also vary with some pools using a continuous wave and some having a fixed time for the waves on and a fixed time for the waves off. Some of these pools allow guests to use tubes and some do not.

Most of the lifeguards are in fixed positions along the sides and/or along the ends. However, there can be roving guards in the shallow water and sometimes there is a "shark" (a guard floating on a rescue tube) in the deep water.

All of these pools have an induced current caused by the waves. There is also a current induced when the waves are shut off and the water flows back to a flat position. One of the things that any guard working on a wave pool should determine is where the currents are.

Frequently, rescues occur along the four foot depth contour and along the sides. Since there can be a back surge when the waves are on, the swimmer can be moved slowly towards deeper water. Another problem with these pools is that when the waves are turned off there can be a pronounced back surge towards deeper water. This is a particularly dangerous time. The walls become an active rescue area because non-swimmers tend to hang on the walls. For these reasons, many if not most wave pool rescues occur, either around the four-foot depth, under the lifeguard's feet, or along the walls. However, the middle of the pool is a very dangerous area also since it is further from the guard. Care should be taken to look in and on all the water.

The waves in these pools are induced along the back wall. There are one or more openings along this wall. These openings are grated to prevent someone from getting drawn back into the wave maker. However, because the surge here can be quite strong, most parks prohibit swimmers from getting too close to the back wall by using a lifeline in this vicinity.

Turbulent water with the waves, swimmers in the water, and possibly tubes make it difficult to see the bottom of these pools. Guards should be very careful to always look at the bottom of the water as well as the top in all pools but particularly in this type of pool.

A common problem with these pools is that lifeguards tend to be very attentive when the waves are on and not quite as attentive when the waves go off. It is not unusual to see scan time increase by as much as 10 seconds when the waves go off. This is, of course, very dangerous. Guards should be very careful not to let their attention wander because the waves go off.

ACTIVITY POOLS

These pools come in all sizes and shapes. They can contain trapeze type rides, rope crawls, fountains, gang slides, and other devices that are fun to play on. They can be deep or shallow. Other than immersion and respiratory incidents, there is the possibility of contact injuries on the various devices. Again, guards are cautioned to guard the entire pool and not just the active play areas.

CHILDREN PLAY AREAS

These areas are usually designed for small children and larger guests are prohibited unless caring for a child. They can contain various features such as slides, swings and mazes. This is a particularly dangerous area because it looks so safe. The reader is reminded that about 25 % of the incidents that involve a non-breathing victim occur to guests who are 3 years old or less in 3 feet of water or less.

Another common problem with this area is a fecal incident where a child goes to the bathroom in the pool. Serious health problems can occur to other guests if such an incident occurs. For this reason, most parks will close the area after such an incident until they are sure that the area has had adequate time to become safe again. Some facilities also enforce a swim diaper policy to help contain the fecal incident and inhibit its release in the pool.

RIVER RAPIDS RIDES-POOL AND DROP RIDES

These rides are built to simulate riding an inner tube down a river. They consist of a series of pools and drops between pools. There may be some fiberglass flumes in part of the ride. One of the common problems here is that the tubes may become inverted as the rider goes down a drop into a pool. Some riders will have a difficult time getting back on their tube.

PLAY STRUCTURES

These are large structures with valves and spouting water. Some have mazes and slides. Slip and fall injuries are common in these types of structures. Due to the high level of activity that is present with this attraction, a great deal of excitement is generated. This excitement tends to cause guests to run or rush from one activity to another. Because of this, guards should be particularly sensitive to making sure that the "no running" rule is enforced. This is also a common place to find unescorted or lost children. Some of these structures are in shallow water and some are just placed on the flat surface of a pool deck.

HOT TUBS AND FOUNTAIN POOLS

These pools can vary in size, shape, and water temperature. The hot tub tends to range in temperature from 90 to 104 degrees Fahrenheit, whereas fountain pools are usually similar in temperature to the other pools at the facility. The depth of these pools tends to be shallow (2ft. to 4 ft.) and sometimes include underwater jets, geysers,

Hot tubs are very popular at some facilities, especially when the weather is cooler. Some facilities have gate/fence systems, age restrictions, and time limitations to meet safety parameters and sometimes state regulations. Water clarity tends to be difficult to maintain in hot tubs, due to the sheer number of people in such a relatively small area, so the guard must be on his/her toes at all times.

Specific Procedures And Considerations

Much of what is important has been covered above in the descriptions of the different attractions. However, the following considerations are important and need to be covered even at the risk of repetition.

POSITIONS

In general, a slide or waterpark attendant works at the top of a slide or in a position that does not include the potential rescue of a drowning victim or injuries that are outside the scope of this training. A shallow water guard works as a guard for water that is less than five feet deep or as a slide attendant. A deep-water guard is required for water that is over 5 feet deep but can work as either a slide dispatcher or as a shallow water guard, if trained on the facility's rules and procedures at these positions.

SLIDE DISPATCHING

Dispatching on slides is done many different ways. Guards should be very familiar with the system used in their particular park. In general, the function of the guard at the top of a slide is to get the guests on the tubes, positioned in the flume, and dispatched correctly. The dispatch interval can be specified by a stoplight, a clock, when the slider passes a particular point, the guard at the bottom signaling that all is clear, or some other method. Whatever method is used, the guard should pay careful attention to insuring that the proper procedure is followed.

Another function of the dispatching guard is to enforce height and weight restrictions if there are any. Remember that these restrictions are there for a reason. Letting a slider go down the slide that fails the height restriction puts that slider at risk and the lifeguard is not doing them any favors. One of the most common guest complaints at a waterpark deals with height restrictions. In general, what occurs is that a guard fails to enforce the height restriction on a child. Then sometime later, another guard on the same slide enforces the height restriction. This leads to irate guests. The mistake of the first guard not only put the slider at risk but also made problems for all of the other guards trying to do their job correctly. Always rigorously enforce whatever restrictions apply.

Pay close attention to dispatching the proper interval. Use the time between dispatching to observe the loading area to be sure that everything is in order. The slide dispatcher is in a good position to talk to the guests and to do public relations. Remember that the interaction of the guards with the guests goes a long way towards making a guest's trip to the park an enjoyable visit. Guests at a park tend to judge the park as much by the guards as they do the slides and attractions. A smiling face and a helping hand from a guard can make people want to come back to the park.

Heat exhaustion and problems relating to walking up the stairs are common at the top of a slide. Make sure you are familiar with the proper method of communicating problems to the management so that you can get help if it is required.

A slide dispatcher could be a waterpark attendant, a shallow water guard, or a deep-water guard if they have been trained on the park's rules and procedures for these attractions.

CATCH POOL OR RUN OUT GUARD

At least three different problems can occur on a slide. One is that the guest can be inverted off of a tube or mat while in the slide or can lose the proper sliding position even if no tube is

involved. Another is one guest can collide with another guest on the slide. This usually occurs when a child stops in the flume or goes slowly in the flume and the dispatcher sends the next guest down. Another is that on slides that use tubes, the guest can be inverted when they hit the catch pool.

If the catch pool guard sees a tube come down without a slider this is a good indication that the slider was flipped off of the tube in the ride. This is not an unusual occurrence. Consideration should be given to stopping dispatch until it is determined what happened.

Because of the induced current, the guard may have trouble getting to a victim. Look at the direction that the water is flowing. Some goes away from the slide and some goes towards it. Whenever possible, always go with the flow and try not to fight the current. If you think a guest is under water and cannot see them due to the turbulence of the water, a good first place to look is where lost articles end up. As an example, there is usually a place where glasses end up on the bottom in most cases. This is also a place where a victim can end up.

A real problem with catch pools is that the guard will be so focused on the end of the flume that they do not observe all of the pool including corners and the water behind them, if any. At least one drowning has occurred when a child went down the steps into the catch pool and the guard did not see the child.

Care should be used when working with a run out that the guard never ends up crossing the run out or standing in the run out. If, for some reason, a guard must cross a run out, they should always be looking up the flume to make sure that no rider is coming towards them.

Guards should be sure to try to have the transfer of tubes occur in an orderly fashion. Some guests may not wish to surrender their tube to the next person in line. If this occurs and is not stopped, a disruptive situation can occur.

SHALLOW WATER

Much of the water in a waterpark is shallow and less than 5 feet deep. Since the water is shallow, guards may feel that they do not have to maintain a high level of vigilance. Such is not the case. Remember that a relatively large number of the non-breathing victims have occurred in 3 feet or less of water over the last several years.

SLIPS AND FALLS

Remember that the most common accident in any aquatic facility is a slip or fall. These normally occur because the guest is running. Be sure to enforce the no running rule, politely, but forcefully.

ACTIVITY POOLS

Because these are very active pools with a large number of attractions such as rope crawls, swings, and others, the guard must be very careful that they do not get so focused on the attraction that they do not watch all of the water. A drowning can occur anywhere at any time.

WAVE POOLS

Sides, corners, the four-foot marker, are all very active high rescue areas. Remember though that all of the water must be observed, top, bottom and in between. Seeing into the middle of the pool is difficult at times because of the width of the pool. So a careful, methodical scan pattern must be used. Another challenge to scanning is the glare caused by the sun as it sets in the

afternoon. This can be addressed by moving, zones may change with other lifeguard positions, and additional lifeguards may be positioned around the pool.

COMMUNICATIONS

The ability to alert the proper people such as management and the first aid team is of course very important. There are many different systems to do this in a waterpark. These include radios, phones, whistles, flags, and just having the management very close. Some of the places in a relatively large park are rather isolated so it is very important that you know how to use the communication system to get support. It is also important that you use the communication system for its intended purpose. A prime example of this idea is the use of the phone. Many guards, perhaps because of immaturity or a lack of a sense of responsibility, use the phone for casual conversation. They call their friends and just chat, thus tying up the phone so that it cannot be used in a real emergency. Non-emergency phone calls should be limited to a minute or less. Be sure to keep this in mind when using the phone.

ANSWERING THE PHONE

If the phone rings in, answer it with your name and your location. Then, if an emergency has occurred, state the problem. Wait for the operator to hang up first.

SAFETY CHECKS AND START UP PROCEDURES

Most waterparks are affiliated with a larger theme park, or are adjacent to a hard ride park. Because of this they have a strong maintenance and inspection program in place to insure that the rides and attractions are safe for the general public. Part of this inspection program requires that the ride or attraction be ridden by staff members, usually lifeguards, who are familiar with how the ride is supposed to perform. If a slide is operating too fast or there is an area in the slide that is causing the riders to become inverted when riding, then the lifeguards that conducted the safety check should notify their supervisors of the situation. Also, whenever the safety check is completed, those lifeguards that conducted the safety check should "sign off" on a document that confirms that the ride has been inspected prior to opening for operation. On this form the rides name, the date, and the names of the individuals that inspected the ride are just a few items that are documented on this safety check. This safety check form is completed every day, and in some facilities, twice during the course of the daily operation of the facility. Some facilities may conduct ongoing inspections that require lifeguards to ride the ride throughout the day's normal operation. This is usually done as the lifeguards rotate from one position at the top of a slide or attraction to a position that is below on the ground. It should be emphasized that this inspection system be taken seriously and that you conduct the safety check in a professional manner as to prevent accidents that can be prevented by early detection.

ROTATIONS

Rotations at a water park are essential to the smooth operation of the lifeguarding staff. It is literally the grease that makes the water park machine work. Rotations are what the park's upper management uses to make sure that the lifeguards are being given sufficient "down-time", or breaks to rest and relax before going back up on stand. They also help reduce the lifeguard's stress by limiting the length of time that a lifeguard may be performing a boring and mundane task to

approximately 45 minutes. The success of the rotation program is dependent upon how well the lifeguards adhere to the rotational instructions given to them during the day. If a lifeguard decides to "skip" a lifeguard position because they do not like it, then the rotation's integrity will be compromised and the lifeguard that was "skipped" may not receive a break until much later in the day. This could cause the "skipped" guard to become fatigued or weak from lack of food. This could result in an accident that may have been prevented if the rotation had been adhered to as originally planned.

Also during the day, the lifeguards may be required to ride the ride and conduct an ongoing safety check. This inspection should be done professionally, the lifeguard needs to be polite when stepping in front of waiting guest, and ride the ride in the safe manner that the ride's rules and regulations require**. Remember that you are the example and if the guest sees you break the rules, they will too. Also the whole lifeguard team at your facility will lose creditability and respect in the eyes of your patrons.** If any abnormalities are discovered during this inspection, you are to follow your facility's policy on notifying the appropriate personnel and upper management.

If the problem is severe, then stop dispatching riders down the attraction until the problem is remedied or otherwise directed by upper management.

CHAPTER 11: WATER RIDES IN THE THEME PARK OR HARD RIDE ENVIRONMENT

Non-Swimming Rescues

Many hard ride parks have water-based attractions. Usually the water is shallow and the people that operate the ride do not have formal lifeguard training. There are some skills though that can be used by a non-swimmer to make a rescue in both shallow and deep water. This section addresses a few of those skills.

ELEMENTARY REACHING ASSISTS

Many times you can simply extend a hand to someone in the water to pull him or her to safety. Be careful that they do not pull you in when they grab for you. If possible, you grab them as opposed to having them grab you. Help them get back on the deck, being careful to not injure them when they come on the deck.

THROWLINES, THROWBAGS, RING BOUYS

All of these are throwing devices that require you to practice. You need to throw them with regard to variables such as wind and current, remembering that the wind will blow a ring buoy off of the target. When they have the end of the rope or buoy, pull them in just fast enough to get their head out of the water. If you pull too hard, it will jerk the rope or buoy out of their hand.

One of the most important things to do with a throwing device is to make sure it is ready to throw before you need it. This is one of the major advantages of throw bags. They are always ready to throw. Heaving lines and ring buoys have the problem of having a tangled line. So store the device in such a manner that it can be easily thrown. Check that it remains in a ready state periodically.

Calm Water Rescues And Searches

SHALLOW WATER SEARCHES

These are used when you think that there is a victim on the bottom in shallow water. Shallow water is water that you can wade in, usually less than 5 feet deep. The first thing that you do is to look in what you feel is the most obvious place for a victim on the bottom. As an example, if you were working a ride that has a deck close to the water and has little or no current, then you would look close to the deck first. If this does not work, then you are going to have to do a methodical search of the area. You may have to help to cover the area quickly. Be sure to activate the emergency management system before you begin the search. Hit all cut-off switches that apply to disconnect or shut off current if possible. Stop the ride if required by your Emergency Action Plan. Keep a look out up stream for oncoming traffic. This requires that you think about your area and how you would do a search in it. Many times, there is piping or some other obstruction in the bottom that can injure you if you run into it. There are many different

search patterns and you will have to adapt one to fit your facility. The most common of these is to cover the bottom in overlapping lines. Sometimes a short pole can aid in finding the victim and in avoiding obstructions. Remember though, that if a victim is on the bottom, time is of the essence and you should go as fast as a reasonable amount of caution will allow.

Remember, without special training, it is very dangerous to do a bottom search in deep water or in any water, shallow or deep, if there is a current. So, know your limitations and practice in your area if possible.