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The Need For Collaborative Agreements Between Fire And Rescue Agencies And Aquatic Recreation And Lifeguard Agencies

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by Gerald M. Dworkin

The purpose of this article is to advocate the establishment of collaborative agreements between Fire/Rescue/EMS Services and Lifeguard/Aquatic Recreation agencies in the development of Standard Operating Procedures (SOPs) or Guidelines (SOGs) and Emergency Response Plans (ERPs).

Within the United States, Lifeguards are trained and certified through such organizations as the American Red Cross (ARC), the YMCA, the Boy Scouts of America (BSA), the United States Lifesaving Association (USLA), and others. Once trained and certified, employment is sought through municipal Parks and Recreation Departments, Community Recreation and Aquatic Facilities, Resort and Commercial Recreation Facilities, or through camps, YMCAs, YWCAs, Jewish Community Centers (JCCs), etc. Certification as having successfully completed a Lifeguard training course only means that by the course completion date, the Lifeguard candidate met all the educational objectives established for the course. Lifeguard certification, like any other type of educational course certification (i.e. CPR, First Responder, EMT, etc.) does not imply any retention of the knowledge or skills established for that specific course of instruction, nor does it qualify that individual to work as a Lifeguard at any aquatic facility. It simply means that the Lifeguard candidate successfully completed that specific course of instruction.

In order for a Lifeguard candidate to be considered as qualified to work at any facility, it is the responsibility of the facility management to assess the Lifeguard candidate's knowledge and skill level, and then to provide the Lifeguard Candidate with site-specific training which should include the following:

- Use of site-specific rescue and safety equipment
- Standard Operating Procedures (SOPs) or Standard Operating Guidelines (SOGs)
- Emergency Response Plans (ERPs)
- Communication Systems (i.e. whistle, radio, telephone, hand-signals)
- Identification of physical hazards and activities which place patrons and personnel at risk
- The facility's Risk Management Plan
- The facility's Bloodborne Pathogen Protection protocols
- Surveillance and Lifeguard protective protocols
- Emergency resuscitation protocols and capabilities
- The local community's EMS System

Once the Lifeguard Candidate has been qualified to work as a Lifeguard at a particular facility, he/she needs to participate in on-going, organized, and well-planned in-service training programs. The management needs

to continually evaluate the Lifeguards' ability to meet the established SOPs or SOGs, and their ability to respond appropriately to emergency incidents as evaluated through the conduct of Emergency Response drills. The operational functions of a Lifeguard service are not much different than those of volunteer or career Public Safety and Rescue organizations. However, in order for the Lifeguard Service to appropriately and effectively integrate their rescue and safety services with those of the local Fire, Rescue and EMS agencies, it is imperative that collaborative agreements and cooperative training programs be established for each service, agency, or facility.

In order for local Public Safety and Rescue agencies to adequately and appropriately respond to an aquatic facility, they must develop specific pre-plans for that facility in order for responding personnel to enter and progress through the facility in the most appropriate and expedient way. During haz-mat or fire suppression incidents, responding personnel must be familiar with the facility and must be knowledgeable about the life safety issues specific to that facility. Apparatus and personnel must be appropriately staged and responding personnel must be knowledgeable about the types and locations of chemicals (i.e. liquid chlorine, chlorine gas, muriatic acid, etc.) stored within the facility. When responding to EMS incidents, responding units must be familiar with the easiest access into the pool area for rapid response as well as patient transfer out of the facility. The responding EMS units must also be aware of the type of rescue equipment used at that facility, as well as the EMS protocols established for that particular facility.

Everytime we have the opportunity to evaluate the rescue and training equipment available at many aquatic facilities, we are amazed at the inferior quality of this equipment and the fact that much of the equipment is not compatible for use with that of the responding Fire, Rescue and EMS agencies. The following are several examples of the sub-standard equipment and/or protocols used by many aquatic recreation facilities throughout the U.S.

1. Many aquatic facilities are equipped with backboards that are too wide to be used in conjunction with most ambulance cots. And, if these backboards will not fit on a standard ambulance cot, they certainly cannot be used should a medical helicopter transport be required of the patient. Backboards should be a maximum of 16" – 18" wide x 72" long with a narrowing taper from the top of the board to the foot section.
2. Most aquatic facilities do not use Cervical Extrication Collars within their spinal injury management protocols because the American Red Cross and several other Lifeguard training organizations do not include instruction in the use of these devices within their Lifeguard training curriculums. Lifeguard personnel should be trained in the use of Cervical Extrication Collars within their pre-service and in-service training programs and must be equipped with the variety of sizes available (i.e. Adult Low, Adult Short, Adult Regular, Adult Tall, and Pediatric sizes). Most cervical collar manufacturers now offer adjustable collars which adjust from Low through Tall sizes.
3. Many plastic backboards marketed within the Aquatic Recreation industry by commercial distributors have more flex than diving boards. These sub-standard backboards certainly should not be used for a patient with an already compromised spine as a result of trauma sustained from a head-first entry into shallow water or a blunt object. Sub-standard backboards are not accepted within the pre-hospital EMS community, nor should they be used or accepted within the Aquatic Recreation community.
4. The spinal immobilization strapping system advocated within certain Lifeguard training curriculums only include the use of 3 straps placed horizontally across the patient at the chest, hips and lower legs. Since airway compromise is a major concern in near-drownings and aquatic spinal injuries, should the patient need to be positioned on his/her side to clear the airway while immobilized on a backboard, 3 straps are not sufficient to effectively keep the patient from bending and twisting on the backboard.

Also, since patients immobilized on backboards may have to be removed from swimming pools in a semi-vertical manner in order to clear the pool deck, the 3 horizontal straps are not sufficient to prevent the patient from sliding down on the backboard during this semi-vertical lift. We recommend either a Spider Strap or Board-Loc strap system, or the use of 6 conventional 2-piece side-release plastic buckle straps which are placed diagonally across the torso and hips and horizontally across the thighs and lower legs.

5. EMS personnel are experienced enough to realize that most cardiac arrest patients will vomit during the performance of aggressive resuscitative efforts. 90% of those patients involved in near-drowning resuscitation incidents will vomit during the performance of aggressive resuscitative efforts. However, although many facilities are now equipped with either Personal Resuscitation Masks or Shields, very few facilities are equipped with hand-held manual suction devices. Lifeguard personnel must be educated about the incidence of vomiting during emergency resuscitation procedures, as well as during spinal injury management procedures, and should be appropriately trained and equipped to deal with a vomiting patient.
6. The American Heart Association and the American Red Cross recognize three separate and distinct age groups within their CPR performance standards: Infant, Child and Adult. Most reputable manufacturers of bag-valve-mask resuscitators accept this standard and therefore provide three sizes of BVMs. Yet, it is not uncommon to find a “one-size-fits-all” BVM at aquatic facilities. This type of BVM would not be acceptable within the EMS community; and therefore, should not be acceptable within the Aquatic Recreation community.
7. Many Aquatic Recreation facilities, although they may be equipped with one or several bag-valve-mask resuscitators, do not include the administration of oxygen within their emergency resuscitation or EMS protocols. Many BVMs cannot be used without an oxygen flow as the refill capabilities of the bags are too slow when only atmospheric air is available. If oxygen units are not available, the oxygen reservoirs of the BVMs should be removed. However, there are many BVMs on the market which cannot be used without an intact oxygen reservoir. BVMs must be appropriately sized, and if used without an oxygen delivery system, then the oxygen reservoirs must be removed prior to use on a non-breathing patient during emergency resuscitation procedures.
8. Many Aquatic Recreation facilities which are beginning to implement the use of oxygen within their EMS protocols are using pre-set commercial units which flow only at the rate of 6 – 8 liters per minute. However, pre-hospital patients who are in respiratory or cardiac distress or arrest need high-flow oxygen at the rate of 15 – 25 liters per minute and many of the oxygen units found at aquatic facilities are not capable of delivering this flow rate of oxygen. When the use of oxygen is implemented into an aquatic facility’s EMS System, this equipment must be capable of delivering 15 – 25 liters per minute of oxygen through a Bag-Valve-Mask Resuscitator.
9. Many Aquatic Recreation facilities are considering the implementation of Automatic External Defibrillators (AEDs) within their EMS protocols. However, it is important that the AEDs used within the facility’s EMS System are compatible with the responding EMS agency’s defibrillators so that the AED electrodes can be shared and/or exchanged, and so that the resuscitation history can be downloaded into the hospital computer in order to generate a resuscitation history for each particular patient.
10. Body Substance Isolation (BSI) Protocols should be established for all Aquatic Recreation facilities. Coordinated procedures should be established between the Aquatic facility and the EMS agency for the disposal and/or disinfecting of contaminated supplies and equipment used during EMS incidents.

This author encourages the integration and/or coordination of the community’s Lifeguard services with the local community’s EMS System by providing guidance to them in the establishment of Emergency Response

Plans and Protocols as well as Standard Operating Procedures or Guidelines. Aquatic Recreation facilities are encouraged to contact their local EMS Agencies to request their assistance in the evaluation of their rescue equipment and to provide guidance in the purchase of appropriate spinal immobilization and emergency resuscitation equipment.

Equipment loan and/or exchange programs for spinal immobilization and emergency resuscitation equipment can be established. When responding EMS units transport a suspected spinal-injured patient immobilized on the facility's backboard, the EMS unit should be able to leave a complete spinal immobilization system with the facility until the facility is able to recover their equipment from either the hospital Emergency Room or the EMS agency.

Although the YMCA's Lifeguard Training curriculum includes the application and use of Cervical Extrication Collars during the management of suspected spinal injured patients, the American Red Cross, along with other training organizations, do not. The American Red Cross Lifeguard Training curriculum, as an example, advocates the following procedures:

After manually stabilizing the victim's head and neck, immobilize the victim on a backboard. While the first Lifeguard maintains in-line stabilization, the second Lifeguard submerges the backboard beneath the victim and then secures the victim on the board using 3 straps placed across the victim's chest, hips and thighs. After the victim is secured to the backboard with straps, the victim's head is then immobilized to the board using a commercial head immobilizer with a strap across the victim's forehead.

When EMS personnel respond to a suspected spinal injured patient at an aquatic facility, they are likely to find the patient fully packaged, according to the description above, and out of the water. However, they are now confronted with a problem in that the EMS personnel cannot and should not transport the spinal injured patient to a medical facility without an appropriately sized and applied Cervical Extrication Collar. Therefore, the EMS personnel will have to undo the commercial head immobilizer, and possibly the single horizontal torso strap, in order to attempt to size and apply a Cervical Extrication Collar. This process can further aggravate an already compromised cervical spine and should be avoided whenever possible. Therefore, the Lifeguard personnel should be instructed on the immobilization method stipulated by the responding EMS agency.

Protocols should be established by the EMS agency for the Aquatic facility Lifeguard personnel to follow in the management of aquatic spinal injuries. The EMS Agency should establish these spinal immobilization protocols for the Lifeguard personnel to either:

Stabilize the patient in the water until the arrival of EMS personnel;

Stabilize and Package the patient in the water until the arrival of EMS personnel; or

Stabilize, Package and Extricate the patient from the water while waiting for the arrival of EMS personnel.

If the expectation is that the Lifeguard personnel should stabilize and package the suspected spinal injured patient, then training should be provided the Lifeguard personnel on the appropriate sizing and application of cervical extrication collars, and collars should be part of the medical equipment inventory for that facility.

EMS Agencies should assist or guide the local Aquatic Recreation Facility in the purchase of rescue and training equipment which meets the community's EMS standards for spinal injury management and

emergency resuscitation. This will prove especially beneficial in the continuity of patient care if the Aquatic Facility's AED electrodes are compatible with the responding EMS Agency's defibrillator.

Summary

The primary and fundamental responsibility of a local EMS System is to provide pre-hospital care to the citizens of the community. Therefore, each community must have a system in place to ensure continual, efficient pre-hospital care. There are a variety of levels of EMS education which include First Responders, EMT-Basic, EMT-Intermediate, and EMT-Paramedic along with other components including the Emergency Medical Dispatcher, other Healthcare Providers, and Specialty Care Centers. In order for a community to provide and ensure continual, efficient pre-hospital care, each component must work together in a well-planned and coordinated effort. If Lifeguard personnel are expected to respond to respiratory, cardiac, and spinal injury incidents within their aquatic facilities, then Lifeguard personnel must be included within this comprehensive community EMS System. Therefore, Fire, Rescue and other pre-hospital EMS agencies must coordinate their efforts and training responsibilities with the local Lifeguard services in their area.

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