**ORAL Abstract**

# How lifeguards would know the severity, treatment and outcome of drowning on the accident site?

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**Abstract**

In a well established beach lifesaving service, respiratory or cardiopulmonary arrests occur in only 0.5% of all rescues and in 10% from those who need medical attention (1). Although there are some controversial issues, it is well established on these cases the need for respiratory support alone or cardiopulmonary resuscitation, assistance of a medical doctor at the accident site, and hospitalization. But one of the most difficult and challenging lifeguard decisions for those who provide Basic Life Support – BLS or Advanced Life Support – ALS at the rescue site is how to recognize the severity of the drowning victims with less life-threatening conditions appropriately and consequently be confident in front of the critical public to do the right intervention. Our purpose is to reassure lifeguards confidence in front of the public, establishing simple recognition signs to let them know the drowning severity, treatment and outcome.

**Methods**: We reviewed literature (Medline, references from previous articles, review articles and books and ILS Policies) searching for the words drowning and severity. All data which does not focus on rescue site were excluded. We focused our search to answer 3 questions: How to recognize drowning severity? How to treat according to severity? And when a lifeguard should seek medical advice or support?

**Results:** Two large researches were reviewed with a total of 87,339 rescues (1,2). From those, 3,234(3.7%) cases needed medical attention at the rescue site, but severity evaluation was based on 2,678 cases. Medical attendance was available in 100% of cases and was responsible for treatment and for triage to release home or for hospitalization. Drowning severity, treatment decision, outcome/mortality and the need to seek for medical advice or support is summarized in table 1.

**Discussion:** One of the most difficult and challenging tasks a lifeguard must face is the giving of first aid. This part of his or her responsibilities requires lengthy theory and practical training exercises using many different situations. This is always done by the lifeguard, alone or with a partner, in front of the public who often interrupt with conflicting comments. In this paper we summarized in one table all the important information on drowning first aid to remind lifeguards, while on duty, what to do after the rescue of the victim. This was based on large rescue reports (1,2) and contributes to guide and develop standardized treatment protocols and also in comparing outcomes with different levels of severity of injury, thereby allowing lifeguards and medical staff to speak the same language - one team, one goal.

**Four learning objectives**

1. How to recognize drowning severity?
2. How to treat accordingly to severity?
3. When lifeguard should seek for medical advice or support?
4. To reassure lifeguards confidence in front of the public.

**References:**

1. Szpilman D. near-drowning and drowning classification: a proposal to stratify mortality based on the analysis of 1,831 cases. chest 1997; 112:660-5.

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3. www.ilsf.org – ILS Policy Number 5, Medical Statement, Who needs further medical help after rescue from the water. Principal author: Ian Mackie; Approved by the ILS Board of Directors: December 1, 2000.

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| Grade | Frequency (%) | Signs | Treatment on land (basic and advanced life support) | Mortality on site (%) | Need of hospitalization | Mortality in hospital (%) |
|---|---|---|---|---|---|---|
| Rescue | 0 to 6.4 | Conscious, normal auscultation, no coughing, foam or difficulty in breathing | Evaluation and release from the accident site without further medical care if no other disease associated. | 0 | 0% | 0 |
| 1 | 56 to 65 | Normal pulmonary auscultation, coughing, no foam in mouth or nose | Rest, warm and calm the victim. No further medical care. | 0 | 2.9% | 0 |
| 2 | 19 to 20 | Rales in some pulmonary fields, small amount of foam in mouth or nose | 5 liter oxygen per minute by nasal cannula; warm and calm the victim; recovery position, hospitalization | 0,6 to 1,2 | 14.8% | 4,0 |
| 3 | 3 to 3.3 | Acute pulmonary edema with large amount of foam in mouth or nose, normotension, palpable radial pulse | 15 liters oxygen per minute by non-rebreathing mask, intubation when possible; recovery position if unconscious; hospitalization. | 3.6 to 5,2 | 44.8% | 11,5 |
| 4 | 1.1 to 2 | Acute pulmonary edema with large amount of foam in mouth or nose, hypotension verify by no radial pulse but palpable carotid pulse | Grade 3 treatment extended by crystalloid infusion via peripheral vein until restoration of Systolic Arterial Pressure > 90mmHg; hospitalization | 19,4 to 22 | 88.9% | 19,4 |
| 5 | 1 to 1.5 | Isolated respiratory arrest | Mouth-to-mouth (when possible with 15 liters of oxygen) until restoration of normal breathing, then treat as grade 4. | 31 to 44 | 100% | 33,3 |
| 6 | 10 to 12 | Cardiopulmonary arrest | Start CPR; insert tracheal tube, obtain venous access, give epinephrine 0,1 mg each 3 minute; ecg monitor and defibrillate if necessary. After successful CPR: follow grade 4. | 88 to 93 | 100% | 43,5 |
| *Dead body* | ---- | Confirm submersion time over 1 hour, or obvious rigor mortis, putrefaction or dependent lividity | Do not start BLS or ALS; arrange morgue. | 100 | --- | 100 |

**Should always receive medical attention (ambulance and/or hospitalization)**: Grades 2 to 6 and any patient in whom a serious condition is suspected such as heart attack, spinal injury, trauma, brief lost of consciousness, asthma, epilepsy, stinger, intoxication, delirium etc.

**Should check before release to home**: No cough; Normal breathing; Normal pulse (strength and rate); Normal color and skin perfusion; No shivering; and Fully conscious, awake and alert.

**There is always a risk, although rare, of delayed lung complications**: All victims should therefore be warned that if they later develop cough, breathlessness, fever or any other worrying symptom, they should seek medical advice immediately.

Table 1. Evaluation of 2,678 drowning severity and treatment decision scheme at the rescue site (Based on the assistance of 87,339 rescues) (1,2) and the indications needs of further medical help after rescue (3).

How lifeguards would know the severity, treatment and outcome of drowning on the accident site? January 2007. David Szpilman.Â  The implication on this request was the risk of drowning as we did not test their swimming ability. The classroom was a good environment to reduce distraction and increase learning opportunities on basic life support on a mannequin. In summary, instructors had the impression that too much information was given in too short a time, as most of it was new, although many students were more confident to face those incidents after class. Furthermore, all were of the opinion â€œI will never look water at the same wayâ€. How Lifeguards would know the severity, treatment and outcome of drowning on the accident site. 2,831 views. Share.Â  On a busy day, as a lifeguard, would you get medical support as quickly as you need ed ? or. 5. ThatÂ´s why rescuers need a DROWNING CLASSIFICATION SYSTEM It a llows Lifeguards and MD teams to speak the same language It gives the exact severity of the case It gives exactly what approach should be taken It a dvise s when to call an ambulance It a dvise s when to call an EMT or a MD It r eassure s. lifeguard â€™s in front of the population, and.Â  15. CLASSIFICATION and MORTALITY (n = 1831) Using clinical classification at the accident site we can recommend the treatment and know exactly the likelyhood of death. drowning can be due to â€” submersion (the airway goes below the level of the surface of the liquid) or â€” immersion (a liquid is splashed across a personâ€™s face, e.g water-boarding). respiratory impairment must be present for drowning to have occurred. terms such as â€œnear drowning,â€ â€œdry or wet drowning,â€ â€œsecondary drowning,â€ â€œactive and passive drowning,â€ and â€œdelayed onset of respiratory distressâ€ are no longer used. non-fatal drowning: the drowning process is interrupted and the person survives. fatal drowning: the person dies during the drowning process (at any stage). CAUSES. Drowning Treatment. Reviewed by Jennifer Robinson, MD on January 21, 2020. In this Article.Â  For an adult or child, place the heel of one hand on the center of the chest at the nipple line. You can also push with one hand on top of the other. For an infant, place two fingers on the breastbone. For an adult or child, press down at least 2 inches. Make sure not to press on ribs. For an infant, press down about 1 and 1/2 inches. Make sure not to press on the end of the breastbone. Do chest compressions only, at the rate of 100-120 per minute or more. Let the chest rise completely between pushes. Check to see if the person has started breathing. Note that these instructions are not meant