American Red Cross

Scientific Advisory Council

ARC SAC Answers
Water Competency

Questions to be addressed:
What should be the definition of water competency that addresses the specific basic, minimum skills needed for water safety and survival?

Answer:
Purpose of the effort is to establish a general definition of water competency that identifies specific skills and includes the concept that water competency depends on the aquatic environment and environmental conditions.

Definition:
Water Competency must include:

1. Entry – with total submersion
2. Recovery to the surface and remain there for at least one minute (floating or treading)
3. Orientation – position to be able turn 360 degrees and orient to the exit
4. Propulsion – level off and move on front and/or on back position for at least 25 yards
5. Exit from the water

Water competency is influenced by conditions of the aquatic environment (water temperature, movement, depth, clothing, distance, etc.) into which the person may be introduced.

Demonstration of skills in one aquatic environment may not transfer to another.

Background

The problem

The ARC promotes swimming lessons and water safety. Throughout its swim programs, at each level of swim training, additional specific water safety and swim skills are taught. The swim student acquires the skills in a progressive manner if taking all the courses. However, specific skills are not presented as a goal and the student is unaware of what basic, minimum skill set is needed. However, most swimming facilities have defined their own swim test, defining what skills a swimmer must have to participate in deep water or specific aquatic environments. The 2012 ARC lifeguard manual addresses this by providing an example of a swim test and states:

> "Swim tests can be used to determine if a person has the minimum level of swimming ability required to participate safely in activities, such as swimming in deep water, riding a slide that empties into deep water or jumping off a diving board into deep water. There is no single set of swim-test criteria that best meets the needs of all facilities or organizations, nor is the following information intended to set a standard."

Water competency includes more than swimming ability.

The need for a standardized definition of water competency.

A standardized definition of water competency is needed for several reasons.

For *educational* purposes, when is a swimmer a swimmer? How do parents know when their child has had enough training or needs to continue swim lessons? Most children do not continue past level 4 ARC swim lessons. Yet parents are unaware that their child needs to accrue more basic water competency skills. How does a program that puts children or others into water activities know its reported participants have achieved a level of competency?

For operational purposes, should required skills vary from facility to facility? While open water settings may require different skills, swimming pool facilities should have relative consistent standards. When an organization requires

For *surveillance* purposes, what percent of the population can "swim"/ is water competent? Does increasing the percent of water competency among communities decrease drowning deaths? Do swimming lessons/water competency protect against drowning? Are swim lessons that teach water competency a needed public health prevention measure? Are local policies addressing drowning prevention and safety in populations or communities at high risk for drowning? *The most important promotion of swimming lessons was recently achieved by a study that evaluated swimming history in young children.* Following this evidence from the landmark 2012 study, the American Academy of Pediatrics changed its recommendation for swimming lessons for young children and the injury prevention community espoused swimming lessons as a drowning prevention tactic for young children. The study that demonstrated the positive effect of swim lessons on decreasing drowning risk in young children who died of drowning was based on the

question: did your child ever have formal swim lessons?" Unfortunately, there is no data supporting the role of swimming lessons among adolescents or adults. The typical drowning death investigation tries to obtain a history of the drowned person's swimming ability; this usually gets reported as "he was a poor or a good swimmer". However, these terms, reported by family, have not been validated,, especially since there is no existing definition of what it means to be "a swimmer".

For *research* purposes, water competency should be assessed for purposes other than as a surveillance measure, able to evaluate swimming or water competency among various populations through surveillance systems. Further research is needed to validate which aspects of water competency are being learned/acquired and are truly effective. Using a clear definition as an outcome measure, water competency can be used to evaluate specific teaching programs.

For *program* purposes, a program that seeks to evaluate its teaching program could evaluate its "product", water competency if it had a working definition and goal in place.

The environmental context

Swimming ability is very much defined by its environmental context. While most swimming programs are swimming pool based, most fatal drownings in the U.S. occur in open waters such as lakes, rivers, ocean. The very controlled setting of the swimming pool is very different from open water which usually has different water temperature, currents, wave action, and lacks close confines for easy self rescue or rest. Therefore, most swimmers having learned to swim in a pool are unprepared for open water conditions. This is reflected by the drowning death investigations that report that many people who drown were "good swimmers" or able to swim. It is also reflected in the reports from many countries (especially northern countries like the UK, Ireland with cold open waters) that their residents' drowning fatality risks are higher while out of the country and, concomitantly, reports from several countries (especially beach destinations such as Australia and NZ) that international visitors are overrepresented in their drowning statistics. Several countries and regions address this with swimming lessons held in their open waters. Several countries (Norway) and specific programs (Switzerland's River swim) address this with swimming lessons held in their specific type of open waters.

What operational definitions for water competency are presently used by national and international agencies or programs involved with water activities ?

The Aquatics subcouncil conducted a written survey of US national and international (International Life Saving organizations) agencies/organizations involved with water activities. Survey asked for the existing requirements for swimming in deep waters in their setting. Responses were received from 14 international organizations representing 4 continents, 9 national organizations, and 18 key informants. Their definitions most commonly included the following domains:

- Distance Swimming- (10-75 yds/m, most commonly 25 yds/m) (N= *25)*
- Floating/ Treading Water- (10-300 seconds, most commonly 30-60 seconds) (N=*20)*
- Swim Strokes- (swim on front or back) (N-*13)*
- Entry and Exit- (some required jumping in) (N=*12)*
- Duration Swimming- (1-5 minutes) (N= *5)*
- Swimwear-(require in street clothes or with PFD) (N= *5)*
- Breathing Techniques- (face submersion) (N= *5)*
- Rescue Techniques- (reach or throw) (N= *4)*
- Water Conditions- (river vs pool) (N=2)

These commonly identified domains formed the basis for the definition.

The definition of water competency was formulated by SAC using best practice and experience to define each of the key domains of water competency. SAC recognized the limited evidence for its definition and designation of each domain. The Bangladesh experience provides the best data; after initiating a series of water competency training programs among children, the country documented a decreased drowning rate in the pediatric population who had participated in a drowning prevention program that included being taught 25 yds/m of swimming, floating for 30 seconds, submerging the face and blowing bubbles, and many other nonswimming related interventions.

> *The recommendations include learning and practicing these skills in the water environment in which they would be needed.*

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