

Drowning (and accidental hypothermia) Current guidelines need urgent improvement

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Topics in this presentation

- key information on drowning statistics
- case report on drowning
- (case report on hypothermia)
- some recommendations

Key information on drowning statistics

450.000 drownings worldwide excluding suicides, motor vehicle and boating incidents, industrial accidents, floods

90% in low-income countries

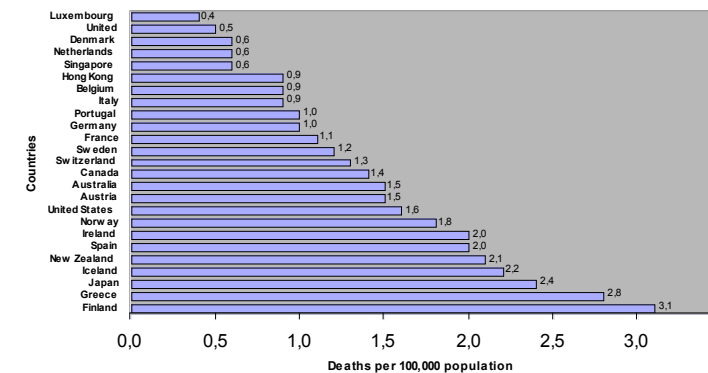
majority children

large variety between countries : 0.2 – 550 / 100.000 inhabitants

new risk groups (migration, aging, disasters, boat refugees)









Country ranked age-adjusted rates of injury deaths from drowning persons, E910



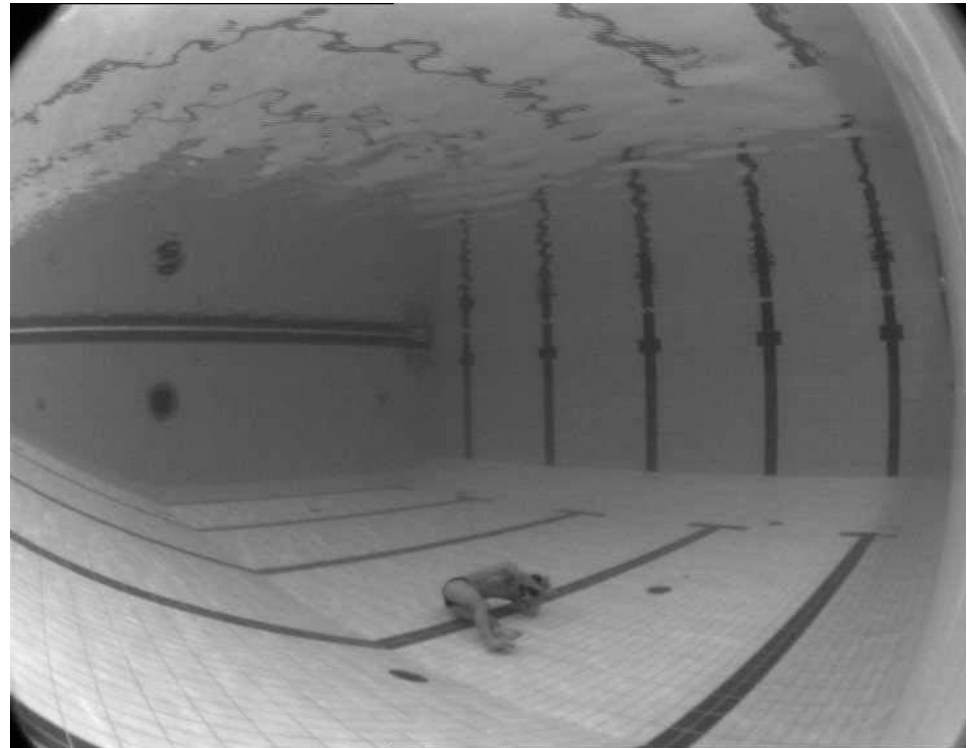
You are sitting in the waiting area of a public swimming pool while proudly observing your 5-year old daughter taking her first swimming lesson. Then suddenly panic arouses at the competition pool. A drowning victim has been observed under the water surface. Since you are a good swimmer, even an ex-lifeguard, as well as an anesthesiologist your action is:











Question 1: what is your first action

-  jump into the water and start in-water CPR
-  run to your car to get your resuscitation kit
-  take your daughter out of the water
-  identify yourself to the pool lifeguards and ask if you can help
-  identify yourself to the pool lifeguard and take leadership
-  wait and see

The victim is taken out of the water. It is a boy of about 14 years old. He is patchy blue-white and feels cold. There is some foam coming from his mouth. He has not moved at all when taking out of the pool and put on the floor.



Question 2 : What is the next thing you do ?

-  check his pulse
-  start thoracic compressions
-  check his ventilation
-  start mouth-to-mouth ventilation
-  perform the Heimlich manoeuvre to open the airways
-  have someone else start mouth-to-mouth ventilation while you check the pulse
-  have someone else start thoracic compressions while you check the pulse
-  you declare the victim to be dead

After a few minutes of mouth-to-mouth ventilation and thoracic compressions, without any result and no observation of spontaneous circulation or respiration, the chief life guard informs you that there is an AED available as well as oxygen and an insulating blanket. He also informs you that an ambulance with an emergency physician on board will arrive soon. You notice that ventilation is extremely difficult.



Question 3: what equipment will you use first?

 AED

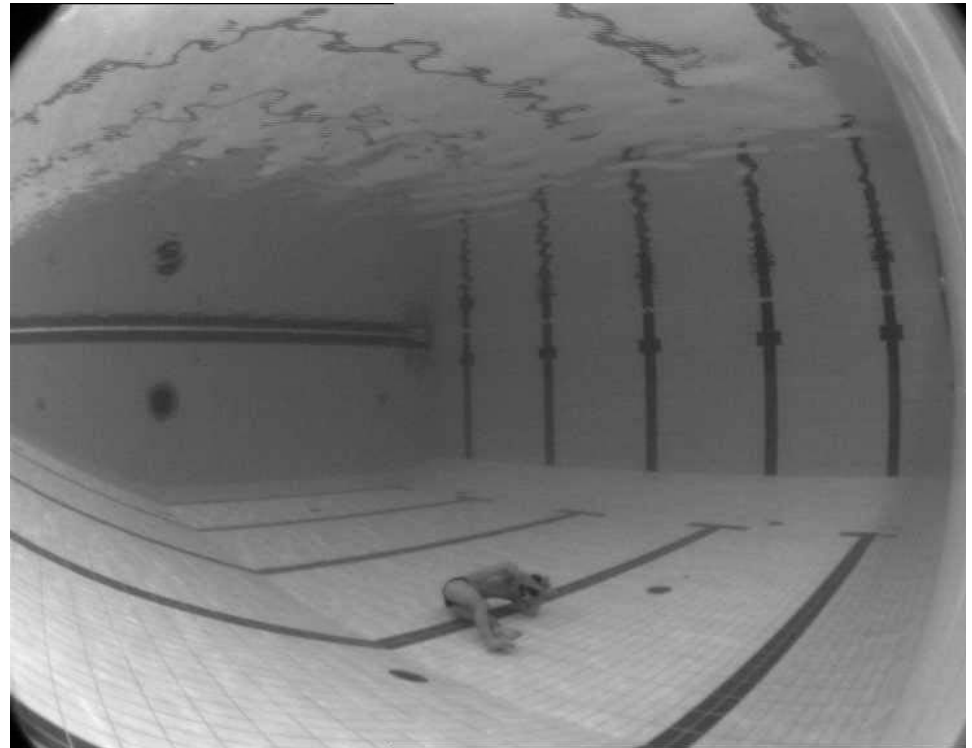
 oxygen

 insulating blanket

 you ask someone to get your resuscitation equipment from your car

 none of these, you continue BLS

The ambulance team arrives. After a difficult intubation, bilateral ventilation is achieved. After 15 minutes of CPR including regular and timely doses of adrenaline, atropine and amiodarone. The monitor shows a pulseless electric activity (PEA).



Question 4: what information guides your further therapy ?

 the age of the victim

 the previous medical history of the victim

 the temperature of the water

 the under water time

 the CPR time

 the cardiac rhythm

 the distance to the nearest hospital

Some recommendations

Always keep attention to your own safety in drowning

Drowning is primarily a respiratory problem, secondary a temperature problem and only in the third place a circulatory problem, and then it is often too late

This means a priority role for bystanders and oxygen and a minimal role for the AED.

Oxygen therapy should become part of bystander training







