
Whither the Chain of Survival?



To improve outcomes in out-of-hospital cardiac arrest (OHCA) patients, doctors and researchers need to investigate the chain of survival of these patients, according to an Editorial to appear in the journal *Resuscitation*. The patient's initial injury and resuscitation events are often seen as "irrelevant" in hospital-based intervention studies of OHCA patients. Thus, the chain of survival gets dropped at the hospital portal, says the Editorial.

See Also: [Categorisation of Survival and Death after Cardiac Arrest](#)

Results of a recent study by Slomine et al. showed that survivors of respiratory caused cardiac arrest, despite therapeutic hypothermia intervention, had "substantial neurobehavioural morbidity". The study's in-depth description of neurologically devastated survivors provides the medical community a more nuanced goal – to decrease not just deaths but the percent of bad post cardiac arrest survivors, the Editorial notes.

"One obvious place to look for ways to improve outcomes is to investigate the chain of survival of these patients. The critical roles of early detection of the arrested victim to early recognition and treatment of VF to early initiation of CPR by a bystander were recognised by the 1990s. These led to EMS system changes to decrease their response time to the scene and to decrease time to resuscitation and implementation of innovative programs such as citizen CPR and public access defibrillation," writes the author, Linda Quan, MD, of Seattle Children's Hospital, Washington, USA.

For example, recognition of the unique aspects of drowning resuscitation led to development of a chain of survival for drowning. These chains show more time critical interventions that should affect outcome: providing the victim flotation to help him keep his airway above the water and timely rescue and removal of the victim from the water. However, Dr. Quan says these factors are often not addressed in hospital-based intervention studies of OHCA patients. "In other words, once in-hospital, the patient's initial injury and resuscitation events may be ignored; incident and prehospital data become irrelevant," the author writes.

The challenge is how to use the Slomine's study results, the author points out. "Does an intensivist interpret Slomine's findings to describe the possible outcomes to the parents who want to know: what will my child be like? Be able to do? What care will he need? Or will the intensivist instead focus on the smaller percentage of survivors with good outcomes or simply say, we don't know what the future may hold?" Dr. Quan writes. The author thinks that developmental disabilities specialists are needed before cardiac arrest patients are discharged. "In fact, care of potential developmental delays in the child and deficits in the adult cardiac arrest survivor should be a link in the survival chain of cardiac arrest," the author says.

The Editorial emphasises that studies evaluating in-hospital therapies for OHCA victims must "recognise, understand and incorporate the critical interventions" that these patients received prior to their arrival in hospital. The very advanced life support and post resuscitation care subsequently provided to these patients need to be seen as a function of the chain of survival and a part of it, not in isolation within hospital walls, the article concludes.

Source: [Resuscitation](#)
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