

Longer resuscitation attempts could improve survival after in-hospital cardiac arrest

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New research published Online First in *The Lancet* suggests that increasing the duration of resuscitation efforts could improve survival in patients who arrest in hospital, challenging the common belief that extending resuscitation in patients who do not respond immediately is often futile.

"Our findings suggest that prolonging resuscitation efforts by 10 or 15 minutes might improve outcomes. The good news is that such an approach might have only modest effects on neurological outcomes and resource use once efforts have already begun", explains Zachary D. Goldberger from the University of Washington who led the research.

Despite several advances in resuscitation care, overall survival after in-hospital cardiac arrest remains poor. Between one and five of every 1000 hospitalised patients in [developed countries](#) will have a cardiac arrest, but fewer than 20% survive to be discharged. Little is known about how long resuscitation attempts should be continued and concerns have been raised that prolonging resuscitation attempts could be futile, but there is limited evidence to guide routine practice.

Goldberger and colleagues used data from the world's largest in-hospital cardiac arrest registry (the [American Heart Association](#) Get with the Guidelines—Resuscitation registry) to examine whether the length of resuscitation efforts varied between hospitals and whether patients treated at hospitals that attempted resuscitation for longer had higher [survival rates](#) than those where resuscitation efforts were shorter.

The study included over 64 000 patients from 435 US hospitals who underwent resuscitation for a cardiac arrest between 2000 and 2008. The duration of resuscitation efforts in non-[survivors](#) was used as a measure of the overall tendency of a hospital to attempt resuscitation for longer. Hospitals were ranked by quartiles on the basis of median duration of resuscitation attempts in non-survivors—16, 19, 22, and 25 minutes.

Overall, median duration of resuscitation attempts in non-survivors varied widely between hospitals, with efforts in hospitals in the longest quartile lasting 50% longer than attempts in the shortest quartile.

What is more, patients at hospitals where resuscitation attempts lasted the longest were significantly more likely to be successfully revived (achieve restoration of a pulse for at least 20 minutes) and survive to be discharged from hospital than those at hospitals where attempts were shortest.

The authors also noted that the proportion of patients surviving to discharge with a favourable neurological status was similar regardless of resuscitation duration.

According to the senior author of the study, Brahmajee Nallamothu from the Ann Arbor VA Medical Center and University of Michigan, "These data are observational, so unfortunately we can't use them to specifically define an optimum duration for resuscitation attempts. But our findings are provocative enough to suggest that targeting minimum lengths of time for resuscitation attempts may be one approach to improve outcomes in this high-risk population."

In a linked Comment Jerry Nolan from the Royal United Hospital NHS Trust in Bath and Jasmeet Soar from Southmead [Hospital](#) in Bristol say: "[This] study reassures clinicians that prolonged resuscitation attempts do not seem to result in a substantial increase in severe neurological

injury in survivors. To improve outcomes, all hospitals should audit their cardiac arrests and benchmark outcomes as part of a quality improvement programme...Prolonged resuscitation efforts can result in high-quality survival. If the cause of [cardiac arrest](#) is potentially reversible, it might be worthwhile to try for a little longer."

More information: www.thelancet.com/journals/lan...
[/12\)60862-9/abstract](http://www.thelancet.com/journals/lan...)

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