

Patients more likely to survive in-hospital cardiac arrest today, study finds

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Researchers say clear guidelines have helped.

(HealthDay)—A new study finds that survival after in-hospital cardiac arrest improved substantially from 2000 to 2009 in U.S. medical centers, probably because established guidelines were followed.

On average, people having a [cardiac arrest](#)—when the heart stops beating—in a hospital have about a 22 percent chance of surviving at least long enough to go home. Ten years ago, they had less than a 14 percent chance of surviving until discharge, the researchers noted.

Also, the rate of neurologic disability among survivors, including motor weakness or difficulty talking, has decreased. Such problems are often associated with insufficient oxygen reaching the brain during the cardiac arrest and [resuscitation](#) efforts.

"We found that survival improved among adult [hospital patients](#) for two

reasons: People are doing a better job of resuscitation, and they're also getting better at providing care for the patient after resuscitation," said Dr. Saket Girotra, of the division of [cardiovascular disease](#) at the University of Iowa Hospitals and Clinics, in Iowa City.

Whether or not people will survive cardiac arrest—when their heart stops beating—depends on a wide variety of factors. Some are related to the individual, such as their age and condition. Other issues are more hospital-related, including: How soon was the patient found? Who arrived at the scene and how soon was cardiopulmonary resuscitation ([CPR](#)) started? Was it a weekend? And, for survivors, did interrupted oxygen to the brain cause [neurological problems](#), such as motor weakness or difficulty talking?

The American Heart Association, which funded the study, has developed guidelines for hospitals in an effort to improve the quality of care associated with in-hospital cardiac arrest. Called "Get with the Guidelines - Resuscitation," they offer clear benchmarks to use in training staff to respond to cardiac crises. Experts say application of the guidelines may have improved survival numbers in hospitals.

"This study shows that when you follow quality and you benchmark people you can improve performance," said Dr. Ralph Sacco, a past president of the [American Heart Association](#) and chairman of neurology at the University of Miami Miller School of Medicine, in Florida.

Data for the research was taken from a national quality-improvement registry that includes all hospitalized patients with a confirmed cardiac arrest who have received CPR in participating hospitals.

For this study, records for more than 84,600 patients aged 18 or older from 374 hospitals were included, adjusting for myriad factors, Girotra said, including age, sex, race and the presence of other conditions.

Patients were excluded if their cardiac arrests occurred in operating rooms, procedural suites, labor and delivery, or emergency departments.

The study authors estimate that given the improved rate of survival they found, an additional 17,200 patients survived to hospital discharge in 2009 as compared with 2000. The rate of surviving the resuscitation attempt but not surviving the hospital stay was about 54 percent, up from nearly 43 percent in 2000.

Another research team examined information on Medicare patients who had CPR after in-hospital cardiac arrest from 1992 through 2005 and found no difference in survival rates to discharge. Girotra said those results, published in the *New England Journal of Medicine* in 2009, were likely affected by the fact that the researchers used data from administrative claims that may have included patients who hadn't had cardiac arrests or excluded those without the proper billing procedure code.

Sacco hopes researchers will now evaluate how to improve the outcomes of cardiac arrests that occur in public places. "Improving resuscitation after cardiac arrest is one of the big goals of the AHA," he said.

Girotra said this study is "a small step in trying to understand survival." He added that research is needed to better define what factors have the greatest impact on survival by actually visiting facilities and conducting in-depth interviews.

"When there's a cardiac arrest, somebody's really trying to die right in front of you," said Girotra. "Effective resuscitation really involves a team to perform steps in a coordinated fashion, and these factors differ by hospital. We need to identify what are some of these factors that will help us understand how resuscitation care is organized and what will improve quality so we can better educate physicians and staff."

More information: Learn about the "Get with the Guidelines - Resuscitation" program at the [American Heart Association](#).

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