

Chances of surviving cardiac arrest at home or work unchanged in 30 years

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The chance of surviving an out-of-hospital cardiac arrest has not improved since the 1950s, according to a report by the University of Michigan Health System.

The analysis shows only 7.6 percent of victims survive an out-of-hospital [cardiac arrest](#), a number that has not changed significantly in almost 30 years.

It's a dismal trend considering enormous spending on heart research, new [emergency care](#) protocols, and the advent of new drugs and devices such as defibrillators.

Each year, 166,000 people experience cardiac arrest - an event during which the heart stops beating - away from a hospital.

Physicians report in the current issue of *Circulation: Cardiovascular Quality and Outcomes* that there are some key factors that can make a difference in saving lives when cardiac arrest happens at home, a hotel, restaurant or workplace.

"Our study shows that patients with a heart rhythm that can be shocked, or who have [bystander CPR](#) or a pulse restored at the scene have a much greater chance of survival," says lead author Comilla Sasson, M.D., a Robert Wood Johnson Scholar and emergency medicine physician at the U-M Health System.

Although half of cardiac arrests are witnessed by a bystander, according to the study, only 32 percent, or about 1 in every 3 people, is receiving bystander CPR.

This is the first study that looks at the associations between five clinical variables and overall survival from an out-of-hospital cardiac arrest.

The variables studied include: witnessed by emergency medical services provider, bystander CPR, types of heart rhythm -- asystole (motionless) vs. ventricular fibrillation (rapid or twitching) and return of spontaneous circulation.

Researchers evaluated data on 142,740 patients from 79 studies published internationally between January 1950 and August 2008.

Here's what researchers found:

- Of the more than 140,000 patients, only 23.8 percent survived to [hospital admission](#), and 7.6 percent, or about 1 in 10 people, lived to be discharged from the hospital.
- Cardiac arrest victims who received CPR from a bystander or an [emergency medical services](#) provider, and those who had a shockable heart rhythm, referred to as ventricular fibrillation, were more likely to survive.
- The strongest predictor of survival was a return of spontaneous circulation, meaning a pulse was restored at the scene. Among them, 15.5 percent (in low-performing EMS systems) to 33.6 percent (in high performing EMS systems) survived.

"Increasing bystander CPR rates, increasing the awareness and use of

devices to shock the heart, and keeping paramedics on scene until they restore a person's pulse needs to occur if we are ever going to change our dismal survival rate," Sasson says.

Places like Seattle, which has the highest rates of cardiac arrest survival in the country, are doing these three basic things exceptionally well, says the U-M physician. "We can learn a lot from that emergency response system," she says.

The lack of progress in survival across the U.S. and abroad may be linked to an aging population, a lower number of people who are found in a shockable rhythm, which is associated with the highest chance of survival, and longer EMS drives due to the increasing size of cities and traffic congestion, authors write.

While the overall rate of out-of-hospital cardiac arrest survival has not improved, the field of cardiac and cerebral resuscitation is rapidly evolving.

Most of the studies in the analysis were conducted before the advent of therapeutic hypothermia, a body cooling treatment that has shown to benefit resuscitated patients. U-M C.S. Mott Children's Hospital is leading a clinical trial to evaluate therapeutic hypothermia to prevent brain damage in children who have [cardiac arrest](#).

Source: University of Michigan Health System ([news](#) : [web](#))

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