

Study finds survival from cardiac arrest highest in the operating room or post-anesthesia care unit

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A University of Michigan study from the "Online First" edition of *Anesthesiology* found cardiac arrest was associated with improved survival when it occurred in the operating room (O.R.) or post-anesthesia care unit (PACU) compared to other hospital locations. The findings offer evidence that the presence of anesthesia providers in these locations may improve outcomes for certain patients.

Cardiac arrest is a very uncommon complication during the perioperative period, which includes the time during and immediately after surgery and anesthesia. An estimated seven arrests occur per every 10,000 patients undergoing non-cardiac surgery each year. In the past, outcomes of cardiac arrest in the perioperative period have not been well-studied.

To better understand the management and outcomes of cardiac arrests during the perioperative period, researchers used the "Get With The Guidelines® - Resuscitation" registry, a national [cardiopulmonary resuscitation](#) registry supported by the [American Heart Association](#). Researchers identified more than 2,500 instances of perioperative cardiac arrest from 234 hospitals.

Findings showed one in three patients survived cardiac arrest to hospital discharge. Of these patients, two of three had good [brain function](#).

In addition, survival was approximately 25-65 percent higher if the cardiac arrest occurred in the O.R. or PACU than if it occurred in the [intensive care unit](#) (ICU) or general in-patient areas.

Researchers also found asystole, a type of cardiac arrest without electrical activity in the heart, was associated with improved survival in the O.R. and PACU compared to other hospital locations. They also found life-saving treatment was given much faster in these locations. Pulseless electrical activity (PEA), a type of cardiac arrest where the heart rhythm does not produce a pulse, was associated with worse survival to discharge in the ICU.

"The most surprising findings from our research were that very sick patients in the ICU and postoperative low-risk patients in general inpatient areas had the poorest outcomes," said Satya Krishna Ramachandran, M.D., F.R.C.A., assistant professor, Department of Anesthesiology, University of Michigan. "We found outcomes were best when [cardiac arrest](#) occurred during or immediately after surgery and anesthesia. This supports the view that the availability of anesthesia providers in the O.R. and PACU may contribute to better outcomes."

Provided by University of Michigan Health System

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