

In-hospital cardiac arrest survival rates higher in cath lab than in ICU, lower than in OR

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People who went into cardiac arrest in the cardiac catheterization lab were more likely to survive to hospital discharge than those who had a cardiac arrest in the intensive care unit (ICU), yet less likely to survive

than those who had an arrest in the operating room (OR), according to preliminary research to be presented at the American Heart Association's Resuscitation Science Symposium (ReSS) 2021.

Cardiac arrest occurs when the heart malfunctions and stops beating; it differs from a heart attack, which occurs when [blood flow](#) to the heart is blocked. While it often happens outside the hospital, [cardiac arrest](#) also occurs among hospitalized patients. An estimated 292,000 adults experience in-hospital cardiac arrest each year in the U.S., based on recent data from the American Heart Association's Get With The Guidelines-Resuscitation quality improvement program.

"Cardiac arrest while in the hospital cardiac catheterization laboratories is likely on the rise due to the increase in complex procedures being done on people at high risk for complications," said study author Ahmed Elkaryoni, M.D., a cardiology fellow at Loyola University Medical Center in Maywood, Illinois. "There are, however, unanswered questions about cardiac arrest while in the cardiac catheterization lab, including how common it is compared to other areas of the hospital, characteristics of the cardiac arrest event and what the chances are of survival to discharge. In this study, we compared rates of survival to [hospital discharge](#) for people who had in-hospital cardiac arrest while in the cardiac catheterization lab, versus the OR and ICU."

Researchers referred to the American Heart Association's [Get With the Guidelines-Resuscitation](#) registry to identify adults ages 18 years and older who had an in-hospital cardiac arrest in the cardiac catheterization lab (cath lab), ICU or OR between 2000 and 2019.

The analysis found:

- Across 428 hospitals, 193,950 adults had an in-hospital cardiac arrest. Nearly 6,900 of those were in the cardiac catheterization

lab; nearly 182,000 were in the ICU; and about 5,180 were in the OR.

- Overall, 38.1% of people who had in-hospital cardiac arrest in the cardiac catheterization lab survived to discharge, compared to 16.9% in the ICU and 40.5% of people who had a cardiac arrest while in the OR.
- Patients who survived a cardiac arrest in the cath lab were more likely to be younger, white adults; have their arrest during normal hours and on weekdays; and initially experience pulseless ventricular fibrillation, the most serious cardiac rhythm disturbance, while in cardiac arrest.
- Patients were less likely to survive to discharge after an in-hospital cardiac arrest in the cardiac catheterization lab if they had any of these factors: experienced a [heart attack](#) during this or a prior hospitalization; had [low blood pressure](#), metabolic or electrolyte abnormalities, or respiratory insufficiency; or required mechanical ventilation.

"Our study shows that in-hospital cardiac arrest in the cardiac catheterization lab is not uncommon and has a slightly lower survival rate when compared with in-hospital cardiac arrest in the OR," Elkaryoni said. "The reasons for this difference, however, deserve further study given that cardiac arrest in both settings is witnessed and [response time](#) should be similar."

A study limitation is that while the American Heart Association's Get With the Guidelines-Resuscitation quality improvement program is the largest nationwide multicenter registry detailing in-hospital cardiac [arrest](#) in the U.S., it represents only about 15% of all U.S. hospitals. Therefore, these findings may not be generalizable to hospitals not participating in the registry, Elkaryoni noted.

More information: [professional.heart.org/en/meet ... on-science-](#)

[symposium](#)

Provided by American Heart Association

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