

Factors vary for mode of death after cardiac arrest in hospitals

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Mortality rates after cardiac arrest are high, but there are important differences among patients who survive to receive hospital care before their death, according to a study published in *American Journal of Critical Care*.

["Clinical Factors Associated with Mode of Death Following Cardiac](#)

[Arrest](#)" examined data from [medical records](#) of 731 [adult patients](#) admitted to the hospital after resuscitation from in-hospital or out-of-hospital [cardiac arrest](#) between January 2015 and March 2020 who subsequently died during their [hospital stay](#).

Co-author Archana Hinduja, MD, an associate professor, department of neurocritical care, The Ohio State University (OSU), Columbus, specializes in neurology at OSU's Wexner Medical Center.

"It's important to take account of a variety of personal and clinical factors related to individual decision-making regarding withdrawal of care," Dr. Hinduja said.

"Families often face the challenging decision of whether to continue with aggressive, life-sustaining treatments or focus on quality of life and comfort measures. The differences identified in our study can help clinicians provide appropriate guidance to the surrogate decision-makers about likely clinical outcomes for their loved one."

The most common mode of death was due to medical causes in 331 patients (45.3%), of whom 64 experienced a subsequent cardiac arrest prior to their death. The researchers suspect the fact that more than half (52%) of the total study population were patients who had experienced an in-hospital cardiac arrest may have contributed to these findings.

Another 30% (219 patients) died after withdrawal of life-sustaining therapies due to neurologic causes, such as evidence of anoxic brain damage or cerebral edema on imaging.

Withdrawal of life-sustaining therapies due to patient preference occurred in 136 patients (18.6%) while brain death occurred in 45 patients (6.2%).

The mode of death for patients who had experienced an out-of-hospital cardiac arrest was most commonly attributed to withdrawal of life-sustaining therapies due to neurologic causes.

The analysis included demographics, comorbidities, characteristics of cardiac arrest and laboratory values. Outcome measures included days between cardiac arrest and death, as well as length of stay in the [intensive care unit](#) and in the hospital prior to death

Older patients were more likely to have withdrawal of life-sustaining therapy due to their values and preferences, especially within three days of their initial cardiac arrest. These patients also had a shorter mean duration of cardiac arrest, a higher rate of witnessed arrest and higher Glasgow Coma Scale scores after arrest, indicating that age and medical comorbidities likely contributed to the decision.

Patients with [brain death](#) were younger, had fewer medical comorbidities, and were more likely to have experienced an unwitnessed cardiac arrest and have prolonged duration between cardiac arrest and death, especially three days or longer. The researchers surmise that the families of these patients may lack information about the patient's preferences for life-sustaining therapies and may pursue aggressive medical care until the patient is declared brain dead.

Combined with prior research and prospective studies, the findings may inform development of focused interventions in specific groups of patients, including documentation of advance directives and prior discussions related to patients' wishes, as well as have implications for efforts related to organ procurement.

More information: Blake Senay et al, Clinical Factors Associated With Mode of Death Following Cardiac Arrest, *American Journal of Critical Care* (2024). [DOI: 10.4037/ajcc2024145](https://doi.org/10.4037/ajcc2024145)

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