

# DNR orders often do not align with poor prognosis

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Although do-not-resuscitate (DNR) orders after in-hospital cardiac arrest were generally aligned with patients' likelihood of favorable neurological survival, almost two-thirds of patients with the worst prognosis did not have DNR orders, according to a study in the September 22/29 issue of *JAMA*.

Do-not-resuscitate orders are often established for patients whose prognosis is poor. One such example is in-hospital cardiac arrest, which affects nearly 200,000 patients in the United States annually, with rates of favorable neurological survival (i.e., survival without severe cognitive disability) of less than 20 percent. Accordingly, this poor prognosis frequently prompts discussions about DNR status among resuscitated patients and their families. It is not known if real-world decisions for DNR orders after successful resuscitation from in-hospital cardiac arrest are aligned with patients' likelihood of favorable neurological survival, according to background information in the article.

From a registry (Get With The Guidelines-Resuscitation), Timothy J. Fendler, M.D., M.S., of Saint Luke's Mid America Heart Institute, Kansas City, and colleagues identified 26,327 patients with return of spontaneous circulation (ROSC) after in-hospital cardiac arrest between April 2006 and September 2012 at 406 U.S. hospitals. Using a previously validated prognostic tool, each patient's likelihood of favorable neurological survival (i.e., without severe neurological disability) was calculated. The proportion of patients with DNR orders within each prognosis score group and the association between DNR

status and actual favorable neurological survival were examined.

Overall, 5,944 (23 percent) patients had DNR orders within 12 hours of ROSC. Among patients with the best prognosis, 7 percent had DNR orders even though their predicted rate of favorable neurological survival was 65 percent. Among patients with the worst expected prognosis, 36 percent had DNR orders even though their predicted rate for favorable neurological survival was 4 percent. The actual rate of favorable neurological survival was higher for patients without DNR orders (31 percent) than it was for those with DNR orders (2 percent).

"In this national registry of in-hospital cardiac arrest, we found that DNR orders after successful resuscitation were generally aligned with patients' likelihood for favorable neurological survival, with increasing rates of DNR orders as a patient's likelihood to survive without neurological disability decreased. Nevertheless, almost two-thirds of patients with the worst prognosis did not have DNR orders, even though only 4.0 percent of patients within this [group] had favorable neurological survival. Moreover, patients who had DNR orders despite a good prognosis had significantly lower survival and less resource use than patients without DNR orders who had a similar prognosis after ROSC," the authors write

"Among patients with a low likelihood of favorable neurological survival after in-hospital cardiac arrest, our findings highlight the potential to improve DNR decision making."

"In summary, when a cardiac arrest occurs in hospital, health care teams are good at rushing in to provide robust resuscitative efforts," writes Derek C. Angus, M.D., M.P.H., of the University of Pittsburgh, and Associate Editor, *JAMA*, in an accompanying editorial.

"However, after successful ROSC, just as after the initial response to

any disaster, it is clear the work has only just begun. Hopefully in the future, standardized delivery of high-quality evidence-based resuscitation guidelines for [cardiac arrest](#) will be followed by equally high-quality standard approaches to ensure [patients](#) and families are supported optimally, regardless of prognosis."

**More information:** *JAMA*, [DOI: 10.1001/jama.2015.11069](https://doi.org/10.1001/jama.2015.11069)

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