

LETTER TO THE EDITOR

Response to “Will We Code for Default ECMO?”: Clarifying the Scope of Do-Not-ECMO Orders

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In “[Will We Code for Default ECMO?](#)” Brauner and Zimmerman draw parallels between the history of cardiopulmonary resuscitation (CPR) and current developments in extracorporeal membrane oxygenation (ECMO). They fear that, as occurred with CPR, indications for ECMO will expand until cardiac arrest becomes a “blanket indication” for ECMO as an adjunct to CPR. If ECMO becomes a default treatment for patients experiencing cardiac arrest, patients and surrogates will likely need a mechanism to opt out of this default. As Klugman, a clinical ethicist, recently blogged: “Is It Time for the DNE: Do Not ECMO?”¹ This question has also been raised in the bioethics and critical care literature.^{2,3} We agree with Brauner and Zimmerman that the best course of action would be to prevent ECMO from becoming a default treatment.

However, we should also consider how to proceed if ECMO does, in fact, become part of the default treatment for cardiac arrest. Such considerations include implementation challenges that would likely arise if do-not-ECMO (DNE) orders were to be incorporated into hospital code status systems. Specifically, we are concerned with implementation challenges related to the scope of DNE orders. We can gain insight into these challenges by comparing DNE orders with do-not-resuscitate (DNR) orders, which have faced scope-related implementation challenges since their adoption in the 1970s.^{4,5} DNR orders allow patients and surrogates to refuse CPR that would otherwise be provided by [default](#).⁴ DNE orders could function similarly by allowing patients and surrogates to refuse ECMO that would otherwise be provided by default. By examining the scope-related implementation challenges associated with DNR orders, we can predict some of the challenges likely to arise when incorporating DNE orders into hospital code status systems.

First, clinicians sometimes erroneously infer patient preferences for treatments outside of cardiac arrest on the basis of a DNR order.^{5,6,7} For example, a clinician might assume that a patient with a DNR order would not want other life-sustaining interventions, such as dialysis. As Yuen et al explain, these erroneous inferences “may be due to misunderstanding the *scope* of DNR orders [italics added].”⁵ Despite decades of efforts to clearly define the scope of DNR orders in national guidelines,^{8,9} DNR orders have continued to shape clinical management decisions for treatments other than CPR.^{6,7} To prevent clinicians from misinterpreting DNR orders, some hospitals have implemented

broadened DNR orders that explicitly communicate patient preferences for treatments other than CPR.^{10,11,12,13,14} However, there is limited data on whether this strategy is effective.^{10,11} We have little reason to believe that DNE orders will not also be subject to misinterpretation; clinicians may assume that patients with DNE orders do not want other life-sustaining interventions.

Second, the scope of DNR orders is unclear because many of the components of CPR, such as intubation and mechanical ventilation or intermittent mandatory ventilation (IMV), can be indicated in other contexts.^{15,16} For example, a patient who refuses CPR in the event of a cardiac arrest (and thus refuses IMV in this context) could want IMV for chronic obstructive pulmonary disease exacerbations. This contextual variation creates challenges in understanding the scope of DNR orders. For example, does a DNR order imply a do-not-intubate order and, if so, in what clinical circumstances? Or does a DNR order preclude intubation entirely? Some organizations and clinicians have navigated these questions by implementing “partial” code orders, although these are controversial.^{17,18} Similar to IMV, ECMO can be a component of CPR but can also be indicated in other contexts. Thus, ECMO would likely be subject to similar questions: Should a DNR order be interpreted as implying a DNE order and, if so, in what clinical circumstances? Or should a DNR order preclude ECMO entirely?

To address these questions, clinicians and bioethicists should proactively consider how to limit the scope of DNE orders before ECMO emerges as a default treatment for patients experiencing cardiac arrest. In particular, code status systems that incorporate DNE orders should prevent physicians from acting on erroneous inferences about patient preferences and should clearly define the conceptual and practical relationships between DNR and DNE orders.

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