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Odds of reversing ICU patients' preferences to forgo life-sustaining care vary, study finds

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Intensive care units across the United States vary widely in how they manage the care of patients who have set preexisting limits on life-sustaining therapies, such as authorizing do-not-resuscitate (DNR) orders and prohibiting interventions such as feeding tubes or dialysis, according to new research from the Perelman School of Medicine at the University of Pennsylvania. Their work is published in the current issue of *JAMA Internal Medicine*.

"We've long known that end-of-life and critical care varies across nations, regions and centers, whether from changes in local policies, practice culture or resource constraints," said the study's lead author Joanna L. Hart, MD, MSHP, a pulmonary and critical care physician and post-doctoral research fellow at Penn. "But, we hypothesized that by looking at this specific patient population, we could attribute this variability as an appropriate response to patient preferences in care, and undue or unsupported variability. No previous studies we're aware of have analyzed variations in care for patients who, upon admission, have similar care requests."

Hart and colleagues also sought to determine the portion of ICU patients who are admitted with existing treatment limitations - which may have been outlined in advance directives or otherwise ordered by inpatient physician—and how these patients are managed in the ICU.

The researchers examined a retrospective cohort of patients from 141 intensive care units in 105 hospitals, for a total of 277,693 patients from

April 2001 through December 2008 and found that 4.8 percent of ICU admissions were patients with preexisting limits on care. Care limitations for most of these patients included DNR orders, which included preferences prohibiting chest compressions, intubation and use of defibrillation to restart their hearts. Other patients had documented restrictions on acceptable therapies, ranging from dialysis to nutritional support such as feeding tubes (21 percent), and four percent expressed a preference for comfort measures only. Patients admitted with treatment limitations tended to be older than those without such limits (78 years on average) and nearly all had preexisting chronic illnesses conditions, most commonly chronic respiratory disease (14 percent) and chronic kidney disease (13 percent). Most (52 percent) of patients were admitted to the ICU from the emergency department, and 35 percent died during the hospital stay studied.

But the researchers found that these patients' preferences to refrain from use of lifesaving measures were often changed during their stay. Among all patients admitted with treatment limitations, 23 percent of patients nonetheless received CPR in the ICU, with great variability among ICUs: with less than five percent of patients at some ICUs and greater than 90 percent in other ICUs. Overall, 41 percent of patients who entered with treatment limitations received one or more forms of life support, and 18 percent had a reversal of previous treatment limitations during their ICU stay.

The researchers found that when ICU care was managed by a critical care physician, the odds were greater that the preexisting limitations on care would change and their care would be escalated with new forms of life support administered. Suburban hospitals, when compared to urban settings, were found to be associated with greater odds that patients surviving an ICU stay would receive new treatments and have new treatment limitations established during their stay.

"The variability here is astounding and no matter how hard we tried, we could not make it go away by accounting for any differences among the patients admitted to different ICUs," says the study's senior author, Scott Halpern, MD, PhD, MBE, assistant professor of Medicine, Epidemiology, and Medical Ethics and Health Policy. "Surprisingly, for patients who had already outlined 'I don't want this or that procedure or treatment at end of life,' escalations of treatment intensity were nonetheless more common than de-escalations," said Halpern. "This tendency toward aggressiveness varies widely depending only on which ICU a patient happens to be admitted to. There seems to be great potential for better aligning the outcomes of critical care with the outcomes people desire through a better understanding of how treatment decisions are made for patients who can and cannot communicate their preferences. We suggest that having clear, effective advance directives along with accompanying conversations with potential surrogate decision makers (usually family) is the best way to prevent unwanted care during an ICU stay."

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