Understanding What Hospital-Based Palliative Care Services Can Do for Critically Ill Patients

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In 2013, I received a Mentored Training Research Grant from FAER. This award supported my development as an investigator interested in the intersection between palliative care and critical care, allowing me the opportunity to gain expertise in studying palliative care using population-level data. During my FAER award, I conducted studies in critically ill patients that delineated the burden of palliative care needs and subsequent health care use after an intensive care unit (ICU) stay and that investigated methods for improving integration of palliative care specialists in the ICU setting and how external factors in the ICU environment may affect end-of-life care delivery (*Am J Respir Crit Care Med* 2014;189:428-36; *Crit Care Med* 2015;43:430-8; *Am J Respir Crit Care Med* 2017;195:1486-93; *Intensive Care Med* 2016;42:987-94; *Crit Care Med* 2017;45:e372-8; *J Crit Care* 2018;46:79-83).

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Palliative care is an interdisciplinary model of care with the overarching goal of improving quality of life for patients with serious illness through symptom management, provision of psychosocial support, elicitation of preferences, and aid in decision-making. The importance of palliative care in the ICU setting has been increasingly recognized, as critically ill patients are at risk for having unmet palliative care needs. In the ICU, patients undergo therapies that may not be in line with their preferences (*J Hosp Med* 2013;8:178-183; *N Engl J Med* 2002;346:1061-6), may cause significant distress (*Crit Care Med* 2004;32:1527-34; *Crit Care Med* 2001;29:277-82; *Ann Am Thorac Soc* 2013;10:458-65), and may not yield meaningful improvements in quality of life, perceived quality of care, or survival (*Chest* 2008;133:377-85; *Med Care* 2010;48:125-32; *J Am Geriatr Soc* 2005;53:1905-11). Given that patients with chronic life-limiting illnesses often choose care preferences that prioritize quality, as opposed to quantity of life (*N Engl J Med* 2002;346:1061-6), there is concern that the delivery of high-intensity care, particularly at the end of life, may not be consistent with patients' goals and values. In prior studies, the use of palliative care was associated with decreases in ICU admission, use of non-beneficial life-sustaining therapies, and ICU length of stay (*Palliat Med* 2010;24:154-65; *Health Aff (Millwood)* 2011;30:454-63; *Crit Care Med* 2007;35:1530-5). These data have driven a national expansion of palliative care services. Yet, it is unclear if palliative care programs outside of these initial studies have been able to replicate these results. Targeting this knowledge gap, I set out to better delineate how to measure and quantify the population-level effect of palliative care services on the intensity of treatment in critically ill patients.

Funding Opportunity

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Supported by the National Institute on Aging and the American Federation for Aging Research, I conducted a series of studies to understand what happens to patients when they receive care in a hospital with a palliative care program, as opposed to a hospital without a palliative care program. First, using a large cohort of critically ill patients from New York State, we assessed whether receiving care in a hospital with palliative care was associated with any differences in the intensity of treatment delivered during hospitalization by examining length of stay, use of invasive life-sustaining therapies (e.g., mechanical ventilation, placement of tracheostomy, cardiopulmonary resuscitation), and discharge to hospice (*Ann Am Thorac Soc* 2018;15:1067-74). We used several different analytic approaches aimed at reducing confounding variables arising from hospital-level differences, including differences in patient case-mix and hospital characteristics. Regardless of our approach, our results were similar – availability of a hospital-based palliative care program was not associated with meaningful differences in length of stay or use of invasive therapies, but was significantly associated with a 46% increase in the likelihood of patients being discharged to hospice. These data suggest that with regard to the intensity of treatment, the effect of palliative care programs may be best measured by their ability to prevent downstream health care use.

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In our second study, I asked a different but related question – is starting a palliative care program associated with differences in use of intensive care for patients at the end of life? In this study, we used a large cohort of patients who received care in New York State hospitals, but only included hospitals that newly implemented palliative care programs, as well as hospitals that never had palliative care programs to serve as "controls" (*JAMA Netw Open* 2020;3:e1918675). Implementing a palliative care program was significantly associated with a 10% decrease in the likelihood of ICU use for patients who died during their hospitalization. While this effect is moderate in size, given that approximately 420,000 patients in the U.S. die each year after using intensive care, we estimated that extrapolating this effect on a population level would translate to a cost savings of approximately $265 million a year. Thus, while the effect of implementing palliative care programs at individual hospitals may be small, its importance may be magnified across a national health system.

Having the support of FAER at the beginning of my career has been invaluable, as it allowed me to gain expertise and study an area that I am passionate about. I am incredibly grateful to FAER for wholeheartedly supporting me in becoming an academic anesthesiologist. ■