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Economic Benefits of Palliative Care Consultation Continue to Unfold

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Although much younger than the traditional oncology specialties, the palliative medicine discipline has blossomed to fill the notable void between the delivery of aggressive anticancer therapies and the patient experience of disease and its treatments. Although initial studies of palliative care (PC) interventions yielded mixed results,[1] more recent randomized trials have shown improved mood, quality of life, and even improved survival with early PC consultation.[2–4] These favorable results have been so consistent and marked that the American Society of Clinical Oncology (ASCO) has issued a clinical opinion supporting the integration of PC with conventional oncology treatment,[5] and as part of the Choosing Wisely Campaign, the American Society for Radiation Oncology (ASTRO) has urged early PC referral in the context of noncurative radiotherapy.[6]

Additional benefits from PC intervention include the opportunity to reduce the frequency, intensity, and therefore cost of medical interventions at the end of life. Although the discipline centers on improving the well-being of patients and their caregivers, these economic benefits may be meaningful, reducing the total cost per patient on the order of thousands of dollars.[7] Despite the stress of an acute illness, inpatient admissions can be an opportune time to initiate PC consultation: at this juncture, patients are often critically ill and may intuitively appreciate the gravity of their diagnosis, multidisciplinary consultation can be performed in one setting, and from an economic perspective, patient decision making can have marked implications for ensuing costs. When to initiate PC consultation over the course of an admission is an open question, however, and from a practical perspective, determining the optimal time for intervention may help programs orient their services.

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In the article that accompanies this editorial, May et al[8] asked whether time to PC consultation influenced the potential cost savings of the intervention. The authors analyzed hospital cost data from a large, prospective, observational trial (the Palliative Care for Cancer, or PC4C trial) that was designed to study patient-reported outcomes (eg, pain intensity, satisfaction), process measures (eg, symptom assessment), and utilization measures, including cost. Patients with advanced cancer who were admitted to one of five hospitals with high-quality PC programs were eligible for enrollment, with a standardized PC consultation as the intervention. However, patients were included in the study even if they did not receive PC services. Thus, it is critical to recognize that the PC4C study was not a randomized trial; instead, the study was planned a priori to use propensity-based methods to compare PC consultation with usual care (UC), with the goal of using this statistical methodology to create pseudorandomized cohorts for comparisons. The majority of the data from this trial has not yet been reported, and the article by May et al describes the first key findings from the study.

The authors performed cost comparisons by creating a series of PC versus UC cohorts among patients who survived the admission, each defined by the maximum time to PC consultation (any time, within 2, 6, 10, and 20 days). Because of the prospective nature of the data collection, each of the two groups was robustly matched on many important baseline variables, including the results of symptom-assessment instruments. The key result was that early but not late PC consultation was associated with significant cost savings versus UC. There were reductions in total costs of approximately $2,300 and $1,300 with PC consultation within 2 and 6 days, respectively, but not when PC was applied 10 days or longer from admission; in fact, when comparing all patients receiving PC with all patients receiving UC, there was no significant difference in cost. Importantly, although laboratory costs were reduced whenever PC consultation was performed, intensive care unit and pharmacy costs were lowered only with the earliest consultations, suggesting that the avoidance of these aggressive interventions was the most influential driver of the cost savings; indeed, intensive care unit costs savings were more than triple the savings from the next largest contributor (pharmacy). The authors intentionally did not control for length of stay in their main analysis, assuming that shorter hospital admissions may be on the causal pathway between early PC intervention and lower expenditure. The average length of stay was significantly shorter by 1 day with the earliest consultations, supporting the contention that reduced admission length may also contribute to cost savings, together with a reduction in the intensity of care.

This analysis builds on previous retrospective studies that have also shown that earlier inpatient consultation leads to greater cost savings,[9,10] and on the basis of these results, one may argue that the PC intervention must be performed within 48 hours to achieve an economic benefit. However, there is an unavoidable collinearity between accrued hospital costs and time to PC consultation; the later the consultation, the more time available for the patient to undergo costly services before the intervention. It is therefore not necessarily surprising that the total impact of PC intervention on cost was mitigated as the time to consultation grew longer. Even still, it may be premature to dismiss the potential cost savings of later PC consultation. First, there is the challenge of drawing meaningful conclusions from the small number of patients who received late PC consultation (only 25 consultations were initiated after 6 days). Second, when performing a secondary analysis that excluded patients with prolonged admissions, the authors found that PC consultation at any time was significantly associated with cost savings,

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suggesting that some patients who were originally included in the late PC cohorts were dragging the cost curve to the right. Accordingly, an analysis of per-day costs before and after consultation may have provided further insight into post-PC cost savings throughout the admission.

It is imperative to remember that this study was not a randomized trial, and unknown confounding variables may account for a nontrivial fraction of the results; the trigger for PC consultation may reflect some unknown differences between the intervention group and controls that could explain the cost differences. Moreover, consider that nearly one third of all eligible patients refused to participate in the parent study, and only 30% of the enrolled sample was included in the final analysis; thus, the analyzed sample almost certainly does not reflect the average patient for whom PC may be considered in the hospital. That said, because this study was rooted in a clinical trial with prospective data collection, the investigators were able to control for a wide and legitimate array of potential confounding variables, lending significant credibility to the comparisons. Furthermore, the authors performed sensitivity analyses on their model assumptions, most of which were reported in the appendix, and nearly all of them confirmed the primary analysis.

These authors and the PC4C investigators should be congratulated on completing this large, robustly designed trial in such a fragile patient population. To place these cost savings in perspective, it is important to see whether PC (early and/or late) leads to superior patient-reported and process outcomes as well. Provided that these theorized benefits of PC consultation are borne out from this study, the present article provides an additional call to health care systems to initiate early PC interventions for their inpatient oncology populations. Although it is questionable whether these savings could make a significant dent in overall national health care expenditures,[11] some optimistic estimates point toward savings in the hundreds of millions of dollars in some settings,[12] and at a minimum, these programs may certainly be self-sustaining if not modestly profitable. In today's health care environment—especially in the realm of oncology—programs that improve both patient quality of life and the proverbial bottom line are a rarity, and May et al[8] have provided important data that suggest that early inpatient PC consultation is one of them.

AUTHOR'S DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

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Peter May, Melissa M. Garrido, J. Brian Cassel, Amy S. Kelley, Diane E. Meier, Charles Normand, Thomas J. Smith, Lee Stefanis, and R. Sean Morrison

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