

## Journal Watch

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Full Reference: Penrod JD, Deb P, Luhrs C, Dellenbaugh C, Zhu CW, Hochman T, et al. Cost and Utilization Outcomes of Patients Receiving Hospital-Based Palliative Care Consultation. *J Palliat Med* 2006; 9(4):855-860.

Abstract:

**Objective:** To compare per diem total direct, ancillary (laboratory and radiology) and pharmacy costs of palliative care (PC) compared to usual care (UC) patients during a terminal hospitalization; to examine the association between PC and ICU admission.

**Design:** Retrospective, observational cost analysis using a VA (payer) perspective.

**Setting:** Two urban VA medical centers.

**Measurements:** Demographic and health characteristics of 314 veterans admitted during two years were obtained from VA administrative data. Hospital costs came from the VA cost accounting system.

**Analysis:** Generalized linear models (GLM) were estimated for total direct, ancillary and pharmacy costs. Predictors included patient age, principal diagnosis, comorbidity, whether patient stay was medical or surgical, site and whether the patient was seen by the palliative care consultation team. A probit regression was used to analyze probability of ICU admission. Propensity score matching was used to improve balance in observed covariates.

**Results:** PC patients were 42 percentage points (95% CI, -556% to -31%) less likely to be admitted to ICU. Total direct costs per day were \$239 (95% CI, -387 to -122) lower and ancillary costs were \$98 (95% CI, -133 to -57) lower than costs for UC patients. There was no difference in pharmacy costs. The results were similar using propensity score matching.

**Conclusion:** PC was associated with significantly lower likelihood of ICU use and lower inpatient costs compared to UC. Our findings coupled with those indicating better patient and family outcomes with PC suggest both a cost and quality incentive for hospitals to develop PC programs.

Comments

Strengths/uniqueness: This paper measures per-diem, risk-adjusted, terminal hospitalization costs of patients with and without a palliative care consult. Although the study uses a retrospective, observational analytic design, the authors acknowledge this limitation and use statistical methods to reduce selection bias. This paper adds to a growing body of evidence supporting the hypothesis that palliative care consult teams lower costs and improved health outcomes (patient and family). The hypothesis is based on the assumption that these outcomes are achieved through improved communication and less use of costly technologies. This paper demonstrates lower use

of intensive care units, which alone is thought to demonstrate an improved quality of care at end of life.

Weakness: (1) Evaluation of site-specific palliative care services ignores the fact that palliative care referrals are determined regionally. Insufficient information is provided to the reader to evaluate the source of and effectiveness of the remedy to selection bias in the two urban centers. A before-and after with control study design for example would have been preferred. (2) A payer (Veterans Administration) costing perspective is adopted for the terminal hospital episode. Both private costs are ignored and the episode of care does not include all treatments following the initial diagnosis of a terminal illness. (3) Costs were obtained from a computerized cost-accounting system (VA Decision Support System). Although cost-accounting systems are thought to provide better data than charges, precision and purpose of the cost-accounting system is not known. Use of micro-costing would generate a higher level of evidence, particularly for the personnel costs of the interdisciplinary team.

Relevance to Palliative Care: Interdisciplinary inpatient palliative care consultation is an important mode of palliative service delivery to terminally ill patients. Despite the limitations, this article is relevant to palliative care administration and practice. This paper represents an important step in the growing body of literature which points to the cost-effectiveness of palliative care interventions.