Original Article

Novel Data Sharing Between a Comprehensive Cancer Center and a Private Payer to Better Understand Care at the End of Life

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Abstract

Context. Understanding end-of-life (EOL) care patterns is a prerequisite to improving the experience for cancer patients. EOL measures endorsed by the National Quality Forum (NQF) have been examined in older patients using Medicare claims.

Objectives. To evaluate EOL care for patients treated at a comprehensive cancer center, using private payer claims data.

Methods. A retrospective cohort study was conducted of Dana-Farber Cancer Institute (DFCI) patients who died between July 2010 and December 2012, and were insured by Blue Cross Blue Shield of Massachusetts. Primary data sources included Blue Cross Blue Shield of Massachusetts claims information and DFCI administrative data. We assessed NQF-endorsed measures of EOL care related to emergency department visits, hospitalizations, and intensive care unit admissions in the last 30 days, chemotherapy in the last 14 days, hospice stay, and death in an acute care setting. Patterns of care by cancer type and service location were determined.

Results. Among 674 patients (mean age 58 years), event rates for NQF-endorsed EOL measures were similar to those reported using Medicare claims. Decedents with hematologic malignancies received significantly more intensive care and were less likely to have enrolled in hospice, compared to decedents with solid tumors. Thirty to 45% of EOL events occurred outside of DFCI and its affiliated hospitals.

Conclusion. Data sharing between a private payer and a large cancer center proved feasible and informative. High rates of hospital service use outside of our sites of care were unexpected. The findings suggest opportunities to better manage care at the end of life. J Pain Symptom Manage 2016;■:■−■. *© 2016 American Academy of Hospice and Palliative Medicine. Published by Elsevier Inc. All rights reserved.*

Key Words

End-of-life care, claims data, oncology patients, quality improvement

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Introduction

Assessment of care at the end of life (EOL) is critical to developing interventions to improve the quality of care for oncology patients. Measures of the intensity of EOL care have been nationally adopted[1]; prioritized by the cancer community[2]; and endorsed by the National Quality Forum (NQF).[3] Collectively, these measures assess referral to hospice as an area of potential underuse, and the administration of chemotherapy, emergency department (ED) visits, hospitalizations, and intensive care unit (ICU) admissions near death as potential overuse or misuse of services.[4–10]

Research indicates that intensive care near EOL negatively impacts patient quality of life and caregiver bereavement adjustment.[11,12] Furthermore, the societal costs of intensive EOL care are significant. Approximately 25% of all deaths in the U.S. are due to cancers.[13] Health care expenses are considerably higher for patients with cancer. One report based on a

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commercially insured population estimated a more than 25-fold difference in the annual average costs for cancer patients receiving chemotherapy than for nononcology patients.[14] The financial burden increases in the last months of life, primarily related to hospitalizations and administration of chemotherapy.[15–17] Among Medicare beneficiaries with cancer, utilization of hospice appears to lower the cost of care.[18–20]

The NQF-endorsed measures have increased focus on quality measurement in this area. Earle et al. led the development of these Medicare claims-based measures among U.S. patients 65 years and older who died of cancer in the 1990s while living in one of 11 U.S. regions monitored by the Surveillance, Epidemiology, and End Results (SEER) program.[6,21] The authors evaluated the accuracy of the claims, empirically defined benchmarks, assessed reliability of the measures, and explored practice variation. They found increasing intensity of care over time.[6,7,21] Subsequent studies assessing EOL care using similar methodologies,[22–24] including the Dartmouth Atlas,[25,26] have reported similar results.

The feasibility of claims assessment has promoted expansion of EOL evaluation to populations with specific cancer diagnoses, such as pancreatic cancer[27,28] and lung cancer,[10] and to services that have not been subject to rigorous evaluation and national endorsement, such as the use of radiation and surgery near EOL.[29] Additional claims-based studies have been conducted outside of the U.S.[4,30–33] Using modified measures based on individual institutional medical records abstraction, the American Society of Clinical Oncology's Quality Oncology Practice Initiative has found national variation and performance gaps within the U.S., with some evidence that assessment over time is associated with improvement.[34,35]

Our project sought to apply these measures to patients with private insurance, which has received less attention to date. Our institution, the Dana-Farber Cancer Institute (DFCI), collaborated with Blue Cross Blue Shield of Massachusetts (BCBSMA), which insures approximately 25% of patients at DFCI. We evaluated the intensity of EOL care in adult patients of all ages, using the measure specifications endorsed by the NQF as the basis for the analysis. Our goal was to gain a better understanding of the patterns of care at EOL among DFCI patients and, thus, identify ways to improve.

Methods

Patient Cohort

The DFCI is a large, Boston-based comprehensive cancer center. It is a tertiary care facility with an extensive referral patient population. Adult inpatient care is provided primarily by Brigham and Women's Hospital (BWH); in Massachusetts, care also is available at three other affiliated institutions (Faulkner Hospital, South Shore Hospital, Milford Hospital). Using administrative databases at Dana-Farber, we identified adult patients who died over a 30-month period between July 1, 2010 and December 31, 2012. Patients were limited to those under active care, which was defined as having had two or more ambulatory visits to the Dana-Farber in the last six months of life, and whose primary insurance was BCBSMA. BCBSMA created a file of medical claims in the last six months of life for these deceased patients. Patients were excluded if they either were not continuously enrolled with BCBSMA during the last six months of life or could not be linked to the claims information. As a quality improvement project, the present study received a waiver from review by the institutional review board at DFCI.

Data Sources

Demographic (age, sex) and disease information (diagnosis, disease center) were obtained from DFCI registration and clinical databases. The BCBSMA claims data were used to determine the EOL outcome measures (see the following section). The following data fields were provided: first service date, admission and discharge dates, Current Procedural Terminology and Healthcare Common Procedure Coding System procedure codes, ICD-9 procedure and diagnosis codes, Diagnosis Related Group code, revenue code, and place of service. An additional data source was DFCI medical records, which were used in a substudy to evaluate the validity of the insurance claims information (see the Statistical Analysis section).

EOL Outcome Measures

We assessed seven measures of EOL care for cancer patients, developed by Earl et al.[6] and endorsed by the NQF.[3] The performance measures examined included as follows: >1 ED visit in the last 30 days of life (NQF #0211); >1 hospitalization in the last 30 days of life (NQF #0212); admission to the ICU in the last 30 days (NQF #0213); receipt of chemotherapy in the last 14 days (NQF #0210); lack of enrollment in hospice (NQF #0215) and, among those in hospice, admission to hospice for less than three days (NQF #0216); and, death in an acute care setting (NQF #0214). The frequency of any hospitalization and the median length of a hospital stay during the last 30 days of life and when death occurred in the hospital also were evaluated, as were the frequency of any ED visit and the median length of time in hospice in the last 30 days. In addition to the NQF measures,