

Brief Report

Disparities in Hospice Utilization for Older Cancer Patients Living in the Deep South



Yasemin Evelyn Turkman, PhD, CRNP, Courtney P. Williams, MPH, Bradford E. Jackson, PhD, James Nicholas Dionne-Odom, PhD, RN, Richard Taylor, DNP, Deborah Ejem, PhD, Elizabeth Kvale, MD, Maria Pisu, PhD, Marie Bakitas, DNSc, CRNP, and Gabrielle B. Rocque, MD
School of Nursing (Y.E.T., J.N.D.-O., R.T., D.E., M.B.), University of Alabama at Birmingham (UAB), Birmingham, Alabama; Division of Hematology and Oncology (C.P.W., G.B.R.), Department of Medicine, University of Alabama at Birmingham, Birmingham, Alabama; University of North Texas Health Science Center (B.E.J.), Fort Worth, Texas; Dell Medical School (E.K.), The University of Texas at Austin, Austin, Texas; Department of Preventive Medicine (M.P.), University of Alabama at Birmingham, Birmingham, Alabama; Division of Gerontology, Geriatrics, and Palliative Care (J.N.D.-O., R.T., M.B., G.B.R.), Department of Medicine, University of Alabama at Birmingham, Birmingham, Alabama; and Comprehensive Cancer Center (G.B.R.), UAB Medicine, Birmingham, Alabama, USA

Abstract

Context. Hospice utilization is an end-of-life quality indicator. The Deep South has known disparities in palliative care that may affect hospice utilization.

Objectives. The objective of this study was to evaluate the association among Deep South patient and hospital characteristics and hospice utilization.

Methods. This retrospective cohort study evaluated patient and hospital characteristics associated with hospice among Medicare cancer decedents aged ≥ 65 years in 12 southeastern cancer centers between 2012 and 2015. We examined patient-level characteristics (age, race, gender, cancer type, and received patient navigation) and hospital-level characteristics (board-certified palliative physician, inpatient palliative care beds, and hospice ownership). Outcomes included hospice (within 90 vs. three days of death). Relative risks (RRs) and 95% CIs evaluated the association between patient- and hospital-level characteristics and hospice outcomes using generalized log-linear models with Poisson distribution and robust variance estimates.

Results. Of 12,725 cancer decedents, 4142 (33%) did not utilize hospice. “No hospice” was associated with nonwhite (RR 1.24, 95% CI 1.17–1.32) and nonnavigated patients (RR 1.17, 95% CI 1.10–1.25), and those at a hospital with inpatient palliative care beds (RR 1.15, 95% CI 1.10–1.21). “Late hospice” (20%; $n = 1458$) was associated with being male (RR 1.31, 95% CI 1.19–1.44) and seen at a hospital without inpatient palliative care beds (RR 0.82, 95% CI 0.75–0.90).

Conclusions. Hospice utilization differed by patient and hospital characteristics. Patients who were nonwhite, and nonnavigated, and hospitals with inpatient palliative care beds, were associated with no hospice. Research should focus on ways to improve hospice utilization in Deep South older cancer patients. *J Pain Symptom Manage* 2019;58:86–91. © 2019 American Academy of Hospice and Palliative Medicine. Published by Elsevier Inc. All rights reserved.

Key Words

Hospice, oncology, South, disparities, geriatric, Medicare

Introduction

Despite substantial growth of U.S. palliative care programs, opportunities remain for improving the quality of end-of-life care. Poor-quality end-of-life

care includes a high number of hospital and intensive care unit days, low proportion of patients enrolled in hospice, and short hospice enrollment (within three days of death).^{1–3} This poor quality was seen nationwide in 2011 when nearly one-third of all

Address correspondence to: Yasemin Evelyn Turkman, PhD, UAB School of Nursing, 1720 2nd Avenue South, Birmingham, AL 35294-4410, USA. E-mail: yturkman@uab.edu

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hospice patients had short hospice stays, resulting in increased suffering for patients and their families.^{2,4}

Significant disparities in U.S. end-of-life care exist by geographic region and race.⁵ Residents in Deep South states have particularly suboptimal hospice use patterns. In Alabama, Georgia, Louisiana, Mississippi, and South Carolina, the proportion of extended hospice enrollment and disenrollment was in the fourth quartile nationally,^{2,3} indicating that patients and families are not receiving the support they need at the appropriate time.² These observed disparities may be related, in part, to differences in demographics. The African American population is concentrated in the Deep South. Though hospice utilization is low for all racial groups, literature has shown that hospice utilization is much lower for African Americans, with 33% of African American decedents versus 44% of white decedents utilizing hospice before death.⁶ Furthermore, when African Americans utilize hospice services, they have higher rates of hospice disenrollment and concerns about care than whites, such as care that is discordant with preferences, poor provider communication, and disparities in the assessment and treatment of pain.⁷

Institutional factors also contribute to disparities in hospice use.^{2,8,9} Despite a tripling of palliative care use over the past 2 decades, only a fraction of appropriate patients received palliative care services.⁸ Institutional measures of end-of-life care quality include the number of board-certified palliative care physicians, the number of inpatient palliative beds, and ownership of the inpatient hospice facility, that is, whether the hospital or an independent organization owns the inpatient hospice facility, which may include a hospice unit or designated hospice beds.⁹

Where access to hospice care is limited, novel approaches to providing patient support are needed. Patient navigation is a patient-centric health care delivery system that establishes one-to-one relationships between the patient and navigator to minimize care barriers such as timely access to cancer diagnosis and treatment.^{10–12} However, the benefits of navigation on end-of-life outcomes are still uncertain. Therefore, we sought to better understand the patient and institutional factors associated with hospice use by examining a geriatric cancer population of Medicare beneficiaries in the Deep South during implementation of the University of Alabama at Birmingham (UAB) Cancer Care Network (CCN). These findings may be useful in identifying potential intervention targets to address disparities and improve health outcomes.

Methods

Study Design and Sample

To examine the hospice utilization patterns in the Deep South, we conducted a retrospective cohort

study using data collected as part of a Center for Medicare and Medicaid Services (CMS) Innovation demonstration project from the UAB CCN. The CCN was established to improve patient outcomes through enhanced cancer care services using navigation and has been fully described elsewhere.^{13–16} The UAB CCN includes 12 community hospitals and cancer centers located within five southeastern states, including Alabama, Georgia, Florida, Mississippi, and Tennessee located in rural and urban settings with two to 58 affiliated oncologists (Fig. 1).¹³ The patient sample included Medicare decedents aged ≥ 65 years diagnosed during or after 2008 with any type of cancer from who had received care within the UAB CCN facilities from 2012 to 2015. Data sources included local tumor registries linked to electronic medical records and claims abstracted from the CMS Chronic Condition Data Warehouse. Only patients with continuous Medicare Part A and B data and no health maintenance organization were included. This study was approved by the UAB Institutional Review Board.

Outcomes

The primary study outcome was hospice utilization, determined by any Medicare claim of hospice within 90 days before death. The secondary outcome was late hospice utilization, defined as the first claim for hospice within three days before death.

Exposures

To explore patient and hospital characteristics associated with hospice utilization, multiple factors were considered. Patient-level characteristics included race (white, nonwhite), sex (male, female), age at death, cancer type (breast, lung, gastrointestinal, genitourinary, other), and navigation status (any receipt of navigation, no navigation). Race, sex, and age were abstracted from Medicare claims data. Cancer type, receipt of navigation services, and all hospital-level factors were obtained from local tumor registry-linked electronic medical record data. Hospital-level characteristics included the presence of a board-certified palliative care physician, dedicated inpatient palliative care beds, and hospital ownership of an inpatient hospice facility.

Statistical Analysis

Descriptive statistics were calculated using means (SDs) for continuous variables and frequencies (percentages) for categorical variables. To examine patient and hospital characteristics associated with hospice utilization, we estimated relative risks (RRs) and 95% CIs using generalized log-linear models with a Poisson distribution and robust variance estimates. In subset analyses of patients with any hospice utilization, RRs and 95% CIs were used to determine patient

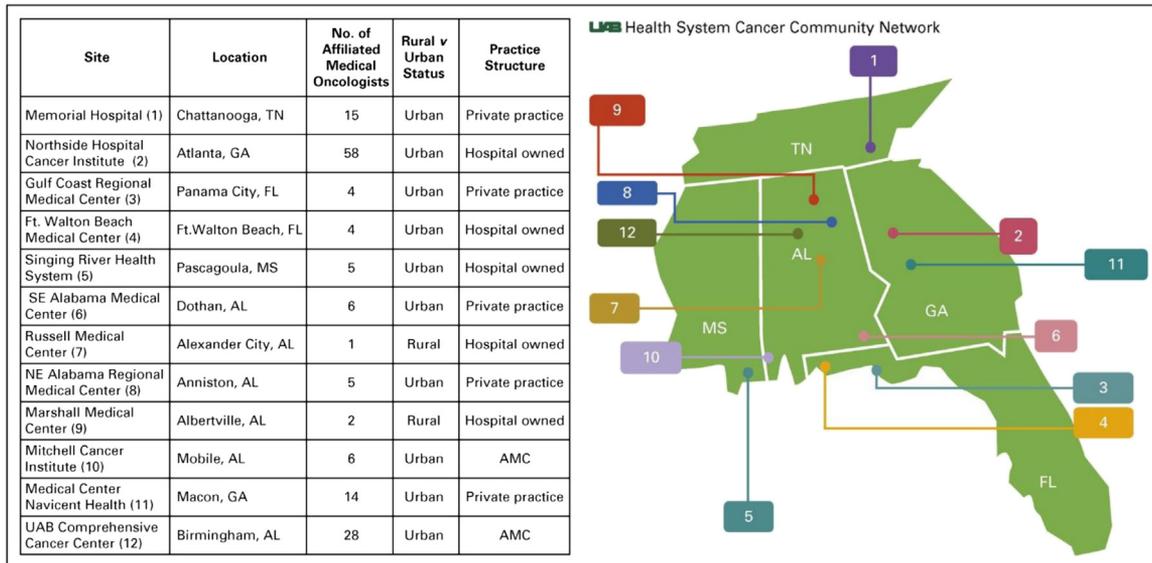


Fig. 1. University of Alabama at Birmingham Cancer Community Network.¹³

and hospital characteristics associated with receipt of late hospice. We examined unadjusted models only due to the exploratory nature of this analysis.¹⁷

Results

The sample consisted of 12,725 UAB CCN Medicare decedents (average age at death = 77 [SD 7.8]); 32.6% did not utilize hospice before death. Table 1 shows patient- and hospital-level

characteristics for the study sample. Patients who did not receive hospice care were more often nonwhite, nonnavigated, and seen at a hospital with inpatient palliative care beds. One in five patients who utilized hospice received late hospice care ($n = 1458/8583$) and were more often male and seen at a hospital without inpatient palliative care beds (Table 2). The results of our unadjusted models estimating risk of no hospice compared to any hospice utilization are shown in Table 3. Nonwhite

Table 1
Patient- and Hospital-Level Characteristics by Hospice Utilization (N = 12,725)

Characteristic	No Hospice Utilization, n = 4142	Any Hospice Utilization, n = 8583
	Mean (SD) or n (%)	Mean (SD) or n (%)
Age at death	76.5 (7.6)	77.1 (7.7)
Race		
White	3313 (80.0)	7282 (84.8)
Nonwhite	829 (20.0)	1301 (15.2)
Gender		
Male	2356 (57.2)	4452 (52.1)
Female	1765 (42.8)	4086 (47.9)
Cancer type		
Lung	973 (23.5)	2212 (25.8)
Gastrointestinal	852 (20.6)	2131 (24.8)
Genitourinary	578 (14.0)	1033 (12.0)
Breast	350 (8.5)	654 (7.6)
Other	1389 (33.5)	2553 (29.7)
Navigated		
Yes	857 (20.7)	2118 (24.7)
No	3285 (79.3)	6465 (75.3)
Hospital with board-certified palliative care physician		
Yes	3122 (75.4)	6561 (76.4)
No	1020 (24.6)	2022 (23.6)
Hospital with inpatient palliative care beds		
Yes	2251 (54.4)	4217 (49.1)
No	1891 (45.7)	4366 (50.9)
Hospital with ownership of hospice facility		
Yes	920 (22.2)	1982 (23.1)
No	3222 (77.8)	6601 (76.9)

Table 2
Patient- and Hospital-Level Characteristics for Patients Who Received Hospice by Timeframe of Hospice Utilization
(N = 8583)

Characteristic	Late Hospice Utilization, n = 1458	Any Other Hospice Utilization, n = 7125
	Mean (SD) or n (%)	Mean (SD) or n (%)
Age at death	76.6 (7.7)	77.2 (7.7)
Race		
White	1268 (87.0)	6014 (84.4)
Nonwhite	190 (13.0)	1111 (15.6)
Gender		
Male	851 (58.6)	3601 (50.8)
Female	595 (41.2)	3491 (49.2)
Cancer type		
Lung	402 (27.6)	1810 (25.4)
Gastrointestinal	312 (21.4)	1819 (25.5)
Genitourinary	200 (13.7)	833 (11.7)
Breast	103 (7.1)	551 (7.7)
Other	441 (30.3)	2112 (29.6)
Navigated		
Yes	388 (26.6)	1730 (24.3)
No	1070 (73.4)	5395 (75.7)
Hospital with board-certified palliative care physician		
Yes	1107 (75.9)	5454 (76.6)
No	351 (24.1)	1671 (23.5)
Hospital with inpatient palliative care beds		
Yes	644 (44.2)	3573 (50.2)
No	814 (55.8)	3552 (49.9)
Hospital with ownership of hospice facility		
Yes	342 (23.5)	1640 (23.0)
No	1116 (76.5)	5485 (77.0)

patients had a 24% increased risk of no hospice utilization compared to white patients (95% CI 1.17–1.32), males had a 15% increased risk of no hospice utilization compared to females (95% CI 1.09–1.21), and nonnavigated patients had a 17% increased risk of no hospice utilization compared to navigated patients (95% CI 1.10–1.25; Table 3). With respect to hospital-level characteristics, patients seen at hospitals with inpatient palliative care beds had a 15% increased risk for no hospice utilization compared to those without (95% CI 1.10–1.21).

In patients with any hospice utilization, we estimated risk of late hospice compared to any hospice utilization (Table 4). Nonwhite patients had a 16% decreased risk of receiving late hospice compared to white patients (95% CI 0.73–0.97), males had a 31% increased risk of late hospice compared to females (95% CI 1.19–1.44), and patients seen at hospitals with inpatient palliative care beds had an 18% decreased risk of late hospice utilization when compared to hospitals without inpatient palliative care beds (95% CI 0.75–0.90).

Discussion

This study found differences in hospice utilization for older patients with cancer living in the Deep South

along the lines of race, gender, and navigation status that are consistent with other research.^{18–20} In addition, the institutional variable of a hospital having inpatient palliative care beds was associated with hospice utilization. These findings add to the sparse literature demonstrating disparities in hospice usage patterns based on race and geographic location.^{21,22}

Both our study and previous studies suggested that patients who were ≥ 65 years and nonwhite did not have optimal hospice use, potentially indicating poor quality of care at the end of life.^{18,19} In the Deep South, the nonwhite population is predominantly African American. Noted barriers to hospice enrollment by patients identifying as African American have included poor knowledge of hospice, low health literacy, misconceptions about the purpose of hospice, and cultural and spiritual beliefs.⁶ Research found that the more a person uses religious coping, the more often they opt for life-sustaining aggressive treatment.^{19,23} African American patients are more likely to use religious coping and to request life-prolonging treatment.^{19,23,24} Gender was also a significant finding with men being at greater risk of no hospice. In addition to not receiving hospice, other research found that being male was a risk factor for more aggressive end-of-life treatment.²⁵ Males, once in hospice, were also more likely to have short hospice stays due to late enrollment.²⁵ These findings suggest there may

Table 3
Generalized Log-Linear Models Estimating Risk for No Versus Any Hospice Utilization (N = 12,725)

Characteristic	Unadjusted RR (95% CI)
Age at death (unit, SD)	0.99 (0.99, 1.00)
Race, nonwhite	1.24 (1.17, 1.32)
Gender, male	1.15 (1.09, 1.21)
Cancer type, breast versus lung	1.14 (1.03, 1.26)
Cancer type, gastrointestinal versus lung	0.93 (0.87, 1.01)
Cancer type, genitourinary versus lung	1.17 (1.08, 1.28)
Cancer type, other versus lung	1.15 (1.08, 1.23)
Nonnavigated	1.17 (1.10, 1.25)
Board-certified palliative care physician	0.96 (0.91, 1.02)
Inpatient palliative care beds	1.15 (1.10, 1.21)
Ownership of hospice facility	0.97 (0.91, 1.03)

RR = relative risk.

be cultural or gender differences to who uses hospice and strategies should consider such cultural competency.

Our analysis of late hospice utilization showed some trends that differed from our findings of any hospice use. Nonwhite patients had a decreased risk of receiving late hospice, as did nonnavigated patients. We speculate that the greatest barrier to hospice for nonwhites and nonnavigated patients exists in entering hospice at all. By contrast, like our analysis of no versus any hospice, males were at increased risk for late hospice suggesting that males may experience barriers for timely hospice.

On the institutional level, we found that hospitals with inpatient palliative services were associated with a decreased likelihood of hospice utilization. Another study found that inpatient hospice units and patients admitted to inpatient hospice were more likely to have three or less days on hospice if they had a hematologic malignancy, were male, were married, and were younger than 65 years.¹⁸ Prolonged intensive care unit stays, rather than discharging patients to hospice, may account for our study findings.^{2,26} Hospitals with palliative care beds may be treating patients at

Table 4
Generalized Log-Linear Models Estimating Risk for Late Versus Any Hospice Utilization (N = 8583)

Characteristic	Unadjusted RR (95% CI)
Age at death (unit, SD)	0.99 (0.98, 1.00)
Race, nonwhite	0.84 (0.73, 0.97)
Sex, male	1.31 (1.19, 1.44)
Cancer type, breast versus lung	0.87 (0.71, 1.06)
Cancer type, gastrointestinal versus lung	0.81 (0.70, 0.92)
Cancer type, genitourinary versus lung	1.07 (0.91, 1.24)
Cancer type, other versus lung	0.95 (0.84, 1.07)
Nonnavigated	0.90 (0.81, 1.00)
Board-certified palliative care physician	0.97 (0.87, 1.08)
Inpatient palliative care beds	0.82 (0.75, 0.90)
Ownership of hospice facility	1.02 (0.91, 1.14)

RR = relative risk.

true end of life, instead of utilizing hospice. This is an important consideration given that hospice use is a quality metric of end of life.²³

We observed that navigation may be a promising strategy for improving access to hospice. This study found that patients who received lay navigation support were more likely to use hospice. Others have found that navigation was useful in facilitating palliative care for older rural dwelling adults with advanced illness.²⁰ A navigation program using nurses for 25 rural older adults with mixed diagnoses including cancer found that navigators were able to provide a variety of services and there was high patient satisfaction. Patients were followed over two years and all patients died in their preferred place of death. Lay navigation may also be a way to improve patients' understanding of hospice and to facilitate access to end-of-life services.

This study is limited by the data being drawn from hospitals with varying levels of palliative care services. Data drawn from Medicare claims and from institutions in the Deep South may not apply to populations who have non-Medicare insurance or who live outside of the Deep South. In addition, when considering findings related to navigation, it is important to note that patients were not randomly assigned to navigation and there may have been selection bias. Patients were more likely to be referred to navigation if they were considered high risk, for example, those with metastatic cancer, high-morbidity cancers (e.g., pancreatic, ovarian, and lung), high-risk comorbidities (e.g., diabetes, heart failure, etc.), or history of hospitalization within the preceding month. We were also unable to examine whether the length of time a patient spent in navigation could affect late entry into hospice. Finally, this study was unable to determine if differences in hospice utilization were based on patient preferences and/or other health care delivery system factors.

In conclusion, this study indicates that patient and hospital characteristics have a potential role in who accesses timely hospice, and continued opportunity exists to improve hospice use for Medicare beneficiaries in the Deep South. Clinicians should be aware of specific patient characteristics, such as nonwhite race, and hospital characteristics, such as presence of inpatient palliative care services, which place patients at greater risk for no or late hospice utilization. Future research should focus on understanding the causes of disparities that place people of certain demographic traits at greater risk, finding ways to alleviate disparities, and exploring the potential role of lay navigation to enhance use of hospice use. Additional research should examine whether institutional factors contribute to disparities and support policies that improve hospice utilization.

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