Original Article

Hospice Use in Alabama, 2002−2005

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Abstract

Context. The literature predominately describes hospice utilization among Medicare recipients, with a limited number of reports describing use among all age groups.

Objectives. This study aimed to describe and compare patterns of hospice use among decedents of all ages in Alabama using a population-based approach.

Methods. We obtained death certificates for Alabama residents who died from January 1, 2002 to December 31, 2005 ($n = 178{,}420$). To ascertain hospice use, we linked death certificates to the hospice administering care using state-mandated listings of deaths reported by hospices. Additionally, each decedent's residence at death was geocoded and area-level socioeconomic status (SES) measures were added.

Results. From 2002 to 2005, a total of 43,638 Alabamians died while under hospice care, representing a quarter (24.5%) of all deaths in the state. During this four-year span, the rate of hospice use increased by nearly 15% (22.2%−25.6%). As expected, rates of hospice use increased with age at death. For the SES indicators for poverty, education, and income, rates of hospice use increased as SES improved. However, this pattern was found to vary by race and metro/nonmetro status.

Conclusions. In addition to revealing racial, geographic, and other disparities in hospice care across Alabama, our results indicate usage rates in Alabama trail behind those observed nationally. We also identified previously unreported interactions between race, urbanization level, and poverty classification. Future studies should explore whether such relationships exist elsewhere and the rationale for their occurrence. J Pain Symptom Manage 2011;41:374−382.

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Hospice, palliative care, Alabama, vital statistics, geographic information systems, death certificates

Introduction

The Medicare hospice benefit, enacted in 1982, allowed terminally ill beneficiaries with a six-month or less life expectancy to exchange curative care for comprehensive hospice care, including medications.[1] Since that time, the number of hospices providing care in the United States more than tripled, from approximately 1500 in 1985 to 4850 in 2008.[2,3] By 2008, an estimated 38.5% of all deaths in the United States occurred under the care of a hospice program, with rates of use among Medicare recipients varying widely from state to state (Alaska, 8%; Arizona, 49%).[3,4] Despite the rapid increase in hospice use, an Institute of Medicine report concluded that a significant number of people continue to experience needless suffering and distress at the end of life that might be alleviated by hospice care.[5] The literature regarding hospice utilization primarily describes hospice use among Medicare recipients, largely reflecting the availability of data for such investigations. Yet, considering an estimated 16.8% of U.S. hospice users in 2008 were under age 65, an argument can be made that a large segment of hospice users remains ill defined.[3] Although there have been a limited number of reports that have assessed hospice use across all age groups, each are faced with methodological limitations.[6–9]

To address these gaps in the literature, this study used death certificate records and administrative reports from the Alabama Department of Public Health Center for Health Statistics to describe and compare patterns of hospice use among decedents of all ages in Alabama. This population-based approach allowed us to study hospice use among all decedents, regardless of age or payment method.

Methods

Hospice Use Determination

We obtained death certificate records from January 1, 2002 to December 31, 2005 for Alabama residents who died in Alabama ($n = 178{,}420$). Alabama state law requires all vital record providers, including hospices, to submit monthly reports of all deaths that occur in their facilities. To ascertain hospice use for each decedent, we linked death certificates to the hospice administering care using the state-mandated listings of deaths reported by hospices. This methodology allowed us to identify all persons who died while under the care of a hospice—these decedents are referred to as hospice “users.” However, this approach did not permit us to detect decedents who were live discharges from hospice care. In such instances, these decedents were classified as “non-users.” More specific details of our hospice use ascertainment methods have been previously published elsewhere.[10]

Geocoding

Because socioeconomic status (SES) information is absent from the death certificate, such area-level measures were added to each death record by use of its geocoded residence at death. Geocoding was performed using two separate resources: ArcView 9.2 and a web-based geocoding application at www.BatchGeocode.com.[11,12] Detailed geocoding methods have previously been reported.[10]

We first geocoded addresses to the street level using ArcView’s StreetMapUSA reference data (based on the 2000 Topologically Integrated Geographic Encoding and Referencing street data).[11] We then geocoded those addresses unmatched from this first stage using the separate web-based geocoding application. Records unmatched by either of these methods were geocoded to their zip code centroid, the center point of the zip code. Most decedents (148,979 of 178,420, 83.5%) were geocoded in ArcView, with 16.2% (28,874 of 178,420) geocoded using the web-based application. Less than 1% of deaths (544 of 178,420) were geocoded to their zip code of residence centroid. Death certificates with completely missing address information were unable to be geocoded and were excluded from the analysis ($n = 23$).

In the absence of individual-level values, census tract data have been concluded to be the best area-level measures to gauge SES