Title
Availability of Palliative Care in Long-Term Acute Care Hospitals

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Authors
Sumarsono, Nathan
Sudore, Rebecca L
Smith, Alexander K

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Availability of Palliative Care in Long-Term Acute Care Hospitals

ABSTRACT

Objective: To determine the availability of palliative care programs in long-term acute care hospitals (LTACHs)

Design: Cross-sectional analysis using the 2016 American Hospital Association (AHA) Annual Survey

Setting and Participants: LTACHs in the United States

Method: We used descriptive analyses to compare the prevalence of palliative care programs in LTACHs across the United States in 2016. For LTACHs without a program, we also examined palliative care physician capacity in regions where those LTACHs resided to evaluate if expertise existed in those regions.

Results: One-third (36.5%) of 405 LTACHs (50.6% response rate) self-reported having a palliative care program. Among LTACHs without palliative care, 42.4% were in regions with the highest palliative care physician capacity nationwide.

Conclusions and Implications: LTACHs care for patients with serious and prolonged illnesses, many of whom would benefit from palliative care. Despite this, our study finds that specialty palliative care is limited in LTACHs. The limited palliative care availability in LTACHs is mismatched with the needs of this seriously ill population. Greater focus on increasing palliative care in LTACHs is essential and may be feasible as 40% of LTACHs without a palliative care program were located in regions with the highest palliative care physician capacity.
INTRODUCTION

Long-term acute care hospitals (LTACHs) care for patients with complex and severe illness requiring extended inpatient care following a short-stay acute care hospitalization. The Centers for Medicare and Medicaid Services (CMS) defines an LTACH as a hospital with an average inpatient length-of-stay (LOS) of greater than 25 days. LTACHs care for patients with a variety of care needs, including prolonged mechanical ventilation, complex wound care, dialysis, and rehabilitation. Patients transferred to LTACHs have prognoses similar to patients with metastatic cancer or other end-stage illness, with a median survival of only 8 months, and spend the majority of their remaining life in an inpatient setting.

Palliative care is specialized medical care for people with serious illness. Palliative care is associated with improved quality of life, better symptom control, and decreased length-of-stay and readmissions, leading to reduced costs. Many patients in LTACHs have a serious illness and are thus eligible to receive specialty palliative care.

Availability of palliative care has increased in the US, with 75% of acute care hospitals with 50 or more beds having a palliative care program in 2016. However, it is not known whether LTACH patients have access to palliative care. Therefore, we examined the availability of palliative care in LTACHs in the US. Because we hypothesized that the prevalence would be low, we also examined palliative care physician capacity of regions in the US where LTACHs without a palliative care program resided to examine if such expertise is potentially available to these LTACHs.

METHODS

Design and Data Sources

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We analyzed the 2016 American Hospital Association (AHA) Annual Survey of Hospitals to examine the availability of self-reported palliative care programs and related services (e.g. geriatric care and hospice) for LTACHs. For LTACHs without a palliative care program, we examined palliative care physician capacity in the hospital referral regions (HRRs) where these LTACHs resided using data from the 2016 Profile of Active Hospice and Palliative Medicine Physicians.16

Secondary Analysis

Because the AHA Survey had a 50% non-response rate for LTACHs and lacked information on staffing composition, we conducted a secondary analysis examining palliative care availability and staffing (physicians, nurses, social workers, chaplains) in California LTACHs using the 2016 Hospital Utilization Report from the California Office of Statewide Health Planning and Development (OSHPD), which included legislatively mandated, self-reported data and had a 100% response rate among California LTACHs.

Palliative Care Availability in LTACHs

The AHA Annual Survey defined a palliative care program as “an organized program providing specialized medical care, drugs or therapies for the management of acute or chronic pain and/or the control of symptoms administered by specially trained physicians and other clinicians; and supportive care services, such as counseling on advanced directives, spiritual care, and social services, to patients with advanced diseases and their families.”17 The AHA Survey also asked respondents to specify whether this service was provided or owned by the hospital, by an affiliated health system, or offered through a joint venture or contract with an outside entity. The California OSHPD survey defined a palliative care program as “an interdisciplinary team that sees patients, identifies needs, makes treatment recommendations,
facilitates patient and/or family decision-making, and/or directly provides palliative care for
patients with serious illness or their families.”

**Statistical Analyses**

We used descriptive analyses to characterize LTACHs with and without a palliative care
program, including ownership, structure, bed size, patient volume, geographic location,
availability of palliative care related services, and source of palliative care program if applicable.

For LTACHs without a palliative care program, we created a heat map of palliative care
physician capacity, defined as the number of these physicians per 100,000 people in the HRR in
which these LTACHs are located, using HRR boundary data from the Dartmouth Atlas. Regional palliative care physician capacity was categorized into deciles based on capacity for all
306 HRRs in the US.

Analyses were conducted in Stata, version 16 (AHA data), Microsoft Excel (OSHPD),
and RStudio, version 1.2.5033 (heat map). The study was exempt from institutional review board
review.

**RESULTS**

**National Analysis**

Of the 405 LTACHs in the US in 2016, 205 (50.6%) responded to the AHA Annual
Survey. Among respondents, 73 (35.6%) self-reported having a palliative care program (Table
1). Compared to LTACHs that reported having a palliative care program, LTACHs without a
palliative care program were more commonly for-profit (79.5% vs 45.2%), part of a multi-
hospital system (88.6% vs 79.5%), smaller (94.7% had <100 beds vs 82.2%), and located in the
Midwest (18.9% vs 11.0%) or South (70.5% vs 64.4%), but were otherwise similar in admission
volume, total inpatient days, location (freestanding vs. hospital-within-hospital), and
metropolitan status. About half (52.1%) of LTACHs with a palliative care program nationwide
offered chaplaincy services, 8.2% had a hospice program, and 12.3% offered geriatric care,
which were all more prevalent in LTACHs with a palliative care program than in LTACHs
without. In nearly half of LTACHs with a palliative care program, that service was provided by
the LTACH directly, in 28.8% it was provided by the affiliated health system, and in 23.3% it
was provided by a joint venture with an outside entity. Non-respondent LTACHs were more
commonly for-profit (86.5%) and located in the Midwest (29.5%) and West (20.0%) but were
otherwise similar to LTACHs that reported having a palliative care program.

**Regional Palliative Care Physician Capacity**

The 132 LTACHs without a palliative care program were located in 85 unique HRRs
(Figure 1). Palliative care physician capacity for these HRRs ranged from 0 to almost 40
physicians per 100,000 people, with a median of 12.7 physicians (interquartile range (IQR), 8.0-
17.3). Palliative care physician capacity for the 85 HRRs was similar to the 221 other HRRs
(median of 12.7 versus 12.0 physicians per 100,000 people, p=0.66). Of the 132 LTACHs
without a palliative care program, 27 (20.4%) resided in HRRs in the lowest 3 deciles of
palliative care physician capacity nationwide (<8.8 physicians), 49 (37.1%) resided in HRRs in
the middle 4 deciles, (8.8-16.3 physicians), and 56 (42.4%) resided in HRRs in the highest 3
deciles (16.3-55.1 physicians).

**Secondary Analysis**

Of the 24 California LTACHs, only 1 (4.2%) self-reported having a palliative care
program in OSHPD, which consisted of one palliative care social worker and one chaplain. Six
LTACHs in California also responded to the AHA survey, 4 of which self-reported having a palliative care program.

**DISCUSSION**

In this national study, one-third (35.6%) of LTACHs self-reported having a palliative care program. However, palliative care availability in LTACHs may be lower for several reasons. First, nearly 50% of LTACHs did not respond to the AHA Annual Survey. Non-responsive LTACHs were overwhelmingly for-profit, which per our analysis and other studies of acute care hospitals are less likely to offer palliative care. Furthermore, our secondary analysis of California LTACHs from the same time period, which had a 100% response rate, indicated only 1 of 24 LTACHs had a palliative care program, which consisted of only a single social worker and chaplain. Second, the AHA survey may overestimate palliative care availability even among respondents. For the six California LTACHs participating in both surveys, four self-reported having a palliative care program in the AHA survey but only one in the OSHPD data. The reason for this discrepancy is unclear, but may be due to California’s legislative mandate to report corresponding palliative care staffing data, which is not included in the AHA survey, or because of differing definitions used in each survey.

LTACHs patients most closely resemble patients in step-down units or ICUs in acute-care hospitals regarding their care needs and meet most commonly recognized definitions of serious illness for which specialty palliative care is recommended. Despite this, specialty palliative care is much more available in acute care hospitals of at least 50 beds than LTACHs of similar size (75% vs 39%). Acute care hospitals with less than 50 beds had similarly limited availability compared to LTACHs of similar size (36% vs 33%), but these hospitals do not care for as many patients with complex and prolonged illness as LTACHs.
Establishing and maintaining a palliative care program is not without its challenges. One potential barrier is scarcity of expertise. However, over 40% of LTACHs without palliative care resided in regions with among the highest palliative care physician capacity in the country (Figure 1). These LTACHs may have greater opportunity to employ or contract with a palliative care physician to establish and direct a program. However, some HRRs are large and palliative care physicians may be unable to provide in-person palliative care due to travel distance. Directly employing or contracting with a palliative care physician will be more challenging in regions with more limited palliative care physician capacity. Additionally, palliative care programs require other interdisciplinary team members such as nurses and social workers for which expertise may also be scarce. Thus, creative models of delivering palliative care in LTACHs may be required. For example, social workers, nurses, or physicians can be trained to deliver primary palliative care. Primary palliative care has been defined as “palliative care that is delivered by health care professionals who are not palliative care specialists, such as primary care clinicians; physicians who are disease-oriented specialists (such as oncologists and cardiologists); and nurses, social workers, pharmacists, chaplains, and others who care for this population but are not certified in palliative care.” Additionally, given the prolonged length of stays, LTACHs may only need palliative care staffing once or twice per week. Moreover, during the COVID-19 pandemic, there was a significant rise in telemedicine, including for palliative care, which suggests the potential for tele-palliative care models in LTACHs. Given that palliative care may shorten hospitalizations, another potential barrier is policies that tie reimbursement to LOS. LTACHs must maintain an average LOS of over 25 days. Reimbursement for patients with shorter-than-average LOS are subject to a short-stay-
outlier (SSO) adjustment which is a considerably lower payment than for patients whose LOS exceeds the SSO threshold.\(^{28}\) Omitting patients who opt for hospice care from LOS requirement under §412.23(e)(2) and fully reimbursing LTACHs for patients who desire premature discharge for hospice care even if their LOS is less than the SSO threshold could align incentives, promote patient and caregiver preferences, and encourage development of palliative care in LTACHs without concern for loss of revenue.\(^{29,30}\) Conversely, once the SSO threshold has been reached, extending the stay only increases costs for facilities since LTACHs are reimbursed a bundled payment by Medicare.\(^{28}\) Thus, implementing palliative care may significantly reduce costs for LTACHs if, after a trial of continued intensive life-prolonging and curative care, patients and caregivers decide to change their goals and pursue comfort focused care.

This study has certain limitations. First, we used prevalence of palliative care programs and palliative care staffing to estimate availability of specialty palliative care, but palliative care could have been provided through primary palliative care, which we would not have captured. Further research is needed to better understand the burden of unmet palliative care needs in this population, and how it may differ among LTACHs. Second, we relied on self-reported data, which we anticipate would overestimate the true prevalence of palliative care programs in LTACHs. Third, the national data did not have detailed information regarding the staffing composition of palliative care programs. However, in our analysis of 24 California LTACHs, zero California LTACHs self-reported employing a single palliative care physician. Finally, we report data from 2016, so palliative care availability may have changed.

**Conclusions and Implications**

Despite caring for patients with serious illnesses with poor prognoses, only a minority of LTACHs in the US have a palliative care program. Over 40% of LTACHs without a palliative
care program reside in regions with among the highest palliative care physician capacity in the
country, which suggests the availability of local expertise to develop or staff a program. Training
staff to provide primary palliative care and tele-palliative care models could also address
potential shortage of palliative care expertise in LTACHs. Ensuring the availability of these
services has the potential to improve LTACH patient and caregiver satisfaction, quality of life,
and end-of-life experiences, while decreasing burdensome care.
REFERENCES


2. Long-Term Care Hospital PPS | CMS. https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/LongTermCareHospitalPPS. Accessed September 22, 2020.


29. Kim YS, Kleerup EC, Ganz PA, et al. Medicare Payment Policy Creates Incentives For Long-Term Care Hospitals To Time Discharges For Maximum Reimbursement. Health Aff (Millwood) 2015;34:907-915.

FIGURE LEGEND

Figure 1. Palliative Care Physician Capacity for the 85 Hospital Referral Regions with at least 1 LTACH that Did Not Report Having a Palliative Care Program.

Deciles are defined according to palliative care physician capacity across all 306 HRRs in the United States, in order to provide a national benchmark of palliative care physician capacity for the 85 HRRs containing at least 1 LTACH without a palliative care program. HRRs shaded in dark gray represent HRRs that did not include an LTACH without a palliative care program.
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Has a PC Program (n=73)</th>
<th>No PC Program (n=132)</th>
<th>p-value</th>
<th>Non-respondents (n=200)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For-profit, investor-owned</td>
<td>33 (45.2%)</td>
<td>105 (79.5%)</td>
<td>&lt;0.001</td>
<td>173 (86.5%)</td>
</tr>
<tr>
<td>Not-for-profit</td>
<td>34 (46.6%)</td>
<td>25 (18.9%)</td>
<td></td>
<td>21 (10.5%)</td>
</tr>
<tr>
<td>Government, nonfederal</td>
<td>6 (8.2%)</td>
<td>2 (1.5%)</td>
<td></td>
<td>6 (3.0%)</td>
</tr>
<tr>
<td>Part of a multi-hospital system</td>
<td>58 (79.5%)</td>
<td>117 (88.6%)</td>
<td>0.08</td>
<td>29 (14.5%)</td>
</tr>
<tr>
<td>Bed size</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-49 beds</td>
<td>38 (52.1%)</td>
<td>78 (59.1%)</td>
<td></td>
<td>105 (52.5%)</td>
</tr>
<tr>
<td>50-99 beds</td>
<td>22 (30.1%)</td>
<td>47 (35.6%)</td>
<td></td>
<td>64 (32.0%)</td>
</tr>
<tr>
<td>≥100 beds</td>
<td>13 (17.8%)</td>
<td>7 (5.3%)</td>
<td></td>
<td>31 (15.5%)</td>
</tr>
<tr>
<td>Total admissions, median (IQR)</td>
<td>363 (262-582)</td>
<td>383 (305-549)</td>
<td>0.79</td>
<td>550 (369-922)</td>
</tr>
<tr>
<td>Total Inpatient days, median (IQR)</td>
<td>10,667 (6,958-17,297)</td>
<td>10,500 (8,172-14,171)</td>
<td>0.91</td>
<td>9,142 (6,184-16,256)</td>
</tr>
<tr>
<td>Metropolitan location</td>
<td>69 (94.5%)</td>
<td>120 (90.9%)</td>
<td>0.36</td>
<td>194 (97.0%)</td>
</tr>
<tr>
<td>Region</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>9 (12.3%)</td>
<td>8 (6.1%)</td>
<td></td>
<td>24 (12.0%)</td>
</tr>
<tr>
<td>Midwest</td>
<td>8 (11.0%)</td>
<td>25 (18.9%)</td>
<td></td>
<td>59 (29.5%)</td>
</tr>
<tr>
<td>South</td>
<td>47 (64.4%)</td>
<td>93 (70.5%)</td>
<td></td>
<td>77 (38.5%)</td>
</tr>
<tr>
<td>West</td>
<td>9 (12.3%)</td>
<td>6 (4.6%)</td>
<td></td>
<td>40 (20.0%)</td>
</tr>
<tr>
<td>Location</td>
<td></td>
<td></td>
<td>0.47</td>
<td></td>
</tr>
<tr>
<td>Freestanding</td>
<td>42 (57.5%)</td>
<td>69 (52.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital-within-Hospital</td>
<td>31 (42.5%)</td>
<td>63 (47.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Programs/services provided by hospital</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospice program</td>
<td>6 (8.2%)</td>
<td>0</td>
<td>0.001</td>
<td>-</td>
</tr>
<tr>
<td>Chaplaincy</td>
<td>38 (52.1%)</td>
<td>30 (22.7%)</td>
<td>&lt;0.001</td>
<td>-</td>
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<tr>
<td>Geriatric services</td>
<td>9 (12.3%)</td>
<td>10 (7.6%)</td>
<td>0.26</td>
<td>-</td>
</tr>
<tr>
<td>Source of palliative care program</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owned/provided by hospital</td>
<td>35 (48.0%)</td>
<td>0</td>
<td>n/a</td>
<td>-</td>
</tr>
<tr>
<td>Provided by the health system</td>
<td>21 (28.8%)</td>
<td>0</td>
<td>n/a</td>
<td>-</td>
</tr>
<tr>
<td>Contract/joint venture with outside entity</td>
<td>17 (23.3%)</td>
<td>0</td>
<td>n/a</td>
<td>-</td>
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</table>