

# End-of-Life Care in Nursing Homes: From Care Processes to Quality

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## Abstract

**Background/Objective:** Nursing homes (NHs) are an important setting for the provision of palliative and end-of-life (EOL) care. Excessive reliance on hospitalizations at EOL and infrequent enrollment in hospice are key quality concerns in this setting. We examined the association between communication—among NH providers and between providers and residents/family members—and two EOL quality measures (QMs): in-hospital deaths and hospice use.

**Design and Methods:** We developed two measures of communication by using a survey tool implemented in a random sample of U.S. NHs in 2011–12. Using secondary data (Minimum Data Set, Medicare, and hospice claims), we developed two risk-adjusted quality metrics for in-hospital death and hospice use. In the 1201 NHs, which completed the survey, we identified 54,526 residents, age 65+, who died in 2011. Psychometric assessment of the two communication measures included principal factor and internal consistency reliability analyses. Random-effect logistic and weighted least-square regression models were estimated to develop facility-level risk-adjusted QMs, and to assess the effect of communication measures on the quality metrics.

**Results:** Better communication with residents/family members was statistically significantly ( $p=0.015$ ) associated with fewer in-hospital deaths. However, better communication among providers was significantly ( $p=0.006$ ) associated with lower use of hospice.

**Conclusions:** Investing in NHs to improve communication between providers and residents/family may lead to fewer in-hospital deaths. Improved communication between providers appears to reduce, rather than increase, NH-to-hospice referrals. The actual impact of improved provider communication on residents' EOL care quality needs to be better understood.

## Introduction

IN THE UNITED STATES, close to 30% of all deaths occur in nursing homes (NHs).<sup>1</sup> Although the importance of providing high-quality end-of-life (EOL) care in this setting has never been clearer,<sup>2</sup> evidence suggests that significant quality problems remain. One area of concern is excessive reliance on hospitalizations at EOL,<sup>3–7</sup> and the increase in the proportion of residents who die in hospitals each year.<sup>8</sup> Such transitions appear to be of limited clinical benefit to residents, are often inconsistent with a goal of comfort care and with treatment preferences, and carry significant adverse risks and substantial costs. In fact, site of death has been proposed as a quality measure (QM) for EOL care, reflecting the evidence that people prefer to die in their homes, avoiding in-hospital deaths when appropriate.<sup>1,9,10</sup>

Another area of concern in NH care is that transitions to hospice occur less frequently than many consider appropriate, even though residents receiving hospice have better pain management and their families' satisfaction with care is higher.<sup>11,12</sup> Although the prevalence of hospice use in NHs has increased significantly in the past 10 years,<sup>13</sup> the overall rates of hospice use remain relatively low. Most hospice enrollees receive such care very late in their illness,<sup>14</sup> and substantial variations in use across facilities and states persist. Motivated by this evidence, hospice enrollment has also been proposed as an NH EOL QM.<sup>15</sup>

To date, most research examining variations in EOL hospitalizations and hospice have focused on NH structural characteristics, location, and market factors.<sup>7,13,16</sup> A few studies have suggested that interpersonal care processes, such as communication and coordination of care, among providers

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and/or between providers and residents/family caregivers, may also be important in explaining these variations.<sup>17,18</sup> Studies have demonstrated that better communication among certified nurse assistants (CNAs) was significantly associated with better staff ability to assess residents and deliver EOL care, and that hospice utilization may be associated with facility-level practices.<sup>19,20</sup> Although research on NH care quality has demonstrated that better communication among providers and better work processes, in general, were associated with improved resident outcomes and other quality metrics,<sup>21–23</sup> there has been little, if any, research focusing specifically on EOL care quality.

Motivated by this lack of research evidence, the objective of this study was to examine the association between two interpersonal care process domains of communication—communication among NH providers and communication between providers and residents/families—and two QMs: in-hospital deaths and hospice use. Compared with structural attributes, modifications of interpersonal care processes may be more mutable, thus providing NH administrators with important opportunities for improvements that might also positively impact EOL quality.<sup>24</sup>

## Methods

### Data and study sample

Primary data, collected through a national NH survey conducted in 2011–12, were used to examine EOL care processes. Eligible facilities were certified by Medicare and/or Medicaid, had at least 50 beds, and were not hospital based. The surveys were addressed to Directors of Nursing (DON). Prior literature suggested that DONs are best positioned to provide the overall assessment with regard to EOL care in their facilities.<sup>18,25</sup> We identified a random sample of 6700 NHs by using the Nursing Home Compare (NHC) website.

Secondary data (CY2011) measured EOL quality of care provided to residents and facility characteristics. We employed the following: the Minimum Data Set (MDS 3.0); Medicare beneficiary file; Medicare Provider and Analysis Review (MedPAR); and hospice claims. The Medicare beneficiary file and the MDS were used to identify NH decedents. The MDS is part of a federal mandate for conducting admission and periodic follow-up clinical assessments of the residents. It contains information on sociodemographics, physical and mental health status, diagnoses, and treatments. Prior studies have demonstrated the reliability and validity of the MDS assessment elements.<sup>26</sup> We linked the MDS to hospice and hospital claims to identify hospice enrollment and hospital admissions. Facility-level characteristics were obtained from the NHC, and we employed the Rural-Urban Commuting Area Codes (RUCA) website to identify rural-urban locations based on zip codes.

We received 1201 completed surveys (18% response rate). In these NHs, we identified 54,526 residents who died in 2011. Decedents younger than age 65 and those in coma at their last MDS assessment were excluded ( $n = 2450$ ). For in-hospital death analysis, we also excluded Medicare managed care enrollees, because their hospitalizations are not accurately reflected in claims ( $n = 10,490$ ); this exclusion was not applied when hospice was evaluated. For in-hospital death,

the analytical sample was 41,586 (76% of total);, whereas for hospice, it was 52,076 (96% of total).

The study protocol was reviewed and approved by the Institutional Review Board.

### Study analyses and definitions

**Quality-of-care measures: Dependent variables.** The two QMs, in-hospital death and hospice enrollment, were defined by following Mukamel et al.<sup>15,27</sup> Place of death was defined as occurring in either a hospital (= 1) or an NH (= 0). If hospice services were used within 100 days of death, hospice enrollment was defined as yes (= 1); otherwise, it was defined as no (= 0).

**Individual-level risk factors.** A separate set of risk-adjusting covariates was employed for each QM. All risk factors were based on the last available MDS 3.0 resident assessment. Demographic variables included age, gender, race (white vs. other), and marital status (married vs. other). Functional status was assessed by using the MDS Long Form to determine the residents' ability to perform 7 activities of daily living (ADLs). For each ADL, response was coded from 0 (total independence) to 4 (total dependence). The ADL score was a continuous variable ranging from 0 to 28. Cognitive impairment was assessed by using the RUG-IV Cognitive Performance Scale (CPS) developed by the Centers for Medicare and Medicaid Services ([www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/NursingHomeQualityInits/MDS30RAIManual.html](http://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/NursingHomeQualityInits/MDS30RAIManual.html)). Other risk factors included number of cardiovascular diseases (count) and presence of the following conditions (binary): asthma; COPD/chronic lung disease; heart failure; cancer; tuberculosis; pressure ulcer stage 3–4; hip fracture; life expectancy less than six months; weight loss; feeding tube; dialysis; chemotherapy; radiation; oxygen therapy; suctioning; tracheostomy care; ventilator/respirator; and long-term versus post-acute status. Residents who were in an NH for more than 90 days, or whose stay was not reimbursed by Medicare, were defined as long-term residents.

**Care processes: Key variables of interest.** To examine EOL care processes employed in NHs, we used a modified version of a survey instrument previously developed and tested in New York State.<sup>18</sup> The modified instrument included two domains of communication—among providers and with residents and their family members (Appendix Table 1). Each domain consists of eight Likert-scale items. A numerical score assigned to each item ranges from 1 (strongly disagree) to 5 (strongly agree). For each domain, an average score of all items was calculated as the facility-level score; a higher score represented a more positive appraisal of communication. The complete survey tool is available on request.

**Other covariates.** Facility characteristics that may influence the outcomes of interest were included. From the survey, a dichotomous variable was constructed to measure whether an NH had a full-time medical director. If there was a full-time medical director, two additional variables were constructed to indicate whether the director was a board-certified geriatrician, and rounded in the facility. Palliative care resources were measured with two dichotomous items:

report of in-house palliative care team and contract for palliative care services. Turnover for CNAs, licensed practical nurses (LPNs), and registered nurses (RNs) was reported in 10% increments. NHs were dichotomized based on profit status, chain affiliation, and rural-urban location. We also included variables for total nurse staffing (hours/resident/day) and the ratio of skilled (RNs+LPNs) to all nursing staff.

### Statistical analysis

**Communication domains: Psychometric assessment.** Pearson correlations between the communication domains were calculated to examine conceptual independence, and between items to assess convergent-divergent validity. Reliability was examined by measuring the internal consistency of items within each domain using standardized Cronbach's alphas. Principal factor analysis tested whether items in each domain represented a single concept.

**Facility-level QMs.** We fit logistic regression models for each QM by using risk factors employed in the development of the prototype QMs.<sup>15</sup> Models were estimated at the individual resident level, with random NH intercepts to account for individuals clustering by facility. C statistic was used to measure the models' goodness of fit. For each resident, these models predicted the probability of each outcome accounting for individual risk factors. For each facility, the expected outcome rates were calculated as the average of the predicted probabilities for all decedent facility residents.

Facility-level QMs for in-hospital death and hospice were then defined as the difference between the observed facility

rate and the expected, risk-adjusted rate. Because in-hospital death is an undesirable outcome for NH residents, QM values greater than 0 (i.e., exceeding national average) are potential indicators of worse quality. However, because risk-adjusted hospice use is considered a desirable outcome, values greater than 0 for this QM potentially indicate better quality.

**Associations between EOL care processes and QMs.** For each QM, we fit two separate weighted least-square regression models, with each including one communication domain and controlling for facility characteristics. We estimated weighted models to correct for the heteroskedasticity due to the different sample size in each facility. Facilities with missing values for the dependent variables, key independent variables, or facility characteristics based on the NHC were excluded from the analysis. To deal with missing values of other survey variables, we used multiple imputations by chained equations. After each regression, Cook's distance was used to identify statistical outliers. After the outliers were excluded from the model, we repeated the multiple imputations and regression analysis until no outliers were detected. The presented final models contain no outliers.

### Results

With regard to the two outcome measures, the responding NHs were statistically, although not clinically, different from all facilities in the national random sample (22.03% vs. 23.75% for in-hospital deaths,  $p < 0.001$ ; 44.50% vs. 45.15% for hospice use,  $p = 0.006$ ) (Table 1). The responding facilities also differed with regard to profit status (61.96% vs.

TABLE 1. NURSING HOME CHARACTERISTICS: A COMPARISON OF FACILITIES IN THE ANALYTICAL SAMPLE TO ALL IN RANDOM SAMPLES

	Survey participating nursing homes (n=1201), mean (SD)/%	All random sample nursing homes (n=6700), mean (SD)/%	p
Outcome measures			
In-hospital death	22.03	23.75	<0.001
Hospice use	44.50	45.15	0.006
Facility characteristics			
Ownership—for profit	61.96	69.22	<0.001
Chain membership	51.64	54.69	0.027
Number of health deficiency citations	5.38 (4.97)	5.91 (4.97)	0.0001
Number of beds	124 (60)	107 (62)	<0.001
Occupancy rate	0.85 (0.12)	0.82 (0.15)	<0.001
Rural location	30.11	27.92	0.064
Total nurse staffing per resident day	4.01 (0.78)	3.91 (0.76)	<0.001
Skill mix (RN+LNP hours/total nursing hours per resident day)	0.38 (0.08)	0.38 (0.08)	0.92
Based on survey items			
Full-time medical director	81.66		
Board-certified geriatrician	36.11		
Regularly rounds in facility	75.81		
Palliative care team in facility	30.95		
Palliative care team on contract	69.19		
CNA turnover			
<15%	27.60		
15%–24%	24.22		
≥25%	48.18		
LPN turnover (≥15%)	36.79		
RN turnover (≥15%)	24.42		

CNA, certified nursing aid; LPN, licensed practical nurse; RN, registered nurse; SD, standard deviation.

69.22%;  $p < 0.001$ ), chain membership (51.64% vs. 54.69%;  $p = 0.027$ ), number of deficiency citations (5.38 vs. 5.91;  $p < 0.0001$ ), bed size (124 vs. 107;  $p < 0.001$ ), occupancy rates (85.0% vs. 82.0%;  $p < 0.001$ ), and total nurse staffing hours per resident per day (0.38 vs. 0.38;  $p < 0.001$ ). They did not differ with regard to rural-urban location ( $p = 0.064$ ) and nurse staffing skill mix ( $p = 0.92$ ).

**Facility-level QMs**

Individual-level coefficient estimates used in developing facility QMs are presented in Table 2. For each variable, means and standard deviations (SD) are also presented. The goodness of fit was good in both the in-hospital ( $C = 0.76$ ) and hospice ( $C = 0.81$ ) models.

**EOL care processes: Communication**

The mean facility scores for communication among providers and with residents/family were 3.77 and 2.67, respectively, ranging from 1 (worst) to 5 (best) (Table 3). As suggested by their respective SD of 0.56 and 0.65, there was considerable variation across facilities. Principal factor analysis was done to confirm dimensionality in the relationship between items in each domain. Confirmed by factor loadings and eigenvalues, items in each domain loaded well on a single factor. Cronbach's alphas of 0.75 and 0.72 confirm good-to-high internal consistency reliability of the two scales, and acceptable correlations with all other items.

**Association between EOL care processes and QMs**

**In-hospital death.** Communication among providers was not a statistically significant predictor in explaining facility-level variations for this QM. However, several facility characteristics were statistically significant (Table 4). Facilities reporting palliative care teams ( $p = 0.021$ ), higher total nurse staffing ( $p = 0.005$ ), and those with NH chain membership ( $p = 0.006$ ) were more likely to perform better (value  $< 0$ ) on this QM. For-profit facilities and those reporting higher LPN turnover were significantly less likely to do well in this domain.

In the second model for this QM, better (higher score) communication with residents/family members was statistically significantly associated ( $p = 0.015$ ) with better performance, that is, fewer in-hospital deaths. The association between this QM and other covariates was similar to the findings on inter-provider communication, with regard to both the effect size and statistical significance of predictors; chain NHs and those with higher staffing were more likely to perform significantly better (value  $< 0$ ), whereas higher LPN turnover and for-profit status were significant predictors of worse QM.

**Hospice enrollment.** Communication with residents/families was not a significant predictor for hospice use. However, better communication among providers was

TABLE 2. RESIDENT CHARACTERISTICS AND RESULTS FROM RISK ADJUSTMENT MODELS PREDICTING IN-HOSPITAL DEATHS AND HOSPICE

Resident characteristics	Mean (SD)/%	Risk adjustment models: Coefficients (95% confidence interval)	
		In-hospital deaths	Hospice
Male	37.38	-0.03 (-0.10 to 0.03)	-0.12 (-0.18 to -0.05)**
Age	85.19 (8.02)	-0.03 (-0.03 to -0.02)**	0.00 (0.00 to 0.00)
White	89.29		0.18 (0.08 to 0.28)**
Married	27.92		0.04 (-0.03 to 0.11)
Activities of daily living limitations	16.96 (3.52)		0.01 (0.00 to 0.01)
Cognitive impairment	33.31	-0.75 (-0.83 to -0.68)**	0.22 (0.15 to 0.28)**
Heart failure	31.25		-0.02 (-0.09 to 0.06)
Number of cardiovascular diseases	2.09 (1.35)	0.09 (0.06 to 0.11)**	-0.04 (-0.07 to -0.01)**
Asthma, COPD, or other chronic lung diseases	26.93	0.09 (0.02 to 0.16)*	-0.06 (-0.12 to 0.01)
Cancer	15.49		0.49 (0.41 to 0.57)**
Pressure ulcer	16.85	-0.15 (-0.24 to -0.06)**	
Pressure ulcer, stage 3 or 4	5.44		-0.05 (-0.18 to 0.07)
Tuberculosis	0.03	0.06 (-1.67 to 1.79)	
Hip fracture	3.99	-0.05 (-0.21 to 0.12)	-0.16 (-0.30 to -0.01)*
Life expectancy of less than six months	14.59		2.68 (2.57 to 2.79)**
Weight loss	16.12		0.42 (0.35 to 0.50)**
Chemotherapy	0.64		-0.42 (-0.75 to -0.08)*
Radiation	0.40	0.05 (-0.38 to 0.49)	-0.19 (-0.58 to 0.20)
Oxygen therapy	37.63		0.05 (-0.01 to 0.12)
Suctioning	1.56		-0.46 (-0.82 to -0.10)*
Tracheostomy care	0.90	-0.30 (-0.76 to 0.15)	-0.54 (-1.06 to -0.03)
Vent/respirator	0.35	0.84 (0.16 to 1.53)*	-0.61 (-1.50 to 0.28)
Feeding tube	6.42	0.31 (0.17 to 0.44)**	
Dialysis	2.25	0.41 (0.22 to 0.60)	
Long-term care	45.01	-0.34 (-0.41 to -0.27)**	0.06 (0.00 to 0.12)
C-statistics		0.76	0.81

\* $p < 0.05$ ; \*\* $p < 0.01$ .

COPD, chronic obstructive pulmonary disease.

TABLE 3. PSYCHOMETRIC ANALYSIS ON END-OF-LIFE CARE PROCESS MEASURES

	<i>Communication/ coordination among providers</i>	<i>Communication with residents and families</i>
No. of items per domain	8	8
Mean (SD)	3.77 (0.56)	2.67 (0.65)
Factor analysis		
Factor loadings (range)	0.35–0.69	0.44–0.57
Eigenvalue	2.4	1.95
Internal consistency		
reliability		
Cronbach's alpha	0.75	0.72
Item-total correlation (range)	0.51–0.71	0.52–0.62

significantly ( $p=0.006$ ) associated with lower use of hospice. Other facility-level predictors of hospice use were similar, in both effect size and statistical significance, in both communication models. NHs with a full-time and board-certified geriatrician as a medical director reported higher hospice use. Similarly, facilities with on-site palliative care teams or those reporting palliative care team contracts showed higher hospice use, with borderline statistical significance ( $p=0.070$ ) when communication with residents/families was the key independent factor. However, in NHs where the medical director regularly rounds, risk-adjusted hospice use was significantly less frequent. We also found facilities located in rural areas to report less hospice ( $p<0.000$ ), with all other characteristics being equal. Facilities with higher RN turnover, for-profit status, and chain membership were more likely to have higher hospice use.

## Discussion

Our findings show that communication is a statistically significant factor in explaining variations in risk-adjusted measures of EOL transitions in NHs.

Facilities with better communication with residents and their families appear to have had significantly lower scores for in-hospital death QM, suggesting fewer residents being transferred to hospital before death. Because decisions to hospitalize are largely within a facility's administrative control, and reflect established practice patterns,<sup>28</sup> chain-affiliated NHs may be better able to leverage both their shared resources and administrative practices to reduce EOL transitions. The negative association of in-hospital death with higher nursing staffing is also consistent, with prior studies demonstrating better quality and fewer EOL hospitalizations for higher-staffed NHs.<sup>7,29</sup> It has also been shown that even small increases in the time that nursing staff spend with residents significantly improve communication with residents and families at the EOL.<sup>18</sup>

Starting in 2016, Medicare has just begun paying physicians and other health professional for having advance care planning discussions with patients. This may provide NHs with an incentive to hold conversations with residents and families about their EOL preferences, discussions that have been rather infrequent. However, at the same time, a recent decision by CMS not to require a uniform collection of treatment preferences in the MDS (3.0) assessments suggests that communication between nursing staff and residents/families may deteriorate rather than improve.

We did not find a significant association between this QM and the other measure of communication, that is, among providers. When nursing staff lack sufficient clinical skills and/or resources to manage acute care conditions in the facility, good communication may not be sufficient for

TABLE 4. ASSOCIATION BETWEEN END-OF-LIFE CARE PROCESSES AND OUTCOMES

<i>Independent variable of interest</i>	<i>QM = In-hospital deaths</i>				<i>QM = Hospice use</i>			
	<i>Communication/ coordination among providers</i>		<i>Communication with residents and families</i>		<i>Communication/ coordination among providers</i>		<i>Communication with residents and families</i>	
	<i>Coefficient</i>	<i>p</i>	<i>Coefficient</i>	<i>p</i>	<i>Coefficient</i>	<i>p</i>	<i>Coefficient</i>	<i>p</i>
	0.001	0.747	-0.010	0.015	-0.019	0.006	-0.003	0.697
Other covariates								
Full-time medical director	0.009	0.252	0.007	0.418	0.060	0.000	0.069	0.000
Board-certified geriatrician	-0.004	0.522	0.001	0.930	0.022	0.020	0.019	0.058
Regularly rounds in facility	0.002	0.847	0.009	0.340	-0.049	0.003	-0.079	0.000
Palliative care team in facility	-0.015	0.021	-0.008	0.177	0.022	0.023	0.018	0.070
Palliative care team on contract	0.002	0.801	0.009	0.162	0.049	0.000	0.035	0.001
CNA turnover	-0.003	0.418	-0.003	0.402	0.006	0.349	0.002	0.756
LPN turnover	0.018	0.013	0.018	0.015	-0.015	0.187	-0.007	0.575
RN turnover	0.001	0.909	0.004	0.619	0.032	0.004	0.039	0.001
For-profit	0.031	0.000	0.032	0.000	0.030	0.002	0.026	0.008
Chain	-0.016	0.006	-0.013	0.023	0.040	0.000	0.044	0.000
Rural location	0.000	0.969	-0.001	0.885	-0.076	0.000	-0.067	0.000
Total nurse staffing per resident day	-0.010	0.005	-0.006	0.049	0.001	0.836	-0.001	0.830
Skill mix (RN+LPN hours/total nursing hours per resident day)	-0.039	0.261	-0.041	0.221	-0.021	0.701	-0.123	0.029

QM=quality measure.

reducing hospital transfers. However, the presence of palliative care teams in a facility does seem to significantly reduce the likelihood of EOL hospital transfers, as demonstrated by our findings.

Findings with regard to communication and its association with hospice use were quite different. We found no statistically significant association between communication with residents/families and hospice use. This is perhaps not surprising, as hospice requires a physician referral and, therefore, it is more likely to be motivated by staff than requested by residents or family members. In fact, research has demonstrated that NH staff's ability to recognize terminal decline correctly and in a timely fashion influences both a decision to refer to hospice and the timing of such referral.<sup>30</sup> Thus, communication among providers, rather than with residents/families, may more effectively drive hospice use. *A priori*, however, the direction of the association is not clear. Although conventional wisdom may suggest that better communication among providers about residents' health status and care needs leads to more hospice use, our findings suggest quite the opposite. Hospice-NH relations have been at times difficult and contentious,<sup>31</sup> due to conflicting payment incentives,<sup>32</sup> unclear benefit coverage requirements,<sup>33</sup> and staff attitudes.<sup>34–36</sup> It may, therefore, be reasonable that when NH staff members communicate more clearly and accurately among themselves about their residents' conditions, they also feel more comfortable and empowered in providing palliative and EOL care to their residents.

Although prior research has demonstrated that when death was expected, facility staff were able to provide as good EOL care as hospice staff,<sup>37</sup> we find the relationship between communication among providers and hospice to be complex and influenced by a number of factors. For example, all else being equal, facilities with a full-time medical director, contractual arrangements with palliative care teams, for-profit and chain-affiliated, appear more likely to “outsource” palliative/hospice care; whereas NHs in which medical directors provide regular and ongoing care to the residents, and those located in rural areas, are more likely to provide these services in-house. The extent to which the provision of palliative/hospice care by facility rather than hospice staff may be preferable or result in better quality is not clear.

Several limitations should be noted. First, the survey tool used for measuring EOL communication relied on one respondent in each facility, with 89% being the DONs. Although having more respondents per facility may be desirable, the cost of conducting such a survey would have been prohibitive. Prior literature suggests that DONs are best suited to provide accurate appraisal of their NHs EOL care processes; their assessments are congruent with those of the facility-based MDs, and they align well with other highly correlated metrics obtained from separate sources.<sup>18,37–39</sup> Second, the survey response rate was modest and the participating NHs were somewhat different, compared with the national random sample of facilities. However, because the purpose of this study was to explore whether a relationship exists between communication and the two outcomes of interest, not to describe patterns of communication in U.S. NHs, the low response rate is not a significant limitation for this study.

In conclusion, when good communication occurs in NHs, between providers and with residents/family members, many

“burdensome transitions” may be averted. However, relying on goodwill and the existing skills of individual providers is not likely to bring about better palliative/EOL care processes in NHs. To raise the bar for palliative care in this setting, financial investment in palliative care training for NH staff, and/or other incentives, may be necessary. Such investment may more than pay for itself, not only in better care quality but also in reducing the unnecessary transitions to more expensive care settings.

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### Author Disclosure Statement

No competing financial interests exist.

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(Appendix follows →)

APPENDIX TABLE 1. CARE PROCESS DOMAINS AND ASSOCIATED ITEMS

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*Domain: communication and coordination between providers—measures the extent to which communication among clinical staff, and along the chain of command is characterized by promptness and accuracy.*

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When a prescribing clinician is informed about a resident being in pain, a new order is typically written within two hours or less.  
 Nursing staff regularly discuss issues regarding management of pain and other symptoms of residents during daily reports/meetings.  
 Nursing assistants often inaccurately report residents' symptoms to their supervisors.  
 There are often delays in relaying information about residents' care needs between providers.  
 Our physicians, nurses, and nursing assistants share similar goals in caring for end-of-life residents.  
 When problems with resident care arise, nursing staff generally work well together toward problem solving.  
 When a resident's condition worsens, the head nurse/supervisor gets information quickly.  
 Nursing assistants consistently report pain and other distressing symptoms of residents to the appropriate clinician.

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*Domain: communication with residents and families—measures the extent to which communication about prognosis and the risks/benefits of treatments is clear, accurate, and available.*

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Nursing staff are often not clear about families' treatment priorities and preferences for their loved ones.  
 Families are reluctant to accept hospice when we suggest it.  
 Our physicians are reluctant to discuss end-of-life issues with residents/families.  
 Families are usually reluctant to discuss end-of-life issues with our staff physicians.  
 Nursing staff lack confidence to discuss issues of death and dying with the residents and their family members.  
 Residents/families do not have a good understanding of the risks of CPR.  
 Residents/families understand the risks/benefits of feeding tubes.  
 Our residents/families understand what hospice is.

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