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Quality of End of Life Care in Magnet® and Non-Magnet Hospitals

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Abstract

OBJECTIVE: To examine whether end-of-life care quality is superior in Magnet® hospitals, a recognition designating nursing excellence.

BACKGROUND: Considerable research shows better patient outcomes in hospitals with excellent nurse work environments, but end-of-life care quality has not been studied in Magnet hospitals.

METHODS: An analysis of cross-sectional data was completed using surveys of nurses and hospitals. Multivariate logistic regression models were used to determine the association between Magnet hospitals and measures of end-of-life care quality.

RESULTS: Overall, nurses report poor quality of end-of-life care in US hospitals. In Magnet hospitals, nurses were significantly less likely to give their hospital an unfavorable rating on end-of-life care.

CONCLUSIONS: Hospital Magnet status may signal better quality in end-of-life care. Administrators looking to improve the quality of end-of-life care may consider improving aspects of nursing that distinguish Magnet hospitals.

Despite mounting initiatives to support older adults aging and dying in their homes, many older adults die in hospitals¹ and often spend the last months of life transitioning in and out of acute care settings.² While most chronically ill, older adults prefer remaining in their homes,³ they often find themselves at the end of life in hospitals seeking symptom management and pain relief. Hospitals are not an ideal setting for the provision of end-of-life care, because they are primarily organized as lifesaving institutions, and despite recent growth in palliative and hospice care, the availability of these services is insufficient to meet patient needs.^{4,5} However, regardless of their hospitals' end-of-life resources, patients are cared for by nurses. Nurses' basic training encompasses the concepts of care that are central

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to supporting individuals and families at the end of life, including comfort care, pain and symptom management, therapeutic communication, and care coordination. Indeed, patients at the end of life, as well as their families, require time-intensive nursing care; yet nurses are often inadequately resourced and supported to provide holistic care for dying individuals and their families.

In this study, we hypothesized that the quality of end-of-life care will be better in institutions in which nurses are well supported by their organizational leadership to practice autonomously to the full scope of their license, have sufficient time to spend with patients and their families, and have positive working relationships with physicians. This hypothesis leads us to study end-of-life care quality in hospitals known for enabling professional nursing care, Magnet® hospitals.⁶ Previous research has found that Magnet hospitals, recognized by the American Nurses Credentialing Center® (ANCC), have more favorable conditions for professional nursing practice, including better work environments characterized for their support of professional nursing practice, more engagement of clinical nurses in hospital decision making, better staffing levels, favorable nurse-physician relations, supportive leadership, and higher rates of baccalaureate-educated nurses.⁶ These better aspects of nursing translate into better clinical outcomes for patients who receive care in Magnet hospitals, including lower mortality^{7–9} and higher levels of patient satisfaction.¹⁰

To our knowledge, no studies have empirically examined whether the patient outcomes advantage observed in Magnet hospitals extends to care at the end of life. In this study, we sought to determine whether hospitals' Magnet status serves as a signal of high-quality end-of-life care for patients and their families. Our findings have the potential to inform hospital efforts to improve end-of-life care quality by focusing on the potential of nurses already present at the patient bedside.

Methods

Design and Data

A secondary data analysis was completed using 3 data sources from 2016, linked together using a shared hospital identifier. The 2016 RN4CAST-US survey provided information on nurses' ratings of the quality of end-of-life care in their hospitals and other information about the nurses and their practice settings. The RN4CAST-US survey randomly sampled 30% of nurses in California, Pennsylvania, Florida, and New Jersey using state boards of nursing mailing lists. Details of the survey methods are described else-where.^{11–13} In short, a modified Dillman approach¹⁴ was used to survey nurses. The main survey yielded a 26% response rate, and an intensive nonresponse survey was conducted and showed no significant differences between the main survey respondents and nonrespondents in their ratings of hospital care quality.¹³ The American Hospital Association Annual Survey provided information on hospital characteristics including size, teaching status, and technology status. Publicly available data from ANCC were used to identify whether hospitals in the sample were Magnet recognized. Hospitals were considered Magnet if they had an active Magnet status in 2016 and 2017.

Sample

The analytic sample included 500 acute, nonfederal hospitals, 90 of which were Magnet hospitals and 410 were non-Magnet hospitals. Within the 500 hospitals, 16 219 direct care RNs provided information on end-of-life care quality. On average, there were 32 nurse respondents per hospital, and all hospitals had at least 10 nurse respondents.

Measures

End-of-Life Care Quality—Measures of end-of-life care quality were obtained by asking RNs to rate the quality of care in their institution for patients for “whom death within a year would not be surprising.” End-of-life quality measures included 2 global and 8 individual measures. The 1st global measure is an overall grade (A-F) on the quality of end-of-life care in the nurse’s practice setting, with “A” being an excellent grade and “F” being a failing grade. The 2nd global measure is a rating of the end-of-life care quality on a 10-point Likert scale for the last patient the nurse cared for who died. Consistent with previous work,¹¹ we define poor care quality as 8 or less. Individual quality ratings were evaluated on a 4-point Likert scale and included whether patients near the end of life experienced uncomfortable and unnecessary procedures, if nurses were discouraged from discussing care options with patients, whether nurses and physicians often disagreed about end-of-life care, whether end-of-life care decisions were made as a team, if end-of-life directives were documented and accessible, and if patients died with dignity. The RN4CAST-US survey questions were similar to the Quality of Death and Dying Questionnaire,^{15–17} a commonly used tool to study end-of-life care.

Data Analysis

χ^2 Tests of significance were used to evaluate differences in the quality of end-of-life care among Magnet and non-Magnet hospitals. Descriptive statistics were used to describe nurse and hospital sample characteristics. Logistic regression was used to examine the relationship between hospital Magnet status and the odds of a nurse reporting negatively on various measures of end-of-life care quality. Huber-White sandwich estimators were used to adjust for the clustering of nurses within hospitals. To account for other possible explanations for associations between Magnet hospitals and care quality, we controlled for nurse and hospital characteristics. Nurse characteristics included the nurse’s age, sex, highest level of education, and whether the nurse worked in an intensive care unit. Hospital characteristics included teaching status (nonteaching was categorized as no medical residents or fellows, minor teaching was categorized as a 1:4 trainee-to-bed ratio or smaller, and major teaching was categorized as a ratio >1:4), bed size (100 beds, 101–250 beds, 250 beds), technology status (high technology identified as a hospital that performs open heart surgery and/or organ transplant), and state. Statistical analyses were completed in STATA version 14.2 (StataCorp LLC, College Station, Texas). Institutional review board approval was granted by the University of Pennsylvania.

Results

Almost half of nurses (47.9%) in our study hospitals report an unfavorable grade for the care patients in their hospital receive at the end of life (Table 1). Nurses in Magnet hospitals are

less likely to report an unfavorable quality grade compared with nurses in non-Magnet hospitals (43.8% vs 49.8%, $P < .001$). Across each of the global and individual quality measures, nurses in Magnet hospitals report better (or no different) quality than do nurses in non-Magnet hospitals. For example, some 13.5% of nurses in Magnet hospitals reported that end-of-life care decisions were not made as a team, compared with 17.7% of nurses in non-Magnets ($P < .001$). Nurses in Magnet hospitals were less likely to report end-of-life directives were not clearly documented (13.5%) compared with nurses in non-Magnets (15.8%, $P = .001$); 10.9% of nurses in Magnet hospitals reported patients do not die with dignity, compared with 12.1% of nurses in non-Magnets ($P = .047$).

Table 2 describes the differences in hospital and nurse characteristics among Magnet and non-Magnet hospitals. Magnet hospitals were more likely to be large, high-technology, major teaching hospitals compared with non-Magnet hospitals ($P < .001$). Across Magnet and non-Magnet hospitals, nurses in our sample were similar in terms of age, sex, and whether they worked in an ICU. However, the average percentage of nurses with a BSN was about 13% ($n = 63.2\%$) higher in Magnet hospitals than in non-Magnet hospitals ($n = 50.4\%$; $P < .001$).

While the nurses' overall perception of end-of-life care quality was generally poor across hospitals, nurses in Magnet hospitals report better quality, even after accounting for nurse and hospital characteristics (Table 3). Nurses in Magnet hospitals are 23% less likely to give their hospital a poor overall end-of-life care grade (odds ratio [OR], 0.77; 95% confidence interval [CI], 0.69–0.85) and 16% less likely to give their hospital a grade of 8 or less on end-of-life care quality (OR, 0.84; 95% CI, 0.76–0.93). Nurses in Magnet-designated hospitals were 26% less likely to report that end-of-life decisions were not made as a team (OR, 0.74; 95% CI, 0.65–0.85) and 19% less likely to report that end-of-life directives were not clearly documented or accessible (OR, 0.81; 95% CI, 0.71–0.91). On most other measures of end-of-life care quality, nurses in Magnet hospitals were less likely to give unfavorable grades; however, the differences were not statistically significant.

Discussion

Our findings suggest that Magnet hospitals may provide better end-of-life care as compared with non-Magnet hospitals including being more likely to document patients' end-of-life care directives and making care decisions as a team inclusive of the patient, family members, nurses, physicians, and others. Our findings are consistent with previous work documenting better outcomes among acutely ill patients in Magnet hospitals and extend the evidence about the Magnet outcomes advantage to patients at the end of life. Our findings also point to the need for further improvements in end-of-life care even in hospitals known for good nursing care, as in Magnet-designated hospitals. Indeed, Magnet-designated hospitals collectively should consider setting a priority focus on end-of-life care to point the way for how further improvements in end-of-life care can be achieved.

Patient's care needs at the end of life are nursing intensive and require a high level of direct care to support activities of daily living (eg, toileting, personal hygiene, feeding, grooming), medication management (eg, timely administration of pain medication and breathing

treatments), and empathic communication and support for patients and their families. The role of the nurse continues after death with body preparation, coordination for organ donation, and ongoing bereavement support for the family. Nurses are experts in managing patient expectations, needs, and concerns,¹⁸ which means they are primed to lead in the coordination and planning that end-of-life care requires. The decisions required of patients and families at the end of life often involve ongoing and frequent conversations to ensure patients' values, preferences, and goals are honored. In fact, patients and their families identified communication and excellent care as the top priorities for end-of-life care.¹⁹ When nurses are able to spend more time with patients, families are more likely to report that patient needs were met, that they were appropriately notified before death, and that they received the emotional support they needed following death.²⁰

Other research has found that nurses in Magnet hospitals were less likely to miss nursing care tasks such as feeding, turning, emotional support, hygiene, surveillance, and education.²¹ Indeed, nurses in Magnet-designated hospitals report more favorable work environments and staffing compared with nurses in non-Magnet-designated hospitals.⁶ In previous work, we identified that nurses who work in hospitals with more favorable work environments also report better end-of-life care quality.¹¹ Others have established that Magnet-designated hospitals embody many of the attributes of hospitals with good nurse work environments.⁶

Limitations

This study was cross-sectional in its design, which limits our ability to draw causal inferences. We use nurses' assessments of the quality of end-of-life care in their hospitals rather than objective measures of actual care, although previous research shows that nurses' assessments of quality are highly related to validated patient outcomes including mortality.²² Many hospitals at any given point in time are on the Magnet journey; it is possible that aspiring and soon-to-be Magnet-designated hospitals were included in our comparison group, thus serving to diminish the differences we observed. However, it is the 1st study to demonstrate that nurses in Magnet-designated hospitals report a higher quality of end-of-life care as compared with nurses in non-Magnet-designated hospitals. Additional research is warranted to validate these 1st findings.

Conclusion

In this study, we find that nurses in Magnet-designated hospitals are less likely to give their hospital poor ratings on the quality of end-of-life care, as compared with nurses in non-Magnet-designated hospitals. This article provides yet more evidence that improving nurse work environments in all hospitals holds promise for better end-of-life care for patients. Additionally, hospitals looking to improve the quality of end-of-life care for dying patients should look to the role of bedside nurses in the provision of high-quality care. Every patient in a hospital has a nurse; making sure each nurse is supported to provide excellent nursing care would go a long way to improving quality of hospital care at the end of life.

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Table 1. Comparison of End of Life Quality Ratings Among Nurses in Magnet and Non-Magnet Hospitals

	All Hospitals n = 500	Magnet Hospitals n = 90	Non-Magnet Hospitals n = 410	P
Global quality measures				
Unfavorable end-of-life grade overall (C, D, or F)	47.9	43.8	49.8	<.001
8 of 10 or lower end-of-life quality rating	58.2	56.9	58.7	.054
Individual quality measures				
Patients near the end of life often experience painful or uncomfortable procedures that are not likely to change their outcome	52.5	52.5	52.4	.934
Nurses are discouraged from discussing care options with patients	37.6	37.6	37.7	.944
Nurses and physicians often disagree about end-of-life care	37.5	38.4	37.0	.143
End-of-life care decisions are not made as a team with physicians, nurses, patients, families, and others	16.4	13.5	17.7	<.001
Patients' end-of-life directives are not clearly documented and accessible	15.1	13.5	15.8	.001
Patients do not die with dignity	11.7	10.9	12.1	.047

Data are reported as a percentage of nurses. The minimum number of nurses reporting on the 8 quality measures was at least 9063 in all cases, or approximately 32 nurses per hospital. χ^2 Tests were used to test differences between Magnet and non-Magnet hospitals.

Table 2.**Hospital and Nurse Characteristics in Magnet and Non-Magnet Hospitals**

	All Hospitals (n = 500)	Magnet Hospitals (n = 90)	Non-Magnet Hospitals (n = 410)	P
Hospital characteristics				
Size, no. (%)				
Small (<100 beds)	21 (4.2)	2 (2.2)	19 (4.6)	.302
Medium (100–250 beds)	200 (40.0)	15 (16.7)	185 (45.1)	<.001
Large (>250 beds)	279 (55.8)	73 (81.1)	206 (50.2)	<.001
Technology status, no. (%)				
Low	212 (42.4)	22 (24.4)	190 (46.3)	<.001
High	288 (57.6)	68 (75.6)	220 (53.7)	<.001
Teaching status, no. (%)				
Nonteaching	206 (41.2)	39 (43.3)	167 (40.7)	.65
Minor	239 (47.8)	29 (32.2)	210 (51.2)	.001
Major	55 (11.0)	22 (24.4)	33 (8.1)	<.001
Nurse characteristics				
Age, mean (SD), y	47.4 (3.6)	46.13 (3.6)	47.6 (3.6)	<.001
% Female, mean (SD)	90.3 (6.9)	91.0 (5.8)	90.1 (7.1)	.2971
% of nurses with BSN or higher nursing degree, mean (SD)	52.7 (15.8)	63.2 (12.2)	50.4 (15.6)	<.001
% Working in an ICU, mean (SD)	18.8 (9.6)	20.0 (9.6)	18.6 (9.6)	.2356

χ^2 Tests were used to test for differences in hospital characteristics between Magnet and non-Magnet hospitals. Two tailed *t* tests were used to test for differences in nurse characteristics between Magnet and non-Magnet hospitals.

Table 3.

Associations Between Hospital Magnet Status and End-of-Life Quality

	Model 1 Unadjusted OR (95% CI)	Model 2 Nurse Characteristics OR (95% CI)	Model 3 Hospital Characteristics OR (95% CI)	Model 4 Fully Adjusted OR (95% CI)
Global quality measures				
Unfavorable end-of-life grade overall (C, D or F)	0.79 ^a (0.71–0.86)	0.81 ^a (0.74–0.89)	0.75 ^a (0.68–0.83)	0.77 ^a (0.69–0.85)
Unfavorable end-of-life care quality rating (8 of 10 or lower)	0.92 (0.83–1.02)	0.85 ^b (0.77–0.94)	0.89 ^c (0.80–0.98)	0.84 ^b (0.76–0.93)
Individual quality measures				
Patients near the end of life often experience painful or uncomfortable procedures that are not likely to change their outcome	1.01 (0.91–1.11)	1.00 (0.91–1.11)	0.95 (0.86–1.05)	0.95 (0.86–1.05)
Nurses are discouraged from discussing care options with patients	0.99 (0.89–1.10)	0.99 (0.89–1.09)	0.94 (0.84–1.05)	0.94 (0.83–1.05)
Nurses and physicians often disagree about end-of-life care	1.06 (0.96–1.16)	1.08 (0.98–1.20)	1.00 (0.90–1.11)	1.02 (0.92–1.14)
End-of-life care decisions are not made as a team with physicians, nurses, patients, families, and others	0.74 ^a (0.65–0.83)	0.77 ^a (0.67–0.87)	0.72 ^a (0.63–0.83)	0.74 ^a (0.65–0.85)
Patients' end-of-life directives are not clearly documented and accessible	0.83 ^b (0.74–0.94)	0.83 ^b (0.73–0.94)	0.81 ^b (0.71–0.91)	0.81 ^b (0.71–0.91)
Patients do not die with dignity	0.90 (0.77–1.05)	0.91 (0.78–1.06)	0.84 ^c (0.72–0.99)	0.86 (0.74–1.02)

Model 1: unadjusted, bivariate model. Model 2: adjusts for nurse characteristics (ie, age, sex, education, working in an ICU). Model 3: adjusts for hospital characteristics (ie, teaching status, technology status, bed size, state). Model 4: adjusts for nurse and hospital characteristics.

^a $P < .001$.

^b $P < .01$.

^c $P < .05$.