

# Organization of Nursing and Quality of Care for Veterans at the End of Life

Ann Kutney-Lee, PhD, RN, FAAN  
University of Pennsylvania School of Nursing  
Corporal Michael J. Crescenz VA Medical Center

Caitlin Brennan, PhD, APRN  
NIH Clinical Research Center

Mark Meterko, PhD  
VA Boston Healthcare System

Mary Ersek, PhD, RN, FAAN  
University of Pennsylvania School of Nursing  
Corporal Michael J. Crescenz VA Medical Center

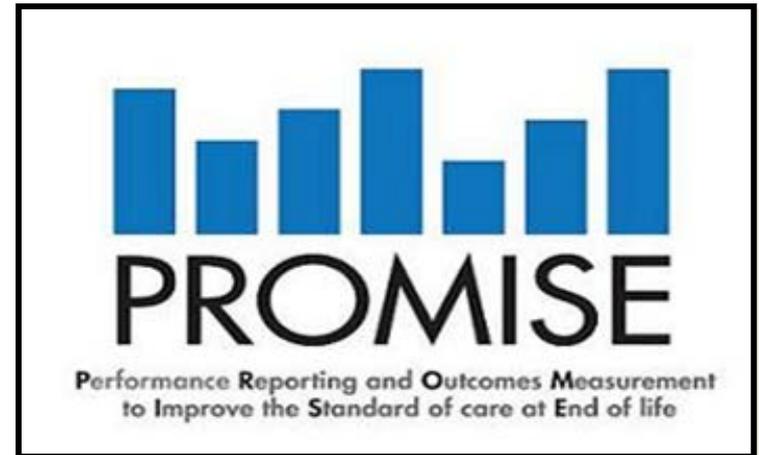


*“Half of a million veterans will be needing end-of-life care each year for the next five years.”*



# The PROMISE Center

Performance  
Reporting and  
Outcomes  
Measurement to  
Improve the  
Standard of Care at  
End-of-Life



# Study Background

- Improving care at the end-of-life is a national priority
- Recent efforts within the Veterans Health Administration (VA) have been successful
- Little is known about organizational structures—particularly related to nursing—that can enhance end-of-life care

# Study Objective

- To explore the relationship between nurse work environments, registered nurse (RN) staffing levels, and family perceptions of care received by Veterans at the end-of-life



# Study Design

- Cross-sectional, observational
- Four linked data sources from FY 2011
  - Bereaved Family Survey (BFS) collected from family members of deceased Veterans (60% response rate)
  - Chart review
  - VA Nursing Outcomes Database (VANOD)
  - VA administrative data for hospital characteristics
- The final sample included 4,908 Veterans from 116 VA acute care facilities nationally

# Bereaved Family Survey (BFS)

- Contains 16 Likert-type items focused on specific aspects of care, and one global item evaluating the overall care received during the last month of life.
- Established validity and reliability
- Administered by phone 4 weeks after an inpatient Veteran death at all VA facilities
- English and Spanish versions
- 60% response rate in FY 2011

The image shows a screenshot of the survey form. At the top left, there is the VA logo and the text "U.S. Department of Veterans Affairs". The title of the survey is "Department of Veterans Affairs Survey for «Vet\_First» «Vet\_Last» «Vet\_Suffix»".

The main text of the survey reads: "Thank you for taking the time to complete this survey. This survey is funded by the Department of Veterans Affairs to find out how well the VA is taking care of its Veterans near the end of their lives. We want to know if we are providing the best possible care to our Veterans and whether there is anything we could be doing better. Your opinions are important to us, so please tell us what you think. Your participation is voluntary and confidential. If you choose not to participate, it will not affect your benefits in any way."

Below this, it says: "If you have any questions about the survey, please don't hesitate to call us at the PROMISE Center on our toll-free number, 1-877-503-5817, and leave a message with your name, number, and reference #«CNUM»«FAC» and we will call you back as soon as possible."

At the bottom left, there is a blue box that says "ESTIMATED TIME TO COMPLETE 10 MINUTES". Below that, there is a small asterisk and a disclaimer: "THE OFFICE OF MANAGEMENT AND BUDGET HAS APPROVED THIS SURVEY UNDER OMB NUMBER 2900-0701 IN ACCORDANCE WITH SECTION 3507 OF THE PAPERWORK REDUCTION ACT OF 1995. WE ESTIMATE THAT IT WILL TAKE ABOUT 10 MINUTES TO ANSWER THESE QUESTIONS. YOUR RESPONSES WILL BE USED TO MEASURE VETERANS' AND THEIR FAMILIES' PERCEPTIONS OF THE HEALTHCARE VA PROVIDES. YOUR PARTICIPATION IS VOLUNTARY AND CONFIDENTIAL. IF YOU CHOOSE NOT TO PARTICIPATE, IT WILL NOT AFFECT YOUR BENEFITS IN ANY WAY."

On the right side of the form, there is a blue circle with the text "FIRST PART". Below that, there is a section titled "HOW TO FILL OUT THE SURVEY" with the following instructions:

- Please choose ONLY one answer per question.
- Please fill in each circle completely.
- Do not fill it like this:  or like this: 
- Do not write comments in the answer choice area. There are two open ended questions on page 4, please save any comments for those questions.

# BFS Outcome Measures

- Primary outcome
  - Overall rating of patient's care was “excellent” (BFS Performance Measure)
- Secondary outcomes
  - 11 items related to process of care, such as:
    - Staff listened to concerns
    - Staff gave medication/treatment that the patient and family wanted
    - Family was alerted when the patient was about to die
    - Staff provided emotional support

# Nursing Measures

- Nurse staffing
  - RN Hours per Patient Day
- Nurse work environment
  - Practice Environment Scale of the Nursing Work Index (PES-NWI)
  - Categorized as better (>75<sup>th</sup> percentile), mixed (25<sup>th</sup>-75<sup>th</sup> percentile) and worse (<25<sup>th</sup> percentile)

# Practice Environment Scale- Nursing Work Index (PES-NWI)



# Analysis

- Descriptive statistics
- Analysis of Variance (ANOVA)
- Unadjusted and adjusted generalized estimating equations (GEEs) accounting for clustering were used to examine associations between nursing and BFS outcomes.
  - Adjusted models accounted for patient sex, age, race/ethnicity, BFS respondent/next of kin, presence /absence of ten medical conditions, days of inpatient hospitalization in last month of life, receipt of palliative care consult, presence of DNR order, hospital complexity score, rural/urban location, and geographic region.

# Characteristics of Patient Sample n=4,908

Patient Characteristic	Number (%)
Male	4808 (98.0%)
Age 60 or older	4340 (88.4%)
Non-Hispanic White	3643 (74.2%)
BFS Respondent: Spouse	2261 (46.1%)
Medical Conditions:	
Kidney disease	2631 (53.6%)
Pneumonia	2158 (44.0%)
Cancer	1488 (30.3%)
Received palliative care consult	2651 (54.0%)

# BFS Outcomes Stratified by Nurse Work Environment

Outcome	No. of Respondents Agreeing (%) (n = 4,908)			
	Overall	Top Quartile	Lower Quartiles	P-value
Overall rating of patient's care was excellent	2355 (48.0%)	651 (51.8%)	1704 (47.7%)	0.01
Providers always listened to concerns	3286 (67.0%)	894 (72.1%)	2392 (67.5%)	0.003
Providers always provided medication and medical treatment that the patient and family wanted	3541 (72.2%)	952 (77.5%)	2589 (74.0%)	0.01
Family was alerted when the patient was about to die	3851 (78.5%)	1032 (83.0%)	2819 (80.2%)	0.03

# Odds Ratios Indicating the Effects of Work Environment and Nurse Staffing on BFS Outcomes (n=4,908)

Outcome	Unadjusted Model OR (95% CI)	Fully Adjusted Model OR (95% CI)
<b>Overall rating of patient's care was excellent</b>		
Nurse Work Environment (Top Quartile)	1.15 (0.98 – 1.34)	<b>1.17 (1.01 – 1.34)*</b>
RN Hours per Patient Day	1.06 (1.02 – 1.10)**	<b>1.04 (1.00 – 1.09)*</b>
<b>Providers always listened to concerns</b>		
Nurse Work Environment (Top Quartile)	1.24 (1.04 – 1.47)*	<b>1.24 (1.07 – 1.44)**</b>
RN Hours per Patient Day	1.00 (.97 – 1.04)	1.02 (0.98 – 1.07)
<b>Providers always provided medication and medical treatment that the patient and family wanted</b>		
Nurse Work Environment (Top Quartile)	1.23 (1.04 – 1.45)*	<b>1.22 (1.03 – 1.45)*</b>
RN Hours per Patient Day	0.98 (0.93 – 1.03)	0.99 (0.94 – 1.05)
<b>Family was alerted when the patient was about to die</b>		
Nurse Work Environment (Top Quartile)	1.17 (0.98 – 1.39)	1.15 (0.97 – 1.35)
RN Hours per Patient Day	1.05 (1.00 – 1.10)*	<b>1.06 (1.01 – 1.12)**</b>
<b>Providers always gave enough emotional support to the family after the patient's death</b>		
Nurse Work Environment (Top Quartile)	0.99 (0.84 – 1.17)	0.97 (0.85 – 1.11)
RN Hours per Patient Day	1.08 (1.02 – 1.14)**	<b>1.07 (1.02 – 1.13)**</b>

\*p<0.05 \*\*p<0.01

# Limitations

- Cross-sectional design limits causal inference
- Analysis was conducted at the facility level due to the nature of available data
- The BFS items do not specifically mention “nurses” or “nursing care”, but instead ask families to report on the actions of “doctors and other staff”

# Conclusions

- Nurses are well-positioned to learn patient/family needs and expectations at the end of life
- Investment in nurse work environments and RN staffing in VA acute care facilities may result in enhanced quality of care received by hospitalized Veterans at the end-of-life

# Practice Implications

- Develop partnerships between nursing, facility leadership, and palliative care teams to identify ways to improve the environment
- Benchmark BFS and PES-NWI scores and identify targets for improvement
- Continue to expand and offer end-of-life training programs for clinicians

# Questions & Comments



[http://www.mitre.org/sites/default/files/focus\\_area/cem\\_whatwedo\\_veteransbenefit\\_0.jpg](http://www.mitre.org/sites/default/files/focus_area/cem_whatwedo_veteransbenefit_0.jpg)

# Publication Information

Kutney-Lee, A., Brennan, C.W., Meterko, M. & Ersek, M. (2015). Organization of nursing and quality of care for Veterans at the end of life. *Journal of Pain and Symptom Management*, 49(3):570-7.