1. What are the best predictors or conditions for quality care?

Literature Review:

Grabowski, DC; Stewart, KA; Broderick, SM; Coots, LA. Predictors of nursing home hospitalization: a review of the literature. Medical Care Research Review. 2008 Feb; 65(1):3-39.


This paper reports on structures and processes of hospital care influencing 30-day mortality for acute medical patients. Wide variation in risk-adjusted 30-day hospital mortality rates for acute medical patients indicates that hospital structures and processes of care affect patient death. Because nurses provide the majority of care to hospitalized patients, we propose that structures and processes of nursing care have an impact on patient death or survival. A model hypothesizing the impact of nursing-related hospital care structures and processes on 30-day mortality was tested. Patient data from the Ontario, Canada Discharge Abstract Database 2002-2003, nurse data from the Ontario Nurse Survey 2003, and hospital staffing data from the Ontario Hospital Reporting System 2002-2003 files were used to develop indicators for variables hypothesized to impact 30-day mortality.

Two multiple regression models were implemented to test the model. First, all variables were forced to enter the model simultaneously. Second, backward regression was implemented. Using backward regression, 45% of variance in risk-adjusted 30-day mortality rates was explained by eight predictors. Lower 30-day mortality rates were associated with hospitals that had a higher percentage of Registered Nurse staff, a higher percentage of baccalaureate-prepared nurses, a lower dose or amount of all categories of nursing staff per weighted patient case, higher nurse-reported adequacy of staffing and resources, higher use of care maps or protocols to guide patient care, higher nurse-reported care quality, lower nurse-reported adequacy of manager ability and support, and higher nurse burnout.

Just as hospitals and clinicians caring for patients focus carefully on completing accurate diagnosis and appropriate and effective interventions, so too should hospitals carefully plan and manage structures and processes of care such as the proportion of Registered Nurses in the staff mix, percentage of baccalaureate-prepared nurses, and routine use of care maps to minimize unnecessary patient death.

The effects of contextual characteristics and nursing-related factors on the overall quality improvement of resident outcomes, measured by a weighted index in incidents of pressure ulcers, physical restraints, and catheter use in nursing homes, were investigated by autoregressive latent trajectory modeling of panel data (1997-2003). Findings show that in the initial study period, nursing homes with a smaller bed size, being for-profit, caring for more Medicare residents, having residents with lower acuity levels, being located elsewhere than the South, having a high level of nurse staffing, and certified with lower frequencies of nursing care deficiencies had better quality. The intercept factor, representing the baseline of quality, was well predicted by six of the eight contextual and facility characteristics variables, and the slope trajectory of quality was only weakly predicted by them. The improved quality in resident outcomes was associated with facilities having fewer nursing care deficiency citations than their counterparts.


This paper reports on a literature review exploring the relationship between quality of care and selected organizational variables through a consideration of: (1) what is meant by perceptions of quality, (2) whose perceptions are accorded prominence, and (3) whether changes in staffing, skill mix and autonomy affect perceptions of quality. Three basic ideas underpin this literature review: (1) the growing focus on quality improvement in health care, (2) concerns about the quality of care, and (3) the move towards patient involvement and consultation.

Of particular interest is the way in which changes in nurse staffing, skill mix and autonomy may affect the delivery of quality patient care. A search was conducted using the CINAHL, Medline and Embase databases. Key words used were quality of health care; quality of nursing care; nurse; patient; skill mix; nurse-patient ratio; outcomes; adverse health care events, and autonomy. The objective was to draw together a diverse collection of literature related to the field of health care quality. Papers were included for their relevance to the field of enquiry. The original search was conducted in 2003 and updated in 2004.

Quality of care is a complex, multi-dimensional concept which presents researchers with a challenge when attempting to evaluate it. Traditional nursing assessment tools have fallen out of use, partly because they have failed to provide opportunities to engage with and access the views of patients or nurses. There is also evidence that patient satisfaction as an indicator of quality is compromised on a number of fronts. There is conflicting information on how nurses and patients think about quality.
Research looking at the relationship between the selected organizational variables and perceptions of quality also suffers from a number of limitations. We argue that there is a requirement for more patient-centered research exploring perceptions of quality and differences in nurse staffing, skill mix and autonomy.


The present study examined quality improvement (QI) implementation in nursing homes, its association with organizational culture, and its effects on pressure ulcer care. Primary data were collected from staff at 35 nursing homes maintained by the Department of Veterans Affairs (VA) on measures related to QI implementation and organizational culture. These data were combined with information obtained from abstractions of medical records and analyses of an existing database.

A cross-sectional analysis of the association among the different measures was performed. Completed surveys containing information on QI implementation, organizational culture, employee satisfaction, and perceived adoption of guidelines were obtained from 1,065 nursing home staff. Adherence to best practices related to pressure ulcer prevention was abstracted from medical records. Risk-adjusted rates of pressure ulcer development were calculated from an administrative database.

Nursing homes differed significantly (p<.001) in their extent of QI implementation with scores on this 1 to 5 scale ranging from 2.98 to 4.08. Quality improvement implementation was greater in those nursing homes with an organizational culture that emphasizes innovation and teamwork. Employees of nursing homes with a greater degree of QI implementation were more satisfied with their jobs (a 1-point increase in QI score was associated with a 0.83 increase on the 5-point satisfaction scale, p<.001) and were more likely to report adoption of pressure ulcer clinical guidelines (a 1-point increase in QI score was associated with a 28 percent increase in number of staff reporting adoption, p<.001). No significant association was found between QI implementation and either adherence to guideline recommendations as abstracted from records or the rate of pressure ulcer development. Quality improvement implementation is most likely to be successful in those VA nursing homes with an underlying culture that promotes innovation. While QI implementation may result in staff who are more satisfied with their jobs and who believe they are providing better care, associations with improved care are uncertain.


Aaronson WE, Zinn JS, Rosko MD. Do for-profit and not-for-profit nursing homes behave differently? *Gerontologist.* 1994;34:775–786.