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# Comparison of the Value of Nursing Work Environments in Hospitals Across Different Levels of Patient Risk

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## **Abstract**

Hospitals with better nurse working environments provide better value (lower mortality with similar costs) especially for higher-risk surgical patients.

## **Keywords**

nursing, hospitals, organization of healthcare delivery

## **Disciplines**

Health Services Administration | Health Services Research | Nursing Administration

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### KEY FINDINGS:

Hospitals with better nurse working environments provide better value (lower mortality with similar costs) especially for higher-risk surgical patients

### THE QUESTION

In this study, LDI Senior Fellow Jeffrey Silber and colleagues at the Children's Hospital of Philadelphia and the University of Pennsylvania look at how better nurse working environments influence the "value" of care, which is defined as the quality of care relative to the cost of providing it. Past studies of nurse work environments have looked at their impact on either quality or cost, but not on both. This study asks whether selecting hospitals based solely on excellent nursing environments identifies a set of hospitals that display better outcomes and value, a question most relevant to a patient seeking advice on where to go for care.

### THE FINDINGS

The study found that hospitals with better nurse working environments provide better value (lower mortality with similar costs) especially for higher-risk patients. More specifically, 30-day mortality in hospitals with good nursing environments was 4.8%, compared to 5.8% in hospitals with worse nursing environments. This one percent mortality advantage was associated with no difference in resource utilization costs (actually \$163 less in estimated costs) – which the authors describe as a "strong argument for excellent value" in the context of the observed survival improvement. Among patients in the highest risk group, the mortality advantage was even greater at 17.3% and

19.9% respectively. At all levels of risk, the difference in cost of care was not significant. Despite their confidence that good nursing environments are tied to higher value care, the authors caution that "these results do not suggest that improving any specific hospital's nursing environment will necessarily improve its value." The question remains as to whether there is a causal relationship between a good nurse working environment and better value or whether hospitals have other systems and processes in place that drive "value" – and that the work environment just tends to be better in those higher-performing facilities.

### THE IMPLICATIONS

The study comes at a time when "value" is dominating the health policy conversation: payers want better quality and outcomes for the ever-increasing cost of care. The Centers for Medicare and Medicaid Services (CMS) has a stated goal of tying 90% of its payment to quality or value by 2018 through models such as bundled payment, accountable care organizations (ACOs), and the patient-centered medical home (PMCH).

In an October 2015 [brief](#), LDI and the [Interdisciplinary Nursing Quality Initiative \(INQRI\)](#) reviewed the evidence on the role of nurses in increasing the value of health care.

*[Implications continued page 2]*

While there is a clear business case for a higher proportion of BSN nurses, higher nurse staffing ratios, and improving transitional care, more research is needed to determine the economic “value” of magnet status, nurse work environment, and targeted prevention of falls and hospital-acquired infections. This new paper from Silber and colleagues is an important step in that direction.

This study helps answer an important question about how improved quality from better nurse environments translates into a measure of value that incorporates cost. Future research might explore whether average hospitals that take active steps to improve the nurse working environments start to deliver “higher value” care.

## THE STUDY

The authors identified 35 “focal” hospitals across Illinois, New York and Texas that had national peer recognition for nursing excellence and higher than average nurse-to-bed staffing ratios, agreed-upon indicators of a high-quality nurse working environment. They identified 298 other hospitals without such recognition as comparison “controls.” The authors used a matching algorithm to create 25,752 closely matched pairs (one from the focal hospitals and one from the control hospitals) of elderly Medicare general surgery patients admitted between 2004-2006. Other hospital characteristics, such as nurse mix and technology level, were left to vary freely across the focal and control hospitals. In general, the focal hospitals were larger, and more teaching and technology-intensive than control hospitals.

Once these matched pairs were created, they then tracked 30-day mortality and cost differences for all matched patients, and from that determined comparative value.

Silber JH, Rosenbaum PR, McHugh MD, et al. [Comparison of the Value of Nursing Work Environments in Hospitals Across Different Levels of Patient Risk](#). JAMA Surg. Published online January 20, 2016. doi:10.1001/jamasurg.2015.4908.

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Jeffery H. Silber, MD, PhD is an internationally known authority on outcomes measurement and severity adjustment for both adult and pediatric applications. He has been Director of the [Center for Outcomes Research](#) at the

Children’s Hospital of Philadelphia since its inception in 1997. Longstanding collaboration with [Linda Aiken, PhD, RN](#), [Matthew McHugh, PhD, JD, MPH, RN](#) and the Center for Health Outcomes and Policy Research at the University of Pennsylvania’s School of Nursing has produced innovative, practical metrics that now serve as tools to transform the quality and efficiency of health care.



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