How nurses' work environment influences key performance indicators

Data show that a high-quality nursing work environment sets the stage for nursing success and gives hospitals a competitive edge.

By Nell Buhlman, MBA

In today's increasingly competitive healthcare market, effective nursing practice is a critical component of high-value care and an essential driver of health system success. To achieve and sustain a competitive advantage, hospital leaders must understand and respond to the full range of factors that influence nursing and make recruitment and retention of top-notch nursing professionals a strategic priority.

Historically, nurse staffing—the number and composition of the nursing staff—has dominated discussions about nursing's impact on key performance indicators of value. A large body of evidence supports the link between inadequate nurse staffing and poor patient outcomes. But it's more than just a numbers game. Adding more nurses may improve outcomes, but many additional factors exert a strong influence on nursing practice and also must be considered in the plan to influence nursing and patient outcomes optimally.

Recent findings from Press Ganey's analyses of integrated data from multiple performance domains sharpen our understanding of how these factors influence performance. The data reveal that although such aspects of staffing as nursing hours per patient day and skill mix influence outcomes, optimizing the nursing work environment can have a greater influence on many key performance indicators, including patient safety, patient experience, nurse outcomes, and hospital payment programs. These findings have important strategic implications for hospitals and health systems. In fact, they make the business case for investing in the structures and programs that support a culture of nursing excellence.

Integrated data and analytic approach

To evaluate the impact of staffing factors compared to aspects of the environment on performance, Press Ganey data scientists analyzed an integrated data set that included staffing measures from the National Database of Nursing Quality Indicators (NDNQI®), RN responses to the Practice Environment Scales of the Nursing Work Index,

Press Ganey analyses: Impact of staffing factors

The Press Ganey data analyses explored relationships between the RN work-environment composite score and a nurse staffing composite score on:

• patient outcomes (falls, pressure ulcers, quality of care ratings, and patient experience ratings)
• nurse outcomes (job enjoyment, intent to stay, and turnover)
• publicly reported value outcomes (value-based purchasing, readmissions and hospital-acquired conditions).

The RN work environment composite measure comprises RNs' responses to four of the five subscales of the Nursing Work Index Practice Environment Scale:

1. foundations for nursing quality of care
2. nurse manager leadership and ability
3. nurse participation in hospital affairs
4. nurse-physician interactions.

The fifth subscale—nurse staffing composite measure—consists of RN hours per patient days, RN skill mix, and education and certification of nurses.

Methodology

For the analyses, multiple regression models were fitted to each patient outcome to examine the individual impact of hospitals' RN staffing characteristics and their nurses' assessment of the work environment, as well as the interaction effect of staffing and work environment. All results were adjusted for hospital beds, teaching status, ownership, and metropolitan status.

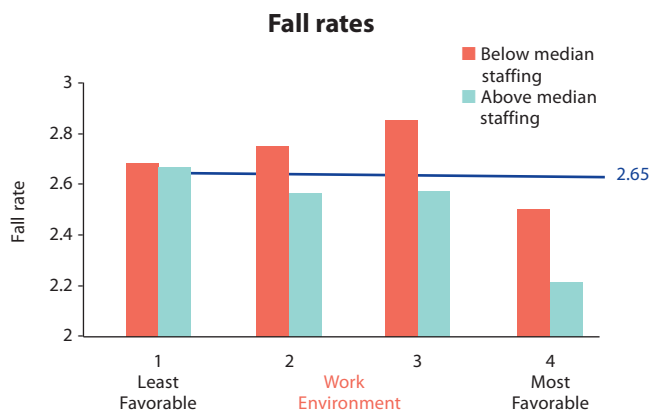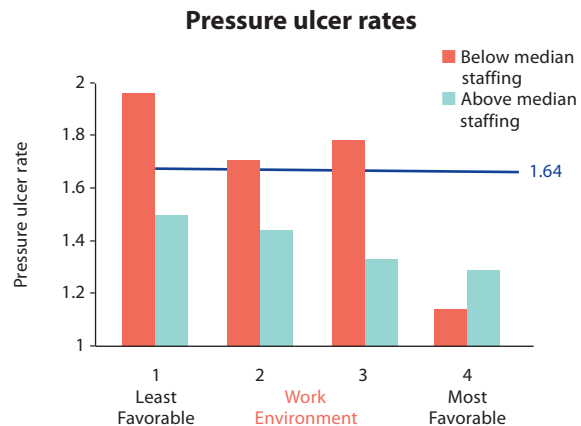Performance was categorized using the following reference points:

• staffing composite: above the median (50th percentile) and below the median
• work-environment composite: quartiles of performance from least favorable (1st quartile: 1% to 24%) to most favorable (4th quartile: 76% to 100%).

posite scores outperformed all other hospitals. Staffing factors conferred additional performance benefits only for hospitals in the lower quartiles for work environment. The graphs below show the power of an optimal work environment on patient outcomes.

**Pressure ulcer rates**

Fall rates

These data show that high-quality nursing care hinges on multiple underlying structural and process factors beyond staff ratios and nurses' skills and education. This underscores the need for organizations to consider the many factors that shape the practice environment, including availability of sufficient supplies and equipment, training, facilities, reliable use of demonstrated nursing best practices, management, interprofessional relationships, and nurse engagement.

Nurses' perception of care quality

Strictly speaking, nurses' assessment of quality of care on their unit isn't a measure of quality. But nurses are uniquely qualified to comment on the quality of care their organizations provide. So looking at how nurses' perceptions of care quality relate to other quality findings is worthwhile.

and a broad range of outcome indicators, including patient experience data from the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS), quality and safety measures from NDNQI, and publicly available hospital value-based purchasing (VBP) performance and 30-day all-cause readmissions. (For details on the analysis, see *Press Ganey analyses: Impact of staffing factors*.)

Findings

Across the vast majority of outcomes examined, an above-median staffing composite score yielded little, if any, performance advantage for hospitals in the highest quartile for work environment. In fact, in many instances, hospitals in the highest quartile with below-median staffing com-

As the graph below shows, staffing factors provide little to no discernible performance differential in nurses' perceptions of quality. Nurses at hospitals in the top two work-environment quartiles are far more likely to perceive quality of care on their units as excellent, whereas those at hospitals in the lowest two quartiles are more likely to perceive quality of care as good. Between the lowest and highest quartile hospitals, average scores differ considerably.

Nurses' perception of quality of care
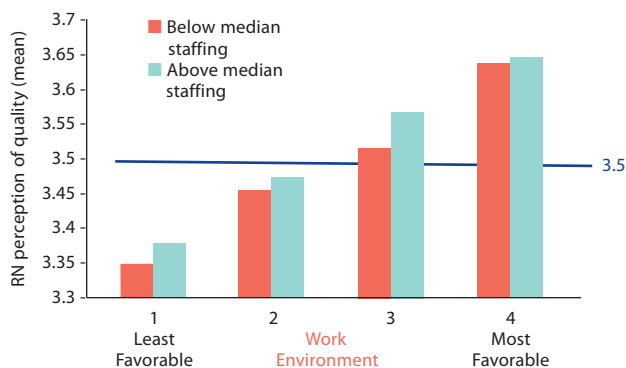
**Nurse work environment and the patient experience**

Findings for patient-experience outcomes generally are consistent with those for quality outcomes. Performance on HCAHPS domains generally show a high degree of sensitivity to work-environment quartile, whereas staffing factors tend to confer benefits only for hospitals in the lower work-environment quartiles.

Work environment and RN communication
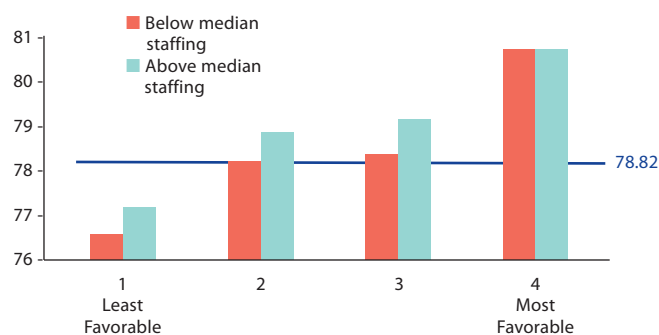
Further, when looking at the HCAHPS domain for *responsiveness of hospital staff*, we see that hospitals in the top work-environment quartile perform dramatically better than all other hospitals in the study, and that hospitals in that same quartile with below-median staffing composite scores outperform all other hospitals in the study.

Work environment and staffing
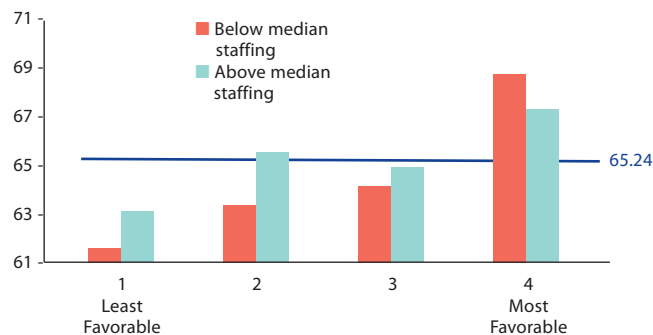
HCAHPS global domains—*likelihood to recommend* and *overall rating*—follow a slightly different pattern than the discrete domains, such as *responsiveness of hospital staff*. Although those domains show general sensitivity to work-environment quartile and the benefit conferred by staffing factors was less pronounced in each successive quartile, hospitals with higher staffing composite scores performed better in each work-environment quartile.

The greater sensitivity of discrete measures (for instance, *patient falls* and *medications explained*) to work-environment factors rather than staffing factors is understandable. Performance on such measures reflects available resources to follow practices that drive better performance. But having adequate staff doesn't guarantee best practices are performed consistently or well. All characteristics of the nurse work environment (including training, tools, nurse engagement, leadership support, effective management, and a culture of collaboration and communication) set the stage for highly reliable application of best practices and improvement. These characteristics account for performance differentials among hospitals in the work-environment quartiles.

How staffing and work environment affect nurse outcomes

Understanding the factors that drive nurse recruitment and retention is vital in inpatient acute-care settings. High nurse turnover causes disruption on multiple fronts: It increases patients' risk for poor quality and safety outcomes, negatively influences patient experience, undermines efforts to foster a collaborative culture, contributes to caregiver burnout, and carries significant negative financial implications. So gaining insight into the factors that contribute to nurse outcomes—such as job enjoyment, intent to stay, and turnover—is a priority.
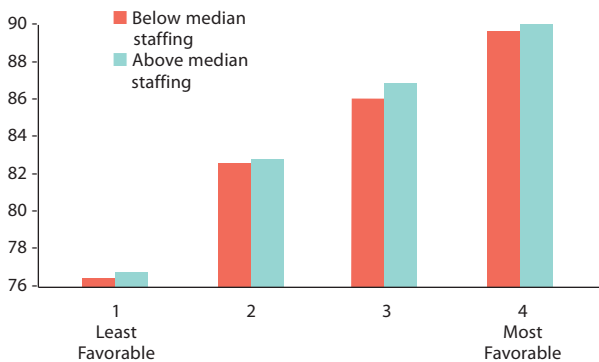
The study's findings reveal that for both *job enjoyment* and *intent to stay on the unit*, work-environment factors have a greater impact on performance than staffing factors. Performance increased in each successive work-environment quartile, whereas above-median staffing composite scores

conferred no additional benefit in performance within each quartile. Conversely, absolute turnover, though moderately sensitive to environment factors, showed greater sensitivity to staffing factors.
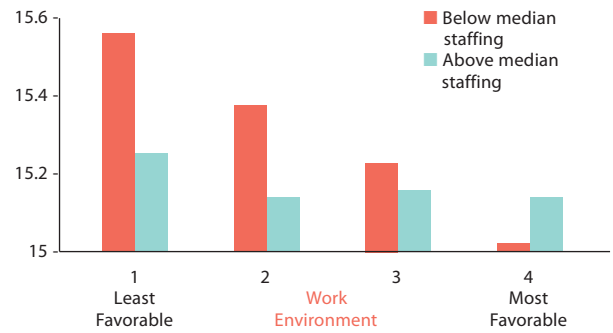
Nurses' job enjoyment
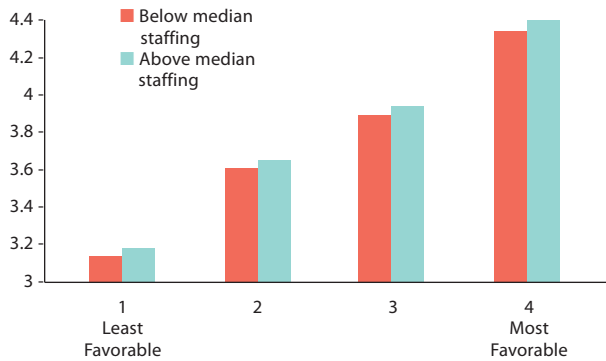
Nurses' intent to stay on unit

30-day all-cause readmissions
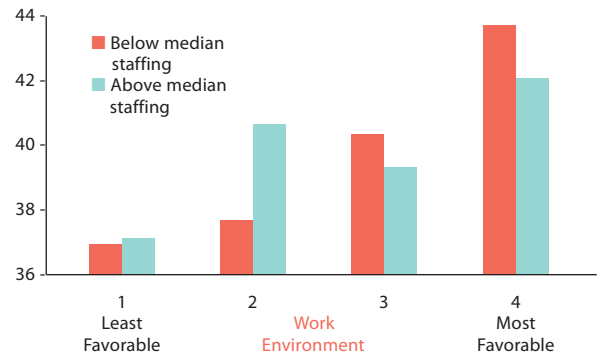

Value-based purchasing

Work environment drives pay-for-performance and accountability outcomes

With the rise of consumerism, the changing nature of competition, and new VBP payment models, much attention now focuses on factors that improve accountability and pay-for-performance metrics (both of which also respond to work environment), according to the Press-Ganey analyses. When comparing the relative contribution of staffing factors and environment factors with respect to performance on both *hospital all-cause 30-day readmission* and *hospital VBP*, data show staffing factors drive performance differentials only in the lower quartiles for work environment. The nurse work environment has a greater influence on these outcomes. Notably, hospitals with below-median staffing composite scores in the highest work-environment quartiles outperformed all other hospitals for both metrics.

Work environment: A powerful force

These analyses demonstrate that hospitals in higher work-environment quartiles consistently performed better across patient safety outcomes, patient experience outcomes, nurse outcomes, and payment program-related outcomes. In nearly all instances, benefits conferred by staffing factors occurred only in hospitals with suboptimal work environments. They were negligible or nonexistent among hospitals in the highest work-environment quartile.

The takeaway: Where quality of the work environment is lacking, the quantity and quality of staff can bridge the gap to some extent. But staffing changes alone can't make up for foundational problems. In hospitals with an optimal work environment, adding staff and adjusting skill mix or competencies may not offer additional value, as defined by readmissions and VBP. Clearly, hospital and nursing leaders need to understand and invest in the quality of the nursing work environment to set the stage for nursing success and provide a competitive advantage in today's value-driven healthcare marketplace. ■

For a graph showing HCAHPS survey results for medications explained, visit www.AmericanNurseToday.com/?p=22608.

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