2016 Nursing Special Report

The Role of Workplace Safety and Surveillance Capacity in Driving Nurse and Patient Outcomes

New data highlight the strategic importance of nurturing a work environment in which nurses feel their physical and emotional safety is an organizational priority.

Executive Summary

The nurse work environment has been identified as a powerful driver of many of the safety, quality and experience outcomes that hospitals and health systems must optimize in order to be competitive in today's consumer-driven, value-based health care marketplace.[1] Because the work environment is a multidimensional construct, it must be examined from various angles to understand the specific factors, attributes and processes that exert the strongest influence on performance across outcomes.

This report looks at the impact of the nurse work environment on nurse, patient and pay-for-performance outcomes through two distinct lenses—nurse perception of workplace safety and nurse perception of surveillance capacity, using composite measures that represent attributes of both.

The results demonstrate the strategic importance of creating a work environment in which nurses feel their physical and emotional safety is an organizational priority and that their work units are sufficiently resourced to allow them to effectively monitor, evaluate and act upon emerging indicators of a patient's change in status (nurse surveillance).

Integrated, cross-domain analyses revealed that nurse workplace safety and surveillance capacity were significantly associated with performance on nurse, patient, patient experience and pay-for-performance outcomes, and that workplace safety was the stronger of the two drivers across most outcomes. Following are some of the largest differences.

- Compared to organizations in the bottom quartile of RN workplace safety, those in the top quartile had approximately
  - 52% lower rate of RN-perceived missed care
  - 27% higher rate of job enjoyment
  - 22% higher CMS Overall Hospital Quality Star Rating
  - 3% higher average Likelihood to Recommend scores

- Compared to organizations in the bottom quartile of RN surveillance capacity, those in the top quartile had approximately
  - 26% lower rate of hospital-acquired pressure ulcers
  - 13% lower rate of RN-perceived missed care
  - 5% higher CMS Overall Hospital Quality Star Rating
  - 1% higher average Likelihood to Recommend scores

Importantly, the respective differences in mean Likelihood to Recommend scores (a marker of patient loyalty) translate to substantial improvements in percentile rank because the scores were clustered in the 90% range, where even small gains can have a large impact on an organization's percentile rank.

Introduction

Effective nursing practice is a critical component of high-value health care and an essential driver of success in today's increasingly competitive, consumer-driven health care marketplace.

Discussions about nursing's impact on key performance indicators often center on nurse staffing—in particular, nurse-to-patient ratios and the composition of the nursing staff. Yet, recent analyses of integrated data from multiple performance domains revealed that optimizing the nurse work environment can have a greater influence than staffing optimization alone on many key indicators of patient safety, patient experience, nurse outcomes and hospital payment programs.[2]

These findings add to the growing body of research linking the nurse work environment to various safety, quality and experience indicators of value-based health care, and they support the business case for improving the practice environment. Doing so requires understanding which and to what degree various environmental attributes drive performance across the measures of interest and translating that insight into actionable and sustainable improvement strategies.

This report looks at the influence of two attributes of the nurse work environment on nurse, patient, patient experience and payment outcomes: RN perception of workplace safety and RN perception of surveillance capacity.

Methods

Nurse safety is an umbrella concept that covers a range of practices designed to minimize nurses' risk of experiencing physical or psychological harm in their daily work. For these analyses, Press Ganey researchers developed an RN Safety Composite measure consisting of survey items related to safe patient handling and mobility practices, RN-to-RN interaction, the appropriateness of patient care assignments, meal-break practices and shift duration.

Nurse surveillance capacity is a function of multiple variables related to nurse characteristics and the practice environment, reflecting the degree to which nurses are able to observe, monitor, collect, interpret and synthesize patient information in order to make informed decisions regarding their course of care.

To evaluate nurse surveillance capacity, the researchers adapted an existing composite measure[3] that includes subscales of the Practice Environment Scale of the Nursing Work Index (PES-NWI) that are linked to surveillance capacity, including nurse participation in hospital affairs, nursing foundations for quality care, the support and ability of the nurse manager, staffing and resource adequacy, and nurse-physician working relationships. The surveillance composite also includes specific RN characteristics, such as staffing, education, clinical competence and years of experience.

Using data derived from Press Ganey's National Database of Nursing Quality Indicators® (NDNQI®) and patient experience databases (2015 survey data) and from the Centers for Medicare & Medicaid Services' (CMS) Hospital Compare website released in July 2016, the researchers evaluated the association between the nurse, patient, patient experience and payment outcomes and each of the predictors (RN safety composite, RN surveillance capacity composite).

Hospital-level analyses of nurses' perceived workplace safety and surveillance capacity were conducted for the patient experience and public outcomes data, while unit-level analyses were performed for NDNQI outcomes that were available at the unit level. The datasets for the patient experience and public outcomes represented 632 hospitals nationally, and the dataset for the NDNQI outcomes represented 8,843 units and 732 hospitals.

Multiple linear regression was used to model the relationship between individual outcomes and safety and surveillance capacity score quartiles. The models controlled for hospital characteristics, including bed size, teaching status, ownership and metropolitan area.

NDNQI Nurse and Patient Outcomes

The nurse outcomes of interest derived from the Press Ganey NDNQI RN Survey included nurses' belief that their work is meaningful (meaningful contribution), their intent to stay, their job enjoyment, their perception of the quality of care being delivered and their reports of missed care. Patient outcomes, derived from NDNQI Clinical Quarterly data, include pressure ulcer and fall rates.

As seen in Figures 1–3, the relationships between nurse perceptions of workplace safety and surveillance capacity and nurse outcomes at the unit level are all positive. Specifically, the data show that units in which nurses rated their safety and surveillance capacity as high also had higher job-enjoyment rates (Figure 1) and intent-to-stay percentages (Figure 2), and they had higher scores on the meaningful contribution item (Figure 3). For all three items, performance on the nurse safety composite was a stronger driver than surveillance capacity.

Figure 1

1=Unit RNs strongly disagree they enjoy their job, 2=disagree, 3=tend to disagree, 4=tend to agree, 5=agree, 6=Unit RNs strongly agree they enjoy their job

Figure 2

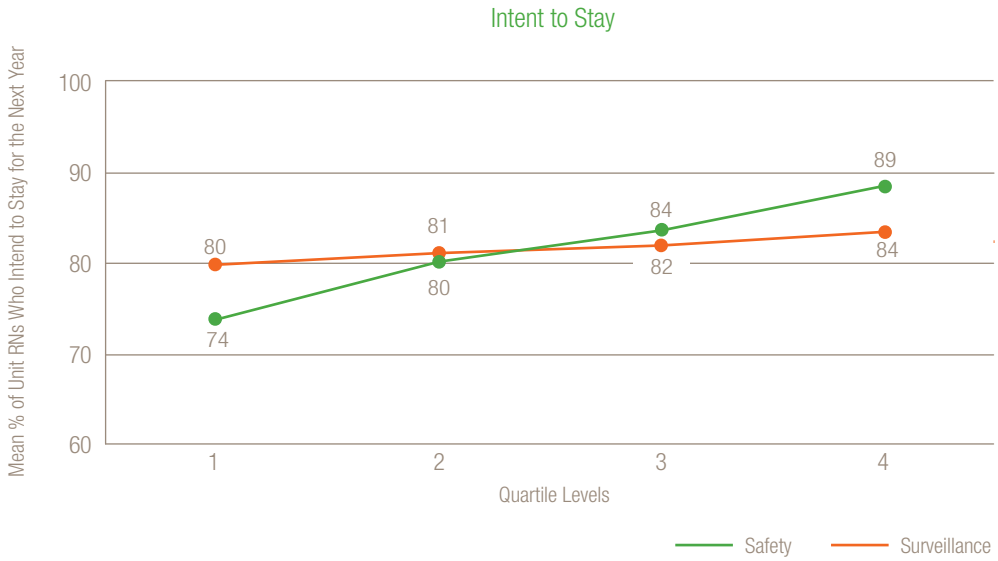
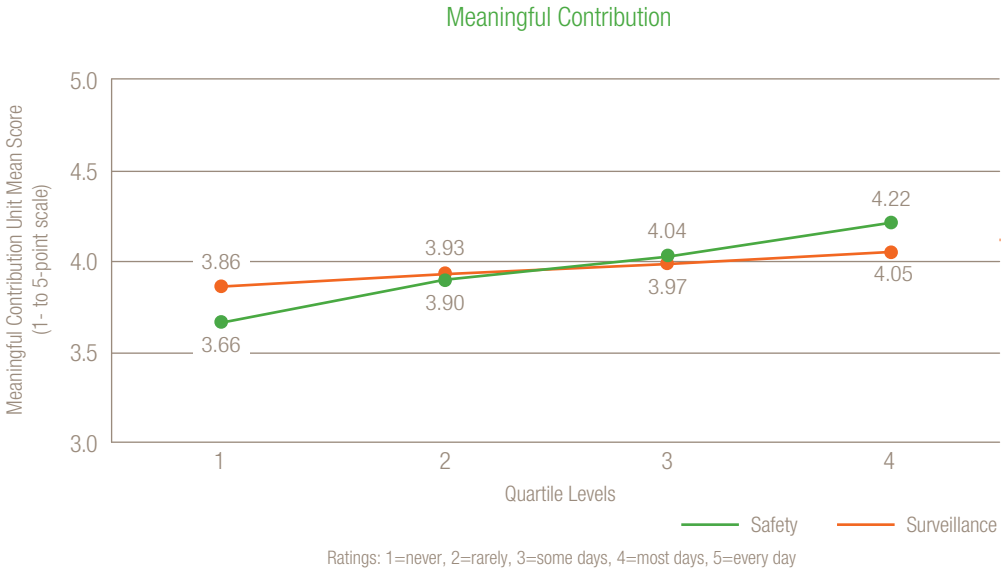


Figure 3



The results clearly demonstrate that the safety of the nurse work environment, above and beyond surveillance capacity, plays a key role in how nurses feel about their jobs, their ability to make meaningful contributions to the care of patients and their intention to stay. All three of these considerations are key facets of nurse engagement, which correlates directly with critical safety, quality and patient experience outcomes and influences the financial health of an organization.[4]

Similarly strong relationships were observed for the NDNQI-derived patient outcomes, as seen in Figures 4–7. Units with high scores on the safety and surveillance composite measures had higher RN-rated quality-of-care ratings (Figure 4) and lower rates of missed care events (Figure 5), pressure ulcers (Figure 6) and patient falls (Figure 7). In these analyses, nurse perception of safety was again a stronger predictor of performance than surveillance capacity.

Figure 4

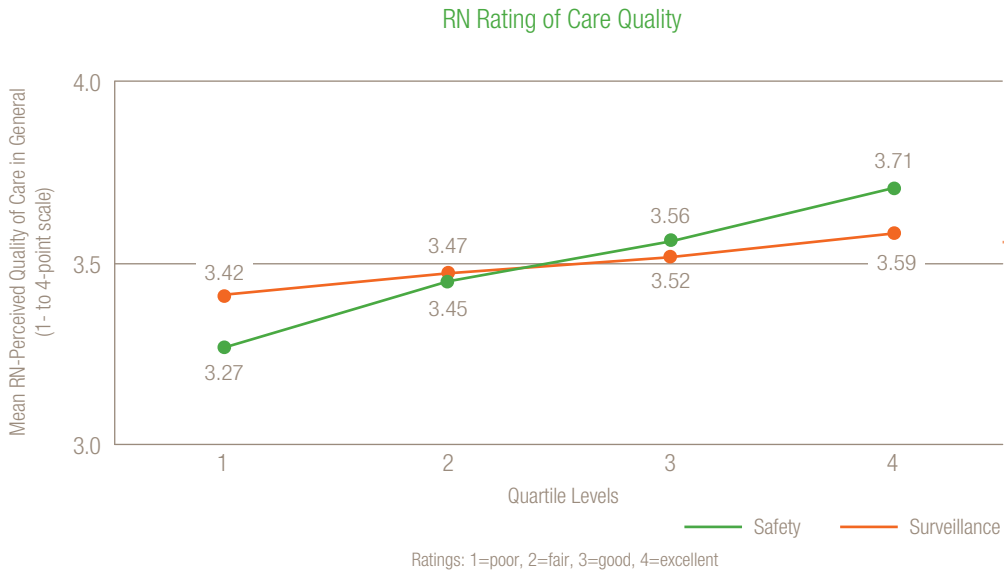


Figure 5

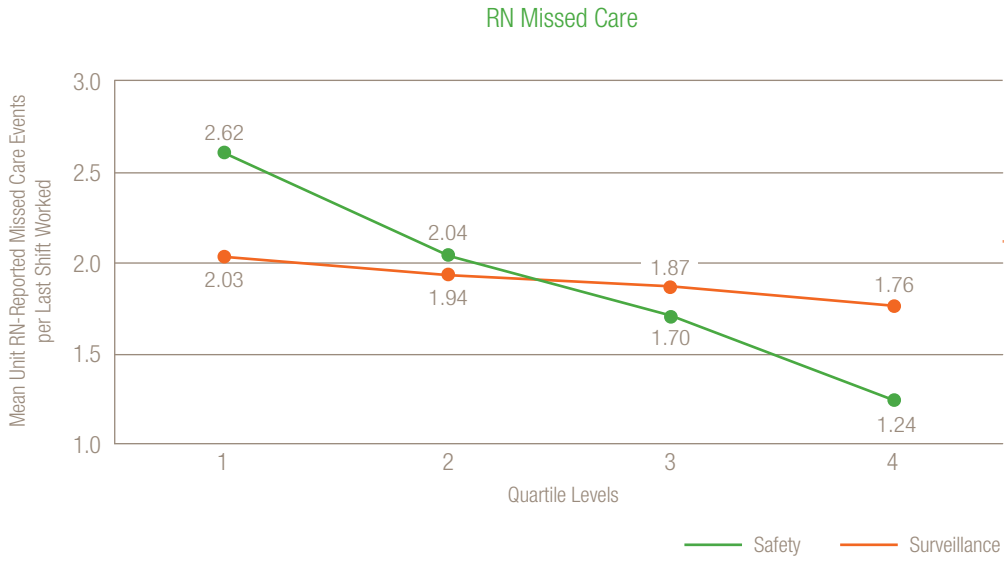


Figure 6

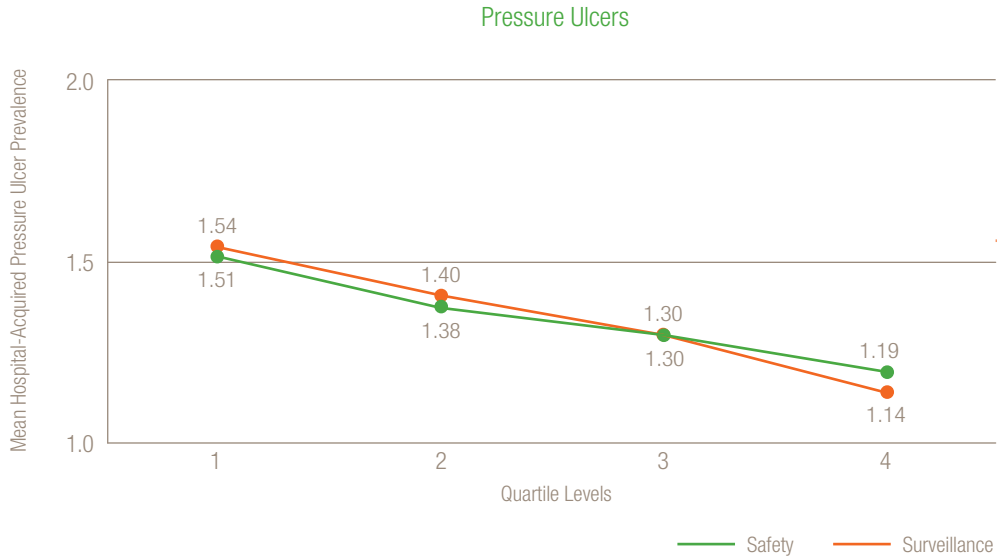
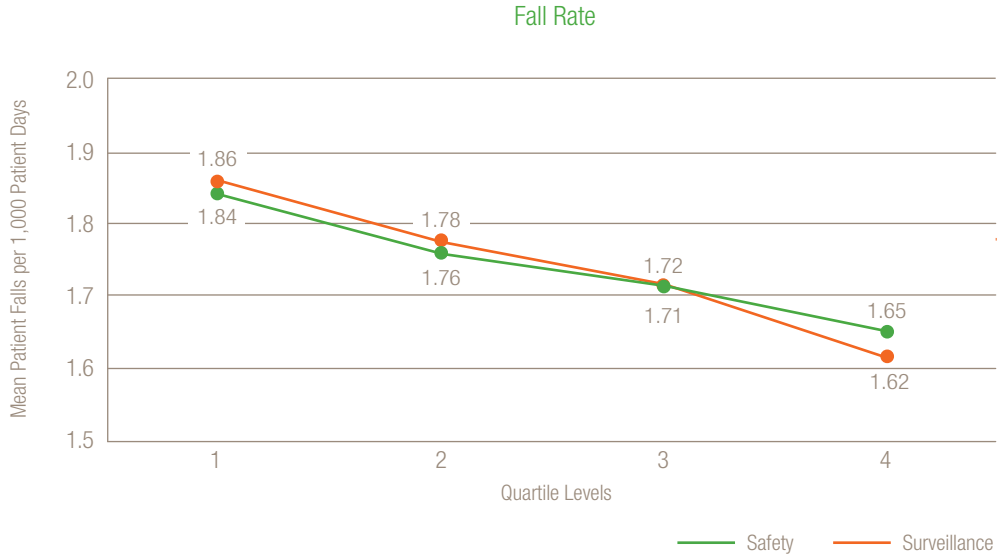


Figure 7



These findings have important care quality and business implications. For example, research has shown that nurses' perceptions about their hospitals' care quality are closely aligned with the hospitals' actual performance across various quality metrics. In one study conducted by the University of Pennsylvania School of Nursing, researchers compared the performance of multiple hospitals in several quality measures to the perception of care quality of those hospitals' nurses and found that a higher proportion of nurses from hospitals that were nationally recognized for their care gave their hospitals high marks.[5] Further, for every 10% of nurses reporting excellent quality of care at their hospitals, mortality rates for patients at their hospitals were lower, as was the likelihood of post-surgical complications. Additionally, patient experience scores were higher, as were composite care scores for conditions such as heart attacks and pneumonia.

The current data show that nurses in units that fall in the lower half of the safety and surveillance capacity composites are more likely to rate the quality of care on their units as good (2.5–3.5) while those in units scoring in the upper half of both composites are more likely to rate the quality of their care as excellent (>3.5). This finding suggests that improving the safety of the nurse work environment in particular would improve nurses' perceptions of the quality of care being provided as well as the important clinical, safety and experience outcomes associated with them.

Performance on the Missed Care item (Figure 5) is also telling. The number and rate of reported tasks that were left undone on the last shift decreased as RN perceived safety and surveillance capacity increased. Missed care is an important warning signal that nurse units are under-resourced, under-supported and potentially under-staffed. Such an environment leaves nurses, patients and hospitals vulnerable.

In one large review, missed nursing care was correlated with quality of care and adverse events and had a moderate effect on patient outcomes.[6] Statistically significant impacts were demonstrated on medication errors, patient falls, nosocomial infections, pressure ulcers, mortality and patient experience. In addition to raising patient safety and care quality concerns, this also influences hospitals' financial performance and competitive standing. Hospitals with the worst performance on the Hospital-Acquired Condition composite measure, which includes outcomes evaluated in this study, can have Medicare payments reduced by up to 1%. Additionally, Medicare does not reimburse for treatment of certain conditions that occur during an inpatient stay.

In the current missed care analyses, RN safety had the strongest relationship with missed care events, and unit type was, predictably, a strong driver as patient care needs and nursing resources vary across different unit types. The relationship between missed care events and surveillance capacity was also strong. To the degree that RN surveillance reflects the work environment and staffing conditions that enable or prevent nurses from providing complete, high-quality patient care, this finding clearly demonstrates how low RN surveillance capacity can lead to missed care and subsequent adverse events.

Patient Experience Outcomes

The patient experience outcomes of interest for the RN safety and surveillance capacity analyses include

- The Nurse Domain (friendliness/courtesy of the nurses, promptness in responding to the call button, nurses' attitude toward requests, attention paid to special or personal needs, how well nurses kept patient informed, perception of nurse skill)
- The Issues Domain (staff concern for patient's privacy, how well pain was controlled, staff addressed patient's emotional needs, response to concerns/complaints during inpatient stay, inclusion of patient in treatment decisions)
- Overall Hospital Rating
- Likelihood to Recommend

As can be seen in Figures 8–11, the relationships between the patient experience scores for these measures and the RN safety and surveillance composites are generally positive. When nurses rate safety and surveillance capacity higher, patients tend to report more positive experiences with nurses (Figure 8), tend to feel their personal issues were well-addressed (Figure 9), and are more likely to recommend the hospital (Figure 10) and give higher overall hospital ratings (Figure 11).

Figure 8

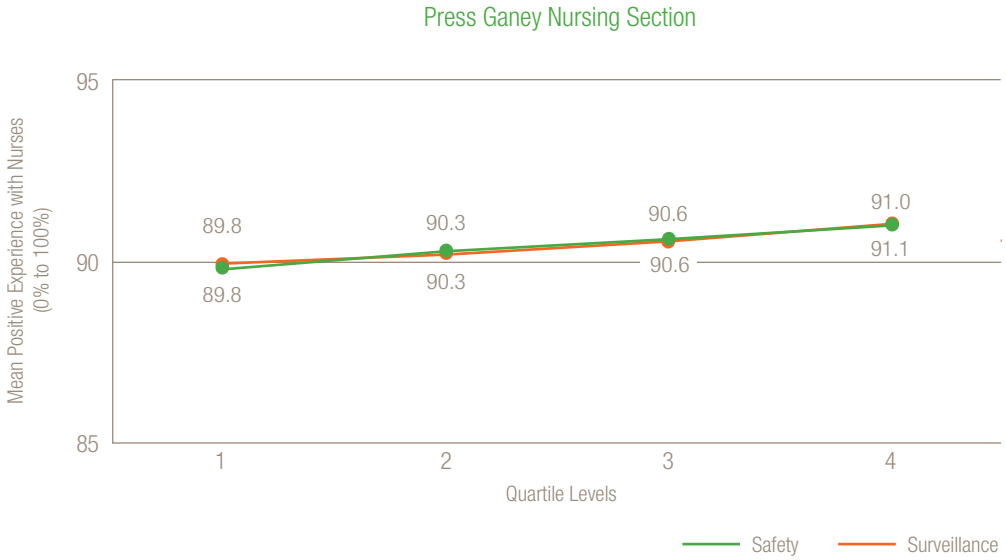


Figure 9

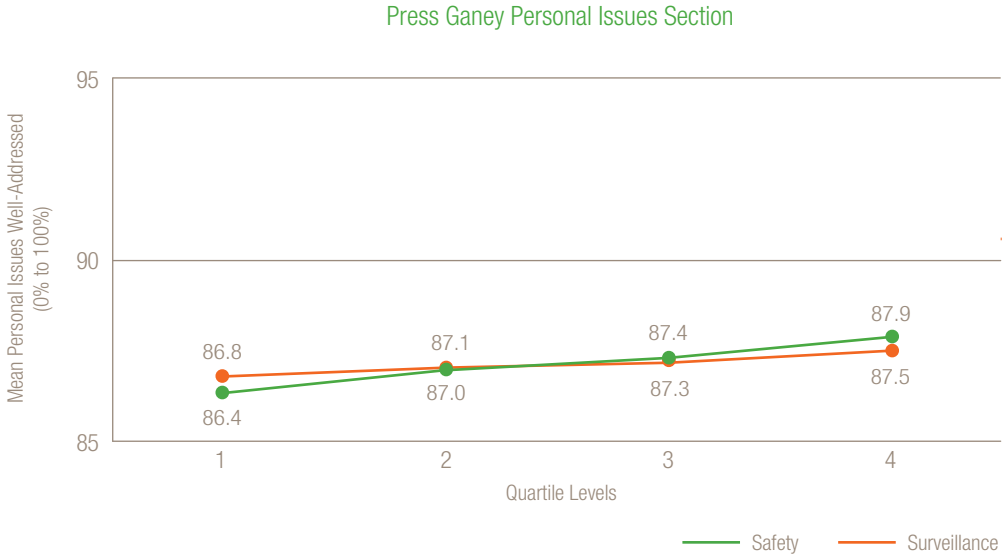


Figure 10

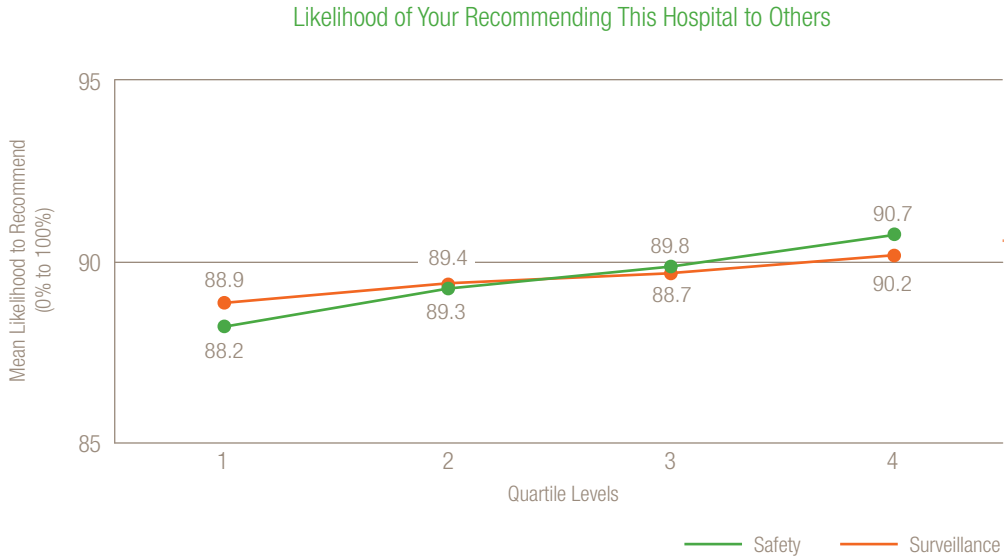
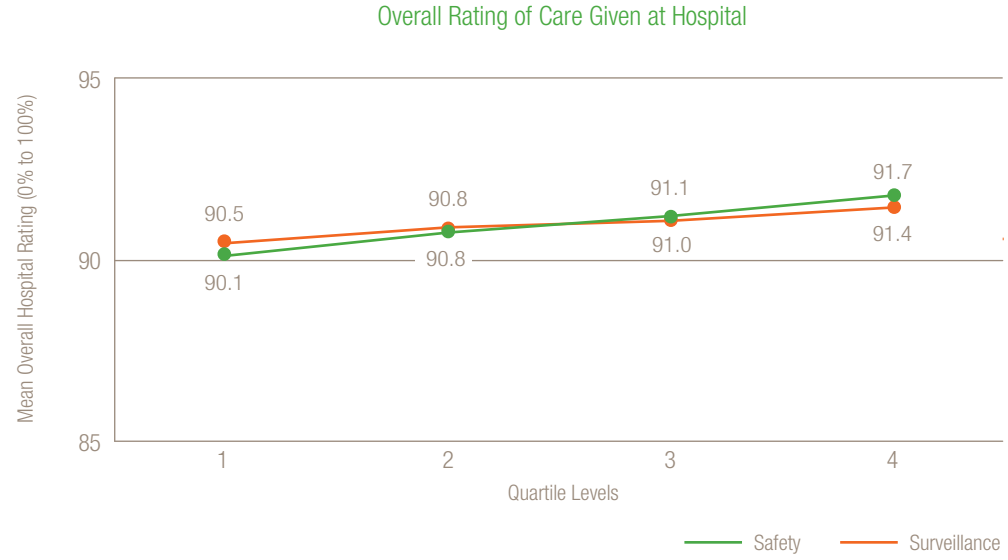


Figure 11



As the figures illustrate, the patient experience variables show the greatest change in scores at the lower and higher ends of the safety and surveillance distributions. For most of the analyses, patient experience performance is lowest when the perception of RN safety is lowest and is highest when perceived surveillance capacity is highest.

The differences from the lowest to highest scores on the safety and surveillance composites across patient experience measures are statistically significant, suggesting that when nurses believe their safety is an

organizational priority and that they are sufficiently supported to provide optimal patient surveillance, patients will have a more favorable care experience than they would if nurses felt suboptimal safety or surveillance capacity.

Pay-for-Performance Outcomes

The Centers for Medicare & Medicaid Services' (CMS) pay-for-performance programs reward hospitals for delivering services of higher quality and higher value and penalize those whose performance on specific process, outcome, patient experience and structure measures does not meet predefined benchmarks. As a result, hospitals and health systems that are able to identify the key drivers of the various pay-for-performance measures and implement targeted improvement strategies are positioned to achieve optimal outcomes for their patients and improve their own bottom line.

The publicly reported pay-for-performance metrics considered in these analyses include

- CMS Overall Hospital Quality Star Ratings
- Hospital-Acquired Condition (HAC) penalty
- Readmissions (Heart Failure, Pneumonia, Penalty)
- Value-Based Purchasing (Overall, Experience, Efficiency, Process, Outcome)

As indicated in Figures 12–14, performance on the RN safety composite is significantly associated with most of the pay-for-performance outcomes, although the model "fit"—its ability to explain differences in hospital or unit performance on outcomes—is not as strong as the nurse or patient experience outcomes. This can largely be explained by the fact that the pay-for-performance outcomes of interest are influenced by many variables and thus are more distant to nursing care alone than the nurse-reported outcomes. Although performance on the RN safety composite collectively explains only a small amount of variance in the pay-for-performance outcomes, it is still reasonable to conclude that changes in the nurse safety composite will change the outcome variables and, by extension, reimbursement percentages.

Among some of the notable findings, these data show

- A significant, positive relationship between the RN safety composite and Overall Star Ratings, a single metric that summarizes more than 60 Inpatient Quality Reporting (IQR) measures (Figure 12)
- A clear, negative relationship between the RN safety composite and HAC scores, whereby higher safety scores predict lower HAC scores (Figure 13)
- Strong relationships between the RN safety composite and Value-Based Purchasing (VBP) Overall score, especially in the top safety quartile (Figure 14)

Figure 12

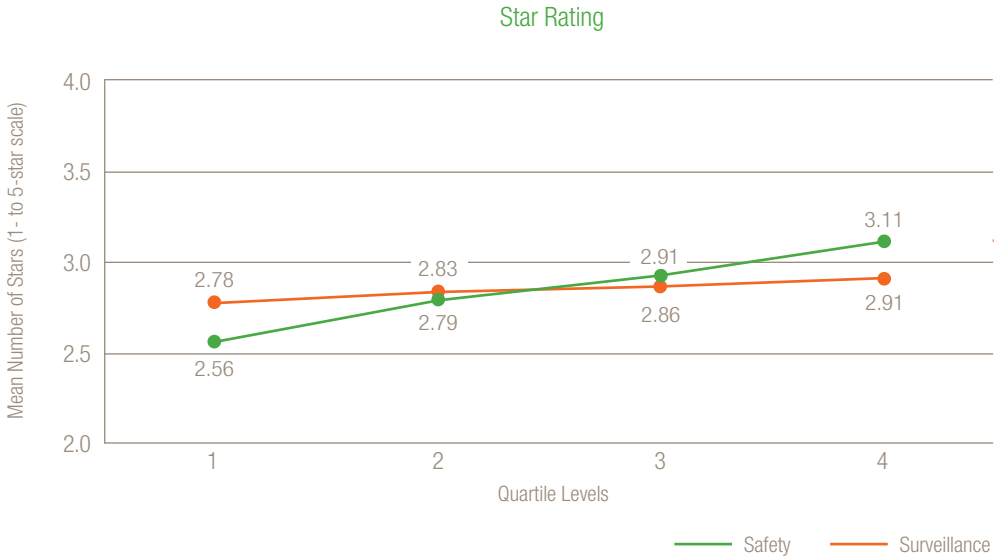


Figure 13

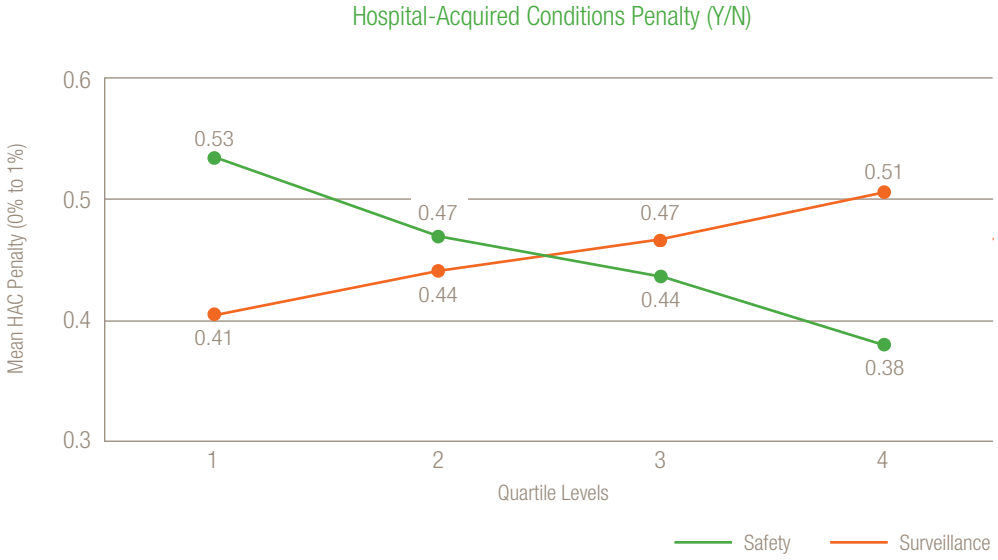
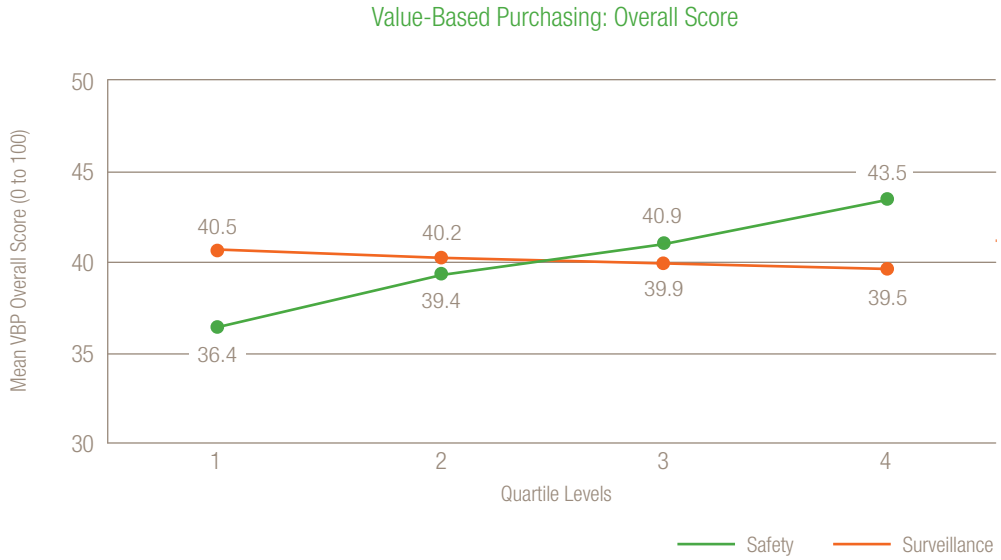


Figure 14



These findings suggest that nurses who perceive the safety of their nursing environment to be high have the support and resources that enable them to provide better quality care, as measured through the nursing-sensitive indicators, such as central-line-associated bloodstream infections (CLABSIs), catheter-associated urinary tract infections (CAUTIs) and surgical site infections (SSIs).

Subscale Analyses

To gain insight into the relative influence of the individual items within nurse safety and surveillance capacity composite measures on overall composite scores, the researchers performed subscale analyses and determined that the strongest drivers of RN safety and surveillance (Figure 15). Of note, the top RN workplace safety items exerted more influence than the top RN surveillance capacity items across nurse, patient and payment outcomes.

Figure 15

DRIVERS OF RN WORKPLACE SAFETY, SURVEILLANCE CAPACITY

	Nurse Outcomes	Patient Exp. Outcomes	Payment Outcomes
• RN Workplace Safety	• Assignment-appropriate last shift • RN-to-RN interactions	• Safe patient handling and mobility program scale score • Assignment-appropriate last shift	• Assignment-appropriate last shift • Percent of staff who worked more than 12 hours last shift • Safe patient handling and mobility practices
• RN Surveillance Capacity	• Staffing and resource adequacy • Nurse manager ability and leadership	• Percent of RNs with specialty certification • Nursing Foundations for Quality of Care	• Nursing Foundations for Quality of Care • Nursing participation in hospital affairs

These findings can provide direction for nurse leaders as they develop and implement targeted RN workplace safety and surveillance strategies for improving nurse, patient and payment outcomes. For example, focusing efforts on making sure that nurse-patient assignments are reasonable and on facilitating more effective nurse-to-nurse communication may move the needle on the RN safety composite and improve nurse outcomes. Similarly, nurse outcomes might also be improved by zeroing in on staffing/resource adequacy and nurse managers' leadership abilities—the stronger drivers of surveillance for the NDNQI outcomes.

Taking Action

The consistently significant associations between the safety of RN working conditions and surveillance capacity with the outcomes in these analyses demonstrate the strategic importance of ensuring that nurses feel their physical and emotional safety is being protected and that the units in which they work are sufficiently and appropriately resourced to allow them to provide patients with safe, effective, quality care.

For this reason, it is imperative that hospital and nursing leadership create work environments that optimize both nurse safety and surveillance capacity. For example, to ensure a safe nurse work environment organizations should consistently employ strategies for safe patient handling and mobility (SPHM) based on the American Nurses Association's Safe Patient Handling and Mobility Standards.[7] These standards provide a comprehensive framework for ensuring the safety of both patients and nurses and include creating a culture of safety, establishing a sustainable SPHM program, incorporating ergonomic design principles, installing proper SPHM equipment and establishing a system for training to maintain competency.

Additional strategies for improving nurse safety and surveillance capacity include

- Committing to equitable and reasonable nurse-patient assignments and adequate unit staffing that take into account patient volume, nurse skill mix and the nature and intensity of the care each patient requires
- Providing and enforcing uninterrupted, adequate meal and rest breaks
- Utilizing patient data to drive scheduling and avoidance of extended work shifts, which have been shown to increase errors, complications and adverse events
- Educating nurse leaders and unit managers to train and empower nursing staff to use systematic and goal-directed processes focused on early identification of at-risk patients, identification of potential adverse events and identification, interruption and correction of medical errors
- Developing a stable core of nurse leaders and nurses with leadership potential through training and/or formal programs to develop these skills
- Providing formal opportunities such as nurse residency and internship programs for structured and measured learning to new graduates or nurses newly entering a specialty nursing area
- Hiring and retaining a high percentage of RNs with a bachelor's degree or higher and nursing specialty certifications
- Adopting surveillance best practices, including checklists, interdisciplinary rounds, clinical information systems and clinical decision support systems
- Implementing best practices to facilitate quality nurse-to-nurse communication, including implementing a standardized handoff communication tool, bedside change of shift report and communication skills training

Given the overlap between the factors that contribute to nurses' perception of safety and surveillance and those that drive nurse engagement, nurse leadership should strive to build a culture of nursing excellence that supports all three objectives. Similar to the goal of providing compassionate, connected care to patients,[8] building a culture of nursing excellence requires that nurse leaders understand and endeavor to meet the needs of nurses by acknowledging the complexity and importance of their work, providing the resources they need to do their jobs, promoting teamwork as a vital component for success and removing barriers to a positive work-life balance.

Conclusion

Nurses' ability to deliver safe, effective, high-value care depends largely on the work environment in which that care is delivered, which in turn is influenced by multiple factors. This report looked at the impact of nurses' perception of the safety of their work environment and the degree to which they believe their work environment is sufficiently resourced to complete essential patient surveillance tasks on every shift.

Multiple cross-domain analyses reveal significant, independent correlations between nurse safety and surveillance capacity and many of the nurse, patient and pay-for-performance outcomes that are fundamental to high-performing organizations.

By targeting and improving the environmental factors that drive nurse safety and enable nurse surveillance, hospitals and health systems can nurture and sustain work environments that support excellence in nursing practice.

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[1] "Nursing Special Report: The Influence of Nurse Work Environment on Patient, Payment and Nurse Outcomes in Acute Care Settings." Press Ganey, 2015.

[2] "Nursing Special Report: The Influence of Nurse Work Environment on Patient, Payment and Nurse Outcomes in Acute Care Settings." Press Ganey, 2015.

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