The Role Of Nurses In Improving Hospital Quality And Efficiency: Real-World Results

Nurses have key roles to play as hospitals continue their quest for higher quality and better patient safety.

by Jack Needleman and Susan Hassmiller

ABSTRACT: Discussions of hospital quality, efficiency, and nursing care often taken place independent of one another. Activities to assure the adequacy and performance of hospital nursing, improve quality, and achieve effective control of hospital costs need to be harmonized. Nurses are critical to the delivery of high-quality, efficient care. Lessons from Magnet program hospitals and hospitals implementing front-line staff-driven performance improvement programs such as Transforming Care at the Bedside illustrate how nurses and staff, supported by leadership, can be actively involved in improving both the quality and the efficiency of hospital care. [*Health Affairs* 28, no. 4 (2009): w625–w633 (published on-line 12 June 2009; 10.1377/hlthaff.28.4.w625)]

The U.S. HOSPITAL SYSTEM SUFFERS FROM SHORTFALLS in quality and from unsustainable growth in costs. The 2000 Institute of Medicine (IOM) report *To Err Is Human* documented major weaknesses in the quality in hospital and ambulatory settings; the 2001 follow-up report, *Crossing the Quality Chasm*, laid out a vision of a health system that delivered safe, reliable, timely, and patientcentered care.¹ Improving the quality of America's hospitals has become a highly visible public and private enterprise, as payers, accreditors, and private organizations attempt to set standards and encourage their achievement.

At the same time, there has been ongoing concern about controlling hospital costs, which have experienced real growth of approximately 2 percent per year despite decades of efforts at hospital payment reform and utilization control.² Efforts by hospitals to control labor costs have had major effects on nurses—the largest component of hospital labor. Lower rates of entry into the nurse workforce

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in the 1990s, and the impact on long-term shortages of nurses, have been attributed in part to the perceptions by potential nurses that the quality of work life as a nurse was low.³

Discussions of hospital quality, cost control, and hospital nursing care have often taken place independent of one another. These discussions need to be integrated, and the goals of assuring the adequacy and performance of hospital nursing, improving quality, and achieving effective cost control need to be harmonized. In this paper we argue, first, that the staffing and organization of hospital nursing affects both quality and cost; second, that nurses must be actively involved in process improvement directed at both quality and efficiency; and third, that there are emerging models of how such engagement can be obtained from both the hospital-level leadership and the front-line staff.

The Impact Of Nurses On Hospital Safety, Quality, And Costs

■ Safety and quality. The 1996 IOM report Nursing Staff in Hospitals and Nursing Homes: Is It Adequate? concluded that although nursing services are central to the provision of hospital care, "little empirical evidence is available to support the anecdotal and other informal information that hospital quality of care is being adversely affected by hospital restructuring and changes in [nurse] staffing patterns."⁴

Since that report, and in part in response to it, the number of studies examining the association of staffing and quality in hospitals has exploded. Major studies demonstrating the association of nurse staffing and patient outcomes, including lengths-of-stay, mortality, pressure ulcers, deep vein thromboses, and hospital-acquired pneumonia have been published in first-tier journals, and several major literature reviews, syntheses, and meta-analyses have been published confirming the association of nurse staffing with patient outcomes.⁵ When the IOM revisited the issue of nurse staffing and patient care in 2004, it concluded: "Research is now beginning to document what physicians, patients, other health care providers, and nurses themselves have long known: how well we are cared for by nurses affects our health, and sometimes can be a matter of life or death."

Research on these issues is continuing. Indeed, its scope has expanded through programs such as the Robert Wood Johnson Foundation (RWJF) Interdisciplinary Nursing Quality Research Initiative (INQRI), whose projects are examining how specific processes of care, such as care coordination, medication administration, or introduction of evidence-based protocols, are associated with nursing care and patient outcomes.⁷

Despite this research, the nature of nurses' work in hospitals is not well understood by the public or policymakers. In a recent survey, 88 percent of the public agreed that making sure there are enough nurses to monitor patient conditions, coordinate care, and educate patients should be a part of efforts to improve quality, but focus groups find that the public is confused about what nurses do, the kind of training they receive, and what distinguishes them from nurse aides and "Shorter hospital stays reflect nurses' ability to affect efficiency as well as quality."

other less trained personnel.⁸ The public understands that nurses' work is physically and emotionally demanding but may view this work as delivering care as ordered and providing physical and emotional comfort to patients and their families. Nurses do far more, and the work entails both substantial intellectual and organizational competence. Among the critical tasks carried out by nurses are (1) ongoing monitoring and assessment of their patients and, as necessary, initiating interventions to address complications or reduce risk; (2) coordinating care delivered by other providers; and (3) educating patients and family members for discharge, which can reduce the risk of posthospital complications and readmission.

■ **Costs.** Much work has examined the association of nursing and quality; less has examined nursing's impact on costs. A number of studies have assessed whether there is a business case for increasing nurse staffing in hospitals—that is, whether simply increasing staffing would pay for itself in reduced complications and lengths-of-stay.⁹ One key finding of this work is that improving nurse staffing does not completely pay for itself, although recent efforts to reduce hospital payment for poor quality may change this conclusion.

These analyses also find that the biggest cost savings of increased staffing result from reduced lengths-of-stay. Shorter stays reflect not just reductions in complications that extend stays, but the ability of nurses to do their work and coordinate the work of others in a timely and effective manner. They reflect nurses' ability to affect efficiency as well as quality.

A key limitation of these cross-sectional studies is that they do not consider how changes in nursing organization, systems, or work environment might improve outcomes or efficiency without increases in staffing. Other research studying nurses' work environments suggests that such improvements are possible.

For example, in 2005 Arminée Kazanjian and colleagues found an association between work environment and patient safety in nineteen of twenty-seven studies.¹⁰ The theoretical and methodological sophistication of the research needs to be strengthened before the mechanisms connecting nurse work environments to patient outcomes can be fully understood, and this research is still evolving; however, there is sufficient evidence to act.¹¹

Hospital Nursing: Key Issues

■ Tapping nurses' knowledge of the system. Nurses develop substantial knowledge of the strengths and weaknesses of hospital systems and how they fail. Their ability to create workarounds to broken or dysfunctional systems is legendary in health care.¹² As hospitals focus on increasing safety and reliability, patient-centeredness, and efficiency, nurses' knowledge and commitment to their patients

and institutions needs to be effectively mobilized.¹³ To accomplish this, nurses' perspectives must be represented at the highest levels of hospital leadership and integrated into hospital decision making. In addition, consistent with process-improvement research that identifies the active involvement of front-line staff as a critical factor in making and sustaining change, processes for engaging nurses and other front-line staff also need to be expanded.

■ Increasing the visibility and participation of nursing leadership within hospitals: Magnet accreditation. One impetus for hospitals to give increased voice to nursing and nursing leadership has been the development and expansion of the Magnet accreditation program. Magnet hospitals are those recognized by the American Nurses Credentialing Center (ANCC) for recruiting and keeping nurses while providing high-quality care to patients. The framework for the Magnet appraisal process consists of fourteen characteristics, including (1) strong nursing representation in the organizational committee structure; (2) nurse leadership that is part of the hospital's executive leadership; (3) a functioning system of shared governance in nursing; (4) empowerment of nurses at all levels of the hospital, with nurses able to effectively influence system processes; and (5) collegial working relationships among disciplines.¹⁴

There are now 305 Magnet hospitals and, according to the ANCC, more than 150 applicants seeking recognition. In 2004, *U.S. News and World Report* added Magnet recognition as a factor in its hospital rankings, providing an additional incentive for hospitals to seek Magnet status. Although every hospital working toward Magnet recognition will not succeed, there is a "great deal of evidence that many nursing leaders have found portions of the criteria particularly helpful in their efforts to improve their own settings."¹⁵ Other hospitals that will not seek Magnet status might nonetheless be inspired by the program.

Magnet hospitals were initially identified based on their ability to attract and retain nurses, but there has been interest in whether Magnet characteristics are also associated with better quality and patient experiences. Although a 1994 study found lower Medicare mortality in magnet hospitals, few studies have directly examined magnet status and patient outcomes.¹⁶ Some studies that have looked at Magnet status and nurses' work environment find persistent differences between Magnet and other hospitals.¹⁷ A growing number of studies find that Magnet characteristics are associated with patient outcomes.¹⁸ This is an area of continuing research.

In the field, concerns have been raised about the cost of seeking Magnet status and whether, as implemented, the accreditation process assures full implementation of the Magnet vision. A new Magnet model of credentialing, yet to be evaluated, that focuses on outcomes was introduced in 2008; it will weight more heavily for organizations demonstrating improved and high-level patient satisfaction, nurse satisfaction, and clinical outcomes measures.¹⁹

The Magnet accreditation program is not the only vehicle for institutionalizing

a more prominent role for nurse leadership at hospitals. Other accreditation programs should focus hospital leadership on the need to strengthen their nursing services. Nurses also need to be recruited to hospital and system boards and to board and leadership positions in national quality improvement organizations.

Engaging Front-Line Staff In Improving Hospital Performance

Process improvement research consistently identifies engagement of front-line staff as central to achieving and sustaining change. Developing models for achieving this in health care has proved challenging.²⁰ One such model is Transforming Care at the Bedside (TCAB).

Launched in 2003 with three hospitals, TCAB is a national program of the Robert Wood Johnson Foundation (RWJF) and the Institute for Healthcare Improvement (IHI). Its goal was to engage front-line staff and hospital leadership to make improvement in four domains: improving the quality and safety of care; ensuring a high-quality work environment to attract and retain nurses; improving the experience of care for patients and their families; and improving the effectiveness of the entire care team. In 2004, ten additional hospitals joined a two-year TCAB learning and innovation collaborative. By 2006, additional participation criteria were in place, such as partnering with schools of nursing, and ten of the thirteen hospitals opted to continue in the collaborative for two more years.

■ **Participants' contributions.** Beyond the initial collaborative, the RWJF has expanded TCAB in several ways. It funded a sixty-seven-hospital collaborative conducted by the American Organization of Nurse Executives (AONE); it created a Web site that provides information to hospitals seeking to implement TCAB independently; and it has incorporated TCAB as a component of its Aligning Forces for Quality initiative. The IHI supports a TCAB Learning and Innovation community with eighty-one hospitals in its IMPACT Network; the program has spread to hospitals in four countries. Hospitals not formally participating in any collaborative have implemented TCAB-like programs by drawing on published descriptions and contact with TCAB hospitals. Hospitals provided a variety of resources to facilitate the work of front-line staff, including release time for nurses to conduct TCAB work, training in quality improvement methods, travel to collaborative meetings, and participation by resource personnel such as nurse educators, clinical nurse leaders, and quality improvement staff.²¹

■ Evaluation of TCAB. The RWJF-sponsored IHI and AONE initiatives are being evaluated. Details of the evaluation design, methods, and findings are available elsewhere; here we mention several findings from the IHI-led initiative that suggest that TCAB might serve as an effective model for engaging front-line staff.²²

One measure of the degree of engagement of staff is the volume of testing of improvement ideas that was conducted. The thirteen pilot units tested 533 innovations over four years—an average of 41 per unit. Testing was done across all four TCAB domains. At the end of the pilot period, unit managers at the hospitals reported that 71 percent had been sustained and were still in place. Many of the innovations focused on improving efficiency or increasing the value of care. Examples include adoption of new end-of-shift reporting methods and work to speed and better coordinate the discharge process among physicians, nurses, housekeeping, and other departments.

■ Impact. Given the small number of hospitals and units involved and uneven data reporting by units, the impact of this collaborative cannot yet be definitively assessed. The limited available data suggest that it has had an impact on both quality and efficiency; if this is confirmed in the larger AONE initiative, it would reinforce recommendations to engage front-line staff in process improvement.

At the end of the four years, all unit managers in the pilot hospitals reported improvement in all TCAB domains and attributed all or some of these improvements to TCAB. Reporting of outcome measures was uneven, and many units demonstrated no improvements on the measures tracked. However, between 2005 and 2007, falls with harm declined, on average, 45 percent, and the calling of "code blue" (meaning need to resuscitate) for cardiac arrest declined 30 percent. Thirty-day readmissions declined 25 percent between 2006 and 2007.²³ Preliminary results of a business-case analysis commissioned by the RWJF, using a limited set of outcomes (costs of avoided falls and low levels of turnover and overtime), suggest that the cost savings might have exceeded the costs of implementation.²⁴

At the beginning of TCAB, many hospital leaders were skeptical that the work of testing and evaluating innovations could be widely spread. They expected that some high-value innovations would be identified on pilot units and that these would be widely disseminated, but that TCAB unit processes would not. During the first year of the program, attitudes changed, and there was increased commitment to spreading processes. Several things contributed to this change. The volume of tests convinced some leaders that the innovation work needed to be decentralized to reduce the burden on the units involved. Implementing some innovations required coordination across units or departments, and this required engaging staff in those units or departments in TCAB processes. Most significantly, there was a perception that the culture on the pilot units had changed and that the changes were desirable throughout the hospital. If the gains were to be sustained, hospitals believed, TCAB could not be viewed as a project that was going to end or be replaced by the next project, but had to be, in the words of a unit manager echoed among participating hospitals, "how we do our work."

At the end of the four years, pilot unit managers, unit managers from the first units to which TCAB was spread, and hospitals' chief nursing officers (CNOs) were surveyed on their TCAB experiences and expectations. Based on those surveys, TCAB appears to have been successful in engaging front-line staff. All but two unit managers believed that TCAB made front-line staff more likely to initiate changes to improve processes on the unit. Informally, waiting lists for nurses to work on TCAB units were reported, at a time when the hospital nurse shortage

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was most acute. Additionally, solid majorities of CNOs and pilot unit mangers believed that cooperation with other departments had increased because of TCAB. Commitment to maintaining and spreading TCAB processes to units well beyond the original units and innovations in the participating hospitals as the formal collaborative ended was high.

TCAB is not the only model for engaging front-line staff. Many organizations are testing or implementing other models, including Kaiser Permanente, with its Nurse Knowledge Exchange; VHA, with its Return to Care initiative; and the Department of Veterans Affairs (VA), with an internal version of TCAB.²⁵

Discussion And Policy Implications

Hospitals need to integrate their work to improve quality and patientcenteredness and to increase the efficiency of care delivery. Nurses and other front-line staff must play key roles. To benefit from the insight and input of these staff members, hospitals will need to value their potential contributions, shifting their vision of nursing from being a cost center to being a critical service line.

But simply changing leadership's view of front-line staff or changing hospital culture to embrace a culture of improvement will be insufficient. One of the lessons we draw from the TCAB experience is that improvement must be institutionalized in the day-to-day work of the front-line staff, with adequate time and resources provided and with front-line staff participating in decision making. The experience of Magnet hospitals and of units engaged in TCAB provide concrete models of hospital- and unit-level organizations and processes to accomplish this. Increasingly, there are organized vehicles for promoting these models, including the Magnet accreditation program, IHI and AONE plans to promote TCAB models in their ongoing work, and the RWJF's ongoing support of this program at the state and national levels.

These specific activities need to be complemented with other changes that encourage the engagement of front-line staff in process improvement. These should include changes in reimbursement to increase value of effective, high-quality nursing to hospitals, such as the recent decision by the Centers for Medicare and Medicaid Services to not pay for "never events." There is a growing literature on nursing-sensitive payment.²⁶

Looking upstream from the hospital, nursing education will have to change to prepare new graduates to work in environments where they have responsibility for process improvement. One model showing promise is that of Clinical Nurse Leaders, an effort to produce nursing school graduates who can implement outcomes-based practice and quality improvement strategies and create and manage unit-level systems for delivering care.²⁷

Getting nurses and other front-line staff actively involved in efforts to simultaneously improve hospital quality and increase efficiency will require action both within institutions and by those who measure their quality and pay for their services. The models for accomplishing this are still evolving, but the broad outlines for achieving such engagement are clear. The lessons from Magnet accreditation and TCAB should be used as hospitals take full advantage of nurses' knowledge and commitment to their patients and institutions—to increase the safety and reliability, patient-centeredness, and efficiency of care.

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NOTES

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