

Addressing the Nursing Work Environment to Promote Patient Safety

Laura Lin, RN, MBA, JD, and Bryan A. Liang, MD, PhD, JD

TOPIC. *The nursing work environment has a critical impact on patient safety. Yet confusion on the specific roles and competencies of nurses, staff ratio issues, and lack of nurse empowerment create weaknesses that result in safety risks.*

PURPOSE. *These interrelated issues must be addressed systemically to impact the nursing care system.*

DISCUSSION. *Educational reform focusing upon standardized, higher level nursing education using a military model, appropriate staff ratio laws derived from the outcomes literature, and recurrent training incorporating policy-making powers can result in nurse empowerment and improved patient safety.*

CONCLUSION. *Improving the nursing environment requires a broad approach to benefit patient safety. By treating the work environment as a complex system, approaches can result in greater nurse professionalism, empowerment, and patient safety.*

Search terms: *Education, nursing, patient safety, staff ratios, work environment*

Laura Lin, RN, MBA, JD, is a Research Associate, Institute of Health Law Studies, California Western School of Law, and Bryan A. Liang, MD, PhD, JD, is Executive Director and Professor of Law, Institute of Health Law Studies, California Western School of Law, and Co-Director and Adjunct Associate Professor of Anesthesiology, San Diego Center for Patient Safety, University of California San Diego School of Medicine, San Diego, California.

Introduction

Patient safety is a compelling concern in our health-care system. This is especially true since the Institute of Medicine (IOM) report "To Err Is Human" was released, which has generated extensive discussion on preventable medical error in hospitals (Kohn, Corrigan, & Donaldson, 2000). Unintended harm arises when an intended outcome does not occur due to the interaction "between pieces of equipment, among people and between people and equipment" (Latham, 2001). Our nation's healthcare delivery is a complex system, and patient safety must be improved on multiple levels. One critical area is the nursing care environment.

Modernizing the "nursing system" can improve patient safety. The nursing staff provides continuous care for acute patients in a complex environment with highly technical equipment and involving multidisciplinary providers. Yet currently, work environment issues dominate problems associated with nursing care. There is a well-known shortage of nurses across the United States that creates poor and high-stress environments for nurses, which adversely affects patient safety. Nurse dissatisfaction with the workplace has also been directly related to having significant negative implications for patient safety. This multifaceted problem must be addressed at all levels in a systems manner to improve the nursing work environments to promote quality and safety in health care.

In this paper, we assess the problem of nursing work environment. We recommend reforms that

address the interrelated concerns of environment, status, education, nursing staff ratios, and recurrent training.

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The Problem: Work Environment, Satisfaction, and Safety

Nurses significantly impact health care. In terms of sheer numbers, registered nurses, licensed practical nurses, and nursing assistants constitute greater than half of all healthcare providers (National Academies News, 2003). Nurses, as providers, interact the most with patients, providing around-the-clock direct patient care. Studies suggest poor patient outcomes, such as increased infections and respiratory failure, occur when there is inadequate nursing staff. Furthermore, nurses thwart medical errors. For example, nursing staff have been shown to intercept almost 90% of medication errors before they reach patients.

Although nurses do act as a last barrier to harm, much improvement in their work environment is needed to promote safety. The IOM has reported that the work environment for nurses needs to be substantially transformed to better protect patients from healthcare errors (National Academies News, 2003).

Work environment issues are a crucial concern from a wide array of perspectives. In 2000, the American Nurses Association (ANA) conducted an online Staffing Study to collect information about nurses'

opinions about their working conditions (ANA, 2001a). Decreasing nurse satisfaction and patient safety became a merging theme. The study revealed nurses were working harder and extra hours, and were very worried about patient safety. Seventy-five percent of the nurses surveyed indicated the quality of nursing care at their facility had deteriorated over the preceding 2 years. Other concerns included inadequate staffing, decreased nurse satisfaction, and patient care delays. Declining work satisfaction was associated with an increase in stress; nurses reported being exhausted, skipping meals to give basic care, and being pressured to work extra shifts, all of which impact patient safety.

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Another survey by the ANA in 2001 collected information about the health and safety concerns of nurses (ANA, 2001b). Nurses reported job stress as the top health and safety concern, followed by disabling back injuries, and contracting HIV or hepatitis from a needle-stick injury, with less than 20% of respondents feeling safe from work-related injury in their current work environment. Most disturbing is that over 75% of these nurses reported that unsafe working conditions interfered with the ability to deliver quality care. These findings point again to the connection between nurse work satisfaction, the environment, and patient safety.

Aiken, Clarke, Sloane, Sochalski, and Silber (2002) have provided analyses of the direct relationship between the level of nurse staffing and its effect on patient safety, outcomes, and the satisfaction of the nursing professional in the hospital. They found that

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each additional patient per nurse was associated with a 7% increase in both patient mortality and deaths following complications and a 23% increase in nurse burnout. These findings provide significant information regarding our health system and the gap in quality and performance.

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However, improvement in work environment can lead to increased satisfaction. The American Nurses Credentialing Center, a subsidiary of the ANA, has developed the “magnet nursing services recognition program” for hospitals that meet quality standards and provide nurses with more responsibilities, autonomy, and opportunities to participate in policy decisions. Studies suggest that nurses in such hospitals have greater job satisfaction, and the hospitals are less likely to have difficulty in hiring and retaining nurses (Aiken, 2002). Yet although these results are compelling, in 2004, less than 3% of the nation’s hospitals had qualified for magnet designation (American Nurse Credentialing Center, 2004).

Poor work environments for nurses adversely impact patient safety, even in the context of legislative efforts at increasing nursing levels. Although Congress

passed the *Nurse Reinvestment Act*, Public Law 107–205 in 2002 to stimulate the growth and attractiveness of the nursing profession, in 2004, the IOM Committee on the Work Environment released a report, *Keeping Patients Safe: Transforming the Work Environment of Nurses*. This report indicated that the current health-care environment is leading to patient harm and nurse burnout (IOM, 2003). A systems approach was suggested to assess how nurses work and the opportunities that exist to reduce medical error. Evidence suggests that the environment in which nurses work affects both patient safety and the safety of nurses. Hence, nurses continue to experience dissatisfaction of their work environment, leading to attrition and detriments to patient safety.

The Solution: Reform in Roles, Education, Staffing, and Professional Development

The nursing profession needs change, or nurses will continue to leave, exacerbating the present shortage that already creates unsafe working environments for both patients and nurses. By the year 2020, the registered nurse (RN) workforce is forecast to be roughly the same size as it is today, declining nearly 20% below projected RN workforce requirements (Buerhaus, Staiger, & Auerbach, 2000).

Adequate RN staffing is fundamental to quality care; evidence is mounting that demonstrates more RNs equates to better patient safety. However, the reduction in reimbursement paid by managed care companies has led to operating budget cuts and restructuring plans, frequently resulting in inadequate staffing. State legislation, such as California’s nurse–patient ratio law (California Health & Safety Code, 2004), is a step in the right direction, but alone is not enough to tackle the patient safety issue. Before decreasing nurse–patient ratios, other measures must be implemented to ensure a successful transition so that nursing supply meets demand.

In order to obtain an adequate supply of nurses and to ensure consistent and clear roles and responsibilities

for the nursing profession, the registered professional nurse must be educated in a standardized high-level skill set. This will lead to a clear understanding of the competencies of a nurse and improved status and satisfaction. In combination with appropriate nursing staff ratios and more effective recurrent safety training, highly qualified candidates will be attracted to the field while also retaining high-quality providers. Through this systemic approach, patient safety will be fostered and promoted.

Education

The 1996 IOM report on nurse staffing in hospitals recommended a comprehensive study of the relationship between skill mix and quality of care (Wunderlich, Sloan, & Davis, 1996). In one joint report, the American Association of Colleges of Nursing (AACN), the National Organization for Associate Degree Nursing, and the American Organization of Nurse Executives determined that substantive differences exist between ADN and BSN educational experiences and the competencies achieved in these programs. Higher level nursing education results in greater safety for patients. A landmark study in 2003 found that surgical patients have a "substantial survival advantage," seen by lower mortality and failure to rescue rates, if treated in hospitals with higher proportions of nurses educated at the baccalaureate or higher degree level (Aiken, Clarke, Cheung, Sloane, & Silber, 2003).

The National Advisory Council on Nurse Education and Practice, policy advisors to Congress and the U.S. Secretary for Health and Human Services on nursing issues, recommends minimally two thirds of the nurse workforce should have at least a baccalaureate degree in nursing by 2010; currently only 43% of nurses hold at least a baccalaureate degree (AACN, 2006). Other professions, like pharmacy and audiology, have raised their education standards (Nelson, 2002). Even disciplines such as occupational therapy and physical therapy, which formerly allowed certification without a college degree, now require a

master's education; indeed audiology has moved from a master's degree to transition to doctoral level training. Hence, *at least* a baccalaureate degree should be the absolute minimum required for nurses to maintain equal standing with other healthcare professionals and to participate as partners on interdisciplinary teams (Barter & McFarland, 2001).

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There is significant variation as to what constitutes a nurse. Although like other professions, nursing education requires standardized minimal educational levels, currently there is no standard definition of what defines a "nurse." Beyond lack of a standard recognized definition, adding to the confusion is that there are at least three educational pathways available for the "registered nurse" or RN designation: the 2-year associate's degree, the 3-year diploma (programs associated with hospitals), and the 4-year baccalaureate degree (Steinbrook, 2002). Compounding this problem, licensed practical nurses typically only have a high school diploma and are trained in a 1-year program at a technical or vocational school, community college, or junior college but are also called "nurses." This creates confusion both within the healthcare

system and outside of it on who exactly is a nurse, and the role and competencies of each nurse.

This confusion and variation of the single professional designation “nurse” may be one source of why the nursing profession does not garner the respect or status it deserves. For example, in focus groups conducted to gather information and perceptions from nurse educators regarding declining BSN enrollments, nurse educators consistently reported that potential BSN students were discouraged from pursuing a nursing career by the confusing array of entry-level options available in the profession. They also noted that such confusion had led many secondary school students and guidance counselors to not view nursing as an intellectual endeavor, and instead more technical “like shop” and not “professional” (JWT Specialized Communications, 2000). Students perceived that nursing was “a girl’s job,” and students believed there were few career advancement opportunities—“a nurse was a nurse, was a nurse regardless of education or experience” (JWT Specialized Communications). Although 72% of nurse executives in one study indicated that they perceived that BSN-prepared nurses are better equipped than RNs with an ADN or diploma education to apply critical thinking and analysis, use evidence-based practice, provide leadership, and focus on prevention and patient education, only 44% of their institutions provided differentiated salaries, and only 33% applied differentiated role descriptions based on education (University Health System Consortium, 1999).

Such confusion creates issues of safety. Responsibilities and competencies of the highest level and trained nurse such as a BSN may be assumed by healthcare providers to apply to all nursing staff, however trained. Hence, if tasks and safety knowledge are allocated and attributed based on this assumption to those without this training and ability, errors will occur and these staff will not be able to effectively intervene to act as a barrier to harm. A useful and effective approach has been adopted by the military and can serve as a reform model.

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The Military Model: Clear Roles

The U.S. Army, the U.S. Navy, and the U.S. Air Force require active duty military nurses to have a minimum of a 4-year college degree (AACN, 2006). Competencies are also well defined and known by all members of the healthcare team; military nurses perform all the duties of “traditional” nurses, but are also given a wider range of responsibility than in civilian environments. For example, they may be in charge of coordinating educational in-service activities for the unit staff, placed on hospital committees, involved in the planning of specific changes that affect the unit, or be responsible to implement surprise CPR and other events to ensure staff are adequately responsive to codes. In the U.S. Navy, hospital corpsman, similar to the civilian counterpart of a licensed vocational nurse, assist nurses, but the corpsman roles and responsibilities are clearly defined and distinct to patients and other providers. Hospital corpsmen assist with physical examinations, provide patient care, administer medicines, as well as perform general laboratory, pharmacy, and other patient support services. There is no confusion as to the specific roles or title distinctions, and active members of the military and the patient understand what are the specific roles of each.

Beyond improving safety through clearly defined roles and responsibilities, using the military model can

promote nurse satisfaction. Recognizing expanding roles and contributions of RNs to the delivery of high-quality health care will make the nursing profession a more attractive career option. A study of community and academic acute-care hospitals indicated that the most successful approaches for recruiting and retaining RNs over the long term included models that allow RNs shared governance programs in which RNs actively participate in decision-making about patient care issues (American Organization of Nurse Executives, 2000). Enhancing responsibility and empowerment through standard, heightened visibility roles and effectiveness is consistent with these results and serve to professionalize this conceptualization of nurse.

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Implementation

To implement the military model and reduce the highly variable civilian use of the term “nurse,” nursing education must be standardized. At a minimum, registered nurses should be required to obtain a baccalaureate degree and pass the state licensing exam. Although this represents a similar move in the direction of other fields such as audiology and occupational and physical therapy, it is not merely a move in form; substantive changes in health care require it. The Veteran’s Administration, the nation’s largest employer of registered nurses, has identified the need of a

baccalaureate degree nurse. Starting in 2005, the Veteran’s Administration has established the baccalaureate degree as the minimum preparation its nurses must have for promotion beyond the entry level, committing \$50 million over a 5-year period to enable Veteran’s Administration nurses to acquire a 4-year degree (AACN, 2006). The ever-increasing and expanding use of modern technology, greater patient severity of illness, along with the extensive tools and education required to promote patient safety warrant the expectation of a nurse professional trained didactically and clinically for a period of 4 years to obtain at least a bachelor’s degree.

This highly trained “nurse” should be clearly distinguished from other healthcare professionals, as the nurse is distinguished from hospital corpsman in the U.S. Navy. Well-defined roles make clear what each staff member is responsible for, and the kinds of tasks he or she is able and expected to perform. The result is hospital team coordination that is highly effective and efficient, similar to roles and team efforts of aviation flight teams.

Hence, the title “nurse” should only be used for a registered nurse with a bachelor’s degree. For example, a licensed vocational nurse, a licensed practical nurse, a nurse’s aide, and a nurse assistant, each should have unique, separate titles *without* the word nurse, to clarify roles in the health delivery system and for patient care purposes. Suggested titles might be vocational assistant, licensed practical caregiver, clinical aide, and clinical assistant. Each should also have standard educational levels and training for team understanding and role purposes. By reducing variations, increasing standardized education, and clarifying titles, specific roles of healthcare team members will be defined and coordination of care promoted that will have a positive effect on safety.

Nursing Staff Ratios: The Literature

Studies show an association between poor nurse staffing levels and adverse patient outcomes. The

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Department of Health and Human Services released a study that concluded the number and mix of nurses in a hospital affects the quality of care received by patients (Needleman, Buerhaus, Mattke, Stewart, & Zelevinsky, 2002). The study found a compelling relationship between nurse staffing and five adverse outcomes in patients—urinary tract infections, pneumonia, shock, upper gastrointestinal bleeding, and length of stay—showing a higher number of registered nurses was associated with up to a 12% reduction in the rates of adverse outcomes. Another study confirmed these results and also found that a higher proportion of hours of nursing care provided by registered nurses were associated with better care for hospitalized patients, demonstrated by shorter lengths of stay, fewer failure-to-rescue deaths, and lower rates of urinary tract infections, upper gastrointestinal bleeding, hospital-acquired pneumonia, and shock or cardiac arrest (Needleman et al.).

Varying intensive care unit nurse–patient ratios also have an effect on patient outcomes. For example, fewer nurses at night caused an increased risk for specific postoperative pulmonary complications in patients undergoing hepatectomy surgery (Dimick, Swoboda, Pronovost, & Lipsett, 2001). There was also a significant increase in complications and use of resources, such as intubations, with patients receiving postoperative care in the intensive care unit with a nurse–patient ratio of 1 to 3 or higher. Surgical patients have also experienced a higher risk of death and injury from infections and other preventable complications when fewer nurses care for them (Aiken et al., 2002). Importantly, it was also found in this study that nurses in hospitals with low nurse–patient ratios are more than twice as likely to experience job-related burnout and dissatisfaction with their jobs when compared to nurses in hospitals with the highest nurse–patient ratios. Cooper (2004) has noted that in nursing staff ratios also implicate higher costs in a plethora of areas that reflect the actual reality of nursing practice.

Hospital Setting

Hospitals have an ethical obligation to provide professional patient care. Nurses are also ethically responsible to deliver safe patient care. However, the facility must have adequate systems in place that reduce the possibility of harm to patients and increase the probability care will be safely delivered, which includes appropriate nursing staff. Higher costs are associated with inadequate nurse staffing in hospitals and leads to errors and nurse burnout (Cooper, 2004). Evidence suggests that better nursing staff levels result in safer patient care outcomes, indicating a need for more nurses, and an appropriate nurse–patient ratio (National Academies News, 2003). The staff nurse is often the last layer of defense for error occurrence and patient safety promotion, and ensuring adequate nursing staff will reduce the possibility of harm to patients and increase the probability care will be safely delivered. Although hospital management may strongly advocate patient safety and create policies and procedures in an effort to promote safety, nurses are those who spend the most time at the “sharp end.” The sharp end is the interface between provider and patient where multiple layers of care may either block or allow errors to penetrate, resulting in accidents. Decisions, policies, procedures, and protocols at the “blunt end” of administration, formal and informal turf battles, communications issues, and so forth represent how the nurse–patient will interact at the sharp end (Reason, 1990).

Hence, to promote safety, sharp end team members must communicate with blunt end decision-makers to provide feedback on how activities on the blunt end affect sharp end activities. Critically, sharp end team members must be empowered to influence blunt end activities, since sharp end team members will implement any safety and quality improvement policies. They are therefore those who must operationalize the safety efforts. They simply cannot if systems factors such as inadequate staff ratios create system weaknesses that hamper their ability to stop an error from

proceeding to an accident. But by having appropriate system resources in place, this creates a safe work and care delivery environment that allows nurses to proficiently perform their duties, enabling nurses to gain the respect they deserve and the personal satisfaction they currently lack.

Legal efforts have recognized the importance of appropriate nurse–patient ratios in hospitals. In 1999, California became the first state in the nation to mandate nurse–patient ratios for hospitals (California Health & Safety Code, 2004). The first phase of the legislation took effect January 1, 2004, requiring hospitals to have at least one nurse on duty for every six patients in medical-surgical units. Phase two took effect in 2006, lowering the nurse–patient ratio to 1 to 5. Though a necessary law, more appropriate systems that address work environment and job satisfaction issues as noted above must be in place to give all entities the tools to ensure a successful transition. Attracting candidates to nursing requires it to be viewed respectfully, which requires a clearly defined title and professional role.

Without deeper nursing education and workplace changes, hospitals are unlikely to be able to recruit registered nurses. This shortage may reduce access to care; compounding this is that the costs of complying with new staffing ratios may put significant burdens on hospitals as well as creating tremendous system stressors that will impact safety. Furthermore, hospitals may face patient injury suits using the compelling research regarding inadequate staffing of registered nurses that lead to poor patient outcomes, emphasizing the need for reform that increases staffing.

Hence, patient safety reform efforts using legal mandates of better nursing staff ratios must also focus on professional issues to promote more professional working conditions so that nursing becomes a more desirable profession (Coffman, Spetz, Seago, Rosenoff, & O’Neil, 2000; Kimball & O’Neill, 2002). Without attention to this latter root cause issue, more numerous laws and regulations may do little to address—

and indeed may exacerbate—problems in patient safety.

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Recurrent Training

A formalized orientation program for nursing staff members is important and has been recognized as one of the best risk management approaches an organization can initiate (Brunt, 2001). Job descriptions and patient care policies, expected conduct, and supervised clinical experience to validate competency are frequently included, while other content is required by regulatory organizations such as the Joint Commission on Accreditation of Healthcare Organizations (JCAHO, 1995). Nursing professional development encompasses both continuing education, which some states mandate a specific amount of units (continuing education units or “CEUs”) with license renewal, and staff development, which is variable depending on the employer (Brunt, 2001).

To create a safe environment, in addition to CEU requirements, nurses need recurrent hands-on safety training, where the nurses can demonstrate and keep

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current on knowledge, abilities, actions, and patient safety efforts. From appropriate hand washing, medication safety processes, patient ID band verification, to other competencies, nurses greatly influence patient safety. Recurrent training in these areas is fundamental for safe systems, good patient outcomes, and reinforcement of nurse habits of safe behavior.

This recurrent training need not be onerous. For example, a hospital can provide nurses with literature regarding the procedures they will be evaluated on. A training room can be set up, with rotating trainers/participants managing/using each station, who observe and evaluate each nurse; for example, in administering medication or blood products, demonstrating a wound-care technique, or inserting tubes such as Foley catheters or NG tubes. Simulators may also be used so nurses can actually use medical equipment, and practice clinical reasoning and decision-making skills in a safe environment. Such practically oriented training activities and simulation are standard in high-risk, safety-oriented industries such as aviation, where recurrent training occurs every 6 to 12 months.

These workshops can also serve, particularly at the outset, to educate nurses away from the individually oriented shame-and-blame attitude that currently engulfs the healthcare professions. It is imperative that a team focus, cooperative shared learning and goal orientation, and nonpunitive reporting, analysis, and corrective action be the focus of care delivery for nurses. Like the aviation industry, which is the gold standard for quality improvement and error reporting, the healthcare industry must move away from blaming the last person who touched the patient and move toward transparency in system weakness identification and creative solutions (Liang, 2004).

Beyond skill development and educating on a systems focus, these training activities can extract valuable information from nursing staff to maximize patient safety. Nurses have a wealth of information on system weakness and near misses, and these workshops can provide a forum for creative problem-solving—allowing this safety information to surface from

frontline nurses and potentially create effective and efficient solutions. Through feedback to blunt end system actors such as administrators and others, policies, procedures, protocols, and decisions can be developed and implemented by those very people who will be in the position to effect safety change—nurses. It should be emphasized that healthcare organizations, including the nursing staff, need a culture that allows blame-free error reporting, like the aviation and nuclear power industries (Liang, 1999).

This, too, is a work environment issue. Healthcare organizations must involve nurses and nurse leaders in all levels of management by soliciting input from nursing staff on decisions about work design environment and safety policy implementation, especially because nurses are in prime positions to help pinpoint inefficient work processes that could contribute to errors, identify causes of nursing staff turnover, and determine appropriate staff levels for each unit (National Academies News, 2003). Without the ability to impact and improve their own work environments—and patient safety there—nurses will become disenfranchised with their workplace as they are now, contributing to dissatisfaction and poor organizational retention as well as dangers for medical accidents. Clearly these are undesirable outcomes for the nurse and the organization, but they may be disastrous for the patient.

Conclusion

The nursing profession must be able to navigate the high-speed, convoluted pace of our healthcare delivery system. Nurses must be prepared to meet the demands of sicker patients, complex technology, more responsibility, and less physician contact. For many years, the nursing profession has been challenged with a poor working environment. Current studies link fewer registered nurses to poor patient outcomes and the nursing shortage has created even greater stresses to the delivery system. Patient safety is at risk.

The problem is multifaceted. Efforts must be made to reform the nursing system to address patient safety in a way that goes beyond superficial solutions. Work environment issues implicate the status of nurses, and clearer roles and educational reform defining specifically who is a nurse, and what a nurse can and should be able to do, can assist in making nursing a more desirable profession. Furthermore, appropriate staff ratios, linked with improved safety, are important, but legal mandates are not enough. Addressing the satisfaction of nurses through empowerment is essential to attract and retain nurses and improve their working environment. Finally, by empowering nurses and providing them with valuable, practical recurrent skills training and problem solving power, nurses will garner the respect, autonomy, and professional status and skills to lead in the effort to promote patient safety.

Author contact: baliang@alum.mit.edu, with a copy to the Editor: cooperconsulting@socal.rr.com

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