Chapter 22. Practice Implications of *Keeping Patients Safe*

Ann E. K. Page

Background

Improving patient safety and other dimensions of health care quality requires change at all four levels of the health care system: (1) the experience of patients during their interactions with individual clinicians; (2) the functioning of small units (microsystems) of care delivery such as surgical teams or nursing units; (3) the practices of organizations that house the microsystems; and (4) the environments of policy, payment, regulation, accreditation, and other factors external to the actual delivery of care that shape the context in which health care organizations deliver care.[1] Several groundbreaking Institute of Medicine (IOM) reports have spurred substantial actions at each of these levels to bring about improvements in patient safety and overall quality.

These IOM reports began as the product of the unique Committee on the Quality of Health Care in America created by the IOM in 1998 in response to the accumulating number of studies documenting that the way in which health care has been delivered has not kept pace with the advances in medical technology and our growing knowledge about diseases and how to effectively treat them. The committee's first report, *To Err Is Human*, was stunning. This report documented that not only was health care often of poor quality, it was actually unsafe. The report said that between 44,000 and 98,000 deaths every year (more than deaths from breast cancer, AIDS, or motor vehicle accidents) were caused by problems in the way the health care system was designed, not from "bad" doctors, nurses, or other health care workers.[2]

The report's message and recommendations for building safer systems of care delivery across the entire U.S. health care system primarily addressed the changes needed at the fourth level of the health care system—where policy, payment, regulation, accreditation, and similar external factors shape the delivery of health care.[a] Within weeks of the report's release, the Senate Committee on Appropriations began hearings on medical errors and patient safety.

As a result of those hearings, Congress directed the Agency for Healthcare Research and Quality (AHRQ) to lead a national effort to combat medical errors and improve patient safety. AHRQ subsequently established a research and demonstration program to fund research to determine the causes of medical errors and to develop models that minimize the frequency and severity of errors; mechanisms that encourage reporting, prompt review, and corrective action; and methods to minimize paperwork.[3]

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[a] The Committee's second report, *Crossing the Quality Chasm—A New Health System for the 21st Century*, addressed health care quality in all its dimensions: effectiveness, timeliness, patient centeredness, efficiency, and equity (in addition to safety). *Crossing the Quality Chasm* generally spoke to the first and second levels of the health care systems—the experiences of patients with their individual clinicians and the microsystems of care delivery. *To Err Is Human* and *Crossing the Quality Chasm* both directed less attention to the third level—health care organizations.

Nurse Working Conditions

Nursing personnel represent the largest component of the health care workforce. Licensed nurses and unlicensed nursing assistants represent approximately 54 percent of all U.S. health care workers (e.g., physicians, nurses, dentists, allied health professionals, technicians and technologists, and other health care assistants).[4] Registered nurses (RNs) alone constitute approximately 23 percent of the entire health care workforce—the largest portion among all health care workers. These 2.2 million RNs provide health care to individuals in virtually all locations in which health care is delivered—hospitals; long-term care facilities; ambulatory care settings, such as clinics or physicians' offices; and other settings, including the private homes of individuals, schools, and workplaces. In U.S. hospitals, approximately one of every four hospital employees is a licensed nurse.[5] Although constituting the largest contingent in the health care workforce, nurses are in short supply and competition for them is strong.

As part of its portfolio of research and demonstrations, AHRQ contracted with the IOM to study key aspects of the work environment of nurses that likely impact patient safety and identify potential improvements that would likely increase patient safety. AHRQ further directed the IOM to address three issues that have received much attention in Federal and State policy arenas: extended work hours and fatigue, mandatory overtime, and regulation of nurse staffing levels.

The report produced by the IOM in response to this charge, *Keeping Patients Safe: Transforming the Work Environment of Nurses*,[6] is significant for three reasons:

1. It documents the key role that nurses (the largest component of the health care workforce) play in patient safety and makes specific recommendations for changing their work environments to improve patient safety.
2. It highlights the role that an organization's governing boards, executive leadership, other management personnel, and practices play in patient safety by shaping organizational work environments.
3. It identifies generic workplace processes and characteristics that threaten or protect patient safety, not just with respect to nurses' actions, but by affecting the actions of all health care practitioners.

Keeping Patients Safe's recommendations are addressed to those parties that most directly shape work environments: health care organizations, Federal and State regulators, labor organizations, as well as other leaders in health care and nursing education. (The recommendations are reproduced in the section below, "Recommendations for Promoting Patient Safety in the Work Environments of Nurses.") However, individual nurses can also use the recommendations of this report to improve work environments in ways that keep patients safe from errors in their health care. The evidence presented in *Keeping Patients Safe* identifies factors that all nurses should take into consideration in selecting the health care organization in which to be employed, in participating in labor-management discussions, and in interacting in their employing organizations' efforts to reduce health care errors.

Practice Implications

Keeping Patients Safe identifies eight overarching safeguards to protect patient safety that need to be in place within all health care organizations in which nurses work: (1) organizational governing boards that focus on safety; (2) the practice of evidence-based management and leadership; (3) effective nursing leadership; (4) adequate staffing; (5) provision of ongoing

learning and clinical decisionmaking support to nursing staff; (6) mechanisms that promote interdisciplinary collaboration; (7) work design practices that defend against fatigue and unsafe work; and (8) a fair and just error reporting, analysis, and feedback system with training and rewards for patient safety (see Table 1).

Table 1. Necessary Patient Safeguards in the Work Environment of Nurses

Governing Boards That Focus on Safety
- Are knowledgeable about the link between management practices and patient safety.
- Emphasize patient safety to the same extent as financial and productivity goals.

Leadership and Evidence-Based Management Structures and Processes
- Provide ongoing vigilance in balancing efficiency and patient safety.
- Demonstrate and promote trust in and by nursing staff.
- Actively manage the process of change.
- Engage nursing staff in nonhierarchical decisionmaking and work design.
- Establish the organization as a "learning organization."

Effective Nursing Leadership
- Participates in executive decisionmaking.
- Represents nursing staff to management.
- Achieves effective communication between nurses and other clinical leadership.
- Facilitates input from direct-care nursing staff into decisionmaking.
- Commands organizational resources for nursing knowledge acquisition and clinical decisionmaking.

Adequate Staffing
- Is established by sound methodologies as determined by nursing staff.
- Provides mechanisms to accommodate unplanned variations in patient care workload.
- Enables nursing staff to regulate nursing unit workflow.
- Is consistent with best available evidence on safe staffing thresholds.

Organizational Support for Ongoing Learning and Decision Support
- Uses preceptors for novice nurses.
- Provides ongoing educational support and resources to nursing staff.
- Provides training in new technology.
- Provides decision support at the point of care.

Mechanisms That Promote Interdisciplinary Collaboration
- Use interdisciplinary practice mechanisms, such as interdisciplinary patient care rounds.
- Provide formal education and training in interdisciplinary collaboration for all health care providers.

Work Design That Promotes Safety
- Defends against fatigue and unsafe and inefficient work design.
- Tackles medication administration, handwashing, documentation, and other high-priority practices.

Organizational Culture That Continuously Strengthens Patient Safety
- Regularly reviews organizational success in achieving formally specified safety objectives.
- Fosters a fair and just error-reporting, analysis, and feedback system.
- Trains and rewards workers for safety.

Source: Committee on the Work Environment for Nurses and Patient Safety, 2004[6]**:** pages 16-17. Reprinted with Permission.

Keeping Patients Safe's 18 recommendations describe actions health care organizations, governmental policymakers, labor organizations, and other leaders in health care and nursing should take to promote patient safety in nurse work environments. While not directed principally

to individual nurses in clinical practice, the recommendations also can be used by nurses to leverage improvements in patient safety. Specifically, the recommendations have corollary questions (presented in Table 2) that nurses should ask of prospective and current employers.

Table 2. Questions Nurses Should Ask Prospective (and Current) Employers About Patient Safety

Governing Boards That Focus on Safety

1. What are the organization's most recent statistics on patient care errors, near misses, and adverse events?
2. How long has the organization been measuring these, and what do the trends show?
3. What activities does the organization have underway to improve patient safety, and what are the quantitative results of these initiatives to date?
4. Does the governing board review results of measurement of patient safety? How frequently?

Evidence-Based Management Structures and Processes

5. What mechanisms does the organization have in place to enable it to function as a "learning organization," i.e., to internally create and acquire from external sources new knowledge of better health care practices, distribute this knowledge throughout the organization, and change its policies and practices to reflect this new knowledge?

Effective Nursing Leadership

6. What person in the organization represents clinical nursing staff to the organization's governing board and management? What percent of this person's time is dedicated to improving clinical nursing care? Is this person a nurse? Of what senior management structures is this person a part?
7. How much funding and other organizational resources does nursing leadership have in its budget to support nurses' acquisition of knowledge?
8. To what nursing manager will the position in question report? What are the responsibilities of this nurse manager, and what portion of the nurse manager's time is generally spent in each of these responsibilities? What proportion of the nurse manager's time is spent providing supervisory and managerial support to clinical staff? How much time does the nurse manager spend providing direct patient care to his or her assigned caseload?

Adequate Staffing

9. What methods does the organization use to determine safe nurse staffing levels? Can you get a copy of the methodology?
10. What input do clinical nurse staff have in reviewing and modifying the staffing methodology? How frequently are the methodology and its assumptions reviewed?
11. Does the organization count admissions, discharges, and "less than full-day" patients (in addition to a census of patients at a point in time) in its estimates of patient volume for projecting staffing needs?
12. What mechanisms does the organization use to quickly secure additional staffing when need for nurse staffing is higher than anticipated—e.g., an internal float pool, use of staff from external agencies, staffing at higher levels to provide "slack" in the system, other mechanisms? Does the organization avoid use of nurses from external agencies?
13. What roles does clinical nursing staff have in determining admissions and discharges to the unit?
14. What is the nurse turnover rate for the organization? How is this calculated?
15. If an acute care hospital, what are the nurse-patient staffing levels in the intensive care units (ICUs)?
16. If a long-term care facility, is there at least one RN in the facility around the clock, seven days a week?

Organizational Support for Ongoing Learning and Decision Support

17. How does the organization support new graduate nurses and nurses new to the organization? Does it assign preceptors? How long is orientation?
18. What percent of the organization's nursing payroll is dedicated to the ongoing acquisition and maintenance of knowledge of the nursing staff?
19. To what extent does the organization annually ensure that each licensed nurse and nurse assistant has an individualized plan and resources for their educational development?
20. What types of decision support technology does the organization provide to nursing staff?
21. Does the organization use an electronic health record (EHR)? Does the EHR include decision support?

Mechanisms That Promote Interdisciplinary Collaboration

22. What mechanisms (such as interdisciplinary patient care rounds) does the organization have in place to promote interdisciplinary collaboration?
23. Does the organization provide formal education and training in interdisciplinary collaboration for all health care providers?

Work Design That Promotes Safety

24. What are the organization's policies with respect to nursing work hours? Do they prevent direct-care nurses from working longer than 12 hours in a 24-hour period and in excess of 60 hours per 7-day period under both voluntary and mandatory work hours?
25. Has the organization undertaken initiatives to design or redesign the work environment and care processes to reduce errors? What care processes did these initiatives address? Did the design of these efforts directly involve direct-care nurses?
26. Has the organization undertaken initiatives to improve hand washing and the safety of medication administration? When were they conducted and what were the results?

Organizational Culture That Continuously Strengthens Patient Safety

27. What are the organization's short- and long-term safety objectives?
28. How and how frequently does the organization review its success in meeting these?
29. What are the organization's policies and procedures for reporting errors, near misses, and adverse events in care?
30. Does the organization assure a de-identified, fair, and just reporting system for errors and near misses? How does it do this?
31. What are the organization's procedures for analyzing errors and providing feedback to direct-care workers?
32. Does the organization conduct an annual, confidential survey of nursing and other health care workers to assess the extent to which a culture of safety exists?
33. To what extent does the organization provide employee training in error detection, analysis, and reduction?
34. What rewards and incentives does the organization use to reduce health care errors?

Recommendations for Promoting Patient Safety in the Work Environments of Nurses[b]

Recommendations for Transformational Leadership and Evidence-Based Management

Creating work environments for nurses that are most conducive to patient safety will require fundamental changes throughout many health care organizations (HCOs) in terms of how work is designed, how personnel are deployed, and how the very culture of the organization understands and acts on the science of safety. These changes require leadership capable of transforming not just physical environments, but also the beliefs and practices of both nurses and other health care workers providing patient care and those in the HCO who establish the policies and practices that shape those environments—the individuals who constitute the management of the organization.

[b] Reprinted, with permission, from *Keeping Patients Safe: Transforming the Work Environment of Nurses*.[6] ©2004 National Academy of Sciences.

Leadership will need to assure the effective use of practices that (1) balance the tension between production efficiency and reliability (safety), (2) create and sustain trust throughout the organization, (3) actively manage the process of change, (4) involve workers in decisionmaking pertaining to work design and work flow, and (5) use knowledge management practices to establish the organization as a "learning organization." To this end, the committee makes the following recommendations:

Recommendation 4-1.[c] HCOs should acquire nurse leaders for all levels of management (e.g., at the organization-wide and patient care unit levels) who will:

- Participate in executive decisions within the HCO.
- Represent nursing staff to organization management and facilitate their mutual trust.
- Achieve effective communication between nursing and other clinical leadership.
- Facilitate input of direct-care nursing staff into operational decisionmaking and the design of work processes and work flow.
- Be provided with organizational resources to support the acquisition, management, and dissemination to nursing staff of the knowledge needed to support their clinical decisionmaking and actions.

Recommendation 4-2. Leaders of HCOs should take action to identify and minimize the potential adverse effects of their decisions on patient safety by:

- Educating board members and senior, midlevel, and line managers about the link between management practices and safety.
- Emphasizing safety to the same extent as productivity and financial goals in internal management planning and reports and in public reports to stakeholders.

Recommendation 4-3. HCOs should employ management structures and processes throughout the organization that:

- Provide ongoing vigilance in balancing efficiency and safety.
- Demonstrate trust in workers and promote trust by workers.
- Actively manage the process of change.
- Engage workers in nonhierarchical decisionmaking and in the design of work processes and work flow.
- Establish the organization as a "learning organization."

Because HCOs vary in the extent to which they currently employ the above practices and in their available resources, the committee also makes the following recommendation:

Recommendation 4-4. Professional associations, philanthropic organizations, and other organizational leaders within the health care industry should sponsor collaboratives that incorporate multiple academic and other research-based organizations to support HCOs in the identification and adoption of evidence-based management practices.

Maximizing Workforce Capability

Monitoring patient health status, performing therapeutic treatments, and integrating patient care to avoid health care gaps are nursing functions that directly affect patient safety. Accomplishing these activities requires an adequate number of nursing staff with the clinical

[c] For ease of reference, the committee's recommendations are numbered according to the chapter of the main text in which they appear.

knowledge and skills needed to carry out these interventions and the ability to effectively communicate findings and coordinate care with the interventions of other members of the patient's health care team. Nurse staffing levels, the knowledge and skill level of nursing staff, and the extent to which workers collaborate in sharing their knowledge and skills all affect patient outcomes and safety.

Regulatory, internal HCO, and marketplace (consumer-driven) approaches are traditionally advocated as methods to achieve appropriate staffing levels. The committee determined that each of these approaches has limitations as well as strengths; their coordinated and combined use holds the most promise for achieving safe staffing levels. The committee also took particular note of the need for more accurate and reliable staffing data for hospitals and nursing homes to help make these efforts more effective and to facilitate additional needed research on staffing. Finally, the committee identified a need for more research on hospital staffing for specific types of patient care units, such as medical-surgical and labor and delivery units. The committee therefore makes the following recommendations:

Recommendation 5-1. The U.S. Department of Health and Human Services (DHHS) should update existing regulations established in 1990 that specify minimum standards for registered and licensed nurse staffing in nursing homes. Updated minimum standards should:

- Require the presence of at least one RN within the facility at all times.
- Specify staffing levels that increase as the number of patients increase, and that are based on the findings and recommendations of the DHHS report to Congress, *Appropriateness of Minimum Nurse Staffing Ratios in Nursing Homes – Phase II Final Report*.[7]
- Address staffing levels for nurse assistants, who provide the majority of patient care.

Recommendation 5-2. Hospitals and nursing homes should employ nurse staffing practices that identify needed nurse staffing for each patient care unit per shift. These practices should:

- Incorporate estimates of patient volume that count admissions, discharges, and "less than full-day" patients in addition to a census of patients at a point in time.
- Involve direct-care nursing staff in determining and evaluating the approaches used to determine appropriate unit staffing levels for each shift.
- Provide for staffing "elasticity" or "slack" within each shift's scheduling to accommodate unpredicted variations in patient volume and acuity and resulting workload. Methods used to provide slack should give preference to scheduling excess staff and creating cross-trained float pools within the HCO. Use of nurses from external agencies should be avoided.
- Empower nursing unit staff to regulate unit work flow and set criteria for unit closures to new admissions and transfers as nursing workload and staffing necessitate.
- Involve direct-care nursing staff in identifying the causes of nursing staff turnover and in developing methods to improve nursing staff retention.

Recommendation 5-3. Hospitals and nursing homes should perform ongoing evaluation of the effectiveness of their nurse staffing practices with respect to patient safety, and increase internal oversight of their staffing methods, levels, and effects on patient safety whenever staffing falls below the following levels for a 24-hour day:

- In hospital ICUs—one licensed nurse for every two patients (12 hours of licensed nursing staff per patient day).
- In nursing homes, for long-stay residents—one RN for every 32 patients (.75 hours per resident day), one licensed nurse for every 18 patients (1.3 hours per resident day), and one nurse assistant for every 8.5 patients (2.8 hours per resident day).

Recommendation 5-4. DHHS should implement a nationwide, publicly accessible system for collecting and managing valid and reliable staffing and turnover data from hospitals and nursing homes. Information on individual hospital and nursing home staffing at the level of individual nursing units and the facility in the aggregate should be disclosed routinely to the public.

- Federal and State nursing home report cards should include standardized, case-mix–adjusted information on the average hours per patient day of RN, licensed, and nurse assistant care provided to residents and a comparison with Federal and State standards.
- During the next 3 years, public and private sponsors of the new hospital report card to be located on the Federal government website should undertake an initiative—in collaboration with experts in acute hospital care, nurse staffing, and consumer information—to develop, test, and implement measures of hospital nurse staffing levels for the public.

Moreover, the knowledge base on effective clinical care and new health care technologies is increasing rapidly, making it impossible for nurses (and other clinicians) to incorporate this information into their clinical decisionmaking and practice without organizational support. Organizational studies and research on exemplary work environments indicate the importance of investment in ongoing employee learning by employers. The committee therefore makes the following recommendation:

Recommendation 5-5. HCOs should dedicate budgetary resources equal to a defined percentage of nursing payroll to support nursing staff in their ongoing acquisition and maintenance of knowledge and skills. These resources should be sufficient for and used to implement policies and practices that:

- Assign experienced nursing staff to precept nurses newly practicing in a clinical area to address knowledge and skill gaps.
- Annually ensure that each licensed nurse and nurse assistant has an individualized plan and resources for educational development within health care.
- Provide education and training of staff as new technology or changes in the workplace are introduced.
- Provide decision support technology identified with the active involvement of direct-care nursing staff to enable point-of-care learning.
- Disseminate to individual staff organizational learning as captured in clinical tools, algorithms, and pathways.

Finally, in response to evidence on inconsistent interprofessional collaboration among nursing staff and other health care providers, the committee makes the following recommendation:

Recommendation 5-6. HCOs should take action to support interdisciplinary collaboration by adopting such interdisciplinary practice mechanisms as interdisciplinary rounds, and by providing ongoing formal education and training in interdisciplinary

collaboration for all health care providers on a regularly scheduled, continuous basis (e.g., monthly, quarterly, or semiannually).

Design of Work and Workspace To Prevent and Mitigate Errors

Nurses' work processes and workspaces need to be designed to make them more efficient, less conducive to the commission of errors, and more amenable to detecting and remedying errors when they occur. The work hours of a minority of nurses, in particular, are identified as a serious threat to the safety of patients. The effects of fatigue include slowed reaction time, lapses of attention to detail, errors of omission, compromised problem solving, reduced motivation, and decreased energy for successful completion of required tasks. Other safety-sensitive industries have acknowledged and taken action to defend against these effects by limiting the number of shifts or hours worked in a week.

Changing work patterns will require attention from HCOs, regulatory bodies, State boards of nursing, schools of nursing, and nurses themselves. Accordingly, the committee makes the following recommendation:

Recommendation 6-1. To reduce error-producing fatigue, State regulatory bodies should prohibit nursing staff from providing patient care in any combination of scheduled shifts, mandatory overtime, or voluntary overtime in excess of 12 hours in any given 24-hour period and in excess of 60 hours per 7-day period. To this end:

- HCOs and labor organizations representing nursing staff should establish policies and practices designed to prevent nurses who provide direct patient care from working longer than 12 hours in a 24-hour period and in excess of 60 hours per 7-day period.
- Schools of nursing, State boards of nursing, and HCOs should educate nurses about the threats to patient safety caused by fatigue.

Enabling nursing staff to collaborate with other health care personnel in identifying high-risk and inefficient work processes and workspaces and (re)designing them for patient safety and efficiency is also essential. Moreover, documentation practices are in great need of redesign. However, this cannot be accomplished solely by nursing staff and internal HCO efforts. As many documentation practices are driven by external parties, such as regulators and oversight organizations, these entities will need to assist in the redesign of documentation practices. To address these needs, the committee makes the following recommendations:

Recommendation 6-2. HCOs should provide nursing leadership with resources that enable them to design the nursing work environment and care processes to reduce errors. These efforts must directly involve direct-care nurses throughout all phases of the work design and should concentrate on errors associated with:

- Surveillance of patient health status.
- Patient transfers and other patient hand-offs.
- Complex patient care processes.
- Non–value-added activities performed by nurses, such as locating and obtaining supplies, looking for personnel, completing redundant and unnecessary documentation, and compensating for poor communication systems.

Recommendation 6-3. HCOs should address handwashing and medication administration among their first work design initiatives.

Recommendation 6-4. Regulators, leaders in health care; and experts in nursing, law, informatics, and related disciplines should jointly convene to identify strategies for safely reducing the burden associated with patient and work-related documentation.

Creating and Sustaining a Culture of Safety

Employing a nursing workforce strong in numbers and capabilities and designing their work to prevent errors will not be sufficient to fully safeguard patients. The largest and most capable workforce is still fallible, and the best-designed work processes are still designed by fallible individuals. Patient safety also requires an organizational commitment to vigilance to prevent potential errors, and to the detection, analysis, and redress of errors when they occur.

A variety of safety-conscious industries have made such a commitment and achieved substantially lower rates of errors by doing so. These organizations place as high a priority on safety as they do on production; all employees are fully engaged in the process of detecting high-risk situations before an error occurs. Management is so responsive to employees' detection of risk that it dedicates time, personnel, budget, and training resources to bring about changes needed to make work processes safer. Employees also are empowered to act in dangerous situations to reduce the likelihood of adverse events. These attitudes and employee engagement are so pervasive and observable in the behaviors of these organizations and their employees that an actual *culture of safety* exists within the organization. These organizational cultures are effective because they (1) recognize that the majority of errors are created by systemic organizational defects in work processes, not by blameworthy individuals; (2) support staff; and (3) foster continuous learning by the organization as a whole and its employees.

HCOs should redouble their efforts to create such cultures of safety within their work environments. Such efforts require a long-term commitment because they necessitate changes in the attitudes and behaviors of both organizations and people. Time is needed to enact an initial change, evaluate, refine, and enact further change. Strong organizational leadership is also essential. The safety of patients needs to be a stated and visible priority, with every organizational member understanding that each is fallible, even with the best of intentions, as are the processes used. Moreover, establishing a fair and just culture in responding to errors reduces workers' fear and disincentives to report errors and near misses. As a result, nursing staff is more inclined to be vigilant for errors and near misses, with a view toward learning from each event and strengthening the culture of safety accordingly. Action also is needed from State boards of nursing and Congress to enable strong and effective cultures of safety to exist. To these ends, the committee makes the following recommendations:

Recommendation 7-1. HCO boards of directors, managerial leadership, and labor partners should create and sustain cultures of safety by implementing the recommendations presented previously and by:

- Specifying short- and long-term safety objectives.
- Continuously reviewing success in meeting these objectives and providing feedback at all levels.
- Conducting an annual, confidential survey of nursing and other health care workers to assess the extent to which a culture of safety exists.
- Instituting a de-identified, fair, and just reporting system for errors and near misses.
- Engaging in ongoing employee training in error detection, analysis, and reduction.

- Implementing procedures for analyzing errors and providing feedback to direct-care workers.
- Instituting rewards and incentives for error reduction.

Recommendation 7-2. The National Council of State Boards of Nursing, in consultation with patient safety experts and health care leaders, should undertake an initiative to design uniform processes across States for better distinguishing human errors from willful negligence and intentional misconduct, along with guidelines for their application by State boards of nursing and other State regulatory bodies having authority over nursing.

Recommendation 7-3. Congress should pass legislation to extend peer review protections to data related to patient safety and quality improvement that are collected and analyzed by HCOs for internal use or shared with others solely for purposes of improving safety and quality.

Research Implications

Finally, the committee notes that changing health care delivery practices to increase patient safety must be an ongoing process. Research findings and dissemination of practices that other HCOs have found successful in improving patient safety will help HCOs as learning organizations add to their repertoire of patient safety practices. This report calls attention to several areas in which, at present, information is limited about how to design nurses' work and work environments to make them safer for patients. Research is needed to provide better information on nursing-related errors, means of achieving safer work processes and workspace design, a standardized approach to measuring patient acuity, information on safe staffing levels for different types of patient care units, effective methods to help night shift workers compensate for fatigue, information on what limits should be imposed on successive days of working sustained work hours, and collaborative models of care. Accordingly, the committee makes the following recommendation:

Recommendation 8-1. Federal agencies and private foundations should support research in the following areas to provide HCOs with the additional information they need to continue to strengthen nurse work environments for patient safety:

- Studies and development of methods to better describe, both qualitatively and quantitatively, the work nurses perform in different care settings.
- Descriptive studies of nursing-related errors.
- Design, application, and evaluation (including financial costs and savings) of safer and more efficient work processes and workspace, including the application of information technology.
- Development and testing of a standardized approach to measuring patient acuity.
- Determination of safe staffing levels within different types of nursing units.
- Development and testing of methods to help night shift workers compensate for fatigue.
- Research on the effects of successive work days and sustained work hours on patient safety.
- Development and evaluation of models of collaborative care, including care by teams.[d]

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Conclusion

Nurses are in a key position to improve patient safety, not just through their individual patient care actions as clinicians, but by exercising their leverage as much-desired employees in the labor marketplace. If nurses ask the above questions of their prospective employers, and incorporate the responses they receive into their selection of their place of employment, they will be able to exert significant influence within the health care system, as health care organizations come to appreciate the ability to recruit nurses as an additional important reason for making the types of organizational changes needed to provide safe patient care.

Author Affiliation

Ann E. K. Page, R.N., M.P.H., senior program officer, Institute of Medicine. E-mail: aekpage@NAS.edu.

References

1. Berwick D. A user's manual for the IOM's Quality Chasm report. Health Aff 2002; 21(3):80–90.

2. Kohn LT, Corrigan JM, Donaldson MS, eds. To err is human: building a safer health system. A report of the Committee on Quality of Health Care in America, Institute of Medicine. Washington, DC: National Academy Press; 2000.

3. Agency for Healthcare Research and Quality. AHRQ's Patient Safety Initiative: building foundations, reducing risk. 2002. Available at: http://www.ahrq.gov/qual/pscongrpt/psinisum.htm. Accessed March 17, 2006.

4. Bureau of Labor Statistics. Licensed practical and licensed vocational nurses. Occupational outlook handbook, 2002–03. Available at: http://www.bls.gov/oco/ocos102.htm. Accessed May 14, 2003.

5. American Hospital Association. Hospital statistics 2002. Chicago, IL: Health Forum LLC; 2002.

6. Committee on the Work Environment for Nurses and Patient Safety, Board on Health Care Services, Page A, ed. Keeping patients safe: transforming the work environment of nurses. Washington, DC: National Academies Press; 2004.

7. Abt Associates. Appropriateness of minimum nurse staffing ratios in nursing homes: report to Congress: Phase II Final Report. (Contract No. 500-0062/ TO#3). Cambridge, MA: Abt Associates; 2001. Report No. 500-95-0062/TO 3.