Nurses' Reports On Hospital Care In Five Countries

The ways in which nurses' work is structured have left nurses among the least satisfied workers, and the problem is getting worse.

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ABSTRACT: The current nursing shortage, high hospital nurse job dissatisfaction, and reports of uneven quality of hospital care are not uniquely American phenomena. This paper presents reports from 43,000 nurses from more than 700 hospitals in the United States, Canada, England, Scotland, and Germany in 1998–1999. Nurses in countries with distinctly different health care systems report similar shortcomings in their work environments and the quality of hospital care. While the competence of and relation between nurses and physicians appear satisfactory, core problems in work design and workforce management threaten the provision of care. Resolving these issues, which are amenable to managerial intervention, is essential to preserving patient safety and care of consistently high quality.

HOSPITALS ARE FACING serious challenges to providing care that is of consistently high quality in a rapidly changing and uncertain environment. Media reports of hospital nurse shortages and their consequences, particularly uneven quality of care, have become commonplace. A three-part series on hospital safety in the *Chicago Tribune* probing the impact of hospital cost cutting on patients and nurses and titled "Nursing Mistakes Kill, Injure Thousands" captured international attention.[1] Well before

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the recent interest in medical errors stimulated by the Institute of Medicine's report, *To Err Is Human*, U.S. nurses reported that cost cutting by hospitals was reducing nurse staffing to unsafe levels.[2]

Inadequate nurse staffing and problems of uneven quality of care in hospitals are often blamed on the growth of managed care; increased hospital competition; the Balanced Budget Act (BBA) of 1997, which reduced Medicare hospital payments; and other uniquely American phenomena.[3] Yet news reports from Canada and the United Kingdom of nursing shortages and discontented nurses are remarkably similar to those in the U.S. press.[4] Moreover, consumer polls confirm substantial public dissatisfaction with hospital care across differently organized and financed health care systems. A recent cross-national public opinion poll reported that of those with a hospital stay, 18 percent of U.S. and U.K. consumers and 27 percent of Canadian consumers rated their last hospital stay as fair or poor.[5]

A new study of more than 43,000 nurses practicing in more than 700 hospitals in five countries indicates that fundamental problems in the design of work are widespread in hospitals in Europe and North America. Its findings further suggest that major workforce management problems in hospitals must be corrected to ensure acceptable quality of care and an adequate nurse workforce for the future.

Study Design

This paper provides preliminary results from a study of staffing, organization, and outcomes in 711 hospitals in five countries, conducted by the International Hospital Outcomes Research Consortium. The consortium was formed by the University of Pennsylvania School of Nursing's Center for Health Outcomes and Policy Research to design and implement a cross-national replication of the center's U.S. research on the effects of nurse staffing and organization on patient outcomes and nurse retention.[6] The study surveyed nurses to obtain information on organizational climate, nurse staffing, and nurse and patient outcomes. Patient discharge administrative databases were used to derive thirty-day mortality and other patient outcome measures. Various administrative databases were used to obtain hospital staffing and organization information on hospitals in the geographic areas of interest.[7]

This report focuses on findings from the nurse survey. The sample consists of 43,329 nurses from the United States (Pennsylvania) (13,471), Canada (17,450), England (5,006), Scotland (4,721), and Germany (2,681) working in adult acute care hospitals in 1998 and 1999. The consortium, consisting of seven interdisciplinary research

teams located in participating countries and provinces, jointly developed a core nurse questionnaire that underwent minor adaptations following pilot testing to ensure that language and content were relevant to nurses in each site. Questions dealt with a variety of issues related to the nurses' perceptions of their working environments and the quality of nursing care being delivered in their hospitals as well as their job satisfaction, career plans, and feelings of job burnout. All nurses sampled received self-administered questionnaires that were anonymously returned by mail.

The sampling of nurses was designed to allow survey assessments of the work climates in a substantial share of hospitals in each country or geographic jurisdiction studied. Nurse sampling designs were driven by the methods used to select target hospitals for the larger outcomes study. In the United States, all hospitals in Pennsylvania were studied. In Canada, all hospitals in the three provinces of Ontario, Alberta, and British Columbia were included. All hospital trusts in Scotland were targeted for study. Limitations in administrative patient discharge data in England and Germany necessitated the selection of hospitals participating in benchmarking organizations. In Pennsylvania 50 percent of registered nurses living in the state were sampled. In Alberta a complete census of registered nurses working in hospitals was undertaken. Representative samples were drawn of nurses employed in all acute care hospitals in Ontario, British Columbia, and Scotland. In England and Germany representative samples of nurses were drawn from hospital employment records in target hospitals. Response rates ranged from 42 percent to 53 percent across geographic jurisdictions.[8]

Study Findings

■ **Job dissatisfaction, burnout, and intent to leave.** Nurses' job satisfaction and levels of burnout are especially important in the current context of nurse shortages. They are also notable because of the potential impact of large numbers of dissatisfied and emotionally exhausted nurses on quality of patient care and patient outcomes.[9] Exhibit 1 illuminates problems in the hospital nurse workforce and clearly demonstrates that low morale among hospital nurses is not unique to the United States. High proportions of registered nurses in all countries studied except Germany were dissatisfied with their jobs.

In the United States (Pennsylvania) more than 40 percent of nurses working in hospitals reported being dissatisfied with their jobs. Job dissatisfaction among nurses is much higher, at least in the United States, than in other groups of workers. In the larger U.S. population, data from the General Social Survey of the National

EXHIBIT 1
Burnout, Job Satisfaction, And Intentions To Leave Present Job Among Nurses Sampled In Five Countries, 1998–1999

	U.S.	Canada	England	Scotland	Germany
Percent dissatisfied with present job	41.0%	32.9%	36.1%	37.7%	17.4%
Percent with scores in high burnout range according to norms[a]	43.2	36.0	36.2	29.1	15.2
Percent under age 30	19.0	10.3	40.6	31.9	33.6
Percent planning to leave present job in the next year	22.7	16.6	38.9	30.3	16.7
Percent under 30 planning to leave in the next year	33.0	29.4	53.7	46.0	26.5

SOURCE: Nurse survey data, International Hospital Outcomes Research Consortium, 1998–1999.
[a] Published norms for emotional exhaustion from Maslach and Jackson; see Note 11 in text.

Opinion Research Center from 1986 to 1996 indicate that only 10 percent of professional workers and 15 percent of workers in general reported dissatisfaction with their jobs. This suggests that the nurses surveyed in Pennsylvania were three to four times more likely than the average U.S. worker to be unhappy with their positions.[10]

Many nurses across the five countries are also experiencing considerable job-related strain. A standardized tool, the Maslach Burnout Inventory (MBI), was used to measure emotional exhaustion and the extent to which nurse respondents felt overwhelmed by their work. Significant percentages of nurses, ranging from just under 30 percent to more than 40 percent in all countries except Germany, had high scores relative to the norms for medical workers published by the developers of the MBI.[11]

In the two North American countries the percentages of nurses under age thirty and thus having the potential for extended careers in nursing were quite low compared with the European samples. These data are consistent with findings of Peter Buerhaus and Douglas Staiger that in the United States fewer college-age youth, who have traditionally been the major base of conventional students in schools of nursing, are choosing careers in nursing.[12] The low percentage of younger nurses in Canada may reflect a dual impact of hospital downsizing. New graduates there were for a time unable to find work in hospital settings, and the seniority rights negotiated by nurses' unions caused a high proportion of younger and relatively inexperienced nurses to lose their jobs when hospital staffs were cut several years ago.

Finally, more than three in ten nurses in England and Scotland and more than two in ten in the United States planned on leaving their jobs within the next year. What is most striking, however, is that the percentages of nurses under age thirty who plan on leaving

within the next year are much higher than among nurses in general in all countries. As a whole, these data suggest greater problems for hospitals in future years unless these negative recruitment and retention trends are stemmed.

■ **Work climate in hospitals.** While discontent among hospital nurses is high, the nurses surveyed did not perceive all aspects of hospital practice as unsatisfactory (Exhibit 2). A vast majority believe that they work with physicians who provide high-quality care and with nurses who are clinically competent. Furthermore, nurse-physician relationships do not appear to be as problematic as popular opinion might suggest.

A different picture emerges when nurses' perceptions of staffing adequacy and workforce management policies are considered. Only 30–40 percent of nurses reported that there are enough registered nurses to provide high-quality care and enough staff to get the work done. The proportion who perceived that support services are adequate is only slightly higher. Moreover, fewer than half of the nurses in each country reported that management in their hospitals is responsive to their concerns, provides opportunities for nurses to

EXHIBIT 2
Nurses' Reports Of Nurse And Physician Competence And Relations, Nurse Staffing, And Workforce Management In Five Countries, 1998–1999

	Percent agreeing				
Competence and relations	**U.S.**	**Canada**	**England**	**Scotland**	**Germany**
Physicians give high-quality care	80.8%	78.2%	69.2%	73.2%	78.3%
Nurses are clinically competent	85.7	86.4	85.4	89.2	94.6
Physicians and nurses have good working relationships	83.4	80.1	86.2	85.7	82.7
Staffing					
There are enough registered nurses to provide high-quality care	34.4	35.2	29.0	38.1	36.5
There are enough staff to get the work done	33.4	37.4	28.4	36.3	37.7
There are adequate support services	43.1	42.5	41.1	41.1	52.9
Workforce management					
The administration listens and responds to nurses' concerns	29.1	34.9	40.9	38.5	44.5
Nurses have the opportunity to participate in policy decisions	40.6	39.7	35.8	32.8	22.7
Nurses' contributions to patient care are publicly acknowledged	39.3	37.0	40.1	43.9	48.5
Nurses participate in developing their own schedules	60.5	32.4	50.1	37.9	69.4
Nurses have opportunities for advancement	32.2	20.9	43.0	23.7	61.0
Salaries are adequate	57.0	69.0	19.9	25.9	40.5

SOURCE: Nurse survey data, International Hospital Outcomes Research Consortium, 1998–1999.

participate in decision making, and acknowledges nurses' contributions to patient care. Nurse ratings of the presence of other aspects of their work that are potentially key to job satisfaction varied more across countries. Nurses' participation in developing their own schedules is a contentious issue in an industry that involves the provision of care twenty-four hours a day, seven days a week, but important to the largely female nurse workforce. Survey results show that the proportion of nurses who have a say in scheduling ranges from fewer than a third of all nurses in Canada to more than two-thirds in Germany. In four of the five countries, only a minority of nurses perceived that they have opportunities for advancement, although in Germany (where percentages of nurses dissatisfied and planning to leave their job were low) this was true of nearly seven in ten nurses. Finally, while more than three-fourths of U.K. nurses felt that their salaries were inadequate, nearly 60 percent of U.S. nurses and 70 percent of Canadian nurses felt that their salaries were adequate. In the United States and Canada, at least, nurses are more likely to be dissatisfied with working conditions than with their wages.

■ **Changes in workloads and managerial support.** Responses to a series of questions dealing with changes in workload and the structure of nursing leadership and management in hospitals show that nurses are themselves observing the types of restructuring discussed in the literature and the press (Exhibit 3). A clear majority of U.S. and Canadian nurses reported that the numbers of patients assigned to them increased in the past year, which is particularly troubling given the widely reported rise in patient acuity levels in both countries (these questions were not included on the U.K. surveys). The reports from nurses in North America indicate also that front-line nursing management (nurse manager) positions have been cut and that top nursing management positions (the chief nursing officer level of management) have been eliminated in a number of hospitals. These findings imply that in addition to having responsibility for more patients, staff nurses might also have to take

EXHIBIT 3
Nurses' Reports Of Past-Year Changes In The Practice Setting In Three Countries, 1998–1999

Percent of nurses reporting	U.S.	Canada	Germany
An increase in the number of patients assigned to them	83.2%	63.6%	44.2%
A decrease in the number of nurse managers	58.3	39.9	14.0
The loss of a chief nursing officer without replacement	16.8	25.0	22.9

SOURCE: Nurse survey data, International Hospital Outcomes Research Consortium, 1998–1999.
NOTE: These questions were not asked in England and Scotland.

on more responsibilities for managing services and personnel at the unit level, which take time away from direct patient care.

■ **Structure of nurses' work.** Nurses in the United States, Canada, and Germany were asked about the types of tasks they performed on their last shift (Exhibit 4). In each country many nurses reported spending time performing functions that did not call upon their professional training, while care activities requiring their skills and expertise were often left undone. For example, the percentage of nurses who reported cleaning rooms or transporting food trays or patients ranged from roughly one-third to more than two-thirds. At the same time, a number of tasks that are markers of good nursing care, such as oral hygiene and skin care, teaching, and comforting patients, were frequently reported as having been left undone.

■ **Quality of care and adverse events.** Only roughly one in nine nurses in Germany, and one in three nurses in the remaining countries, rated the quality of nursing care provided on their nursing units as excellent (Exhibit 5). Moreover, in the United States and Canada only about one-third of the nurses were confident that their patients were adequately prepared to manage at home upon discharge, and nearly half of them believed that the quality of patient care in their institutions had deteriorated in the past year. Deterioration in the quality of care was less commonly reported in the European countries than in North America, which may reflect poorly on the extensive and widespread restructuring of Canadian and U.S. hospitals in the years preceding the survey.[13] The compara-

EXHIBIT 4
Non-Nursing Tasks Performed By Nurses And Nursing Care Left Undone In The Last Shift Worked, In Three Countries, 1998–1999

Percent of nurses who performed the following non-nursing tasks	U.S.	Canada	Germany
Delivering and retrieving food trays	42.5%	39.7%	71.8%
Housekeeping duties	34.3	42.9	–[a]
Transporting patients	45.7	33.3	53.7
Ordering, coordinating, or performing ancillary services	68.6	71.7	27.6
Percent of nurses reporting that nursing tasks were necessary but left undone			
Oral hygiene	20.1	21.7	10.0
Skin care	31.0	34.7	13.0
Teaching patients or family	27.9	26.2	29.6
Comforting/talking with patients	39.5	43.6	53.6
Developing or updating care plans	40.9	47.4	34.0
Preparing patients and families for discharge	12.7	13.7	13.4

SOURCE: Nurse survey data, International Hospital Outcomes Research Consortium, 1998–1999.
NOTE: These questions were not asked in England and Scotland.
[a] Not asked.

EXHIBIT 5
Nurses' Assessments Of Quality Of Care And Reports Of Adverse Events In Five Countries, 1998–1999

Nurse-assessed quality of care	U.S.	Canada	England	Scotland	Germany
Percent describing the quality of care on their unit as excellent	35.7%	35.6%	29.3%	35.2%	11.7%
Percent confident that their patients are able to manage their own care when discharged	33.8	30.0	59.7	56.1	80.9
Percent who say the quality of care in their hospital has deteriorated in the past year	44.8	44.6	27.6	21.5	17.2
Percent reporting that the following indicators of lower-quality care were not infrequent					
Patient received wrong medication or dose	15.7	19.3	–[a]	–[a]	5.1
Nosocomial infections	34.7	33.0	–[a]	–[a]	27.9
Patient falls with injuries	20.4	27.9	–[a]	–[a]	15.0
Complaints from patients or families	49.1	43.4	–[a]	–[a]	32.6
Verbal abuse directed toward nurses	52.7	61.2	–[a]	–[a]	35.7

SOURCE: Nurse survey data, International Hospital Outcomes Research Consortium, 1998–1999.
NOTE: Nurses were asked whether these adverse events had occurred occasionally or frequently in the past year, involving them or their patients.
[a] Not asked.

tively positive ratings of patients' preparedness for discharge among European nurses may result directly from the longer hospital stays in those countries. It also may result from the fact that hospital restructuring is more recent in Germany, and any ill effects of such initiatives may be still to come.

When nurses in North America and Germany were asked about the frequency of specific marker events that indicate potential problems in quality of care, for the most part, U.S. and Canadian nurses were considerably more likely to report that incidents such as medication errors and patient falls occurred with regularity in the preceding year. A majority of U.S. and Canadian nurses indicated that patient and family complaints and verbal abuse directed toward nurses had also occurred with regularity in the past year. These findings suggest that the current climate of care in hospitals is as unsatisfying to patients and their families as it is to nurses, and the resulting frustration is likely to be compromising the civility of the work environment and contributing to the high rates of nurse burnout reported earlier.

Discussion

Consumers, health professionals, and hospital leaders concur that all is not well in hospitals. Consumers' trust in hospitals is eroding,

"To retain a qualified nurse staff, hospitals will have to develop personnel policies comparable to those in other lines of work."

nurses feel that they are under siege, and hospitals cannot find enough nurses willing to work under current conditions in inpatient settings. This is not a uniquely American problem, and it suggests a fundamental flaw in the design of clinical care services and the management of the hospital workforce.

The current shortage of hospital nurses in Western countries appears destined to worsen over the long term, with nurses' job dissatisfaction and intent to leave at high levels, an aging workforce, and an increased tendency for younger nurses to show greater willingness to leave their hospital jobs. While nursing shortages have been cyclical for decades, generally hospitals have acted as oligopsonies, conceding salary increases and other benefits begrudgingly.[14] But twenty-first-century health care has brought myriad opportunities to nurses, and hospitals are now ill prepared to compete for and retain the most qualified.

Nurses' perceptions of the deficiencies in hospital organization, work design, and care would seem at face value to make sense. However, much of the recent reengineering and restructuring undertaken by hospital management has been designed to emulate industrial models of productivity improvement, rather than to address nurses' concerns. These approaches have had limited success in terms of retaining nurses or improving patient outcomes and have been demonstrated in some cases to yield negative outcomes.[15] Nurses want more communication with management about the allocation of resources and the creation of an environment that is conducive to high-quality care. But reengineering has moved to reduce front-line nurse leadership roles. This eliminates a key mechanism for connecting the hospital's mission with the providers of bedside care as well as a vehicle for communicating the responsiveness of administration to the concerns of front-line caregivers. To retain a qualified nurse staff in a competitive labor market, hospitals will have to develop personnel policies and benefits comparable to those in other lines of work and businesses, including opportunities for career advancement, lifelong learning, flexible work schedules, and policies that promote institutional loyalty and retention. Popular short-term strategies such as signing bonuses and use of temporary personnel do not address the issues at their core.

A recent Commonwealth Fund survey of doctors in five countries finds that doctors rank nurse staffing levels of hospitals as one of

their most serious concerns in being able to provide top-quality health care.[16] Our previous research and that of others has already established that hospital working conditions and the adequacy of nurse staffing are important predictors of variation in hospital patient outcomes.[17] Hence, beyond concerns that inadequate hospital nurse staffing will become chronic, there is every reason to believe that the problems in work design and workforce management that are reflected in the responses of the 43,000 nurses in our study contribute to uneven quality of care, medical errors, and adverse patient outcomes.

This research has been supported by the National Institute of Nursing Research, National Institutes of Health (NR04513); the Commonwealth Fund; the Agency for Healthcare Research and Quality; the Alberta Heritage Foundation for Medical Research; the British Columbia Health Research Foundation; the Federal Ministry of Education and Research (Germany); the Nuffield Provincial Hospitals Trust, London; and the Baxter Foundation.

NOTES

1. M.J. Berens, "Nursing Mistakes Kill, Injure Thousands," *Chicago Tribune*, 10 September 2000.
2. Henry J. Kaiser Family Foundation, "Survey of Physicians and Nurses," 1999, <www.kff.org/content/1999/1503> (17 November 2000); J. Shindul-Rothschild, D. Berry, and E. Long-Middleton, "Where Have the Nurses Gone? Final Results of Our Patient Care Survey," *American Journal of Nursing* 96, no. 11 (1996): 24–39; and Institute of Medicine, *To Err Is Human: Building a Safer Health System* (Washington: National Academy Press, 2000).
3. P.I. Buerhaus and D.O. Staiger, "Trouble in the Nurse Labor Market? Recent Trends and Future Outlook," *Health Affairs* (Jan/Feb 1999): 214–222.
4. S.D. Driedger, "The Nurses: The Front-Line Caregivers Are Burned Out; Is It Any Wonder?" *Macleans* 10, no. 17 (1997): 24–33; J. Buchan, "Heading for a Double Whammy," *Nursing Standard* 11, no. 21 (1997): 24–25; J. Appleby, "Cost-Cutting Changes How Nurses Operate," *USA Today*, 18 November 1999; and A. Trafford, "When the Hospital Staff Isn't Enough," *Washington Post*, 7 January 2001.
5. K. Donelan et al., "The Cost of Health System Change: Public Discontent in Five Nations," *Health Affairs* (May/June 1999): 206–216.
6. See L.H. Aiken and J.A. Sochalski, eds., "Hospital Restructuring in North America and Europe: Patient Outcomes and Workforce Implications," *Medical Care* 35, no. 10 (Supplement 1997). The authors represent the International Hospital Outcomes Research Consortium, which is directed by Linda Aiken and includes the following research teams. United States: Linda Aiken, Sean Clarke, Eileen Lake, Jeffrey Silber, Douglas Sloane, and Julie Sochalski (University of Pennsylvania); Alberta: Carole Estabrooks, Konrad Fassbender, and Phyllis Giovannetti (University of Alberta); British Columbia: Heather Clarke (Registered Nurses Association of British Columbia), Sonia Acorn, Arminee Kazanjian, and Robert Reid (University of British Columbia); England: Jane Ball (Employment Research Inc.), James Coles (CASPE Research Inc.), Philip James (CHKS Inc.), Martin McKee, and Anne Marie Rafferty (London School of Hygiene and Tropical Medicine); Germany: Reinhard Busse, Thorsten

Koerner (Hannover Medical School), and Gabriele Müller-Mundt (University of Bielerfeld); Ontario: Geoffrey Anderson, Jack Tu (Institute for Clinical Evaluative Sciences and University of Toronto), Judith Shamian (Health Canada–Santé Canada), and Donna Thomson (Mount Sinai Hospital); and Scotland: Heather Baillie, Andrew Boddy, Alastair Leyland (University of Glasgow), James Buchan (Queen Margaret College), Jennifer Hunt, Suzanne Hagen, and Louisa Sheward (Nursing Research Initiative for Scotland).

7. J. Sochalski and L.H. Aiken, "Accounting for Variation in Hospital Outcomes: A Cross-National Study," *Health Affairs* (May/June 1999): 256–259.
8. Further detail on survey methodology for each country is available from Sean Clarke, Center for Health Outcomes and Policy Research, School of Nursing, University of Pennsylvania, Philadelphia, Pennsylvania 19104-6096, <sclarke@nursing.upenn.edu>.
9. L.H. Aiken and D.M. Sloane, "Effects of Organizational Innovations in AIDS Care on Burnout among Hospital Nurses," *Work and Occupations* 24, no. 4 (1997): 455–479; and L.H. Aiken, D.M. Sloane, and E.T. Lake, "Satisfaction with Inpatient Acquired Immunodeficiency Syndrome Care: A National Comparison of Dedicated and Scattered-Bed Units," *Medical Care* 35, no. 9 (1997): 948–962.
10. National Opinion Research Center, "General Social Survey, Data Information and Retrieval System," 15 March 1999, <www.icpsr.umich.edu/GSS99> (17 November 2000).
11. C. Maslach and S.E. Jackson, *Maslach Burnout Inventory Manual*, 2d ed. (Palo Alto, Calif.: Consulting Psychologists Press, 1986).
12. P.I. Buerhaus and D.O. Staiger, "Implications of an Aging Registered Nurse Workforce," *Journal of the American Medical Association* 283, no. 22 (2000): 2948–2954.
13. R.L. Brannon, "Restructuring Hospital Nursing: Reversing the Trend toward a Professional Work Force," *International Journal of Health Services* 26, no. 4 (1996): 643–654.
14. L.H. Aiken and C.F. Mullinix, "The Nurse Shortage: Myth or Reality?" *New England Journal of Medicine* 317, no. 10 (1987): 641–646.
15. L.H. Aiken, S.P. Clarke, and D.M. Sloane, "Hospital Restructuring: Does It Adversely Affect Care and Outcomes?" *Journal of Nursing Administration* 3, no. 10 (2000): 457–465; and H. Davidson et al., "The Effects of Health Care Reforms on Job Satisfaction and Voluntary Turnover among Hospital-Based Nurses," *Medical Care* 35, no. 6 (1997): 634–645.
16. "Doctors in Five Countries See Decline in Health Care Quality," *Commonwealth Fund Quarterly* 6, no. 3 (2000): 1–4.
17. L.H. Aiken et al., "Organization and Outcomes of Inpatient AIDS Care," *Medical Care* 37, no. 8 (1999): 760–772; L.H. Aiken, H.L. Smith, and E.T. Lake, "Lower Medicare Mortality among a Set of Hospitals Known for Good Nursing Care," *Medical Care* 32, no. 8 (1994): 771–787; and C. Kovner and P.J. Gergen, "Nurse Staffing Levels and Adverse Events Following Surgery in U.S. Hospitals," *Journal of Nursing Scholarship* 30, no. 4 (1998): 315–321.