

More nursing, fewer deaths

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S P Clarke, L H Aiken

The need to connect organizational components and outcomes for improved patient safety

The implications for action from the growing body of research on nursing and patient safety are straightforward: hospitals seeking to improve safety outcomes should put a premium on adequate nurse staffing, a high proportion of registered nurses, a well educated nurse workforce, positive nurse-physician relations, and responsiveness of management to addressing problems in patient care identified by nurses at the bedside.

A critical mass of research confirms an association between hospital nursing capacity and patient outcomes, both within and across countries with differently organized and financed health care. Recent studies undertaken in the United States, Canada, England, Switzerland, New Zealand, the Russian Federation, and Armenia¹⁻⁶ all show that the adequacy of nurse staffing and the quality of the nurse working environment are associated with the quality of patient care. In hospitals with poor nurse work environments, patients tend to be at a heightened risk for adverse outcomes—including mortality.

The National Quality Forum (NQF) (www.nqf.org), an organization representing a wide array of stakeholders in health care in the United States, has recommended that all hospitals should monitor the quality of the nurse work environment as part of their efforts to improve the quality and safety of health care. The International Hospital Outcomes Study has demonstrated the applicability of the instrument recommended by the NQF—the Nursing Work Index^{7,8}—in a wide range of countries. Our findings confirm that low levels of hospital nurse staffing and deficiencies in the nurse working environment are associated with poor patient outcomes including excess deaths in a broad array of countries.¹⁻⁶

If there is so much evidence for a link between nursing and patient safety, why hasn't nursing been a higher priority on national safety agendas? Much of the attention in patient safety research and practice has been on preventing errors, while safety experts point out that reducing latent conditions that increase the risk of error

will result in safer care more quickly.⁹ Nurse understaffing, fatigue, burnout, inadequate education, and a poor practice environment are classic examples of latent conditions that predispose individuals to make mistakes, and make it difficult for others in the environment to identify a mistake before the consequences are serious. These latent conditions have received far less attention than the factors directly connected to the errors themselves. Reducing latent errors requires culture changes which, while not necessarily expensive, demand a commitment by top management to a different style of decision making with greater devolution of authority to nurses at the bedside commensurate with their high level of responsibility for the welfare of patients.

In this issue of *QSHC* Tourangeau *et al*¹⁰ review the determinants of mortality for patients who have experienced acute care hospitalization. To the evidence-based recommendations which they make, we would add two more. The first is that clinicians and leaders must realize that improving safety in health care is not only a matter of implementing "new and improved" procedures and equipment (such as computerized provider order entry), but is also about fundamentally rethinking the environments in which care is delivered. Even though technological solutions and scrutiny and re-engineering of discrete clinical judgments and actions can and should work hand in hand with organizational approaches to safety problems, these two approaches are still often in competition with each other. There is still a tendency to view organizational thinking as too ethereal and distant from the day to day concerns of clinicians and patients to be of much use. That is changing. Researchers need to continue to make organizational context "real" to policymakers, administrators, and clinicians by describing as concretely as possible what good organizations and good conditions in organizations look like, and clearly demonstrating how important outcomes differ under various scenarios. Only then can we achieve the right balance of thought and

action for the prevention of active and latent errors.

Our second recommendation is that stakeholders must realize that positive organizational features in hospitals and other healthcare settings (such as staffing numbers and positive nurse-physician relations) do not appear spontaneously, nor do they usually exist in isolation. They are put in place and maintained over time by skilful managers and executives who operate from a vision of patient care driven by an understanding of patient needs. Researchers also need to focus more attention on the interrelatedness and precursors of organizational factors in safety—namely, strong and consistent leadership. On a practical level, managers and executives must be carefully selected, developed in their roles, and listened to and supported in their decision making. Authority and resources must be invested in clinical leaders, both at the front line of organizations and at the executive level, and meaningful and positive interdisciplinary relations must be fostered by any institution hoping for improvements in both organizational qualities and safety, let alone one aiming for excellence. Well functioning interdisciplinary teams, which often need the intervention of top management and role modeling by senior physicians for implementation, are also required. A careful reading of the evidence base linking better work environments to patient safety shows that a culture change could improve the productivity of nurses and other personnel at the bedside, thus making it possible to achieve more with the resources in hand.

Not surprisingly, the review by Tourangeau and colleagues¹⁰ concludes with a plea for more research on organizational correlates of safety, which we heartily support. The enormous progress made in a short period of time reflects the investments of researchers and funders internationally. There is a clear need for more study of the mechanisms responsible for organizational effects on mortality and other untoward patient outcomes. The nature of the relationship between staffing and outcomes needs further clarification, including the circumstances under which it operates the most strongly. There is also a need to connect work on the properties of organizations (including entire organizations and their sub-units and broad summary measures of quality) with safety research and practice investigating specific aspects of the delivery of clinical care such as medication errors and failures of team communication.

There is consensus that the goal proposed by the Institute of Medicine to halve the rate of medical errors within 5 years has not yet been achieved.¹¹ In their paper Tourangeau and colleagues¹⁰ show how much work lies ahead to connect organizational components and patient outcomes. More importantly, however, they give us a tantalizing glimpse of how much might be achieved in terms of reducing errors and poor patient outcomes by the investment of resources by hospitals in their work environments, especially in nursing and the management of nursing services.

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REFERENCES

- 1 **Aiken LH**, Clarke SP, Sloane DM. Hospital staffing, organization, and quality of care: cross-national findings. *Int J Qual Health Care* 2002;14:5–13.
- 2 **Aiken LH**, Clarke SP, Cheung RB, et al. Educational levels of hospital nurses and surgical patient mortality. *JAMA* 2003;290:1617–23.
- 3 **Aiken LH**, Clarke SP, Sloane DM, et al. Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *JAMA* 2002;288:1987–93.
- 4 **Aiken LH**. Extending the magnet concept to developing and transition countries. *Reflections on Nursing Leadership* 2005;31:16–8.
- 5 **Rafferty AM**, Ball J, Aiken LH. Are teamwork and professional autonomy compatible, and do they result in improved hospital care? *Qual Health Care* 2001;10(Suppl II):ii32–7.
- 6 **Estabrooks CA**, Midodzi WK, Cummings GG, et al. The impact of hospital nursing characteristics on 30-day mortality. *Nurs Res* 2005;54:74–84.
- 7 **Aiken LH**, Patrician PA. Measuring organizational traits of hospitals: the revised Nursing Work Index. *Nurs Res* 2000;49:146–53.
- 8 **Lake ET**. Development of the practice environment scale of the Nursing Work Index. *Res Nurs Health* 2002;25:176–88.
- 9 **Reason JT**. *Human error*. Cambridge: Cambridge University Press, 1990.
- 10 **Tourangeau AE**, Cranley LA, Jeffs L. Impact of nursing on hospital patient mortality: a focused review and related policy implications. *Qual Saf Health Care* 2006;15:4–8.
- 11 **Institute of Medicine**. *To err is human: building a safer health care system*. Washington, DC: National Academy Press, 1996.

ECHO

Best practice would cut coronary deaths by thousands



Please visit the Quality and Safety in Health Care website [www.qshc.com] for a link to the full text of this article.

Complying with best practice, as set out in the National Service Framework (NSF) for coronary heart disease (CHD) in England in 2000, will significantly reduce deaths after one year, say authors of a modelling study.

The impact would be greatest for patients with heart failure receiving drug treatment as per NSF recommendations—preventing 37 899 extra deaths one year after diagnosis compared with 1027 extra deaths in patients one year after acute myocardial infarction (MI). Adherence with lifestyle measures could prevent 7249 extra deaths in heart failure patients and 848 extra deaths in acute MI patients. Costs (at 2000 prices) for every death prevented are calculated at around £1500 for drug treatment and £1800 for lifestyle measures for heart failure compared with £6500 and £7900 for acute MI. The authors speculate that the drastic effect in heart failure deaths may reflect poor one year survival currently, which may itself suggest that current treatment may fall some way short of best practice.

The model used recently developed population impact measures—which quantify impact of public health recommendations—and published data from British sources, mostly, as available.

Many aspects of the measures underlying the data and the data themselves need to be improved, though, say the authors. Nevertheless, they maintain the method is sound and that with improved data we should be better able to translate the full potential of evidence based medicine into future planning of care for CHD at a population level.

▲ Gemmell I, et al. *Journal of Epidemiology and Community Health* 2005;59:1041–1046.