What's the Fuss About? Why Do We Need Healthy Work Environments for Nurses Anyway?

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Abstract

Healthy work environments (HWEs) are essential for the retention and recruitment of nurses and for health system sustainability. HWEs are defined as practice settings that maximize the health and well-being of nurses, quality patient outcomes and organizational and system performance. The Registered Nurses Association of Ontario (RNAO) (with funding from the Ontario Ministry of Health and Long-Term Care) and the Office of Nursing Policy (ONP), Health Canada, entered into a partnership to develop HWE Best Practice Guidelines (BPGs) for nurses. These BPGs are intended to provide healthcare organizations with evidence-based implementation strategies designed to achieve healthy workplaces where nurses thrive in their practice. This project is a result of needs identified in a number of recent Canadian nursing reports (Advisory Committee on Health Human Resources 2002; Council of Ontario University Programs in Nursing 2002; Canadian Nurses Association 2002; Bauman et al. 2001; Association of Colleges of Applied Arts and Technology of Ontario 2001; Registered Nurses Association of Ontario and Registered Practical Nurses Association of Ontario 2000; Report of the Nursing Task Force 1999). This paper discusses why we need healthy work environments for nurses. In a subsequent article, we will discuss how we have developed a comprehensive conceptual model for healthy work environments for nurses as the underpinnings of the HWE BPG project.

The Importance of Healthy Work Environments for Nurses,

Healthcare systems are under siege to control costs and increase their productivity while responding to increasing demands arising from growing and aging populations, advanced technology and more sophisticated consumerism. In Canada, healthcare reform is currently focused on the primary goals identified in the Federal/Provincial/Territorial First Ministers' Agreement, 2000, the Health Accords, 2003 and 2004. These goals are the provision of timely access to health services on the basis of need; high quality, effective, patient-centred and safe healthcare services; and a sustainable and affordable healthcare system.

Health human resources are a vital component in achieving all these goals - particularly nursing human resources, which comprise approximately 60% of the healthcare workforce in Canada. However, there are major challenges facing the Canadian nursing workforce. Achievement of healthy

work environments for nurses is critical to the retention and recruitment of nurses in a time of nursing shortages, in order to maintain a sufficient supply of nurses to ensure access to health services and to sustain the healthcare system. Some have suggested that the basis for the current nursing shortage is the result of unhealthy work environments (Shindul-Rothschil 1994; Grinspun 2000a; Grinspun 2000b; Dunleavy 2003). As well, there is a growing understanding of the relationship between nurses' work environments and patient outcomes and organizational and system performance. Each of these issues is discussed separately.

The Need to Recruit and Retain Nurses in a Time of Nursing Shortages

Like many other industrialized countries, Canada is facing a current nursing shortage that is predicted to rise to 78,000 by 2011 and to 113,000 by 2016 (Canadian Nurses Association 2002). It is imperative to attain a stable nursing workforce that can meet the healthcare needs of Canadians. Strategies are required to repair the damage left from a decade of relentless restructuring and downsizing. This includes recruitment strategies to maximize the inflow of those entering the nursing workforce by attracting entrants, determining the annual number of entrants required to sustain the workforce and ensuring the education system has the capacity to meet the demand. In addition, retention strategies and supportive human resource management practices are required to sustain the existing number of practicing nurses, to maximize their productivity and to reduce the outflow of those leaving the profession. These retention strategies involve the creation of positive and healthy work environments that facilitate and enhance the work of nurses.
Retention strategies, then, must be aimed at the following:

• *The Health and Safety of Nurses.* The rate of Registered Nurse (RN) illness- and injury-related absenteeism is 8.6% - a 49% increase since the 5.9% rate reported in 1987. This rate is 83% higher than the rate found in the overall full-time employed labour force. The RN rate is also second only to the group listed as "assisting occupations in support of health services," which includes licensed practical nurses. In 2002, there were 376,000 hours of absenteeism per week, which equates to 10,808 full-time equivalent positions (Canadian Labour and Business Centre 2004).

• *Nursing Workload.* The literature is replete with reports that nurses have too much to do in the allotted time, thereby contributing to the highest stress levels of all health professionals (Bauman et al. 2001; Aiken et al. 2002; O'Brien-Pallas et al. 2001). In addition, research suggests that there is an almost perfect correlation between overtime and sick time (O'Brien-

Pallas et al. 2001). In 2002, Canadian RNs worked an estimated 300,000 hours of overtime per week, which equates to 8,643 full-time equivalent positions (Canadian Labour and Business Centre 2004).

• *Casualization of the Nursing Workforce.* The over-reliance on casual and part-time employment has been discussed in detail elsewhere (Grinspun 2000a; Grinspun 2002; Grinspun 2003; Registered Nurses Association of Ontario 2003). In 2001, almost half (45%) of registered nurses were employed on this basis (Canadian Institute for Health Information 2004). Between 1985 and 1998, the number of full-time positions decreased from 64% to less than 53%. In 2001, if those employed involuntarily on a part-time basis were converted to full-time, there would have been an increase of 4.7 million hours of nursing practice - 2,592 full-time equivalent positions (Advisory Committee on Health Human Resources 2002).

• *Aging Nursing Workforce.* In 1990, the average age of a RN in Canada was 39 years: by 2003, this average age had risen to 44.5 years. For every RN aged 35 or less, there are 1.8 RNs aged 50 or over (Canadian Institute for Health Information 2004). It is estimated that, by 2006, there will be a loss of 13% of the 2001 nursing workforce aged 50 or older to retirement or death, based on retirement at age 65. This loss would rise to 28% if retirement is based on age 55 (Aiken et al. 2002).

• *Scope of Practice.* Rather than expanding nurses' scope of practice, restructuring and redesigning have, instead, resulted in a reduction in scope of practice, evidenced by an increase in non-nursing tasks. These tasks include portering, delivering meal trays and obtaining supplies (Advisory Committee on Health Human Resources 2002). This reinforces nurses' perceptions that administrators do not value the intellectual contribution that nurses bring to patient care (Bauman et al. 2001).

• *Nursing Leadership Positions.* The number of managerial positions was reduced from 10% of the nursing workforce in 1994 to 8% in 2000. This constitutes a loss of 5,500 positions, thereby removing valuable supports for nurses in the workplace (Canadian Institute for Health Information 2004).

• *Financial Support for Continuing Education and Professional Development.* (Advisory Committee on Health Human Resources 2002).

• *Verbal and Physical Abuse.* In a study of five countries, Canadian nurses reported high rates of emotional abuse, threat of assault and actual physical assault from patients, families and co-workers (Aiken et al. 2002).

• *Respect.* When nurses were asked what could be done to increase the respect shown to them, their answer was to "consult with nurses and act on their recommendations regarding patient care and operational and structural changes in the workplace" (Viewpoints Research 2002). Retention strategies that lead to healthy work environments will have a direct impact on the health and well-being of nurses, and are therefore necessary to build a stable nursing workforce in a time of nursing shortages. These retention strategies also have an indirect impact on patient outcomes, the efficient operation of organizations and system outcomes such as access, quality and sustainability.

The Relationship Between Nurses' Work Environments and Patient Outcomes

The Canadian Adverse Events Study found an overall adverse event rate of 7.5% for one or more adverse events (Baker et al. 2004). If this rate is applied to the 2.5 million annual hospital admissions in this country, there would be an estimated 185,000 adverse events, of which 70,000 would be potentially preventable. This is particularly significant in relation to nursing human resources in light of the emerging body of literature that describes the relationships between nurse staffing and patient outcomes such as mortality, adverse events and length of stay.

The relationship between nurse staffing and patient mortality has been demonstrated in studies where: an increase of 7% risk of patient mortality within 30 days of admission was found for each additional patient added to the nurses' average workload (Aiken et al. 2002); higher RN staffing was associated with lower failure-to-rescue in major surgical patients (Needleman et al. 2002); and higher RN staffing was connected with lower mortality (Person et al. 2004; Blegen and Vaughn 1998; Sasichay-Akkadechanunt 2003; Tourangeau et al. 2002). There are some conflicting results from other studies, possibly due to the methodological problems inherent in the use of large administrative data sets and how risk is adjusted. It is fair to say that there is strong evidence of this relationship, although not yet conclusive (Needleman and Buerhaus 2003).

There is, however, a strong evidence base for concluding that there is a relationship between nurse staffing and adverse patient outcomes. Relationships have been reported between nurse staffing levels and urinary tract infections, pressure ulcers, pneumonia, deep vein thrombosis, falls, post-operative wound infections, medication errors, upper gastro-intestinal bleeds, sepsis and length of stay (interpreted as a general measure of complications) (Needleman et al. 2002; Blegen and Vaughn

1998; American Nurses Association 2000; Kovner and Gergen 1998; Sovie and Jawad 2001; Yang 2003; Cho et al. 2003; Pronovost et al. 2001). One study in particular found that the most powerful predictor of nosocomial infections was nurse workload (Yang 2003). In addition, studies have indicated that the higher the level of stress experienced by nurses, the greater likelihood of patient incidents (Dugan et al. 1996; Reason 2000; Lundstrom et al. 2002). The relationships between nurse staffing and patient outcomes have been recognized in the recent position statement by the Association of Canadian Executive Nurses (Ferguson-Pare 2004), which states:

"A significant body of research evidence links adequate nurse staffing to positive patient outcomes and identifies ways to improve the nursing workplace and provide reasonable workload for nurses. Nursing leaders and healthcare executives must embrace their accountability to design workload in accordance with patient care needs and enable nurses to work to their full scope of practice."

The Relationship Between Nurses' Work Environments and Organizational Outcomes

Evidence shows that healthy work environments yield financial benefits to organizations. The main outcomes studied are absenteeism and organizational healthcare costs (Aldana 2001). There is also evidence relating to lost productivity and costs arising from adverse patient outcomes.

Absenteeism in Canada, as previously discussed, consumed the equivalent of almost 10,808 FTEs in 2002 (Canadian Labour and Business Centre 2004). The direct costs of absenteeism and injury in British Columbia Health Authorities alone were estimated as $24.1 million in 2002/03. In addition, the direct sick time costs for five health authorities in that province in 2002/03 were $103.2 million (British Columbia, Office of the Auditor General 2004). These same Health Authorities spent close to $1 billion annually in direct and indirect costs due to medically related absenteeism and presenteeism (where the employee is present but non-productive).

Lost productivity costs were estimated in the 2000/01 Ontario Health Survey's Mental Health Supplement (Dewa 2004). While this survey indicated that physical health problems were the largest cause of lost work days, the results also showed that individuals with mental health problems were more likely to go to work and then have difficulty functioning in their jobs. Based on this survey, it was estimated that approximately 5-9% of

workers currently suffer from a depressive disorder - a fact which translates into an annual loss in productivity of $4.5 billion.

Loss of productivity also occurs through turnover. In the United States (US), VHA Inc. estimated an average cost of $64,000 per registered nurse that turns over. With an annual 20% turnover rate, a cost of $5.52 million for turnover activity alone is incurred. In a survey of 235 US hospitals, low-turnover (4%-12%) organizations averaged $23 return on assets, compared with 17% for organizations having turnover rates above 22% (Kosel and Olivo 2002).

Adverse patient outcomes also give rise to additional costs, so that what appears to be cost savings arising from staffing reductions may not be savings at all when compared to the costs which arise from patient complications and increased lengths of stay. Depending on facility size, costs for adverse events can be as high as $5.6 million per hospital annually (United States Agency for Healthcare Research and Quality 2003).

There is increasing recognition of the negative impact and financial cost of poor work environments on organizations, with the result that attention is being given to programs designed to improve workplaces. In the US, for example, it has been estimated that cost-benefit ratios run between $3 and $8 for every $1 invested in health promotion programs within five years of being launched (Aldana 2001; Goetzel et al. 1998; Anderson et al. 2001).

The Relationship Between Nurses' Work Environments and System Outcomes

There is growing evidence that promoting healthier work environments will yield benefits not only for individuals and their families, but also for the healthcare system and the economy (Lowe 2003). In the US alone, the most accurate estimates show that deaths from job-related injuries, nonfatal injuries, deaths from disease and illnesses amounted to $65 billion in direct costs and $106 billion in indirect costs in 1992 (Lowe 2003). The Health Enhancement Research Organization estimated that work-related stress accounts for approximately 8% of total healthcare expenditures (Anderson et al. 2001). In another US estimate, injuries were calculated at $145 billion and illnesses at $26 billion (Leigh et al. 1997). The largest direct costs are medical; the largest indirect costs are lost earnings. The US National Institute for Occupational Safety and Health estimated over $2.1 billion yearly in workers' compensation costs and $90 million in indirect costs such as hiring, training, overtime and administration (Cole et al. 1997).

In Australia, estimates of the direct costs of workers' compensation are 1.5% of GNP and about 20% of total healthcare costs (Chu et al. 2000). In Canada, it is estimated that work-life conflict cost the healthcare system approximately $425.8 million in physician visits in 1996/97 (Duxbury et al. 1999). The Canadian Council on Integrated Healthcare estimates the annual burden of workplace health in Canada at $32.5 billion (Bonnett and Yardley 2003). The Business and Economic Roundtable on Addiction and Mental Health estimates that the cost in Canada - two-thirds of which is productivity costs, wage replacements, disability pay-outs and workplace absenteeism - is around $30 billion a year (Corbett 2003).

Summary
Clearly, there are compelling reasons to create and sustain healthy work environments for nurses. The Registered Nurses Association of Ontario and the Office of Nursing Policy, Health Canada, have not only recognized this need, but are doing something about it. The Healthy Work Environment Best Practices Guidelines Project currently underway will provide evidence-based implementation strategies to guide the achievement of HWEs in the form of six BPGs and a number of systematic reviews on relevant topics. The six BPG topics are:

1. Developing and Sustaining Nursing Leadership
2. Workload and Staffing
3. Cultural Diversity in Healthcare
4. Professional Practice of the Nurse
5. Collaborative Practice in Nursing Teams
6. Workplace Health and Safety of the Nurse

In addition, the topics selected for systematic review are: reward and recognition; relationships and respect; equipment, supplies and resources; autonomy and decision-making; continuing education and professional development; illness, injury and nurse safety; healthy living; communication structures and processes; and models of care delivery. Establishing and sustaining healthy work environments for nurses will not occur overnight. However, the above tools should provide significant support for moving in the right direction. Together - policymakers, administrators, managers and nurses - we can achieve positive change that will have implications for not only nurses, but also patient outcomes and safety, organizational efficiencies and the sustainability of our prized healthcare system.

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References

Advisory Committee on Health Human Resources. 2002. Our Health, Our Future: Creating Quality Workplaces for Canadian Nurses, Final Report of the Canadian Nursing Advisory Committee (p. 83).

Aiken, L.H., S.P. Clarke, D.M. Sloane, J. Sochalski and J.H. Silber. 2002. "Hospital Nurse Staffing and Patient Mortality, Nurse Burnout, and Job Dissatisfaction." Journal of the American Medical Association 288(16): 1987-93.

Aldana, S.G. 2001. "Financial Impact of Health Promotion Programs: A Comprehensive Review of the Literature." American Journal of Health Promotion 15(5): 296-320.
American Nurses Association. 2000. Nurse Staffing and Patient Outcomes in the
Inpatient Hospital Setting. Washington, DC: American Nurses Publishing.
Anderson, D.R., S.A. Serxner and D.B. Gold. 2001. "Conceptual Framework, Critical Questions, and Practical Challenges in Conducing Research on the Financial Impact of Worksite Health Promotion." American Journal of Health Promotion 15(5): 281-88.
Association of Colleges of Applied Arts and Technology of Ontario. 2001. Environmental Scan (p. 153).
Baker, G.R., P.G. Norton, V. Flintoft, R. Blais, A. Brown, J. Cox, E. Etchells, W.A. Ghali, P. Herbert, S.R. Majumdar, M. O'Beirne, L. Palacios-Derflingher, R.J. Reid, S. Sheps and R. Tamblyn. 2004. "The Canadian Adverse Events Study: The Incidence of Adverse Events Among Hospital Patients in Canada." Canadian Medical Association Journal 170(11): 1678-86.
Bauman, A., L. O'Brien-Pallas, M. Armstrong-Stassen, J. Blythe, R. Bourbonnais, S. Cameron, S. Irvine Dorna, M. Kerr, L. McGillis Hall, M. Vezina, M. Butt and L. Ryan. 2001. Commitment and Care - The Benefits of a Healthy Workplace for Nurses, Their Patients and the System. A policy statement (p. 45).
Blegen, M.A. and T. Vaughn. 1998. "A Multi-site Study of Nurse Staffing and Patient Occurrences." Nursing Economics 16(4): 196-203.
Bonnett, C. and J. Yardley. 2003 (February). "By the numbers." Canadian Healthcare Manager.
www.chmonline.ca.
British Columbia, Office of the Auditor General. 2004. In Sickness and in Health: Healthy Workplaces for British Columbia's Health Care Workers. British Columbia, Canada: Author.
Canadian Institute for Health Information. 2004. Supply and Distribution of Registered Nurses in Canada.
Canadian Labour and Business Centre. 2004. Trends in Illness and injury-Related Absenteeism and Overtime Among Publicly-Employed Canadian Registered Nurses, 1987-2002.
Canadian Nurses Association. 2002. Planning for the Future: Nursing Human Resource Projections (p. 87).
Cho, S., S. Ketefian, V.H. Barkauskas and D.G. Smith. 2003. "The Effects of Nurse Staffing on Adverse Events, Morbidity, Mortality and Medical Costs." Nursing Research 52(2): 71-79.

Chu, C., G. Breucker, H. Harris and A. Stitzel. 2000. "Health-promoting Workplaces - International Settings Development." Health Promotion International: 15(2).
Cole, D.C., D. Hayatt and S. Sinclair. 1997. Coming to Grips with Economic Causes, Costs, and Efficiency (Occasional Paper # 4). Toronto: Institute for Work and Health.
Corbett, D. 2003. "Why Focus on a Healthy Workplace? Building the Case for Healthy Workplaces." National Quality Institute (Excellence Articles). www.nqi.ca/articles
Council of Ontario University Programs in Nursing. 2002. Position Statement on Nursing Clinical Education (p. 6).
Dewa, C.S. 2004. The Nature and Magnitude of Mental Illness in the Workplace. Overheads from a CIHR Invited Workshop on Mental Health and the Workplace held on April 28-29, 2004. Toronto, Ontario: Author.
Dugan, J., E. Lauer, Z. Bouquot, B.K. Dutro, M. Smith and G. Widmeyer. 1996. "Stressful nurses: The Effect on Patient Outcomes." Journal of Nursing Care Quality 10(3): 46-58.
Dunleavy, Shamian and Thomson. 2003. "Workplace Pressures: Handcuffed by Cutbacks." Canadian Nurse, March 99(3): 23-6.
Duxbury, L., C. Higgins and K.L. Johnson. 1999. An Examination of the Implications and Costs of Work-life Conflict in Canada. Ottawa, Ontario: Health Canada.
Ferguson-Pare, M. 2004. "ACEN position statement: Nursing Workload - A Priority of Healthcare." Nursing Leadership: 17(2).
Goetzel, R.Z., D.R. Anderson, R.W. Whitmer, R.J. Ozminkowski, R.L. Dunn and J. Wasserman. 1998. "The Relationship Between Modifiable Health Risks and Health Care Expenditures: An Analysis of the Multi-employer HERO Health Risk and Cost Database." Journal of Occupational and Environmental Medicine 40(10): 843-54.
Grinspun, D. 2000a. "Taking Care of the Bottom Line: Shifting Paradigms in Hospital Management." In D.L. Gustafson, ed., Care and Consequences (25-48). Halifax: Fernwood Publishing.

Grinspun, D. 2000b. "The Social Construction of Nursing Caring." (unpublished doctoral dissertation proposal).
Grinspun, D. 2002 (Fall). "A Flexible Nursing Workforce: Realities and Fallouts." Hospital Quarterly 79-84.
Grinspun, D. 2003. "Casual and Part-time Work in Nursing: Perils of Health Care Re-structuring." International Journal of Sociology and Social Policy: 54-70.
Kosel, K., and T. Olivo. 2002. "The Business Case for Workplace Stability." VHA Research Series 2002, Vol. 7: VHA, Inc. Irving, TX: Center for Research and Innovation.

Kovner, C. and P.J. Gergen. 1998. "Nurse Staffing Levels and Adverse Events Following Surgery in US Hospitals." Image: Journal of Nursing Scholarship 30(4): 315-321.
Leigh, J.P., S.B. Markowtiz, M. Fahs, C. Shi and P.J. Landrigan. 1997. "Occupation Injury and Illness in the United States." Archives of Internal Medicine 157: 1557-568.
Lowe, G. 2003. Healthy Workplaces and Productivity: A Discussion Paper. Ottawa, ON: Health Canada.
Lundstrom, T., G. Pugliese, J. Bartley, J. Cos and C. Guither. 2002. Organizational and Environmental Factors that Affect Worker Health and Safety and Patient Outcomes. DetroitMedical Center.
Needleman, J. and P. Buerhaus. 2003. "Nurse Staffing and Patient Safety: Current Knowledge and Implications for Action (editorial)." International Journal for Quality in Health Care 15(4): 275-77.
Needleman, J., P. Buerhaus, S. Mattke, M. Stewart and K. Zelevinsky. 2002. "Nurse-Staffing Levels and the Quality of Care in Hospitals." New England Journal of Medicine 346(22): 1715-22.
O'Brien-Pallas, L., C. Alksnis and S. Wang. 2003. Bringing the Future into Focus: Projecting RN Retirement in Canada (p. 93). Canadian Institute for Health Information.
O'Brien-Pallas, L., D. Thomson, C. Alksnis and S. Bruce. 2001 (Spring). "The Economic Impact of Nurse Staffing Decision: Time to Turn Down Another Road?" Hospital Quarterly 4(3): 42-50.
Person, S.D., J.J. Allison, C.I. Kiefe, M.T. Weaver, O.D. Williams, R.M. Centor and N.W. Weissman. 2004. "Nurse Staffing and Mortality for Medicare Patients with Acute Myocardial Infarction." Medical Care 42(1): 4-12.
Pronovost, P.J., D. Dang, T. Dorman, P.A. Lipsett, E. Garrett, M. Jenckes, et al. 2001. "Intensive Care Unit Nurse Staffing and the Risk for Complications after Abdominal Aortic Surgery." Effective Clinical Practice: ECP 4(5): 199-206.
Reason, J. 2000. "Human Error: Models and Management." British Medical Journal 320(7237): 768-70.
Registered Nurses Association of Ontario. 2003. Survey of Casual and Part-Time Registered Nurses (Report). Toronto: Author.
Registered Nurses Association of Ontario and Registered Practical Nurses Association of Ontario. 2000. Ensuring the Care Will Be There - Report on Nursing Recruitment and Retention in Ontario (p. 155).
Report of the Nursing Task Force. 1999. Good Nursing, Good Health: A Good Investment for the 21st Century (p. 38).
Sasichay-Akkadechanunt, T., C.C. Scalziand and A.F. Jawad. 2003. "The Relationship between Nurse Staffing and Patient Outcomes." Journal of Nursing Administration 23(9): 478-85.

Shindul-Rothschil, 1994. "Restructuring, Redesign, Rationing and Nurses' Morale: A Qualitative Study of the Impact of Competitive Financing." Journal of Emergency Nursing 20(6): 497-504.
Sovie, M.D. and A.F. Jawad. 2001. "Hospital Restructuring and its Impact on Outcomes." Journal of Nursing Administration 31(12): 588-600.
Tourangeau, A.E., P. Giovannetti, J.V. Tu and M. Wood. 2002. « Nursing-Related Determinants of 30-Day Mortality for Hospitalized Patients." Canadian Journal of Nursing Research 33(4): 71-88.
United States Agency for Healthcare Research and Quality. 2003. The Effect of Health Care Working Conditions on Patient Safety. Summary, Evidence Report /Technology Assessment. Number 74. Rockville, MD: Author.
Viewpoints Research (Devine, G. and L. Turnbull). 2002. Nurses' Definitions of Respect and Autonomy in the Workplace: Summary of Focus Groups with Canadian Nurses. Ottawa, Ontario: Report commissioned for the Canadian Nursing Advisory Committee.
Yang, K.P. 2003. "Relationships Between Nurse Staffing and Patient Outcomes." Journal of Nursing Research 11(3): 149-58.