



RN/RPN Scope of Practice Synopsis of Supportive Research

Please note: This summary is intended to provide an overview of the research related to RN/RPN Scope of Practice. For more specific information and guidance, please speak to your Labour Relations Officer (LRO).

1. The association between nurse staffing and hospital outcomes in injured patients. 2012

This study was based on a large nationally representative sample from the United States of Level I and Level II trauma centers. **The study showed higher LPN staffing levels were independently associated with increased mortality and higher rates of sepsis.** In particular, trauma centers with the lower LPN-to-patient staffing ratios (lower quartile of LPN staffing) would have 3 fewer deaths and 5 fewer episodes of sepsis per 1000 trauma admissions. In addition, **higher proportion of nursing care provided by LPNs is associated with increased rates of mortality and sepsis, suggesting that substitution of LPNs for RNs may be the mechanism leading to worse outcomes in hospitals with higher levels of RPN staffing.**

Glance, L., Dick, A., Osler, T., Mukamel, D., Li, Y., Stone, P. (2012). The association between nurse staffing and hospital outcomes in injured patients. *BMC Health Services Research*. 12:247

2. Staff Mix: Decision –making Framework for Quality Nursing Care. 2012

The framework was developed to guide decision-making about staff mix through four phases: assessment, planning, implementation and evaluation. Staff mix decision-making is an ongoing process and the evaluation of outcomes will continually provide new insights and, possibly, the need for adjustments. **The framework outlines key client factors, organizational factors and outcome indicators to be considered when assessing, planning, implementing and evaluating staff mix decisions.**

Developed by the Canadian Nurses Association, the Canadian Council for Practical Nurse Regulators and the Registered Psychiatric Nurses of Canada:

<http://www.cna->

[aiic.ca/~media/cna/page%20content/pdf%20en/2013/07/26/10/41/staff_mix_framework_2012_e.pdf](http://www.cna-aiic.ca/~media/cna/page%20content/pdf%20en/2013/07/26/10/41/staff_mix_framework_2012_e.pdf)

3. Quality and Cost Analysis of Nurse Staffing, Discharge Preparation, and Post-discharge Utilization. 2011

This study finds that when more registered nurses are working on a hospital unit and the amount of RN overtime hours are reduced, there are correlated lower readmission rates and visits to the emergency room within the first 30 days after hospital discharge. A positive correlation was found between the number of RN staffing hours and patient satisfaction, with the quality of discharge teaching and subsequent readiness to go home. Patients who were discharged when RN non-overtime hours were higher were less likely to be readmitted, while patients who were discharged when RN overtime was higher were more likely to visit the ER post-discharge.

Weiss, M., Yakusheva, O., Bobay, K. (2011). Quality and Cost Analysis of Nurse Staffing, Discharge Preparation, and Post Discharge Utilization. *Health Services Research*, 10.1111/j.1475-6773.2011.01267.x,1-22.

4. Nurse Staffing and Inpatient Hospital Mortality. 2011

This study shows a significant association between patient mortality and shifts that have lower levels of RN staffing or high patient turnover. The risk of death increased on shifts in which RN hours were eight hours or more below target staffing levels, or where there was a high turnover of patients related to admissions, discharges and transfers. Further, this study emphasized the importance of flexible staffing practices that consistently match staffing-to-patient care requirements and patient census on a shift-to-shift basis. Staffing levels should also be adjusted to account for the effect on workload and patient outcomes related to the number of admissions, discharges and transfers.

Needleman, J., Buerhaus, P., Pankratz, V., Leibson, C., Stevens, S., & Harris, M. (2011). Nurse staffing and inpatient hospital mortality. *New England Journal of Medicine*, 364(11), 1037-1045. Retrieved from EBSCOhost.

<http://www.NEJM.org/doi/full/10.1056/NEJM1001025>

5. The Association of Shift-Level Nurse Staffing with Adverse Patient Events. 2011

The objective of this study was to demonstrate the association between nurse staffing and adverse events on a shift-to-shift basis.

Findings were that RN skill mix, total nursing care hours and nursing experience were related to shift-level adverse events. A higher percentage of RNs was significantly associated with fewer falls and medication administration errors. Every shift must be adequately staffed with the right numbers, skill mix and experience level of nursing staff.

Patrician, P. A., Loan, L., McCarthy, M., Fridman, M., Donaldson, N., Bingham, M., & Brosch, L. R. (2011). The Association of shift-level nurse staffing with adverse patient events. *Journal of Nursing Administration*, 41(2), 64-70.

6. RNAO Position Statement: Strengthening Client Centred Care in Home Care. 2011

This position statement, adopted by the Registered Nurses Association of Ontario (RNAO) in February 2011, supports a client-centered inter-professional care model where all health disciplines work together,

ensuring the right care is provided to the right client in the right place by the right care provider. Both for-profit and not-for-profit home care must ensure the appropriate skill-mix and access to Registered Nurses. The percentage of RN visits in home care is positively related to better patient outcomes. Four pillars are identified that support excellence in client-centered home care, including: continuity of care and caregiver; the most appropriate category of caregiver based on client complexity of care needs and predictability of client outcomes; workforce stability by achieving 70 percent full-time employment for all nurses and publically funded not-for-profit home care services. Further, this position statement promotes that data derived from Resource Utilization Scores (RUG) derived from Resident Assessment Instrument Minimum Data Set (RAI MDS) can be a useful tool in determining the appropriate category of care provider. Competitive bidding and privatization of services in this sector have caused the unwarranted introduction of inappropriate skill mix application.

Registered Nurses Association of Ontario (RNAO). (2011) *Position statement: Strengthening client centred care in home care.* Retrieved from: http://www.rnao.org/Storage/77/7150_Position_Statement_Strengthening_Client_Centred_Care_in_Home_Care.pdf

7. RNAO Position Statement: Strengthening Client Centred Care in Hospitals. 2010

This position statement, adopted by the RNAO in January 2010, discusses the background of changing models of care delivery, including skill mix changes and the new and expanding roles of health care providers. Further, this position statement identifies the three pillars required to support and strengthen client-centered care, including: continuity of care and caregiver; the most appropriate category of care provider; and a stable workforce based on 70 percent full-time employment. Assignment of the most appropriate caregiver is based on the patient's complexity and care needs and the degree to which the patient's outcomes are predictable, with RNs assigned total nursing care for complex and/or unstable patients with unpredictable outcomes, and RPNs assigned total nursing care for stable patients with predictable outcomes.

Patients whose condition is unclear remain under the care of RNs to prevent shifting a patient back and forth between RNs and RPNs, which causes fragmentation of nursing care. A comparison is made between patient outcomes related to primary nursing vs. team nursing models. "The evidence is overwhelming that nursing models of care that advance continuity of care and continuity of caregiver from the most appropriate nurse ensures safe, high-quality patient client-centred care"

Registered Nurses Association of Ontario (RNAO). (2010) *Position statement: Strengthening client centred care in hospitals* Retrieved from: <http://www.rnao.org/Page.asp?PageID=122&ContentID=3175&SiteNodeID=390>

8. RNAO Position Statement: Strengthening Client-Centered Care in Long-Term Care. 2010

This position statement, adopted by the RNAO in June 2010, promotes the idea that an appropriate nursing care delivery model and skill mix is paramount to optimize resident, staff and organizational outcomes. Excellence in resident-centered long-term care is supported by four pillars, including: continuity of care and caregiver; assignment of the most appropriate care provider based on the resident's complexity, care needs and predictability of outcomes; 70 percent full-time employment for all nurses and UCPs; and not-for-profit funding. Further, **this position statement links the access to RNs and resident outcomes such as death rates, hospitalizations, discharges to home, functional outcomes, fewer pressure ulcers, urinary tract infections, urinary catheter and antibiotic use.**

Registered Nurses Association of Ontario (RNAO). (2010) *Position statement: Strengthening client centred care in long term care.* Retrieved from:
<http://www.rnao.org/Page.asp?PageID=122&ContentID=3350&SiteNodeID=471>

9. CNA Invitational Roundtable: Nursing Care Delivery Models and Staff Mix: Using Evidence in Decision-Making. 2010

An Invitational Round Table on the topic of *Nursing Care Delivery Models and Staff Mix: Using Evidence in Decision Making* brought together many of Canada's most influential and knowledgeable nursing researchers, policy-makers, clinicians and administrators. The report outlines presentations made by experts and a set of guiding principles for nursing care delivery models created by the participants. The major issues and concerns discussed included, **"Ongoing funding pressures have led many regional, provincial, and territorial health care systems to redesign models of care, including their nursing care delivery models often not guided by evidence-based decisions,"** and **"There is a large body of research regarding the clinical, staff outcomes in relation to RNs' deployment primarily in acute care settings. This evidence is not being used consistently by policy makers, funders and decision makers."**

Canadian Nurses Association. (2010) *Nursing care delivery models and staff mix: Using evidence in decision making: final report. [Invitational Roundtable]* Ottawa, Canada: Author

10. Development and Evaluation of an RN/RPN Toolkit. 2010

This article discusses the development and evaluation of a toolkit to guide RN/RPN staff mix decision-making based on the College of Nurses of Ontario (CNO) Practice Guideline: Utilization of RNs and RPNs. This toolkit was tested in a sample of 36 medical/surgical units in five academic and two community hospitals in Southern Ontario. **The results supported the validity and reliability of the Patient Care Needs Assessment Tool (PCNA) and a consensus-based process, but there was limited evidence for the validity and use of the Unit Environmental Profile (UEP).** Further, results confirmed nursing leader confidence in the reliability of the toolkit to plan unit staff mix ratios.

Blastorah, M., Alvarado, K., Duhn, L, Flint, F., McGrath, P., VanDeVelde-Coke, S. (2010) Development and Evaluation of an RN/RPN Utilization Toolkit. *Nursing Leadership* 23 (5) Special Issue

11. Fact Sheet: The Value of Registered Nurses. 2009

This Canadian Nurses Association (CAN) resource provides a summary of research literature that supports and identifies the value of Registered Nurses. The information is presented under the subheadings of 'Saving Lives,' 'Promoting Health,' and 'Reducing Costs.' "A higher proportion of registered nurses in the skill mix of licensed care providers has been associated with shorter lengths of stays and lower rates of shock and cardiac arrest, urinary tract infections, pneumonia and respiratory failure among medical and surgical patients."

Canadian Nurses Association. (2009) *Fact sheet: Value of registered nurses.*

Retrieved January 19, 2011

http://www.cna-aiic.ca/CNA/documents/pdf/publications/ROI_Value_Of_Nurses_FS_e.pdf

12. Registered Practical Nurses: An Overview of Education and Practice: A report to the Implementation Task Force, MOHLTC. 2009

This report presents an overview of RPN education and practice in Ontario and provides the background for a future study that will examine the relationship between RPN education and what roles they perform in the workplace. This report cautions that skill mix and staffing decisions should not be made by sector (acute, long-term care, etc.), but should be made related to complexity and stability of the average patient population for a particular unit. Further, this report states that skill mix changes should not be based on the lower cost of RPNs vs. RNs and that the two professions are not to be put in the position of competing with each other.

NHSRU. Health Human Resources Series ; 12 (2009) *Registered Practical Nurses: An Overview of Education and Practice: A report to the Implementation Task Force.* Ontario Ministry of Health and Long-Term Care.

13. Relationships between Registered Nurse Staffing, Processes of Nursing Care, and Nurse-reported Patient Outcomes in Chronic Hemodialysis Units. 2008

This article discusses the influence of RN staffing levels on patient outcomes for hemodialysis patients. Findings revealed that high patient-to-RN ratios and tasks not completed by RNs were associated with increased likelihood of frequent occurrences in dialysis hypotension, skipped dialysis treatments, shortened dialysis treatments and patient complaints. "Findings from this study indicate that the more RNs present during Hemodialysis (i.e. a richer RN skill mix), the less likely frequent adverse events will occur."

Thomas-Hawkins, C., Flynn, L., & Clarke, S. (2008). Relationships between registered nurse staffing, processes of nursing care, and nurse-reported patient outcomes in chronic hemodialysis units. *Nephrology Nursing Journal*, 35(2), 123. Retrieved from EBSCOhost.

14. Registered Nurses and Licensed/Registered Practical Nurses: A Description and Comparison of their Decision-Making Process. 2008

This article identifies the challenges being faced by the profession, regulatory bodies and employers to clarify the similarities and differences between the two categories of nurses in Canada. It presents the

results of a study of RNs and L/RPNs through survey and focus-group interviews, to describe the nursing decision-making process and compare the responses. The data further examines factors that influence decision-making between the two categories of nurses. Registered Nurses reported greater frequency than RPNs for eight decision-making elements: (a) assessing the client or situation; (b) identifying the problem, need or issue; (c) identifying alternative courses of action; (d) identifying possible outcomes or consequences; (e) considering the likelihood of outcomes; (f) considering the risks and benefits to the client; (g) selecting an intervention or action; and (h) evaluating outcomes. "LPNs found it more difficult than RNs to: (a) identify the possible outcomes or consequences; and (b) select an intervention or action"

Boblin S, Baxter P, Alvarado K, Baumann A, Akhtar-Danesh N. (2008) Registered nurses and licensed/registered practical nurses: a description and comparison of their decision making process. *Nurs Leadersh (Tor Ont)*. 2008;21(4):56-72.

15. Economics of Nursing. (2008)

The article addresses the economics of nursing from a broad perspective that considers how both national policies in the United States and managerial decisions within institutions impact the outcomes of nurses and patients. In the article it was shown that the odds of hospitals achieving quality targets that would trigger payments under pay for performance was increased RN hours per patient day. In particular, from 1982 to 1987 when there was a major restructuring of hospitals associated with Medicare prospective payment, hospitals in the U.S. reduced LPN employment by more than 67,000 full time equivalent and hospitals also reduced the number of non-licensed nurse staffing by 300,000. During this time, hospitals increased the employment of almost 137,000 RNs.

Aiken, L. (2008). Economics of Nursing. *Policy, Politics & Nursing Practice*. (2008) Sage Publications. Retrieved from: <http://ppn.sagepub.com>

16. The Association of Registered Nurse Staffing Levels and Patient Outcomes. 2007

This article examined the association between Registered Nurse staffing and patient outcomes in acute care hospitals. Conclusions reached included the link between increased RN staffing and lower odds of hospital-related mortality and adverse patient events, including failure to rescue.

Kane, R., Shamliyan, T., Mueller, C., Duval, S., & Wilt, T. (2007). The Association of registered nurse staffing levels and patient outcomes. Systematic review and meta-analysis. *Medical Care*, 45(12), 1195-1204. Retrieved from EBSCOhost.

17. RNAO Healthy Work Environments Best Practice Guidelines: Developing and Sustaining Effective Staffing and Workload Practices. 2007

Practice settings that maximize the health and safety of the nurse, quality patient/client outcomes, and organization performance and societal outcomes, are defined as healthy work environments for nurses. Interventions to promote healthy work environments must be aimed at multiple levels and components of the system. Further, healthy work environments are essential for quality, safe patient/client care. Workload expectations of nurses in today's health care settings often exceed capacity and staffing levels. Nursing work environments have become characterized by higher levels of patient/client acuity. Decisions related to skill mix, staffing allocation or the optimal number of nurses to meet patient/client care needs have become a highly complex matter. This Best Practice Guideline goes on to describe, *"The relationship between care provided by RNs and positive patient/client outcomes has been attributed to the comprehensive assessment and surveillance skills of RNs which enable quicker detection of changes in the health status of patients/clients before their condition deteriorates beyond recovery."*

Registered Nurses Association of Ontario (RNAO). (2007) *Best practice guideline: Developing and sustaining effective staffing and workload practices*

Retrieved

from:

http://www.rnao.org/Page.asp?PageID=122&ContentID=1199&SiteNodeID=241&BL_ExpandID=

18. Nurse Staffing in Hospitals: Is there a Business Case for Quality? 2006

This article discusses the relationship between increases in the proportion of RNs within skill mix, the improvement in patient outcomes and increased costs. It describes the business case for raising the proportion of RNs without changing the total number of licensed care provider hours. Despite the fact that RNs wages are higher than LPN wages, patients would likely benefit from reduced length of stay and fewer adverse outcomes. *"We believe that urinary tract infections, pneumonia and shock or cardiac arrest are more sensitive to the RN/LPN mix than hours at the bedside because preventing those complications draws heavily on the skills and education of RNs in patient assessment and intervention, not just increased time to observe and treat the patients."*

Needleman, J. (2006) Nurse staffing in hospitals: Is there a business case for quality? *Health Affairs* 25(1):204-211

19. Research Summary: Higher Levels of RN Staffing are Related to Better Patient Outcomes. 2005

This Canadian Nurses Association resource provides a summary of a research study which examined the relationship between nurse staffing levels in hospitals and the rate of adverse outcomes among patients. The principle finding included that a higher proportion of RNs, and more RN hours per day,

were associated with reduced lengths of stay, lower rates of urinary tract infections and upper gastrointestinal bleeding, lower rates of pneumonia, shock, or cardiac arrest and failure to rescue.

In summary, increasing the number of RNs or the proportion of RNs to L/RPNs can be expected to reduce the number of negative outcomes to patients. To ensure patient safety and improve quality of care, hospitals must have adequate RN staffing.

Retrieved from: http://www.cna-aiic.ca/CNA/documents/pdf/publications/RS_Higher_Levels_e.pdf

20. Nursing Staff Mix: A Key Link to Patient Safety. 2005

This article from the Canadian Nurses Association discusses the link between patient safety and the complex problems within the health care system. The article highlights the significant link between nursing staff mix decision-making and the relationship to patient safety. The article addresses the connection of scope of practice with the challenges in determining appropriate staff mix, including supporting research evidence. *“The consequences of uninformed and cost-driven decision making can be serious: the nursing staff mix itself may create the conditions that could lead to clinical errors and result in adverse outcomes for patients, nurses and organizations”*

Canadian Nurses Association. (2005) Nursing staff mix, a key link to patient safety [serial online] Nursing Now: Issues and Trends in Canadian Nursing (No. 19) Retrieved January 14, 2011 http://www.cna-aiic.ca/CNA/documents/pdf/publications/NN_Nursing_Staff_Mix_05_e.pdf

21. Nursing Research: The Impact of Hospital Nursing Characteristics on 30-Day Mortality. 2005

A cross-sectional analysis was completed assessing the effects and importance of nurse education and skill mix, continuity of care, and quality of work environment in predicting mortality. Hospital nursing characteristics were found to be an important consideration in efforts to reduce patient mortality rates.

“Hospitals with a higher proportion of richer skill mix of registered nurses (i.e. higher RN-to-non-RN ratios) were associated with lower rates of 30-day patient mortality.”

Estabrooks CA, Midodzi WK, Cummings GG, Ricker KL, Giovannetti P. (2005) The impact of hospital nursing characteristics on 30-day mortality. *Nurs Res.* 54(2):74-84. PubMed PMID: 15778649.

22. Research Summary: Nurse Staffing and Patient Death. 2005

This Canadian Nurses Association resource provides a summary of a Canadian research study to understand the effects of nursing-related hospital variables and to measure the proportion of patients who die within 30 days of admission to hospital. The model assessed such variables as nurse staffing, skill mix and years of experience, as well as others. This research summary states, *“If the number of RNs on a unit is reduced or RNs are substituted with lesser qualified care providers, more patients may die.”*

Canadian Nurses Association. (2005) *Research summary: Nurse staffing and patient death* http://www.cna-nurses.ca/CNA/documents/pdf/publications/RS_Patient_Death_e.pdf

23. CNA Position Statement: Staffing Decisions for the Delivery of Safe Nursing Care. 2003

This position statement adopted by the Canadian Nurses Association in June, 2003 discusses the principles for decision making related to staffing decisions, including having the appropriate number of positions and competencies; the responsibilities of nurse administrators and managers to ensure the appropriate staff mix; the risk to patient safety related to the substitution of RNs with less qualified workers; the importance of involving front-line RNs in decision making that involves nursing practice, client care and the work environment; ensuring that staffing decisions are evidence based and that the necessary elements for a quality professional practice environment are in place. Further, this position statement identifies the necessary care provider competencies to ensure that the appropriate care staff mix is in place.

Retrieved from: http://www.cna-nurses.ca/cna/documents/pdf/publications/PS67_Staffing_Decisions_Delivery_Safe_Nursing_Care_June_2003_e.pdf

24. Nursing Sensitive Outcomes: State of the Science, Chapter 6 Patient Safety Outcomes. 2003

Chapter 6 of *Nursing Sensitive Outcomes* discusses the rising concern for patient safety in health care. Further, it discusses the link between nursing and patient safety by considering medication errors, nosocomial infections, patient falls, pressure ulcers, and mortality. Aiken et al is cited as saying: “The mortality rate was significantly lower in hospitals with the highest ratio of RNs to licensed practical nurses (LPNs) and unlicensed personnel.”

Doran, D. (editor) *Nursing Sensitive outcomes: state of the Science*. Chapter 6

Useful Reference Materials

College of Nurses of Ontario [CNO], 2011
Practice Guideline: RN and RPN Practice: The Client, the Nurse and the Environment
<http://www.cno.org/Global/docs/prac/41062.pdf>

Collective Agreements
http://www.ona.org/ona_members/cba.html

CNO Standards of Practice
www.cno.org

ONA Tip Sheet Combating the Displacement of Registered Nurses
ona.org/executivePDF.php?file=/CombatingTheDisplacementOfRegisteredNurses_201011.pdf
(available on the executive members' section of the ONA website)

ONA Guide to Job Security and Protecting Professionalism
ona.org/executivePDF.php?file=/JobSecurityAndProtectingProfessionalismGuide_200910.pdf
(available on the executive members' section of the ONA website)

Professional Practice Concerns and Professional Responsibility Concerns
http://www.ona.org/documents/File/guides/ONA_ProfPracticeGuide_201210.pdf