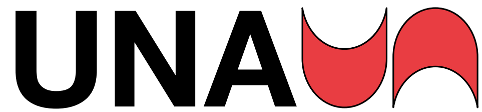


Nursing Home Regulations: RNs in Long Term Care Research Summary

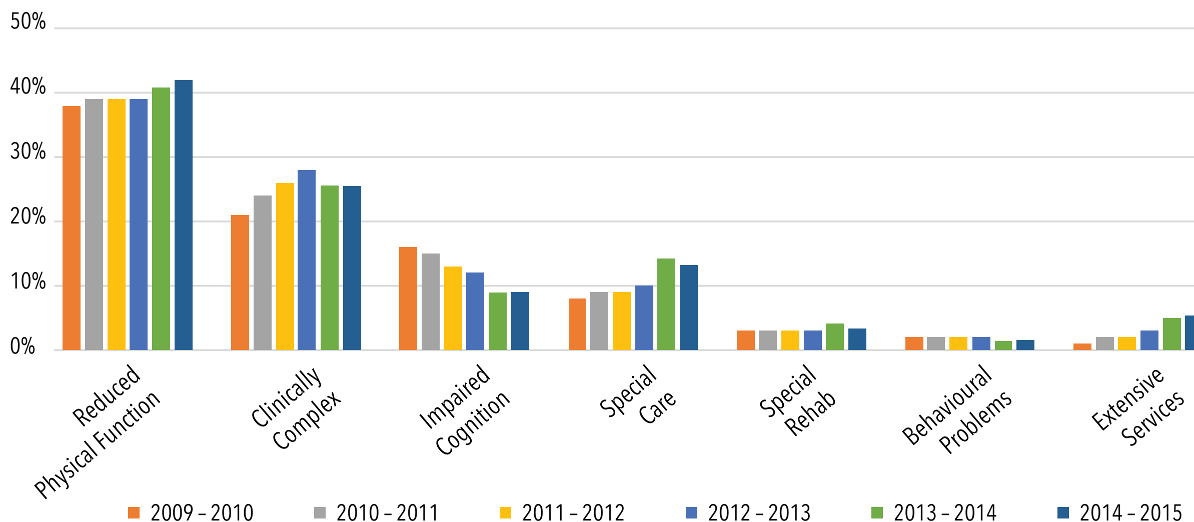
July 2016

NURSING NEEDS OF ALBERTANS IN LTC HAVE INCREASED

The proportion of residents in Alberta's LTC facilities categorized as clinically complex has risen by 25% over the past six years.

- This is attributable to the stricter criteria required for admission to LTC in Alberta and the expansion of the number of spaces in home care and supportive living.

Summary of characteristics of LTC residents in Alberta, 2009-2010 to 2014-2015 (RUG-III)[1]



Alberta currently has the highest proportion of clinically complex LTC residents in Canada.

- Just over a quarter of all residents in Alberta's LTC facilities are designated as Clinically Complex;
- Higher than the proportion for Canada as a whole (approximately 20%);
- Higher than in any other Canadian jurisdiction.

Higher acuity requires RNs to assess, coordinate and provide expertise in direct care.

- According to the AHS website "Long-term care beds are now reserved for individuals who have highly complex and unpredictable health needs," who may experience "serious fluctuations in health status requiring immediate health professional assessment" and who therefore require "the continued presence of a Registered Nurse" for "assessment and/or treatment." [2]
- According to the October 2014 Report of the Auditor General of Alberta, LTC residents need a significantly higher level of care than can be delivered in a community setting: "Today, long-term care is largely short-term care (on average 2 years) for seniors who are too frail and too ill to be cared for in the community." [3]

[1] Adapted from Sutherland, J.M., Repin, N,. & Crump, R. T. (2013) The Alberta Health Services Patient/Care– Based Funding Model for Long Term Care; A Review and Analysis. Accessed July 14, 2016 at http://www.albertahealthservices.ca/Publications/ahs-pub-ltc-pcbf.pdf and CCRS Profile of Residents in Continuing Care Facilities 2013-2014 and 2014-2015. Accessed July 14, 2016 at https://www.cihi.ca/sites/default/files/document/stats_res_profile_2013_14_en.xls and https://www.cihi.ca/sites/default/files/document/ccrs_quickstats_14_15_en.xlsx.

[2] Alberta Health Services, Continuing Care Choices – Long Term Care. Accessed July 14, 2016 at http://www.albertahealthservices.ca/cc/Page13339.aspx.

[3] Auditor General Alberta, Report of the Auditor General October, 2014. Seniors Care in Long-term Care Facilities (pp. 71-106). Accessed July 14, 2016 at https://www.oag.ab.ca/webfiles/reports/October%202014%20Report.pdf.

Risks associated with failing to provide appropriate care to Albertans in LTC.

- **Poorer resident outcomes; lowered levels of family well-being**;
- **Significant negative impact on the cost and capacity of the rest of the health care system** in the form of inappropriate use of other healthcare resources such as the Emergency Department, inpatient acute care, and the long-term impacts of hospitalization on a frail and complex population.[4]

RESEARCH SUPPORTING THE NEED FOR RN HOURS IN LTC

1. **Increased RN hours—particularly direct care RN hours—is associated with better quality of care and better resident outcomes.**
   - Various studies and reviews demonstrate that **increased RN hours alone**, regardless of total nursing and personal care hours, **result in better resident outcomes**.
   - Other studies report **beneficial outcomes of increased RN hours as an interaction effect between increased RN hours and total nursing and personal care hours**.
   - Although further research is necessary to determine the exact mechanism whereby increased RN hours improves resident outcomes, **there is no debate about the positive correlation between increased RN hours in LTC and better resident outcomes**.
   - Over the past 20 years researchers have made extensive use of staffing data collected by the Centers for Medicare and Medicaid Services (CMS) as part of their annual nursing home certification process either by linking publicly available CMS staffing data to nursing sensitive outcomes or by **linking the staffing data to publicly available CMS data on regulatory deficiencies in the area of quality of care.**[5]

Examples of research findings on the benefits of increased RN hours in LTC:

- **Lower rate of mortality associated with higher RN intensity.** Having more nursing aides did not have a similar impact on resident outcomes.

  Dorr, D.A., Horn, S.D., Smout, R.J. (2005). Cost Analysis of Nursing Home Registered Nurse Staffing Times, Journal of the American Geriatrics Society;53(5) 840-845.

- **Reduced rates of pressure ulcers and urinary tract infections** associated with increased RN staffing levels.

  Konetzka, R. T., Stearns, S.C., & Park, J. (2008). The staffing-outcomes relationship in nursing homes. Health Services Research, 43, 1025-1042.

- **Reduction in hospitalization** among residents admitted to nursing home from hospital is associated with higher RN staffing.

  Decker, F. (2008). The relationship of nursing staff to the hospitalization of nursing home residents. Research in Nursing & Health, 31, 238-251.

- **Lower counts of regulatory deficiency citations** associated with higher RN staffing relative to total nursing staffing

  Kim, H., Harrington, C., & Greene, W. H. (2009). Registered nurse staffing mix and quality of care in nursing homes: a longitudinal analysis. The Gerontologist, 49(1), 81-90.

---

[4] From Report of the Auditor General of Alberta, October 2014:"Avoiding hospitalization is a key objective of long-term care. Among residents with complex care needs, even a brief hospitalization can result in a rapid deterioration of cognitive and physical condition" (Ibid; p.72).

[5] See https://data.medicare.gov/data/nursing-home-compare and https://data.medicare.gov/data/nursing-home-compare?sort=relevance&tag=staffing for examples of staffing data and deficiency citations publicly available from CMS.

- **Nursing homes with higher RN to LPN ratio consistently received fewer regulatory deficiencies**[6] **regardless of total staffing level**. The authors speculate that this is attributable to the fact that "Registered nurses, with their higher education levels…may have better knowledge and skills to assess and monitor changes in patient condition and develop proper interventions in time, and also have better leadership and supervisory skills" (p. 88).

Kim, H., Harrington, C., & Greene, W. H. (2009). Registered nurse staffing mix and quality of care in nursing homes: a longitudinal analysis. The Gerontologist, 49(1), 81-90.

- **Nursing homes with higher RN staffing levels had significantly fewer quality of care deficiencies**. When RN and LPN staffing were examined separately, only higher RN staffing was related to fewer deficiencies. The practice of substituting LPNs for RNs may reduce labour costs but may not be effective in maintaining or improving quality of care.

Kim, H., Kovner, C., Harrington, C., & Greene, W., & Mezey, M. (2009). A panel data analysis of the relationships of nursing home staffing levels and standards to regulatory deficiencies. Journal of Gerontology: Social Sciences, 64B(2), 269-278

- **Less restraint use, fewer pressure ulcers, better quality measures, decreased probability of hospitalization,**[7] **decreased mortality, decreased urinary tract infections** are all associated with increased RN hours.

Dellefield, M. E., Castle, N. G., McGilton, K. S., & Spilsbury, K. (2015). The relationship between registered nurses and nursing home quality: An integrative review (2008-2014). Nursing Economics, 33(2), 95-116.

- **RN hours has a large and significant causal relationship**[8] **with nursing home quality of care; nursing aide hours and LPN hours do not.**[9] Increasing RN staffing by 0.3 hours per resident day increases nursing home quality of care by more than 16%.

Lin, Haizhen, Revisiting the Relationship between Nurse Staffing and Quality of Care in Nursing Homes: An Instrumental Variables Approach (January 22, 2013). Kelley School of Business Research Paper No. 2014-39. Available at SSRN: http://ssrn.com/abstract=2427821 or http://dx.doi.org/10.2139/ssrn.2427821

2. **Establishing the minimum number of hours of RN staffing necessary to ensure quality care**.
   - Policy makers face the challenge of determining a **minimum threshold for RN, LPN, and total nursing and personal care hours below which there is evidence that quality of care is unacceptable**.
   - Using both research findings and available data from CMS,[10] an expert panel convened in 1998 by the John A Hartford Foundation Institute for Geriatric Nursing recommended the following staffing guidelines[11] to providers, accrediting organizations, states and the US Congress:
     - 1.15 RN hours-per-resident day (hprd) consisting of 0.75 hours of direct RN care plus 0.42 hours of indirect RN care/administrative hours[12]
     - RN on duty 24/7
     - 4.55 hours-per-resident-day (hprd) total nursing and personal care.

---

[6] Higher RN staffing resulted in lower counts of deficiency citations, particularly in nursing homes that did not meet regulatory standards.

[7] The association of reduced rates of hospitalization from nursing homes with higher RN staffing is particularly significant among nursing home residents who were initially admitted to the nursing home following an acute care hospitalization. See: Decker, F. (2008). The relationship of nursing staff to the hospitalization of nursing home residents. *Research in Nursing & Health*, 31, 238–251.

[8] This finding was particularly pronounced in nursing homes which had previously had deficient staffing.

[9] While much of this research literature is correlational, Lin's work clearly establishes a causal relationship between RN staffing and quality of care as operationalized by regulatory deficiency citations through the examination of data from both before and after legislative changes to minimum staffing requirements in eight U.S. states.

[10] At the time the CMS was known as the Health Care Financing Administration (HCFA).

[11] See Harrington, C. Kovner, C, Mezey, M., Kayser-Jones, J., Burger, S., Mohler, M., Burke, R. & Zimmerman, D. (2000). Experts recommend minimum nurse staffing standards for nursing facilities in the United States. Gerontologist, 40, 5-16.

[12] These recommended hours-per-resident-day were based on a facility with more than or equal to 100 beds.

- In 2000, CMS issued a study specifically excluding administrative RN hours (i.e. RN Director of Nursing hours). It warned that total direct care staffing levels below 3.9 hours-per-resident-day (hprd) could result in serious resident impairment.
- In 2001 a further study from CMS looking at nursing homes with the greatest number of significant deficiencies took the position that **4.1 total hprd, of which 0.75 hprd were RN hours, were necessary to prevent harm or jeopardy to residents.**[13]

Examples of research findings on the minimum RN hours necessary to ensure quality care:

- **Raising RN thresholds of care to 0.6 hours-per-resident day (hprd) significantly reduced adverse outcomes for pressure ulcers.**

Kramer, A.M. and Fish, R. (2001). The Relationship Between Nurse Staffing Levels and the Quality of Nursing Home Care. In Appropriateness of Minimum Nurse Staffing Ratios in Nursing Homes. Report to Congress, Phase 2 Final, Section 2. Washington, D.C., U.S. Department of Health and Human Services, Health Care Financing Administration, 2001

- **Raising RN thresholds to 0.8 RN hours-per-resident-day improved resident functioning.**

Dorr, D.A., Horn, S.D., Smout, R.J. (2005.) Journal of the American Geriatrics Society;53(5) 840-845.

- **Residents receiving 30- 40 minutes of direct RN care per day were 85% less likely to develop a pressure ulcer** than those in the reference groups who received fewer than 10 mins a day of direct RN nursing care.

Horn, S., Buerhaus, P., Bergstrom, N., & Smout, R. (2005). RN staffing time and outcomes of long-stay nursing home residents: Pressure ulcers and other adverse outcomes are less likely as RNs spend more time on direct patient care. American Journal of Nursing, (105(11), 58-70.

- For a 100-bed, long-stay high-risk nursing unit with less than 10 minutes of RN staffing per resident per day, **raising RN staffing to 30 to 40 minutes per resident per day was associated with an annual net societal cost savings of more than $319,000**.[14]

Dorr, D.A., Horn, S.D., Smout, R.J. (2005). Cost Analysis of Nursing Home Registered Nurse Staffing Times, Journal of the American Geriatrics Society;53(5) 840-845.

- **Thresholds for RN hours were relevant to quality of care level at the median (50%) and 75% level of care**, while thresholds for LPN hours were not.

Zhang, N.J., Unruh, L., Rong, L. & Wan, T.T. H. (2006). Minimum nurse staffing ratios for nursing homes, Nursing Economics, 24(2) 78-93.

[13] Kramer, A.M. and Fish, R. "The Relationship Between Nurse Staffing Levels and the Quality of Nursing Home Care." In Appropriateness of Minimum Nurse Staffing Ratios in Nursing Homes. Report to Congress, Phase 2 Final, Section 2. Washington, D.C., U.S. Department of Health and Human Services, Health Care Financing Administration, 2001. As cited in Harrington, C. et al., (2015). Technical Guide to the CalQualityCare.org Ratings: Nursing Facilities (p.6).

[14] As valued in American currency circa 1997.

3. **The importance of 24/7 RN staffing**

- A 1996 American **Institute of Medicine (IOM)** study commissioned by the US Congress **recommended the minimum presence of one RN 24 /7**.

Wunderlich, G.S., Sloan, F., Davis, C.K.(1996). Nursing staff in hospitals and nursing homes: is it adequate. Washington, DC: National Academy Press;1996 Accessed July.14, 2016 at http://www.nap.edu/read/5151/chapter/1#iii.

- In both 2001 and 2004, further IOM studies **called for 24/7 RN presence in nursing homes** as well as reiterating the call for **0.75 RN hours as a minimum threshold of RN staffing**.

Institute of Medicine (2004). Keeping Patients Safe: Transforming the Work Environment of Nurses. Committee on the Work Environment for Nurses and Patient Safety, Board on Health Care Services, Washington, DC: National Academies Press; 2004. Available at http://www.nap.edu/read/10851/chapter/2#9

- A persistent theme emerging in the literature on nurse staffing is the **association of 24/7 RN staffing with reduced hospitalizations and reduced transfers to Emergency Departments.**

Examples of research findings on the importance of 24/7 RN staffing:

- A 2009 Canadian review reported that there was at the time no Canadian research on the topic of 24/7 RN staffing that satisfied their criteria for high quality evidence-based research. However, they also noted that **neither had their exhaustive literature review found any evidenced-based research to support a change to the policy of requiring 24/7 RN availability.**

Bryan, S., Murphy, J. M., Doyle-Waters, M. M., Kuramoto, L., Ayas, N., Baumbusch, J., et al. (2010). A systematic review of research evidence on:(a)24-hour Registered Nurse availability in long-term care, and (b) the relationship between nurse staffing and quality in long-term care. Final report for CIHR Expedited Knowledge Synthesis Program; Commissioning province: Saskatchewan. Retrieved July 22 2016 at https://circle.ubc.ca/bitstream/.../Final_Report_LTC_Staffing_Version_Aug_20_2010.pdf

- **The absence of an RN compromises the capacity of staff to make the right decision regarding Emergency Department transfers**. "It is, therefore, reasonable to hypothesize that **the presence of an RN on-site 24/7**, even after controlling for the hours per resident day (intensity) of RNs, LPNs, and CAs working in the facility, **may have an impact on residents' risk of inpatient hospital admission and ED visits**" (p.501).

Arendts, G., Reibelt, T., Codde, J., & Frankel, J. (2010). Can transfers from residential aged care facilities to the Emergency Department be avoided through improved primary care services? Data from qualitative interviews. Australasian Journal on Ageing, 29(2), 61–65. doi:10.1111/ j.1741-6612.2009.00415.x

- **The risk of inpatient hospitalization is higher in facilities with less than 24-hour RN on-site presence**. Possible explanations for this include: 24/7 on-site RN presence leads to **earlier detection of illness and thereby appropriate intervention**; and that when a resident requires an assessment by a physician, **RNs' training allows them to communicate these needs more effectively and confidently with facility physicians**.

McGregor, M.J., Murphy, J.M., Poss, J.W., McGrail, K.M., Kuramoto, L., Huang, H. & Stirling, B. (2015). 24/7 registered nurse staffing coverage in Saskatchewan nursing homes and acute hospital use. Canadian Journal on Aging, 34(4), 492-505.

THE IMPORTANCE OF THE REGULATORY FRAMEWORK

Standards and regulations are necessary tool to ensure residents receive the care they need.

- Studies have shown that **implementation of higher minimum staffing standards improves quality of care**.

Harrington, C., Schnelle, J. F., McGregor, M., & Simmons, S. F. (2016). The Need for Higher Minimum Staffing Standards in U.S. Nursing Homes. Health Services Insights, 9, 13–19. http://doi.org/10.4137/HSI.S38994

- **Only minimum standards have been successful in increasing direct-care staffing ratios; other means such as incentives have not worked.**

Hyer, Katherine, Temple A., & Johnson, C.E. (2009). Florida's efforts to improve quality of nursing home care through nurse staffing standards, regulation, and Medicaid reimbursement. Journal of Aging and Social Policy, 21(4), 318-37.

- There are significant **risks associated with failing to set appropriate standards of RN hours in LTC**, in particular the **tendency towards substitution of staff resulting in a decline in skill mix** clearly contraindicated by the research cited above.

Ibid

MONITORING, TRANSPARENCY, ACCOUNTABILITY

In 2014 the Auditor General expressed concern over the lack of transparency in Alberta's LTC system.[15]

- The Auditor General's Report identified the need to "**eliminate […] the visibility barrier that remains between plan and delivery**, between intention and results." (p.73).
- Recommendations aimed at removing this "visibility barrier" include **more effective monitoring, performance assessment, standardized compliance action, and improved public reporting**.
- **The report expresses particular concern over the number and skill level of staffing**. It points out that the current AHS inspection program "specifically excludes the review of facility staffing schedules" (p.98) and that in order to **verify that facilities provide residents with an adequate number and level of staff every day**, there should be unannounced inspections[16] and reviews of shift schedules.[17]

[15] This report followed up on the Auditor General's 2005 audit of Alberta Seniors Care and Program. Auditor General Alberta, Report of the Auditor General on Seniors Care and Programs (2005). Accessed July 14, 2016, at https://www.oag.ab.ca/webfiles/reports/OAG_Seniors_2005.pdf.

[16] As stated in the 2014 Auditor General Report the current practice for LTC facility audits is to announce visits at least eight weeks in advance (p.75).

[17] While the AG report does characterize AHS as having "an adequate system to ensure that facilities hire the number and the mix of staff they were funded to provide … AHS does not have an adequate mechanism to periodically verify that daily scheduling of staff across shifts is adequate to meet the daily care needs of the residents" (p. 84).

Concern over consistent staffing is particularly relevant in light of the heterogeneity of LTC ownership.

- 47% of all LTC facilities in Alberta are operated by Alberta Health Services; 28% are privately owned and operated, and 23% are owned and operated by non-profit organizations.[18]
- Within the nursing home sector alone the percentage of private ownership is significantly higher[19]: **virtually half (49%) of all facilities designated as nursing homes in Alberta are privately owned and operated**, while 28% are publically owned and operated and 23% are owned and operated by non-profit organizations.

Research shows that direct nursing care hours are lower in privately owned facilities:

- "…public money used to provide care to frail elderly people purchases **significantly fewer direct care and support staff hours per resident day in for-profit long term care facilities** than in not-for-profit-facilities" (p.645).

McGregor, M.J., Cohen, M., McGrail, K., Broemeling, A.M., Adler, R.N., Schulzer, M., Ronald, L., Cvitkovich, Y. & Beck, M (2005). Staffing levels in not-for-profit and for-profit long-term care facilities: does type of ownership matter? Canadian Medical Association Journal, 172(5), 645-9.

- As a result, poorer resident outcomes associated with lower levels of direct nursing care are more likely. According to a recent publication based on data collected in Ontario,"**…[R]esidents in for-profit homes consistently and robustly experience higher mortality and hospitalization rates"** (p. 878).

Tanuseputro, P., Chalifoux, M., Bennett, C., Gruneir, A., Bronskill, S.E., Walker, P.& Manuel, D, (2015). Hospitalization and Mortality Rates in Long-Term Care Facilities: Does For-Profit Status Matter? Journal of the American Medical Directors Association, 16(10):874-83.

Need for increased public reporting:

- The 2014 Auditor General report recommends **improved public reporting on our province's expectations of the publicly-funded LTC system in Alberta and further public reporting on whether the system is in fact meeting these expectations** (p. 91).

[18] The remaining 2% are located in Lloydminster and owned by the Prairie North Regional Health Authority out of Saskatchewan.

[19] Of the 14,768 LTC beds in the province, 38% are located in facilities classified as Nursing Homes and 62% are located in facilities classified as Auxiliary Hospitals.

RECOMMENDATIONS

1. Continue to include minimum nursing and personal care hours in regulations:
   - Minimum threshold for total nursing and personal care staffing of 4.1 hours-per-resident-day
   - Minimum threshold for direct care registered nursing of 0.75 hours-per-resident-day
2. Continue to include the requirement for an RN on-site 24 hours a day.
3. Increase monitoring of RN, LPN and HCA staffing hours; ensure data collected distinguishes between RN and LPN hours.
4. Make Alberta Health Services contracts with for-profit and not-for-profit LTC providers available to public
5. As per the Auditor General's October 2014 Report, increase public reporting on financial information, service quality and compliance in LTC facilities, including information on staffing hours, in order to ensure that funding for LTC is being spent optimally in all facilities, regardless of ownership status.

11150 Jasper Avenue NW
Edmonton AB T5K 0C7
(780) 425-1025
1-800-252-9394
nurses@una.ab.ca
www.una.ab.ca