



Early Retirement Among RNs: Estimating the Size of the Problem in Canada

Linda O'Brien-Pallas, Chris Alksnis, Sping Wang, Stephen Birch, Gail Tomblin Murphy,
Francine Anne Roy and Paul Sajjan

ABSTRACT

Background: Many health human resource planners have warned that Canada, like much of the industrialized world, is facing a nursing shortage. In Canada, nearly one-third of registered nurses (RNs) in the workforce are aged 50 years or older, and will soon reach the typical retirement age of 65 years. Research also indicates that an increasing proportion of RNs are retiring early, many by age 56. This paper examines the impact of RN retirement and death on the future RN supply.

Design: A cohort projection model was developed to estimate the number of RN losses due to retirement or death using data from the RNs Database (RNDB) at the Canadian Institute for Health Information and vital statistics data from Statistics Canada for the period 1997–2001.

Population: RNs who were employed in nursing in Canada in 2001 in the first six months of annual registration.

Methods: The numbers of RNs that would be lost to retirement or death are estimated under three different sets of circumstances: (1) all RNs working to a maximum age of 65 (i.e., retirement at age 65 as a best case scenario); (2) all

RNs working to a maximum age of 55 (i.e., retirement at age 55 as a worst case scenario); (3) RN losses when observed retirement rates are reduced, assuming a maximum work age of 65. Separate estimates are made for six regions of Canada (Atlantic, Quebec, Ontario, Manitoba/Saskatchewan, Alberta and British Columbia), for all of Canada (including territories) and for four employment sectors (hospital, long-term care, community, and other employment). A method for examining the distribution of the proportionate losses among regions or employment sectors was also devised (i.e., the index ratio).

Results: If all 2001 RNs were to continue working to age 65, Canada is projected to lose 29,746 RNs aged 50 or older to retirement or death by 2006, representing 13% of the RN workforce in 2001. Quebec has the highest proportionate loss, 16% of its 2001 workforce. If all RNs were to retire at age 55, Canada is expected to lose 64,248 RNs or 28% of the 2001 RN workforce by 2006. If retention strategies could be implemented to mitigate the current observed rates of retirement, the estimated loss of RNs retiring prematurely could be reduced by 53%.

This analysis suggests that effective retention incentives would most benefit Quebec, potentially retaining 66% of possible losses to retirement by 2006.

Interpretation: The results of this analysis highlight the importance of identifying effective retention strategies as a tool for health human resource planners. Implementation of retention strategies targeted to senior nurses is critical to sustaining the experienced RN workforce and to the efficient use of health human resources.

BACKGROUND

Many human resource planners have warned that Canada, like much of the industrialized world, is facing a nursing shortage (Buchan 1999; Buerhaus 1998; Duffield and O'Brien-Pallas 2002; O'Brien-Pallas and Baumann 1999). Concerns for a global shortage of registered nurses (RNs) are aggravated by the increasing size and proportion of elderly populations, healthcare system restructuring, changing work environments and competition from other career opportunities for potential nursing school applicants. Although the number of RNs employed in nursing in Canada has generally increased over time

(Canadian Institute for Health Information [CIHI] 2002b), in recent years, some regions of Canada have experienced decreases.

Between 1997 and 2001, the number of RNs employed in nursing aged 20 to 65 remained relatively stable in Canada, increasing by only 1.1%, from 227,656 to 230,261. This small increase was not uniform across the country. The number of RNs increased in Alberta (7.5%), Ontario (3.1%), and the Atlantic region (1.2%), but decreased in Manitoba/Saskatchewan (-2.7%), British Columbia (-2.3%), and Quebec (-1.1%). The number of RNs per 10,000 population decreased in Canada, from 75.9 in 1997 to 74.1 in 2001, as the population growth rate exceeded the rate of increase for the RN workforce. The average age of the RN workforce is increasing, from 42.3 years in 1997 to 43.6 years in 2001. British Columbia (44.7 years) and Ontario (44.2 years) claim the oldest workforces, on average, whereas Quebec (42.7 years) and the Atlantic region (42.3 years) have the youngest RN workforces. Across sectors, the proportion of RNs working in nursing in 2001 aged 50 years or older varied from 30% to 42% (CIHI 2002b).

Faced with this aging workforce, planning is now urgently required to grow a strong and vibrant RN workforce to meet future healthcare needs. This study contributes to this planning by generating national and regional estimates of the number of RNs aged 50 or older that can be expected to leave the RN workforce due to death or retirement by 2006. These estimates are then compared by region and nursing employment sector to determine the relative severity of losses. This study aims to

1. produce separate estimates of expected losses of RNs in Canada

(aged 50 or older) if RNs retire at currently observed retirement rates up to the maximum work ages of 65 and 55 respectively

2. identify and compare the proportionate losses of RNs nationally and regionally as well as by employment sector
3. examine the impact of reducing the observed retirement rates on the supply of RNs in 2006.

The phrase "typical retirement age of 65 years" is used throughout this document, since less than 0.5% of the Canadian RN workforce was aged over 65 in 2001 (CIHI 2002b). Between 1997 and 2000, 43% of Canadian workers retired before age 60, compared to only 29% before 1990 (Kieran 2001). In the healthcare industry, 49% of healthcare professionals retired before age 65 between 1997 and 2000 (Kieran 2001). Moreover, the average age of retirement among Canadian nurses was found to be 56 years, with many nurses considering retiring earlier (Aiken et al 2001; Connors 2001).

This analysis intends to provide human resource planners, decision-makers and those with an interest in nursing resources with information on potential losses of RN personnel by 2006.

HEALTH HUMAN RESOURCE PLANNING METHODOLOGY

The supply of health human resources makes up only one important piece of an HHRP framework. Supply reflects the actual number, type and geographic distribution of care providers available to deliver health services at any given point. Supply is fluid in nature and is influenced by several labour market factors, including but not limited to, participation rates, provider-to-population ratios, migra-

tion and mobility, retirement and death (Lomas et al. 1985; O'Brien-Pallas 2002). The adequacy of any particular level of supply will depend on the health needs of the population, the financial resources devoted to health-care and the prevailing values of the population. (See for example the framework developed by O'Brien-Pallas et al. 2000). It is not the intention of this paper to address these issues; application of the full models examining needs and utilization will be forthcoming in future papers. Instead, attention is focused on the impact of alternative retirement scenarios on the number of active RNs.

Many scholars have estimated the future supply of nurses in Canada (Ryten 1997; Ryten 2002) or for individual provinces/territories (Atkinson and Hull 2001; Elliott 1999; Hanson & Associates and Malloch Graham Associates 2001; Ministry of Health and Ministry Responsible for Seniors of B.C. 2000; O'Brien-Pallas et al. 2001; Wells 2001), although the specific simulation methods differ from study to study. For example, Ryten (1997) projected the future supply of RNs for the nation based on the "survivors" from the existing nursing complement and the number of new entrants to nursing based on data between 1980 and 1995. Wells (2001) used a simpler strategy for projecting losses in Newfoundland and Labrador by taking the number of RNs currently aged 43 or older as the expected losses in 15 years, assuming all nurses stop working at age 58.

Nevertheless, no research has focused on the projected losses of experienced RNs to retirement and death. Losses by employment sector or across Canada and the impact of retention initiatives on sustaining the experienced nursing workforce have not been carefully examined. This

study generates estimates of losses to retirement by region and nursing employment sector and estimates of losses to retirement under retention scenarios. The findings provide substantial knowledge to assist policy-makers to plan effectively for the short-term future. Policy initiatives considered may relate to recruitment of new nurses with expansion of educational seats or may focus on unique strategies to retain the senior nursing workforce. As senior nurses leave the workforce, immense intellectual capital is lost and cannot be replaced by just adding more new graduates to the system.

METHODS

This study uses 1997–2001 data from the Registered Nurses Database (RNDB) at CIHI (CIHI 1998a; 1999a; 2000a; 2001a; 2002a). The extraction and reporting of RNDB data for this study are consistent with CIHI privacy policies. Ethical approval for the study was received from the University of Toronto Tri-Council Ethics Committee. For full details on methodology, analytical considerations and data limitations, the reader is referred to the full report, entitled *Bringing the Future into Focus: Projecting RN Retirement in Canada*, published by CIHI (O'Brien-Pallas et al. 2003). The RNDB contains data on all RNs submitting active-practising registration in a Canadian province/territory in the first six months of the registration year. The RNDB data were classified into four broad sectors: hospital (general, pediatric, maternal and psychiatric hospitals; mental health centre; nursing station; rehabilitation/convalescent centre); long-term care (nursing home/long-term care facility); community (community health centre, home care agency); other employment business/industry/occupa-

tional health centre, private agency nursing/private duty, self-employed, physician's office/family practice unit, educational institution, association/government, other). CIHI's classification of nursing workplace (2000a; 2001a) can differ from provincial or territorial classifications.

The target population was narrowed to RNs aged 20 to 65 who were employed in nursing in the first six months of annual registration. Estimates of retirement losses focused on the population of RNs aged 50 to 65. Smaller provinces were combined into "regions" to ensure reliable and stable estimates for the projections. In total, projections were made for Canada and for six geographic regions: Atlantic (Newfoundland and Labrador, Prince Edward Island, Nova Scotia and New Brunswick), Quebec, Ontario, Manitoba/Saskatchewan, Alberta and British Columbia. Projections for Canada include all provinces and territories and are not merely a sum of the six regional totals.

A cohort-based projection method was developed and applied to three retirement scenarios to estimate the expected losses of RNs aged 50 or older due to death or retirement for 2001–2006. The three retirement scenarios examined were (1) all RNs working to a maximum age of 65 (i.e., retirement at age 65 as a best case scenario); (2) all RNs working to a maximum age of 55 (i.e., retirement at age 55 as a worst case scenario); (3) RN losses when observed retirement rates are reduced, assuming a maximum work age of 65. For the latter scenario, expected losses were recalculated assuming that it would be possible to retain 100% of the 50- to 54-year olds, as well as 75% of the 55- to 59-year-olds and 50% of the 60- to 64-year-olds who might otherwise have retired given the trend to earlier

retirement. The estimates are based on the assumption that the current mix of full-time/part-time/casual employment among RNs will remain the same over the five-year period. This reflects the relatively stable employment patterns observed over the past several years for most regions (CIHI 1998b; 1999b; 2000b; 2001b; 2002b).

Annual loss rates between 1997 and 2001 were calculated for each single-year age cohort (i.e., 50-year-olds, 51-year-olds, etc.) for all RNs between 50 and 64 years of age. The estimates were confined to the 2001–2006 period because errors tend to increase as data are projected further into the future (Smith et al. 2001). The rates of loss of RNs between age cohorts in two consecutive years for 50–65 age groups are calculated by the proportion of RNs from a given age cohort who do not register to practise from one year to the next. No losses were assumed among nurses under age 50. The 1997/98 to 2000/01 loss rates, which are detailed in the full report, vary from year to year with no clear downward or upward trend of losses across time within single-year age cohorts. However, the older the nurse cohort, the greater the loss rates relative to the base year of 50.

Once calculated, the age-specific loss rates were averaged across four years of data, and the 2001 cohort was "aged forward" year by year toward 2006 by applying the average annual loss rates to the survivors at single-year intervals for the entire forecast period. The estimated losses of nurses to retirement or death were generated by subtracting the number of RNs between two age cohorts in two consecutive years. Aggregating overall age groups and years produces the number of RNs anticipated to leave the nursing profession due to retirement or death.

An index ratio was developed to determine the relative severity of RN losses across regions and employment sectors. It expresses the estimated loss of RNs to death or retirement over the five-year period as a proportion of the total number of RNs employed in nursing in 2001; the higher the ratio, the greater the proportion of nurses to be lost to retirement or death. Ultimately, interpretation of this ratio must be evaluated within the regional context and supplemented with data on the needs of the population and other healthcare resources allocated to meeting those needs to provide a more comprehensive picture of the RN workforce. The severity of expected losses in a region or employment sector will depend on the age and geographic distribution of the workforce, recent trends of workforce growth or reduction, as well as health system and nursing policies at the provincial/territorial level.

Finally, the effects of reducing early retirement rates on RN retention were estimated. In this analysis, only the losses due to retirement were isolated for each region. Statistics Canada's (2001) most recent vital statistics on female mortality rates for single-year age groups between 50 and 65 were used to adjust the loss rates. Each cohort's survivors were then "aged" by applying the adjusted survival rate to the single-year age cohorts of RNs aged 50 or older in 2001. The estimates assumed hypothetical early retirements of 0% of RNs aged 50–54 years, 25% of existing retirements for RNs aged 55–59 years and 50% of existing retirements for RNs aged 60–64 years. The purpose of this paper was not to propose or evaluate the success of retention strategies. Instead, the estimates are aimed at illustrating the potential benefits of reducing retirement rates to alleviate the strain on the

healthcare system due to RN workforce losses. In addition, this method is conditioned on loss rather than growth, such that regions with overall growth will have smaller proportionate losses to the 2001 RN workforce. Further details concerning the methodology underlying the estimates can be found in the full report (O'Brien-Pallas et al. 2003).

RESULTS

Expected Losses by Region Assuming Retirement at Age 65

Given the RN workforce trends observed between 1997 and 2001, this analysis determined the expected losses of RNs in the next five years due to retirement or death. Table 1 outlines the annual expected losses and provides an index ratio of losses. Under this best case scenario, Canada is estimated to lose almost 30,000 RNs to retirement or death by 2006, equivalent to 13% of the RN workforce in 2001. Ontario and Quebec are estimated to experience the largest losses (9,878 and 9,471 respectively), which together account for 65% of the estimated total losses in Canada. Alberta and the Atlantic region have the lowest proportionate losses. In contrast, despite having one of the youngest RN workforces (i.e., average age 42.7 years) the estimated proportionate loss is greatest for Quebec, which would lose 16% of its 2001

workforce to retirement or death. This may be due to the fact that the average age of the Quebec nursing workforce appears to be increasing at a greater rate than in other jurisdictions (Spurgeon 2000). Nearly 40% of Quebec RNs were aged 45 or older in 1999, up from 31% in 1991 (Spurgeon 2000).

Expected Losses by Employment Sector, Assuming Retirement at Age 65

The expected losses by 2006 for each employment sector, assuming a retirement age of 65, are presented in Table 2.

Hospital Sector: In 2001, 147,469 RNs were employed in hospitals in Canada, among which 37,841 (25.7%) were between the ages of 50 and 65. By 2006, an estimated 18,103 RNs would be lost due to retirement or death in the hospital sector, representing 12% of RNs who worked in the sector in 2001. Quebec has the highest estimated loss, both in absolute number and proportion. In Alberta, retirement and death are estimated to absorb only 7% of RNs working in the hospital sector in 2001.

Long-Term Care Sector: In 2001, 42% of the 24,914 RNs working in the long-term care sector in Canada were between the ages of 50 and 65. The long-term care sector experienced a decline in the number of RNs between 1997 and 2001 for almost every region.

Table 1. Expected Losses of RNs Employed in Nursing Aged 50 to 65 for Canada and by Region (2002–2006), Assuming Age 65 Retirement

	2001–02	2002–03	2003–04	2004–05	2005–06	Total	Index Ratio
Canada	5,316	5,640	5,982	6,267	6,541	29,746	0.13
Atlantic	385	423	457	482	513	2,261	0.10
Quebec	1,750	1,823	1,917	1,969	2,013	9,471	0.16
Ontario	1,759	1,873	1,992	2,074	2,180	9,878	0.12
MB./SK.	365	388	417	439	450	2,060	0.11
Alberta	352	392	408	477	520	2,149	0.09
B.C.	681	714	760	790	828	3,773	0.14

Notes: Canada total includes northern territories data.
Source: Projections based on data from RNDB/CIHI.

Table 2 shows that by 2006, 19% of this RN workforce is estimated to have died or retired, representing the highest proportionate loss among all employment sectors. Ontario is expected to lose 1,577 RNs (26%) from the long-term care sector by 2006 – higher than all other regions. This finding partly reflects the relatively small percentage of RNs that this sector accounts for in the Ontario RN workforce in 2001. The relatively high proportionate loss in British Columbia is partly explained by the higher average age (47.6 years) of RNs in this sector. The expected losses in the Atlantic, Alberta and Manitoba/Saskatchewan regions are smaller, both in absolute numbers and proportions.

Community Sector: In 2001, 29,320 RNs worked in the community sector in Canada, with 32.7% between the ages of 50 and 65. The projected losses of RNs aged 50 or older are lower for the community sector than for other types of employment sectors. Table 2 shows under the best case scenario, a loss of 2,899 RNs in the community sector is projected for Canada by 2006, representing 10% of the workforce in 2001. Ontario, though having the highest number of RNs in the community sector, is projected to experience lower proportionate losses (8%) than Quebec (15%), or British Columbia (13%). Manitoba/Saskatchewan and Alberta are estimated to lose only 2% and 9% respectively of their community sector workforce in 2001. These smaller proportionate losses may be understood by exploring the recent growth and age profiles of the RN workforce in this sector (Alberta Health and Wellness 2000; Roos et al. 2001).

Other Employment Sector: In 2001, 27,548 RNs were employed in other places of work. The other employment sector consists of RNs working in a variety of healthcare settings, such as

physicians' offices, private nursing agencies, educational institutions or government. Among these RNs, 42.2% were between the ages of 50 and 65. Under the best case scenario, a loss of 3,904 RNs is estimated by 2006, 14% of the 2001 workforce (Table 2). The index ratio indicates that proportionate losses are relatively small for Quebec (0.09) but higher for Alberta (0.20), British Columbia (0.17) and Manitoba/Saskatchewan (0.15). In the absence of more detail, it is difficult to determine which specific settings within the heterogeneous "other" category are most affected by projected losses.

Expected Losses by Region Assuming Retirement at Age 55

If RNs were to retire at age 55, the worst case scenario, Canada could

expect to lose 64,248 RNs to retirement or death by 2006, equivalent to 28% of the RN workforce in 2001 (Table 3). These losses are more than double the estimated losses of the best case scenario. Proportionally, the estimated losses are highest in British Columbia (32%) and lowest in the Atlantic region (22%). Note that for Quebec, the proportionate loss is relatively low whereas under the best case scenario Quebec's proportionate loss was highest of all regions.

Retention Scenarios: Expected Losses by Region if Early Retirement Rates Are Reduced

Using the age-related retirement rates as a basis for estimated losses, 52.8% (14,905) of RNs between ages 50 and 65 who might otherwise have retired by 2006 would be retained, assuming

Table 2. Total Expected Losses by 2006 of RNs Employed in Nursing Aged 50 to 65 by Sector for Canada and by Region, Assuming Age 65 Retirement

	Hospital		Long-Term Care		Community		Other Employment	
	Losses	Index Ratio	Losses	Index Ratio	Losses	Index Ratio	Losses	Index Ratio
Canada	18,103	0.12	4,799	0.19	2,899	0.10	3,904	0.14
Atlantic	1,559	0.10	275	0.11	166	0.09	268	0.13
Quebec	6,270	0.17	1,423	0.17	1,093	0.15	482	0.09
Ontario	5,245	0.11	1,577	0.26	897	0.08	1,686	0.14
MB./SK.	1,224	0.11	346	0.15	61	0.02	311	0.15
Alberta	1,053	0.07	290	0.14	241	0.09	541	0.20
B.C.	2,274	0.13	634	0.18	418	0.13	478	0.17

Notes: Canada total includes northern territories data. Due to calculations during projections and non-responses for place of employment, counts by sector do not match total regional counts.

Source: Projections based on data from RNDB/CIHI.

Table 3. Total Expected Losses by 2006 to Retirement or Death by Retirement Ages 55 and 65 for Canada and by Region

	Retirement at Age 55			Retirement at Age 65		
	Total	Index Ratio	Rank	Total	Index Ratio	Rank
Canada	64,248	0.28	-	29,746	0.13	-
Atlantic	5,021	0.22	6	2,261	0.10	5
Quebec	15,408	0.26	5	9,471	0.16	1
Ontario	23,610	0.29	2	9,878	0.12	3
MB./SK.	4,881	0.27	4	2,060	0.11	4
Alberta	6,365	0.28	3	2,149	0.09	6
B.C.	8,718	0.32	1	3,773	0.14	2

Notes: Canada total includes northern territories data.

Source: Projections based on data from RNDB/CIHI.

Table 4. Comparison of Total Loss Estimates to Potential Retention Estimates for Canada and by Region, Assuming a Maximum Work Age of 65

	Loss Estimates			Retention Estimates	
	Due to Retirement and Death	Due to Retirement	Due to Retirement after incentives Implemented	Estimated Retention with incentives	% Retained from Retirement by incentives
Canada	29,746	28,242	13,337	14,905	52.8
Atlantic	2,261	2,125	992	1,133	53.3
Quebec	9,471	9,169	3,128	6,041	65.9
Ontario	9,878	9,300	5,091	4,209	45.3
MB./SK.	2,060	1,927	1,012	915	47.5
Alberta	2,149	1,994	1,200	794	39.8
B.C.	3,773	3,578	1,925	1,653	46.2

Notes: Canada total includes northern territories data.
Source: Projections based on data from RNDB/CIHI.

the maximum work age is 65. Reducing early retirement rates among 50- to 64- year-olds would benefit Quebec the most, saving 65.9% of expected losses to early retirement. Similar strategies would save 53.3% of expected losses in the Atlantic region and 47.5% of losses in the Manitoba/Saskatchewan region. Quebec and the Atlantic would gain the most from the potential retention scenarios explored in this paper because the average age of RNs is lowest in these regions. Alberta ranks lowest in the number and percentage of RNs retained because the region has experienced strong RN growth resulting in smaller proportionate losses.

DISCUSSION

Retirement significantly impacts the RN workforce in Canada: the aging baby boom cohort places additional pressures on the healthcare system, while the aging RN workforce risks losing many of its most experienced members to early retirement. The number of new RNs required to compensate for losses through death and retirement will depend crucially on the rate of early retirement. As noted earlier, the size of the RN workforce remained relatively stable in Canada between 1997 and 2001, during

which time the country's population increased by 3.7%. In effect, Canada now has fewer RNs per person than in 1997. As patient needs generally increase in later years of life, an aging population is likely to be associated with increases in both frequency and complexity of needs for care. The estimates presented in this paper emphasize the importance of considering RN retirement as a policy variable, as opposed to an external constraint, in planning the future RN supply.

This study estimated the losses of RNs aged 50 or older to retirement or death between 2002 and 2006 under three retirement scenarios. Under the best case scenario, with all RNs retiring at 65 years of age, Canada would lose 29,746 RNs, or 13% of the 2001 workforce by 2006, if the existing retirement rates for 50- to 64-year-olds continue in future years. However, if all RNs were to retire at age 55, the worst case scenario, and evidence suggests this is a plausible prospect (Aiken et al. 2001; Connors 2001), the potential loss increases to 64,248, or 28% of the 2001 workforce. In other words, to maintain current levels, more than one in four of the 2001 RN workforce would need to be replaced by 2006, either by newly qualified RNs, immigration or re-entrants. New

graduates and replacements, however, are likely on average to be less experienced than retiring RNs. Moreover, increasing population size and aging of the population suggest that maintaining current levels is unlikely to be sufficient to maintain existing standards of care.

The retention of experienced RNs has been suggested as a key factor in solving the RN shortage (Baumann et al. 2001; Canadian Nurses Association 1998; Canadian Nursing Advisory Committee 2002; Registered Nurses Association of Ontario and Registered Practical Nurses Association of Ontario 2000). This study found that by retaining 100% of RNs aged 50–54, 75% of RNs aged 55–59 and 50% of RNs aged 60–64 (who would have otherwise retired before age 65) the estimated losses of RNs were reduced by almost half. The retention scenarios explored here are simply numerical illustrations of how reductions in existing retirement rates could alleviate expected losses. It was not the purpose of this paper to develop, articulate or investigate specific retention strategies that would yield reductions in currently observed retirement rates.

In summary, the cohort based estimation model utilized in this paper presents a picture of the expected short-term losses of RNs in the potential retirement age group. A comprehensive interpretation of the impact of the projected RN losses requires an understanding of the roles of other health professionals, including licensed practical nurses and registered psychiatric nurses and of the staffing mix within the context of service requirements and the healthcare system. Understanding the impact of retirement on the RN workforce within this regional context will assist policy- and decision-makers in planning RN resources for the future.

Acknowledgements

This manuscript is adapted from a report entitled *Bringing the Future into Focus: Projecting RN Retirement in Canada*, published by the Canadian Institute for Health Information (CIHI; O'Brien-Pallas, Alksnis, Wang, Birch and Tomblin Murphy, 2003). The authors thank CIHI and its Health Human Resources Team for their invaluable contribution, as well as the Nursing Effectiveness, Utilization and Outcomes Research Unit at the University of Toronto (NRU; funded by the Ontario Ministry of Health and Long-Term Care) for supporting this analytical study. CIHI provided data from the RNs Database. Ms. Jill Strachan from CIHI is acknowledged for her support of this project, as is Ms. Raquel Meyer from the NRU for her assistance in developing this manuscript. Finally, thanks are extended to the RNs of Canada and the provincial/territorial regulating authorities for RNs for making possible the CIHI health human resources databases.

References

- Aiken, L., S.P. Clarke, D.M. Sloane, J.A. Sochalski, R. Busse, H. Clarke, P. Giovannetti, J. Hunt, A.M. Rafferty and J. Shamian. 2001. "Nurses' Reports on Hospital Care in Five Countries." *Health Affairs* 20(3): 43–53.
- Alberta Health and Wellness. 2000. "Alberta's Health System: Some Performance Indicators." Edmonton: Alberta Health and Wellness.
- Atkinson, A.M. and S. Hull. 2001. "Health Human Resources Supply and Demand Analysis: Executive Summary." Report prepared for the Health and Social Services System, Prince Edward Island. Retrieved September 30, 2003. www.gov.pe.ca/photos/original/hss_nov162001_b.pdf
- Baumann, A., L. O'Brien-Pallas, M. Armstrong-Stassen, J. Blythe, R. Bourbonnais, S. Cameron, D. Irvine Doran, 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." Ottawa: Canadian Health Services Research Foundation and The Change Foundation.
- Buchan, J. 1999. "The 'Greying' of the United Kingdom Nursing Workforce: Implications for Employment Policy and Practice." *Journal of Advanced Nursing* 30(4): 818–26.
- Buerhaus, P.I. 1998. "Is Another RN Shortage Looming?" *Nursing Outlook* 46(3): 103–8.
- Canadian Institute for Health Information. 1998a. "Registered Nurses Database 1997 [computer file]." Ottawa: Canadian Institute for Health Information [distributor].
- Canadian Institute for Health Information. 1998b. "Registered Nurses Database: Supply and Distribution of Registered Nurses in Canada 1997." Ottawa: Canadian Institute for Health Information.
- Canadian Institute for Health Information. 1999a. "Registered Nurses Database 1998 [computer file]." Ottawa: Canadian Institute for Health Information [distributor].
- Canadian Institute for Health Information. 1999b. "Registered Nurses Database: Supply and Distribution of Registered Nurses in Canada 1998." Ottawa: Canadian Institute for Health Information.
- Canadian Institute for Health Information. 2000a. "Registered Nurses Database 1999 [computer file]." Ottawa: Canadian Institute for Health Information [distributor].
- Canadian Institute for Health Information. 2000b. "Registered Nurses Database: Supply and Distribution of Registered Nurses in Canada 1999." Ottawa: Canadian Institute for Health Information.
- Canadian Institute for Health Information. 2001a. "Registered Nurses Database 2000 [computer file]." Ottawa: Canadian Institute for Health Information [distributor].
- Canadian Institute for Health Information. 2001b. "Registered Nurses Database: Supply and Distribution of Registered Nurses in Canada 2000." Ottawa: Canadian Institute for Health Information.
- Canadian Institute for Health Information. 2002a. "Registered Nurses Database 2001 [computer file]." Ottawa: Canadian Institute for Health Information [distributor].
- Canadian Institute for Health Information. 2002b. "Registered Nurses Database: Supply and Distribution of Registered Nurses in Canada 2001." Ottawa: Canadian Institute for Health Information.
- Canadian Nurses Association. 1998. "Registered Nurse Human Resources: Recruitment and Retention Issues." Ottawa: Canadian Nurses Association.
- Canadian Nursing Advisory Committee. 2002. "Our Health, Our Future: Creating Quality Workplaces for Canadian Nurses. Final Report of the Canadian Nursing Advisory Committee." Ottawa: Advisory Committee on Health Human Resources.
- Connors, K. 2001. "Healthy People, Healthy Economies." Presentation to the House of Commons Standing Committee on Finance on Canadian Economy: Short and Mid-Term Outlook. Parliament of Canada, Ottawa.
- Duffield, C. and L. O'Brien-Pallas. 2002. "The Nursing Workforce in Canada and Australia: Two Sides of the Same Coin." *Australian Health Review* 25(2): 136–44.
- Elliott, D. 1999. "Labour Market Analysis: Saskatchewan Nursing." Report prepared for Saskatchewan Health, Saskatchewan. Retrieved September 30, 2003 www.health.gov.sk.ca/info_center_pub_nurse_study.pdf
- Hanson & Associates and Malloch Graham Associates. 2001. "Nursing Human Resources Demand and Options for Supply: Phase One Nursing Labour Market Survey." Yukon College, Whitehorse. Retrieved September 30, 2003 www.yukoncollege.yk.ca/prostudies/pdf_files/phase1.pdf
- Kieran, P. 2001. "Early Retirement Trends." *Perspectives on Labour and Income* 13(4) 7–13.
- Lomas, J., G. Stoddart and M.L. Barer. 1985. "Supply Projections as Planning: A Critical Review of Forecasting Net Physician Requirements in Canada." *Social Science and Medicine* 20: 411–24.
- Ministry of Health and Ministry Responsible for Seniors of B.C. 2000. "Assess and Intervene: Report to the Minister of Health on the Recruitment and Retention of Registered Nurses and Registered Psychiatric Nurses in British Columbia." MOH and MRSBC. Retrieved September 30, 2003 www.healthplanning.gov.bc.ca/cpa/publications/rpnurses/assessintervene.pdf
- O'Brien-Pallas, L. 2002. "Where to from Here?" *Canadian Journal of Nursing Research* 33(4): 3–14.
- O'Brien-Pallas, L., C. Alksnis, S. Wang, S. Birch and G. Tomblin Murphy. 2003. "Bringing the Future into Focus. Projecting RN Retirement in Canada." Ottawa, ON: Canadian Institute for Health Information.
- O'Brien-Pallas, L. and A. Baumann. 1999. "The State of Nursing Practice in Ontario: The Issues, Challenges and Needs." Nursing Effectiveness, Utilization and Outcomes Research Unit. College of Nursing, University of Toronto, Toronto.
- O'Brien-Pallas, L., A. Baumann, S. Birch and G. Tomblin Murphy. 2000. "Health Human Resource Planning in Home Care: How to Approach It – That Is the Question." *HealthcarePapers* 1(4): 53–9.

O'Brien-Pallas, L., G. Darlington and C. Alksnis. 2001. "Estimating the Impact of Retirements on Nursing Supply." ICN 22nd Quadrennial Congress June 10–15, 2001. Copenhagen, Denmark.

Registered Nurses Association of Ontario and Registered Practical Nurses Association of Ontario. 2000. "Ensuring the Care Will Be There: Reporting on Nursing Recruitment and Retention in Ontario." Registered Nurses Association of Ontario, Toronto. Retrieved September 30, 2003 <http://www.rnao.org/html/pdf/1_R&R_Summary_Report.pdf>

Roos, N., C. Black, N. Frohlich, C. Decoster, M. Cohen, D. Tataryn, C. Mustard, F. Toll, K. Carriere, C. Burchill, L. MacWilliam and B. Bogdanovic. 1995. "A Population Based Health Information System." *Medical Care* 33(12): DS13-20.

Roos, N., L. Mitchell, S. Peterson and E. Shapiro. 2001. "Perspectives on Home Care Data Requirements." Manitoba Centre for Health Policy, Department of Community Health Sciences, University of Manitoba.

Ryten, E. 1997. "A Statistical Picture of the Past, Present and Future of Registered Nurses in Canada." Ottawa: Canadian Nurses Association.

Ryten, E. 2002. "Planning for the Future: Nursing Human Resource Projection." Ottawa: Canadian Nurses Association.

Smith, K., J. Tayman and D. A. Swanson. 2001. "State and Local Population Projections: Methodology and Analysis." New York: Kluwer Academic/Plenum Publishers.

Spurgeon, D. 2000. "Canada Faces Nurse Shortage [news]." *British Medical Journal* 320(7241): 1030.

Statistics Canada. 2001. "CANSIM II tables 510001 and 510002 [computer file]." Ottawa: Statistics Canada [distributor]. Retrieved February 19, 2002

<http://dc1.chass.utoronto.ca/cgi-bin/cansim2/getArray.pl?a=510001> and <http://dc1.chass.utoronto.ca/cgi-bin/cansim2/getArray.pl?a=510002>

Wells, A. 2001. "Registered Nurse Supply Report 2000/2001 Newfoundland and Labrador." Health and Community Services Human Resource Sector Study. Retrieved September 30, 2003 www.nlhba.nf.ca/hr/documents/RN.pdf

About the Authors

Linda O'Brien-Pallas, RN, PhD, Professor, CHSRF/CIHR Chair Nursing Health Human Resources; Co-Director, Nursing Effectiveness, Utilization and Outcomes Research Unit, Faculty of Nursing, University of Toronto, Toronto, Canada.

Chris Alksnis, PhD, is now Assistant Professor at Wilfrid Laurier University, Brantford Campus, Brantford, Ontario and was Senior Research Associate with the Nursing Effectiveness, Utilization and Outcomes Research Unit, Faculty of Nursing, University of Toronto, Toronto, Canada.

Sping Wang, PhD, is Senior Research Associate with the Nursing Effectiveness, Utilization and Outcomes Research Unit, Faculty of Nursing, University of Toronto, Toronto, Ontario.

Stephen Birch, DPhil, is a Professor with the Centre for Health Economics and Policy Evaluation, McMaster University, Hamilton, Ontario.

Gail Tomblin Murphy, RN, PhD (c), is Associate Professor with the School of Nursing and Department of Community Health and Epidemiology, Dalhousie University, Halifax, Nova Scotia.

Francine Anne Roy, RN, MSc, is a Nursing Consultant with the Canadian Institute for Health Information, Ottawa, Ontario.

Paul Sajan, MPL, is Senior Analyst with the Canadian Institute for Health Information, Ottawa, Ontario.

The full report is available at: www.cihi.ca and www.hhr.utoronto.ca.

Send inquiries to: Dr. Linda O'Brien-Pallas, Faculty of Nursing, University of Toronto, 50 St. George St., Toronto, Ontario, Canada M5S 3H4, tel: (416) 978-1967, fax: (416) 946-7142, e-mail: l.obrien.pallas@utoronto.ca

Comments or statements that appear to be editorial in nature are solely the responsibility of the authors and may not reflect the views or opinions of the Canadian Institute for Health Information.

A Senior Nurse Executive's Perspective

Marcy Saxe-Braithwaite, BScN, MScN, MBA, CHE

This paper validates with compelling evidence the skill-scarcity challenge nursing faces in Canada as our seasoned and experienced senior nurses chose to exit the healthcare system within the next few years.

Consider this a "wake up call" for policy makers, government and healthcare leaders. We must take ACTION;

no more planning reports nor speculative talk and predictions are required – we require a fully operational health human resource plan, with an effective retention strategy to mitigate the potential loss of our most senior nursing colleagues.

Today's nursing shortage is worsening as illustrated in this article. Yet, we continually hear healthcare leaders addressing the problem through increased immigration from other provinces and countries, employing more LPNs (RPNs in Ontario) in areas of unpredictable outcomes and utilizing unregulated care providers. There is not enough evidence to understand the impact this has on patient outcomes but it is concerning. Patients who enter

the healthcare system are now more acute, more elderly and have more comorbid factors than in the past. Surely they would benefit from receiving care from a highly skilled and knowledgeable registered nurse.

As leaders the time has come to act on the compelling evidence presented by Dr. O'Pallas et al. Instead of initiating new care models without supporting evidence as to their impact on care quality – i.e. care models in part mandated by the nursing shortage – policy makers, government and healthcare leaders should work to keep the skill set of our more senior colleagues in the workforce to enable an evidence-based transition to future care models.