



# Nursing Practice In Rural and Remote Prince Edward Island: An Analysis of CIHI's Nursing Database

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## Highlights

- In the period between 2003 and 2010, the regulated nursing workforce in Prince Edward Island grew by 3.7%, reaching a total of 2066 regulated nurses. The greatest increase in the regulated nursing workforce during this time was in rural RNs (up 37.0%).
- In 2010, 29.7% of the regulated nursing workforce in Prince Edward Island was located in rural areas of the province where 39.2% of the population lived.
- In rural areas the nurse-to-population ratio increased for RNs, but decreased for LPNs. In urban areas, it decreased for RNs and LPNs.
- Fewer rural than urban RNs worked full-time. In 2010, urban LPNs had the highest proportion holding casual positions.
- The proportions of RNs in rural and urban Prince Edward Island achieving baccalaureate degrees increased from 2003 to 2010. These proportions were slightly higher in rural than in urban Prince Edward Island.
- In 2010, the estimated proportion of rural nurses working in primary healthcare settings was 6%. The greatest increase between 2003 and 2010 was in urban LPNs (up 102%), followed by rural LPNs (up 45%).
- Although the majority of nurses educated in Prince Edward Island stay in Prince Edward Island, in 2010, 31% of RNs and 7% of LPNs received their initial education elsewhere.

## Introduction

People who live in rural and remote parts of Canada (including the North) tend to have more health challenges than people living in urban areas. Rural and remote communities also experience limited numbers and chronic shortages of health care workers, including nurses.

In order to keep improving health services and support nurses in rural and remote communities, planners and policy makers need up-to-date information. *Nursing Practice in Rural and Remote Canada II* provides some of that information.

*Nursing Practice in Rural and Remote Canada II* is a study conducted in partnership with planners and policy makers who will make sure that the findings can be used to improve nursing services and access to care in rural and remote Canada.

A key activity of the *Nursing Practice in Rural and Remote Canada II* study was the analysis of the Canadian Institute for Health Information's (CIHI) Nursing Database (NDB). This analysis was undertaken in order to identify key characteristics of the regulated nursing workforce in rural and remote Canada, as well as changes in the workforce over the last decade.

- Data for the years 2003 and 2010 were analyzed.

- Data for registered nurses (RNs), nurse practitioners (NPs), and licensed practical nurses (LPNs) were included.

This document reports key findings from the NDB analysis for Prince Edward Island (PEI). It provides an overview of the regulated nursing workforce in PEI, with a special focus on rural and remote locations.

## Definition of Rural

We use the Statistics Canada definition of Rural and Small Town Canada (du Plessis et al., 2001, p. 6). Rural refers to communities with a core population of less than 10,000 people, where less than 50% of the population commutes to larger urban centres for work. This Statistics Canada definition of rural includes northern communities, as well as remote areas with little or no metropolitan influence as measured, in a labour market context, by the size of commuting flows to any larger urban centre.

According to the 2011 Census, PEI had a population of 140,204. As of 2011, the rural population was 59,229, which accounted for 42.2% of the total and represented a decrease of 3.0% since 2006. Table 1 lists population by health region.

Table 1. Population by health region, 2011, PEI

Health Region Name	Population
Kings County	18,150
Queens County	82,921
Prince County	44,784

Source: CIHI. (2013). *Regulated Nurses: Canadian Trends, 2007 to 2011*. Ottawa, ON: CIHI.

## Nursing Database Analysis: Findings

### 1. Nursing Workforce Numbers in Prince Edward Island

In the period between 2003 and 2010, PEI's overall regulated nursing workforce grew from 1992 to 2066, which represented a 3.7% increase. When this increase was examined in terms of nurse type, we found that the total number of RNs increased from 1,373 to 1,472 (up 7.2%), and the total number of LPNs decreased from 619 to 590 (down 4.7%). Data for the number of NPs in 2003 were not available and the total number of NPs in 2010 was suppressed.

The changes in the regulated nursing workforce were also examined in terms of urban and rural comparisons. The numbers of urban RNs and LPNs all decreased between 2003 and 2010. In rural locations, the number of RNs increased (up 37.0%) while the number of LPNs decreased (down 8.1%). These changes differed from the wider trends found at the national scale where increases were seen for all nurse types in both rural and urban areas.

Of the total regulated nursing workforce in PEI in 2010, 32.2% of RNs, 23.2% of LPNs, and 50.0% of NPs worked in rural communities. When we considered the rural regulated nursing workforce with respect to the rural population we found that 29.7% of PEI nurses served 39.2% of PEI residents. The situation in urban locations was reversed; here we found that 70.3% of the regulated nursing workforce served 57.8% of the population.

## 2. Nurse-to-Population Ratios

Nurse-to-population ratios represent the number of nurses per 100,000 population. In rural PEI, the nurse-to-population ratios for RNs were lower than in urban locations for both data years (2003 and 2010). Nurse-to-population ratios for LPNs were also higher in urban locations in 2003 and 2010. Table 2 illustrates the increase in nurse-to-population ratios for urban RNs and urban and rural LPNs. There was a decrease in the nurse-to-population ratio for urban RNs and urban and rural LPNs. In contrast, the nurse-to-population ratio increased for rural RNs.

Table 2. Percentage (%) changes in 2003-2010 nurse-to-population ratios, PEI and Canada

Jurisdiction	RNs		LPNs	
	Urban	Rural	Urban	Rural
PEI	-10.1	40.8	-11.2	-5.5
Canada	††	††	20.7	6.8

Note: †† - no urban/rural allocations of RNs were available for RNs in Quebec in 2003. Data were suppressed for the territories due to small cell sizes.

## 3. Demographics

### Age:

Table 3 provides information about the average ages of RNs and LPNs in urban and rural locations for 2003 and 2010. There was little difference between the ages of nurses working in rural compared to urban areas. The average ages of RNs and LPNs working in both urban and rural locations continues to increase.

Table 3. Average age (in years) of the regulated nursing workforce, 2003-2010, PEI and Canada

Jurisdiction	RNs				LPNs			
	Urban		Rural		Urban		Rural	
	2003	2010	2003	2010	2003	2010	2003	2010
PEI	44.8	47.8	44.8	46.1	44.5	47.3	43.9	47.4
Canada	††	†††	††	†††	44.4	42.8	44.6	44.8

Note: †† no urban/rural allocation was made of 2003 Quebec NDB records for RNs. ††† data to compute average ages were not submitted by Manitoba for the 2010 NDB data year.

### Gender:

The proportions of males in the regulated nursing workforce remained low for all nurse types in both rural and urban locations. In 2003, the proportion of male RNs working in rural PEI was lower than in urban PEI; however, by 2010, the proportions were nearly the same. In both 2003 and 2010, the proportion of male LPNs was lower in rural than in urban areas.

In 2003 and 2010, LPNs were the nurse type with the largest proportion of males, with the largest proportions seen in urban areas. In 2010, 10.4% of LPNs in urban PEI were male compared to 2.3% of urban RNs (see Figure 1). In the same year in rural PEI, the proportions of males were similar for RNs and LPNs (see Figure 2).

Figure 1. Proportion male nurses, urban PEI

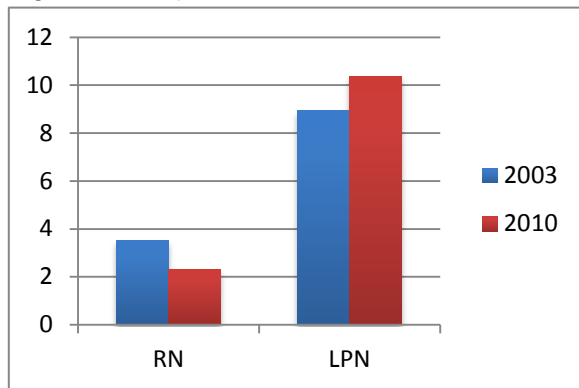
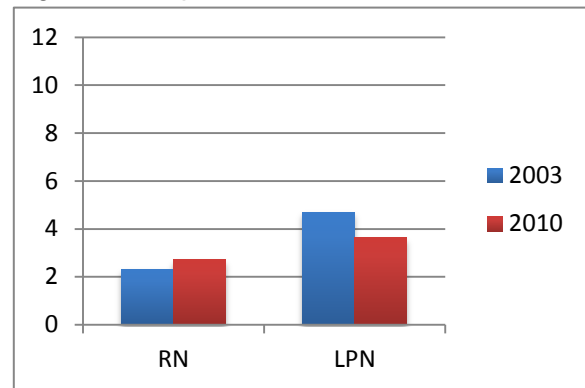


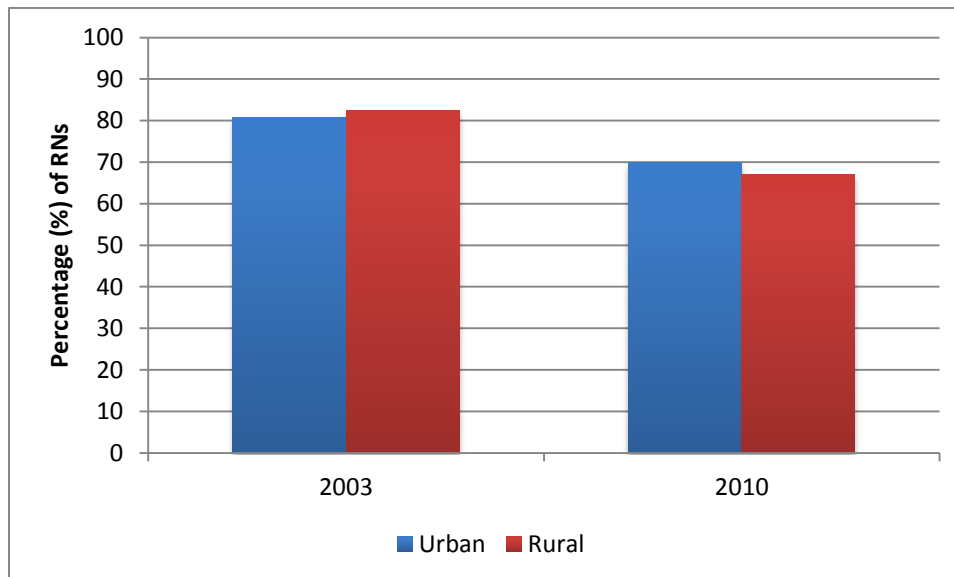
Figure 2. Proportion male nurses, rural PEI



#### 4. Education

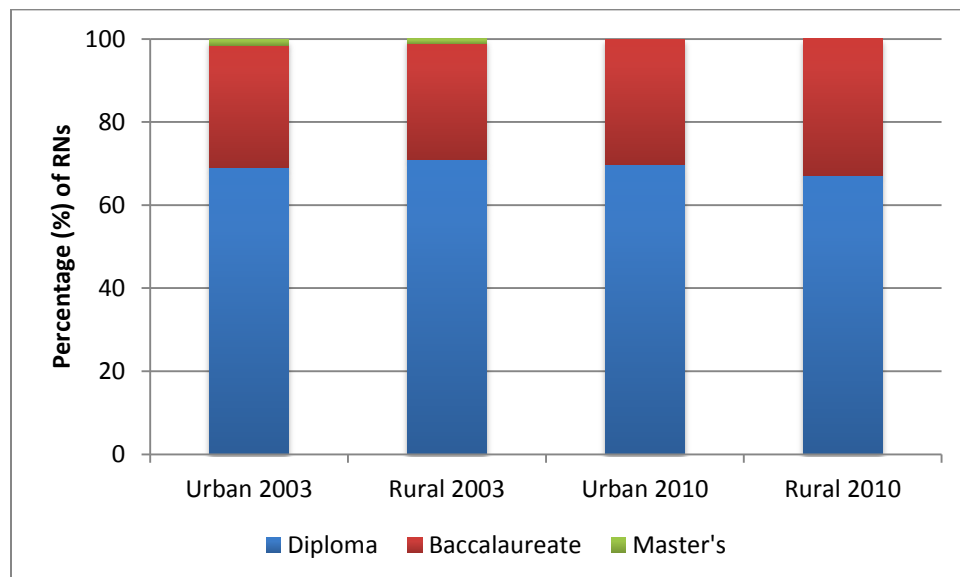
In 2003, slightly more rural than urban PEI RNs had a diploma as their initial nursing education (82.4% compared to 80.8%). However, in 2010 this pattern was reversed, and more urban than rural RNs had diplomas as their initial nursing education (69.8% compared to 67.1%). As Figure 3 indicates, the proportion of RNs with diplomas as initial nursing education was decreasing in both rural and urban areas.

Figure 3. Proportion of RNs with diploma as initial nursing education, rural-urban, 2003-2010, PEI



In PEI, marginally more urban than rural RNs had baccalaureate degrees in 2003 (29.4% compared to 27.8%). In 2010, the pattern was reversed, and marginally more rural than urban RNs had baccalaureate degrees (32.9% compared to 30.2%). In 2010, no rural or urban RNs reported Master's or doctorate degrees. Figure 4 compares highest nursing education categories for rural and urban RNs in PEI for 2003 and 2010.

Figure 4. Proportion of RNs by highest nursing education categories, rural-urban, 2003-2010, PEI



## 5. Employment

### ***Employment Status:***

The NDB 'employment status' categories are: full-time, part-time, casual and not stated. The nursing colleges and CIHI define regular nursing employment as guaranteeing "a fixed number of hours of work per pay period. May be defined by the employer as full-time or part-time, but reflects permanent employment even though it may be time limited" (CIHI 2012, p. 8). Casual nursing employment "does not guarantee a fixed number of hours of work per pay period" (CIHI 2012, p. 8). Table 4 provides employment status proportions by nurse type, rural/urban, and year.

Table 4. Employment status proportions by nurse type, rural and urban, 2003 and 2010, PEI

	Urban			Rural		
	%FT	%PT	%Casual	%FT	%PT	%Casual
<b>2003</b>						
RNs	54.7	40.4	4.9	43.6	52.6	3.8
LPNs	40.0	34.9	25.1	28.9	45.6	25.5
<b>2010</b>						
RNs	52.9	35.0	12.1	45.6	39.9	14.6
LPNs	49.9	33.8	16.3	32.9	52.6	14.6

In 2003, more urban RNs were in full-time positions than their rural counterparts (54.7% compared to 43.6%). In the same year, the proportion of rural RNs in part-time positions was higher than for urban RNs (52.6% compared to 40.4%), and the proportion of rural RNs in casual positions was slightly lower than for urban RNs (3.8% compared to 4.9%).

Between 2003 and 2010, the proportion of nurses working full-time increased slightly for rural RNs and decreased slightly for urban RNs. For both urban and rural RNs, the proportion in part-time positions decreased between 2003 and 2010 while the proportion in casual positions increased. In 2010, the proportion of rural RNs in casual positions was higher than it was for their urban counterparts.

In urban areas, more LPNs reported full-time than part-time or casual status in both 2003 and 2010. In contrast, in rural areas more LPNs reported part-time positions in these years. The proportion of LPNs in full-time and part-time positions increased between 2003 and 2010 while the proportion in casual positions decreased. In urban areas, the proportion of LPNs in full-time positions increased, the proportion in part-time held steady, and the proportion in casual positions decreased.

### ***Multiple Employers:***

'Multiple employers' refers only to whether nurses have one or more employers. The actual number of employers was not available for this study.

Between 2003 and 2010, the proportion of rural RNs in PEI who worked for more than one employer changed very little, staying within a percent of 11%. During the same time period, this proportion increased for urban RNs, from 10.4% in 2003 to 14.3% in 2010. Multiple employer status was lower for rural than for urban RNs in 2010.

The proportion of rural LPNs with more than one employer decreased slightly between 2003 and 2010 from 25.5% to 23.4%. Over the same time period, the proportion of urban LPNs with multiple employers decreased from 16.0% to 14.1%. In 2010, multiple employer status was higher for rural than for urban RNs.

### ***Place of Work:***

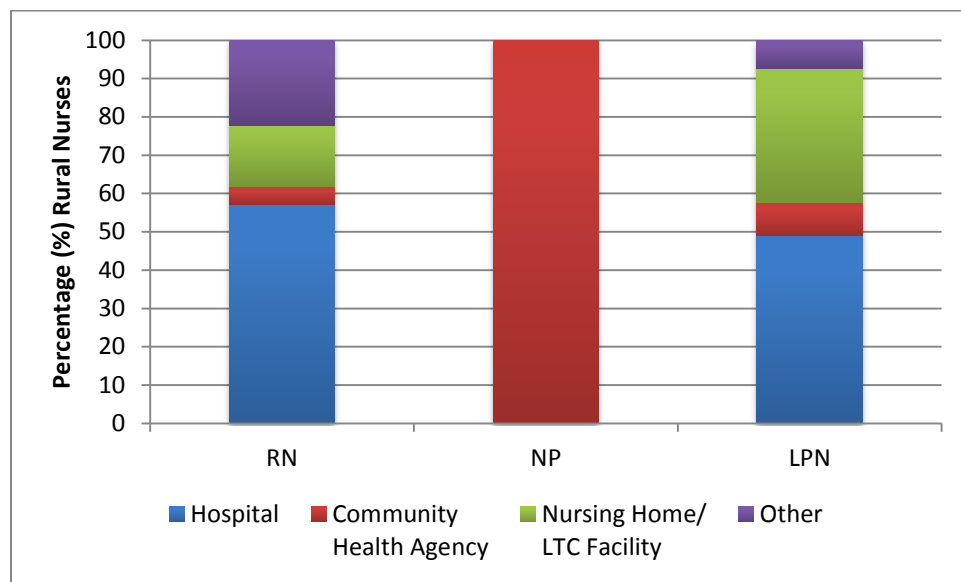
The 'place of work' NDB data element consists of approximately fifteen sub-elements. Enumeration of these sub-elements by urban-rural nurses and jurisdiction produces a large number of small cell sizes. As the numbers in these small cell sizes were suppressed, it was necessary to employ the CIHI grouping as indicated below:

- ***Hospital:*** Hospital, Mental Health Centre, Rehabilitation/Convalescent Centre
- ***Community Health Agency:*** Nursing Station (outpost or clinic), Home Care Agency, Community Health Centre, Public Health Department/Unit
- ***Nursing Home/Long Term Care Facility***
- ***Other Place of Work:*** Business/Industry/Occupational Health Office, Private Nursing Agency/Private Duty, Self-Employed, Physician's Office/Family Practice Unit, Educational Institution, Nursing Association/Government, Other
- ***Not Stated***

Figure 5 shows who worked in rural PEI hospitals, community agencies, nursing homes/LTC facilities and other settings in 2010. The proportion of rural RNs working in hospital settings increased slightly from 54.9% in 2003 to 57.2% in 2010. Over the same time period the

proportion of rural RNs working in community health agencies decreased from 17.6% to 4.6%, and the proportion working in nursing homes/LTC facilities also decreased from 19.4% to 16.0%. In urban areas, the proportion of RNs working in hospitals decreased from 64.8% to 58.4%, the proportion working in community health agencies decreased from 6.8% to 2.4%, and the proportion working in nursing homes/LTC facilities decreased from 15.4% to 14.3%. In 2010, 58.4% of urban RNs worked in hospital settings compared to 57.2% of their rural counterparts.

Figure 5. Primary place of work, rural nurses, 2010, PEI



Note: Percentages computed excluding 'not stated' category.

No data were available for NPs in 2003. In 2010, 100% of rural NPs worked in community health agencies. In urban areas, 57.1% of NPs worked in hospitals and 42.9% worked in community health agencies.

The proportion of rural LPNs working in hospitals decreased between 2003 and 2010 from 56.4% to 48.9%, respectively. The proportion of rural LPNs working in community health agencies held steady at 9%, while the proportion working in nursing homes/LTC facilities increased slightly from 31.5% to 35.0%. In urban areas, the proportion of LPNs working in hospitals, community health agencies, and nursing homes/LTC facilities changed only marginally: in 2010, 48.8% worked in hospitals, 5.5% worked in community health agencies, and 36.2% worked in nursing homes/LTC facilities.

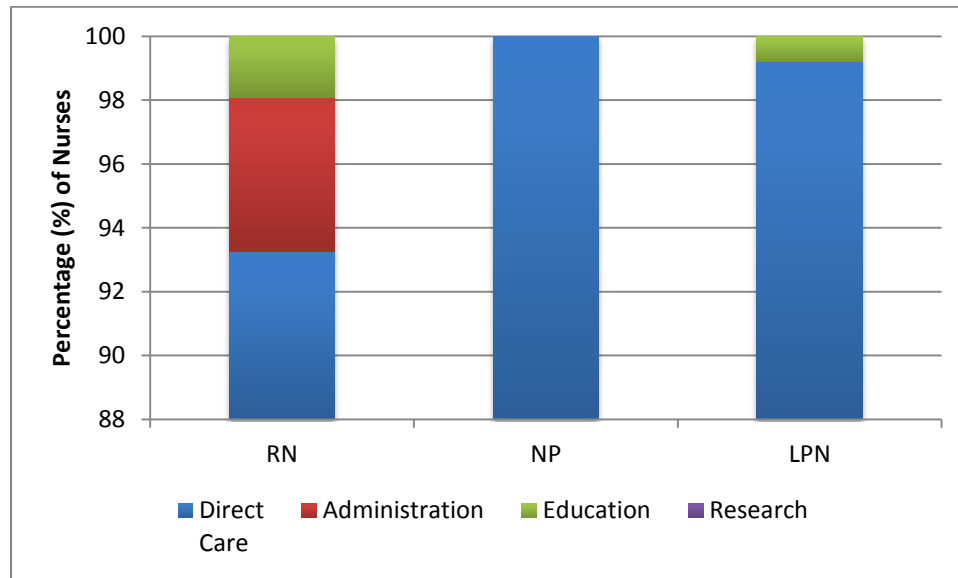
**Primary Area of Responsibility:**

Figure 6 illustrates nurses' primary areas of responsibility in rural PEI in 2010. The proportion of rural RNs in direct care held steady between 2003 and 2010 (~93%). The proportion of urban RNs in direct care decreased slightly (88.0% to 85.8%). During the same time period, the proportions of RNs in administration stayed between 5-6% in rural areas, and between 7-8% in urban areas. Proportions of rural RNs in education remained between 1-2% in rural areas, and between 4-6% in urban areas. Very few rural and urban RNs (<1%) reported research as a

primary area of responsibility in 2003 and 2010.

No data were available for NPs in 2003. In 2010, 100% of rural NPs reported direct care as their primary areas of responsibility.

Figure 6. Primary area of responsibility, rural nurses, 2010, PEI



Note: Percentages computed excluding 'not stated' category.

The vast majority of both rural and urban LPNs worked in direct care. Between 2003 and 2010, the proportion of rural LPNs in direct care increased from 97% to 99%. The proportion of LPNs working in direct care in urban areas held steady at 99%. In 2010, very few rural and urban LPNs reported working in administration, education or research ( $\leq 1\%$ ).

## 6. Work in Primary Healthcare Settings

Primary healthcare (PHC) settings include the following places of work: nursing station/outpost/nurse clinic; private nursing agency/private duty; business/industry/occupational health; self-employed/private practice; mental health centre; physician's office; home care agency; and, public health agency/community health centre (Wong et al., 2009).

Due to suppression of small cells, the information reported here should be considered as only estimates of the numbers and proportions of nurses working in PHC settings in PEI. The proportions of regulated nurses working in rural PHC settings in PEI decreased from 10.9% in 2003 to 6.0% in 2010. Between 2003 and 2010, the proportions of rural nurses practicing in PHC settings decreased for RNs and increased for LPNs (see Figure 7).

Between 2003 and 2010, the proportion of regulated nurses working in urban PHC settings stayed at 12%. As in rural areas, the proportion of urban RNs in PHC settings decreased during this time, and the proportion of LPNs in PHC settings increased (see Figure 8).



Figure 7. Nurses in PHC settings, 2003, PEI

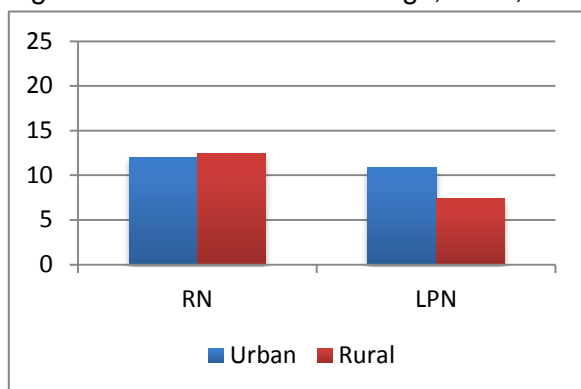
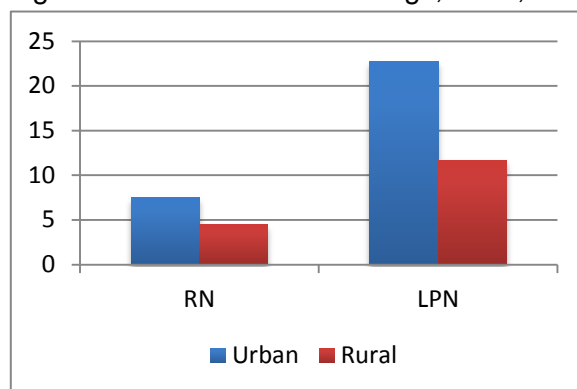


Figure 8. Nurses in PHC settings, 2010, PEI



Note: Percentages are estimates due to suppressed cells in some categories.

## 7. Migration

### **International:**

Nurses who obtained their entry-to-practice education in a country other than Canada are considered to be ‘international nursing graduates’ (INGs).<sup>1</sup> In general, only small proportions of urban and rural nurses are ING.

In PEI, between 2003 and 2010, the proportion of urban RNs who were ING stayed ~2%, and the proportion of rural RNs who were ING increased slightly from 1.5% to 2.3%.

### **Interprovincial:**

Canadian interprovincial migration is generally characterized as nurses moving to a neighbouring province/territory or to a relatively large ‘magnet’ province. In 2003 and 2010, the top interprovincial migration destination for PEI-educated nurses – both rural and urban – was Nova Scotia. Table 5 provides details of interprovincial migration for RNs and LPNs in 2003 and 2010.

<sup>1</sup> Also known as ‘internationally educated nurses’ (IENs).

Table 5. Interprovincial migration for RNs and LPNs, 2003- 2010, PEI

	RNs		LPNs	
	2003	2010	2003	2010
Total number of nurses in PEI	1373	1472	619	590
Received initial nursing education in PEI	1347	1431	622	607
Proportion retained <sup>2</sup>	70% (n=947)	71% (n=1017)	92% (n=572)	90% (n=545)
Number not retained <sup>3</sup>	400	414	50	62
Proportion working in urban areas of other jurisdictions <sup>4</sup>	88%	88%	86%	73%
Proportion working in rural areas of other jurisdictions <sup>5</sup>	12%	11%	14%	27%
Top two destinations	NS (28%) ON (26%)	NS (29%) AB (20%)	NS (36%) ON (30%)	NS (42%) NB (24%)
Proportion registered in PEI who received initial nursing education elsewhere	31% (n=422)	31% (n=447)	8% (n=47)	7% (n=44)
Top three jurisdictions other than PEI where initial nursing education was received	NS (39%) NB (25%) ON (15%)	NS (35%) NB (25%) ON (15%)	ON (30%) NS (23%) NB (13%)	ON (34%) NS (30%) NB (16%)

*Note: The numbers and proportions reported in this table should be considered estimates due to suppression of small cells.*

<sup>2</sup> This is the proportion of those nurses who received their initial education in PEI who are also registered in PEI.

<sup>3</sup> This is the proportion of those nurses who received their initial education in PEI who are registered in jurisdictions other than PEI.

<sup>4</sup> This refers to a percentage of those nurses who were not retained (i.e., received initial education in PEI but are registered in jurisdictions other than PEI).

<sup>5</sup> Percentages for urban and rural may not add up to 100 due to some suppressed cells.

## References

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### **Further information about the full study is available from:**

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# APPENDIX 1

## Prince Edward Island Synopsis

	Year 2010		RNs		LPNs		NPs	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Number of nurses employed in nursing	998	474	453	137	†	†	†	†
Number of nurses per 100,000 population	1,232	800	559	231	†	†	†	†
Average age (years)	48	46	47	47	53	37		
Gender (%)	Male 2 Female 98	3 97	10 90	4 96	0 100	0 100	0 100	0 100
Place of work (%)	Hospital 58 Community Health Agency 2 Nursing Home/LTC Facility 14	57 5 16	49 6 36	49 9 35	57 43 0	0 100 0	0 100 0	0 100 0
Primary area of responsibility (%)	Direct Care 86 Administration 8 Education 6 Research 1	93 5 2 0	99 1 0 0	99 0 1 0	100 0 0 0	100 0 0 0	100 0 0 0	100 0 0 0
Full-time/part-time status (%)	Full-Time 53 Part-Time 35	46 40	50 34	33 53	75 0	100 0	100 0	100 0
Position (%)	Staff 72 Managerial 11 Other 17	79 11 10	91 0 9	95 0 5	0 0 0	0 0 0	0 0 0	0 0 0
Highest education in nursing (%)	Diploma 70 Bachelor's 30 Master's 0	67 33 0	n/a	n/a	60 40 0	100 0 0	100 0 0	100 0 0
Place of graduation (%)	Canada 98 Foreign 2	98 2	99 1	100 0	67 33	100 0	100 0	100 0

## APPENDIX 2

### The Regulated Nursing Workforce Employed in Direct Care, By Health Region, 2011

Health Region Name	RNs			LPNs			All Reg Nurses		
	Pop Estimates	Direct Care Counts	Per 100,000 Population	Direct Care Counts	Per 100,000 Population	Direct Care Counts	Per 100,000 Population		
Kings County	18,150	129	711	55	303	184	1,014		
Queens County	82,921	783	944	373	450	1,156	1,394		
Prince County	44,784	392	875	138	308	530	1,183		
<b>Prince Edward Island (Direct Care Total)</b>	<b>145,855</b>	<b>1,304</b>	<b>894</b>	<b>566</b>	<b>388</b>	<b>1,870</b>	<b>1,282</b>		
<b>Canada (Direct Care Total)</b>	<b>34,482,779</b>	<b>231,234</b>	<b>671</b>	<b>81,646</b>	<b>237</b>	<b>317,464</b>	<b>921</b>		

Source: CIHI. (n.d.). Regulated Nurses: Canadian Trends, 2007-2011. Ottawa, ON: CIHI.

*Note: The urban-rural breakdown of these data and comparable 2010 data are not available. Data were suppressed in accordance with CIHI's privacy policy; small cell size.*