



**2017 Registered Nurse
Workforce Model Report
Newfoundland and Labrador**

May 2, 2017

Executive Summary

This document is an update to the Registered Nurse (RN) Workforce Model Report initially released in January 2014. It provides updated statistics for 2013-14, 2014-15 and 2015-16, derived from the Association of Registered Nurses of Newfoundland and Labrador (ARNNL), regional health authorities (RHAs), the Canadian Institute for Health Information (CIHI), and other relevant sources. The RN Workforce Model Working Group was re-established to review the updated model and to discuss the expansion demand (i.e., workforce growth) assumptions.

The entire provincial RN workforce was considered in this analysis including public and private sector RNs, and RNs in specialized roles such as nurse practitioners, clinical nurse specialists, faculty, and administrators. A total of 6,372 RNs obtained practicing licenses in registration year 2015-16. Of those, 5,565 or 87 per cent were employed by regional health authorities (RHAs). A provincial approach to workforce modelling is necessary because supply and demand considerations affect the entire workforce regardless of the employer.

This report provides RN labour market projections from 2015 to 2030. It is noted however, that it is impossible to accurately predict all factors that contribute to workforce dynamics.

Key conclusions from this report include:

1. There are many factors that influence the supply and demand for RNs; therefore, workforce modeling cannot predict future labour market trends with certainty.
2. While measures to improve system sustainability, adjust skill mix, and increase RN utilization are anticipated to slow future growth; enhancements to RN scope of practice and the role of NPs may result in RN growth.
3. There is value in maximizing opportunities to improve RN productivity.
4. The number of casual RNs has grown; and the proportion of RNs desiring casual employment over other forms of employment has also grown. Despite this growth, the availability of casual relief to address system pressures when RNs are absent from work, regardless of leave type, remains challenging for some areas.
5. RN retirements are expected to peak in the year 2024 as the last remaining members of the baby boom generation exit the system
6. RN educational seat capacity in NL is comparable to the average among all provinces.
7. For the given assumptions and estimates presented in this report, a slight Provincial surplus of RNs is projected from present to 2021. However, RHA-specific supply challenges remain.
8. Based on 0.2 per cent growth, a gap of seven RNs is projected for the year 2021, growing to 50 in 2024.
9. Current analysis, based on an attrition rate of 15 per cent, does not support further educational seat increases at this time. However, close monitoring is required to ensure an adequate supply of RNs exist to meet provincial demand. Further exploration into the factors influencing attrition could be beneficial in maximizing RN supply.
10. At a provincial level, RN supply and demand appears to be balanced; yet, at a regional level, dispersal challenges remain for health authorities, further exasperating recruitment and retention challenges.

This report provides eight recommendations:

1. Explore opportunities to increase RN productivity.
2. Further examine the RN casual workforce to determine what impact the trend towards casual employment as an RN preference has for current and future supply assumptions.
3. Review and strengthen existing attendance management programs in RHAs.
4. Maintain strong recruitment through continued offering of bursaries, signing bonuses, and other incentive programs with associated return-in-service commitments.
5. Refresh the RN Workforce Model with an additional two years of data in 2018.
6. The Schools of Nursing consider exploring innovative, non-traditional delivery methods to optimize supply of new RN graduates.
7. The Schools of Nursing consider undertaking a research study examining attrition in nursing programs.
8. The Regional Health Authorities utilize the data contained in this report for succession planning purposes.

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1. Background

This document is an update to the Registered Nurse (RN) Workforce Model Report initially released in January 2014. It provides updated statistics for 2013-14, 2014-15 and 2015-16, derived from the Association of Registered Nurses of Newfoundland and Labrador (ARNNL), regional health authorities (RHAs), the Canadian Institute for Health Information (CIHI), and other relevant sources. The RN Workforce Model Working Group was re-established to review the updated model and to discuss the expansion demand (i.e., workforce growth) assumptions.

2. Model Scope

The entire provincial RN workforce was considered in this analysis including public and private sector RNs, and RNs in specialized roles such as nurse practitioners, clinical nurse specialists, faculty, and administrators. A total of 6,372 RNs obtained practicing licenses in registration year 2015-16. Of those, 5,565 or 87 per cent were employed by regional health authorities (RHAs). A provincial approach to workforce modelling is necessary because supply and demand considerations affect the entire workforce regardless of the employer.

3. Limitations

Limitations of workforce modeling include:

- Balancing supply and demand at the provincial level does not guarantee that all positions will be filled. Experience shows that many vacant positions are difficult-to-fill. Targeted recruitment and retention approaches are important, especially in rural and remote areas.
- The results presented are not forecasts; they are scenarios based on averages and assumptions. It is impossible to accurately predict all factors that contribute to workforce dynamics.
- Demand scenarios reflect employer's need for RNs. Employer requirements for RNs do not necessarily reflect population needs in that there are always opportunities to improve alignment of services. Such realignment could result in a need for more (or fewer) positions.
- This model does not account for opportunities to improve RN utilization and productivity. Utilization factors may include team mix, scope of practice issues, scheduling/deployment, work flow, and injury rates.
- RN data provided in this report are counts of practicing licenses. Practicing licenses are used as a proxy for the RN workforce; however, RNs may have a practicing license yet be unemployed. Also, a count of practicing licenses does not reflect job types (e.g., temporary, permanent, part-time, full-time) or work patterns (e.g., earned hours, overtime, callback, sick leave). Finally, RN licensure status may change from non-practicing to practicing (or vice versa) throughout the year. The last registration status in a particular registration year is recorded in the database for that year. Note that only practicing licenses were analyzed as part of this report. The term "workforce" in the context of this report generally means the number of practicing licenses issued in a particular year.

4. Methodology/Model Components

The methodology presented here is a replication of the exercise taken with the RN Workforce Model Report that was released in January 2014. It undertakes a full analysis of supply (i.e. all workforce entries and exits are considered) and simplified estimates for growth or decline in workforce demand,

based on past patterns of growth or decline and careful consideration of strategic changes in the health care system, either planned or underway.

Core data were obtained from the ARNNL. Further detailed data were gathered from RHAs, the Department of Health and Community Services Teledata System (financial and statistical RHA reporting system), and the Canadian Institute for Health Information (CIHI). Sources are noted throughout the report.

Stakeholder involvement was critical for model development. Assumptions and estimates must be reasonable from a variety of standpoints. Working Group member organizations included:

- Four Regional Health Authorities;
- Department of Health and Community Services;
- Department of Advanced Education and Skills;
- Centre for Nursing Studies (CNS) representing the three provincial nursing schools; and
- Association of Registered Nurses of Newfoundland and Labrador (ARNNL);

The workforce model considers demand in two components: replacement and expansion. Replacement demand considers basic turnover and the need to replace existing staff. Expansion demand refers to potential workforce growth (or decline). All RN supply is considered, including new graduates and experienced workers, both from within the province and from external sources. All factors were combined in a spreadsheet and projected over several years to determine potential gaps. Various scenarios were tested to measure impact of different strategies. A summary of the components of this model and a comparison to the 2012-13 RN Model is presented in Table 1. A fulsome discussion of how these conclusions were reached is outlined in further detail throughout this report.

Table 1. Summary of RN Model Components.

Model Components		2012-13 RN Model	2015-16 RN Model
Workforce		6340	6372
Supply	Internal		
	<i>Student Attrition</i>	15%	15%
	<i>New Grad Retention in NL Workforce</i>	77%	78%
	External		
	Obtaining Practicing Licenses in NL for the First Time	1.2%	1.2%
	Returning		
	Re-activating from Lapsed License	1.7%	1.8%
Demand	Replacement		
	<i>Turnover</i>	4.4%	4.6%
	<i>Avg. Retirement Age</i>	58	59
	<i>Increasing Retirements</i>	10 (peak in 2022)	14 (peak in 2024)
	Expansion		
	Growth	0.6%	0.2%

Recommendations were developed to reflect short and long-term opportunities to stabilize the RN workforce in the province.

5. Registered Nurse Workforce

Unless otherwise noted, data in this report are workforce counts.¹

5.1. Provincial Workforce

Statistics from the ARNNL provided in Table 2 and Figure 1 show that the number of practicing RN licenses in the province in 2015-16 was 6,372.

Table 2. Provincial RN Workforce Historical Trends.

Licensure Year	RN Count	Per Cent Change ¹	Licensure Year	RN Count	Per Cent Change ¹	Licensure Year	RN Count	Per Cent Change ¹
1954-55	673	-	1975-76	3,094	19.5%	1997-98	5,511	-0.7%
1955-56	663	-1.5%	1976-77	3,347	8.2%	1998-99	5,528	0.3%
1956-57	696	5.0%	1977-78	3,554	6.2%	1999-00	5,447	-1.5%
1957-58	779	11.9%	1978-79	3,751	5.5%	2000-01	5,592	2.7%
1958-59	840	7.8%	1978-80	3,911	4.3%	2001-02	5,596	0.1%
1959-60	920	9.5%	1980-81	4,087	4.5%	2002-03	5,609	0.2%
1960-61	990	7.6%	1981-82	4,228	3.4%	2003-04	5,637	0.5%
1961-62	967	-2.3%	1982-83	4,371	3.4%	2004-05	5,727	1.6%
1962-63	1,047	8.3%	1983-84	4,464	2.1%	2005-06	5,756	0.5%
1963-64	1,194	14.0%	1984-85	4,602	3.1%	2006-07	5,787	0.5%
1964-65	1,233	3.3%	1985-86	4,765	3.5%	2007-08	5,840	0.9%
1965-66	1,453	17.8%	1986-87	4,846	1.7%	2008-09	5,969	2.2%
1966-67	1,565	7.7%	1987-88	4,948	2.1%	2009-10	6,097	2.1%
1967-68	1,640	4.8%	1988-89	4,980	0.6%	2010-11	6,262	2.7%
1968-69	1,840	12.2%	1989-90	5,134	3.1%	2011-12	6,307	0.7%
1966-70	1,916	4.1%	1991-92	5,397	3.8%	2012-13	6,340	0.5%
1970-71	2,097	9.4%	1992-93	5,452	1.3%	2013-14	6,342	0.0%
1971-72	2,292	9.3%	1993-94	5,568	2.1%	2014-15	6,338	-0.1%
1972-73	2,558	11.6%	1994-95	5,584	0.3%	2013-14	6,342	0.0%
1973-74	2,344	-8.4%	1995-96	5,617	0.6%	2014-15	6,338	-0.1%
1974-75	2,589	10.5%	1996-97	5,549	-1.2%	2015-16	6,372	0.5%

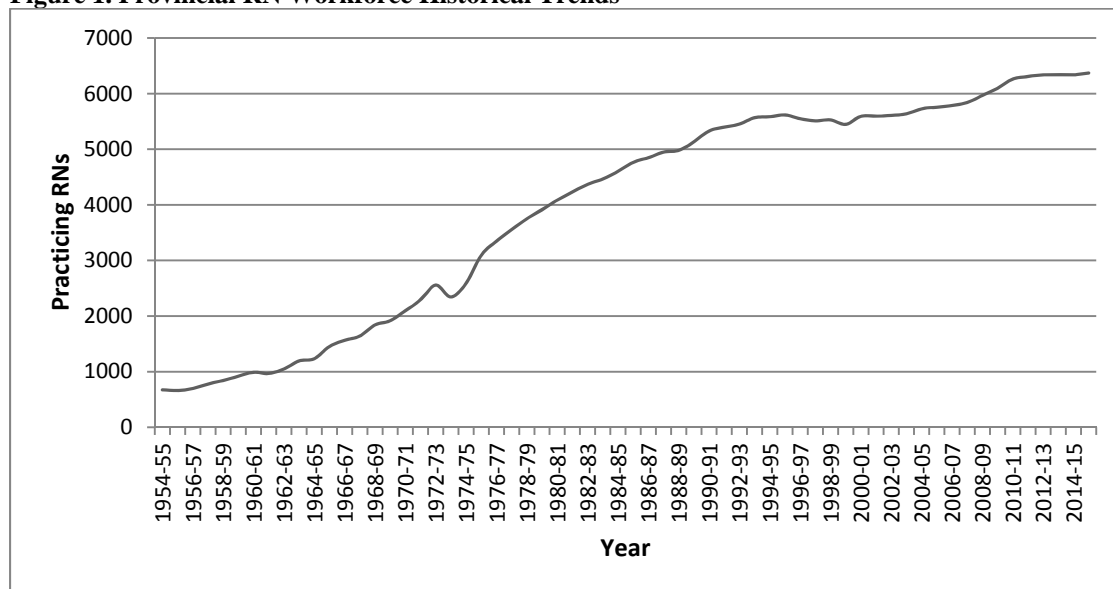
Notes:
1. Per cent change refers to the per cent growth or decline, as compared to the previous year.

Source: Association of Registered Nurses of Newfoundland and Labrador.

The average annual workforce growth from 1954-55 to 2015-16 has been 3.9 per cent each year; however there is a large variation, for example -8.4 per cent (decline) between 1972-73 and 1973-74) and 19.5 per cent (growth) between 1974-75 and 1975-76.

¹ Data obtained from the ARNNL represent the count of individuals obtaining a practicing license at any time in the licensure year referenced.

Figure 1. Provincial RN Workforce Historical Trends



Source: Association of Registered Nurses of Newfoundland and Labrador

RNs in NL have higher rates of full-time employment and lower rates of part-time employment, than the Canadian average:

Table 3. RNs in NL and Canada: Employment Status.

Employment Status (2015)	NL (%)	Canada (%)
Full-time	71.1	60.8
Part-time	12.7	28.9
Casual	16.2	10.3
Total	100.0	100.0

Source: CIHI Regulated Nurses 2015 Data Tables.

The number of hours worked in each of the categories shown in Table 3 is not available and data should be interpreted with caution. All data reported from CIHI are 2015 licensure data provided annually from provincial regulatory bodies and only consider the first six months of the licensure year. Additionally, data is cleaned to remove potential duplicates and mapped to common categories for comparison purposes, by CIHI.

As illustrated in Table 4, RNs in NL were distributed more strongly in hospitals in 2015 than the Canadian average:

Table 4. RNs in NL and Canada: Place of Work.

Place of Work (2015)	NL (%)	Canada (%)
Hospital	67.9	63.3
Community Health Agency	13.7	15.7
Nursing Home/LTC Facility	7.7	9.3
Other Place of Work	10.7	11.8
Total RN Workforce	100.0	100.0

Source: CIHI Regulated Nurses 2015 Data Tables.

Table 5 shows that there was a higher per cent of RNs in NL working in managerial positions in 2015 than the Canadian average; however, CIHI’s definition of managerial positions includes coordinator, head nurse, and team leader, which are unionized positions in the RHAs:

Table 5. RNs in NL and Canada: Position.

Position (2015)	NL (%)	Canada (%)
Managerial Positions	12.7	6.4
Staff/Community Health Nurse	77.1	77.1
Other Positions	10.2	16.5
Total RN Workforce	100.0	100.0

Source: CIHI Regulated Nurses 2015 Data Tables.

The RN workforce in NL had a higher percentage of its RN workforce educated at the baccalaureate level than Canada, and lower percentages at the diploma, masters, and doctorate levels:

Table 6. RNs in NL and Canada: Level of Education.

Level of Education (2015)	NL (%)	Canada (%)
Diploma	40.9	47.3
Baccalaureate	54.6	48.0
Masters/Doctorate	4.5	4.7
Total RN Workforce	100.0	100.0

Source: CIHI Regulated Nurses 2015 Data Tables.

A higher percentage of RNs in NL were Canadian-trained in 2015 than the Canadian average:

Table 7. RNs in NL and Canada: Location of Graduation.

Position (2015)	NL (%)	Canada (%)
Canadian Trained	98.6	91.1
Internationally Trained	1.4	8.9
Total RN Workforce	100.0	100.0

Source: CIHI Regulated Nurses 2015 Data Tables.

On an RN per 100,000 population basis, NL had 45 per cent more RNs than the Canadian average in 2015. The gap has lessened since 2012 when NL had 53 per cent more.

Table 8. RNs in NL and Canada: RNs per 100,000 Population.

Year	RNs per 100,000 Population		Per Cent More in NL (%)
	NL	Canada	
2008	1,130	786	43.8
2009	1,144	790	44.8
2010	1,175	787	49.3
2011	1,180	785	50.3
2012	1,193	779	53.1
2013	1,153	788	46.3
2014	1,146	785	46.0
2015	1,151	791	45.5

Source: CIHI Regulated Nurses 2014 Data Tables, 2008-2014. As of 2015; CIHI no longer performs these calculations for the Regulated Nurses report; the Department of Health and Community Services (HCS) Health Workforce Planning Division used 2015 Statistics Canada Population Estimates to calculate the ratios for 2015.

There are several limitations associated with interpreting professional per population ratios. The population (denominator) only reflects gross numbers and not the age/gender distribution of the population. Additionally, population numbers do not reflect health status, population density, or patterns of utilization of health services. The number of professionals (numerator) does not reflect scope of practice, utilization, workload, skill mix, casualization, team mix, core staffing requirements availability of support staff, distribution of personnel, or the sector to which they belong (i.e. public versus private sector RNs). Core staffing requirements in rural and remote locations are a significant factor in determining the required number of health professionals.

Professional per population ratios should be viewed with caution particularly in a sparsely distributed population, as is the case in NL.

5.2. Regional Health Authority Workforce

RHAs employed 87 per cent of all RNs in the province in 2015-16 as shown in Table 9:

Table 9. RNs by Employer 2015-16.

Employer	Count	Per Cent
Eastern Health	3,615	56.7%
Central Health	742	11.6%
Western Health	843	13.2%
Labrador-Grenfell Health	365	5.7%
Sub-Total	5,565	87.3%
Other Employer or Unknown	807	12.7%
Total	6,372	100.0%

Source: Association of Registered Nurses of Newfoundland and Labrador.

5.3. Demographics

CIHI reports that in 2015 the average age of the RN workforce in NL was 42.8 years while the Canadian average was approximately two years older at 44.6 years. Compared to Canada, RNs in NL have a smaller per cent in the 60+ years old category:

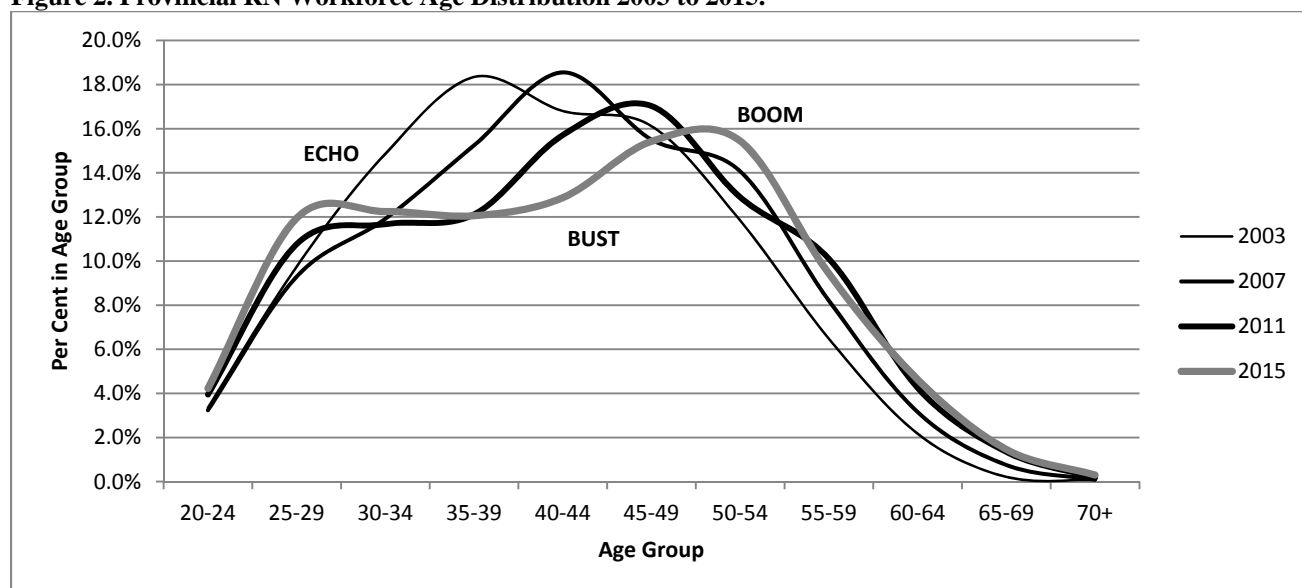
Table 10. RNs in NL and Canada: Age Distribution.

Age Group (2015)	NL (%)	Canada (%)
<30	15.7	14.3
30-34	11.8	12.4
35-39	12.0	10.9
40-44	13.1	11.5
45-49	15.8	12.0
50-54	15.8	13.4
55-59	9.4	12.0
60+	6.4	13.5
Total	100.0	100.0

Source: CIHI Regulated Nurses 2015 Data Tables.

The changing age distribution for NL RNs is shown in Figure 2:

Figure 2. Provincial RN Workforce Age Distribution 2003 to 2015.



Source: Association of Registered Nurses of Newfoundland and Labrador

The “Boom” in Figure 2 refers to the post-war “Baby Boom” generation born between 1947 and 1966 (49 to 68 years old in 2015). The “Peak” shows the last of the Baby Boom generation while the “Bust” shows the RNs born between 1967 and 1979. The “Bust” reflects declining birth rates in the 1960s and 1970s. Over the 1980s and 1990s the Boomers had children, named the “Echo Boom”. The “Echo” generation started in 1980 (35 years old in 2015) and peaked in 1991 (24 years old in 2015).

The breakdown of RN average age by position shown in Table 11 indicates that RNs in senior positions tend to be older:

Table 11. RNs in Related Positions 2015-16: Average Age.

Position	Average Age	Count
Executive (CNO, CEO, COO, VP, ED)	53.4	27
Director / Assistant Director (2nd in command)	51.3	70
Supervisor	50.3	27
Consultant	50.2	90
Clinical Nurse Specialist	49.8	32
Coordinator	49.3	167
Researcher	48.3	22
Patient Care Coordinator, Team Leader, Head Nurse, Nurse II	48.3	227
Other	48.2	130
Nurse Practitioner	47.3	124
Instructor / Professor / Educator	46.9	257
Manager / Assistant Manager	46.8	267
Blank	46.3	92
Office / Occupational Health Nurse	44.6	92
Staff Nurse / Community Health Nurse	40.8	4741
None	38.3	7
Grand Total	42.6	6372

Source: Association of Registered Nurses of Newfoundland and Labrador

The following two tables provide a breakdown of the number (Table 12) and average age (Table 13) of RNs grouped by Direct Care, Administration, Education and Research. These categories are defined by CIHI and are based on ARNNL data. These tables show that RNs working in direct care areas tend to be younger than those working in administration, education or research. Internal movement in direct care areas would result from RNs in direct care areas moving into vacancies in those areas.

Table 12. RNs by Area of Care/Category by RHA 2015-16: Workforce Counts

Area of Care/Category	CH	EH	LGH	WH	RHA Total	Other	Overall Total
Direct Care							
Ambulatory Care / Outpatient Care	35	211	37	42	325	14	339
Community Health	72	211	39	68	390	37	427
Critical Care (ICU, CCU, Dialysis) ¹	65	443	22	66	596	5	601
Emergency Care ¹	64	276	35	56	431	24	455
Geriatric / Long Term Care	60	267	16	69	412	40	452
Home Care	< 5	10	8	-	20	31	51
Maternal / Newborn ¹	44	180	20	33	277	9	286
Medical / Surgical	138	854	41	213	1246	16	1262
Nursing in Several Clinical Areas	90	72	62	81	305	18	323
Occupational Health	< 5	13	< 5	< 5	21	105	126
Oncology ¹	< 5	76	< 5	< 5	83	< 5	85
Operating Room / Recovery Room ¹	35	219	21	47	322	5	327
Other Direct Care	< 5	32	< 5	12	51	44	95
Pediatric ¹	-	127	< 5	12	140	< 5	142
Psychiatric / Mental Health ¹	30	280	7	46	363	15	378
Public Health	37	86	10	21	154	10	164
Rehabilitation	-	53	< 5	6	60	< 5	64
Telehealth	-	< 5	-	< 5	< 5	26	29
Direct Care Total	679	3412	330	778	5199	407	5606
Administration							
Nursing Education	< 5	8	< 5	-	12	41	53
Nursing Service	29	83	21	33	166	46	212
Other Administration	12	23	< 5	14	52	49	101
Administration Total	43	114	26	47	230	136	366
Education							
Other Education	< 5	< 5	-	< 5	7	9	16
Teaching Employees	10	44	< 5	10	66	8	74
Teaching Patients / Clients	8	24	6	< 5	42	12	54
Teaching Students	-	< 5	-	< 5	< 5	124	127
Education Total	20	72	8	18	118	153	271
Research							
Nursing Research	-	7	< 5	-	8	8	16
Other Research	-	10	-	-	10	12	22
Research Total	-	17	< 5	-	18	20	38
Not specified	-	-	-	-	0	91	91
Grand Total	742	3615	365	843	5565	807	6372

Notes:

1. Considered a specialty area of Nursing Practice within Direct Care.

Source: Association of Registered Nurses of Newfoundland and Labrador

Table 13. RNs by Area of Care/Category by RHA 2015-16: Average Age

Area of Care/Category	CH	EH	LGH	WH	RHA Average Age	Other	RN Workforce Avg. Age
Direct Care							
Ambulatory Care / Outpatient Care	49.4	49.7	52.4	48.9	49.8	49.4	49.8
Community Health	47.3	43.2	48.5	41.7	44.2	47.4	44.5
Critical Care (ICU, CCU, Dialysis) ¹	43.1	42.1	41.0	44.4	42.4	31.8	42.4
Emergency Care ¹	38.9	39.9	39.4	43.6	40.2	39.1	40.1
Geriatric / Long Term Care	46.3	46.5	44.1	44.0	45.9	54.7	46.7
Home Care	57.0	44.3	42.1	-	44.7	53.5	50.1
Maternal / Newborn ¹	42.9	42.6	38.9	44.4	42.6	34.6	42.3
Medical / Surgical	36.5	35.3	33.2	35.5	35.4	34.8	35.4
Nursing in Several Clinical Areas	40.2	40.1	39.6	36.1	39.0	43.2	39.2
Occupational Health	37.0	46.5	51.3	46.0	46.5	46.0	46.1
Oncology ¹	41.0	41.0	44.7	49.3	41.4	41.5	41.4
Operating Room / Recovery Room ¹	49.0	45.9	41.3	47.5	46.2	50.8	46.3
Other Direct Care	46.0	44.0	50.0	51.4	46.3	51.4	48.6
Pediatric ¹	-	40.1	52.0	45.5	40.6	30.5	40.5
Psychiatric / Mental Health ¹	43.7	43.5	38.6	40.6	43.0	48.7	43.3
Public Health	42.5	44.5	38.7	44.5	43.6	42.0	43.5
Rehabilitation	-	41.5	42.0	52.0	42.6	50.0	43.1
Telehealth	-	40.0	-	52.0	44.0	48.2	47.8
Direct Care Average	42.4	41.4	42.0	41.2	41.6	47.0	42.0
Administration							
Nursing Education	37.5	46.0	36.5	-	43.0	50.9	49.1
Nursing Service	46.6	47.0	48.5	47.3	47.2	49.2	47.6
Other Administration	42.5	48.2	47.0	48.8	47.0	50.9	48.9
Administration Average	45.0	47.1	47.4	47.8	46.9	50.3	48.2
Education							
Other Education	40.0	51.3	-	45.0	46.3	46.0	46.1
Teaching Employees	44.7	44.8	49.5	51.7	46.0	45.9	46.0
Teaching Patients / Clients	45.3	47.9	42.2	48.5	46.6	52.4	47.9
Teaching Students	-	46.0	-	42.5	43.7	46.6	46.6
Education Average	44.5	46.1	44.0	49.2	46.2	47.0	46.6
Research							
Nursing Research	-	51.9	42.0	-	50.6	49.1	49.9
Other Research	-	55.1	-	-	55.1	52.8	53.8
Research Average	-	53.8	42.0	-	53.1	51.3	52.2
Not specified	-	-	-	-	-	46.4	46.4
Grand Total	42.6	41.8	42.4	41.7	41.9	47.6	42.6

Notes:

1. Considered a specialty area of Nursing Practice within Direct Care.
2. Areas shaded are those with low RN critical mass (i.e. less than 5). So caution should be given when interpreting the numbers.

Source: Association of Registered Nurses of Newfoundland and Labrador

Within direct care there are certain areas of practice that pose greater operational concerns when vacant than others. For example, RN positions in the specialty areas of emergency, critical care, operating room and pediatrics require enhanced orientation and training for new incumbents to be proficient. When vacancies arise in these areas and the remaining staff complement is inexperienced this may create operational challenges for the RHAs. Information in Table 12 and Table 13 can help inform succession planning work in RHAs, particularly for those areas requiring enhanced orientation.

Compared to Canadian averages, RNs in NL have a lower percentage of males in the workforce as shown in Table 14.

Table 14. Gender of RNs in NL and Canada.

Gender (2015)	NL (%)	Canada (%)
Male	6.0	7.6
Female	94.0	92.4
Total RN Workforce	100.0	100.0

Source: CIHI Regulated Nurses 2015 Data Tables.

5.4. Vacant Positions

Since October 2008, RN position vacancies in RHAs have been as follows:

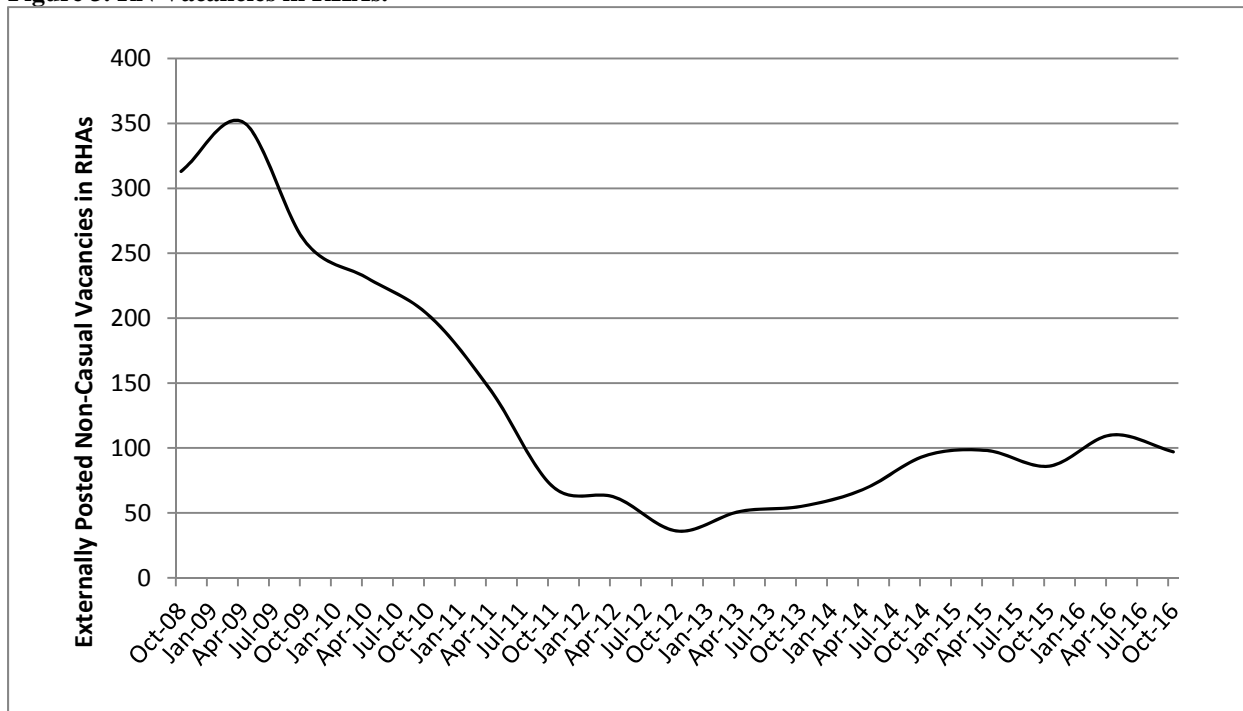
Table 15. RN Vacancies in RHAs (excluding casuals).

Date	Vacancies	Date	Vacancies
October 1, 2008	313	April 1, 2013	51
April 1, 2009	351	October 1, 2013	55
October 1, 2009	259	April 1, 2014	68
April 1, 2010	231	October 1, 2014	94
October 1, 2010	202	April 1, 2015	98
April 1, 2011	144	October 1, 2015	86
October 1, 2011	70	April 1, 2016	110
April 1, 2012	62	October 1, 2016	97
October 1, 2012	36	Average	137

Source: Department of Health and Community Services – Health Professional Vacant Position Report.

These data are shown in Figure 3:

Figure 3. RN Vacancies in RHAs.



Source: Department of Health and Community Services – Health Professional Vacant Position Report.

In October 2016, RHAs posted 197 vacant RN positions externally; however, 51 per cent were casual (100 positions), 31 per cent were permanent (62 positions), and 18 per cent were temporary (35 positions). The number of external non-casual vacancies for RNs (97 positions) was approximately 72 per cent less than at its peak of 351 in April 2009.

Balancing workforce supply and demand generally involves long-term decisions, while the number of vacant positions can change daily for any number of reasons. For these reasons, the average number of vacant positions is not factored into the workforce model.

6. Demand

For the purpose of this document, demand is defined as:

Demand: Employer requirements for qualified workers.

Demand is considered in two components:

1. *Replacement Demand: Employer requirements for qualified workers to replace those leaving the organization to sustain the current workforce.*
2. *Expansion/Contraction Demand: Employer requirements for qualified workers stemming from projected growth (or decline) in the workforce size.*

6.1. Replacement Demand

Replacement demand is the employer requirements for qualified workers to replace those leaving the organization; it is equated to turnover. This should not be confused with relief staff for day-to-day scheduling issues. If replacement demand is met, the workforce will be sustained, but growth or decline in overall workforce numbers will not be considered.

Exits include people who do not register in the subsequent year for any number of reasons such as leaving the workforce to raise a family, leaving the workforce to go to another jurisdiction, retirement, death, etc. Entries include those obtaining licensure for the first time, and those who reactivate an existing licensure number.

Up to and including registration year 2006-07, new graduates were required to obtain practicing licenses in the province regardless of their intention to stay or leave. These practicing licenses therefore over-state entries to the RN workforce, and over-state exits. If used without correction, replacement demand would be over-stated, as would graduate retention rates. To correct for this, all new graduates who obtained a practicing license in 2006-07 and earlier, and did not renew their practicing license in the year following their initial registration, were removed from the database (their initial registration only). This includes some new graduates who obtained practicing licenses in their graduation year and remained in the province but did not renew in the following year. Analysis of retention rates show that second year retention rates are only slightly less than first year retention rates, therefore this deletion is thought to introduce minimal error to the model.

Data for 17 transitions from one licensure year to the next are provided in Table 16:

Table 16. Provincial RN Workforce Transitions: Counts (corrected).

Licensure Year		Workforce Counts					
<u>Year 1</u>	<u>Year 2</u>	<u>Year 1</u>	Renewals from Year 1 to Year 2	Exits from Year 1	Entries to Year 2	Net Change	<u>Year 2</u>
A	B	C	D	E	F	G	H
1997-98	1998-99	5,510	5,145	365 ¹	305	-60	5,450
1998-99	1999-00	5,450	5,209	241	224	-17	5,433
1999-00	2000-01	5,433	5,222	211	333	122	5,555
2000-01	2001-02	5,555	5,291	264	280	16	5,571
2001-02	2002-03	5,571	5,303	268	258	-10	5,561
2002-03	2003-04	5,561	5,309	252	268	16	5,577
2003-04	2004-05	5,577	5,347	230	312	82	5,659
2004-05	2005-06	5,659	5,419	240	273	33	5,692
2005-06	2006-07	5,692	5,438	254	286	32	5,724
2006-07	2007-08	5,724	5,474	250	369	119	5,843
2007-08	2008-09	5,843	5,601	242	368	126	5,969
2008-09	2009-10	5,969	5,734	235	363	128	6,097
2009-10	2010-11	6,097	5,854	243	408	165	6,262
2010-11	2011-12	6,262	5,945	317	362	45	6,307
2011-12	2012-13	6,307	5,969	338	371	33	6,340
2012-13	2013-14	6,340	6,020	320	322	2	6,342
2013-14	2014-15	6,342	5,971	371	367	-4	6,338
2014-15	2015-16	6,338	5,982	356	390	34	6,372
Average		5,846	5,569	272	326	48	5,894

Notes:

1. This figure is excluded from the calculated average because it could not be corrected since new graduates obtaining licenses in the previous year could not be identified.

Source: Association of Registered Nurses of Newfoundland and Labrador (corrected).

An example is provided to illustrate the transition from one licensure year to the next: In licensure year 2014-15, there were 6,338 RNs. Of these, 5,982 renewed their license in 2015-16, while 356 RNs did not register in 2015-16. A total of 390 RNS registered in 2015-16 that were not registered in 2014-15. The net change of 34 brought the total count of RNs to 6,372 in 2015-16. Using column labels: $C = D + E$ and $G = F - E$ and $H = C + G$.

Data are shown as per cents in Table 17:

Table 17. Provincial RN Workforce Transitions: Per Cent (corrected).

Licensure Year		Workforce Counts			
Year 1	Year 2	Renewals	Exits	Entries	Net Change
1997-98	1998-99	93.4%	6.6% ¹	5.6%	-1.1%
1998-99	1999-00	95.6%	4.4%	4.1%	-0.3%
1999-00	2000-01	96.1%	3.9%	6.1%	2.2%
2000-01	2001-02	95.2%	4.8%	5.0%	0.3%
2001-02	2002-03	95.2%	4.8%	4.6%	-0.2%
2002-03	2003-04	95.5%	4.5%	4.8%	0.3%
2003-04	2004-05	95.9%	4.1%	5.6%	1.5%
2004-05	2005-06	95.8%	4.2%	4.8%	0.6%
2005-06	2006-07	95.5%	4.5%	5.0%	0.6%
2006-07	2007-08	95.6%	4.4%	6.4%	2.1%
2007-08	2008-09	95.9%	4.1%	6.3%	2.2%
2008-09	2009-10	96.1%	3.9%	6.1%	2.1%
2009-10	2010-11	96.0%	4.0%	6.7%	2.7%
2010-11	2011-12	94.9%	5.1%	5.8%	0.7%
2011-12	2012-13	94.6%	5.4%	5.9%	0.5%
2012-13	2013-14	95.0%	5.0%	5.1%	0.0%
2013-14	2014-15	94.2%	5.8%	5.8%	-0.1%
2014-15	2015-16	94.4%	5.6%	6.2%	0.5%
Average		95.3%	4.6%	5.6%	0.8%
Notes:					
1. This figure is excluded from the calculated average because it could not be corrected since new graduates obtaining licenses in the previous year could not be identified.					

Source: Association of Registered Nurses of Newfoundland and Labrador.

Table 17 shows an increase in the number of exits over the past five years, reaching a spike of 5.8% in 2013-14. Timing of collective agreements may have had an effect on turnover. Anecdotal evidence suggests that the recent pay increases realized in the 2008-2012 and 2012-2016 collective agreements with the Registered Nurses' Union of Newfoundland and Labrador (RNUNL)—formerly the Newfoundland and Labrador Nurses' Union— may have impacted RNs retirement decisions as some may have chosen to work for a longer period of time to maximize earnings and resulting pension and severance amounts upon retirement.

Changes to the Public Service Pension Plan effective January 1, 2015 may have also resulted in a spike in retirements in 2013-14. These changes included increased contribution payments; higher age requirements for unreduced and reduced early retirement; and increased years of best average earning (from five years to six years) for the pension calculation formula. RNs may take advantage of the five year transition period starting in 2015 and opt to retire earlier than expected.

Exits shown in Table 17, 18 and 19 represent an average provincial turnover rate of 4.6 per cent. Exits broken down by year and employers are shown in Table 18:

Table 18. Exits by Employer.

Year	Eastern Health		Central Health		Labrador-Grenfell Health		Western Health		Other Employer		Not Reported		Total	
	Exits	RNs	Exits	RNs	Exits	RNs	Exits	RNs	Exits	RNs	Exits	RNs	Exits	RNs
1998	116	3,129	24	682	22	333	22	698	38	491	19	117	241	5,450
1999	107	3,121	22	673	16	313	14	700	38	519	14	107	211	5,433
2000	135	3,250	21	704	22	325	30	712	49	503	7	61	264	5,555
2001	142	3,278	32	716	24	323	20	710	34	466	16	78	268	5,571
2002	140	3,206	26	729	25	308	19	741	31	492	11	85	252	5,561
2003	107	3,158	28	756	13	303	31	762	37	533	14	65	230	5,577
2004	108	3,168	39	764	22	329	30	773	27	545	14	80	240	5,659
2005	130	3,207	30	749	10	321	32	772	39	568	13	75	254	5,692
2006	130	3,213	38	747	12	331	28	766	35	600	7	67	250	5,724
2007	117	3,266	24	746	11	342	29	762	45	623	16	104	242	5,843
2008	122	3,350	25	750	13	353	20	777	44	665	11	74	235	5,969
2009	117	3,400	21	758	19	368	24	794	42	673	20	104	243	6,097
2010	141	3,538	31	770	26	386	42	822	58	669	19	77	317	6,262
2011	163	3,564	39	774	18	378	47	806	50	705	21	80	338	6,307
2012	158	3,541	26	753	21	389	38	835	59	698	18	124	320	6,340
2013	172	3,577	39	767	29	382	45	844	67	677	19	95	371	6,342
2014	182	3,604	28	737	31	378	36	841	53	683	26	95	356	6,338
Avg.	135	3,328	29	740	20	345	30	771	44	595	16	88	272	5,836

Source: Association of Registered Nurses of Newfoundland and Labrador.

The calculated turnover rate is shown in Table 19:

Table 19. Turnover Rates by Employer.

Year	Eastern Health	Central Health	Labrador – Grenfell Health	Western Health	Other Employers	Not Reported	Total
1998	3.7%	3.5%	6.6%	3.2%	7.7%	16.2%	4.4%
1999	3.4%	3.3%	5.1%	2.0%	7.3%	13.1%	3.9%
2000	4.2%	3.0%	6.8%	4.2%	9.7%	11.5%	4.8%
2001	4.3%	4.5%	7.4%	2.8%	7.3%	20.5%	4.8%
2002	4.4%	3.6%	8.1%	2.6%	6.3%	12.9%	4.5%
2003	3.4%	3.7%	4.3%	4.1%	6.9%	21.5%	4.1%
2004	3.4%	5.1%	6.7%	3.9%	5.0%	17.5%	4.2%
2005	4.1%	4.0%	3.1%	4.1%	6.9%	17.3%	4.5%
2006	4.0%	5.1%	3.6%	3.7%	5.8%	10.4%	4.4%
2007	3.6%	3.2%	3.2%	3.8%	7.2%	15.4%	4.1%
2008	3.6%	3.3%	3.7%	2.6%	6.6%	14.9%	3.9%
2009	3.4%	2.8%	5.2%	3.0%	6.2%	19.2%	4.0%
2010	4.0%	4.0%	6.7%	5.1%	8.7%	24.7%	5.1%
2011	4.6%	5.0%	4.8%	5.8%	7.1%	26.3%	5.4%
2012	4.5%	3.5%	5.4%	4.6%	8.5%	14.5%	5.0%
2013	4.8%	5.1%	7.6%	5.3%	9.9%	20.0%	5.8%
2014	5.0%	3.8%	8.2%	4.3%	7.8%	27.4%	5.6%
Average	4.0%	3.9%	5.5%	3.8%	7.3%	17.2%	4.6%

Source: Association of Registered Nurses of Newfoundland and Labrador.

Among RHAs, average turnover rates varied from year to year and amongst the RHAs. For example, in 2014 turnover rates fluctuated from a low of 3.8 per cent in Central Health to a high of 8.2 per cent in Labrador-Grenfell Health. Turnover is higher for “Other Employers” at 7.3 per cent.

Comparing NL-educated RNs to all other RNs, exit and turnover data are shown in Table 20:

Table 20. Turnover Rates by Place of Education.

Place of Education	Total Exits 1998 to 2014	Total Workforce 1998 to 2014	Turnover
Other and Not Stated	861	8,309	10.4%
NL Educated	3,771	91,411	4.1%
Totals	4,632	99,720	4.6%

Source: Association of Registered Nurses of Newfoundland and Labrador.

Turnover rates for non-NL educated RNs are more than twice that of NL-educated RNs. This suggests a focus on self-sufficiency for RN supply is preferable.

For the purposes of the analysis contained in this report a turnover rate of 4.6% was used. The previous version of the RN Model report (released in January 2014) assumed a turnover rate of 4.4 per cent.

Retirements

Historically the average retirement age for RNs has been 58 and this has been the age used in previous RN modeling exercises. However, as mentioned above, recent pension reform changes have increased the minimum age requirements that individuals must reach (combined with certain service requirements) before they can retire without any financial penalty. As well, data obtained from the Pensions Division, shows that the average retirement age has increased, with the latest figures showing the average retirement age for all members of the PSPP employed by the RHAs being 59.

While recognizing that there are many factors that may influence an individual's decision to retire based on the foregoing it was assumed that a slight increase in the assumed average retirement age was required. *Therefore, for the purpose of the RN model an average retirement age of 59 was used.* Consequently, analysis presented here involves artificially retiring every individual as they turn 59 and determining the linear trend. If this trend is flat, retirements are not increasing in number and no further adjustment to turnover is required. If the trend is rising, turnover is "ramped" slightly to account for more exits, assuming all the other components of turnover will remain constant. For RNs, the latter is true.

In 2015, there were 499 RNs aged 59 years or older and still working, however these individuals are not considered in the trending of retirements because they represent a permanent "wave" that will turnover rapidly at the individual level, but collectively the number might be expected to remain stable. In other words, as a member of this "wave" (still working and older than 59 years) retires, another may take their place from the under-59 cohort, and it would be false to reduce the "wave" to 0.

The number of RNs turning age 59 years, by year, is shown in Table 21:

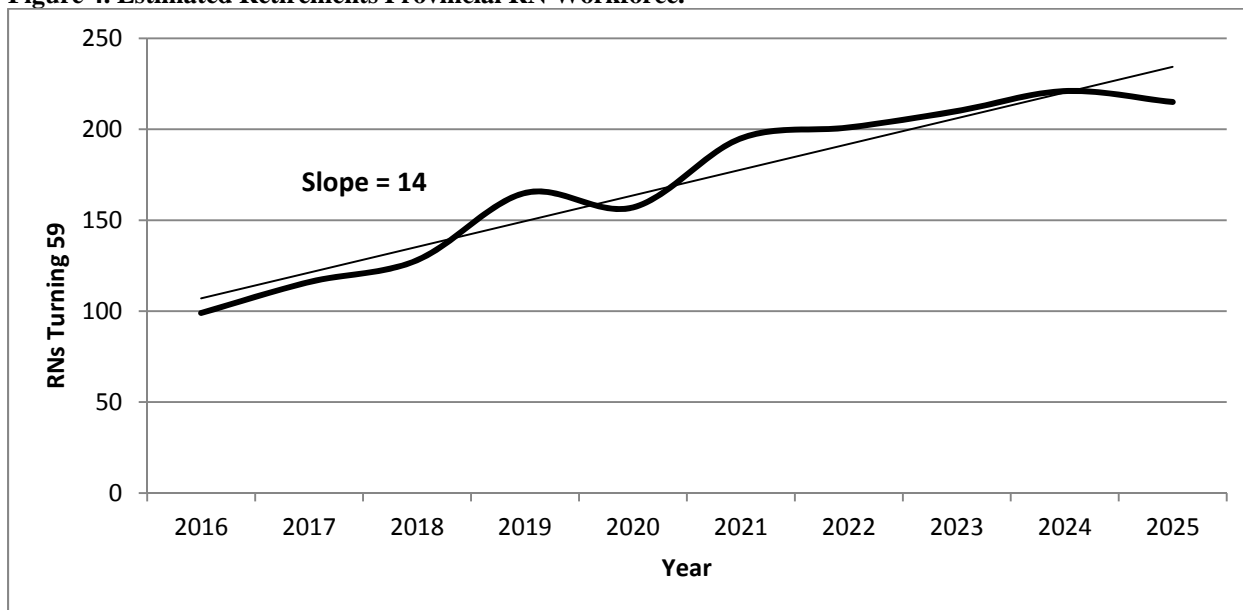
Table 21. Estimated Retirements Provincial RN Workforce.

Year	Number of RNs Turning 59 Years Old
2015 or earlier	499
2016	99
2017	116
2018	128
2019	165
2020	157
2021	195
2022	201
2023	210
2024	221
2025	215
2026 or later	4166
Total	6372

Source: Association of Registered Nurses of Newfoundland and Labrador.

Retirements are estimated to peak in 2024. Figures from 2016 to 2025 are shown in Figure 4:

Figure 4. Estimated Retirements Provincial RN Workforce.



Source: Association of Registered Nurses of Newfoundland and Labrador.

It is clear that retirement trends are increasing; therefore, an assumption is needed to factor this into the model as relying solely on a fixed turnover rate would underestimate the expected replacement demand. To incorporate this into the model, the slope of the line indicates an incremental change of 14 more RNs than in the previous year. For example, if 150 retire in one year, one might expect (on average) that 164 would retire in the next year, 178 in the year following, etc. ***The model uses a factor of 14 to “ramp” turnover during the timeframe examined. For the purpose of an RN workforce model, it is assumed that retirements peak by 2024.*** The previous model used a factor of 10 and assumed retirements would peak by 2022.

6.2. Expansion Demand

How health services are delivered directly impacts workforce demand. Expansion demand is employer requirements for qualified workers stemming from projected growth (or decline) in the workforce size.

Workforce growth (or decline) is an important factor and has many contributing factors. For example, workforce utilization (scope of practice, team mix, workflow, etc.), the availability of provincial or federal funding for specific initiatives, competing priorities for new positions, and new roles for RNs, are all examples of factors that change the system's requirements for RNs and the overall size of the workforce.

For the purposes of a workforce model and long-term decision making, an assumption(s) on workforce growth or decline is required. Several factors contribute to the need for more or fewer RNs in the future, for example:

- Strategic goals for the health care system, and a variety of initiatives to meet those goals, could influence the need for RNs. HCS is undertaking a number of different initiatives such as the Provincial Home Support Review and Primary Health Care Reform, with the outcome of each of these projects impacting the health workforce, in particular how nursing services will be utilized in the future. Under these initiatives, nursing services pertain to those services provided by RNs, Licensed Practical Nurses and Personal Care Attendants.
- Funding for new positions: A summary of new positions added in RHAs from 2005-06 to 2015-16 is as follows:

Table 22. Funding for New RN Positions in RHAs 2005-06 to 2015-16.

Fiscal Year	New Positions in RHAs (Approximate)
2005-06	15
2006-07	103
2007-08	58
2008-09	27
2009-10	20
2010-11	16
2011-12	22
2012-13	22 ¹
2013-14	8
2014-15	14
2015-16	10
2016-17	0
Average	26

Source: Department of Health and Community Services.

Notes:

1. Six positions in 2012-13 were approved for a pilot program of two-year duration only.

Historical Growth

Growth by employer is shown in Table 23:

Table 23. RN Workforce Growth 1997-98 to 2015-16 by Employer.

Employer	RN Workforce 1997-98	RN Workforce 2015-16	Annual Growth (Compounding)
Eastern Health	3,050	3,615	0.9%
Central Health	650	742	0.7%
Western Health	686	843	1.2%
Labrador-Grenfell Health	315	365	0.8%
Other Employer or Unknown	809	807	0.0%
Total	5,510	6,372	0.8%

Source: Association of Registered Nurses of Newfoundland and Labrador.

Previously, Table 2 showed that the average annual workforce growth from 1954-55 to 2014-15 was 3.9 per cent. Considering the more recent period of 1997-98 to 2015-16, RN workforce growth was 0.8 per cent compounding annually; however, the actual growth per year has been less than one per cent since 2011-12. In fact, the average growth over this period was 0.0 per cent, as there was no

growth in between 2012-13 and 2013-14, and the workforce declined by 0.1 per cent between 2013-14 and 2014-15.

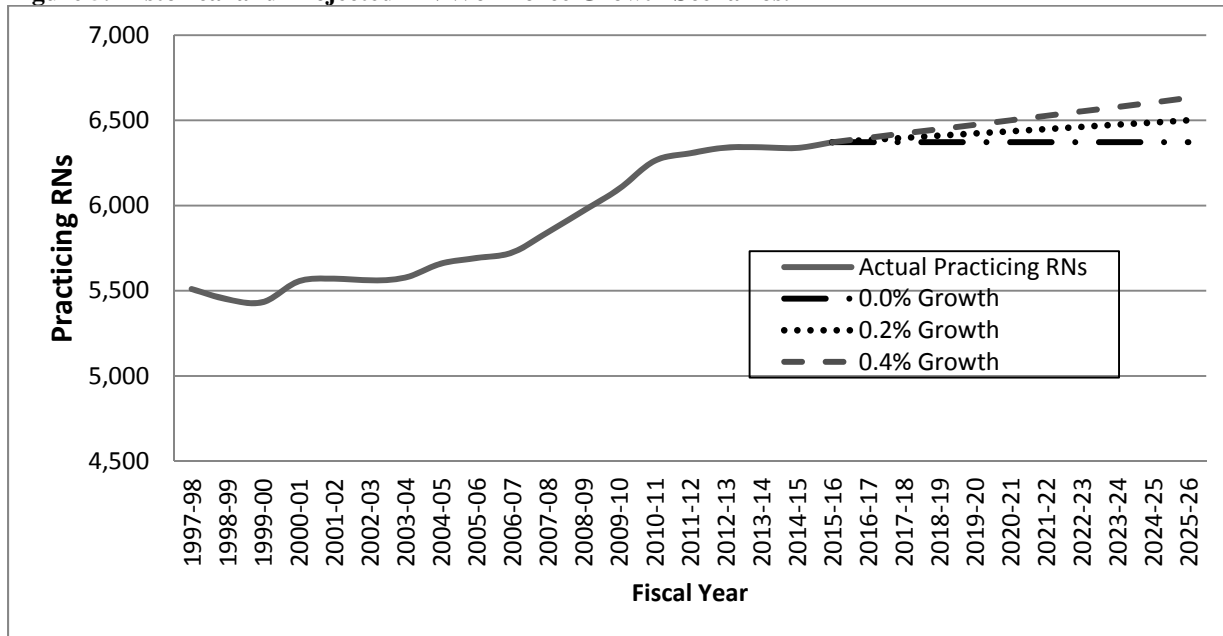
Projected Growth

Employment and Social Development Canada (ESDC) uses the models of the Canadian Occupational Projection System (COPS) to develop projections of future trends in the numbers of job openings for almost 300 occupational groupings at the national level.² In 2014, COPS projected that the “Registered Nurses and Registered Psychiatric Nurse” workforce could expect labour shortage conditions over the period of 2015-2024 at the national level: new job openings (arising from expansion demand and replacement demand) are expected to total 139,700, while 114,000 new job seekers (arising from school leavers, immigration and mobility) are expected to be available to fill them.

In NL, the Provincial Government’s Department of Advanced Education, Skills and Labour publication “Outlook 2025” has estimated almost 64,000 job openings over the 2015 to 2025 period. Almost 80 per cent of these job openings will be in sales and service; business; finance; administration; management; health, and occupations unique to primary industry. Job openings in health-related fields will consist primarily of registered nurses and assisting occupations (e.g., orderlies, personal care attendants, support staff, technician professionals), and job openings will be due to employment expansion and not attrition.³

Figure 5 shows actual RN workforce numbers 1997-98 to 2015-16 and presents three scenarios for workforce growth to 2025-26.

Figure 5. Historical and Projected RN Workforce Growth Scenarios.



Source: Association of Registered Nurses of Newfoundland and Labrador.

² Employment and Social Development Canada, Canadian Occupational Projection System, “Registered Nurse and Registered Psychiatric Nurse” downloaded from <http://occupations.esdc.gc.ca/sppc-cops/occupationsummarydetail.jsp?&tid=103> on March 25, 2016.

³ Government of Newfoundland and Labrador Department of Advanced Education and Skills, “Outlook 2025” downloaded from http://www.aes.gov.nl.ca/publications/pdf/labour_market_outlook2025.pdf on March 25, 2016.

Numerically, these scenarios are shown in Table 24.

Table 24. Projected RN Workforce Growth Scenarios.

Year	Annual Compounding Growth Scenarios		
	0.0% Growth	0.2% Growth	0.4% Growth
2015-16	6,372	6,372	6,372
2016-17	6,372	6,385	6,397
2017-18	6,372	6,398	6,423
2018-19	6,372	6,410	6,449
2019-20	6,372	6,423	6,475
2020-21	6,372	6,436	6,500
2021-22	6,372	6,449	6,526
2022-23	6,372	6,462	6,553
2023-24	6,372	6,475	6,579
2024-25	6,372	6,488	6,605
2025-26	6,372	6,501	6,632

6.3. Workforce Utilization and Other Factors

Before concluding a discussion on demand it is important to review RN workforce utilization and highlight opportunities for improvement. Improving utilization could lessen the need for more RNs. For example, decreasing absenteeism rates would lower the need for relief staff.

RN Utilization

While the statistics from the ARNNL provided in Table 2 show that the RN workforce has grown, anecdotal evidence from the working group is that RN work patterns are changing and it is taking more RNs to achieve the same number of work hours. To further examine this issue a review of RN worked to earned hours was completed.

Table 25 outlines all earned hours for members of the RNUNL in RHAs from 2008-09 to 2015-16. The total earned hours is defined as the total worked hours plus the total benefit. For worked hours, the employee is physically present at work while for benefit hours they are not. Worked hours examples include regular, relief, overtime, overtime banked, and callback (worked portion). Benefit hours examples include sick leave, workers compensation leave, vacation leave, bereavement leave and family leave. This information showed a decrease in the worked hours to employee ratio over the past 8 years by 0.3 per cent annually and supports the view of working group members that there is a trend towards RNs working less hours each.

Table 25. Worked vs. Earned Hours for RNUNL in RHAs, 2008-09 to 2015-16.

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
RNUNL Worked Hours	6,831,811	6,822,516	7,092,622	7,036,049	6,991,602	6,924,877	6,799,289	6,801,870
RNUNL Benefit Hours	1,765,722	1,748,634	1,808,181	1,829,323	1,873,757	1,823,347	1,945,354	1,946,999
RNUNL Total Earned Hours	8,597,535	8,571,150	8,900,803	8,865,373	8,865,360	8,748,225	8,744,644	8,748,869
Worked/Earned Ratio	79.5%	79.6%	79.7%	79.4%	78.9%	79.2%	77.8%	77.7%

Source: Department of Health and Community Services Teledata System

Table 26 compares worked hours to practicing licenses in the RHAs. This shows that since 2008-09 there is an annual 0.9 per cent decline in the total hours worked per RN with an active practicing license. Each RN in 2015-16 worked fewer hours than was the case in 2008-09. A higher proportion of part-time and casual employment is likely the cause.

Table 26. Estimated Total Hours Worked per RN, RNUNL in RHAs, 2008-09 to 2015-16.

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
RHA RN Count	5,230	5,320	5,516	5,522	5,518	5,570	5,560	5,565
RHA RN Managers	294	327	345	357	344	331	300	306
Total RNs (Minus managers)	4,936	4,993	5,171	5,165	5,174	5,239	5,260	5,259
Worked Hours/RN	1,384	1,366	1,372	1,362	1,351	1,322	1,293	1,293

Source: Association of Registered Nurses of Newfoundland and Labrador.

Sick Leave, Injury Leave, and Relief

One of the reasons contributing to the increase in benefit hours as shown in Table 25 is time taken by RN's due to sick leave. In 2015-16, sick leave usage in RHAs cost \$85.7 million, which included \$52.0 million in sick leave costs, \$26.1 million in relief costs, and \$7.6 million in overtime costs. The total annual cost associated with sick leave, sick leave relief, and overtime from sick leave for RHA members of the Registered Nurses' Union of Newfoundland and Labrador was \$32.9 million, representing 38 per cent of provincial sick leave costs. In terms of days lost due to illness, RNs who are entitled to sick leave (i.e. excluding casual RNs) were absence from work an average of 19.5 days of paid due to illness. This equates to 340 FTEs lost from the health system due to illness. The breakdown of sick leave taken is provided in Table 27.

Table 27. Breakdown of Sick Leave Taken, RNUNL in RHAs, 2015-16.

Eligible employees	Paid Sick Leave			Unpaid Sick Leave			Total	
	Hours	Hours/Eligible Employee	Days/Eligible Employee	Hours	Hours/Eligible Employee	Days/Eligible Employee	Hours/Eligible Employee	Days/Eligible Employee
A	B	C=B/A	D=C/7.5	E	F=E/A	G=F/7.5	H=C+F	I=D+G
4538	496,883	109.5	14.6	167,400	36.9	4.9	146.4	19.5

Source: RHAs.

Many workplace injuries result in lost time. Data from the Workplace Health Safety and Compensation Commission in NL for 2010 to 2015 indicates that RNs accounted for 12 per cent of all lost time claims in the "Health care and social services" which includes all hospitals, nursing homes, social services, day care services, physicians' offices, and health and community services.

Table 28. Lost-time Claim Statistics, 2010 to 2015 (All occupations)

Lost-time Claims 2010 to 2014 Statistic	Number One Category	Per cent of Total Lost-time Claims
Nature of Injuries	Sprains, strains, tears, unspecified	53%
Parts of Body Injured	Multiple body parts ¹	22%
Type of Accidents	Overexertion in lifting	15%
Notes:		
1. The second top "Parts of Body Injured" was "Lumbo-sacral region" at 13 per cent.		

Source: Workplace Health Safety and Compensation Commission (WHSCC). Industry Fact Sheet 2015 downloaded March August 9, 2016.

Statistics shown in Table 28 reflect a strong connection between patient/resident handling and lost-time claims. Beyond lost time/costs associated with benefits paid to RNs injured on the job, and relief staff, the human cost is significant. Injuries often result in disabling and chronic conditions which can reduce personal income, end careers, and affect personal lifestyles. Partners, children and other family of injured workers are negatively affected.

Casual RN Workforce

Casual RNs work on an intermittent basis and act as relief for permanent staff and to ease any other short-term increases in operational demands. As per the provisions in RNUNL Collective Agreement, Casual RNs have no obligation to work any set number of hours, nor are the RHAs under any obligation to guarantee them work or offer shifts based on seniority. Casual RNs are paid 20 per cent of their base salary in lieu of compensation for certain benefits (e.g. annual leave, family leave, sick leave etc). Historically, RNs would accept casual work as a mechanism to gain experience and seniority with the goal of securing other more permanent employment as RNs retire or vacate their permanent positions. Thus, casual employment was often viewed as a career pathway to a more stable full-time nursing career.

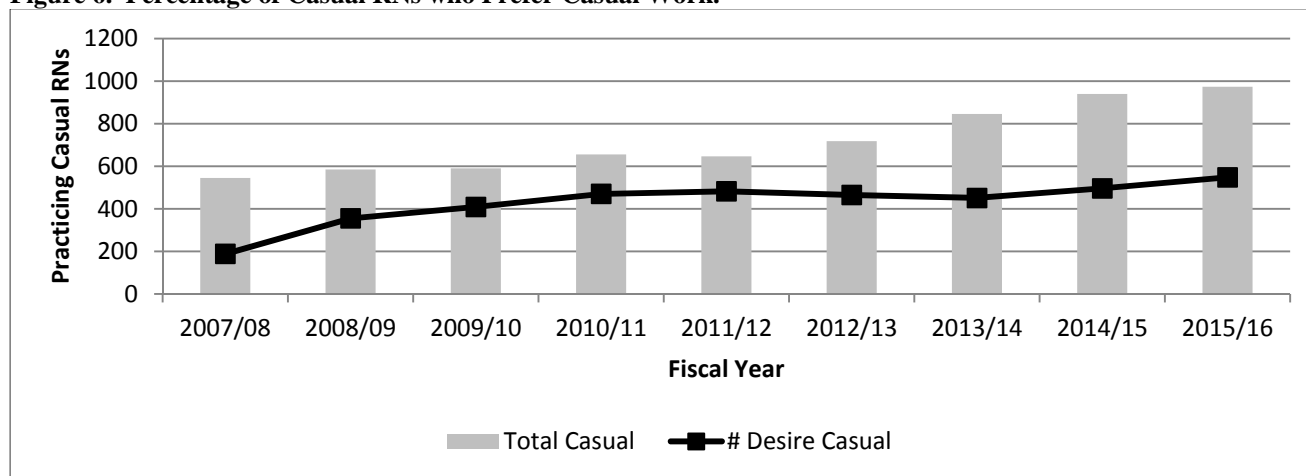
The ARNNL collects RNs employment status upon registration each year and if the RNs are employed on a casual basis, they are asked to indicate if this work arrangement was their preference/choice. Table 29 provides a summary of the information collected by the ARNNL since 2007-08. There has been a 78 per cent increase in the number of casual RNs employed in the RHAs since 2007-08; furthermore, since this time, the majority of all the RNs employed on a casual basis prefer this type of employment arrangement. The growth and preference for casual work is shown in Table 29.

Table 29. Casual RN's and % Desire Casual.

Year	Total Casual RNs	% of RHA workforce	Desire Casual	
			#	%
2007-08	545	11%	188	34%
2008-09	585	11%	355	61%
2009-10	590	11%	409	69%
2010-11	656	12%	470	72%
2011-12	647	12%	482	74%
2012-13	718	13%	465	65%
2013-14	846	15%	451	53%
2014-15	940	17%	496	53%
2015-16	974	18%	548	56%

Source: Association of Registered Nurses of Newfoundland and Labrador.

Figure 6. Percentage of Casual RNs who Prefer Casual Work.



Source: Association of Registered Nurses of Newfoundland and Labrador.

Table 30 provides a breakdown of the casual workforce by RHA. This shows that there is variation in the casual workforce across the RHAs. For example, Eastern Health which has the largest casual workforce, also has the smallest percentage, in comparison to all of the other RHAs, of RNs who

prefer to work on a casual basis. This suggests that as other employment opportunities become available, Eastern Health has a pool of internal RN candidates to draw upon to fill these positions. However, Central Health's casual workforce has remained relatively stable in number, but 90 per cent of its casual workforce prefers casual work. For Central Health this may mean that its pool of internal candidates to draw upon for other more permanent vacancies is limited.

Table 30. Preference for Casual Work by RHA

Year	EH			CH			LGH			WH		
	Casual	Desire Casual	%	Casual	Desire Casual	%	Casual	Desire Casual	%	Casual	Desire Casual	%
2007-08	365	121	33%	51	28	55%	23	12	52%	106	27	25%
2008-09	376	216	57%	71	55	77%	36	25	69%	102	59	58%
2009-10	376	248	66%	67	60	90%	44	35	80%	103	66	64%
2010-11	414	280	68%	83	70	84%	51	44	86%	108	76	70%
2011-12	438	308	70%	66	59	89%	41	38	93%	102	77	75%
2012-13	493	287	58%	70	53	76%	43	38	88%	112	87	78%
2013-14	591	273	46%	71	56	79%	55	44	80%	129	78	60%
2014-15	646	305	47%	77	60	78%	59	46	78%	158	85	54%
2015-16	689	337	49%	72	65	90%	60	51	85%	153	95	62%

Source: Association of Registered Nurses of Newfoundland and Labrador.

Table 26 shows there is a decrease in the total worked hours per RN. Table 25 showed there has been an increase in the benefit hours taken per RN which corresponds with the growth in the number of casual RNs hired over this timeframe. However, Table 29 and 30 also show that RN attitudes towards casual employment are changing and that more RNs are opting for casual work over potentially more stable options. Taken together, these trends suggest that RHAs may require more RNs in the future to achieve the same level of output. From a workforce planning perspective, further exploration is required to determine if more RN supply is needed in future years and what strategies may be required to address these changes in work patterns.

Scope of Practice

Future changes to the scope of nursing practice in NL could grow the RN workforce as RNs move into positions that historically were filled by an alternate health care provider. These changes could occur through enhancement of a RNs current scope (e.g. introduction of RN prescribing) or the authorization by employers for RNs to carry out additional roles already within the scope of nursing practice (e.g. admission and discharge). Alternatively, the growth of LPNs in community could result in a decrease in the RN workforce size in that area.

The ARNNL is completing an evaluation of the NP role in NL. The study is evaluating NP practice in NL in an effort to address information deficits in regards to the NP role within NL's health care system. One of the objectives of the study is to identify a standardized process that can be used by both private and public organizations to identify the need for a new NP role. In addition, the study will determine system impacts of NP practice and factors influencing the integration of the role within NL's health care system. Once the ARNNL starts to evaluate and disseminate data related to the value and impacts of the NP role, there may be an increase in the demand for NPs.

Table 31 shows the average annual growth in the number on NPs over the past five licensure years is 5.8 per cent.

Table 31. Growth in NPs over the past five years

Licensure year	# practicing	% growth
2010-11	105	--
2011-12	118	12.4
2012-13	123	4.2
2013-14	127	3.2
2014-15	135	6.2
2015-16	139	3.0

Source: Association of Registered Nurses of Newfoundland and Labrador.

Each time a new NP position is created and filled, it impacts RN staffing levels as RNs who are trained as NPs move into these roles. As further growth in this area is anticipated, this will need to be considered in the workforce model.

Non-Nursing Duties

A Non-Nursing Duties Working Group, a sub-group of Senior Joint Quality Worklife Committee (SJQWC), was formed to examine duties performed by RNs that could detract from patient/resident/client care, such as cleaning, ordering supplies, transporting patients, etc. The Working Group's final report in July 2011 provided recommendations for better alignment of RN skills with patient/resident/client needs. Implementation of these recommendations may slow the need to grow the RN workforce by improving utilization of existing RNs.

It is important to note that nurses often perform duties that could be performed by other staff, with no negative impact on patient/resident/client care. In these cases, it may not make operational sense to separate duties as these do not detract from patient/resident/client care. For example, in smaller sites there may be down time when it would be quite appropriate for an RN to perform non-nursing duties.

In response to the recommendations, Eastern Health developed a paper-based Non-Nursing Duties Toolkit to collect real-time data from nursing staff regarding their performance of non-nursing duties. In December 2015, Eastern Health submitted a proposal to HCS requesting funding to develop an electronic toolkit to enhance data collection, analysis and dissemination of non-nursing duties to be pilot tested in the four cancer centres in NL with an eventual provincial roll-out to all clinical areas in RHAs. HCS provided funding of \$42,000 for this initiative.

Model of Nursing Clinical Practice

In early 2010, the Department of Health and Community Services provided funding for provincial implementation of the Model of Nursing Clinical Practice (MoNCP) in response to quality work-life issues for nurses, workforce development and full utilization of nursing scopes of practice. A partnership was established with the Ottawa Hospital to provide NL with a number of tools including a staff mix decision making tool and tools to assess nurse educator and management spans of control. The MoNCP is a guide to organize the delivery of nursing care among different categories of nursing personnel: the RN, the LPN and the PCA. All four RHAs are currently implementing the model. The MoNCP has realized several positive outcomes with implementation, including improved patient care, communication, organizational climate (safety and equity), nurse satisfaction, nurse empowerment, interest in continuing education, leadership, and decreased vacancy rates, turnover rate, nurse burnout, and nurse absenteeism. The MoNCP may lower demand for RNs because of stronger deployment of LPNs and PCAs.

Budget 2016

Budget 2016 has resulted in changes to health services delivery and facilities that will impact health workforce planning, including nursing positions, in the immediate future. For example, Eastern Health

has closed Masonic Park senior's residence. While the Waterford Hospital received money to support further planning and design, a 10-bed unit in the hospital will also be closed. The Burin Protective Community Residence was cancelled, and the Rowan Centre, which supports youth between the ages of 12 and 17 who struggle with substance abuse, will close and integrate into other mental health services. Eastern Health will also reduce the number of psychiatric emergency nurses at the Health Sciences Centre.

Central Health will consolidate and defer services at some community health centres; discontinue centre based dialysis services at the Connaigre Peninsula Health Centre in Harbour Breton; and reduce the hours of operation of the emergency department at the Dr. Hugh Twomey Health Centre in Botwood.

In Western Health, funding was made available to continue planning and design of the new hospital. Construction of the new acute care regional hospital is scheduled to begin in 2019 with the facility to be completed in 2023.

6.4. Demand Summary

There has been an increase of the role of RNs working in the private sector and other non-traditional roles, projected growth in the long-term care sector and work is underway to enhance RN scope of practice. Each of these factors supports that the RN workforce will grow; however, recent growth trends show zero or negative growth in the RN workforce and efforts are underway to improve utilization of RNs and other health professional groups given the austerity measures taken in Budget 2016. *Therefore, a modest growth of 0.2 per cent in the RN workforce is assumed for the model.* The previous model report assumed a 0.6 per cent growth rate.

A summary showing the total RN demand projections for the period 2015 to 2030 for a growth scenario of 0.2 per cent compounding annually is shown in Table 32:

Table 32. RN Demand Projections 2015 to 2030 (0.2% Growth).

YEAR	WORKFORCE	DEMAND				Total Demand
		Replacement	Incremental Retirements	Expansion		
<i>Reference:</i>	<i>Section 4.1 (Page 6)</i>	<i>Section 6.1 Page 15</i>	<i>Section 6.1 Page 15</i>	<i>Section 6.2 Page 20</i>		
<i>Assumption</i>	<i>Total RN Workforce = 6372</i>	<i>Turnover: 4.6%</i>	<i>Retirement Age: 59; factor of 14 to ramp turnover until 2024</i>	<i>0.2% Growth</i>		
A	B	C	D	E	F=C+D+E	
2015	6372	-	-	-	-	
2016	6385	294	14	13	320	
2017	6398	294	28	13	335	
2018	6410	295	42	13	350	
2019	6423	295	56	13	364	
2020	6436	296	70	13	379	
2021	6449	297	84	13	394	
2022	6462	297	98	13	408	
2023	6475	298	112	13	423	
2024	6488	298	126	13	437	
2025	6501	299	126	13	438	
2026	6514	300	126	13	439	
2027	6527	300	126	13	439	
2028	6540	301	126	13	440	
2029	6553	301	126	13	441	
2030	6566	302	126	13	441	

7. Supply

Health related education programs that are responsive to the needs of the health system are of critical importance. Aligning educational capacity with service delivery acts as a lever of health system transformation as it ensures that the supply of RNs matches the projected needs of the health system into the future.

For the purpose of this document, supply is defined as:

Supply: Source of qualified workers.

All sources of RNs are broken down into six categories:

Table 33. RN Supply: Categories.

	Obtaining a Practicing License for First Time		Re-activating a Practicing License
	New Graduate	Experienced RN	
Educated in NL	I	III	V
Educated Outside NL	II	IV	VI

7.1. Internal Supply

Internal supply refers to new graduates from Bachelor of Nursing (Collaborative) Programs in NL obtaining a practicing license in this province for the first time, or Category I in Table 33.

A summary of total current educational seat capacity is shown in Table 34:

Table 34. Seats in NL Schools of Nursing 2013.

<u>School</u>	Fast-Track (2 Years)	LPN Bridging (3 Years)	Regular Stream (4 Years)	Total
Memorial University School of Nursing (MUNSON)	32	0	53	85
Centre for Nursing Studies (CNS)	0	16	121	137
Western Regional School of Nursing (WRSON)	8	0	61	69
Total	40	16	235	291

Source: NL Schools of Nursing.

Past trends of nursing program capacities, applicants, enrollments and new graduates, are shown in Table 35.

Table 35. Nursing Program Capacity, Applicants, Enrollments, and Graduates 1991-2012.

Year	Program Capacity (Approved Seats)			Enrollments			Graduates		
	Dip.	BN	Total	Dip.	BN	Total	Dip.	BN	Total
1991	339	50	389	339	50	389	243	25	268
1992	326	50	376	326	45	371	252	47	299
1993	314	50	364	314	51	365	260	44	304
1994	246	50	296	246	51	297	249	27	276
1995	244	50	294	244	52	296	227	31	258
1996	x	223	223	x	221	221	241	41	282
1997	x	223	223	x	221	221	211	45	256
1998	x	223	223	x	221	221	198	49	247
1999	x	223	223	x	226	226	x	40	40¹
2000	x	223	223	x	227	227	x	163	163
2001	x	223	223	x	223	223	x	162	162
2002	x	255	255	x	244	244	x	176	176
2003	x	255	255	x	255	255	x	181	181
2004	x	255	255	x	255	255	x	222	222
2005	x	255	255	x	244	244	x	197	197
2006	x	254	254	x	251	251	x	190	190
2007	x	258	258	x	254	254	x	213	213
2008	x	291	291	x	286	286	x	214	214
2009	x	290	290	x	285	285	x	206	206
2010	x	290	290	x	294	294	x	225	225
2011	x	291	291	x	289	289	x	223	223
2012	x	291	291	x	291	291	x	253	253
2013	x	291	291	x	291	279	x	236	236
2014	x	291	291	x	291	294	x	249	249
2015	x	291	291	x	303	303	X	247	247

Notes:

1. The Diploma Nursing programs had their last graduating classes in 1998. The new BN Program had their first graduates in 2000. As a result, there were only 40 graduates in 1999.

Source: NL Schools of Nursing; Association of Registered Nurses of Newfoundland and Labrador, Annual Reports, (1991- 2014). Figures may be subject to further revision and confirmation.

The number of graduates is for the stated year, but these individuals generally entered the Program four years earlier (for the BN (Collaborative) Program) or three years earlier (for the Diploma of Nursing Program). Comparing the enrollments to the graduates in the related (lagging) year facilitates a calculation of program attrition. Data for the BN (Collaborative) Program are shown in Table 36:

Table 36. Nursing Program Enrollments, Graduates, and Attrition.

Enrollments 1997 to 2011	Graduates 2001 to 2015	Program Attrition
3,775	3,194	15.4%

For graduating years 2001 to 2015, attrition from the starting enrollment (1997 to 2011) has averaged 15.4 per cent. Examining the last ten years of graduates from the BN (Collaborative) Program, average attrition has been 14.1 per cent. ***The workforce model assumes an average program attrition rate of 15 per cent.*** A 15 per cent attrition rate was also used in the last model.

To determine the average retention of new graduates, it is necessary to compare the number of new graduates to the number of practicing licenses issued. Up to the registration year 2006, new graduates were required to obtain a practicing license regardless of their intention to practice in the province. This meant that it was unknown if the new graduate remained to practice in the province, until the second registration year following graduation. In registration year 2007, the policy changed and new graduates were required to obtain a practicing license only if they intended to practice in the province. The data are shown in Table 37:

Table 37. New Graduates: First and Second Year Retention Rates.

Year		Number of Graduates Year 1	Number of Graduates Receiving a Practicing License Year 1		Number of Graduates Receiving a Practicing License Year 2	
Year 1	Year 2	Number	Number	Per Cent	Number	Per Cent
1998	1999	247	239	97%	161	65%
1999	2000	40	40	100%	26	65%
2000	2001	163	162	99%	125	77%
2001	2002	162	159	98%	134	83%
2002	2003	176	175	99%	126	72%
2003	2004	181	179	99%	127	70%
2004	2005	222	217	98%	136	61%
2005	2006	197	199	101%	137	70%
2006	2007	190	183	96%	120	63%
2007	2008	213	175	82%	162	76%
2008	2009	214	166	78%	158	74%
2009	2010	206	165	80%	161	78%
2010	2011	226	203	90%	196	87%
2011	2012	223	194	87%	187	84%
2012	2013	253	222	88%	208	82%
2013	2014	236	186	79%	175	74%
2014	2015	249	206	83%	199	80%
2015	2016	247	213	86%	-	-

Source: Calculated from Association of Registered Nurses of Newfoundland and Labrador data.

For the workforce model, an assumption is needed for average long-term graduate retention in the future. Anecdotal evidence suggests that recent retention rates have been high for a variety of reasons, including the salary increases provided in the latest collective agreement and the availability of recruitment incentives. To determine the long-term average graduate retention rates, second-year retention rates are used to estimate first year retention rates for the years 2006 and earlier.

Comparing similar years, the average first year retention since 2007 is 84 per cent. The average second year retention for the same time period is 80 per cent. Assuming that second year retention lags first year retention by an average of four per cent (84 per cent minus 80 per cent) and the second year retention rate from 1998 to 2014 was 74 per cent, then the average first year retention rate for the years since 2007 is estimated to be 74 per cent + 4 per cent = 78 per cent.

For the purpose of the workforce model, a first year retention rate of 78 per cent is used. This rate reflects the long-term expectation for new graduate retention which is slightly higher than the 77 per cent retention rate that was used in the previous model. This slight increase reflects improved retention through continued offering of recruitment incentives to students and experienced nurses.

Given 15 per cent attrition (or 85 per cent class retention), and an average of 78 per cent retention, the current capacity of 291 educational seats will, in the context of the model, yield an effective supply (RNs that actually join the provincial workforce) of $291 \times 0.85 \times 0.78 = 193$ RNs.

Comparison of the number of graduates from NL to other provinces is made possible by expressing the number of graduates as a per cent of the workforce they serve to replenish and grow. This measure is called the Training Capacity Indicator (TCI):

Table 38. Training Capacity Indicator 2013.

Province	Workforce	Graduates	Training Capacity Indicator
NS	9,151	416	4.5%
BC	31,799	1,390	4.4%
ON	96,148	4,031	4.2%
NL	6,071	246	4.1%
SK	11,042	435	3.9%
PEI	1,571	61	3.9%
NB	8,190	312	3.8%
MB	12,174	417	3.4%
AB	35,945	1,070	3.0%
QC	67,917	1,498	2.2%
Total	280,008	9,876	3.5%

Source: CIHI, Association of Registered Nurses of Newfoundland and Labrador

Note:

1. NL uses actual graduates and workforce data from the Association of Registered Nurses of Newfoundland and Labrador.

As showing in Table 29, in 2013, there were 246 graduates in NL for a workforce of 6,071. This equates to a TCI of 4.1 per cent for RNs in NL. Compared to the overall national TCI benchmark of 3.5 per cent. Our TCI of 4.1 per cent suggests that NL has an adequate supply of new graduate RNs. In 2015, there were 247 graduates of the BN program in NL and a provincial workforce of 6,372 RNs with practicing licenses, for a TCI of 3.8 per cent.

From a workforce planning perspective, balancing supply and demand provincially is necessary, but it is important to ensure graduates are deployed to the area of the province that has difficult-to-fill positions. Recruitment incentives, such as bursaries and signing bonuses are one mechanism that RHAs utilize to help attract RNs to these positions. The MUN School of Nursing raised a concept for distance delivery of the Bachelor of Nursing Collaborative Program through video conferencing and local mentoring. This model could be explored through a partnership with the three Schools of Nursing and focus on delivering the program to small cohorts in rural and remote areas of the province. The overall premise of this option would be to offer the program in the regions of the province with the greatest recruitment and retention challenges and that graduates would work in these areas upon graduation.

Based on the potential this delivery method has for addressing RN supply distribution challenges, the feasibility of this option merits further investigation. The exploration of a potential new education delivery model is proposed later in this report; however it does not represent a commitment to deliver the Bachelor of Nursing Collaborative Program in this manner. As part of the suggested feasibility study, a number of factors would need to be addressed, including, but not limited to: program costs; infrastructure and information technology needs (e.g., classroom space, video conferencing facilities); student needs (e.g., library resources); quality assurance; and required approvals (e.g., from Senate, the Board of Regents, regulatory bodies).

7.2. External Supply

External supply refers to new graduates from outside the province and experienced RNs (regardless of where they were educated), obtaining practicing licenses in this province for the first time, represented by Categories II, III, and IV shown in bold in the table below.

	Obtaining a Practicing License for First Time		Re-activating a Practicing License
	New Graduate	Experienced RN	
Educated in NL	I	III	V
Educated Outside NL	II	IV	VI

Detail by Category, over the years available, is shown in Table 39 below:

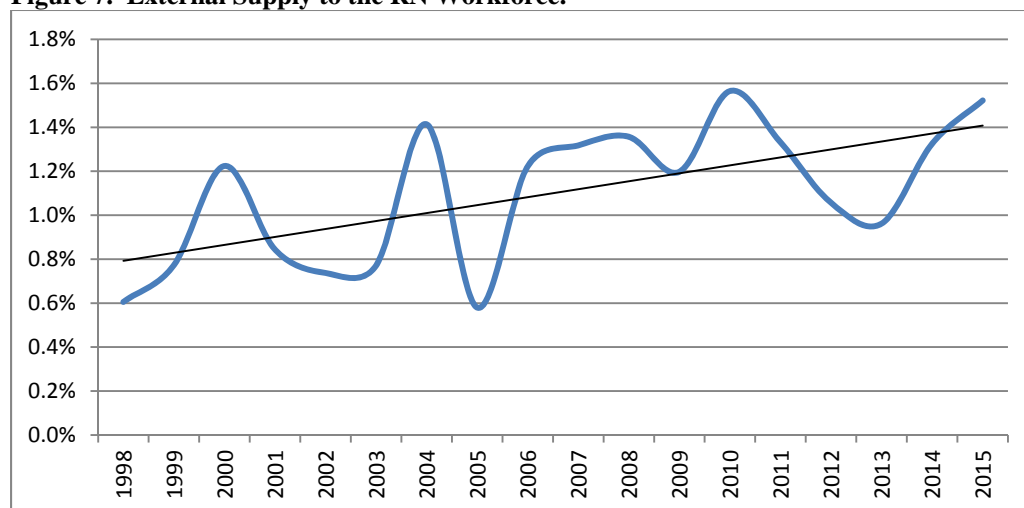
Table 39. External Supply to the RN Workforce.

Year	Workforce	Category			Total	As a Per Cent of the Workforce
1997	5,510	II	III	IV	-	-
1998	5,450	8	6	19	33	0.6%
1999	5,433	9	6	27	42	0.8%
2000	5,555	16	15	37	68	1.2%
2001	5,571	12	7	28	47	0.8%
2002	5,561	12	4	25	41	0.7%
2003	5,577	16	6	21	43	0.8%
2004	5,659	31	9	40	80	1.4%
2005	5,692	8	6	19	33	0.6%
2006	5,724	5	39	26	70	1.2%
2007	5,843	11	22	44	77	1.3%
2008	5,969	10	31	40	81	1.4%
2009	6,097	14	23	36	73	1.2%
2010	6,262	23	11	64	98	1.6%
2011	6,307	15	7	62	84	1.3%
2012	6,340	11	17	39	67	1.1%
2013	6,342	7	22	32	61	1.0%
2014	6,338	5	29	50	84	1.3%
2015	6372	15	20	62	97	1.5%
Average		13	16	37	66	1.1%

Source: Calculated from Association of Registered Nurses of Newfoundland and Labrador data.

The total number of external-source RNs has been tracking upwards since 1998 as shown in Figure 7:

Figure 7. External Supply to the RN Workforce.



Source: Calculated from Association of Registered Nurses of Newfoundland and Labrador data.

Whether or not the trend of an increasing external supply will continue is unknown. *For the purpose of the workforce model, an estimate of the equivalent of 1.2 per cent entering the RN workforce annually as external supply is assumed.* This is the same assumption of the previous model and slightly higher than the average of 1.1 per cent shown in Table 39, to reflect the upwards trend shown in Figure 7.

7.3. Returning Supply

Returning supply refers to any RN re-activating a practicing license from an absence of one year or more, regardless of where they were educated. These RNs are Categories V and VI shown in bold in the table below.

	Obtaining a Practicing License for First Time		Re-activating a Practicing License
	New Graduate	Experienced RN	
Educated in NL	I	III	V
Educated Outside NL	II	IV	VI

These RNs exit the workforce for many reasons; to raise children, care for another person, pursue further education, to move, or some other reason. These RNs are included in turnover figures and when they return to the workforce, must be considered as a source of supply. Breakdown of Categories V and VI is shown in Table 40:

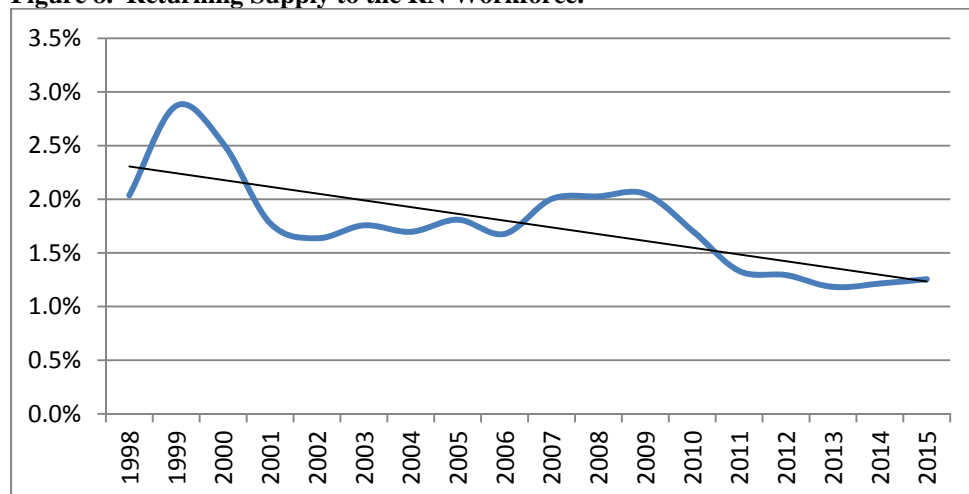
Table 40. Returning Supply to the RN Workforce.

Year	Workforce	Category		Total	As a Per Cent of the Workforce
1997	5,510	V	VI	-	-
1998	5,450	100	11	111	2.0%
1999	5,433	141	15	156	2.9%
2000	5,555	127	13	140	2.5%
2001	5,571	90	9	99	1.8%
2002	5,561	80	11	91	1.6%
2003	5,577	89	9	98	1.8%
2004	5,659	84	12	96	1.7%
2005	5,692	96	7	103	1.8%
2006	5,724	86	10	96	1.7%
2007	5,843	111	6	117	2.0%
2008	5,969	109	12	121	2.0%
2009	6,097	116	9	125	2.1%
2010	6,262	94	13	107	1.7%
2011	6,307	74	10	84	1.3%
2012	6,340	71	11	82	1.3%
2013	6,342	68	7	75	1.2%
2014	6,338	68	9	77	1.2%
2015	6,372	68	12	80	1.3%
Average		93	10	103	1.8%

Source: Calculated from Association of Registered Nurses of Newfoundland and Labrador data.

Trends in the total number of returning-source RNs since 1998 are shown in Figure 8:

Figure 8. Returning Supply to the RN Workforce.



Source: Calculated from Association of Registered Nurses of Newfoundland and Labrador data.

The future trends for returning supply is unknown. *For the purpose of the workforce model, an estimate of the equivalent of 1.8 per cent entering the RN workforce annually as returning supply is assumed.* This is slightly higher than the 1.7 per cent that was assumed in the previous model.

7.4. Supply Summary

A summary showing the total RN supply projections for the period 2016 to 2030 based on a graduate retention of 78 per cent and a constant provincial educational seat capacity of 291 seats is shown in Table 41:

Table 41. RN Supply Projections 2015 to 2030

YEAR	WORKFORCE	SUPPLY				Total Supply
		Internal	External	Returning		
<i>Reference:</i>	<i>Section 4.1 Page 20</i>	<i>Section 7.1 Page 29</i>		<i>Section 7.2 Page 33</i>	<i>Section 7.3 Page 34</i>	
<i>Assumption:</i>	<i>Total RN Workforce = 6372</i>	<i>15 percent attrition: 1st yr retention rate: 78%</i>		<i>1.2% New RN Returners</i>	<i>1.8% RN License Activations</i>	
A	B	Seats	G	H	I	J=G+H+I
2015	6372	291	-	-	-	-
2016	6385	291	193	77	115	384
2017	6398	291	193	77	115	385
2018	6410	291	193	77	115	385
2019	6423	291	193	77	116	386
2020	6436	291	193	77	116	386
2021	6449	291	193	77	116	386
2022	6462	291	193	78	116	387
2023	6475	291	193	78	117	387
2024	6488	291	193	78	117	388
2025	6501	291	193	78	117	388
2026	6514	291	193	78	117	388
2027	6527	291	193	78	117	389
2028	6540	291	193	78	118	389
2029	6553	291	193	79	118	390
2030	6566	291	193	79	118	390

8. Provincial Workforce Model

Given a growth rate of 0.2 per cent annually, existing educational seat capacity, and other assumptions described in this report, the following scenario compares supply and demand to 2030:

Table 42. RN Projections 2015 to 2030

YEAR	WORKFORCE	DEMAND				Total Demand	SUPPLY				PROJECTED GAP (In each year. positive value means surplus)
		Replacement	Incremental Retirements	Expansion	Internal		External	Returning	Total Supply		
<i>Reference:</i>	<i>Section 4.1 Page 20</i>	<i>Section 6.1 Page 15</i>	<i>Section 6.1 Page 155</i>	<i>Section 6.2 Page 20</i>		<i>Section 7.1 Page 29</i>	<i>Section 7.2 Page 33</i>	<i>Section 7.3 Page 34</i>			
<i>Assumption:</i>	<i>Total RN Workforce = 6372</i>	<i>Turnover: 4.6%</i>	<i>Retirement Age: 59; factor of 14 to ramp turnover until 2024</i>	<i>0.2 Growth</i>		<i>15 percent attrition: 1st yr retention rate: 78%</i>	<i>1.2% New RN Returners</i>	<i>1.8% RN License Activations</i>			
A	B	C	D	E	F=C+D+E	Seats	G	H	I	J=G+H+I	K=J-F
2015	6372	-	-	-	-	291	-	-	-	-	-
2016	6385	294	14	13	320	291	193	77	115	384	64
2017	6398	294	28	13	335	291	193	77	115	385	50
2018	6410	295	42	13	350	291	193	77	115	385	36
2019	6423	295	56	13	364	291	193	77	116	386	21
2020	6436	296	70	13	379	291	193	77	116	386	7
2021	6449	297	84	13	394	291	193	77	116	386	-7
2022	6462	297	98	13	408	291	193	78	116	387	-21
2023	6475	298	112	13	423	291	193	78	117	387	-36
2024	6488	298	126	13	437	291	193	78	117	388	-50
2025	6501	299	126	13	438	291	193	78	117	388	-50
2026	6514	300	126	13	439	291	193	78	117	388	-50
2027	6527	300	126	13	439	291	193	78	117	389	-51
2028	6540	301	126	13	440	291	193	78	118	389	-51
2029	6553	301	126	13	441	291	193	79	118	390	-51
2030	6566	302	126	13	441	291	193	79	118	390	-51

The model was run for a range of assumptions regarding growth and new graduate retention. Growth of 0.0, 0.2, and 0.4 per cent compounding annually was considered. Similarly, a range of new graduate retention from 76 to 80 per cent was considered, in increments of one per cent. Results were sorted according to the timing and magnitude of the resulting gap, with scenario 1 having the smallest gap and scenario 15 having the largest. Results are shown in Table 43:

Table 43. RN Model Gaps for Growth and New Graduate Retention.

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Workforce Growth (%)	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.4	0.4	0.4
New Graduate Retention (%)	80	79	78	77	76	80	79	78	77	76	80	79	78	77	76
2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2016	82	79	77	75	72	69	67	64	62	59	56	54	51	49	46
2017	68	65	63	61	58	55	52	50	47	45	42	39	37	34	32
2018	54	51	49	47	44	41	38	36	33	31	27	25	22	20	17
2019	40	37	35	33	30	26	24	21	19	16	12	10	8	5	3
2020	26	23	21	19	16	12	10	7	5	2	-2	-4	-7	-9	-12
2021	12	9	7	5	2	-2	-5	-7	-10	-12	-17	-19	-21	-24	-26
2022	-2	-5	-7	-9	-12	-16	-19	-21	-24	-26	-31	-34	-36	-38	-41
2023 (Peak Retirements)	-16	-19	-21	-23	-26	-31	-33	-36	-38	-41	-46	-48	-51	-53	-55
2024	-30	-33	-35	-37	-40	-45	-47	-50	-52	-55	-60	-63	-65	-68	-70
2025	-30	-33	-35	-37	-40	-45	-48	-50	-53	-55	-61	-63	-66	-68	-71
2026	-30	-33	-35	-37	-40	-45	-48	-50	-53	-55	-61	-64	-66	-69	-71
2027	-30	-33	-35	-37	-40	-46	-48	-51	-53	-55	-62	-64	-67	-69	-72
2028	-30	-33	-35	-37	-40	-46	-48	-51	-53	-56	-62	-65	-67	-70	-72
2029	-30	-33	-35	-37	-40	-46	-49	-51	-53	-56	-63	-65	-68	-70	-73
2030	-30	-33	-35	-37	-40	-46	-49	-51	-54	-56	-63	-66	-68	-71	-73

The inflection point between surplus and gap is shown as a bold line dividing the table from right to left. Given the ranges described, a supply/demand gap could start by 2020 (Scenario 11-15) or as late as 2022 (Scenarios 1-5). Scenario 8 represents the assumption of 0.2 per cent growth and 78 per cent new graduate retention reflected in the model in Table 42.

For the current assumptions and potential corrective action, increased admissions are not required until 2018, or possibly later. Therefore a decision on educational seat increases is not required immediately; however some scenario planning should be considered. Educational seats are added in cohorts of eight and based on program attrition of 15 per cent and new graduate retention of 78 per cent, would yield an overall increase in supply of five RNs, four years after the seats are increased. For example, assuming no changes to service delivery, to increase the supply to address the projected gap of 21 RNS in 2022 as shown in Table 42, you would need to add at least 32 seats ($32 \times 0.85 \times 0.75 = 20$ new RNs grads).

9. Conclusions

Conclusions from this report include:

1. There are many factors that influence the supply and demand for RNs; therefore, workforce modeling cannot predict future labour market trends with certainty.
2. While measures to improve system sustainability and adjust skill mix are anticipated to slow future growth; enhancements to RN scope of practice and the role of NPs may result in RN growth.
3. There is value in maximizing opportunities to improve RN productivity.
4. The number of casual RNs has grown; and the proportion of RNs desiring casual employment over other forms of employment has also grown. Despite this growth, the availability of casual relief to address system pressures when RNs are absent from work, regardless of leave type, remains challenging for some areas.
5. RN retirements are expected to peak in the year 2024 as the last remaining members of the baby boom generation exit the system
6. RN educational seat capacity in NL is comparable to the average among all provinces.
7. For the given assumptions and estimates presented in this report, a slight Provincial surplus of RNs is projected from present to 2021. However, RHA-specific supply challenges remain.
8. Based on 0.2 per cent growth, a gap of seven RNs is projected for the year 2021, growing to 50 in 2024.
9. Current analysis, based on an attrition rate of 15 per cent, does not support further educational seat increases at this time. However, close monitoring is required to ensure an adequate supply of RNs exist to meet provincial demand. Further exploration into the factors influencing attrition could be beneficial in maximizing RN supply.
10. At a provincial level, RN supply and demand appears to be balanced; yet, at a regional level, dispersal challenges remain for health authorities, further exasperating recruitment and retention challenges.

10. Recommendations

Recommendations that follow are grouped into three strategic directions to strengthen workforce capacity, maintain appropriate workforce supply; and monitor and plan:

Strengthen Workforce Capacity

- Recommendation 1: Explore opportunities to increase RN productivity.
- Recommendation 2: Review and strengthen existing attendance management programs in RHAs.

Maintain Appropriate Workforce Supply

- Recommendation 3: Maintain strong recruitment through continued offering of bursaries, signing bonuses, and other incentive programs with associated return-in-service commitments.
- Recommendation 4: Further examine the RN casual workforce to determine what impact the trend towards casual employment as an RN choice has for current and future supply assumptions.
- Recommendation 5: The Schools of Nursing consider undertaking a research study examining attrition in nursing programs.

Monitor and Plan

- Recommendation 6: The Regional Health Authorities utilize the data contained in this report for succession planning purposes.
- Recommendation 7: Refresh the RN Workforce Model with an additional two years data in 2018.
- Recommendation 8: The Schools of Nursing consider exploring innovative, non-traditional delivery methods to optimize supply of new RN graduates.