



**Dietitian Workforce  
Model Report  
Newfoundland and Labrador**

**June 17, 2013**

## Table of Contents

1.	Background .....	1
2.	Scope and Limitations .....	3
3.	Methodology .....	4
4.	Dietitian Workforce.....	6
4.1.	Provincial Workforce .....	6
4.2.	Regional Health Authority Workforce .....	8
4.3.	Demographics.....	9
4.4.	Vacant Positions .....	10
5.	Demand .....	11
5.1.	Replacement Demand.....	11
5.2.	Expansion Demand.....	15
5.3.	Workforce Utilization.....	19
5.4.	Demand Summary .....	20
6.	Supply.....	22
6.1.	Internal Supply .....	24
6.2.	External Supply .....	28
6.3.	Returning Supply .....	29
6.4.	Supply Summary .....	30
7.	Provincial Workforce Model.....	32
8.	Conclusions .....	37
9.	Recommendations .....	38
	Appendix A: Terms of Reference .....	39

## List of Tables

Table 1.	Provincial Dietitian Workforce Historical Trends.....	6
Table 2.	Health Professionals per 100,000 Population, Canada and NL 2011.....	8
Table 3.	Dietitians by Employer.....	9
Table 4.	Dietitians NL and Canada: Age Distribution.....	9
Table 5.	Dietitian Vacancies.....	10
Table 6.	Provincial Dietitian Transitions: Counts.....	12
Table 7.	Provincial Dietitian Transitions: Per Cent.....	13
Table 8.	Estimated Retirements Provincial Dietitian Workforce (Age 58 Assumption).....	14
Table 9.	Projected Dietitian Workforce Growth Scenarios.....	19
Table 10.	Dietitian Demand Projections 2011 to 2021 at 3.3 Per Cent Growth.....	20
Table 11.	Dietitian Demand Projections 2011 to 2021 at 2.0 Per Cent Growth.....	21
Table 12.	Dietitian Supply: Categories.....	22
Table 13.	Dietitian Supply: Counts by Supply Category, 2003 to 2011.....	23
Table 14.	Dietitian Supply: Counts and Per Cents by Group, 2003 to 2011.....	23
Table 15.	Dietitian Supply: Province of Education and Province of Internship, 2003 to 2011.....	23
Table 16.	Dietetics Programs Seat Capacity 1975 – 2022.....	25
Table 17.	Dietitian External Supply: By Province of Education, 2003 to 2011.....	29
Table 18.	Dietitian Supply Projections 2011 to 2022 (Existing Seat Capacity).....	30
Table 19.	Dietitian Workforce Projections 2012 to 2022 (3.3% Growth, No Program).....	32
Table 20.	Dietitian Workforce Projections 2012 to 2022 (3.3% Growth, With a Program).....	33
Table 21.	Dietitian Workforce Projections 2012 to 2022 (2.0% Growth, With a Program).....	34

Table 22. Balance Sheet Approach: Dietitian Supply and Demand in 2022. ....35  
Table 23. Training Capacity Indicator: Dietetics Graduates 2011. ....36

**List of Figures**

Figure 1. Provincial Dietitian Workforce Historical Trends. ....7  
Figure 2. Provincial Dietitian Workforce Age Distribution 2011. ....10  
Figure 3. Estimated Retirements Provincial Dietitian Workforce (Age 58 Assumption) .....14  
Figure 4. Historical and Projected Dietitian Workforce Growth Scenarios. ....18

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## 1. Background

Residents of this province have among the highest rates of circulatory disease, cancer, and diabetes in the country. Residents tend to rank high on the risk factors of smoking, obesity, alcohol consumption, and inactivity, and are eating fewer fruits and vegetables than the Canadian average<sup>1</sup>. The 2011 Policy Blue Book of the Progressive Conservative party named “Access to Nutritionists and Dietitians” as one of its mandates.

Registered Dietitians<sup>2</sup> are educated in biochemistry, human development, management, and population health. They are linked with current practice-based evidence in nutrition to support health as well as the prevention and management of chronic disease. Dietitians work as key members of interprofessional health teams as well as in areas such as food service management, public health policy, research, and education.

The Newfoundland and Labrador College of Dietitians (NLCD) regulates the Dietitian workforce. To become a Registered Dietitian, individuals must meet a number of requirements including having successfully completed:

- A Dietitians of Canada (DC) accredited post-secondary degree program;
- A DC accredited internship program, and;
- The Canadian Dietetic Registration Exam (CDRE).

Newfoundland and Labrador is in special need of nutrition expertise due to the high rates of chronic disease experienced in the province and the important link between dietary practices and the prevention of these diseases. The public’s need for professional nutrition advice is not in question. Unfortunately there is evidence to suggest that many residents of the province are confused by nutrition misinformation from many nonprofessional sources, although many have good intent<sup>3</sup>. This has the potential to make a significant and negative impact upon the health of the residents of Newfoundland and Labrador.

The term "Nutritionist" is not protected by law in all Canadian provinces, including Newfoundland and Labrador. As a result, individuals with different levels of training and knowledge can call themselves a "Nutritionist". A variety of titles have been used by unqualified people to describe their involvement in nutrition-related practice. Many use the term "Registered" with a variation of "Nutrition" as a title. This remains a challenge as self-proclaimed nutrition experts contribute to public confusion and possible perpetuation of nutrition information that is not evidence-based.

From 1975 to 2008, Memorial University offered an undergraduate Dietetics Program. The program accepted 10 students annually. Students completed three years at Memorial University and their final year through Acadia University in Nova Scotia, after which time students transfer their credits back to Memorial, and then graduated from Memorial. The undergraduate Dietetics Program at Memorial University was discontinued in March 2008.

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<sup>1</sup> <http://www.health.gov.nl.ca/health/publications/pdffiles/HealthReflections.pdf> downloaded September 14, 2009.

<sup>2</sup> Referred to as Dietitians for the remainder of this report.

<sup>3</sup> Polgar, M. and Roebathan, B.V., Memorial University of Newfoundland, ongoing research.

In October 2010 Memorial University signed a five-year Memorandum of Understanding with Acadia University whereby students complete two years at Memorial University, and their final two years of the dietetics undergraduate degree at Acadia. Students now graduate from Acadia.

In June 2010, Memorial University established a Masters in Public Health program with a concentration in Dietetics (two seats annually). This program requires an undergraduate degree in Dietetics as a prerequisite, noting that students must now leave the province to earn this undergraduate requirement.

In light of the suspension of the undergraduate program at Memorial University, the subsequent five-year Memorandum of Understanding with Acadia, and in response to extensive advocacy efforts from the health professional and student community, the Faculty of Medicine at Memorial University of Newfoundland established a Dietitian Education and Training Steering Committee in September 2011.

The mandate of the Steering Committee is to provide leadership, direction and recommendations to Memorial University and the Government of Newfoundland and Labrador regarding an appropriate model for dietetics education and training for Newfoundland and Labrador. The Steering Committee established two Working Groups:

1. Dietitian Program Model
2. Dietitian Workforce Model

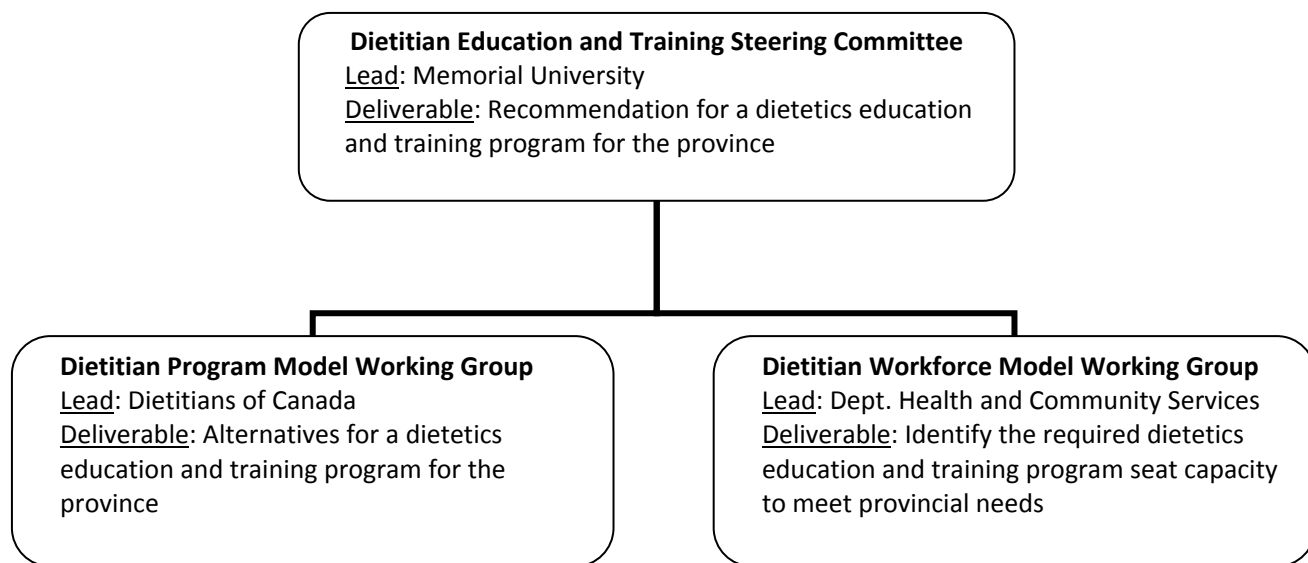
The Dietitian Program Model Working Group was tasked with investigating potential models for future dietetic education and training in Newfoundland and Labrador through exploring potential Dietitian education and internship models suitable for Memorial University in partnership with the Regional Health Authorities (RHAs) and that also match the health workforce needs of the population.

Two main factors contributed to the need for a Dietitian Workforce Model including but not limited to:

- To ensure the province has an appropriate supply of Dietitians to meet future demand; and
- To provide decision support for Memorial Universities' Dietitian Education and Training Steering Committee.

The Dietitian Workforce Model Working Group (referred to as the Working Group for the remainder of this report) was tasked with the development of a comprehensive Dietitians Workforce Model that incorporates all relevant supply and demand factors. The Working Group was to provide recommendations for an appropriate seat capacity to meet future provincial needs, and other related recommendations. The Working Group had its first meeting in May 2012. Its Terms of Reference are provided in Appendix A.

The committee structure (including lead agencies and deliverables) is shown below:



## 2. Scope and Limitations

The entire provincial Dietitian workforce was considered in this analysis. A total of 172 Dietitians obtained practicing licenses in registration year 2011/12 (April 1, 2011 to March 31, 2012).

Of those 172 Dietitians, an estimated 68 per cent or 117 work for an RHA. The remaining 32 per cent or 55 work for a private employer or other employers including government, nonprofit organizations, etc. Employment status may change frequently and for the purpose of this report, all those with practicing licenses are included. This is explained more fully in Section 2.

A provincial approach is necessary because supply and demand considerations affect the entire workforce, regardless of the employer.

Limitations of workforce modeling include:

- Balancing supply and demand at the provincial level does not guarantee that all positions will be filled. Experience has shown 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 Dietitians. Employer requirements for Dietitians do not necessarily reflect population needs in that there are 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 for improving Dietitian utilization. General discussion and recommendations are included; however a full analysis of utilization issues is beyond the scope of this report. Utilization factors include team mix, scope of practice issues, scheduling/deployment, work flow, etc.
- Dietitians data provided in this report are counts of practicing licenses. Practicing licenses are used as a proxy for the Dietitian workforce; however Dietitians may have a practicing license yet be unemployed. Also, a count of practicing licenses does not reflect job types (i.e.

temporary or permanent, part time or full time) or work patterns (i.e. earned hours and incidence of overtime, callback, sick leave, etc.) or how either may vary throughout the year. Finally, a Dietitian's licensure status may change; part of the year may be non-practicing, while part may be practicing. The Dietitians last registration status in a particular registration year is what is recorded in the database for that year. Note that only practicing licenses were analyzed as part of this report. The word "workforce" used throughout this report means "number of Registered Dietitians with a practicing license".

- The difficulty in securing internship placements for some new graduates means the path from graduation to employment is not always straight-forward. Therefore, the post degree internship can result in a time lapse of one or more years, making it difficult to categorize and measure the sources of supply. This is detailed in Section 6 of this report: Supply.

### **3. Methodology**

There are a variety of modeling approaches for workforce planning. A discussion of these approaches can be found in the document "A Framework for Collaborative Pan-Canadian Health Human Resources Planning" 2007<sup>4</sup>.

The methodology presented here undertakes a full analysis of supply (i.e. all workforce entries are considered) and estimates for demand stemming from those leaving the system requiring replacement, as well as changes in the overall size of the workforce, based on past patterns of growth or decline and careful consideration of strategic changes in the health care system, either planned or underway.

The Working Group methodology is based on a framework developed to produce provincial models for Social Workers, Licensed Practical Nurses, and Medical Laboratory Technologists in Newfoundland and Labrador, and provides consistent analysis across several health occupations. Core data were obtained from the NLCD.

The NLCD requested permission from its members for analysis of their data. Records for those denying permission (five individuals) were deleted from the data before sharing with the Department of Health and Community Services. An Information Sharing Agreement was signed by both the Department of Health and Community Services and the NLCD to facilitate the proper sharing, security, and eventual deletion of data. A total of 12 years data were provided, from fiscal year 2000/01 to 2011/12. Data for fiscal year 2000/01 and 2001/02 were not used because of data quality issues.

Other 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.

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<sup>4</sup> Available for download at: <http://www.hc-sc.gc.ca/hcs-sss/pubs/hhrhs/2007-frame-cadre/index-eng.php>

Stakeholder involvement was critical for model development. Assumptions and estimates must be reasonable from a variety of standpoints. Working Group members represented the following organizations:

- Four RHAs;
- Department of Health and Community Services;
- Memorial University;
- Newfoundland and Labrador College of Dietitians; and
- Dietitians of Canada.

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 Dietitian supply is considered, including new graduates, 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.

Recommendations were developed regarding seat capacity to meet provincial demand, and for other related aspects of balancing the Dietitian supply/demand equation.



## 4. Dietitian Workforce

Unless otherwise noted, data in this report represent practicing licenses<sup>5</sup>.

### 4.1. Provincial Workforce

Statistics from the NLCD provided in Table 1 show that the current number of practicing licenses (licensure year 2011/12) is 172. The assumption used in the model for future trends is discussed in Section 5.2 on page 15.

**Table 1. Provincial Dietitian Workforce Historical Trends.**

Licensure Year <sup>1</sup>	Dietitian Count	Per Cent Change <sup>2</sup>
2002	129	-
2003	139	7.8%
2004	142	2.2%
2005	148	4.2%
2006	148	0.0%
2007	147	-0.7%
2008	151	2.7%
2009	161	6.6%
2010	160	-0.6%
2011	172	7.5%
<b>Average</b>	<b>150</b>	<b>3.3%</b>

Source: Newfoundland and Labrador College of Dietitians.

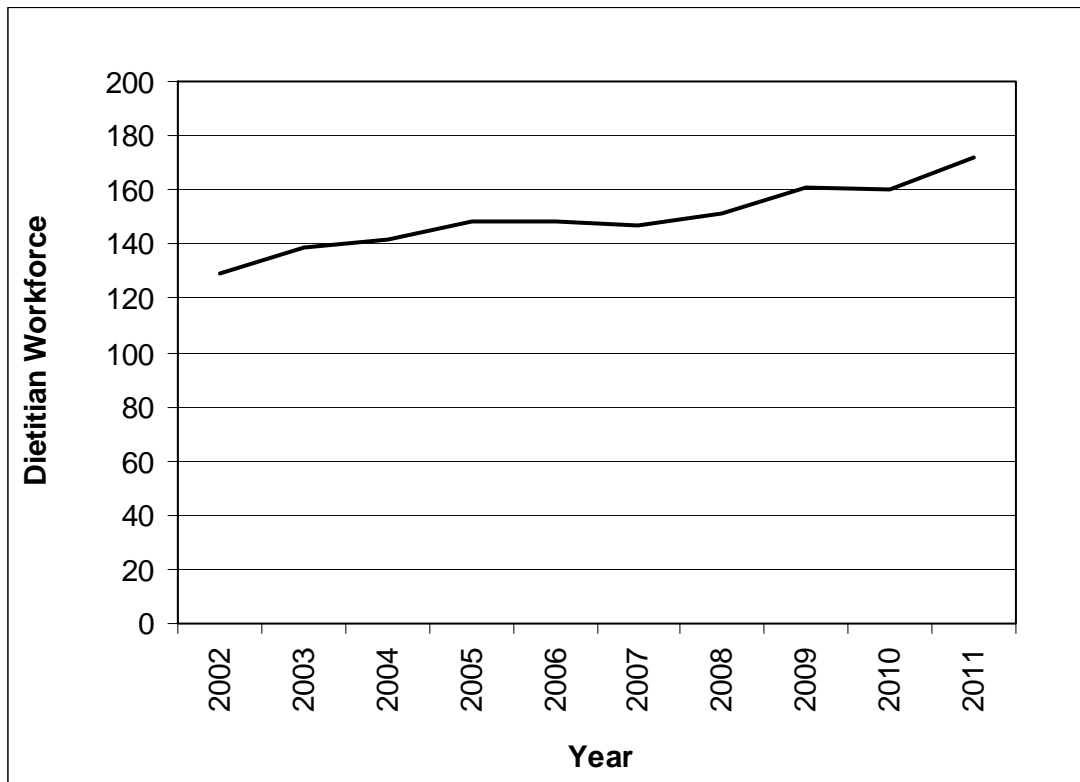
Notes:

1. The year shown represents the fiscal year. For example, 2000 refers to fiscal year 2000/01. This naming convention is used throughout the remainder of this report.
2. Per cent change refers to the per cent growth or decline, as compared to the previous year.

The average workforce growth from 2002 to 2011 has been 3.3 per cent each annually, with a range from -0.7 per cent decline to 7.8 per cent growth. Note that as of October 2, 2012, 11 Dietitians reported their employment status as “unemployed”, or six per cent of 172 practicing licenses, using the 2011 registration data.

<sup>5</sup> Data obtained from the NLCD represent the count of individuals having practicing licenses at any time in the licensure year referenced.

**Figure 1. Provincial Dietitian Workforce Historical Trends.**



Source: Newfoundland and Labrador College of Dietitians.

The number of Dietitians per 100,000 population is 17 per cent higher in NL than in Canada. Data are shown in Table 2. Data for other health occupations are provided for the purpose of comparison.

It is probable that historical workforce growth shown in Figure 1 has been supported by the ongoing undergraduate Dietetics Program at Memorial University. Discontinuation of the program in 2008 did not affect graduate output until 2011.

**Table 2. Health Professionals per 100,000 Population, Canada and NL 2011.**

Occupation	Number per 100,000 Pop.		Per Cent More or Less (NL compared to Canada)	
	Canada	NL		
Nurse Practitioners	8	21	163%	<b>More in NL</b>
Licensed Practical Nurses	244	485	99%	
Medical Laboratory Technologists	57	99	74%	
Registered Nurses	781	1,184	52%	
Pharmacists	94	127	35%	
<b>Dietitians</b>	<b>29</b>	<b>34</b>	<b>17%</b>	
Physicians	209	231	11%	
Occupational Therapists	39	34	-13%	<b>Less in NL</b>
Respiratory Therapists (note 1)	29	25	-14%	
Physiotherapists	51	43	-16%	

Notes:

1. Discipline not regulated consistently across Canada. Interpret data with caution.
2. Source: CIHI Canada's Health Care Providers 2011 Provincial Profiles: A Look at 24 Health Occupations.

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 employment status, 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 Dietitians).

Professional per population ratios should be viewed with caution particularly in a sparsely distributed population, as is the case in Newfoundland and Labrador

## 4.2. Regional Health Authority Workforce

RHAs employed 68 per cent of all Dietitians in the province, or 114, in 2011/12. Detail by RHA is provided in Table 3:

**Table 3. Dietitians by Employer.**

<b>Employer (2011)</b>	<b>Count<sup>1</sup></b>	<b>Per Cent</b>
Eastern Health	65	38.9%
Western Health	25	15.0%
Central Health	17	10.2%
Labrador-Grenfell Health	7	4.2%
<b>Total</b>	<b>114</b>	<b>68.3%</b>
Other or Unknown	53	31.7%
<b>Grand Total</b>	<b>167</b>	<b>100%</b>

Source: Newfoundland and Labrador College of Dietitians.

Note:

1. Data do not match Table 1 (for year 2011) because five individuals were excluded as they did not grant permission to use their data.

### 4.3. Demographics

Comparing the average per cent distribution of Dietitians among five age categories in eight provinces, Dietitians in Newfoundland and Labrador have a younger age distribution. Data are shown in Table 4:

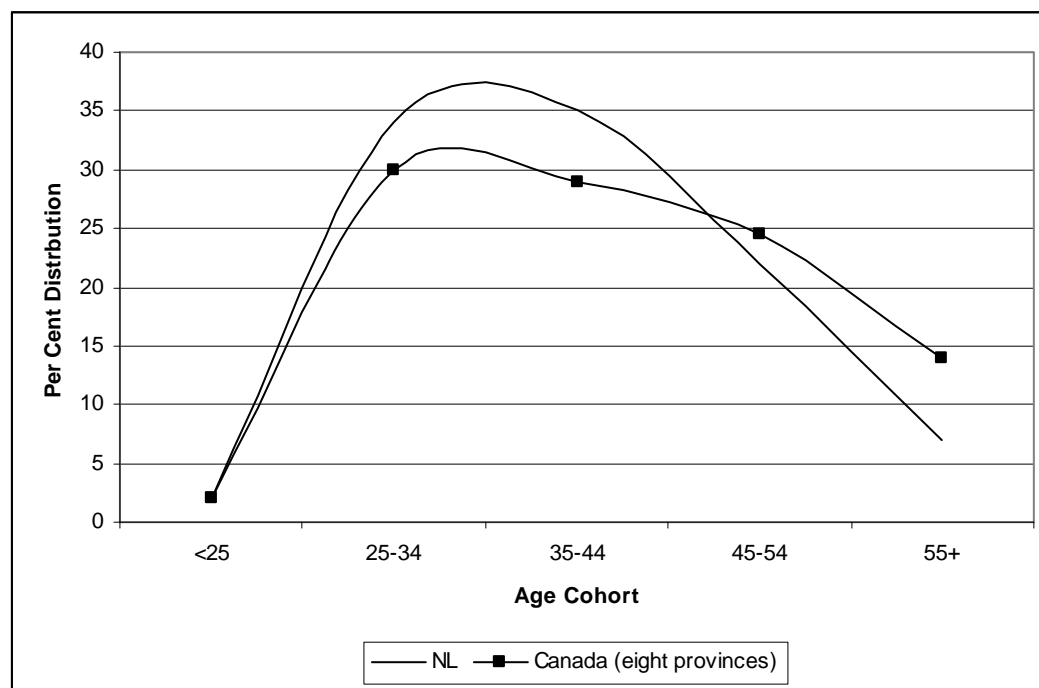
**Table 4. Dietitians NL and Canada: Age Distribution.**

<b>Age Group (2010)</b>	<b>NL (%)</b>	<b>Canada (%)</b>
<25	2	2
25-34	34	30
35-44	36	29
45-54	22	25
55+	7	14
<b>Total</b>	<b>100</b>	<b>100</b>

Source: CIHI Canada's Health Care Providers 2010 Provincial Profiles: A Look at 24 Health Occupations.

Graphically, the age distribution for Newfoundland and Labrador Dietitians is shown in Figure 2:

**Figure 2. Provincial Dietitian Workforce Age Distribution 2011.**



Source: CIHI Canada's Health Care Providers 2010 Provincial Profiles: A Look at 24 Health Occupations.

The average age of Dietitians with practicing licenses in Newfoundland and Labrador as of January 2012 was 40 years. Estimating using CIHI data as referenced as the source for Table 4, the average age in Newfoundland and Labrador in 2010 was about 40 years, while in Canada the average age was about 42 years.

#### 4.4. Vacant Positions

Over the past six years, external recruitment postings for Dietitians in RHAs only are as follows:

**Table 5. Dietitian Vacancies.**

Position	2007/08		2008/09		2009/10		2010/11		2011/12		2012/13		Average
	April	Oct	April	Oct	April	Oct	April	Oct	April	Oct	April	Oct	
Dietitian Vacancies	2	0	0	3	3	2	0	0	1	5	3	2	2

Source: Department of Health and Community Services Vacancy Surveys 2008/09 – 2012/13.

On average, two Dietitian positions were posted externally by RHAs during each collection period over the past six years. Of the 21 postings, 10 were for permanent positions and 11 were for temporary/casual positions. Caution is noted that these may not represent 21 separate positions as some vacancies will carry over collection periods. The average vacancy period is three months.

Internal recruitment postings reflect normal turnover and movement within an organization, and are not included in this analysis. External recruitment postings do not reflect all staffing needs and only represent a proportion of total health system vacant positions. It is possible however, that a position may be vacated for a period of time due to illness / injury / other leave, and the RHA will not advertise the position externally. Rather, the RHA may choose to backfill the position with relief staff or overtime.

The vacancy rate for Dietitians is about 1.8 per cent, or the average number of vacant positions (2) divided by an RHA workforce of 114. Provincially, if the vacancy rate is similar in the private sector, this would mean an average of three vacant positions. Past experience shows this may never be expected to reduce to zero. Additionally, balancing workforce supply and demand generally involves long term decisions, while the number of vacant positions can change daily for any number of reasons. RHAs indicate there are currently no recruitment issues for dietitians. For these reasons, the average number of vacant positions is not factored into the workforce model.

## **5. Demand**

For the purpose of this document, demand is defined:

*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.*

### **5.1. Replacement Demand**

Replacement demand is simply the number of qualified workers an employer needs to replace those leaving the organization. This is not to be confused with relief staff for day-to-day scheduling issues. If this component of demand is met, the workforce will be sustained, but growth or decline in overall workforce numbers will not be considered. This section examines replacement demand only, which can be equated to turnover.

To determine turnover at the provincial level, record-level data from the NLCD were analyzed. In each transition from one licensure year to the next, there are three possibilities; individuals may:

- 1) Carry over from year 1 to year 2 (renewal)
- 2) Not carry over from year 1 to year 2 (exit)
- 3) Show up in year 2 and not in year 1 (entry)

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. Data for nine transitions from one licensure year to the next are provided in Table 6:

**Table 6. Provincial Dietitian Transitions: Counts.**

Licensure Year		Registration 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
2002/03	2003/04	126	120	6	16	10	136
2003/04	2004/05	136	128	8	11	3	139
2004/05	2005/06	139	137	2	8	6	145
2005/06	2006/07	145	137	8	8	0	145
2006/07	2007/08	145	135	10	9	-1	144
2007/08	2008/09	144	140	4	8	4	148
2008/09	2009/10	148	144	4	13	9	157
2009/10	2010/11	157	144	13	12	-1	156
2010/11	2011/12	156	151	5	16	11	167
<b>Average</b>		<b>144.0</b>	<b>137.3</b>	<b>6.7</b>	<b>11.2</b>	<b>4.6</b>	<b>148.6</b>
<b>Total</b>		<b>-</b>	<b>-</b>	<b>60</b>	<b>101</b>	<b>-</b>	<b>-</b>

Source: Newfoundland and Labrador College of Dietitians.

An example is provided to illustrate the transition from one licensure year to the next: In licensure year 2009/10, there were 157 Dietitians. Of these, 144 renewed their license in 2010/11, while 13 Dietitians did not register in 2010/11. A total of 12 registered in 2010/11 that were not registered in 2009/10 (though they may have been in earlier years). The net change of -1 brought the total count of Dietitians to 156 in 2010/11. Using column labels,  $C = D + E$  and  $G = F - E$  and  $H = C + G$ .

Data are shown as per cents in Table 7:

**Table 7. Provincial Dietitian Transitions: Per Cent.**

Licensure Year		Registration 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
2002/03	2003/04	126	95.2%	4.8%	11.8%	8.3%	136
2003/04	2004/05	136	94.1%	5.9%	7.9%	2.3%	139
2004/05	2005/06	139	98.6%	1.4%	5.5%	4.4%	145
2005/06	2006/07	145	94.5%	5.5%	5.5%	0.0%	145
2006/07	2007/08	145	93.1%	6.9%	6.3%	-0.7%	144
2007/08	2008/09	144	97.2%	2.8%	5.4%	2.9%	148
2008/09	2009/10	148	97.3%	2.7%	8.3%	6.3%	157
2009/10	2010/11	157	91.7%	8.3%	7.7%	-0.7%	156
2010/11	2011/12	156	96.8%	3.2%	9.6%	7.3%	167
<b>Average</b>		<b>144.0</b>	<b>95.4%</b>	<b>4.9%</b>	<b>7.6%</b>	<b>3.3%</b>	<b>148.6</b>

Source: Newfoundland and Labrador College of Dietitians.

Exits shown above represent an average provincial turnover rate of 4.9 per cent. For the purpose of the workforce model, a turnover rate of 4.9 per cent is used to represent replacement demand.

The Dietitian workforce is aging, and it is recognized that retirement trends are increasing. It is necessary to consider and incorporate these trends yet data on exact numbers of retirements in the past are not readily available i.e. it is not possible to isolate these individuals' data from general turnover data.

Past analysis of several health professional groups shows the average age of retirement is an estimated 58 years old. Analysis presented here involves artificially retiring every individual as they turn 58 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. Committee members discussed the possibility of the actual average age of retirement being older than 58 years, however this does not affect the trend for the purpose of workforce modeling.

There were seven Dietitians aged 58 years or older and still registered with the NLCD, however these individuals are not considered in the trending of retirements because they are thought to 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, it would be false to reduce that cohort to 0.

The number of Dietitians already 58 (having reached age 58 by 2012 or earlier) and those turning 58, by year, are shown in Table 8:



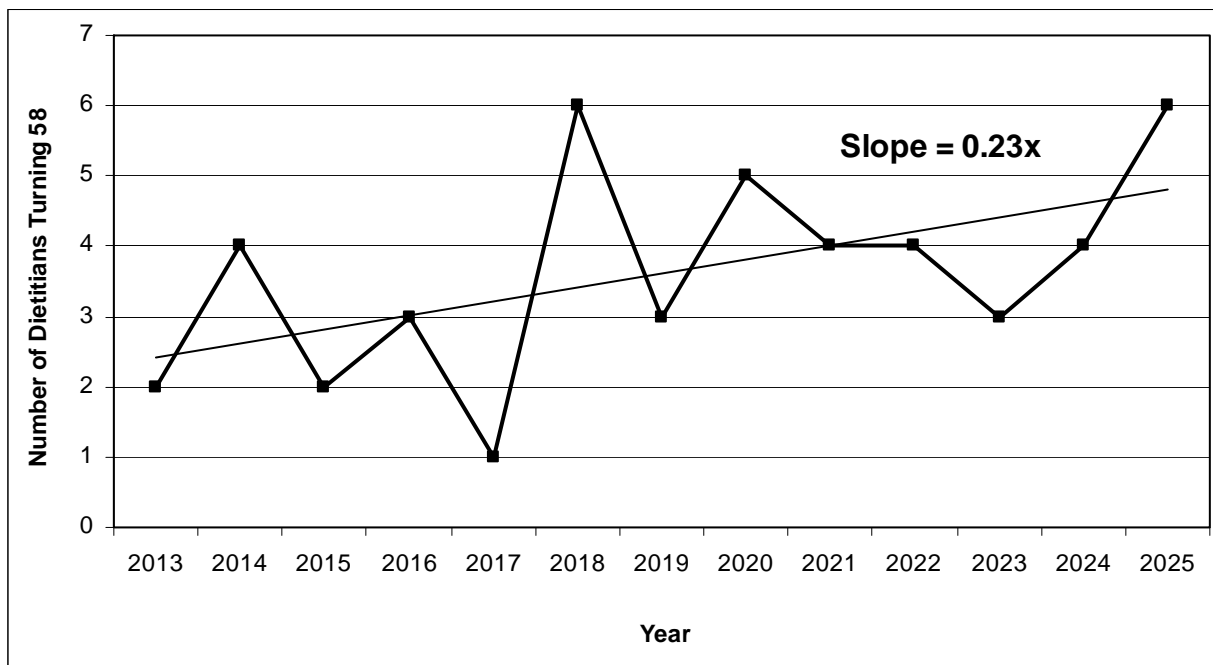
**Table 8. Estimated Retirements Provincial Dietitian Workforce (Age 58 Assumption)**

Year	Number of Dietitians Turning 58
<i>2012 or earlier</i>	7
2013	2
2014	4
2015	2
2016	3
2017	1
2018	6
2019	3
2020	5
2021	4
2022	4
2023	3
2024	4
2025	6
<i>2026 or later</i>	113
<b>Total</b>	<b>167</b>

Source: Newfoundland and Labrador College of Dietitians.

Graphically figures from 2013 to 2025 are shown in Figure 3:

**Figure 3. Estimated Retirements Provincial Dietitian Workforce (Age 58 Assumption)**



Source: Newfoundland and Labrador College of Dietitians.

Retirement trends appear to be rising when the average linear trend is considered, although this trend is slow at an estimated 0.23 Dietitians per year. To incorporate into the model as discussed, the slope of the line indicates an incremental change of 0.23 more Dietitians retiring than in the previous year. For example, if six retire in one year, one might expect (on average) that this would increase to seven over four years i.e.  $\frac{1}{4}$  more in each of the next four years.

To summarize, the model assumes a continued rate of 4.9 per cent turnover with an incremental retirement rate of 0.23 Dietitians annually.

## **5.2. Expansion Demand**

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

Average historical growth rates vary by profession. For example, the Social Work workforce has been growing in number at a rate of about 3.0 per cent (average annual compounding growth) for the past fifteen years. The Registered Nurse workforce has been growing by less than one per cent over the same timeframe.

As with all occupations, opportunities for improved workforce utilization (scope of practice, team mix, workflow, etc.) have the potential to stem some of this growth however there is usually no evidence to suggest that growth will not continue in the future. Trends in population needs for health services are widely accepted to be steadily growing.

The importance of workforce utilization is acknowledged and discussed in more detail later in this report. For the purposes of a workforce model and long-term decision making, an assumption(s) on workforce growth or decline is required.

Various factors contribute to the need for more or fewer Dietitians in the future. For example:

- Dietitians are needed to support actions and help meet targets within regional, provincial and federal healthy living initiatives such as the: Provincial Wellness Plan, Provincial Food and Nutrition Framework and Action Plan, Provincial Healthy Aging Policy Framework, Policy Framework for Chronic Disease Prevention and Management, Provincial Cancer Control Policy Framework, and National Framework to Promote Healthy Weights; and
- New positions may also be established, or eliminated, in the private sector.

## Historical Growth

### *United States*

A study commissioned by the Academy of Nutrition and Dietetics, in conjunction with the Commission on Dietetic Registration, of supply and demand for Registered Dietitians in the United States, indicated that: “Since 1991, the number of dietetics practitioners holding the Registered Dietitian credential has increased by an average annual rate of 2.3 per cent.”<sup>6</sup>

### *Canada*

Historical Dietitian workforce growth in Canada between 2000 and 2009 was approximately 3.6 per cent compounding annually<sup>7</sup>.

### *Newfoundland and Labrador*

In Newfoundland and Labrador, historical workforce figures for Dietitian workforce counts were provided earlier in Table 1 and Figure 1. Compounded on an annual basis, growth in the Dietitian workforce from 2000 to 2011 was 3.3 per cent.

To better understand growth, information was obtained from Eastern Health. In Eastern Health, Dietitians provide clinical nutrition service in all acute care sites, most long term care sites, and in a number of health centres and outpatient clinic settings. They also provide health promotion services within the Personal Care Home Program and in the community. Over the past five years, 6.3 FTE positions were created at Eastern Health. Areas of growth included:

- The management of eating disorders including the establishment of the Renata Elizabeth Withers Centre for HOPE;
- The Janeway Lifestyles Program, working with children who were identified as having a risk factor for development of chronic disease;
- Regional Diabetes and Regional Dialysis Programs;
- A new Bariatric Surgery Program; and
- Personal care homes

## Projected Growth

### *United States*

The United States Department of Labour, Bureau of Labour Statistics projects an overall increase in the number of Dietitians, from 2010 to 2020 of 20 per cent: “Employment of dietitians and nutritionists is expected to increase 20 percent from 2010 to 2020, faster than the average for all occupations<sup>8</sup>. This equates to a rate of about 2.0 per cent compounding annually.

### *Canada*

In Canada, Pharmacists, Dietitians and Nutritionists are combined for workforce projections. Over the 2010 to 2020 period, Human Resources and Skills Development Canada (HRSDC) projects an increase equivalent to 1.1 per cent compounding annually for these three occupations combined.

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<sup>6</sup> Downloaded from <http://www.ncbi.nlm.nih.gov/pubmed/22709865> January 28, 2013.

<sup>7</sup> Canadian Institute for Health Information, Canada’s Health Care Providers, 2000 to 2009 A Reference Guide.

<sup>8</sup> United States Department of Labour, Bureau of Labour Statistics, downloaded from <http://www.bls.gov/ooh/healthcare/dietitians-and-nutritionists.htm> October 30, 2012.

“Based on projections and considering that labour supply and demand in this occupation were balanced, it is expected that the number of job seekers will remain sufficient to fill the job openings over the 2011-2020 period.”<sup>9</sup>

#### *Newfoundland and Labrador*

Similarly, in Newfoundland and Labrador, Pharmacists, Dietitians and Nutritionists are combined for workforce projections. The Provincial Government’s Department of Advanced Education and Skills publication “Outlook 2020” indicated that for years 2011 to 2016 “Labour pressures are expected to tighten in these occupations. On average, anticipated labour imbalances will be on par with the overall average for all occupations” and for years 2016 to 2020 “It is anticipated that there will be enough workers available in the local labour market to meet anticipated demands over the next decade.”<sup>10</sup> Data in the same report indicates that there were 730 people in the combined workforce of Pharmacists, Dietitians and Nutritionists, and that growth would be 81 people from 2011 to 2020. This translates into an overall growth of 11 per cent or 1.2 per cent compounding annually, however Dietitians only comprise about one quarter of this group and their growth cannot be isolated.

Again, to better understand projected growth, information was obtained from Eastern Health. Based on analysis to date, Eastern Health has identified several areas with current and/or future need:

- Long Term Care based on increased workload, resident acuity, and increased prevalence of malnutrition and dysphagia;
- Acute care services including the Critical Care Program, Adult Rehabilitation Program and the Stroke Teams based on increased workload and new program development in line with the national stroke guidelines; and
- Outpatient and Community Services including Outpatient Pediatric Services, Adult Cystic Fibrosis, Regional Diabetes Services, Regional Dialysis Services, Pulmonary Rehabilitation, Adult Home Enteral Nutrition (tube feeding) and general Adult Outpatients that address a variety of other chronic diseases, based on workload and wait-times for services.

Eastern Health indicated that “Dietitians in the community setting could play a leadership role in the area of primary health care through health promotion, and disease prevention and treatment. Diseases like diabetes, heart disease and stroke are closely related to diet and physical activity. There are a number of skills and perspectives that Dietitians bring to primary health care and chronic disease prevention and management.”

Figure 4 shows actual Dietitian workforce numbers 2000 to 2011 for Newfoundland and Labrador, and three scenarios for workforce growth to 2026:

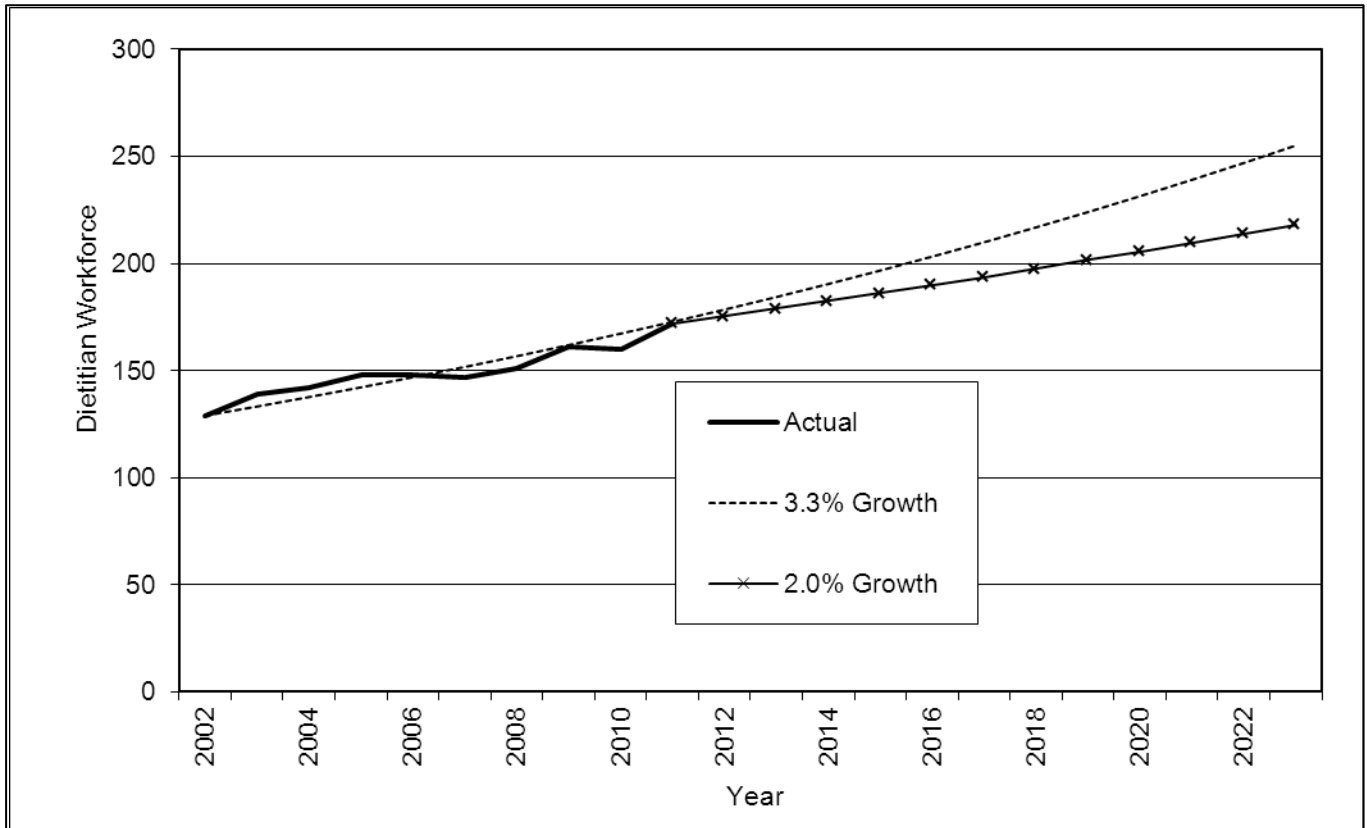
1. The trend if growth experienced since 2000 continues, or 3.3 per cent compounding annually; and
2. A growth rate of 2.0 per cent compounding annually.

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<sup>9</sup> Human Resources and Skills Development Canada Canadian Occupational Projection System (COPS) downloaded October 30, 2012 from <http://www23.hrsdc.gc.ca/w.2lc.4m.2@-eng.jsp?fbc=Y>.

<sup>10</sup> Government of Newfoundland and Labrador Department of Advanced Education and Skills, “Outlook 2020” downloaded from <http://www.aes.gov.nl.ca/publications/LMOutlook2020.pdf> October 30, 2012.

**Figure 4. Historical and Projected Dietitian Workforce Growth Scenarios.**



Source: Newfoundland and Labrador College of Dietitians and calculated workforce growth scenarios.

Numerically, these scenarios are shown below in Table 9.

**Table 9. Projected Dietitian Workforce Growth Scenarios.**

Year	Annual Compounding Growth Scenario	
	3.3%	2.0%
2011	172.0	172.0
2012	177.7	175.4
2013	183.5	178.9
2014	189.6	182.5
2015	195.9	186.2
2016	202.3	189.9
2017	209.0	193.7
2018	215.9	197.6
2019	223.0	201.5
2020	230.4	205.6
2021	238.0	209.7
2022	245.8	213.9
2023	253.9	218.1

For the purpose of the Dietitian workforce model, two growth rate scenarios are considered: 3.3 and 2.0 per cent compounding annually.

### 5.3. Workforce Utilization

Before concluding a discussion on demand it is important to highlight opportunities for improved workforce utilization. Improving utilization could lessen the demand for more Dietitians, or more realistically, allow them to provide more services.

RHAs indicate that absence due to injury or sickness for Registered Dietitians is low. The use of overtime is also generally considered low. For this reason, no discussion is included in this report on opportunities for improvement in these areas.

There may be opportunities to improve the productivity of Dietitians in RHAs. For example, the availability of support staff<sup>11</sup> for clinical and administrative support may allow Dietitians to expand their clinical focus. Improving processes and better organization and scheduling of the work may achieve the same effect.

<sup>11</sup> For example, The Diet Technician works in collaboration with the Registered Dietitian to assist with the nutrition care provided to patients and residents. Within their scope of practice, they may help the Dietitian with nutrition screening, interviewing for nutritional and dietary concerns and following up with individuals once nutrition care plans have been developed. This follow-up might include visitation for data to help with nutrition intake and consumption of any prescribed supplements. The diet technician is the link between Clinical Nutrition and Food Services. The technician updates computerized menu systems with food preferences, restrictions and other relevant information. There are currently no Diet Technicians in RHAs.

Useful frameworks are readily available for improving efficiency of health care. For example, the Scottish Government published an efficiency and productivity framework<sup>12</sup> for the safety, effectiveness, experience and responsiveness of health services. This and other frameworks describe a suite of opportunities for improving efficiency and improving Dietitian utilization.

There are always such opportunities within RHAs, but initiatives require careful analysis and implementation to be successful. That analysis is beyond the scope of this report. No allowance for improved workforce utilization is made in workforce projections presented here.

#### 5.4. Demand Summary

A summary showing the total Dietitian demand projections for each of 3.3 and 2.0 per cent growth for the period 2012 to 2022 are shown in Table 10 and Table 11 respectively:

**Table 10. Dietitian Demand Projections 2011 to 2021 at 3.3 Per Cent Growth.**

YEAR	WORKFORCE	DEMAND				Total Demand
		Replacement	Incremental Retirements	Expansion		
<i>Reference:</i>	<i>Section 5.2 Page 15</i>	<i>Section 5.1 Page 11</i>	<i>Section 5.1 Page 11</i>	<i>Section 5.2 Page 15</i>		
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F=C+D+E</b>	
<b>2011</b>	172	-	-	-	-	
<b>2012</b>	178	9	0	6	<b>15</b>	
<b>2013</b>	184	9	0	6	<b>15</b>	
<b>2014</b>	190	9	1	6	<b>16</b>	
<b>2015</b>	196	10	1	6	<b>17</b>	
<b>2016</b>	202	10	1	6	<b>17</b>	
<b>2017</b>	209	10	1	7	<b>18</b>	
<b>2018</b>	216	11	2	7	<b>19</b>	
<b>2019</b>	223	11	2	7	<b>20</b>	
<b>2020</b>	230	11	2	7	<b>21</b>	
<b>2021</b>	238	12	2	8	<b>22</b>	
<b>2022</b>	246	12	3	8	<b>22</b>	

<sup>12</sup> Available at <http://www.scotland.gov.uk/Resource/0039/00398705.pdf>

**Table 11. Dietitian Demand Projections 2011 to 2021 at 2.0 Per Cent Growth.**

YEAR	WORKFORCE	DEMAND				Total Demand
		Replacement	Incremental Retirements	Expansion		
<i>Reference:</i>	<i>Section 5.2 Page 15</i>	<i>Section 5.1 Page 11</i>	<i>Section 5.1 Page 11</i>	<i>Section 5.2 Page 15</i>		
A	B	C	D	E	F=C+D+E	
<b>2011</b>	172	-	-	-	-	
<b>2012</b>	175	9	0	3	<b>12</b>	
<b>2013</b>	179	9	0	4	<b>13</b>	
<b>2014</b>	183	9	1	4	<b>13</b>	
<b>2015</b>	186	9	1	4	<b>14</b>	
<b>2016</b>	190	9	1	4	<b>14</b>	
<b>2017</b>	194	9	1	4	<b>15</b>	
<b>2018</b>	198	10	2	4	<b>15</b>	
<b>2019</b>	202	10	2	4	<b>16</b>	
<b>2020</b>	206	10	2	4	<b>16</b>	
<b>2021</b>	210	10	2	4	<b>17</b>	
<b>2022</b>	214	10	3	4	<b>17</b>	



## 6. Supply

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

*Supply: Source of qualified workers.*

All sources of Dietitians are broken down into six categories:

**Table 12. Dietitian Supply: Categories.**

	Obtaining a Practicing License for First Time		Re-activating a Practicing License
	New Graduate	Experienced Dietitian	
<b>Educated in NL</b>	I	III	V
<b>Educated Outside NL</b>	II	IV	VI

Note that each entry (and exit) is treated as an independent occurrence. For example, a new graduate may obtain a practicing license upon graduation (one entry in category 1), renew for five subsequent years, have an absence of two years, and then return to the workforce (one entry, category 5).

The source of Dietitian supply is broken down in this manner to organize the discussion in the report and identify model inputs. These six categories are discussed in the report under three headings as follows:

Report Section	Page	Category	Description
6.1 Internal Supply	24	I	New graduates from the NL program, first time entries to NL.
6.2 External Supply	28	II, III, IV	New graduates from outside of the province and experienced Dietitians, first time entries to NL.
6.3 Returning Supply	29	V, VI	Dietitians reactivating a practicing license after an absence of one year or more.

From 2003/04 to 2011/12 there were 101 entries to the provincial Dietitian workforce. These entries are broken down by category as follows:

**Table 13. Dietitian Supply: Counts by Supply Category, 2003 to 2011.**

	<u>Obtaining a Practicing License for First Time</u>		<u>Re-activating a Practicing License</u>	Total
	New Graduate	Experienced Dietitian		
<b>Educated in NL</b>	35	15	1	<b>51 (50.5%)</b>
<b>Educated Outside NL</b>	31	17	2	<b>50 (49.5%)</b>
<b>Total</b>	<b>66</b>	<b>32</b>	<b>3</b>	<b>101 (100%)</b>

These entries are organized in groups as follows:

**Table 14. Dietitian Supply: Counts and Per Cents by Group, 2003 to 2011.**

Report Section	Number of Entries	As a Per Cent
6.1 Internal Supply	35	35%
6.2 External Supply	63	62%
6.3 Returning Supply	3	3%
<b>Total</b>	<b>101</b>	<b>100%</b>

Regardless of category, the overall breakdown of supply by province of education and province of internship is shown in Table 15.

**Table 15. Dietitian Supply: Province of Education and Province of Internship, 2003 to 2011.**

Province of Education	Province of Internship									Total	Per Cent
	NS	NL	ON	PEI	AB	NB	MB	QC	SK		
NL	12	26	5	1	2	3	1		1	<b>51</b>	<b>50%</b>
NS	29	5	2	3						<b>39</b>	<b>39%</b>
AB		1			3		1			<b>5</b>	<b>5%</b>
PEI				2						<b>2</b>	<b>2%</b>
NB					1					<b>1</b>	<b>1%</b>
ON			1							<b>1</b>	<b>1%</b>
QC								1		<b>1</b>	<b>1%</b>
Unknown	1									<b>1</b>	<b>1%</b>
<b>Total</b>	<b>42</b>	<b>32</b>	<b>8</b>	<b>6</b>	<b>6</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>101</b>	<b>100%</b>

The biggest single supply of Dietitians to the province has been those educated and interned in Nova Scotia. Many of these individuals are thought to be originally from Newfoundland and Labrador, although this information is not captured by the NLCD. To investigate this, a list of 171 Registered Dietitians was obtained from the NLCD website on November 7, 2012. Committee members reviewed the names and identified 128 (75 per cent) who were originally from the province, 29 (17 per cent) who were not, and 14 (8 per cent) were unknown.

Discussion on each supply category follows.

### 6.1. Internal Supply

Internal supply refers to new graduates from programs within the province obtaining a practicing license for the first time. Internal supply is represented by Category I in the table below:

	Obtaining a Practicing License for First Time		Re-activating a Practicing License
	New Graduate	Experienced Dietitian	
<b>Educated in NL</b>	I	III	V
<b>Educated Outside NL</b>	II	IV	VI

From 1975 to 2008, Memorial University offered an undergraduate Dietetics Program. The program accepted 10 students annually. Students completed three years at Memorial University and their final year through Acadia University in Nova Scotia. This was a popular program and students were selected through a competitive entry process. Students graduated with a Bachelors degree from Memorial University. Following an additional one year accredited internship program, individuals would be eligible to write the national certification exam.

The undergraduate Dietetics Program at Memorial University was discontinued in March 2008. In October 2010 Memorial University signed a five-year Memorandum of Understanding with Acadia University whereby students complete the first two years of an undergraduate Dietetics Program at Memorial, and complete the last two years at Acadia. Students will graduate from Acadia University.

Also, in June 2010, Memorial University established a Masters in Public Health program with a concentration in Dietetics (two seats annually). This program requires an undergraduate degree in Dietetics as a prerequisite. A summary of past and future seat capacities is shown in Table 16:

**Table 16. Dietetics Programs Seat Capacity 1975 – 2022.**

Year	Program Year				Potential Graduates	Potential Registered Dietitians	Notes
	Year 1	Year 2	Year 3	Year 4			
2004	M31	M31	M31	A31	10	10	Memorial/Acadia 3-1 Program started in 1975
2005	<b>M31</b>	M31	M31	A31	10	10	
2006	M31	<b>M31</b>	M31	A31	10	10	
2007	M31	M31	<b>M31</b>	A31	10	10	
2008		M31	M31	<b>A31</b>	<b>10*</b>	10	*Bold figures illustrate flow i.e. 3 years at Memorial 1 at Acadia, 1 year internship
2009			M31	A31	10	<b>10</b>	
2010	M2			A31	10*	10	*Last graduates from Memorial/Acadia 3-1 Program
2011	M22* M2	M2				10	*First year of Memorial/Acadia 2-2 Program.
2012	M22 M2	M22 M2			2*	2	* First Masters graduates
2013	M22 M2	M22 M2	A22		2	2	
2014	M22 M2	M22 M2	A22	A22	10* 2	2	*First graduates from Memorial/Acadia 2-2 Program
2015	M22 M2	M22 M2	A22	A22	10 2	10* 2	*First graduates from Memorial/Acadia 2-2 Program complete internship
2016	M2	M22 M2	A22	A22	10 2	10 2	
2017	M2	M2	A22	A22	10 2	10 2	
2018	M2	M2		A22	10* 2	10 2	*Last graduates from Memorial/Acadia 2-2 Program
2019	M2	M2			2	10* 2	*Last graduates from Memorial/Acadia 2-2 Program complete internship
2020	M2	M2			2	2	
2021	M2	M2			2	2	
2022	M2	M2			2	2	

**Table Key:**

- M31: The Memorial portion of the past arrangement between Memorial and Acadia  
A31: The Acadia portion of the past arrangement between Memorial and Acadia
- M22: The Memorial portion of the current arrangement between Memorial and Acadia  
A22: The Acadia portion of the current arrangement between Memorial and Acadia
- M2: The Masters Program at Memorial University (two years)
- Column heading “Potential Registered Dietitians” reflects the fact that new graduates from the Bachelor Program must obtain a one-year internship before becoming eligible to register. The two-year Masters Program includes internship

There will be no graduates from the discontinued undergraduate Dietetics Program at Memorial University in years 2011 to 2013 although there were graduates (ready to practice) from Memorial's two-year Master in Public Health Program.

The column labeled "Potential Registered Dietitians" shows the total potential internal supply, given the current arrangements.

Considering the lag between program start and finish and the length of the current agreement between Memorial and Acadia of five years, a supply of new graduates from the undergraduate program will be in place until 2019<sup>13</sup>. These graduates will have an Acadia University degree, but for the purpose of this report they are classified as internal supply. The Working Group raised a concern that the two years at Acadia may negatively affect Dietitian recruitment and retention in our province.

Scenarios for seat capacities will assume seats are established in 2015 and a program would be four-years in length, therefore graduates in 2019 will finish their internship in 2020, coinciding with the effective end of the current arrangement with Acadia from the previous year.

Anecdotal evidence suggests student attrition from the program is a rare occurrence<sup>14</sup>. For the purpose of the workforce model, it is assumed there will be no student attrition.

Table 13 shows that from 2003 to 2011, internal supply has accounted for 35 of 101 entries or 35 per cent. Assuming no program attrition, 10 graduates per year from 2003 to 2011, and assuming also that they would have met registration requirements, this totals 90 graduates. Therefore an estimated 35/90 or 39 per cent of our total internal supply was retained.

### **Internship Positions**

In addition to a Bachelors degree from an accredited university program, Dietitians must also have supervised practical internship experience to become Registered Dietitians. There are two routes available for obtaining an internship, these are 1) an integrated undergraduate internship or 2) a post-degree internship.

If a student completes the integrated undergraduate internship then at end of their education they can apply to a regulatory body for registration as a Dietitian. However, for students who choose a post degree internship, this process involves applying for an internship through a separate process after completion of the university degree.

Students apply through Dietitians of Canada annual internship selection match process. The employer (usually hospital-based) interviews and ranks applicants to internship positions. Interns also rank their preferred matches based on the interviews. Matches are then decided through a computerized selection process managed by Dietitians of Canada. If a student is unsuccessful in the match process the first time, they have two additional attempts over the next two years after which they may have to upgrade their education.

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<sup>13</sup> The Memorial/Acadia 2-2 Program currently has nine students in year three. Full enrollment is projected for first-year intake in 2014.

<sup>14</sup> Personal communications B. Roebothan Faculty of Medicine, Memorial University, November 6, 2012.

Dietitians of Canada indicates that about 50 per cent of all graduates originate from integrated programs. The remaining 50 per cent of students must apply for an internship position as described. Dietitians of Canada indicates there are only half as many graduate internship positions available as there are applicants for these post graduate internship positions. This means some new graduates often require two or more years to meet registration requirements.

The availability of internships is a bottleneck for the “pipeline to practice” for some graduates. The evidence suggests that the province would not have a problem filling internship seats, as long as internship capacity remains below required levels.

Eastern Health<sup>15</sup> provided data regarding their internship program from 2001 to 2012, summarized as follows:

- There have been 49 graduates of the internship program from 2001 to 2012;
- There are five internship positions in the province, four in Eastern Health and one in Central Health. The number of applications received by Eastern Health was normally in the range of 25 to 30 for the four positions. About 75 per cent of the applicants would be people from this province and it was usual to get applications from most of the 10 graduating Memorial/Acadia graduates;
- Each internship seat requires 0.1 of a full time equivalent (FTE) coordination position. In Eastern Health this means a 0.4 FTE coordinator position is in place related to the four internship seats. The internship component of the Masters seats is coordinated by Memorial University in collaboration with the Eastern Health internship coordinator. The internship placement in Central Health is part of ARAMARK Canada Internship Program.
- Eastern Health has a preference for graduates of the provincial program for two of the positions, provided selection criteria are met;
- Forty of the 49 internship positions were completed by students from this province, or 82 per cent;
- All of the graduates who were not originally from Newfoundland and Labrador left the province;
- A total of 29 of the 40 from Newfoundland and Labrador remained in the province;
  - Twenty three are working in positions that required a Dietitian; and
  - Five are working in other positions and one is currently not working.
- Eastern Health has experienced a decline in applications beginning in 2011 which may be related to the end of the old Memorial/Acadia arrangement. In 2012, nine of the 23 applicants were from this province and were graduates from Acadia, Mount Saint Vincent, University of Prince Edward Island, St. Francis Xavier, and Ryerson.

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<sup>15</sup> Personal communications M. Manojlovich Regional Director, Allied Health Professional Practice, Eastern Health, November 13, 2012.

There were 28 applicants for Eastern Health’s 2013-2014 internship Program. Five were from NL: three graduating from Acadia, one from St. Francis Xavier, and one from Mount St. Vincent. Other applicants and their province of residence include:

- Prince Edward Island: 2
- Ontario: 9
- Nova Scotia: 7
- New Brunswick: 4
- British Columbia: 1

This year’s internship applicant pool shows a low number of people from this province, and is likely related to gap in graduates shown in Table 16.

Integrated programs have guaranteed internship placements as part of the undergraduate degree program. Masters internship programs meet practicum requirements for Dietitian credentialing but selection is through a post-degree application process.

The availability of internship seats is clearly a key component of the “pipeline to practice”.

The workforce model assumes all seats will be filled, there will be no attrition, and 80 per cent of the Memorial/Acadia graduates will be successful in completing their internship placements and be available for employment as Registered Dietitians one year following the program.

## 6.2. External Supply

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

	Obtaining a Practicing License for First Time		Re-activating a Practicing License
	New Graduate	Experienced Dietitian	
<b>Educated in NL</b>	I	III	V
<b>Educated Outside NL</b>	II	IV	VI

Table 13 shows that from 2003 to 2011, external supply has accounted for 62 per cent of all workforce entries, or 63 individuals.

External supply by province of education is shown in Table 17:

**Table 17. Dietitian External Supply: By Province of Education, 2003 to 2011.**

Province of Education	Individuals	As a Per Cent
NS	38	60%
NL	15	24%
AB	5	8%
PEI	2	3%
QC	1	2%
NB	1	2%
ON	1	2%
<b>Grand Total</b>	<b>63</b>	<b>100%</b>

Given 63 individuals over nine years, average external supply has been seven annually.

Much of the external supply originated as graduates from our province, but they are classified as external supply because of the non-linear path from graduation to employment. Additionally, those educated in Nova Scotia represented nearly half of the supply but many of these people are thought to be from our province as described earlier. It appears that Nova Scotia has significant capacity given there are three separate Dietetic undergraduate program in that province at St Francis Xavier in Antigonish, Mount Saint Vincent University in Halifax, and Acadia University in Wolfville.

External supply represents the majority source of Registered Dietitians, but caution is noted regarding the difficulty in categorizing supply, especially the identification of our own graduates from others.

Workforce model assumptions on external supply are explained as required in the remainder of this report.

### 6.3. Returning Supply

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

	Obtaining a Practicing License for First Time		Re-activating a Practicing License
	New Graduate	Experienced Dietitian	
<b>Educated in NL</b>	I	III	<b>V</b>
<b>Educated Outside NL</b>	II	IV	<b>VI</b>

These Dietitians exit the workforce for many reasons; to raise children, care for another person, pursue further education, and other reasons. These Dietitians are included in turnover figures and when they return to the workforce, should be considered as a source of supply.

Table 13 shows that from 2003 to 2011, they were three entries categorized as returning supply. Some returning Dietitians can be expected in the future. The workforce model adds one entry each three



years to account for returning supply. This is based on three re-activations over the past nine years or one each three years.

The Steering Committee noted that many Dietitians were initially “grandfathered” when registration was introduced in the province. There are exam implications for license renewal for any “grandfathered” Dietitians who lapse their license. This may be one reason behind the low numbers of returning Dietitians i.e. they do not let their licenses lapse.

#### 6.4. Supply Summary

The categorization used in this document for workforce modeling shows the historical source of Dietitians to the workforce as 35 percent internal and 62 per cent external and 3 per cent returning.

A Dietitian supply projection is shown in Table 18 (figures are rounded to the nearest integer):

**Table 18. Dietitian Supply Projections 2011 to 2022 (Existing Seat Capacity).**

YEAR	WORKFORCE (based on 3.3% Growth)	SUPPLY				Total Supply
		Internal		External	Returning	
Reference:	Section 5.2 Page 15	Section 6.1 Page 24		Section 6.2 Page 28	Section 6.3 Page 29	
A	B	Seats <sup>1</sup>	G	H	I	J=G+H+I
2011	172	-	-	-	-	-
2012	178	2	2	13	0	15
2013	184	2	2	13	1	16
2014	190	2	2	14	0	16
2015	196	10+2	10	7	0	17
2016	202	10+2	10	7	1	18
2017	209	10+2	10	9	0	19
2018	216	10+2	10	9	0	19
2019	223	10+2	10	9	1	20
2020	230	2	2	7	0	8
2021	238	2	2	7	0	9
2022	246	2	2	7	1	10

Notes

1. Graduates from Bachelor seats actually occur one year earlier but a one-year internship is mandatory before registration to practice. Seats also include two graduates from the Masters Program at Memorial University.
2. Historical average external supply has been seven annually. It is assumed that there is sufficient external supply to meet demand from 2013 to 2019 (3.3 per cent growth scenario). This is explained more fully following this table. From 2020 to 2022 external supply is assumed to remain at the historical average of seven annually.
3. Integers may not appear to add correctly due to rounding.

The summary was constructed such that the total supply (internal and external) matches the total demand for the period 2013 to 2019 shown in Table 10:

- For the years 2012 to 2014: the range of 13 to 14 external supply is double the historical average of seven annually. This is assumed because there appears to be many Dietitians available for employment, and enough to meet demand; Eastern Health<sup>16</sup> reported that they had 17 qualified applicants for an externally posted Clinical Dietitian position. Four of these applicants were from out of province and were just finishing their internship and entering the workforce for the first time, while the other 13 were currently in the province. There is clearly a strong supply of Dietitians at present. This is also demonstrated later in this report in Table 23 on page 36.
- For years 2015 to 2019: the province will again have 10 graduates annually (allowing for a one-year internship) supplemented by external supply, and sufficient supply to meet demand.

As previously described, assumptions are that all seats will be filled and there will be no attrition, and 80 per cent of the Memorial/Acadia graduates will be successful in completing their internship placements and be available for employment as Registered Dietitians one year following the program (80 per cent of “Potential Registered Dietitians” column in Table 16 on page 25).

Caution is noted in assuming external supply may meet some or all our needs in 2020 and beyond:

1. Existing seat capacity in other provinces may not be sustained. A dependence on external seat capacity is risky because there would likely be no advance warning of cuts to capacity, resulting in the province being left with a gap in supply while alternate arrangements are made. Also, there is no guarantee that people from our province will continue to enroll in external programs, or that graduates will be attracted to our province;
2. A strong internship program is required for effective recruitment of Dietitians, regardless of any arrangements for dedicated supply in 2020 and beyond. However, if more internship seats (or more integrated programs) become available across Canada, internship seats in our province, without a dedicated supply of new graduates, could fail to attract sufficient numbers; and
3. The volume required in 2020 and beyond is significantly more than have been recruited to the province in the past.

A summary comparing projected Dietitian supply and demand (assuming current seat capacities, non-renewal of the Memorial/Acadia arrangement, continuation of historical level of external supply, and two growth scenarios) is shown next in Section 7. Scenarios with added seats are also shown.

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<sup>16</sup> Personal communications M. Manojlovich Regional Director, Allied Health Professional Practice, Eastern Health, February 6, 2013.

## 7. Provincial Workforce Model

The first scenario presented here represents the case of carrying on with existing arrangement only. It assumes 3.3 per cent growth, current seat capacities, non-renewal of the Memorial/Acadia arrangement, and continuation of historical levels of external supply. Results are shown in Table 19. A gap is projected for years 2020 to 2022. This scenario holds external supply at historical levels for those years.

**Table 19. Dietitian Workforce Projections 2012 to 2022 (3.3% Growth, No Program).**

YEAR	WORKFORCE	DEMAND				SUPPLY					PROJECTED GAP (In each year. positive value means surplus)
		Replacement	Incremental Retirements	Expansion	Total Demand	Internal		External <sup>1</sup>	Returning	Total Supply	
Ref:	Section 5.2 Page 15	Section 5.1 Page 11	Section 5.1 Page 11	Section 5.2 Page 15		Section 6.1 Page 24		Section 6.2 Page 28	Section 6.3 Page 29		
A	B	C	D	E	F=C+D+E	Seats	G	H	I	J=G+H+I	K=J-F
2011	172	-	-	-	-	-	-	-	-	-	-
2012	178	9	0	6	15	2	2	13	0	15	0
2013	184	9	0	6	15	2	2	13	1	16	0
2014	190	9	1	6	16	2	2	14	0	16	0
2015	196	10	1	6	17	10+2	10	7	0	17	0
2016	202	10	1	6	17	10+2	10	7	1	18	0
2017	209	10	1	7	18	10+2	10	9	0	19	0
2018	216	11	2	7	19	10+2	10	9	0	19	0
2019	223	11	2	7	20	10+2	10	9	1	20	0
2020	230	11	2	7	21	2	2	7	0	8	-12
2021	238	12	2	8	22	2	2	7	0	9	-13
2022	246	12	3	8	22	2	2	7	1	10	-12

### Notes

1. It is assumed that there is sufficient existing supply to meet demand for 2012 to 2019
2. See Section 6.4 Supply Summary for assumptions and cautions regarding supply in 2020 and beyond.
3. Integers may not appear to add correctly due to rounding.

The primary reason for constructing a Dietitian Workforce Model is to determine an appropriate seat capacity, given an assumption that the province would want to become self-sufficient, recognizing that self-sufficiency includes some measure of external supply. A key question is: what level of external supply should be assumed? For the purpose of “backing out” external supply to determine the number of required seats, it is assumed that an average of one third of total demand would be satisfied by external supply in a steady state system where the majority of the supply came from internal seats i.e. an undergraduate program is in place.

The model shown in Table 20 was constructed by filling in external supply as described, and then inserting the required number of retained graduates to bring the gap to zero. An assumption is made that 80 per cent of all graduates from a program in this province would be available for hire one year after graduation. This allows a conversion from retained graduated to seat capacity (which must be higher). Table 20 shows a growth scenario of 3.3 per cent and Table 21 shows a growth scenario of 2.0 per cent.

**Table 20. Dietitian Workforce Projections 2012 to 2022 (3.3% Growth, With a Program).**

YEAR	WORKFORCE	DEMAND				SUPPLY					PROJECTED GAP <i>(In each year, positive value means surplus)</i>
		Replacement	Incremental Retirements	Expansion	Total Demand	Internal		External	Returning	Total Supply	
Ref:	Section 5.2 Page 15	Section 5.1 Page 11	Section 5.1 Page 11	Section 5.2 Page 15		Section 6.1 Page 24		Section 6.2 Page 28	Section 6.3 Page 29		
A	B	C	D	E	F=C+D+E	Seats	G	H	I	J=G+H+I	K=J-F
2011	172	-	-	-	-	-	-	-	-	-	-
2012	178	9	0	6	15	2	2	13	0	15	0
2013	184	9	0	6	15	2	2	13	1	16	0
2014	190	9	1	6	16	2	2	14	0	16	0
2015	196	10	1	6	17	10+2	10	7	0	17	0
2016	202	10	1	6	17	10+2	10	7	1	18	0
2017	209	10	1	7	18	10+2	10	9	0	19	0
2018	216	11	2	7	19	10+2	10	9	0	19	0
2019	223	11	2	7	20	10+2	10	9	1	20	0
2020	230	11	2	7	21	15+2	14	7	0	20	0 (see added seats)
2021	238	12	2	8	22	16+2	14	7	0	22	0 (see added seats)
2022	246	12	3	8	22	16+2	14	7	1	23	0 (see added seats)

Note: Integers may not appear to add correctly due to rounding.

Backing out the two Masters seats, the number of seats required in this scenario is 15 in 2020 to 16 in 2022 (see outlined boxes).

**Table 21. Dietitian Workforce Projections 2012 to 2022 (2.0% Growth, With a Program).**

YEAR	WORKFORCE	DEMAND				SUPPLY					PROJECTED GAP <i>(In each year, positive value means surplus)</i>
		Replacement	Incremental Retirements	Expansion	Total Demand	Internal		External	Returning	Total Supply	
Ref:	Section 5.2 Page 15	Section 5.1 Page 11	Section 5.1 Page 11	Section 5.2 Page 15	F=C+D+E	Section 6.1 Page 24	Section 6.2 Page 28	Section 6.3 Page 29	J=G+H+I	K=J-F	
A	B	C	D	E	F=C+D+E	Seats	G	H	I	J=G+H+I	K=J-F
2011	172	-	-	-	-	-	-	-	-	-	-
2012	175	9	0	3	12	2	2	11	0	13	0
2013	179	9	0	4	13	2	2	10	1	13	0
2014	183	9	1	4	13	2	2	12	0	14	0
2015	186	9	1	4	14	10+2	10	4	0	14	0
2016	190	9	1	4	14	10+2	10	4	1	15	0
2017	194	9	1	4	15	10+2	10	5	0	15	0
2018	198	10	2	4	15	10+2	10	6	0	16	0
2019	202	10	2	4	16	10+2	10	5	1	16	0
2020	206	10	2	4	16	11+2	10	5	0	16	0 (see added seats)
2021	210	10	2	4	17	12+2	11	5	0	17	0 (see added seats)
2022	214	10	3	4	17	11+2	10	6	1	17	0 (see added seats)

Note: Integers may not appear to add correctly due to rounding.

Backing out the two Masters seats, the number of seats required in this scenario is 11 in 2020 to 11 in 2022 (see outlined boxes).

To establish Dietitian retention in 2020, the first graduates need be in 2019; therefore the first year intake (assuming a four-year program) would need to be in 2015.

For the assumptions described in this report including two scenarios for workforce growth of between 2.0 and 3.3 per cent compounding annually, the seat capacity required to meet demand for Dietitians in 2022 is estimated to be between 11 and 16 seats with a first year intake required in 2015.

A simplified analysis of projected supply and demand is shown in Table 22:

**Table 22. Balance Sheet Approach: Dietitian Supply and Demand in 2022.**

Factor	Notes	Expressed as a Per Cent of the Workforce	
		2.0% Growth	3.3% Growth
Demand	Historic turnover	4.9%	4.9%
Growth	Scenario	2.0%	3.3%
<b>Total Demand</b>		<b>6.9%</b>	<b>8.2%</b>
External	1/3 of demand	2.3%	2.7%
Returning	None historically	0.0%	0.0%
Internal	Need this many to balance Total Demand	4.6%	5.5%
<b>Total Supply</b>		<b>6.9%</b>	<b>8.2%</b>
<b>Seats Needed</b>	Retain 80% of graduates as internal supply	$4.6\% / 0.8 = 5.8\%$	$5.5\% / 0.8 = 6.8\%$
<b>Workforce</b>	In year 2022	214 RDs	246 RDs
<b>Seats</b>	Need this many seats to retain 80%	$5.8\% \times 214 = 12 \text{ Seats}$	$6.8\% \times 246 = 17 \text{ Seats}$
<b>Undergraduate Seats</b>	Assuming the two Masters seats remain	<b>10 Seats</b>	<b>15 Seats</b>

This analysis does not replace the more comprehensive one shown in earlier tables; it is presented here as a simple check. These figures suggest a slightly lower seat capacity than calculated earlier (assuming the two Masters seats remain, then the undergraduate seat requirement is 10 to 15, compared to the range of 11 to 16 calculated earlier) because the retirement trend is not considered.

It is useful to compare training capacities across provinces on a consistent basis by dividing the number of graduates by the workforce they are intended to replenish and grow. This calculation is named the Training Capacity Indicator (TCI) and is being introduced in this report as a new indicator. This indicator supports capacity planning for all occupations, health-based or otherwise. Results are shown in Table 23:

**Table 23. Training Capacity Indicator: Dietetics Graduates 2011.**

Province	Graduates Integrated Programs	Graduates Non-integrated Programs	Total Graduates	Workforce	Training Capacity Indicator
	A	B	C = A + B	D	C/D
Prince Edward Island	10	13	23	68	33.8%
Nova Scotia	39	78	117	490	23.9%
Manitoba	22	24	46	412	11.2%
Ontario	29	238	267	3,331	8.0%
Saskatchewan	20	0	20	310	6.5%
Quebec	165	0	165	2,790	5.9%
New Brunswick	20	0	20	339	5.9%
Alberta	60	0	60	1,048	5.7%
British Columbia	32	0	32	1,148	2.8%
Newfoundland and Labrador	2	0	2	172	1.2%
Territories	0	0	0	33	0.0%
<b>Canada</b>	<b>399</b>	<b>353</b>	<b>752</b>	<b>10,141</b>	<b>7.4%</b>

Source: Dietitians of Canada.

Table 23 shows the number of graduates divided by the workforce they may enter. There was a large range of training capacities in 2011, from 0 to nearly 34 per cent of the workforce, averaging 7.4 per cent across Canada. It appears that Prince Edward Island and Nova Scotia had excess capacity in 2011, at 33.8 and 23.9 per cent respectively.

In 2011 there were 353 graduates from non-integrated programs, competing for approximately 160 internship seats (130 through the Dietitians of Canada matching process and 30 internship seats in Ontario for graduates of Masters programs). This is a significant pan-Canadian internship capacity issue.

The recommended range of 11 to 16 seats calculated earlier for NL equates to 5.1 and 6.5 per cent respectively (for workforce numbers projected in 2022), both below the 2011 Canadian average. If Nova Scotia and Prince Edward Island maintain strong capacity into 2020 and beyond, a seat capacity of 11 to 16 in NL might contribute to an over-supply situation.

## 8. Conclusions

Key conclusions follow:

### Workforce

1. Newfoundland and Labrador has a higher Dietitian per population ratio than the Canadian average, acknowledging that there are several limitations to these ratios;
2. The province has not experienced large vacancy rates for Dietitians in recent years;

### Demand

3. The Dietitian workforce has grown significantly since 2002 at an average of 3.3 per cent compounding annually. Continued growth is expected;
4. Dietitians in this province do not have significant retirement projections;
5. Dietitians play an important role in supporting regional, provincial and federal strategic health plans;

### Supply

6. Approximately half the supply of Dietitians to the province originated as graduates from our (past) program;
7. Approximately half of the supply of Dietitians to the province originated from programs outside of the province. Nova Scotia programs and internship seats have been the primary supply in this regard;
8. Every province other than NL currently has a Dietetics education program;
9. Nova Scotia and Prince Edward Island had strong dietetic program seat capacity in 2011;
10. It is unknown if current seat capacity in other provinces will remain in place;
11. There are too few internship positions in Newfoundland and Labrador, with five internship seats and 10 associated undergraduate program seats at Acadia;
12. There are too few internship positions in Canada, with an estimated 160 internship seats and 353 undergraduate seats in non-integrated programs;
13. Internship seats are a key consideration for Dietitian recruitment and the “pipeline to practice” and potential provincial seats should have matching internship capacity i.e. a potential program should be integrated;

### Provincial Workforce Model

14. Given no intervention i.e. no further arrangements besides those currently in place, there is no projected gap in the supply of Dietitians up to and including the year 2019;
15. If no program or any other arrangements are made for educating Dietitians, programs in other provinces may have sufficient capacity to supply Dietitians to meet provincial needs for 2020 and beyond, however there are several risks associated with this scenario; and
16. Given a desire for self-sufficiency in the supply of Dietitians, which includes some supply from external sources and other assumptions described in this report, seat capacity required to meet demand for Registered Dietitians from years 2020 to 2022 is estimated to be between 11 and 16 undergraduate seats starting in the year 2015. It would be prudent to consider the lower end of this range as a starting point for program planning, with options to further increase seat capacity if warranted.



## 9. Recommendations

- Recommendation 1. If a decision is made to initiate an undergraduate Dietetics Program, begin planning in September 2013 and enroll the first students in 2015 so they will be ready to enter practice in 2020.
- Recommendation 2. If a decision is made to initiate an undergraduate Dietetics Program, design for a seat capacity of 11. This assumes the continuation of the two Masters seats.
- Recommendation 3. If a decision is made to initiate an undergraduate Dietetics Program, design for an integrated program.
- Recommendation 4. If a decision is made to *not* initiate an undergraduate Dietetics Program, secure alternate arrangements for the future supply of Registered Dietitians. For example, continuation of the current Memorial/Acadia agreement, seat purchase agreements, or targeted recruitment.
- Recommendation 5. Refresh some or all of the data in the Dietitian Workforce Model in three to four years, or earlier if required.
- Recommendation 6. Establish a mechanism for engagement between Memorial University and stakeholders, including the Department of Health and Community Services, regarding future decisions on dietetic education programs.

## Appendix A: Terms of Reference

### Registered Dietitians Workforce Model Working Group

(A Working Group of the Dietetics Education and Training Steering Committee)

**Purpose:** A Registered Dietitian (RD) Workforce Model is required to support the main responsibility of the Dietetics Education and Training Steering Committee to determine an appropriate model for dietetics education and training for Newfoundland and Labrador.

**Scope:** The entire provincial RD workforce.

**Objective:** To develop a comprehensive RD Workforce Model that incorporates the following Supply and Demand factors:

<b>Replacement Demand (how many RDs are needed to simply maintain the current workforce?)</b>
<ul style="list-style-type: none"> <li>• Workforce requirements stemming from projected turnover. Turnover includes all employee separations, including retirements.</li> </ul>
<b>Expansion Demand (how many RDs will be required to meet current and future population needs and changing service delivery models?)</b>
<ul style="list-style-type: none"> <li>• Workforce requirements stemming from projected growth (or decline) in workforce size;</li> <li>• Incorporate discussion on population health needs, changing service delivery models, and opportunities to improve productivity<sup>17</sup>, where appropriate. A workforce model would not be a full analysis of population needs for RDs; rather it is an informed estimation of probable direction for future demand for RDs stemming from growth (or decline) in RD positions in any sector in the province. For example, several provincial plans and programs may increase the demand for RDs including but not limited to: Chronic Disease Strategy, Wellness Plan, National Framework for Action to Promote Healthy Weights, wellness grants, senior’s grants, cancer control grants, and recreation grants.</li> </ul>
<b>Supply (where are RDs coming from?)</b>
<ul style="list-style-type: none"> <li>• Supply includes all graduates from any source, probable attrition and graduate retention rates, and experienced RDs from here or outside the province. Also includes those re-entering the workforce, having held a previous license in the province.</li> </ul>

### Deliverables

- A written report including a recommended potential seat capacity to meet provincial needs, and potential recommendations related to any of the Supply and Demand Factors listed above.

### Membership

- Tracey Duder: Labrador-Grenfell Health
- Suzanne House: Central Health
- Mary Manojlovich: Eastern Health

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<sup>17</sup> Productivity is defined as the ratio of output to input. Output refers to a measure of the quantity/quality of services provided. Input refers to the resources used to provide those services, including human resources.

- Laeora Reba: Western Health
- Barbara Roebbothan: Memorial University Faculty of Medicine
- Marjorie Scott: NL College of Dietitians
- Cynthia Whelan: NL College of Dietitians
- Judy Jenkins: Regional Executive Director Atlantic, Dietitians of Canada
- Heather Hanrahan: Department of Health and Community Services
- Janine Woodrow: Department of Health and Community Services
- Andrew Wells: Department of Health and Community Services

**Accountability**

- This working group is accountable to the Dietetics Education and Training Steering Committee, and the Minister of Health and Community Services.

**Responsibilities:** (in addition to those listed in the Terms of Reference of the Dietetics Education and Training Steering Committee)

- A. Wells is responsible for report and workforce model development under the direction of the Working Group.
- All members are responsible for representing the interests of their organization, reviewing materials, providing constructive feedback in a timely manner, and final deliverables.

**Revision: August 29, 2012**