

The Future Nursing Workforce

Supply Projections 2010 – 2035



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Contents



List of Tables and Figures	2
1. Foreword	3
2. Summary	6
3. Introduction	9
3.1 Project Methodology	9
3.2 Report structure	10
4. Future workforce concerns	11
4.1 Workforce issues	11
4.2 Workforce influences	11
4.3 Previous workforce modelling and strategies	12
4.4 Economic modelling of workforce supply	12
5. The business as usual scenario	14
5.1 Background to scenario: the nurse workforce in 2010	15
5.2 Scenario results	20
5.3 Scenario assumptions	20
6. The supply of nurses grows due to population growth	24
6.1 Background to scenario educating nurses in 2010	25
6.2 Scenario results	29
6.3 Scenario assumptions	31
7. Graduate nurses increase to meet ageing population needs	32
7.1 Background to scenario	33
7.2 Scenario results	33
7.3 Scenario assumptions	36
8. An increase in internationally qualified nurses	38
8.1 Background to scenario: internationally qualified nurses	39
8.2 Scenario results	40
8.3 Scenario assumptions	42
9. New Zealand nurse graduates decrease	44
9.1 Background to scenario	45
9.2 Scenario results	46
9.3 Scenario assumptions	48
10. Conclusion	50
Appendix A: Technical tables	52
Appendix B: References	55

List of Tables

TABLE 11.1	RNs, gender, 2010	52
TABLE 11.2	ENs, gender, 2010	52
TABLE 11.3	RN employment by setting, 2010	52
TABLE 11.4	EN employment by setting, 2010	52
TABLE 11.5	RN employment by region, 2010	53
TABLE 11.6	EN employment by region, 2010	53
TABLE 11.7	RN enrolments, 2004-2010	53
TABLE 11.8	EN enrolments, 2004-2010	53
TABLE 11.9	Education providers by type, 2010	54
TABLE 11.10	RNs, self-identified ethnic group, 2010	54
TABLE 11.11	Ethnicity of graduate RNs, 2010	54
TABLE 11.12	Ethnicity of graduate ENs, 2010	54
TABLE 11.13	Graduate RNs, 2005-2010	54
TABLE 11.14	Internationally qualified nurses, 2010	54

List of Figures

FIGURE 1.1	Total nurse workforce, 2010, age profile, %	3
FIGURE 1.2	Nursing workforce supply modelling 2010-2035	4
FIGURE 1.3	Number of nurse graduates per year under supply modelling 2010-2035	5
FIGURE 5.1	RNs, gender, 2010	15
FIGURE 5.2	ENs, gender, 2010	15
FIGURE 5.3	RNs, age, 2010	16
FIGURE 5.4	ENs, age, 2010	16
FIGURE 5.5	RN employment by setting, 2010	17
FIGURE 5.6	EN employment by setting, 2010	18
FIGURE 5.7	RN employment by region, 2010	18
FIGURE 5.8	EN employment by region, 2010	19
FIGURE 5.9	Nursing supply modelling: Business as usual 2010-2035	20
FIGURE 5.10	Total nurse workforce, 2010, age profile, %	21
FIGURE 5.11	Total nurse workforce, change in age profile, 2035, %	22
FIGURE 6.1	RN enrolments, 2004-2010	26
FIGURE 6.2	EN enrolments, 2004-2010	26
FIGURE 6.3	Education providers by type, 2010	27
FIGURE 6.4	Ethnicity of graduate RNs, 2010	28
FIGURE 6.5	Ethnicity of graduate ENs, 2010	28
FIGURE 6.6	Graduate RNs, 2005-2010	29
FIGURE 6.7	Nursing supply modelling: Population growth 2010-2035	30
FIGURE 6.8	Total nurse workforce, age profile, 2035	31
FIGURE 7.1	Nursing supply modelling: Ageing population 2010-2035	33
FIGURE 7.2	Change in employment setting, RNs, ageing population 2035	35
FIGURE 7.3	Change in employment setting, ENs, ageing population 2035	35
FIGURE 7.4	RNs, private hospitals, 2010-2035	36
FIGURE 7.5	RNs, age profile, 2035	37
FIGURE 8.1	Growth in internationally qualified RNs, 2010-2035	41
FIGURE 8.2	RN age profile, %, 2035	41
FIGURE 8.3	Nursing supply modelling: Increase international nurses 2010-2035	42
FIGURE 8.4	Internationally qualified nurses, 2010	43
FIGURE 9.1	NZ graduates decrease, 2010-2035	45
FIGURE 9.2	Nursing supply modelling: NZ graduates decrease 2010-2035	47
FIGURE 9.3	NZ graduates decrease, age profile of total nurse workforce, 2020	47

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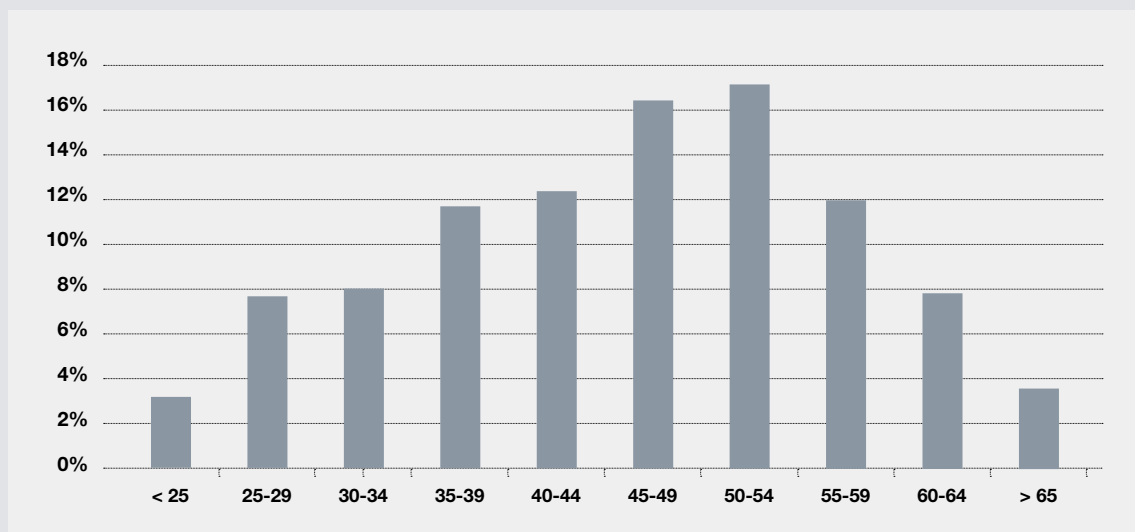
Foreword

Population factors such as ageing and increased life expectancy among the general population are expected to increase the demand for healthcare. Concern has been raised within the health sector about the future size, skills and attributes of the nursing workforce. These concerns are significant as nurses are the largest occupational group within the health sector and play a key role in the provision of health care.

In 2012 the Nursing Council of New Zealand (the Council) commissioned Business and Economic Research Limited (BERL) to undertake an analysis of the nursing workforce from 2010 to 2035 based on available workforce information and taking

into account predicted changes in New Zealand's population size and structure. By 2035 it is estimated there will be 5.26 million people living in New Zealand and a predicted increase in demand for health care based on an ageing population and lifestyle disease.

FIGURE 1.1 Total nurse workforce, 2010, age profile, %



As the nursing workforce is ageing it is predicted that over 50% of our present workforce will retire by 2035. Therefore the supply of nurses must replace the increasing numbers of nurses who are retiring and meet the extra demand for nurses as a result of population changes.

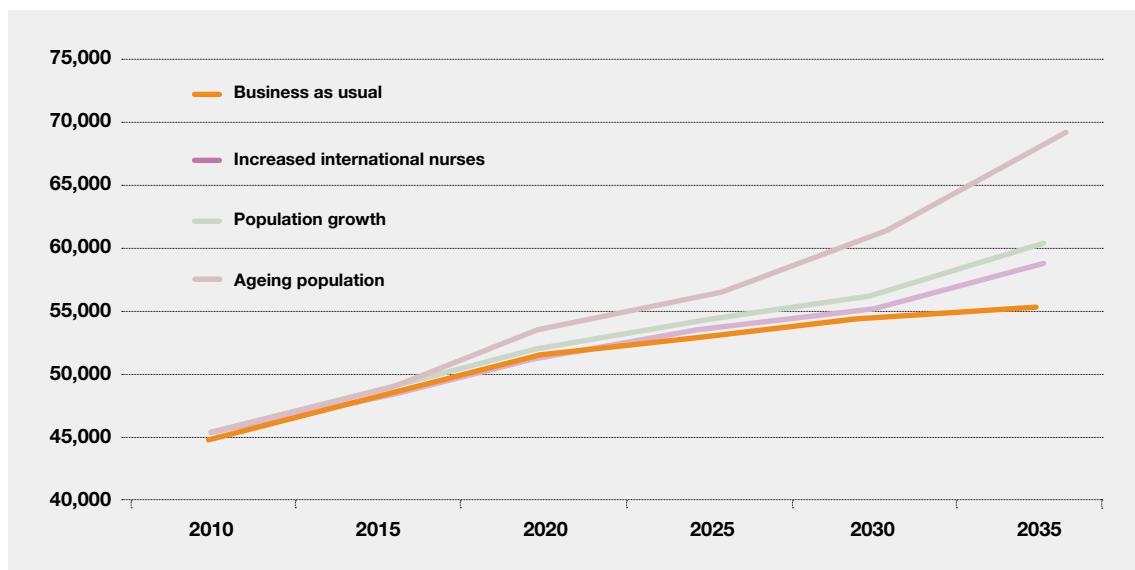
BERL developed four possible scenarios using economic modelling to illustrate how decisions made now about workforce supply are likely to impact on the size and makeup of the nursing workforce by 2035. Each scenario is compared to a business as usual (BAU) situation which is used as a benchmark to compare and measure the effects of assumed changes in behaviour or economic activity that are shown under the other four modelled scenarios.

Under a business as usual situation the number of domestic and international students enrolling and completing nursing qualifications remains constant, and the number of places available at New Zealand

nursing schools remains stable. The rate that nurses enter and leave the workforce continues at the same level as in 2010 and the proportion of overseas-trained nurses in the New Zealand nurse workforce remains the same towards 2035 as they were in 2010. Under this situation the supply of nurses does not allow New Zealand to maintain its existing nurse to population ratio by 2020 (Scenario 1: Population Growth) or meet any additional demand for nurses created by an increasing and ageing population (Scenario 2: Ageing population). The modelling illustrates the supply of nurses will need to increase substantially between 2020 and 2035.

Under a business as usual scenario the nursing supply will remain adequate until 2020 but then begin to diverge from health demand due to population growth and ageing resulting in a nursing shortage that will increase over the following 15 years to a shortage of 15,000 nurses by 2035.

FIGURE 1.2 Nursing workforce supply modelling 2010-2035



The option of increasing the proportion of internationally qualified nurses in the New Zealand workforce (Scenario 3: Increase international nurses) was also examined by BERL. This option assumes that New Zealand will be able to continue to attract an increased number of internationally qualified nurses (IQNs) from 2020 to 2035 when there is a worldwide demand for nurses. In recent years the country of origin of IQNs has changed significantly and further attention must be given to integrating these nurses into the New Zealand health system. New Zealand has relied on attracting a significant number of nurses from overseas to supplement New Zealand trained nurses since the 1990s but the attraction of nurses with the appropriate qualification

and competency required by the New Zealand health system and an appropriate fit with the New Zealand cultural environment is not guaranteed into the future. An increasing reliance on overseas nurses is likely to create a nursing workforce that does not reflect the ethnic makeup of the population. Also, on its own, this strategy will not maintain or improve the nurse to population ratio to meet the health demands of an increasing and ageing population.

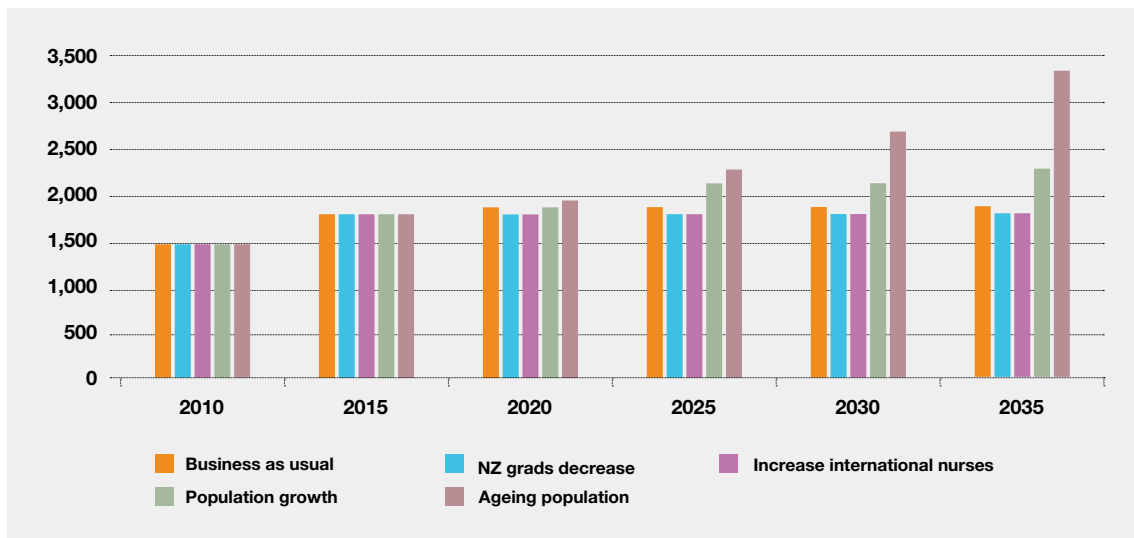
BERL has also explored the impact of fewer nurse graduates (Scenario 4: decrease NZ graduates) on the supply of nurses. This scenario illustrates that workforce supply is very sensitive to any changes to education EFTS¹ and that increasing capacity

¹ Equivalent full time students

to educate more nurses may be dependent on developing different models of clinical education and increasing investment in nurse education. The current nursing workforce does not reflect the changing ethnic composition of the New Zealand population. Further strategies are required to increase the proportion of Maori and Pasifika students enrolling in and completing nursing programmes.

Modelling provides decision makers with tools to examine the potential effects of workforce decisions. This modelling suggests that continuing with a business as usual approach to nursing workforce supply will not result in the nursing workforce New Zealand needs from 2020-2035. Existing constraints on nursing numbers, including limitations on the number of clinical placements for nursing students may contribute to nursing shortages.

FIGURE 1.3 Number of nurse graduates per year under supply modelling 2010-2035



This report provides some useful modelling tools but it does not address all the possible variables that will affect the supply of nurses. These variables include:

- + The potential for other countries such as Australia to attract more New Zealand nurses to relieve their own shortages,
- + New Zealand becoming less attractive to internationally qualified nurses if other countries such as the United Kingdom or the USA begin recruiting IQNs,
- + Strategies that would increase the retention of nurses such as improvements in working conditions or strategies aimed at older nurses or new nurses e.g. the NETP² programme,
- + Nursing could also become a less attractive career and fail to attract students as all occupations compete for younger workers, and
- + Some nurses may choose to leave the nursing workforce when the recession ends.

This report has not attempted to quantify health demand beyond looking at an increase in total population and in some age groups. Some of the other factors that may impact on the number of nurses needed in the future are changes in any

of the following: government spending on health, technology, health priorities, productivity, scopes of practice and the model of care.

The report also shows how the reinstatement of enrolled nurse education has had a positive effect on nursing supply and the importance of incorporating enrolled nursing into future models of care.

Workforce management in health is a challenging task. The Council believes this supply report will provide an increased understanding of the existing workforce and also enable the development of supply indicators that can be benchmarked against this modelling into the future.

The Council looks forward to continuing to work with government, educators and employers to develop the nursing workforce of the future.

Carolyn Reed
Chief Executive/Registrar

² Nurse Entry to Practice programme.

02

Summary

In 2010, there were approximately 45,460 nurses working in New Zealand. Of this number, approximately 42,330 were Registered Nurses (RNs) and 3,130 were Enrolled Nurses (ENs)³. Nursing is a female dominated occupation, and the District Health Boards are the largest employers of nurses in New Zealand.

Ageing and increased life expectancy among the general population has raised concerns within the New Zealand health sector about the future size, skills and attributes of the nursing workforce. These concerns are noteworthy as nurses are the largest occupation group within the New Zealand health sector, and play a key role in providing health care. These concerns have arisen because of a number of factors:

- + The number of nurses older than 40 is reported to be growing, while the inflow of people from younger age cohorts may not be balancing this growth.
- + The number of nurses likely to retire between now and 2035 is expected to be significant.
- + Attracting quality nurses from abroad to New Zealand may be difficult in the future due to an ageing workforce in many of the countries that New Zealand sources internationally qualified nurses from.
- + New Zealand RNs may be attracted overseas in greater numbers due to rising incomes in countries such as Australia and the Middle East.
- + The demand for health services will change to meet changing population health needs towards

2035. These health needs could include, but not be restricted to, the average age and changing ethnic mix of the population, the geographic dispersion of the population, lifestyle choices including diet and exercise, increased consumer expectations, and technological developments.

This project has used economic modelling to quantify the supply of nurses in New Zealand between 2010 and 2035. This modelling illustrates what could happen to the New Zealand nursing workforce if the number of graduate nurses was to increase, decrease, or to remain stable. It provides the Council with four scenarios that can be used to guide further discussions on workforce issues.

The four scenarios focus on:

1. Population growth

The number of graduate nurses grows to meet the demand for health care services caused by population growth. By 2035, it is estimated that there will be 5.26 million people living in New Zealand.⁴ The demand for health care services is therefore expected to grow as the population

³ For the purposes of this report, enrolled nurses and nurse assistants are referred to as enrolled nurses. Nurse assistants were retitled as enrolled nurses as at 31 May 2010.

⁴ This population projection assumes that the total fertility rate will decrease to 1.9 births per woman by 2026 then remain constant; life expectancy at birth will increase to 85.6 years for males and 88.7 years for females by 2061; and that annual net migration will see a gain of 10,000 people living in New Zealand from 2013. Statistics New Zealand. Population Projection Tables. (www.statistics.govt.nz/tools_and_services/tools/TableBuilder/populationprojections-tables.aspx).

increases. Some of this demand will be driven by the complex health needs of subsets of the population, while lifestyle factors, technology, and consumer choices may also influence the demand for nurses.⁵

The number of graduate nurses grows under this scenario from 1,430 nurses per annum in 2010, to 2,200 graduate nurses per annum in 2035. The number of nurses who complete their education programme to become an EN also grows during this period, but from a smaller base number.

Under this scenario, if the population grows to 5.26 million the number of RNs will need to grow from 42,330 nurses employed in 2010, to 54,660 RNs in 2035. In addition, the number of ENs will need to grow from 3,130 nurses in 2010, to 4,830 in 2035. An additional 493 RNs and 68 ENs will need to enter the workforce each year between 2010 and 2035 to maintain the 2010 nurse to population ratio of 10 nurses for every 1,000 New Zealanders⁶.

2. Ageing population

The number of graduate nurses grows to meet the health needs of those under the age of 15 and over the age of 65.

Under this scenario the health needs of the population grow in complexity due to an increase in chronic illness, and the prevalence of disease as the population ages. The demand for child and adolescent health services grows due to growing disparity and an increase in poverty.

The number of graduate nurses under this scenario grows from 1,430 graduates per annum in 2010, to 2,950 graduate nurses per annum in 2035. The number of nurses who complete their education programme to become an EN also grows during this period, but from a smaller base number.

Statistics New Zealand population projections indicate that people under the age of 15 and over the age of 65 could be between 40 and 45 percent of the total population in 2035. This projection is based on the number of people under the age of 15 growing from approximately 890,000 people in 2010 to 970,000 in 2035.⁷ In addition, the number of people over the age of 65 grows from 600,000 people in 2010, to 1.2 million in 2035. This projection is based on the total population reaching 5.26 million.

To meet the 2010 nurse to population ratio, an additional 865 RNs and 88 ENs will need to enter the workforce each year between 2010 and 2035.

This means, the total nurse workforce grows from 45,460 nurses in 2010, to 69,280 nurses in 2035.

Under this scenario the number of RNs grows from 42,330 employed in 2010, to 63,960 in 2035; while the number of ENs grows from 3,130 employed in 2010, to 5,325 in 2035. The greatest increase in RNs will occur between 2025 and 2030. During this period, the number of RNs will grow from approximately 51,395 nurses in 2025, to 56,320 nurses in 2030.

3. Increase international nurses

The number of internationally qualified nurses in the New Zealand workforce increases, and graduate nurse numbers remain stable.

The modelling indicates that in 2020 the number of RNs who graduate sits at 1,580. This figure is lower than the number of RN graduates under the business as usual scenario, at 1,600. This leads to a labour constraint, as the growing population creates a demand for health care services, and this demand is not met by nurses entering the workforce.

Instead this labour constraint is met by increasing the proportion of internationally qualified nurses working in New Zealand who meet the registration requirements. In 2010, approximately 25 percent of the RN workforce and 7.5 percent of the EN workforce were internationally qualified nurses. Under this scenario these proportions increase to 33 percent of the RN workforce and 10 percent of the EN workforce. From 2015, the number of internationally qualified RNs entering the New Zealand health workforce is expected to grow by 365 nurses per annum.

Under this scenario the number of RNs grows from 42,330 in 2010, to 52,880 in 2035, while the number of ENs grows from 3,130 in 2010 to 4,870 in 2035. This means by 2035, an estimated 57,750 nurses will be in the New Zealand health workforce.

4. New Zealand nurse graduates decrease

Under this scenario, the number of registered nurse graduates initially grows from 1,430 graduate nurses per annum in 2010, to 1,578 graduate nurses per annum in 2020. It then begins to decline and the number of graduates in 2035 (1,520) is lower than the number of nurses who complete their education programme under the business as usual scenario (1,722).

Under this scenario, the number of nurses employed in New Zealand grows from 45,460 in 2010, to 51,565 in 2035. The number of RNs grows from 42,330 in 2010, to 46,930 in 2035 while the number

⁵ Interview with Dr Jane O'Malley, Chief Nurse, Ministry of Health; Brenda Wraight, Director, Health Workforce New Zealand; Dr Kathy Holloway, Whitireia Community Polytechnic.

⁶ Nurse to population ratio is an indicator of the density of nurses within the health system and it allows comparisons with countries with similar health systems and within a health system over time. Higher densities have been associated with better health outcomes, better quality care and a more satisfied nursing workforce. See Simoens, S., Villeneuve, M. and Hurst, J. (2005).

⁷ Population projections on the number of children are more difficult to estimate due to uncertainty around the number of future births. Current population projections indicate that the number of children will increase, but not as fast as the older segment of the population.

of ENs grows from 3,130 in 2010, to 4,630 in 2035. Similar to the previous scenario, a labour constraint exists by 2020 as the number of graduate nurses declines and a growing population continues to create a demand for health care services.

However, unlike the previous scenario, in this scenario the labour constraint is not met by increasing the proportion of internationally qualified nurses working in New Zealand. Under this scenario the proportions remain at approximately 25 percent of the RN workforce and 7.5 percent of the EN workforce being internationally qualified nurses.

This means that while there is an overall increase in the total number of nurses employed, the number of nurses employed in this scenario in 2035 is lower than the other scenarios examined. In addition, a decline in the number of people enrolling and completing nurse qualifications impacts on the age profile of the total nurse workforce.

Exclusions and assumptions

These scenarios do not address the working conditions of nurses, nor how service delivery or models of care may change in the future. Further, the scenarios do not consider the gender or ethnicity of the future nursing workforce, and population growth is accounted for through increasing or decreasing the number of nurses employed in various settings.

The potential workforce issues that may arise from employing greater numbers of internationally qualified nurses from a broader range of countries are not addressed in the scenarios. But a labour constraint is met in one scenario by increasing the proportion of internationally qualified nurses employed in the New Zealand nursing workforce.

The results of the modelling therefore provide the Council with a vehicle for further discussion.

This project has focused on workforce supply because this is an area of influence of the Council. Other areas of influence include the education of student and graduate nurses, and public policy in health and education.

Each scenario is compared to a business as usual situation. This scenario is used as a benchmark to compare and measure the effects of assumed changes in behaviour or economic activity that are shown under the other four modelled scenarios.

Assumptions regarding each scenario are discussed in each section of the report. However, there are broad underlying assumptions that are important to each scenario.

These include:

- + The number of domestic and international students enrolling and completing nursing qualifications remains the same towards 2013 as they were in 2010, and the number of places available at New Zealand nursing schools remains stable.
- + The proportion of RNs and ENs working full and part-time remains the same in 2035 as it was in 2010. Working part-time is common, with over 50 percent of RNs and 65 percent of ENs working part-time in 2010. The rate that RNs and ENs enter and leave the workforce continues at the same level as in 2010.
- + The scopes of practice of RNs and ENs remain the same towards 2035 as they were in 2010.

03

Introduction

The Council commissioned BERL to undertake a workforce planning research project. The aim of this project is to assist the Council in their strategic response to workforce issues in the New Zealand health sector. The objective is to quantify the supply of registered (RN) and enrolled nurses (EN) between 2010 and 2035.

3.1 Project methodology

Qualitative and quantitative research methods were used in this three-stage project. Existing databases and official information was drawn on, and where data gaps exist, interviews with key stakeholders were undertaken.

Stage One: Quantitative and Qualitative Research

In stage one BERL profiled the current RN workforce in New Zealand, and identified potential supply and demand issues that may impact on this workforce towards 2035.

In this stage of the project, BERL compiled and assessed relevant employment, income, and turnover data. Here, the principal data source was the Council, but the authors also drew on data supplied by the New Zealand Nurses Organisation, and official data sources from Statistics New Zealand, the Ministry of Education, the Department of Labour, and Immigration New Zealand.

As the registering national authority, there is mandatory information that the Council must keep in respect of each nurse. This mandatory information includes name, qualification(s), scope(s) of practice and any change to the conditions in their scope of practice, whether the nurse holds an annual practising certificate and if this is an interim annual practising certificate, and if the nurse is subject to

any investigation. Some demographic information is collected with this mandatory information.

In regards to information on student enrolments, completions and attrition, BERL drew on official data from Education Counts at the Ministry of Education, and the Tertiary Education Commission. The authors also interviewed key stakeholders within tertiary education providers, and drew on data from them and the Nurse Education in the Tertiary Sector (NETS) graduate destinations surveys.

BERL reviewed relevant New Zealand public policy on health funding, tertiary education, workforce registration, and migration. The authors also interviewed key stakeholders in public policy, and within the Council and New Zealand Nurses Organisation.

BERL identified relevant international research on the health and nurse workforces, and any issues raised by this research that may be relevant in a New Zealand context. Here, they focused on demographic changes that could impact on the international demand for New Zealand-trained nurses, or the supply of internationally-trained nurses into the New Zealand workforce.

The authors also scanned the international literature for health workforce initiatives or strategies that may have arisen due to perceived or current registered nurse shortages.

Stage Two: Modelling Experiments

In stage two BERL undertook modelling experiments to project potential changes in the supply of RNs towards 2035. To undertake these experiments BERL established scenarios.

These scenarios posed 'what if' questions in regards to the future workforce and focused on nursing school enrolments and completions, the number of internationally qualified RNs working in New Zealand, the number of New Zealand-trained RNs working overseas, and changes in the patterns of work whereby RNs work more hours. These questions were generated from stage one of the research.

The results of these experiments were presented at workshops to the Council. As a result of feedback from these workshops, the original scope of the project was extended to include ENs.

This feedback was concerned with the number of ENs needed to supply the New Zealand health system, and whether further investment should also be made in EN education towards 2035. Subsequently, further experiments were undertaken that focused on the total nursing workforce, and changes were made in regards to assumptions about the RN and EN workforce.

Due to the small number of people employed in this role, nurse practitioners were not included in this extended project scope.

Stage Three: Presentation of Findings

As discussed above, the results of the experiments were presented to the Council in a series of workshops. Feedback from these workshops allowed BERL to refine the scenarios and rerun the modelling experiments. This feedback also allowed the authors to finalise this report in the third stage of the project.

3.2 Report structure

The next section focuses on previous research undertaken on the future nursing workforce. The following five sections then detail the economic modelling and the scenario results.

04

Future Workforce Concerns

Human resources management in the health workforce is a challenging task. New Zealand, the United Kingdom, Canada, the United States and Australia experience cyclical shortages in nurses, and currently fill these gaps with internationally qualified nurses. This dependency could grow in the future, as each of these countries have an ageing nurse workforce.

To counter this dependency, workforce planning projects for nurses have been put in place overseas. These projects focus on strategies to increase the supply of nurses through educational initiatives, and to improve the retention of nurses through changes in working conditions.

4.1 Workforce issues

In New Zealand, the Health Workforce Advisory Committee, the New Zealand Nurses Organisation, District Health Boards New Zealand, Health Workforce New Zealand, and others have noted future workforce issues that may affect New Zealand nurses. These issues include:

- + Recruitment and retention including the number of people entering nursing, the growing average age of nurses, and turnover.
- + Workload and working conditions including shift work, expanding scopes of practice, technology, and the need for professional development.

- + Potential drivers of change in the health workforce including consumer choice, lifestyle factors, patient complexity, coexisting disorders such as mental health and addiction problems, chronic illnesses, and the prevalence and patterns of disease.

4.2 Workforce influences

Health sector reform and reorganisation impacts on the amount of money spent on the health sector, including health workforce planning and development, and the salary and working conditions of nurses. To ensure that money is spent wisely, Health Workforce New Zealand argues a “whole of systems” approach needs to be adopted in regards to health workforce planning.

This approach needs to focus on the range of factors that impact on the health of the population, the services that will be required to meet these needs, and the workforce that will provide these services.⁸

⁸ Interview with Brenda Wraight, Director, Health Workforce New Zealand.

4.3 Previous workforce modelling and strategies

In 2004 NZIER (New Zealand Institute of Economic Research) modelled three scenarios in regards to the health and disability workforce between 2001 and 2021. These scenarios focused on population growth, morbidity rates, and the onset of disease and disability in old age.

Each scenario illustrated that the number of hospitalisations will increase towards 2021, due to an increase in the number of diseases and conditions affecting older people.⁹ The demand for labour will grow between 40 and 69 percent, in line with these service needs.¹⁰

This very high labour demand could result in labour shortages. Therefore, NZIER argued action needed to focus on “how the health and disability services workforce should be educated, trained, developed, and deployed.”¹¹

In 2006 Future Workforce Group completed a nursing workforce strategy. This strategy argued that workforce issues, such as those noted earlier, need

to be addressed as population changes – including population ageing and an increase in chronic illness and patient complexity – will impact on nursing.¹²

Public health policy and associated workforce strategies have responded to, and continue to respond to, the range of health services and health service provision that will be required to meet the health needs of the population.

These demand-based projects include outcomes such as *Ageing in Place*, a greater emphasis on primary care, reducing disparities, and responding to population needs.¹³ Some of these service provisions are based on hospitalisation statistics and the prevalence of disease.

4.4 Economic modelling of workforce supply

The Council is the regulatory authority responsible for the registration of nurses, including internationally qualified nurses. This research has modelled four scenarios to illustrate the impact of student enrolments and completions on the nursing workforce. Workforce supply is a key area of influence of the Council.

⁹ NZIER. (2004). *Ageing New Zealand Health and Disability Services: Demand Projections and Workforce Implications 2001-2021*. NZIER: Wellington.

¹⁰ Ibid.

¹¹ Ibid.

¹² Future Workforce Group. (2006). *Nursing Workforce Strategy*. Ministry of Health: Wellington.

¹³ Ibid.

Currently, the Nursing Council accredits and monitors education providers and sets the state examination that nursing students must pass in order to register as a nurse. As part of accrediting and monitoring education providers, the Council also sets the qualifications that nursing students must obtain for registration.

Once nurses are registered the Nursing Council sets the ongoing competency requirements of RNs and ENs and issues annual practising certificates. At a big picture level, the Nursing Council sets the scope of practice for nurses, and provides guidelines and standards for practice.

In the following five sections of this report the modelled scenarios are discussed in detail.

The next section outlines the business as usual scenario as it sets the scene through a discussion on the current nursing workforce in New Zealand.

05

The Business As Usual Scenario



Economic modelling was used to project potential changes in the supply of RNs and ENs towards 2035. To undertake the modelling, scenarios were established to pose ‘what if’ questions in regards to the future nursing workforce.

These scenarios focused on ‘what if’ questions in regards to New Zealand nursing graduates, the number of internationally qualified nurses working in New Zealand, the number of New Zealand-trained nurses working overseas, and changes in the patterns of work whereby nurses work more hours.

To understand and measure the size of the changes that could occur through the scenarios, a business as usual scenario was also established. In economic modelling the use of a business as usual scenario is standard practise. This scenario is predominantly used as a benchmark, to compare and measure the effects of assumed changes in behaviour or economic activity.

In this project, the business as usual scenario is used to illustrate what could happen to the RN and EN workforce if no supply-side interventions occurred, and workforce trends that were occurring in 2010 were to continue to occur towards 2035.

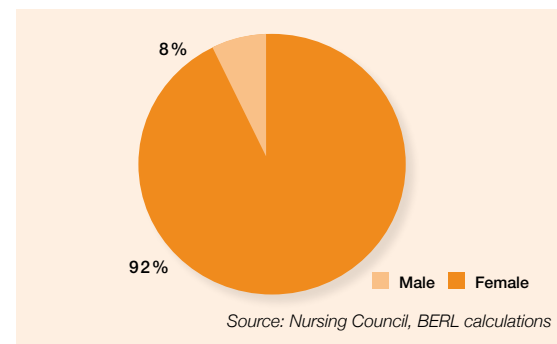
This section of the report discusses the business as usual scenario, and therefore sets the scene for the other four scenarios. In each of the four scenarios, BERL makes a number of comparisons between the total numbers of nurses employed in that scenario and the business as usual scenario.

5.1 Background to scenario: the nurse workforce in 2010

In 2010, there were approximately 45,460 nurses. Of this number, 42,330 were RNs and 3,130 were ENs in the New Zealand health workforce.

Nursing is a female dominated occupation in New Zealand. Of the 45,460 nurses in 2010, 42,263 were female. This is illustrated in the following figures, which show that in 2010, 92 percent of practising RNs (39,125) and 97 percent of ENs (3,030) in New Zealand were female.

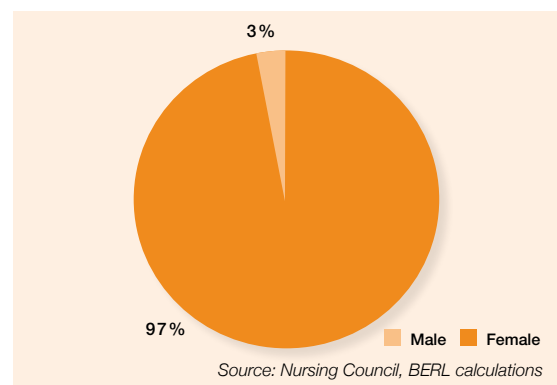
FIGURE 5.1 RNs, gender, 2010



This trend also holds true for other countries such as Australia, the United States, England and Wales where 90 percent or more of the workforce are female.

Across several large European countries, 80 percent of the workforce is female including Belgium, including Belgium, Germany, Finland, France, Italy, Norway, Netherlands, Poland, Sweden and Slovakia.¹⁴

FIGURE 5.2 ENs, gender, 2010

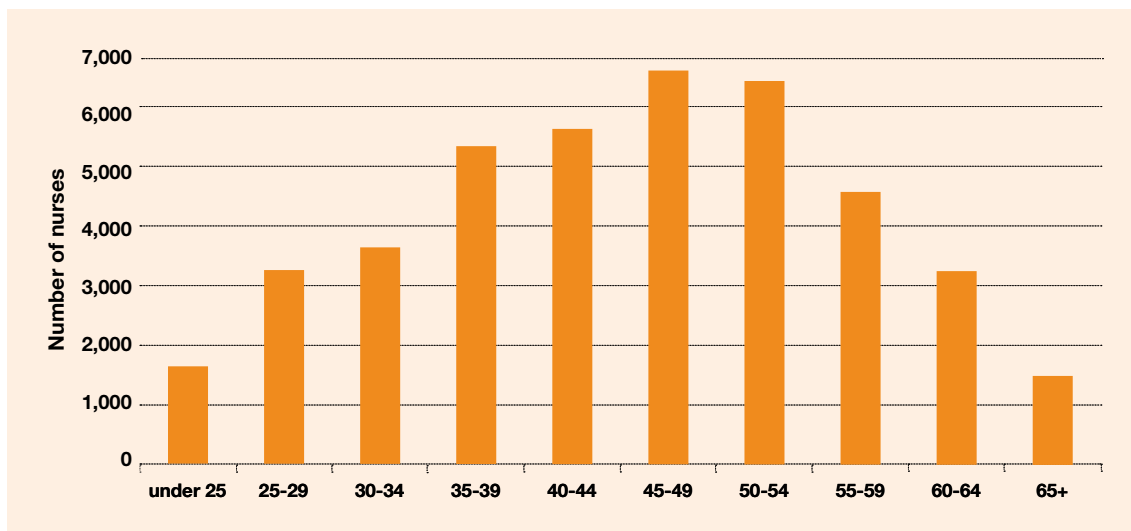


¹⁴ Jamieson, I. (2012). What are the views of Generation Y New Zealand Registered Nurses towards nursing, work and career? A descriptive exploratory study. A thesis submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Health Sciences. University of Canterbury: Christchurch.

In 2010, 19,766 nurses, or just over 43 percent of the workforce, were younger than 44 years old. This means the majority of New Zealand nurses are over the age of 45.

The proportion of nurses over the age of 45 is higher among ENs than RNs, as shown in the following figures. In 2010, approximately 46 percent of RNs (19,447) were younger than 44 in 2010. The age profile of RNs is shown in Figure 5.3 below.

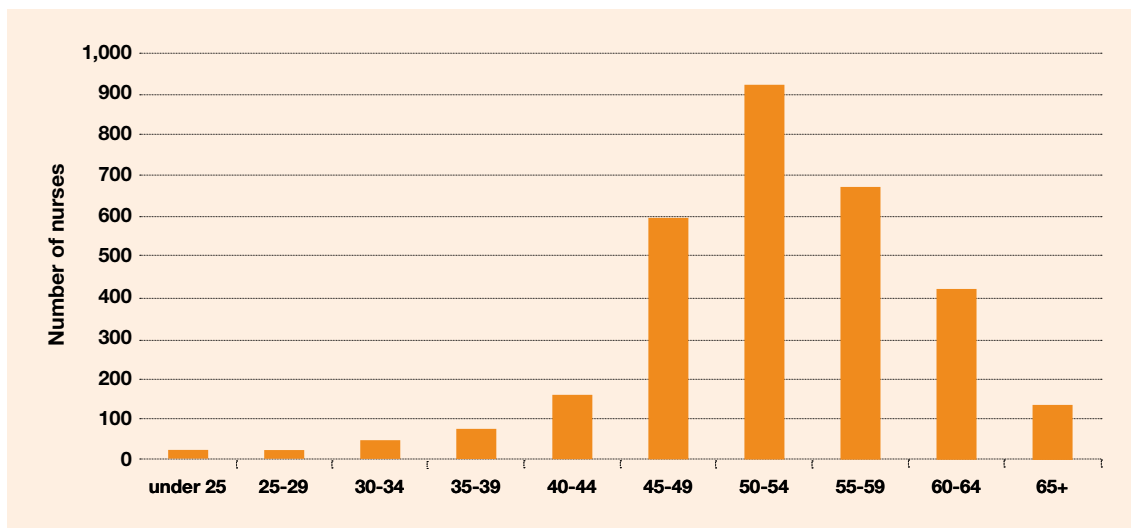
FIGURE 5.3 RNs, age, 2010



Source: Nursing Council, BERL calculations

In contrast, just under 10 percent of ENs are younger than 44. The largest age cohort for ENs is those aged between 50 and 54 years old. In 2010, approximately 923 ENs were in this age group, or just over 28 percent. The age profile of ENs is shown in Figure 5.4.

FIGURE 5.4 ENs, age, 2010



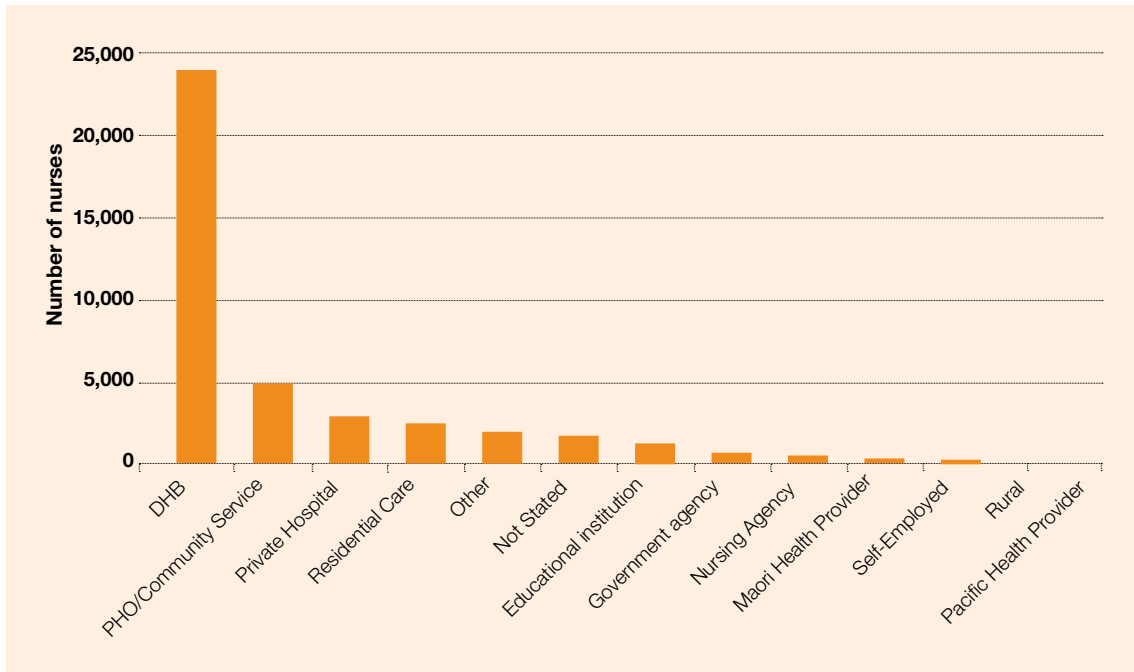
Source: Nursing Council, BERL calculations

5.1.1 Major areas of employment

District Health Boards (DHBs) are the largest employers of RNs and ENs (Figure 5.5). In 2010, 24,190 RNs and 1,350 ENs were employed in DHBs. Of these numbers, 18,410 RNs were employed within acute employment settings along with 840 ENs. In addition, 3,850 RNs were employed in the community.

The employment setting with the highest percentage of practising RNs under the age of 40 was the acute area within DHBs, at 41 percent. No other employment setting had more than 30 percent of its workforce in this age group.

FIGURE 5.5 RN employment by setting, 2010



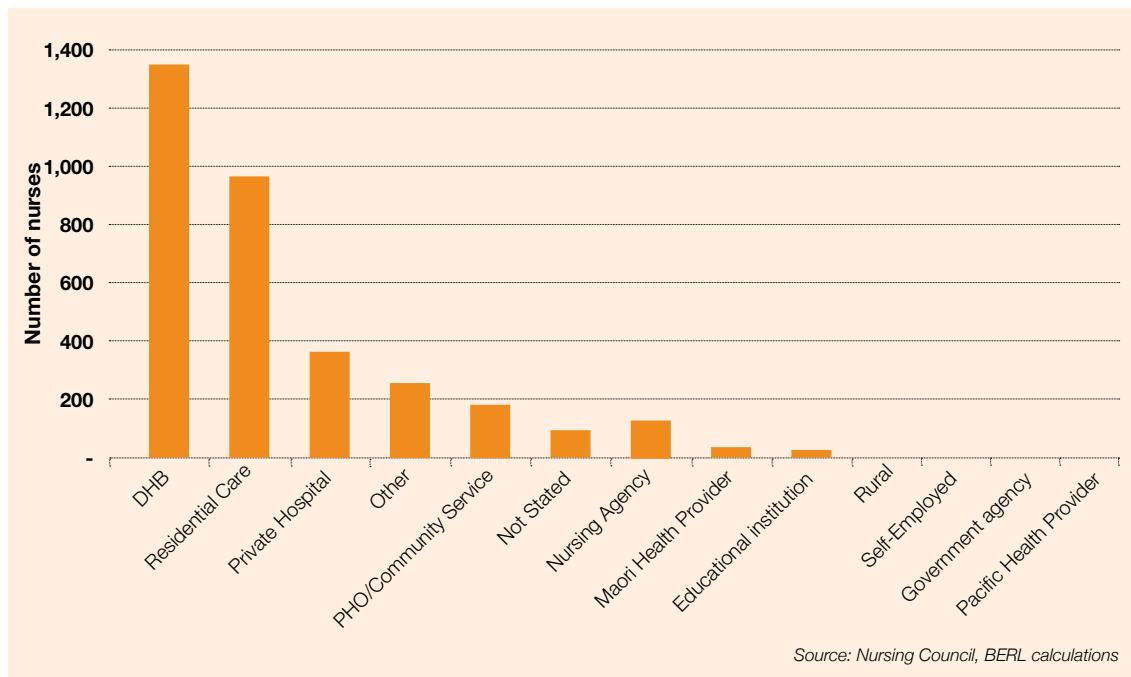
Source: Nursing Council, BERL calculations

The second largest area of employment outside of DHBs is in community health and public health organisations, with 5,172 RNs working in this area in 2010. Private hospitals and residential care are the third and fourth largest areas of employment.

Smaller numbers of RNs work for Māori and Pacific health providers, are self-employed, work for nursing

agencies, or are employed in government agencies. It is also interesting to note that 790 RNs worked in education institutions. These nurses may be employed as nurse educators or in clinical placement or research roles.

FIGURE 5.6 EN employment by setting, 2010



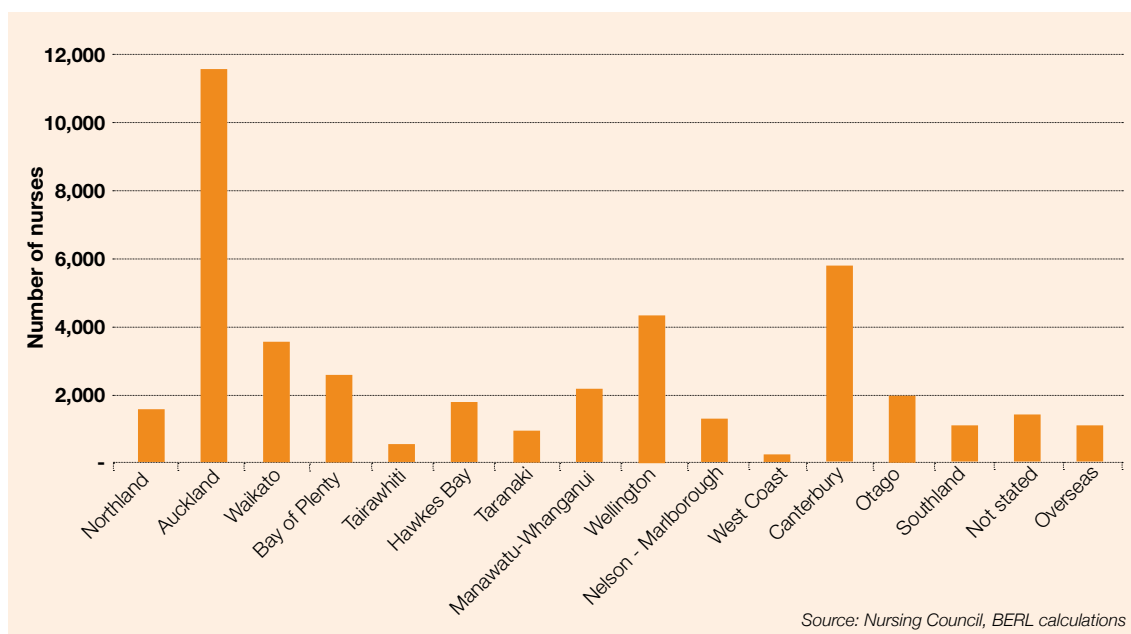
For ENs, the largest area of employment outside of DHBs is in residential care and private hospitals (Figure 5.6). Smaller numbers of ENs work in primary health care organisations, and for health service providers and nursing agencies.

In 2010, 2,825 nurses or 90 percent of ENs were over the age of 45 years old.¹⁵ Of this number, rest homes and residential care employed the largest

number of ENs over the age of 50, followed by the acute area within DHBs.

As shown in Figure 5.7 and Figure 5.8, the majority of RNs and ENs work in the Auckland Region. For RNs, the Auckland, Wellington and Canterbury regions are large areas of employment with smaller numbers in the West Coast and Gisborne regions. This employment pattern reflects the large number of RNs employed in DHBs.

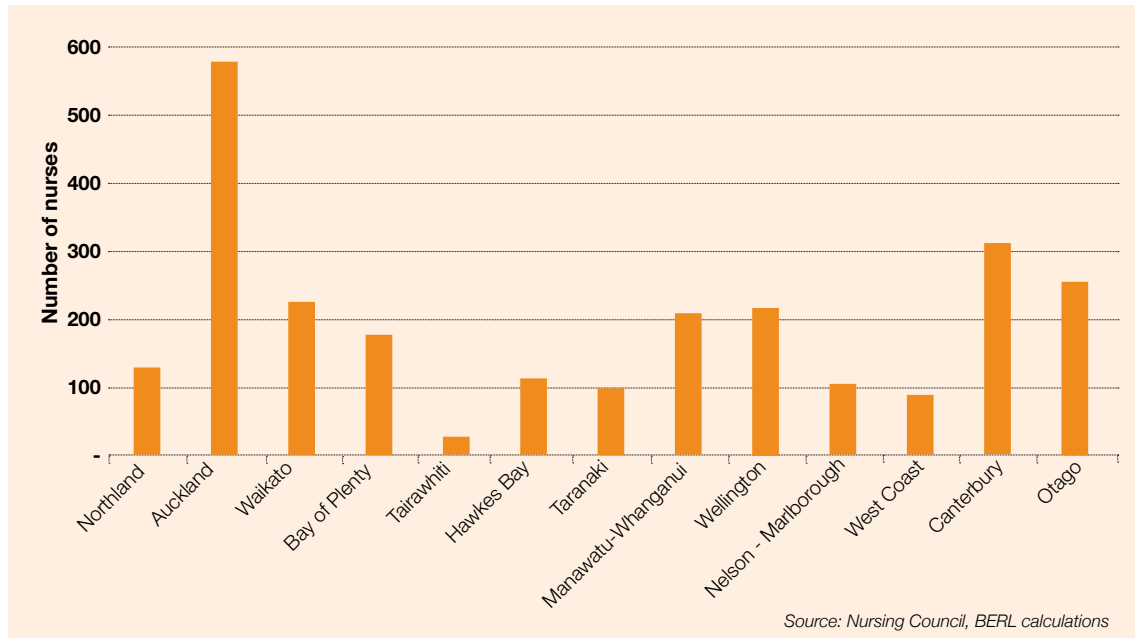
FIGURE 5.7 RN employment by region, 2010



¹⁵ The reason for this is that EN education in hospitals ceased in 1993 and recommenced in 2002 in tertiary providers with very small numbers from these programmes being registered until 2010.

For ENs the Auckland, Canterbury and Otago regions are large areas of employment. Large numbers of ENs are also employed in the Waikato, Wellington and Manawatu-Whanganui regions.

FIGURE 5.8 EN employment by region, 2010



5.1.2 Turnover

Many nurses take time away from nursing to have career breaks, to study, or to have children. Despite this anecdotal evidence, it has been difficult to attain an accurate measure of turnover. This is due to the variety of employers that RNs and ENs can work for, and differences between urban and rural settings. Turnover can also vary between age groups.¹⁶

The New Zealand Nurses Organisation Employment Survey discusses job changing that occurs within the health sector, where RNs change employers, or change jobs with the same employer. BERL refers to this as churn and it is not necessary negative, as the skills and experiences of the nurse are not lost to the health system.

However, it is interesting to examine some of the reasons given as to why RNs change jobs. The top three listed options from this survey include: for career reasons such as promotion, pay and prospects or to acquire new skills; because they did not like their previous job; and for personal reasons such as hours of work, family, or health and well-being.¹⁷

BERL was unable to obtain robust turnover data for ENs. However, anecdotal evidence indicates ENs may change employer but remain in the same employment setting, or will change roles but continue to work for the same employer.

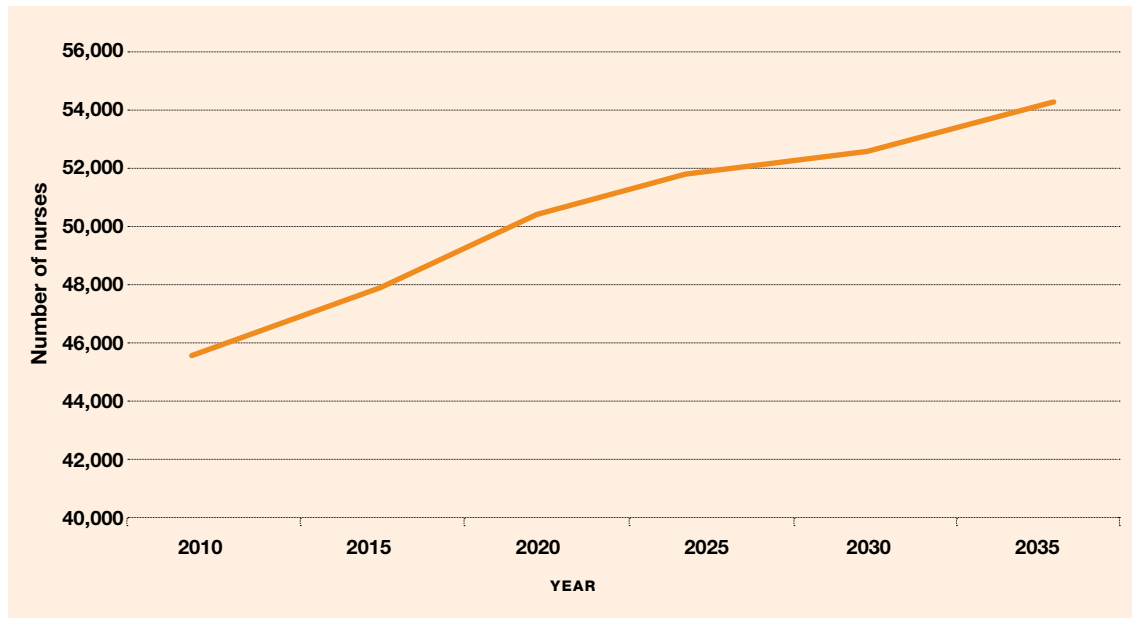
¹⁶ Interview with Dr Jane O'Malley, Chief Nurse, Ministry of Health; Interview with Brenda Wraight, Director, Health Workforce New Zealand.

¹⁷ New Zealand Nurses Organisation. (2011). NZNO Vital Signs: The NZNO Employment Survey 2011. New Zealand Nurses Organisation: Wellington.

5.2 Scenario results

Under a business as usual scenario the total nurse workforce grows from 45,460 nurses in 2010 to approximately 54,010 in 2035. Within this workforce, the number of RNs grows from 42,330 in 2010 to 49,270 in 2035, and the number of ENs grows from 3,130 in 2010 to 4,740 in 2035.

FIGURE 5.9 Nursing supply modelling: Business as usual 2010-2035



DHBs continue to be the largest area of employment for nurses. In 2010, an estimated 25,540 nurses worked in this setting. Of this number, 24,190 were RNs and 1,350 were ENs. Under this scenario, by 2035 this number has grown to 27,520 nurses employed in this setting including 25,620 RNs and 1,900 ENs.

The number of nurses who complete their education programme and enter employment grows from 1,430 graduate nurses per annum in 2010 to 1,720 graduate nurses per annum in 2035 under this scenario. The number of nurses who complete their education programme to become an EN also grows during this period, but from a smaller base number.

5.3 Scenario assumptions

Under this scenario BERL assume that workforce trends in 2010 continue through to 2035.

These trends include:

- + The proportion of nurses working full and part-time remains the same in 2035 as it was in 2010.

- + The rate that RNs and ENs enter and leave the workforce continues at the same level as in 2010. Overall turnover for RNs is assumed to be 3.4 percent per annum, while for ENs it is assumed to be 5.1 percent per annum.¹⁸
- + The proportion of internationally qualified nurses in the New Zealand nurse workforce remains the same towards 2035 as in 2010. For RNs this proportion is 25 percent, while for ENs this proportion is 7.5 percent.
- + The proportion of New Zealand nurses who chose to live and work overseas remains the same towards 2035 as in 2010, at five percent.
- + The scopes of practice of RNs and ENs remain the same towards 2035 as they were in 2010.

Each of these assumptions is discussed in more detail in the following section.

5.3.1 Nursing enrolments and completions

In this scenario the number of people who choose nursing as a career, and enrol in and complete a

¹⁸ The turnover rate discussed here is an annual average value. The turnover rate for RNs and ENs varies depending on age, and this variation has been built into our model. The model also takes into account turnover due to the proportion of nurses that complete qualifications by age, whether the nursing graduate is an international or domestic student, and the proportion of nursing graduates who take up employment in New Zealand.

Bachelor Degree or Diploma of Nursing programmes, continues at the same rate towards 2035 as in 2010. This assumption is based on trend data from Education Counts, and data and information provided by stakeholders within tertiary education providers. BERL have also drawn on data and information from the Nurse Education in the Tertiary Sector (NETS) graduate destinations surveys.

Together, this data and information indicates that between 2004 and 2010, there was an average of 7,000 students enrolled at various stages of their bachelor degree in nursing schools in New Zealand. Of this number, 540 students were international students.

In addition, approximately 90 percent of students who currently enrol in a Bachelors degree or Diploma in Nursing complete their programme of study. BERL assume that this trend continues towards 2035.

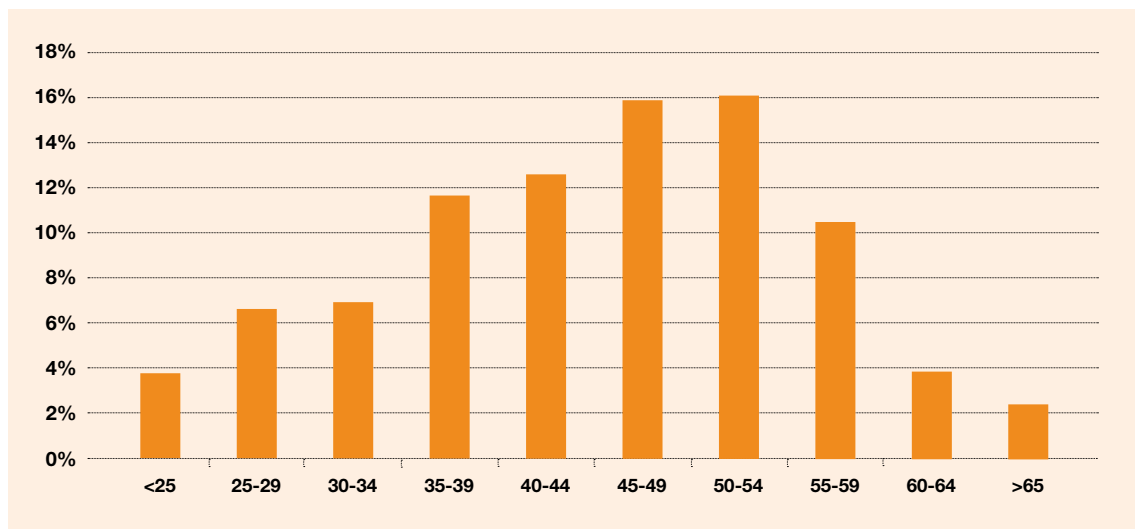
5.3.2 Full and part-time employment in the nursing workforce

Nurses generally work shifts, where 35 hours or more per week is defined as full-time. As at 31 March 2010, approximately 59 percent of nurses in New Zealand worked part-time.

For RNs, the proportion of people who worked part-time in 2010 was just over 50 percent, at 24,951. For ENs the numbers working part-time is higher; with 65 percent or 2,005 ENs working part-time in 2010.

Under this scenario, towards 2035 the proportion of RNs and ENs working full and part-time remains the same. Parental responsibilities are the most common reason given for nurses working part-time.¹⁹ This reason is supported by the female-dominated workforce, and the current age profile. This profile is shown as a percentage in Figure 5.10 below.

FIGURE 5.10 Total nurse workforce, 2010, age profile, %



¹⁹ Nursing Council of New Zealand. (2010).

In 2010 approximately 46 percent of the RN workforce was aged between 40 and 54 years old. In addition, 11.5 percent of this workforce was under the age of 30, while 11 percent was over the age of 60. The age profile of the EN workforce is older again. Here, 90 percent of the workforce was over the age of 45 in 2010, compared with 54 percent of RNs.

Figure 5.11 shows the age profile of the total nurse workforce in 2035 compared to the age profile of this workforce in 2010. This figure illustrates that an ageing workforce will continue to be an issue for the

nurse workforce unless there is a substantial inflow of people from younger age cohorts.

Under a business as usual scenario, a greater percentage of nurses are under the age of 34 years old in 2035. For example, 12 percent of the total nurse workforce is 30 to 34 years old under a business as usual scenario in 2035, as opposed to eight percent in 2010. However, this small shift in the age profile of the workforce is due to an increase in the number of people undertaking an education programme to be ENs rather than a concerted effort to attract more people into nursing.

FIGURE 5.11 Total nurse workforce, change in age profile, 2035, %

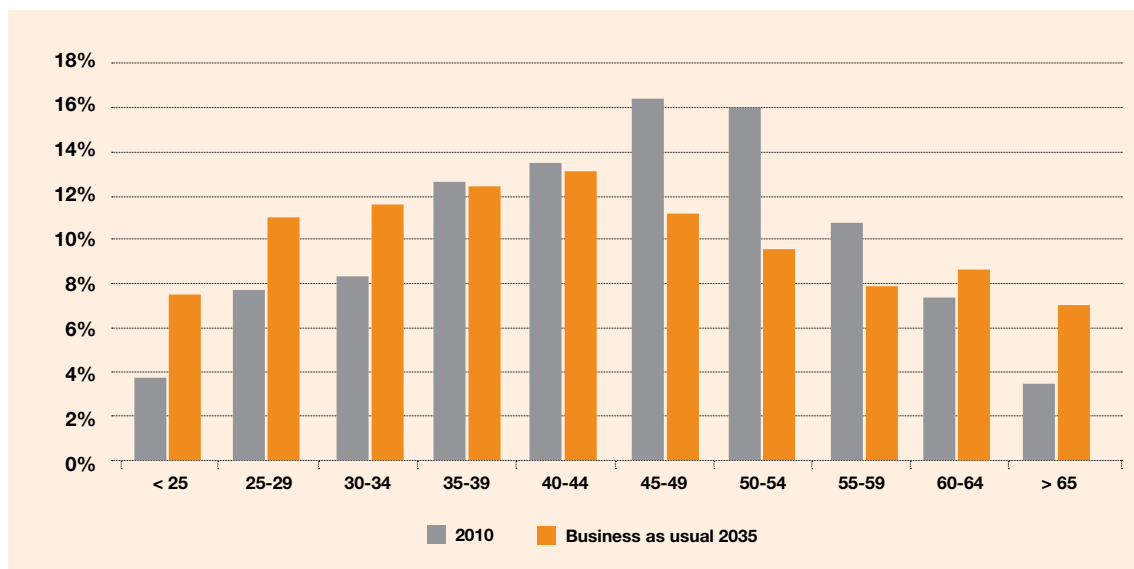


Figure 5.11 highlights that there will continue to be a large number of people over the age of 40 in the total nurse workforce, under a business as usual scenario. For example, the percentage of nurses who are 35 to 44 years old remains similar to that in 2010, and the percentage of those aged between 50 and 59 declines from 29 percent of the total workforce to 16 percent. Again, this decline is largely due to people retiring, rather than an overall shift in the age profile of the workforce.

The challenge shown here, of an ongoing ageing workforce, will also be compounded by changes in professional practice and models of care. Workplace settings for RNs and ENs will also change, as the provision of health services adapts to evolving community needs. Allied with these factors will be the prevalence of career breaks, as well as the mixture of people working part and full-time.

5.3.3 Internationally qualified nurses as a proportion of the total workforce

Another key assumption in this scenario is that the number of overseas trained nurses working in New Zealand remains at approximately 25 percent of the RN workforce and approximately 7.5 percent of the EN workforce.²⁰

Under a business as usual scenario BERL assumes that the number of people who apply from overseas for New Zealand registration and are accepted, remains fairly stable. Tied to this assumption is that migrant nurses are able to complete any additional education required to become a New Zealand registered or enrolled nurse in a timely fashion, and that there are no backlogs of people attempting to apply and complete an education programme.

Another assumption BERL makes in regards to the business as usual scenario is that the number of nurses trained in New Zealand who chose to work

²⁰ Further information on overseas trained nurses working in New Zealand is provided in scenario three. This section of the report discusses a scenario where the number of internationally qualified nurses grows.

in New Zealand as their first career move remains at 95 percent. This means five percent of graduate RNs chose to migrate overseas for work.²¹

In 2010, the Department of Labour reported that nurses were one of the 10 most common occupational groups to leave New Zealand. They also noted that the majority of nurses leave to work in Australia or the United Kingdom.²² When BERL raised this point with stakeholders in the interviews, they were unsurprised at this statistic. Many argued that it is generally accepted that at some point in a New Zealand nurse's career they will travel and work overseas. These interviewees also emphasised that nursing is a career that allows people to travel and gain overseas work experience.²³ Further, New Zealand RNs are not alone in having internationally recognised qualifications, nor are they alone in seeking overseas work experience. The United Kingdom and the United States are popular destination countries for nurses who have trained in Australia, South Africa, India, Canada and the Philippines. In turn, nurses from the United Kingdom migrate to Australia, New Zealand and North America.²⁴

The attraction of using overseas trained nurses to ease workforce shortages also comes with its own challenges under a business as usual scenario. For example, this scenario assumes that overseas trained nurses continue to have the appropriate level of qualification and competency required by the New Zealand health system, and an appropriate fit with the New Zealand cultural environment.

As the later scenarios illustrate, overseas trained nurses are older, which may further increase the average age of the nurse workforce, and are from a variety of source countries. Some of these source countries are experiencing their own workforce issues, and these issues may also accelerate towards 2035.

5.3.4 Scope of practice of RNs and ENs remains the same

Finally under this scenario, the employment settings of RNs and ENs shift as the range of health services required to meet the needs of the population changes. This means RN employment within the District Health Boards remains fairly stable, but there is a noticeable increase in the number of ENs employed in this setting. Towards 2035, the number of RNs and ENs working in residential care also doubles. However, the scope of practice of RNs and ENs remains the same.

5.3.5 Four scenarios modelled

The next four sections of this report discuss the results of four modelled experiments that BERL undertook to project potential changes in the supply of RNs and ENs towards 2035. The business as usual scenario discussed in this section is used as a benchmark to compare and measure the effects of assumed changes in behaviour or economic activity shown under the four other modelled experiments.

²¹ Nursing Council of New Zealand. (2012). The 2005/2006 Nursing Cohort Report: A longitudinal study of New Zealand and internationally qualified registered nurses. Wellington: Nursing Council of New Zealand. Interviews with Dr Jane O'Malley, Chief Nurse, Ministry of Health; Dr Kathy Holloway, Dean, Faculty of Health, Whitireia Community Polytechnic; Geoff Annals, Chief Executive, New Zealand Nurses Organisation.

²² Cited in Jamieson, I. (2012). What are the views of Generation Y New Zealand Registered Nurses towards nursing, work and career? A descriptive exploratory study. A thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Health Sciences. University of Canterbury: Christchurch.

²³ Nursing Council of New Zealand. (2012). The 2005/2006 Nursing Cohort Report: A longitudinal study of New Zealand and internationally qualified registered nurses. Wellington: Nursing Council of New Zealand. Interviews with Dr Jane O'Malley, Chief Nurse, Ministry of Health; Dr Kathy Holloway, Dean, Faculty of Health, Whitireia Community Polytechnic; Geoff Annals, Chief Executive, New Zealand Nurses Organisation.

²⁴ For further information see, Nursing Council of New Zealand. (2012). The 2005/2006 Nursing Cohort Report: A longitudinal study of New Zealand and internationally qualified registered nurses. Wellington: Nursing Council of New Zealand.

06

The Supply of Nurses Grows
Due to Population Growth



The first scenario focuses on the supply of nurses required to meet population growth. Here, the number of nursing graduates grows to meet the demand for health care services caused by a growing population.

Under this scenario, graduate nurses increase from 1,430 graduates per annum in 2010, to 2,200 graduate nurses per annum in 2035. To achieve this increase in graduates, between 2015 and 2020 the number of graduate RNs needs to grow by one percent per annum before increasing to 1.5 percent per annum between 2020 and 2025. Between 2020 and 2030, the number of New Zealand trained RNs needs to grow by two percent per annum, and from 2030 to 2035 this number increases further to 2.5 percent per annum.

By 2035, it is estimated that there will be 5.26 million people living in New Zealand.²⁵ The demand for health care services is therefore expected to grow as the population increases. Some of this demand will be driven by the complex health needs of subsets of the population, while lifestyle factors, technology, and consumer choices may also influence the demand for nurses.²⁶

6.1 Background to scenario: educating nurses in 2010

The discussion begins with an overview of nursing student enrolments and completions in 2010.

In 2010 there were 16 tertiary education providers on 21 sites offer nursing courses in New Zealand. Thirteen of these providers are institutes of technologies and polytechnics (ITPs), while the remaining three are universities. All of these providers offer a bachelor degree in nursing, while nine ITPs also offer a diploma in enrolled nursing.

6.1.1 A profile of nursing students

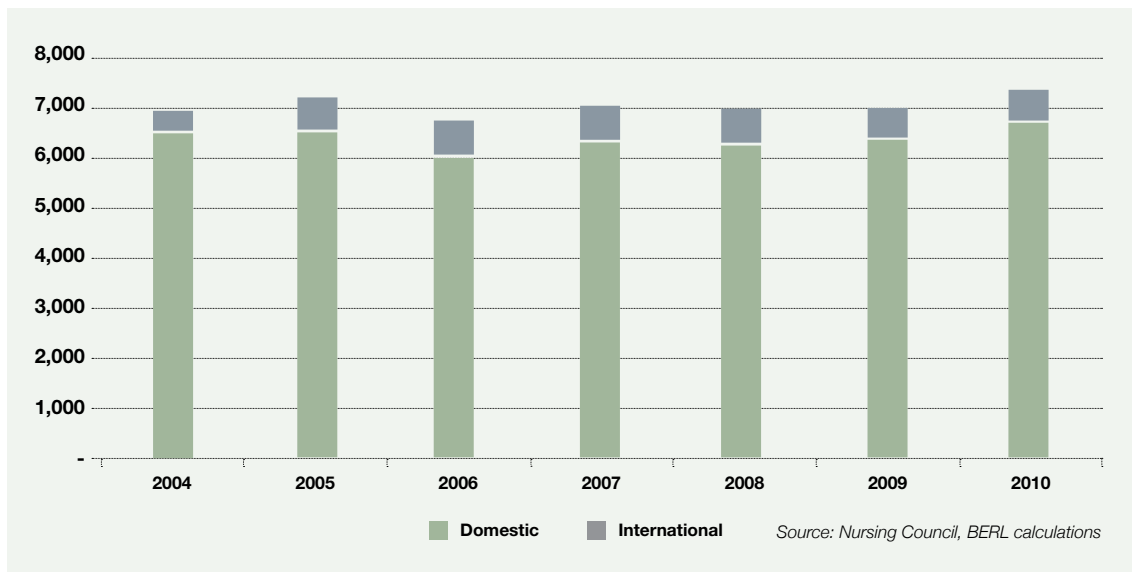
In 2010, 7,540 students were enrolled in various stages of the three years of a bachelor degree in nursing, including 560 international students. Over the last five years, an average of 7,030 people has been enrolled in nursing at various stages of their bachelor degree (Figure 6.1)²⁷.

²⁵ This population projection assumes that the total fertility rate will decrease to 1.9 births per woman by 2026 than remain constant; life expectancy at birth will increase to 85.6 years for males and 88.7 years for females by 2061; and that annual net migration will see a gain of 10,000 people living in New Zealand from 2013. Statistics New Zealand. Population Projection Tables. (www.statistics.govt.nz/tools_and_services/tools/TableBuilder/populationprojections-tables.aspx).

²⁶ Interview with Dr Jane O'Malley, Chief Nurse, Ministry of Health; Brenda Wraight, Director, Health Workforce New Zealand; Dr Kathy Holloway, Whitireia Community Polytechnic.

²⁷ This data may include students who do not complete the programme, part-time students who take longer than 3 years to complete a degree and nurses who complete degree papers but are already registered as nurses.

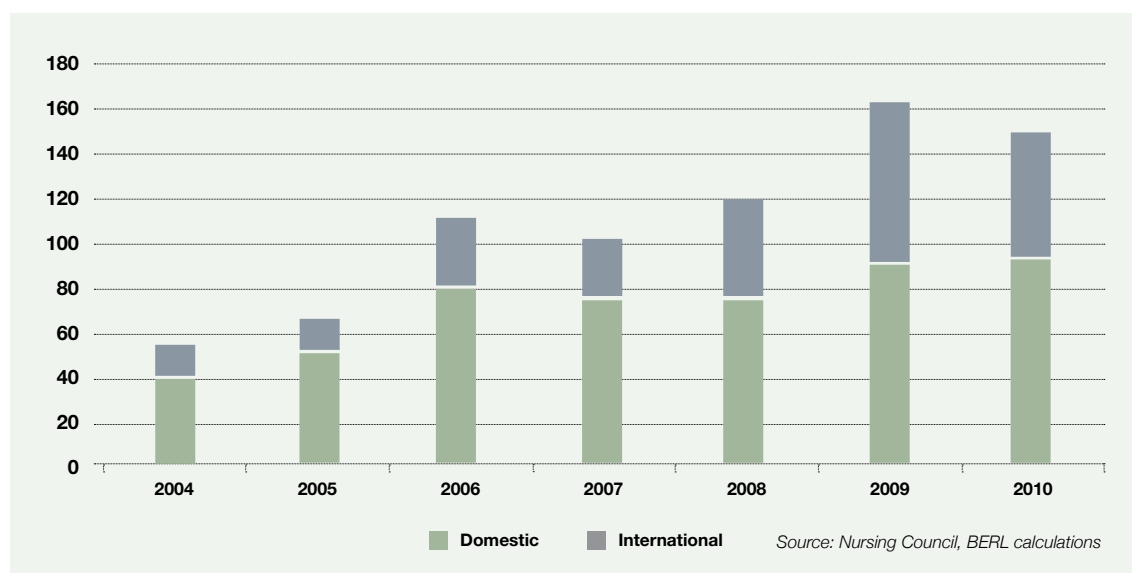
FIGURE 6.1 RN enrolments, 2004-2010



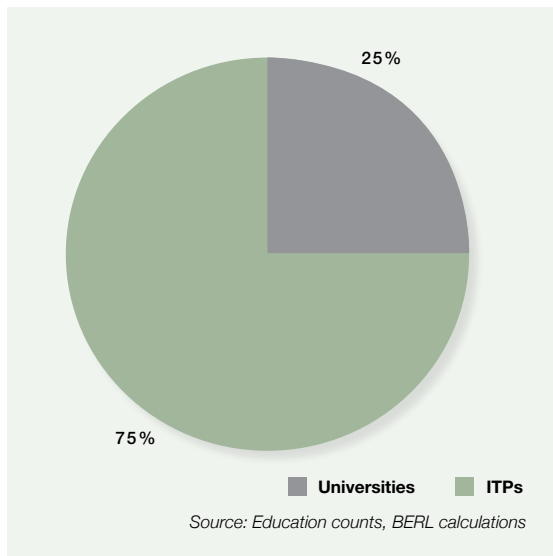
Enrolment numbers in the enrolled nursing programmes have grown between 2004 and 2010, as shown in Figure 6.2. In 2004, only 53 students were enrolled in the enrolled nurse programme, by 2010 this number had risen to 150 enrolments. Please note the lines in this figure are to assist number identification.

International students are a higher proportion of the total number of EN enrolments than for the nursing degree. For example, in 2010 of the 150 enrolments for that year, 56 enrolments were international students.

FIGURE 6.2 EN enrolments, 2004-2010



Almost three out of four nursing students (or 74.6 percent) were enrolled at an institute of technology and polytechnic in 2010, as shown in Figure 6.3. The remaining, 2,090 nursing students were enrolled at one of three universities.

FIGURE 6.3 Education providers by type, 2010

6.1.2 The age, gender and ethnicity of nursing students

In 2010, 20 to 24 year olds were the largest age cohort of students entering nursing. The second largest age cohort was students between 25 and 39 years old. This indicates that most students currently entering nursing schools are not school leavers.

For example, 2,490 students were aged 20 to 24 in 2010 while only 1,220 students were aged 18 to 19 years old. This is an important point to note as the average age of RN candidates and graduates impacts on the average age of the workforce.

In 2010, the majority of students entering nursing were female, with 6,970 nursing students being women. Only 730 nursing students or 10.5 percent were male in 2010. However, despite this small number, the proportion of male nursing students is higher, at 10.5 percent than the current proportion

of male nurses in the workforce. The largest age cohort of male nursing students was those aged 25 to 39 years.

The majority, or 70 percent, of nursing students in 2010 also identified with the European ethnic group. Nursing students who identified as Māori were 15 percent of students while Asians were the next largest ethnic group at 12 percent of students. Approximately 6.5 percent of students enrolled in nursing in 2010 were Pasifika.

The nursing student body reflects the total population in regards to the European and Māori ethnic groups, but under-represents Pasifika peoples.

At the 2006 Census of Population and Dwellings, Pasifika peoples were 6.9 percent of the total population, while Europeans were 67.6 percent, Māori were 14.6, and those of Asian ethnicity were 9.2 percent of the total population.

6.1.3 A profile of nursing graduates

In 2010, 1,520 students completed their bachelor degree in nursing in New Zealand²⁸. Of this number, 150 were international students and 1,360 were domestic students with 10 unknown.

The profile of nursing graduates closely matches the profile of students. As expected, the majority of nursing students (or 75 percent) are completing their degree in an institute of technology and polytechnic, while almost 25 percent finished their qualification at university. In addition, due to a higher proportion of females enrolling in nursing degrees, the majority of students (1,270) who completed were also females.

In 2010, 620 students completed their degree between the ages of 20 and 24, while 470 completed their degree between the ages of 25 and 39. Interestingly, 250 students were over the age of 40 when they completed their qualification.

²⁸ Data and information on nursing graduates comes from Education Counts, the Ministry of Education. These figures may differ from Nursing Council of New Zealand nurse graduates and registration figures as the numbers presented here are number of students graduating from Bachelor of Nursing programmes, and do not include people who have passed their State exams.

FIGURE 6.4 Ethnicity of graduate RNs, 2010

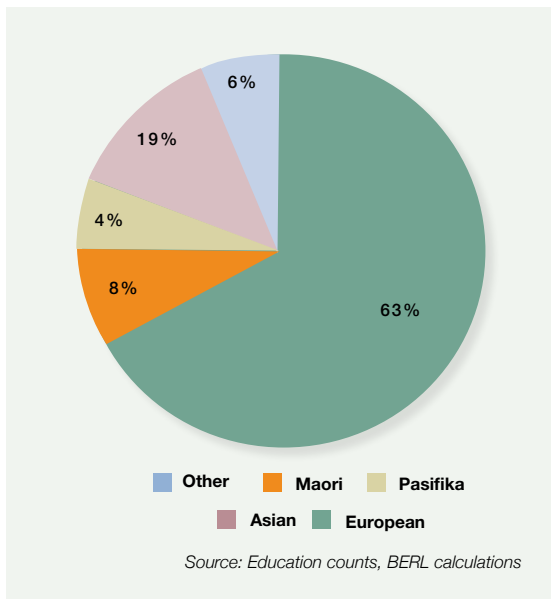
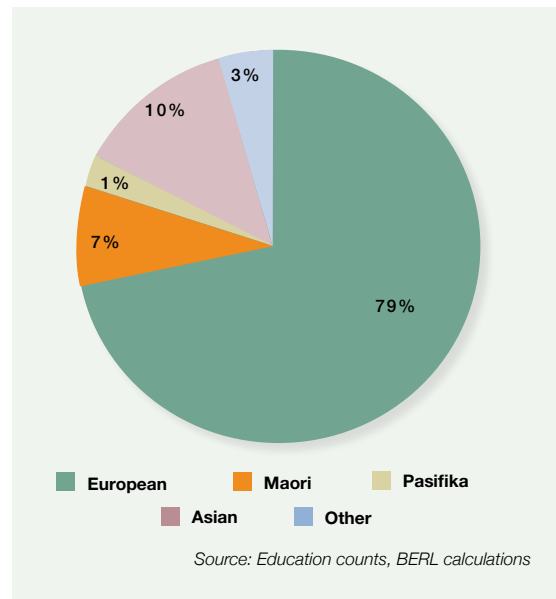


FIGURE 6.5 Ethnicity of graduate ENs, 2010



The ethnicity of nurse graduates differed from the total number of students in 2010 (Figure 6.4). The majority or 63 percent of bachelor graduates in 2010 identified with the European ethnic group compared with 70% of students. Graduate students who identified as Māori were 8 percent compared with 15% of all bachelor nursing students. Asians were 19 percent of graduates and 12% of students. Approximately 4 percent of graduates and 6.5 percent of students in nursing in 2010 were Pasifika. The 2010 nursing graduates under-represent Māori ethnic groups and Pasifika peoples. The higher proportion of Asian students could be because of international students.

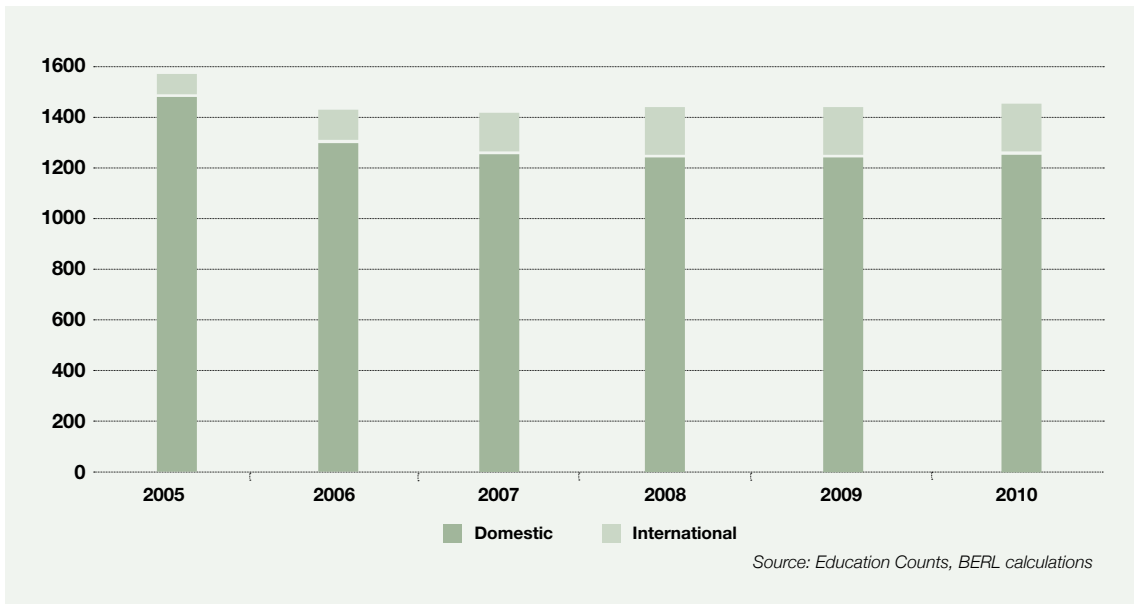
Smaller numbers of students currently enrol in and complete the 18 month diploma programme

to become an enrolled nurse. This means the discussion on students enrolled in this programme is limited, and the graduate profile is also smaller than that of registered nurse students.

In 2010, 290 students completed their diploma to become an enrolled nurse. Of this number, 79 percent identified with the European ethnic group. Enrolled nursing students who identified as Asian were 10 percent of the student cohort, while Māori were the next largest ethnic group, with 7 percent of the student cohort (Figure 6.5).

Once students complete their bachelor degree or diploma in nursing they must then pass the State Final Examination and be considered fit to be registered by the Nursing Council.

FIGURE 6.6 Graduate RNs, 2005-2010



6.1.4 Stable graduate numbers

In 2010 the number of people undertaking nurse education had remained fairly stable. This can be monitored through the number of RN candidates who sit and pass their state final examination. For example, in 2010/11 1,357 RN candidates sat the state final examination.²⁹ These RN candidates were from New Zealand schools of nursing.

The number of students completing a bachelor degree in nursing has remained fairly stable between 2005 and 2010. It takes an average of three years to finish the bachelor degree so BERL has included data for five years to provide a snapshot of degree completion trends.

Between 2005 and 2010, 1,410 to 1,560 students annually completed a bachelor degree in nursing at New Zealand nursing schools. The largest cohort of students completed their studies in 2005, while the smallest completed the following year in 2006.

Approximately 90 percent of all nursing students completing their bachelor degrees at New Zealand

nursing schools are domestic students. The number of international students completing their degrees has also remained fairly stable over the last five years.

This number has varied from 70 international students completing their bachelor degree in 2005, to 200 students in 2007. Over the last two years this number has stabilised at 160 international graduates.

6.2 Scenario results

Under this scenario, if the population grows to 5.26 million, an additional 495 RNs and 82 ENs will need to enter the workforce each year between 2010 and 2035 to maintain the 2010 nurse to population ratio of 10 RNs for every 1,000 New Zealanders. To maintain this ratio and meet the demand for health care services, the total number of RNs will need to grow from 42,330 nurses employed in 2010, to 54,660 RNs in 2035. In addition, the number of ENs will need to grow from 3,130 nurses in 2010, to 4,830 in 2035.

²⁹ Nursing Council of New Zealand. (2011). Annual Report for the Year Ending 31 March 2011. Nursing Council of New Zealand: Wellington.

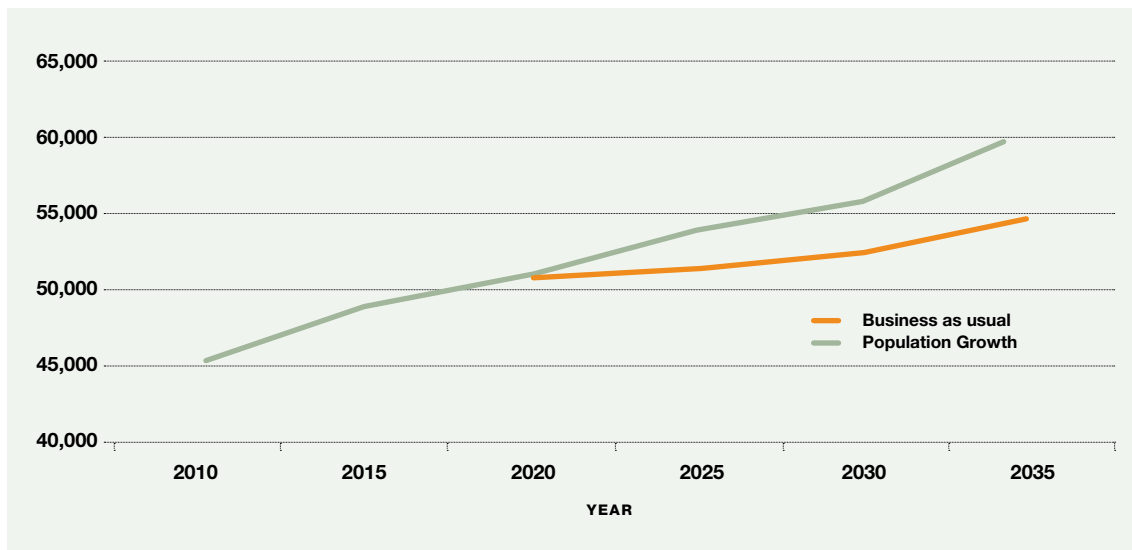
- + Under this scenario, the greatest overall increase in RNs will need to occur between 2030 and 2035. During this five year period, the number of RNs will increase by 3,660 nurses, based on population projections and an increase in student enrolments and completions.
- + During this same period, the number of ENs will increase, with an additional 510 people employed in this scope of practice.

In this scenario, BERL has focused on the employment of nurses in four settings: the District Health Boards, service providers such as primary health care and community service providers, private hospitals, and rest homes and residential care. BERL believes these settings will be most affected by population growth, based on information gathered from the stakeholder interviews. These employment settings are defined by the Council, and were the largest areas of employment in 2010.

Comparing this scenario to the business as usual scenario:

- + Towards 2035, the number of nurses employed within the District Health Boards remains stable. In 2035, approximately 30,350 nurses are employed in the District Health Boards and of this number, approximately 1,930 are ENs and 28,420 are RNs.
- + In contrast, the number of RNs employed in primary health care and working for community health service providers grows from approximately 5,630 in 2010 to 9,840 in 2035.
- + The number of RNs working in private hospitals also doubles under this scenario between 2010 and 2035. The biggest step change in employment will occur between 2015 and 2020, where the number of RNs employed in this setting is projected to grow by approximately 1,370 nurses.
- + The number of ENs employed in rest homes and residential care grows from approximately 970 nurses employed in these settings in 2010, to 1,810 nurses in 2035. Between 2025 and 2030 is when the greatest demand for ENs in rest homes and residential care is expected to occur.

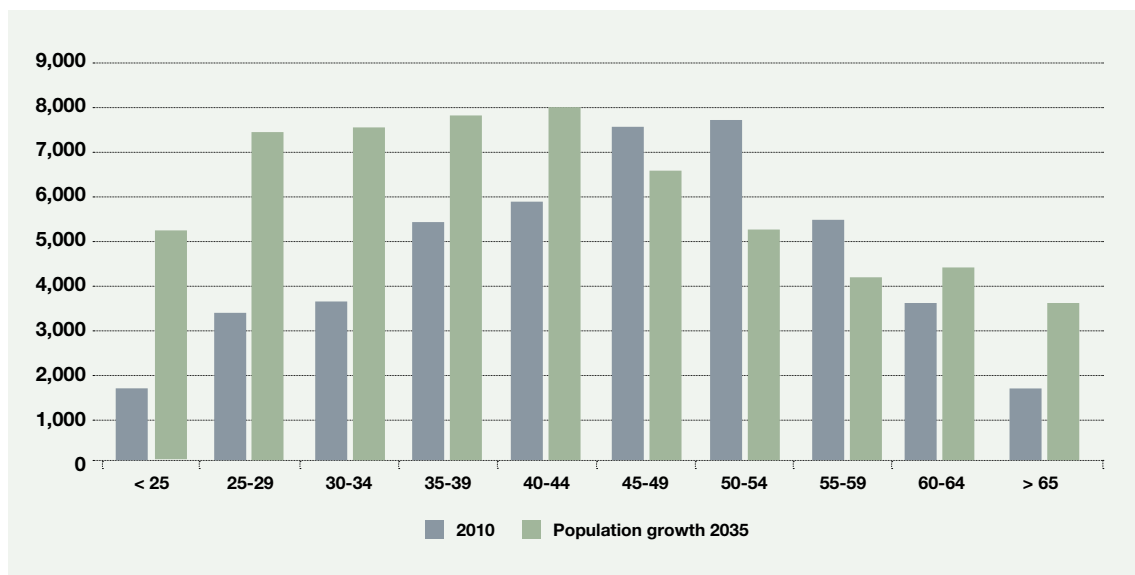
FIGURE 6.7 Nursing supply modelling: Population growth 2010-2035



BERL acknowledges that changes in health care needs may lead to changes in the way that nurses deliver health care, and their working conditions. However, the modelling is unable to account for this as these factors and the impact of them is unknown. Instead, the modelling focuses on the number of nurses required to meet the health care needs of the total population. This means BERL has accounted for population growth by changing the number of nurses employed in various settings.

- + The number of RNs under a business as usual scenario is expected to grow from 42,330 in 2010, to 49,270 in 2035, while the number of ENs is expected to grow from 3,130 in 2010, to 4,740 in 2035.
- + An additional 480 graduate nurses will enter employment each year in 2035 under this scenario, compared to the business as usual scenario.

FIGURE 6.8 Total nurse workforce, age profile, 2035



6.3 Scenario assumptions

The assumptions BERL make in the modelling of this scenario are that student enrolments and completions increase due to further investment in nurse education, and that nursing is actively promoted as a career choice for school leavers and people who are looking to change their career.

In addition, the various programmes that are in place now to encourage greater numbers of Māori and Pasifika students to enter and complete nursing qualifications have been successful. Based on this success, these types of programmes have expanded. BERL therefore assume that the nurse workforce begins to greater reflect the ethnic composition of the population towards 2035.

Another impact on workforce demographics as a result of an increase in nursing student enrolments is a shift in the age profile. Under this scenario,

BERL assume that the overall age profile of the nurse workforce shifts to be predominantly younger by 2035. This shift is shown in Figure 6.8, and is based on an increase in the number of nursing student enrolments and completions. In 2010, approximately 8,490 nurses were under the age of 34. Under this scenario, this number grows to approximately 20,025 nurses in 2035.

Under this scenario BERL has focused on the impact that total population growth will have on the nurse workforce. Here BERL has modelled how many graduate nursing students will be needed to meet the demand for health care caused by a growing population. In the next section of this report BERL focuses on the growing health needs of those under the age of 15 and over the age of 65, and how this will further increase the need for graduate nurses towards 2035.

07

Graduate Nurses Increase to Meet Ageing Population Needs



The second scenario focuses on the supply of graduate nurses required to meet the population health needs of those under the age of 15 and over the age of 65. As the proportion of these age groups increases within the population it is expected that the demand for health care and for nurses will also increase as these age groups have higher health needs.

The number of nurses who complete their education programme and enter employment grows under this scenario from 1,430 graduate nurses per annum in 2010 to 2,950 graduate nurses per annum in 2035. To achieve this increase in graduates, the number of New Zealand trained nurses completing their education programme needs to increase by 2.5 percent per annum between 2015 and 2020, before increasing to three percent per annum between 2020 and 2025. A step change occurs again between 2025 and 2030, whereby graduate nurse numbers need to increase by 3.5 percent per annum, and again between 2030 and 2035, where this number rises to four percent per annum. The number of nurses who complete their education programme to become an EN also grows during this period, but from a smaller base number.

7.1 Background to scenario

Under this scenario, the focus is on the number of nurses required to meet the health needs of subsets of the population with relatively high health needs. In particular, people under the age of 15 and over the age of 65.

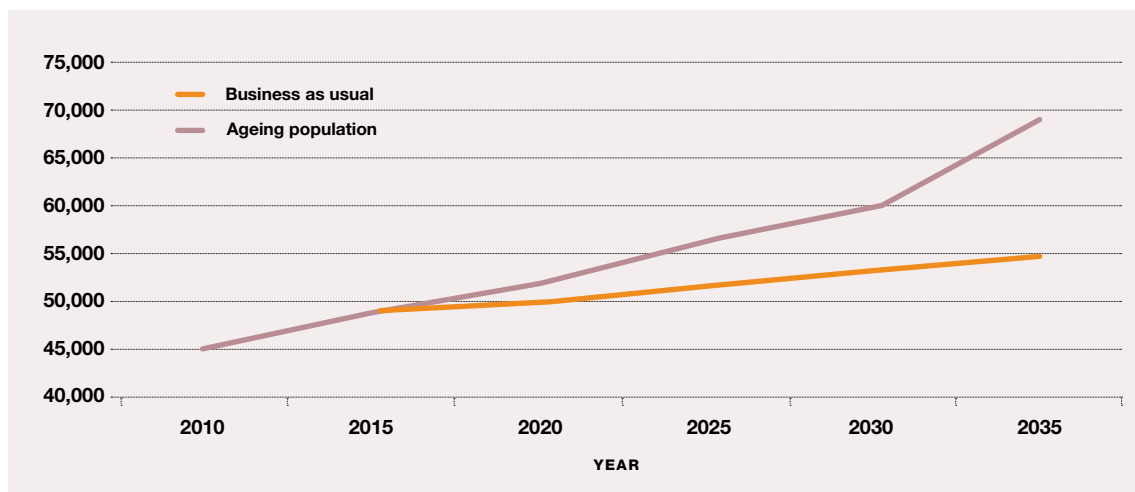
Statistics New Zealand population projections indicate that 5.26 million people will live in New Zealand in 2035. Between 15 and 20 percent of the total population is projected to be under the age of 15, while between 20 and 25 percent will be over the age of 65. Together, these two subsets of the population could be approximately 45 percent of the total population in 2035.

Under this scenario the health needs of the population grow in complexity due to an increase in chronic illness, and the prevalence of disease as the population ages. The demand for child and adolescent health services grows due to growing disparity and an increase in poverty.

7.2 Scenario results

Under this scenario, the number of graduate nurses grows as further investment is made in nurse education to maintain the nurse to population ratio of 10 RNs to every 1,000 New Zealanders. This investment is made to ensure the health needs of growing subsets of the population are met.

FIGURE 7.1 Nursing supply modelling: Ageing population 2010-2035



- + Under this scenario the total nurse workforce grows from 45,460 nurses in 2010, to 69,280 nurses in 2035. Here, the number of RNs grows from 42,330 in 2010, to 63,960 in 2035; while the number of ENs grows from 3,130 in 2010, to 5,325 in 2035.
- + The greatest increase in RNs employed in New Zealand will occur between 2025 and 2030. Here, the number of RNs will grow from approximately 51,395 nurses in 2025, to 56,320 nurses in 2030.
- + During this same period, the number of ENs will also grow from approximately 4,040 nurses to 4,560.
- + By 2025, the number of nurses who are completing their qualification and entering the workforce has grown from 1,430 graduate nurses in 2010 to 2,040 graduate nurses. By 2030, the number of nurses graduating each year has increased again to 2,430 nurses.

Between 2025 and 2030, Statistics New Zealand project a substantial proportion of the population will be under the age of 15 and over the age of 65. It is therefore during this period that the demand for nurses may be at its highest.

Where nurses are employed and the number of nurses employed in each employment setting also changes substantially under this scenario. These changes reflect a greater demand for nurses in health care settings that serve the needs of people under the age of 15 and over the age of 65.

Under this scenario, approximately 35,390 nurses are employed in the District Health Boards by 2035. Of this number, approximately 2,130 nurses are ENs and 33,260 are RNs. Employment growth in this setting is steady between 2010 and 2025, with the largest increase in employment occurring between 2030 and 2035. If we compare this scenario with the previous scenario, an additional 4,840 RNs are employed by the District Health Boards in 2035, along with an additional 200 ENs.

Employment growth in primary health care organisations and community service providers that are not part of District Health Boards is also substantial under this scenario. The number of RNs growing from approximately 5,630 RNs employed in primary health care organisations and community service providers in 2010, to approximately 11,510 RNs in these settings by 2035. Further, the number of ENs also grows from approximately 240 nurses employed in these settings in 2010, to 370 nurses in 2035.

As mentioned earlier, the total nurse workforce grows under this scenario from 45,460 nurses in 2010, to 69,280 nurses in 2035. Of this number, 9,990 nurses will be employed in rest homes and residential care.

The greatest change in nurse employment under this scenario is the increase in the number of RNs working in rest homes and residential care.

Under this scenario, the number of RNs working in rest homes and residential care grows from approximately 3,090 nurses in 2010 to 8,000 nurses in 2035. The greatest increase in RNs employed in this setting will occur between 2020 and 2025. During this same period, the demand for ENs in rest homes and residential care will also be at its greatest, and there will be growing demand from the District Health Boards for ENs to be employed within acute and community settings.

In addition, the number of RNs employed in private hospitals will steadily increase under this scenario from approximately 3,195 RNs employed in private hospital in 2010, to 8,000 RNs in 2035. Between 2015 and 2020, an additional 1,460 RNs will work in private hospitals. In addition, between 2020 and 2025 a further 1,390 RNs will be needed to work in this setting. This is also during a period when, as discussed above, the demand for RNs in other settings such as residential care and rest homes, and within District Health Boards will also be at its greatest.

FIGURE 7.2 Change in employment setting, RNs, ageing population 2035

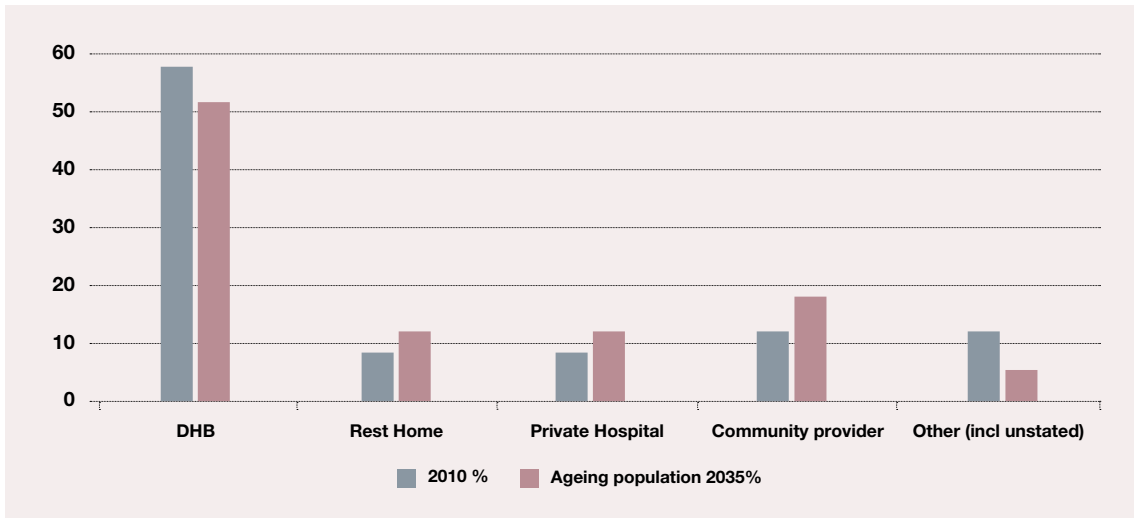
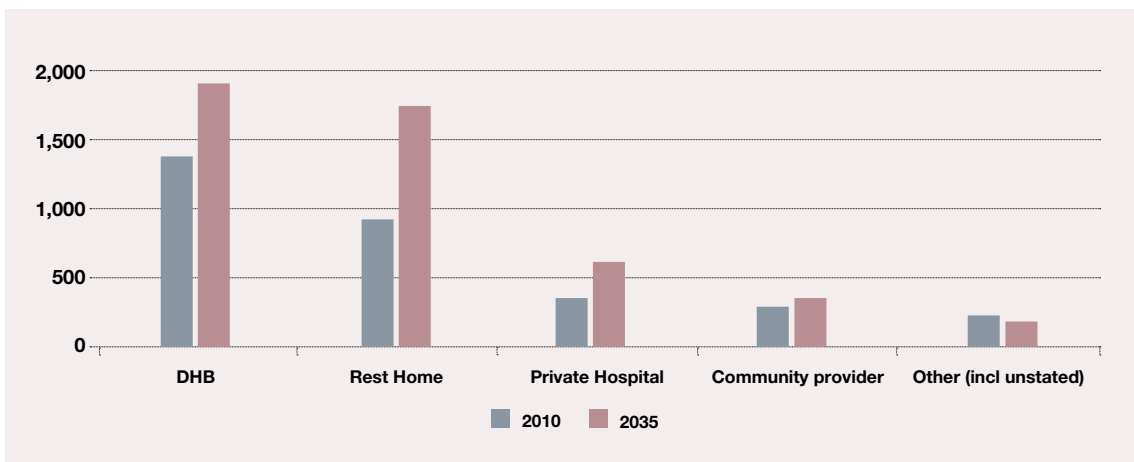


Figure 7.2 shows the change in proportion of registered nurses employed in each setting.

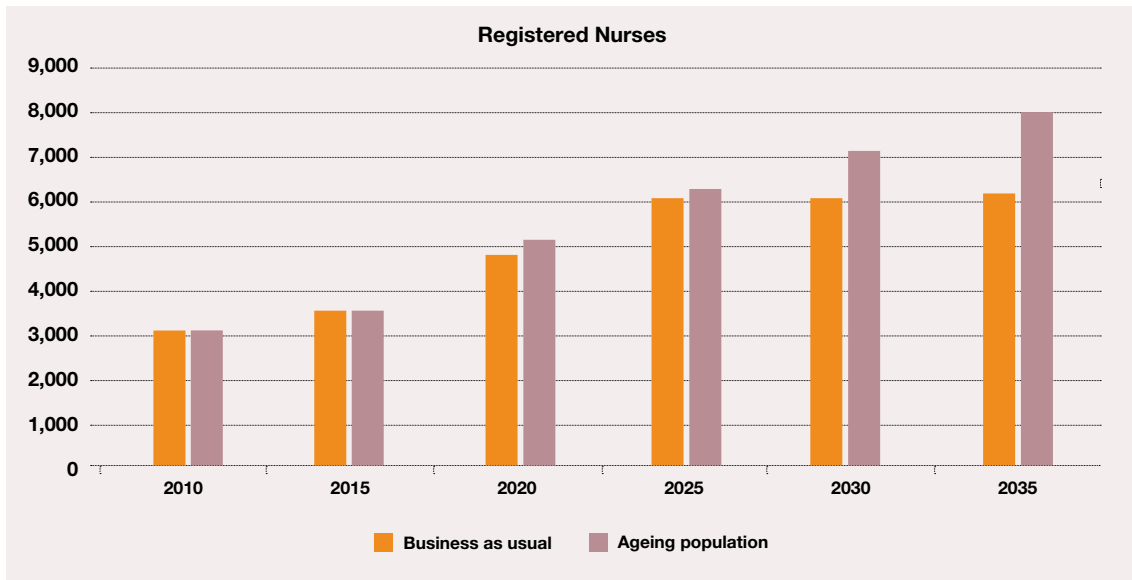
Figure 7.3 shows the change employment setting, ENs, ageing population 2035

FIGURE 7.3 Change in employment setting, ENs, ageing population 2035



In Figure 7.4 below this change in employment in private hospitals is shown. This growth is compared to the business as usual scenario. The greatest changes in employment numbers between these two scenarios can be seen between the snapshot years of 2030 and 2035.

FIGURE 7.4 RNs, private hospitals, 2010-2035



7.2.1 Comparing this scenario to the business as usual scenario:

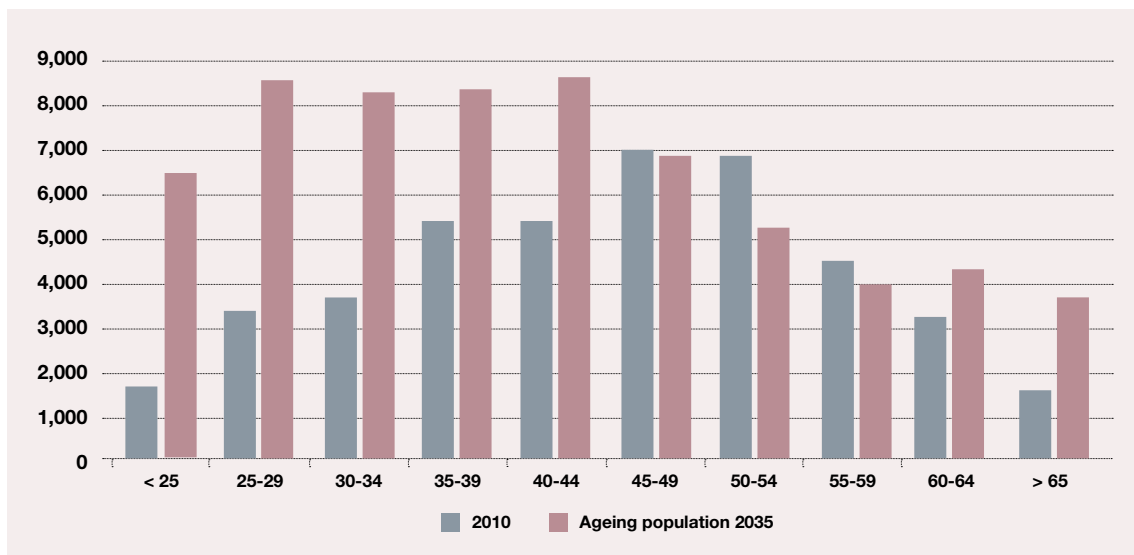
- + Under the business as usual scenario, the total nurse workforce grows from 45,460 nurses in 2010 to approximately 54,010 nurses in 2035.
- + Under this scenario an additional 15,270 nurses will be required to maintain the 2010 nurse to population ratio and meet the health needs of the population. This means an additional 610 nurses will need to enter the workforce each year between 2010 and 2035.
- + An additional 1,230 graduate nurses will enter employment in 2035 under this scenario, compared to the business as usual scenario.
- + In terms of where these nurses are employed, an additional 7,640 RNs and 235 ENs are employed by the District Health Boards in 2035, compared to the business as usual scenario.

7.3 Scenario assumptions

Under this scenario a key assumption is that a growing and ageing population impacts not only on the demand for nurses and the skills and attributes they require, but it also impacts on the average age and ethnic diversity of the nurses themselves.

This means the number of nurses under the age of 44 increases under this scenario compared to the business as usual scenario. By 2035, approximately 40,100 RNs out of a possible 63,960 RNs will be under the age of 45 years old. This change in the age profile is shown in Figure 7.5 where a comparison is made between the RN age profile in 2010 and the modelled results in 2035.

FIGURE 7.5 RNs, age profile, 2035



To achieve this change in the age profile, BERL assume that nursing is actively promoted as a career choice for school leavers and people who are looking to change their career.

Similar to the assumptions made in the previous scenario a concerted effort is put into attracting people into nursing as a career and increasing the graduate nurses.

In addition, the various programmes that are in place now to encourage greater numbers of Māori and Pasifika students to enter and complete nursing qualifications have been successful. Based on this success, these types of programmes have expanded. BERL therefore assume that this education effort continues to focus on increasing the ethnic diversity of the workforce to better reflect the population that nurses work with.

Similar to the previous scenario, BERL have focused on four employment settings under this scenario. These are again District Health Boards, service providers such as primary health care organisations and community service providers, rest homes/residential care, and private hospitals.

However, in this scenario BERL assumed that greater investment is made in certain areas of health care. For example, the health care of children and adolescents, and that this impacts on nurse employment in certain settings.³⁰ This assumption is based on a proactive

strategic approach being taken to grow and develop the nursing workforce, and ensure enough nurses are employed across the various employment settings to meet growing demand.

Again similar to the previous scenario, BERL has assumed that the population grows, and by 2035 5.26 million people are living in New Zealand. This projection could be considered conservative, and the number of people living in New Zealand in 2035 could be substantially higher through migration. A substantially higher number of nurses may be required to meet the health needs of the population in 2035, particularly those with relatively high health needs under the age of 15 and over the age of 65.

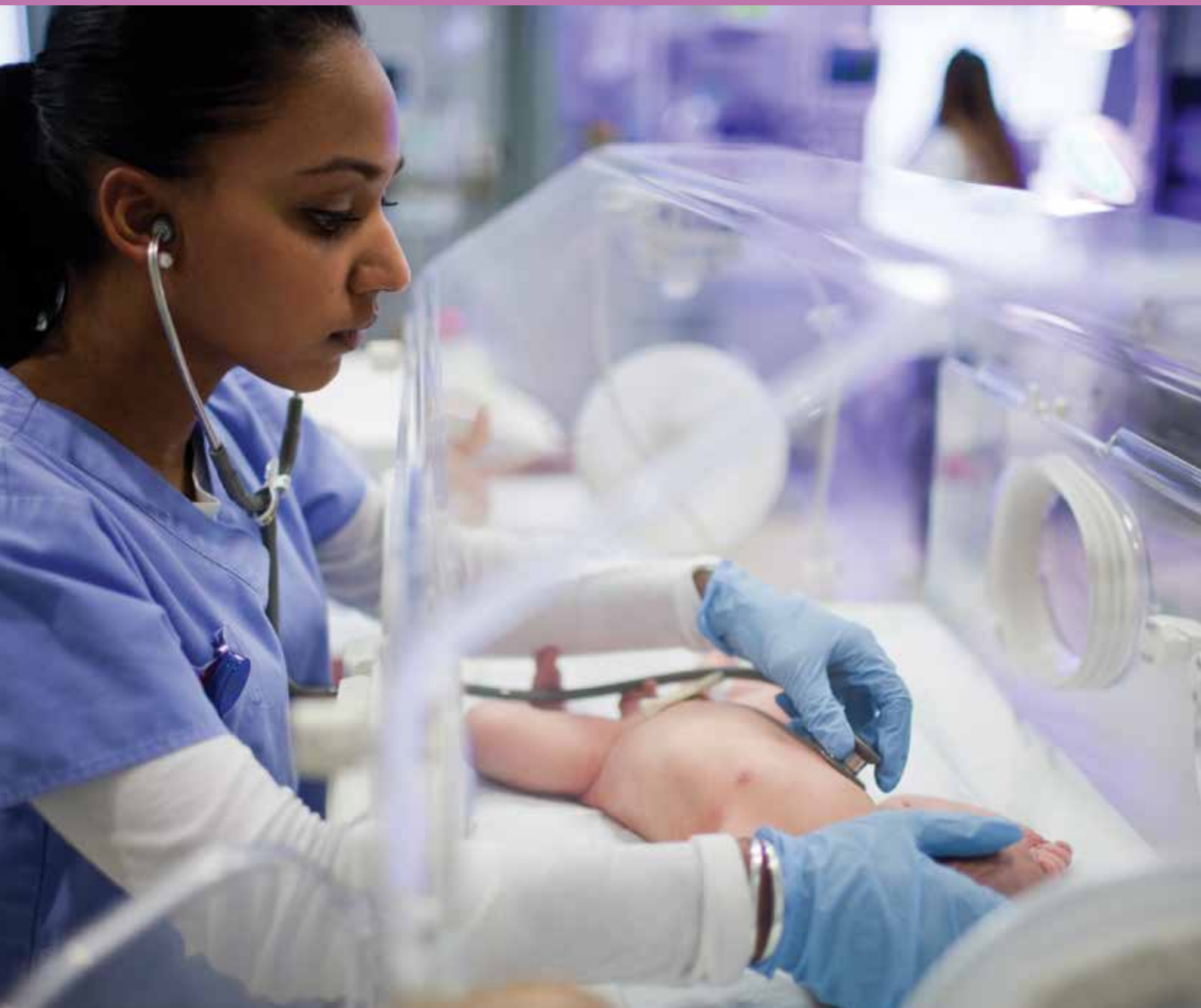
Under this scenario BERL has focused on the growing health needs of those under the age of 15 and over the age of 65, and how this will further increase the need for nurses toward 2035. Here BERL have modelled how many graduate nurses will be needed to meet the demand for health care caused by a growing population.

In the next section of this report BERL focus on the number of graduate nurses remaining stable. This leads to a labour constraint by 2020 as the growing population creates a demand for health care services. This labour constraint is met under the next scenario by increasing the proportion of internationally qualified nurses.

³⁰ Interview with Dr Jane O'Malley, Chief Nurse, Ministry of Health.

08

An Increase in Internationally
Qualified Nurses



The third scenario focuses on the number of graduate nurses remaining stable. In 2020, the number of RNs who graduate sits at 1,580. This figure is lower than the number of RN graduates under the business as usual scenario, at 1,600. This leads to a labour constraint by 2020, as the growing population creates a demand for health care services.

This labour constraint is met under this scenario by increasing the proportion of internationally qualified nurses working in New Zealand who meet New Zealand registration requirements. In 2010, approximately 25 percent of the RN workforce and 7.5 percent of the EN workforce are internationally qualified nurses. Under this scenario these proportions increase to 33 percent of the RN workforce and 10 percent of the EN workforce.

8.1 Background to scenario: internationally qualified nurses

Internationally qualified nurses are an important part of the New Zealand nursing workforce.

Over the last five to 10 years, the number of New Zealand nursing school graduates has remained fairly stable. However, the completion of degrees and subsequent registration of nurses is affected by attrition. The attrition rate has varied during this period. Any increase in the demand for nurses has therefore been met by a steady increase in the number of internationally qualified nurses working in New Zealand.

8.1.1 International research on nurse migration

The push and pull factors that motivate nurses to migrate have been researched internationally.

These factors include: not enough jobs in their country of origin, poor wages, poorly funded health care systems, safety concerns, and economic instability. Pull factors include higher wages, better living and working conditions, and the opportunity to advance their education and/or expertise.³¹

New Zealand, the United Kingdom, Canada, the United States and Australia experience cyclical shortages in nurses, and fill these gaps with migrant nurses. Migrant nurses are often seen as a 'quick fix' as they are already trained, and the destination country can turn the 'tap to on or off' depending on their workforce needs. These shortages, and the subsequent employment of migrant nurses, may increase further as the nurse workforce in the destination countries mentioned age and retire.

³¹ Aiken, L., Buchan, J., Sochalski, J., Nichols, B. & Powell, M. Trends in International Nurse Migration. *Health Affairs*, 23, no. 3 (2004); Gill, R. Nursing Shortage in India with specific reference to International Migration of Nurses. *Social Medicine*, 6, no 1 (2011).

Debate now centres on this practise of recruitment, and organisations such as the International Council of Nurses and the World Health Organisation argue that international strategies need to be put in place to ensure ethical recruitment.³²

This concern has arisen due to greater numbers of nurses from Sub-Saharan Africa, the Philippines and India migrating to work in the United Kingdom and the United States. Under this situation, the migration of nurses from developing to developed economies is creating problems in the source countries, due to the loss of qualified nurses and the subsequent impact on their health system.

The Philippines, for example, is the largest supplier of nurses in the world, yet hospitals have been closed in the Philippines and many regions face shortages due to the large number of nurses who migrate.³³

The WHO argues this is a health system problem as a shortage of nurses undermines the effectiveness of the health system.

But there are positives and negatives in nurse migration, and migration strategies and policy need to be carefully balanced. In India, for example, nursing is taken up by women as part of raising the social status of their family and assisting the nurse to save for her dowry. It is argued that nurses go abroad to save for three main purposes: to send remittances back home, for their dowry, and for future savings.³⁴ Therefore, migration could be perceived as a positive aspect of their nursing career.

Similarly, for New Zealand nurses there are many positives associated with being employed in a mobile occupation with an internationally recognised qualification.³⁵

8.2 Scenario results

As mentioned above, under this scenario the number of internationally qualified nurses working in New Zealand increases from 25 percent of the total RN workforce in 2010 to 33 percent in 2035 and from 7.5 percent of the total EN workforce in 2010, to 10 percent in 2035.

Under this scenario the number of RNs grows from 42,330 in 2010 to 52,880 in 2035, while the number of ENs grows from 3,130 in 2010 to 4,870 in 2035. This means by 2035, an estimated 57,750 nurses are in the New Zealand health workforce.

Between 2010 and 2015, approximately 340 internationally qualified nurses enter the New Zealand health workforce each year. This results in an additional 1,690 internationally qualified RNs in 2015. The largest increase in internationally qualified RNs entering the New Zealand health workforce is expected to occur between 2015 and 2030.

From 2015, the number of internationally qualified RNs entering the New Zealand health workforce is expected to grow by 365 nurses per annum. This results in the number of RNs increasing from 44,670 in 2015, to 50,155 in 2030. This steady increase in the proportion of internationally qualified RNs working in New Zealand is shown in Figure 8.1 as the pink bars. This increase in internationally qualified RNs is compared to the number of RNs employed under a business as usual scenario.

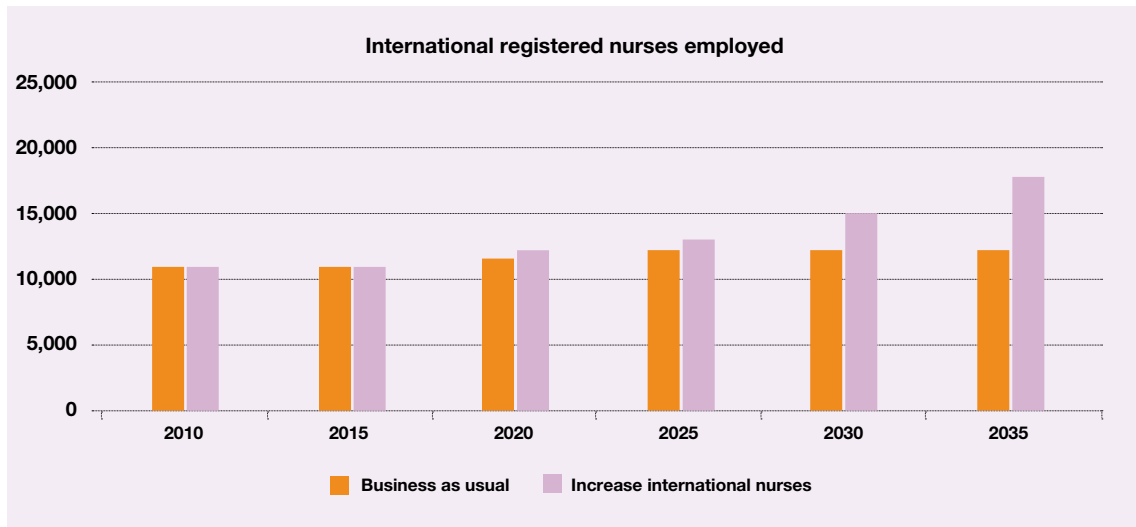
³²See for example, World Health Organisation. Health Professions Networks Nursing & Midwifery Human Resources for Health. A Global Survey Monitoring Progress in Nursing and Midwifery. (2010).

³³Gill, R. Nursing Shortage in India with specific reference to International Migration of Nurses. Social Medicine, 6, no 1 (2011).

³⁴Ibid.

³⁵Interviews with Dr Jane O'Malley, Chief Nurse, Ministry of Health; Dr Annette Huntington, Massey University; Dr Kathy Holloway, Whitireia Community Polytechnic, Geoff Annals, Chief Executive, New Zealand Nurses Organisation; Professor Jenny Carryer, Executive Director, College of Nurses Aotearoa.

FIGURE 8.1 Growth in internationally qualified RNs, 2010-2035



Under this scenario, an increase in the proportion of internationally qualified nurses has impacted on the age profile of the nursing workforce. However, the older ages of internationally qualified nurses

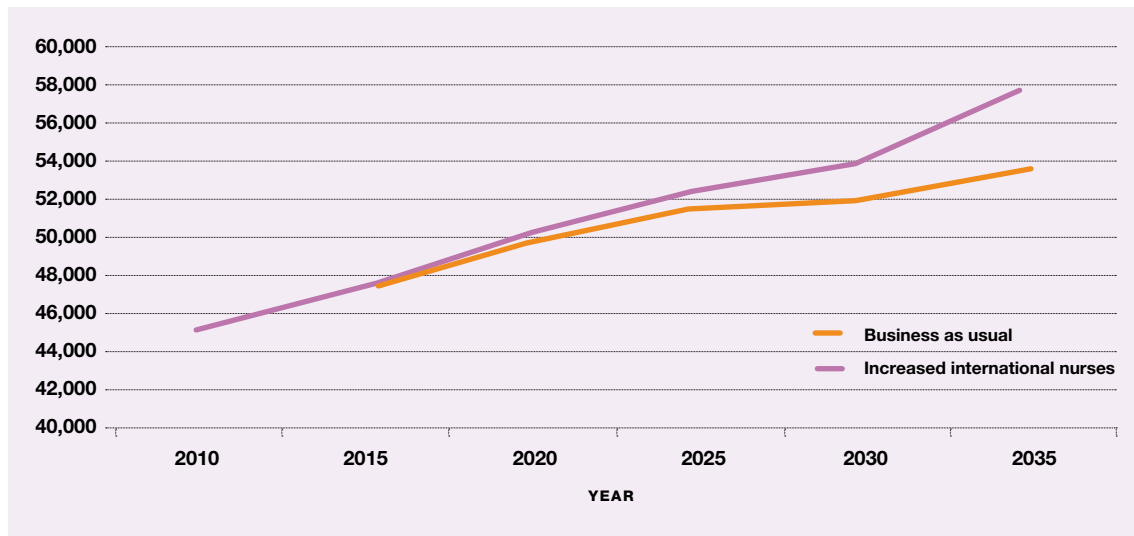
compared to new graduates, and as recent research has suggested, the older age of new graduates, could see an ageing workforce continue to be an issue in nursing towards 2035.

FIGURE 8.2 8.2 RN age profile, %, 2035



As illustrated in Figure 8.2, 16,390 RNs or 31 percent of the RN workforce will be over the age of 50 in 2035, under this scenario.

FIGURE 8.3 Nursing supply modelling: Increase international nurses 2010-2035



8.2.1 Comparing this scenario to the business as usual scenario:

- + Under the business as usual scenario, the total nurse workforce grows from 45,460 nurses in 2010 to approximately 54,010 nurses in 2035. This means there are an additional 3,740 nurses employed in 2035 under this scenario compared to the business as usual situation.
- + Under this scenario an additional 5,270 internationally qualified nurses will be working in New Zealand in 2035, compared to the business as usual scenario.
- + In terms of where these nurses are employed, 29,445 nurses will be employed by DHBs under this scenario in 2035. This is an additional 1,880 nurses employed in this employment setting compared to the business as usual scenario.

8.3 Scenario assumptions

Two key assumptions under this scenario are that firstly, internationally qualified nurses are attracted to New Zealand as a place to live, work, and raise children. Secondly, an increase in the proportion of internationally qualified nurses working in New Zealand changes the ethnic composition and age profile of the New Zealand nursing workforce.

8.3.1 Applications to work in New Zealand

Currently, it is perceived that there may be a growing difficulty in attracting quality RNs from abroad to New Zealand, due to an ageing workforce in many of the countries that New Zealand attracts internationally qualified nurses from. Under this scenario, this concern does not eventuate as New Zealand remains an attractive place to live and work. In the 2010-11 year, the Council received 1,844 applications for registration from internationally qualified nurses, and 1,304 or 71 percent of these applications were approved.³⁶ Most of these applications were from nurses from the Philippines and India, and these numbers are discussed in more detail below.

According to the Nursing Council there are four criteria that internationally qualified nurses who wish to apply for New Zealand registration must meet.

³⁶ Nursing Council of New Zealand. (2011). Annual Report for the Year Ending 31 March 2011. Nursing Council of New Zealand: Wellington).

These are:

- + The applicant has to establish their identity.
- + The applicant is required to complete an English Language Assessment (ELA) before applying for New Zealand registration (except applicants with Australian registration).
- + The applicant is assessed as meeting New Zealand educational standards.
- + The applicant demonstrates that they are fit for registration.

In terms of the English language assessment, the applicant must achieve a score of seven in all areas of the International English Language Testing System (IELTS) (Academic Test) or achieve a B pass in all areas of the Occupational English Test (OET).³⁷

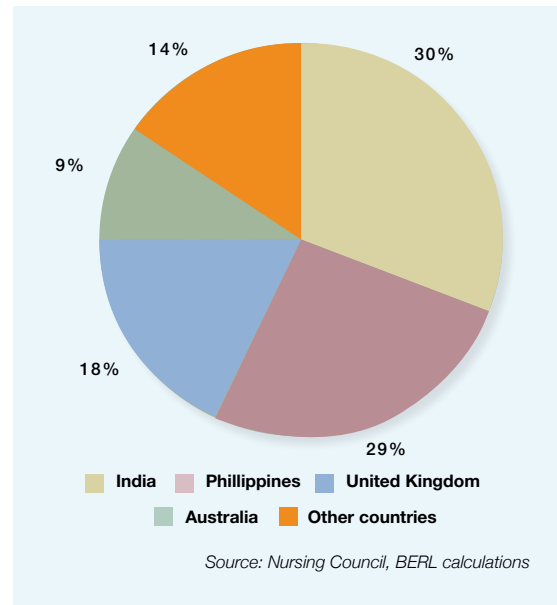
Competency is assessed through educational equivalence, and/or a Nursing Council approved competence assessment programme, or individualised competence assessment programme. The curriculum content that is specific to practise in New Zealand (including the Treaty of Waitangi, cultural safety and Māori health content) may be addressed separately by the requirement that the applicant completes a competence assessment programme in an organisation approved by the Nursing Council. These programmes have specific teaching content related to the health care context of New Zealand.³⁸

8.3.2 Profile of internationally qualified nurse applicants

In 2010, the largest number of applications for New Zealand registration was received from nurses from India (405 applications, or 30 percent). The second largest number of applications came from the Philippines (397 applications, or 29 percent), followed by the United Kingdom (243 applications, or 18 percent).

Most of these nurses held a bachelor of science in nursing (48 percent), followed by those with a diploma in nursing (24 percent).³⁹ Again, the majority of internationally qualified nurses were female, with four out of every five applications for New Zealand registration being female.

FIGURE 8.4 Internationally qualified nurses, 2010



In 2010, 1,052 of the internationally qualified nurses who applied for registration in New Zealand were between the ages of 25 and 39 years old (77 percent), while 282 (20 percent) were over the age of 40. The remaining 3% were 23 and 24 years of age.

This finding is also interesting from the point of view of graduate nurses. As discussed earlier, the average age of New Zealand graduate nurses is increasing. This is a trend that is also being witnessed overseas. In Canada, for example, the average age that nurses graduate and enter the workforce has increased. The average age at graduation was 26.5 years old in 2008, which has further pushed the average age of the workforce to 45.1 years old.⁴⁰

³⁷Nursing Council of New Zealand. International nurse registration. (www.nursingcouncil.org.nz/index.cfm/1,29,0,0,html/International-Registration).

³⁸Ibid.

³⁹Others held a range of other qualifications such as a Certificate in Nursing, a Bachelor of Nursing or a Diploma in Health Science.

⁴⁰Canadian Institute for Health Information. (2008). Regulated Nurses: Trends, 2003 to 2007. Ottawa: Canadian Institute for Health Information.

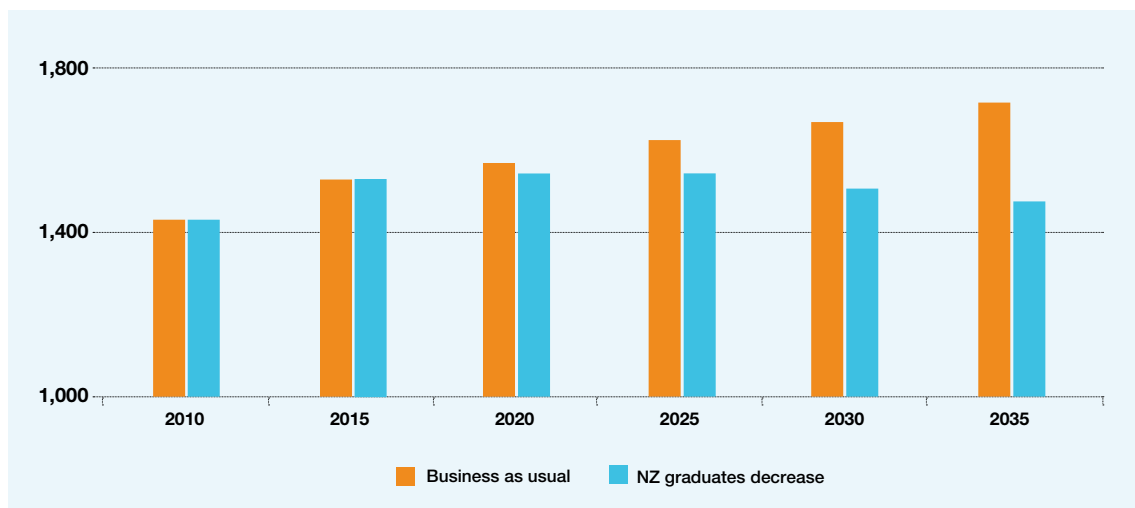
09

New Zealand Nurse
Graduates Decrease



Under this scenario, the number of registered nurse graduates initially grows from 1,430 graduate nurses per annum in 2010, to 1,578 graduate nurses per annum in 2020. It then begins to decline and the number of graduates in 2035 (1,520) is lower than the number of nurses who complete their education programme under the business as usual scenario (1,722) as shown by “NZ graduates decrease” bars in the figure below.

FIGURE 9.1 NZ graduates decrease, 2010-2035



As discussed earlier, in 2010 16 tertiary education providers offered a bachelor degree in nursing, while nine ITPs also offer a diploma in enrolled nursing. Between 2005 and 2010, 7,000 students were enrolled, on average, at any one time at these campuses studying nursing for up to three years. In addition, each year between 2005 and 2010, an average of 1,480 students graduated with a bachelor degree.

Under this scenario, enrolments in New Zealand nursing schools remain static between 2014 and 2019, decline by 0.25 percent per annum from 2020 to 2029, and then decline further between 2030 and 2035. The number of nurses graduating from New Zealand nursing schools declines to an annual average of 1,520 in 2035, or by an average of 0.5 percent per annum.

9.1 Background to scenario

The completion of degrees and subsequent registration of nurses is affected by attrition. Attrition can arise due to the nursing student failing courses within their programme of study, or completing their qualification but choosing not to take up registration or employment as a nurse.

9.1.1 International research on student attrition

It is important to consider attrition, as education is a key supply side factor in health workforce planning. Previous research has argued that to increase the number of nurses who are willing and able to fill positions, it is important to increase the retention of nursing students during their degree studies, as well as to increase the flow, age, and

ethnicity of people seeking entry into these courses of study.⁴¹

Most strategies employed internationally to address nursing shortages have focused on strategies to expand the supply of nurses through education initiatives.⁴² Australia and the United States have recognised shortages in their nursing workforce and the need to meet these workforce gaps through education and migration strategies.

- + Research recently completed in Australia argues that 14,000 RNs will be demanded each year, but with 10,000 new nurse graduates each year there will be a shortfall of 4,000 people. It is argued this shortfall may be addressed by migrant nurses.⁴³
- + The United States has the largest professional nursing workforce globally. There are almost 3 million registered nurses in the United States, but shortfalls continue due to not enough nursing graduates. It is argued that there could be a shortage of up to one million professional nurses in the United States by 2020.

Further, the OECD (Organisation for Economic Co-operation and Development) argues that shortages in the nursing workforce could be largely addressed through greater investment in expanding the capacity of nursing schools, and increasing the number of graduates.⁴⁴

Here it is interesting to note that the expansion in the capacity of nursing schools mentioned by the OECD includes the nurse educator workforce. In New Zealand, this workforce may struggle to find replacements in the future, as nurse educators age and retire. The ageing nurse educator workforce could therefore be considered a constraint on future nursing workforce plans. To prevent this constraint,

prior investment therefore needs to be made in the nurse educator workforce.

The International Centre for Human Resources in Nursing also argues that nurse education needs to be scaled up over a period of years to ensure the supply of nurses satisfies the ongoing demand. They state that a planned expansion over a period of 10 to 12 years would be manageable as it takes at least three years for the pipeline of additional trained nurses to arrive into the labour market.⁴⁵

9.1.2 New Zealand research on student attrition

Previous New Zealand research has argued that some nursing schools have attrition rates of up to 45 percent, while the national average is 20 to 25 percent. This rate can be even higher for Māori and Pasifika nursing students, and older students.⁴⁶

Interviews with tertiary education providers indicate that attrition rates are high in the first year of study, and then drop in the subsequent years of studying. Attrition is high in the first year as students decide if nursing is the right career for them.

For some students, the academic requirements to complete the programme are too high, and they choose to leave the programme or to take up other courses to assist them to 'bridge' into the programme at a later time. For others, the financial and time commitments of studying may be too high and this only becomes apparent to the nursing student when they begin their study and clinical placements.⁴⁷

9.2 Scenario results

Under this scenario, the number of nurses employed in New Zealand grows from 45,460 in 2010, to 51,565 in 2035. The number of RNs grows from 42,330 in 2010, to 46,930 in 2035 while the number of ENs grows from 3,130 in 2010, to 4,630 in 2035.

⁴¹ Cook, L. (2009). Report to the Minister of Health: An Evaluation of the Need for a Nurse Education and Training Board for the Oversight of Nursing Education and Training in New Zealand.

⁴² Spetz, J. (2011). Unemployed and Underemployed Nurses. International Centre for Human Resources in Nursing. International Council of Nurses: Switzerland.

⁴³ Eley, R., Eley, R. & Rogers-Clark, C. Reasons for entering and leaving nursing: An Australian Regional Study. *Australian Journal of Nursing*, 28, no.1, 2010.

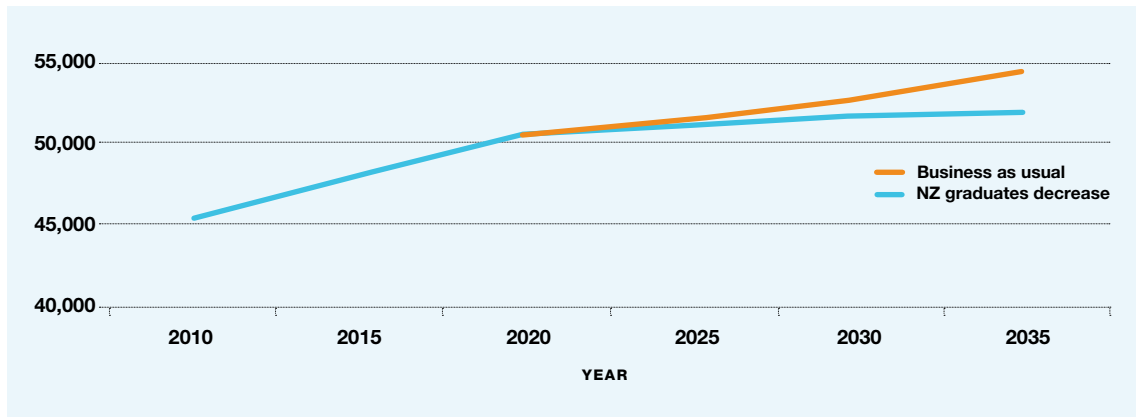
⁴⁴ Aiken, L. & Cheung, R. Nurse Workforce Challenges in the United States: Implications for Policy. *OECD Health Working Papers* no. 35. 2008.

⁴⁵ Lane, C., Antunes, A., Kingman, M. & Weller, B. (2010). The Nursing Community, Macroeconomic and Public Finance Policies: Towards a Better Understanding. International Centre for Human Resources in Nursing. International Council of Nurses: Switzerland.

⁴⁶ Cook, L. (2009). Report to the Minister of Health: An Evaluation of the Need for a Nurse Education and Training Board for the Oversight of Nursing Education and Training in New Zealand.

⁴⁷ Interview with Sharon Rydon, Manakau Institute of Technology; Dianna Fergusson, Western Institute of Technology; Sally Dobbs, Southern Institute of Technology; Dr Annette Huntington, Massey University; Dr Kathy Holloway, Whitireia Community Polytechnic.

FIGURE 9.2 Nursing supply modelling: NZ graduates decrease 2010-2035

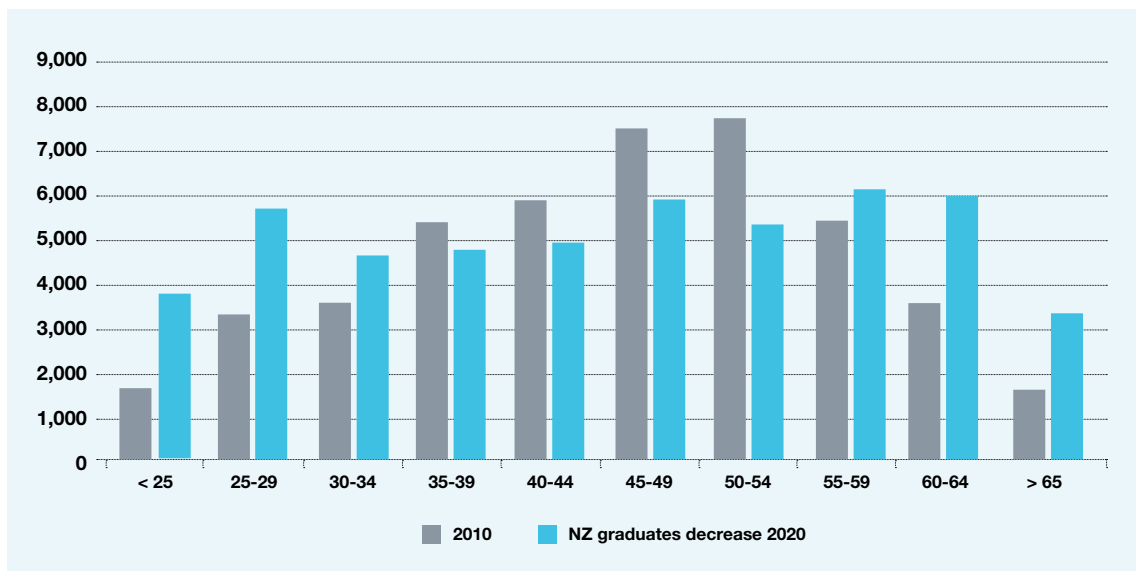


Similar to the previous scenario, a labour constraint exists by 2020 as the number of nursing graduates declines and a growing population continues to create a demand for health care services. However, unlike the previous scenario, in this scenario the labour constraint is not met by increasing the proportion of internationally qualified nurses working in New Zealand who meet New Zealand registration requirements. Under this scenario these proportions remain at approximately 25 percent of the RN workforce and 7.5 percent of the EN workforce being internationally qualified nurses.

This means that while there is an overall increase in the total number of nurses employed, this number is lower than under the business as usual scenario, by 2,445 nurses, and substantially lower than the other three scenarios examined.

In addition, a decline in the number of nursing graduates impacts on the age profile of the total nurse workforce. This is illustrated in Figure 9.3 where BERL presents a snapshot of the age profile of the total nurse workforce in 2020 compared to the situation in 2010.

FIGURE 9.3 NZ graduates decrease, age profile of total nurse workforce, 2020



Under this scenario, with lower enrolments in New Zealand nursing schools and therefore lower graduate numbers, the age profile of the RN workforce has aged further in 2020 as fewer nurses are entering the workforce. For example, 20,750 nurses in the RN workforce are over the age of 50 in 2020, compared to 18,200 nurses in this same age group under the business as usual scenario.

9.2.1 Comparing this scenario to the business as usual scenario:

Under this scenario, the overall number of nurses declines by 2035 compared to the business as usual scenario.

- + In 2035, approximately 46,930 nurses are employed as RNs and 4,630 nurses are employed as ENs under this scenario. Under the business as usual scenario, 49,270 nurses are employed as RNs in 2035 and 4,740 nurses are employed as ENs.
- + In terms of where these nurses are employed, 26,260 nurses will be employed by DHBs under this scenario in 2035. This is 1,220 less RNs employed in this employment setting compared to the business as usual scenario.

9.3 Scenario assumptions

The decline in graduate nurses may be due to:

- + a change in government policy in regards to the funding of tertiary education organisations and their courses and programmes;
- + a change in government policy in regards to international students and their courses and programmes of study;
- + nursing schools struggling to place students in clinical placements; or
- + nursing becoming an unattractive career option for school leavers and career changers.

In addition, assumptions around this scenario focus on two key challenges noted by tertiary education providers in regards to workforce supply.

- + Clinical placement and education may further limit the size of the future intake of nursing students. This may impact on any initiatives to increase the size of the nurse workforce, and the competence and confidence of nursing graduates.
- + There is a need for targeted initiatives to be employed to increase the number of nursing graduates from Māori and Pacific Island communities. This is important to increase the ethnic diversity of the nursing workforce to better reflect the communities that nurses work in.

9.3.1 Limiting the intake of students

From an education policy point of view there is the concern that student enrolment numbers in nursing will be capped. Currently there is no EFTS (Equivalent Full-Time Student) capping on the number of people that can enter nurse education programmes. But, nursing schools are within tertiary education providers. Any changes in the wider funding of the tertiary education sector, including EFTS capping, could impact on nursing student numbers.

Nursing schools already limit the number of students they accept in each intake. This number could be further limited due to the limited availability of clinical placements, and the number of nurse educators, role models and support people that are available. Most nursing schools have a greater number of applications than they do places.

Clinical placements where the nursing student is well supported, has good role models, and is exposed to a variety of work environments are important. Interviewees argued that graduates may be attracted to work in a specialty area of nursing due to meeting and working with good role models in these environments during their placements.

Clinical training capacity may limit the size of the future intake of nursing students. Many education providers see the biggest challenge in nursing education continues to be access to practice placements for undergraduate students. This challenge takes different forms depending on location.⁴⁸

⁴⁸ NETS Response to New Zealand Nurses Organisation Consultation Document: 2020 and Beyond: A vision for Nursing – second draft. 2011. (<http://nurseseducation.org.nz/Resources/Submissions-position-paper-and-publications>).

Education providers argue that some of the concerns in regards to student placements could be met through the use of dedicated education units, e-learning and observed simulation, and simulation of a situation. However, it is difficult for a student nurse to gain confidence in their ability without being in a 'real life' situation.⁴⁹ In short, a range of clinical learning models may need to be explored towards 2035.

9.3.2 Nurse Entry to Practice Programme (NETP)

The Nurse Entry to Practice Programme is a structured introduction to clinical experience that was introduced in 2006. The programme provides graduate RNs with an introduction to working as a nurse, and it is undertaken after the completion of an undergraduate degree and acceptance for registration as a nurse.

As part of their education, RNs gain theoretical knowledge, but have limited opportunities to demonstrate their competency in the undergraduate nursing programme. The NETP programme therefore provides the opportunity for graduate RNs to gain further competency, including skills in directing and delegating tasks to other health workers.

The NETP programme is undertaken predominantly within District Health Boards. However, stakeholder interviewees expressed a desire for the programme to be further extended and funded into private healthcare and general practise settings. They argued graduate nurses actively seek employment where NETP places are provided. This is an indication of the importance graduates place on NETP, and the value they see in having this experience.

9.3.3 Unsuccessful student programmes

Given the smaller share of RNs who identify as Māori or Pacific peoples, the Ministry of Health and DHBNZ argue it is important to have workforce development plans in place for these ethnic groups, as they will make-up a larger share of the total population in the future.⁵⁰

Various research projects have investigated how to attract more Māori and Pasifika peoples into nursing, and how to retain those who are trained. DHBNZ, for example, has undertaken research on how to better support Māori and Pasifika undergraduate nursing students.

This research found that a large proportion of Māori and Pasifika nursing students do not complete their first year of study. A number of reasons were cited including family commitments, access to childcare facilities, and not enough role models and supporters in educator roles in schools or DHBs.⁵¹ This research highlighted the important connection between the health and education sectors, and the need for effective recruitment and retention strategies that include career plans and career development.

In this scenario BERL assume that the various policies or programmes that have been put in place as a result of research programmes and projects, such as those undertaken by DHBNZ, are unsuccessful. In addition, BERL assume that programmes that focus on attrition rates and encouraging greater numbers of Māori and Pasifika peoples to enter and complete nursing qualifications are unsuccessful. Further, BERL assume that students are not attracted into nursing through scholarships, mentoring or support, and do not receive appropriate careers advice and information.

⁴⁹ Interviews with Sharon Rydon, Manakau Institute of Technology; Dianna Fergusson, Western Institute of Technology at Taranaki; Dr Kathy Holloway, Whitireia Community Polytechnic.

⁵⁰ Ministry of Health and DHBNZ Workforce Group. (2007). A Career Framework for the Health Workforce in New Zealand. Ministry of Health and DHBNZ: Wellington.

⁵¹ Future Workforce, DHBNZ. (2009). Report on Support for Māori and Pacific Nursing and Midwifery Undergraduate Students. Wellington: DHBNZ. This research was supported by our interviews

10

Conclusion

The modelled scenarios reinforce the need for a proactive, strategic approach to the development of the nursing workforce. This strategy needs to have clear priorities that are agreed on and pursued to ensure the nursing profession is positioned to proactively respond to the ever changing demands of New Zealand society for nursing services.

The modelled scenarios reinforce the need for a proactive, strategic approach to the development of the nursing workforce. This strategy needs to have clear priorities that are agreed on and pursued to ensure the nursing profession is positioned to proactively respond to the ever changing demands of New Zealand society for nursing services.

The pace of change in professional competencies and relevant practices are set to accelerate towards 2035, in line with medical and technological developments, and the evolution of models of care. Workplace settings for nurses will also change, as the provision of health services adapts to evolving community needs. These changes are likely to occur during a period when the ethnicity, skills and capabilities of the nursing workforce will also alter, as demographic trends in our communities impact on this profession.

Existing constraints on nursing student numbers, through limitations on the number of clinical placements, will inevitably result in nurse shortages without a supply-side intervention by 2015.

This inevitability is based on the demand for nurses increasing as the population increases to 5.26 million by 2035. It is also based on the results of the modelling, which indicates that the number of nurses required is noticeably larger than trainee numbers. This higher growth also needs to be maintained over most of the period to 2035.

Internationally qualified nurses could be used to ease this shortage. New Zealand, the United Kingdom, Canada, the United States and Australia experience cyclical shortages in nurses, and currently fill these gaps with migrant nurses. But the attraction of this option comes with its own challenges, particularly as each of these countries have an ageing RN workforce. These challenges include ensuring an appropriate fit with the current and changing New Zealand cultural environment, and that the qualifications and capabilities of these nurses are appropriate for the New Zealand health sector.

To counter this dependency, overseas projects have focused on strategies to expand the supply of nurses through educational initiatives, and changes

in working conditions to improve retention. In New Zealand, education providers see the biggest challenge in expanding the supply of nurses through educational initiatives being access to practice placements for undergraduate students and clinical training capacity limiting the size of student intakes.⁵²

To counter this challenge, increased investment in nurse education and employing a range of clinical learning models may increase nurse graduate numbers. Further, education providers argue that some of the concerns in regards to student placements could be met through the use of dedicated education units, e-learning and observed simulation, and simulation of a situation. However, it is difficult for a student nurse to gain confidence in their ability without being in a 'real life' situation.⁵³ In short, a range of clinical learning models may need to be explored towards 2035.

The low proportion of Māori and Pasifika nurses and nursing students means the nursing workforce is unlikely to move towards reflecting New Zealand's ethnic composition in the near future. Further, should an increasing number of migrant nurses be used to overcome a nursing shortage, this divergence will only be magnified.

Human resources management in the health workforce is a challenging task. New Zealand experiences cyclical shortages in nurses, and currently fills these gaps with migrant nurses. This dependency could grow in the future with an ageing workforce. The New Zealand nursing workforce therefore faces a challenging future, which could be compounded by changes in professional practice and models of care.

⁵² NETS Response to New Zealand Nurses Organisation Consultation Document: 2020 and Beyond: A vision for Nursing – second draft. 2011. (<http://nurseducation.org.nz/Resources/Submissions-position-paper-and-publications>).

⁵³ Interviews with Sharon Rydon, Manakau Institute of Technology; Dianna Fergusson, Western Institute of Technology at Taranaki; Dr Kathy Holloway, Whitireia Community Polytechnic.

Appendix A: Technical Tables

TABLE 11.1 RNs, gender, 2010

Gender	Total 2010	% of total
Female	39,125	92%
Male	3,209	8%
Total	42,334	100%

Source: Nursing Council, BERL calculations

TABLE 11.2 ENs, gender, 2010

Gender	Total 2010	% of total
Female	3,138	97%
Male	100	3%
Total	3,238	100%

Source: Nursing Council, BERL calculations

TABLE 11.3 RN employment by setting, 2010

Employment setting	Number
DHB	24,190
PHO/Community Service	5,172
Private Hospital	3,194
Residential Care	3,087
Other	2,144
Not Stated	1,840
Educational institution	790
Government agency	492
Nursing Agency	473
Maori Health Provider	405
Self-Employed	390
Rural	108
Pacific Health Provider	49
Total	42,334

Source: Nursing Council, BERL calculations

TABLE 11.4 EN employment by setting, 2010

Employment setting	Number
DHB	1,351
Residential Care	972
Private Hospital	375
Other	247
PHO/Community Service	199
Not Stated	93
Nursing Agency	90
Maori Health Service Provider	41
Educational institution	25
Rural	15
Self-Employed	14
Government agency	12
Pacific Health Provider	3
Total	3,129

Source: Nursing Council, BERL calculations

TABLE 11.5 RN employment by region, 2010

Region	Number
Northland	1,519
Auckland	11,837
Waikato	3,597
Bay of Plenty	2,636
Tairāwhiti	437
Hawkes Bay	1,545
Taranaki	1,057
Manawatu-Whanganui	2,320
Wellington	4,670
Nelson-Marlborough	1,318
West Coast	334
Canterbury	5,908
Otago	1,998
Southland	889
Not Stated	1,237
Overseas	1,032
Total	42,334

Source: Nursing Council, BERL calculations

TABLE 11.6 EN employment by region, 2010

Region	Number
Northland	148
Auckland	577
Waikato	256
Bay of Plenty	184
Tairāwhiti	35
Hawkes Bay	122
Taranaki	102
Manawatu-Whanganui	212
Wellington	220
Nelson-Marlborough	107
West Coast	85
Canterbury	317
Otago	260
Southland	132
Other	51
Not Stated	22
Total	2,830

Source: Nursing Council, BERL calculations

TABLE 11.7 RN enrolments, 2004-2010

	2004	2005	2006	2007	2008	2009	2010
Domestic	6,520	6,540	6,120	6,250	6,250	6,640	6,980
International	400	590	620	590	520	520	560
Total	6,920	7,130	6,740	6,840	6,770	7,160	7,540

Source: Education counts, BERL calculations

TABLE 11.8 EN enrolments, 2004-2010

	2004	2005	2006	2007	2008	2009	2010
Domestic	41	51	81	74	74	91	94
International	13	15	30	30	46	71	56
Total	53	66	112	104	119	162	150

Source: Education counts, BERL calculations

TABLE 11.9 Education providers by type, 2010

Education providers	Number
Universities	2,090
ITPs	6,170
Total	8,260

Source: Education counts, BERL calculations

TABLE 11.10 RNs, self-identified ethnic group, 2010

Ethnic group	Number
NZ European/Pakeha	25,852
Other European	6,480
NZ Maori	2,559
Pasifika	1,354
Indian	1,655
Chinese	839
Other Asian	2,028
Other	2,003
Not Stated	4,493
Total	47,263

Source: Nursing Council, BERL calculations

TABLE 11.14 Internationally qualified nurses, 2010

Country of origin	Number	% of total
India	405	30
Philippines	397	29
United Kingdom	243	18
Australia	123	9
Other countries	196	14
Total	1,364	100

Source: Nursing Council, BERL calculations

TABLE 11.13 Graduate RNs, 2005-2010

	2005	2006	2007	2008	2009	2010
Domestic	1,480	1,270	1,250	1,340	1,340	1,360
International	70	140	200	140	160	160
Total	1,560	1,410	1,450	1,480	1,510	1,520

Source: Education counts, BERL calculations

TABLE 11.11 Ethnicity of graduate RNs, 2010

Ethnicity	Number	% of total
European	2,260	63%
Māori	300	8%
Pasifika	140	4%
Asian	680	19%
Other	200	6%
Total	3,580	100%

Source: Education counts, BERL calculations

TABLE 11.12 Ethnicity of graduate ENs, 2010

Ethnicity	Number	% of total
Europeans	230	78%
Māori	20	7%
Pasifika	4	1%
Asians	30	10%
Other	10	3%
Total	294	100%

Source: Education counts, BERL calculations

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