



Workforce Supply Projections, 2014-2035

# The Physiotherapy Workforce

August 2014

## **Background**

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# Executive Summary

## Introduction

Physiotherapy is a registered health profession in New Zealand. To practise, physiotherapists are required to have a physiotherapy bachelor degree or equivalent, be registered with the Physiotherapy Board of New Zealand, and hold a current Annual Practising Certificate (APC).

The Physiotherapy Board of New Zealand is a statutory body and responsible authority under the Health Practitioners Competence Assurance Act 2003. The Board sets standards, and monitors and promotes competence, continuing professional development, and proper conduct for the practice of physiotherapy. The size and shape of the physiotherapy workforce now and in the future is therefore of strategic importance to the Board.

The Board needs workforce data and information to engage with government ministries, policy-makers and funders, tertiary education providers, professional bodies and associations, employers and practitioners, and to discuss and promote the practise of physiotherapy as a health profession.

This project has analysed the APC and workforce survey data and information for the 2013/2014 practising year. It has supplemented this with data from the 2013 Census of Population and Dwellings, and also used this data as a benchmark.

This snapshot of the physiotherapy workforce has allowed BERL to use economic modelling to project the potential changes that could occur in the supply of physiotherapists towards 2035. These changes are modelled as scenarios that focus on changing the number of physiotherapy graduates and internationally qualified physiotherapists working in New Zealand. The scenarios also consider if the population of New Zealand grows to 5.3 million, the potential effects of a growing and ageing population on the physiotherapy workforce.

## Scenarios

Each scenario is compared to a business as usual (BAU) scenario.

- In the 2013/14 practising year 4,040 APCs were issued by the Board. Of this number, 3,200 APC holders were trained in New Zealand while 840 were internationally qualified. Under a BAU scenario, the number of registered physiotherapists holding an APC grows to approximately 5,500 in 2035.
- Annual turnover is 6.2 percent, where turnover includes all physiotherapists who leave the workforce but does not include people who change employer or decrease the number of hours they work per week.
- The profile of the physiotherapy workforce remains the same in terms of the age, sex and ethnicity of the workforce. The proportion of physiotherapists working in each practise setting, and full and part-time also remains the same.
- Student enrolments grow by an average of 0.6 percent per annum and approximately 90 percent of New Zealand trained physiotherapists remain in New Zealand after graduation.
- The proportion of internationally qualified physiotherapists remains the same, at approximately 21 percent of the workforce. This is based on the assumption that the number of successful applications for an APC grows at one percent per annum.

**Figure 1.1 Total physiotherapy workforce, scenarios towards 2035**



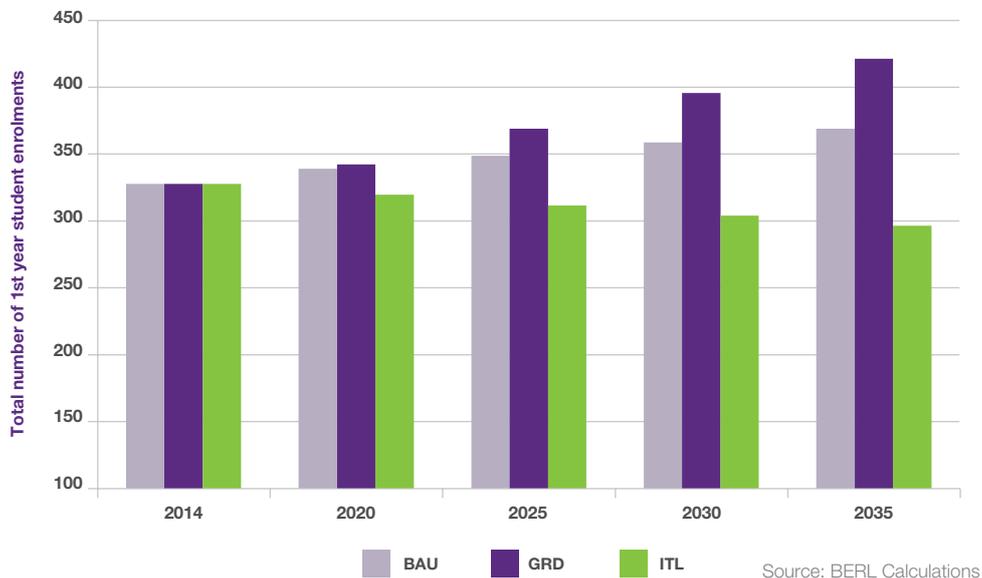
Source: BERL Calculations

## New Zealand graduate scenario

Under the New Zealand graduate scenario (GRD), the number of students enrolling and completing physiotherapy qualifications grows compared to the BAU scenario. This growth in New Zealand trained physiotherapists is required to maintain the current physiotherapist to population ratio as the population grows towards 2035. This ratio is one physiotherapist for every 1,055 people. This constraint of a physiotherapist to population ratio may or may not be appropriate. However, it does provide an indication that if the population grows to 5.3 million the number of physiotherapists will need to grow from 4,040 in 2014, to 4,985 physiotherapists with an APC in 2035. This means 355 new physiotherapists will need to enter the workforce each year between 2014 and 2035. This replacement rate will maintain the physiotherapist to population ratio of one physiotherapist for every 1,055 New Zealanders.

- Under this scenario, the number of domestic and international students enrolling and completing physiotherapy qualifications increases to 265 per annum by 2035, with the number of places available at New Zealand physiotherapist schools increasing from around 330 in 2014 to approximately 420 in 2035.
- In 2035, the number of New Zealand trained physiotherapists will be 3,359 this is an increase of 163 practitioners from 2014.
- In contrast, the number of internationally trained physiotherapists will be 1,627 in 2035 this is an increase of 783 practitioners from 2014.
- The greatest increase in physiotherapist numbers will occur between 2015 and 2020, when an additional 320 physiotherapists will be in employment.
- Under the GRD scenario, the number of students enrolling and completing physiotherapy qualifications could change due to changes in the permitted enrolment funding caps, the funding received by the physiotherapy schools from the Tertiary Education Commission, the average cost of training a full-time physiotherapy student, or the placement of students in final year practice settings.

**Figure 1.2 First year enrolments, scenarios towards 2035**

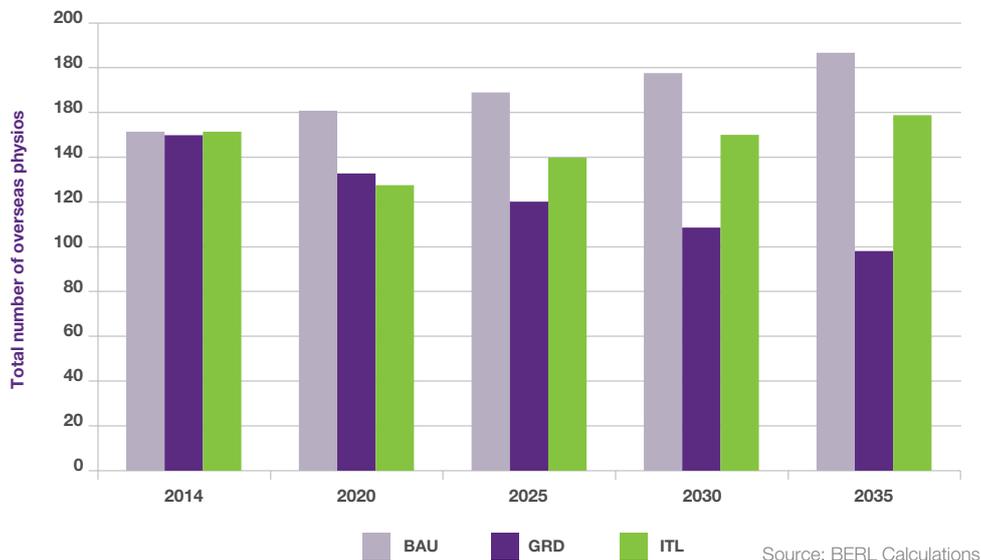


## Internationally qualified workforce scenario

Under the internationally qualified workforce scenario (ITL), the number of students enrolling and completing physiotherapy qualifications declines compared to the BAU scenario. This leads to a labour constraint that is met by an increase in the number of internationally qualified physiotherapists working in New Zealand.

- To maintain the current physiotherapist to population ratio of one physiotherapist for every 1,055 people, and meet the demand for physiotherapy services, the total number of physiotherapists will need to grow from 4,040 physiotherapists with an APC in 2014, to 4,985 physiotherapists with an APC in 2035.
- Due to a decline in the number of New Zealand trained physiotherapists, the number of internationally qualified physiotherapists joining the New Zealand workforce will increase under the ITL scenario by around 150 practitioners per annum towards 2035.
- Under this scenario, the greatest overall increase in physiotherapists will occur between 2015 and 2020. During this five year period, the number of physiotherapists will increase by approximately 350 practitioners and this growth will be largely driven by an increase in internationally qualified practitioners.
- The number of internationally qualified physiotherapists in the workforce will grow from approximately 840 in 2014, to approximately 1,970 under this scenario.
- In contrast, the number of New Zealand trained physiotherapists will decrease under this scenario, from approximately 3,200 in 2014 to 3,020 in 2035.
- Under the ITL scenario, the number of internationally qualified physiotherapists entering the New Zealand workforce could change due to changes in immigration policy or the assessment and registration requirements to practise in New Zealand, or changes in the home country of the migrant physiotherapist such as an increase in the salary of the physiotherapy workforce, improvement in working conditions, or greater demand for physiotherapy services.

**Figure 1.3 Internationally qualified physiotherapists, scenarios towards 2035**



## Growing and ageing population scenario

Under a growing and ageing population scenario (AGE), the average age and ethnic diversity of the physiotherapy workforce could change, along with where practitioners are employed.

- An example that is used in this scenario is employment in private hospitals and rest homes. Here, it is assumed that physiotherapy services offered in private hospitals and rest homes are maintained across the period 2014 and 2035. To do this however, the number of physiotherapists employed in these practise settings will need to increase to keep up with the increase in the New Zealand population over the age of 65. This increase will be at the expense of other practise settings due to the constraint of the population to physiotherapist ratio.
- Overall, this scenario provides an indication that there may be a need for the Physiotherapy Board to consider how an ageing workforce could impact on the hours of work and practise settings of practitioners in the future.
- Further, having a greater proportion of the workforce over the age of 55 may also impact on turnover, and the number of people that may be required to enter the workforce each year.
- Overall, these figures provide an early indication that there may be a need for the Physiotherapy Board and the Schools of Physiotherapy to consider how physiotherapy students and in turn practitioners better represent the population they currently serve, and how their client base may also change in the future.

## Assessment

In each of these scenarios, we assume that the current level of service of one physiotherapist for every 1,055 people will be provided to the New Zealand population through to 2035. This ratio places a constraint on the workforce. This means any behaviour change needs to be balanced – an increase in the number of internationally qualified physiotherapists in the workforce to make-up for a shortfall in New Zealand trained graduates, an increase in New Zealand trained graduates to make-up for a shortfall in internationally qualified physiotherapists in the workforce, or a decrease in the number of physiotherapists employed in private practice to make-up for an increase in the number required in private hospitals and rest homes.

As discussed earlier, this constraint may or may not be appropriate; however, it does provide an indication that if the population grows to 5.3 million the number of physiotherapists will need to grow from 4,040 in 2014, to 4,985 physiotherapists with an APC in 2035.

The information and data derived from the workforce scenarios provides the Physiotherapy Board with a starting point to proactively engage in conversation with public policy funders and decision-makers, and provides the Board with an evidence base to respond to proposed public policy changes or funding decisions. Overall, the workforce scenarios indicate:

- An average of 950 students enrolled across the bachelor of physiotherapy degree may be an under or over-estimation of workforce requirements. Student enrolment and completion rates need to be monitored, along with graduate destinations, to ensure that the supply of graduates is adequate to replace those who are retiring or leaving the profession.
- An ageing population and changing health needs will impact on the services required of physiotherapists. This may impact on the way that physiotherapists are trained in New Zealand, the skills, knowledge and prior experiences physiotherapy schools look for in prospective students, and the skills that graduates gain through their training. It may also impact on the attributes that we look for in international applicants and the types of people and qualifications that we try to attract from overseas.
- The services required of physiotherapists may change due to changes in their client base. Currently, the average age of physiotherapists varies across practise settings. For example, practitioners who are employed within private hospitals and rest homes have the highest average age, and these settings have the greatest proportion of practitioners over the age of 55 years old. If there is a greater need for practitioners in this area in the future due to population ageing and changing health needs, this may impact on the career choices, scope of practice and practice settings of graduates and current practitioners.
- The student population and the physiotherapy workforce do not reflect the ethnic make-up of New Zealand. This difference could become starker in the future as the ethnic make-up of the New Zealand population is expected to change towards 2035 due to migration and a greater number of young Māori and Pasifika people in the overall population.

However, the modelling draws on trends – workforce trends, student enrolment and completions trends – and uses this data to make assumptions regarding behaviour in the future. These trends may or may not be a useful reflection of the future workforce or student behaviour. For example, they may illustrate a period where it was popular to undertake study in physiotherapy or when turnover was low within the profession as people were generally happy with their working conditions and continued to work for the same employer.

There is also a risk in assuming that the current situation in regards to the workforce – the total number of people employed, their qualifications, and areas of practice – is adequate, and that the size of the current workforce is adequately meeting demand and should continue to grow as per past trends.

This research has also highlighted that there are gaps in the workforce data and that it is important to fill these gaps and collect further data and information to monitor workforce developments and drive strategic workforce initiatives and policy.

This future data gathering and evaluation will allow the Board to engage in conversation with policy makers, funders and others within the health sector, and make decisions that are evidence-based.

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- Karen McLeay, Executive Director, Physiotherapy New Zealand
- The Physiotherapy Board of New Zealand.

However, no member or group has been asked to endorse the contents of this report. Our acknowledgement of their assistance should not be read as such. The contents of this report are the sole responsibility of the authors and BERL.

## Ethical statement

This research has drawn on survey data on physiotherapist practitioners who registered with the Physiotherapy Board of New Zealand in the 2013-2014 year. The anonymity of these practitioners was respected, and all data remained confidential. Careful consideration was given to the use of this data to avoid harm to survey participants.

# 1.0

## Introduction

In New Zealand all practising physiotherapists are legally required to be registered with the Physiotherapy Board of New Zealand, and hold a current Annual Practising Certificate (APC).

The Physiotherapy Board of New Zealand is a regulatory authority under the Health Practitioners Competence Assurance Act 2003 (HPCA Act).

The vision of the Board is *fostering excellence in physiotherapy*. To ensure that this vision is met, the Board sets standards, monitors and promotes competence, continuing professional development and proper conduct for the practice of physiotherapy in the interests of public health and safety. The Board is able to undertake this monitoring through various measures, including APCs.

The aim of this project is to analyse the current physiotherapy workforce and consider the size of the future workforce. To do this BERL has analysed APC and workforce survey data and information for the 2013/2014 practising year, supplemented by data from the 2013 Census of Population and Dwellings, and worked with the Board to develop four workforce scenarios that use economic modelling. Each scenario is compared to a business as usual situation, which is used as a benchmark to compare and measure the effects of assumed changes in behaviour or economic activity.

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

The report begins with a discussion on the physiotherapy workforce in 2013. Data on the workforce was gathered from the Physiotherapy Board, the 2014 Physiotherapy Workforce Annual Survey, and the 2013 Census of Population and Dwellings. Sections three to six of the report then discuss each of the modelled scenarios, outlining the assumptions used, and the results of that modelling. Appendices include a list of references, information on the Physiotherapy Board of New Zealand, the scopes of practice for physiotherapists, and additional Census data.

# 2.0

## The physiotherapist workforce, 2013

In 2013, the New Zealand Census of Population and Dwellings indicated that 3,147 people were employed as physiotherapists throughout New Zealand.

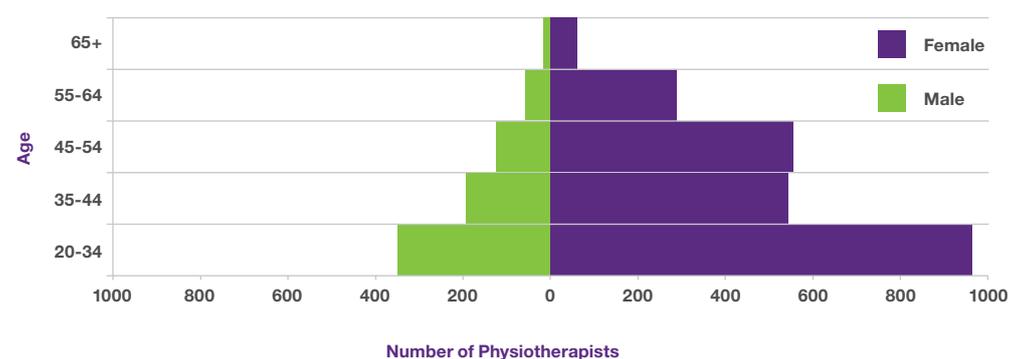
Census data has been used as a benchmark in this project and to provide supplementary data and information that was not available through the Physiotherapy Workforce Annual Survey.

### 2.1 Age and sex

Of the 3,147 people employed as physiotherapists in 2013, 738 were male while 2,412 were female, as shown in the population pyramid in Figure 2.1. Male physiotherapists were one-third of the workforce in 2013, and this trend is typical of Commonwealth countries whereby physiotherapy is a female-dominated workforce.

Population pyramids are one means of visually representing a population by age and sex. Here, the pyramid in Figure 2.1 indicates that 42 percent of the New Zealand physiotherapy workforce was under the age of 34 in 2013. The largest age group were those aged 30 to 34 years old, at 17 percent of the total workforce, followed by those aged 25 to 29 years old, at 16 percent of the total workforce. The average age of physiotherapists in 2014, according to the Census, was 35.

**Figure 2.1 Age and gender of physiotherapists, Census 2013**



As a comparator, 45 percent of physiotherapists in Australia were under the age of 34 in 2013, and the largest age group were those aged 25 to 29 years old, at 21 percent of the total workforce.<sup>1</sup>

<sup>1</sup> Physiotherapy Board of Australia. (2013). Physiotherapy Registrant Data: October 2013. ([www.physiotherapyboard.gov.au](http://www.physiotherapyboard.gov.au)).

## 2.1.1 Overseas comparators

In 2012, approximately 20,081 physiotherapists were employed in Australia and the majority were females. The average age was 38.6 years old, and one third of physiotherapists worked part-time.<sup>2</sup> The ratio of physiotherapists to the total population was one physiotherapist for every 1,082 people.

The supply of physiotherapists into the Australian workforce is steadily growing, with an increase in the number of physiotherapy schools. In 2012, approximately 1,550 people completed a physiotherapy qualification, while 2,500 students enrolled to begin.

Approximately 85 percent of the total workforce in Australia trained in Australia. New Zealand physiotherapists were 3.7 percent of the workforce in 2012, but comprised almost 25 percent of all internationally qualified physiotherapists working in Australia.<sup>3</sup>

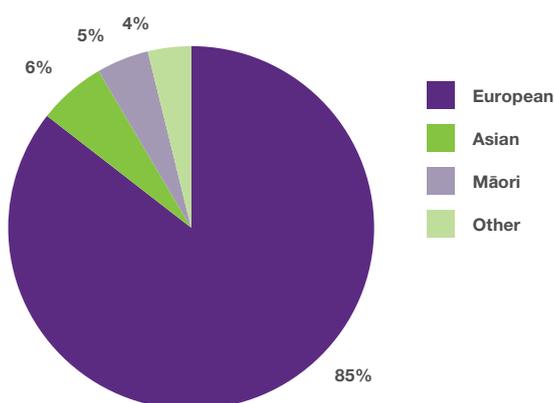
Workforce data on physiotherapists in Canada is for the 2011 year. This data indicates that in 2011, approximately 17,653 people were employed as physiotherapists. This means the ratio of physiotherapists to the total population is higher in Canada than Australia or New Zealand, with one physiotherapist for every 1,896 people in 2011.<sup>4</sup>

The average age of physiotherapists in Canada was 41.9 years old in 2011 and this workforce is also predominantly female, but this varies between provinces. Nearly 90 percent of physiotherapists in Canada work in urban areas, and equal numbers work in hospitals and private practice. One third of physiotherapists work part-time, and the majority of the workforce work for a single employer.

Approximately 12 percent of Canadian physiotherapists are internationally qualified, with 20 percent of these physiotherapists coming from the United Kingdom, 15 percent from India and 10 percent from the United States.<sup>5</sup>

## 2.2 Ethnicity

Figure 2.2 Ethnicity of physiotherapists, Census 2013



2 Health Workforce Australia. (2013). Health Workforce by Numbers – Issue 2. ([www.hwa.gov.au](http://www.hwa.gov.au)).

3 Health Workforce Australia. (2013). Health Workforce by Numbers – Issue 2. ([www.hwa.gov.au](http://www.hwa.gov.au)).

4 Canadian Institute for Health Information. (2011). Physiotherapists in Canada, 2011 – National and Jurisdictional Highlights. ([www.cihi.ca](http://www.cihi.ca)).

5 Canadian Institute for Health Information. (2011). Physiotherapists in Canada, 2011 – National and Jurisdictional Highlights. ([www.cihi.ca](http://www.cihi.ca)).

In 2013, 85 percent of physiotherapists in New Zealand were of New Zealand European or European ethnicity, as shown in Figure 2.2.<sup>6</sup> The remaining 15 percent consisted of people who identified with Asian, Māori and other ethnic groups such as Samoan and Tongan.<sup>7</sup>

### 2.2.1 Overseas born physiotherapists

As shown in Figure 2.3, one-third of all physiotherapists employed in New Zealand were born outside of New Zealand.

**Figure 2.3 Birthplace of physiotherapists, Census 2013**

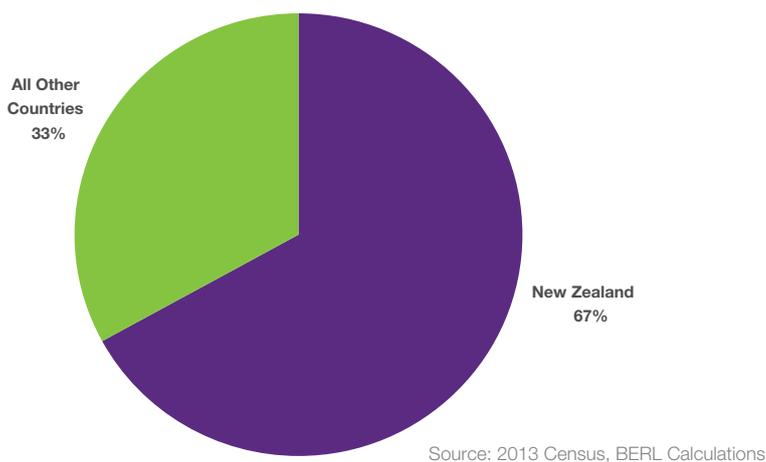
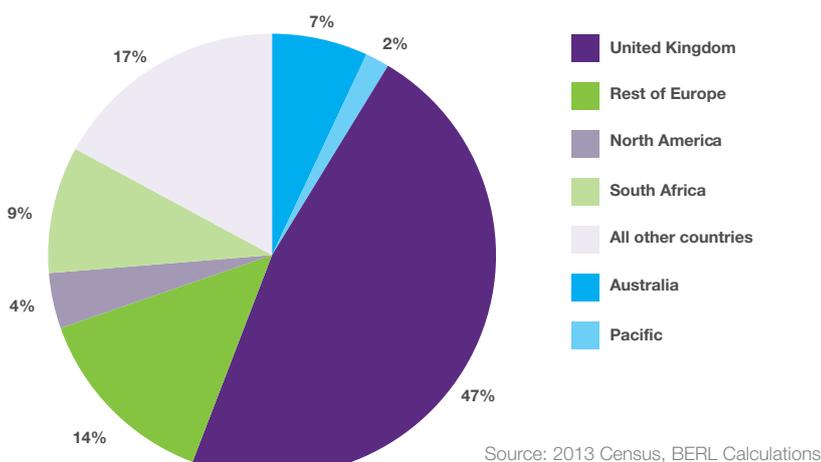


Figure 2.4 provides a further breakdown of where these physiotherapists were born. Almost half of all overseas born physiotherapists were born in the United Kingdom, followed by the rest of Europe with 14 percent, and South Africa with nine percent. The “All Other Countries” category includes physiotherapists born in Asia, South America, the Middle East, and Africa excluding South Africa.

**Figure 2.4 Country of birth, overseas born physiotherapists, Census 2013**

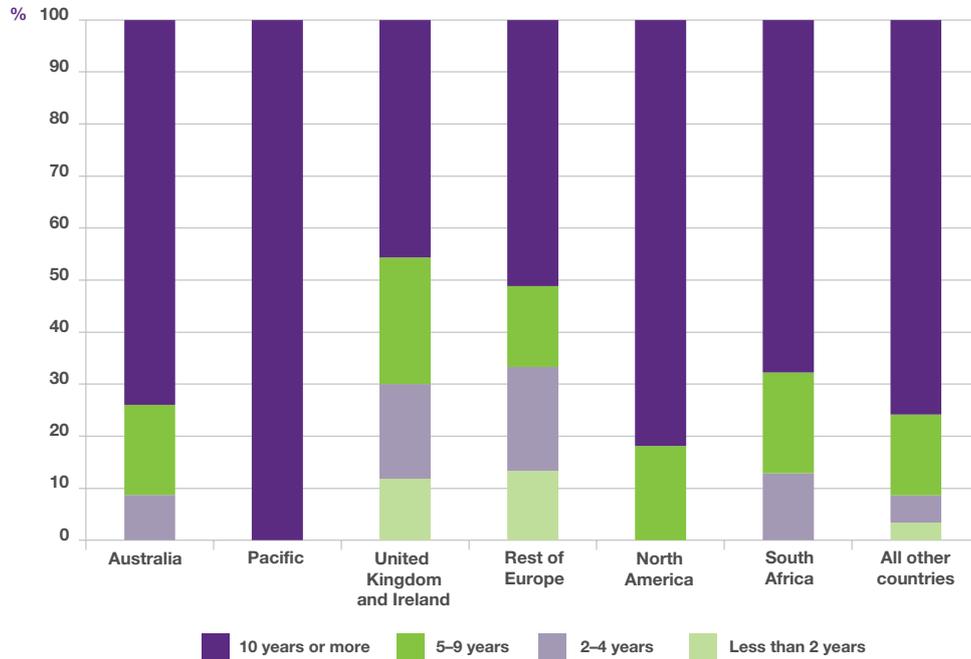


The majority of overseas born physiotherapists have been in New Zealand for 10 years or more, at 56 percent, while almost 20 percent had been living in New Zealand for five to nine years.

<sup>6</sup> The European ethnicity classification includes people from Britain, Ireland, Scotland, Western, Eastern and Central Europe, Canada, Australia, the United States of America, and South Africa.

<sup>7</sup> People are counted just once according to the ethnic group or combination of ethnic groups they have reported. This means that the total number of responses equals the total number of people who stated an ethnicity.

**Figure 2.5 Length of time in New Zealand, overseas born physiotherapists, Census 2013**

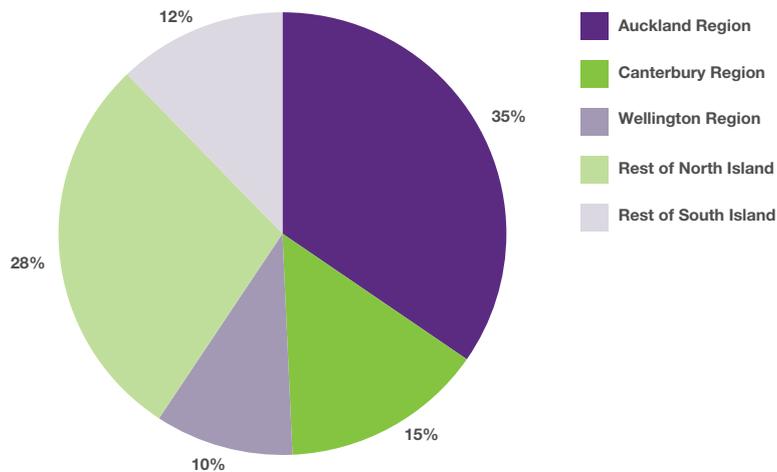


Source: 2013 Census, BERL Calculations

## 2.3 Work place and conditions

In 2013, 60 percent of physiotherapists lived in the Auckland, Canterbury and Wellington regions, as shown in Figure 2.6. Outside of these regions, eight percent of physiotherapists lived in the Waikato Region, followed by seven percent in the Otago and Bay of Plenty regions respectively.

**Figure 2.6 Physiotherapists by region of residence, Census 2013**

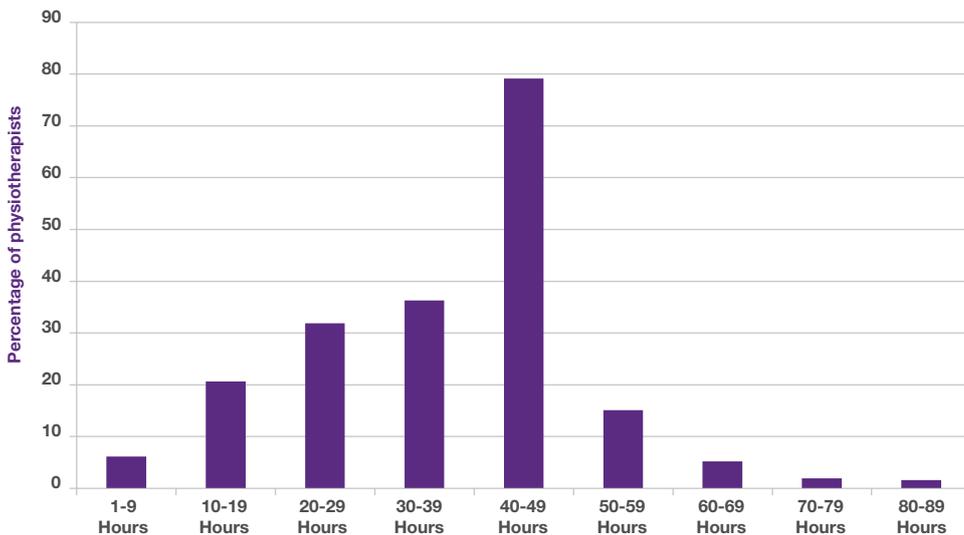


Source: 2013 Census, BERL Calculations

### 2.3.1 Hours worked

Approximately 70 percent of physiotherapists worked 30 hours or more per week in 2013. Most worked between 40 and 49 hours per week, as shown in Figure 2.7, and a small number worked more than 60 hours a week.

**Figure 2.7 Number of hours worked per week, Census 2013**



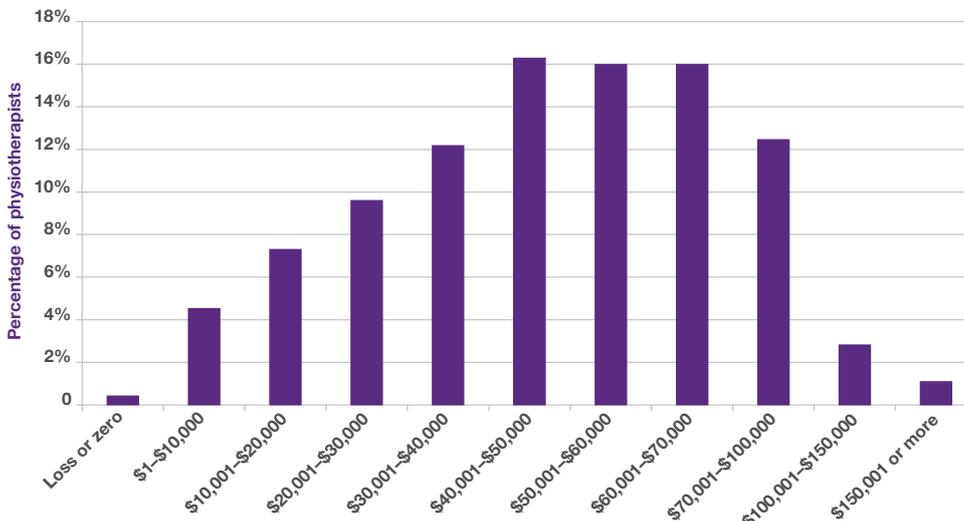
Source: 2013 Census, BERL Calculations

### 2.4 Personal income

On average, physiotherapists earned \$50,950 in 2013 while the median income was around \$45,000. Figure 2.8 shows the annual personal income of physiotherapists in 2013.

Around 48 percent of all physiotherapists fit almost equally into three income groups \$40,001 to \$50,000, \$50,001 to \$60,000, and \$60,001 to \$70,000. Just over a third earned less than \$40,001 per annum, which may be due to working part-time, while the remaining 16 percent earned more than \$70,000 a year.

**Figure 2.8 Annual personal income of physiotherapists, Census 2013**



Source: 2013 Census, BERL Calculations

## 2.5 Turnover

Many physiotherapists take time away from physiotherapy to have children, to take a career break, or to study. It is also common for New Zealand trained physiotherapists to work overseas to gain further experience and skills.<sup>8</sup> However, the evidence on turnover is anecdotal and we were unable to obtain an accurate measure of turnover or robust turnover data.

As such, we used data supplied by the Physiotherapy Board on the number of physiotherapists with an APC on March 31 2014 and compared this to those with an APC on April 1 2014. An APC is valid for one year, from April 1 to March 31, and physiotherapists must apply for a new APC annually if they wish to continue practising in New Zealand.

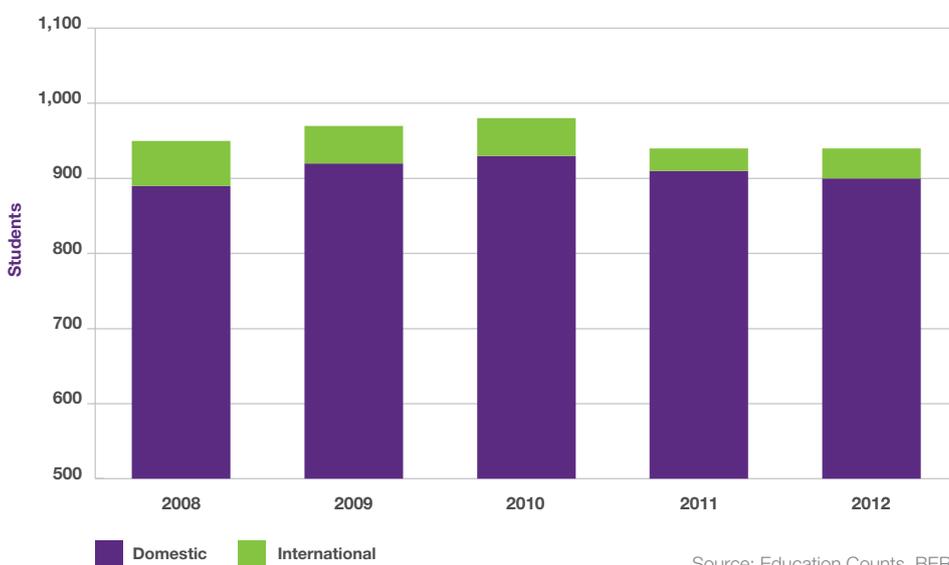
As at 31 March 2014, there were 4,053 physiotherapists with an APC. Of this number, 251 or 6.2 percent no longer had an APC at 1 April 2014. It is assumed that these 251 physiotherapists have either left the profession or New Zealand, no longer want a New Zealand APC, or have obtained a non-practising certificate for the 2014/15 year.<sup>9</sup>

## 2.6 Physiotherapist enrolments and completions

To become a physiotherapist in New Zealand, students train at the Auckland University of Technology or the University of Otago to gain a physiotherapy bachelor degree. This qualification is a four year degree.<sup>10</sup>

In 2012, 940 students were enrolled in a bachelor degree in physiotherapy, either in their first, second, third or fourth year of the degree. The majority of these students were domestic students, as shown in Figure 2.9 below.

**Figure 2.9 Total student enrolments, 2008-2012**



8 Interview with Janet Copeland and Karen McLeay, Physiotherapy New Zealand; Interview with Cheryl Hefford and Jeanette Woltman-Black, Physiotherapy Board of New Zealand.

9 Included here are also some physiotherapists who will reapply for their APC during the year.

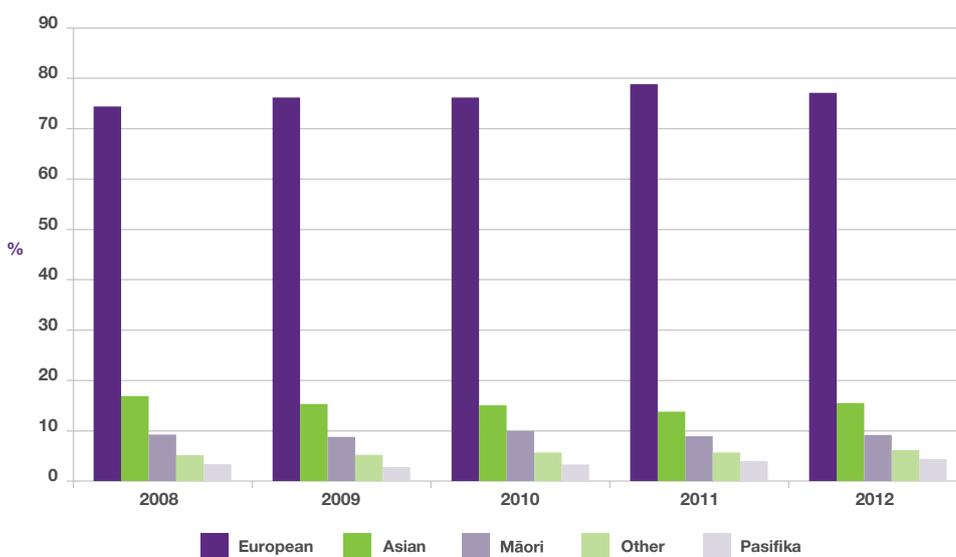
10 From the 2013 academic year, students can now complete a Bachelor of Physiotherapy with Honours at the University of Otago.

Over the last five years, from 2008 to 2012, there has been an average of 950 students enrolled in the bachelor degree. Domestic students average around 910 a year, while international students average around 40 a year. There has been little growth in total enrolment numbers in the bachelor degree because, despite its popularity, both universities offering the degree offer only a limited number of places each year.

Universities receive funding from the Tertiary Education Commission at the beginning of each academic year, based on their investment plans and statements of intent. This funding is used to provide courses and programmes at all levels, which means each subject area receives a certain amount of funding and can enrol a set number of students. Universities also have enrolment caps. These are funding restrictions on courses that are considered “high-cost provision”. This limits the number of student places or EFTS units that can be offered. These funding caps may vary annually. In 2013 there were funding caps on medical undergraduates, dentistry, veterinary science, specialist large animal science and aviation.<sup>11</sup>

Over the last five years, the ethnicity of students enrolling in the bachelor degree has largely remained unchanged. As shown in Figure 2.10, on average the majority of students identified themselves as being of European ethnicity, followed by an average of 17 percent who identified themselves as Asian, and nine percent who identified themselves as Māori.<sup>12</sup>

**Figure 2.10 Domestic student enrolments by ethnicity, 2008-2012**



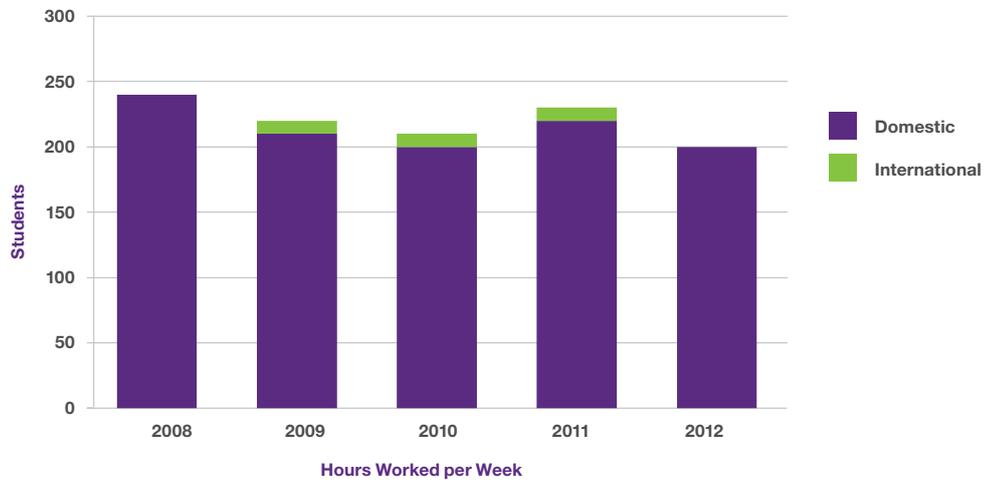
Source: Education Counts, BERL

In 2012, 200 students completed their bachelor degree in physiotherapy. This is slightly below the average of 220 seen between 2008 and 2012, as shown in Figure 2.11. For the 2008 and 2012 years there is no data on international students completing a degree, while in the period 2009 to 2011 only 10 international students completed a degree. International student enrolments are five percent of total enrolments, which indicates international students completing a degree in physiotherapy are a minority.

<sup>11</sup> TEC. Rule SAC081: Enrolment funding caps. ([www.tec.govt.nz/Resource-Centre/Rules-and-Conditions/Container-SAC-051---100/SAC081-Enrolment-funding-caps](http://www.tec.govt.nz/Resource-Centre/Rules-and-Conditions/Container-SAC-051---100/SAC081-Enrolment-funding-caps)).

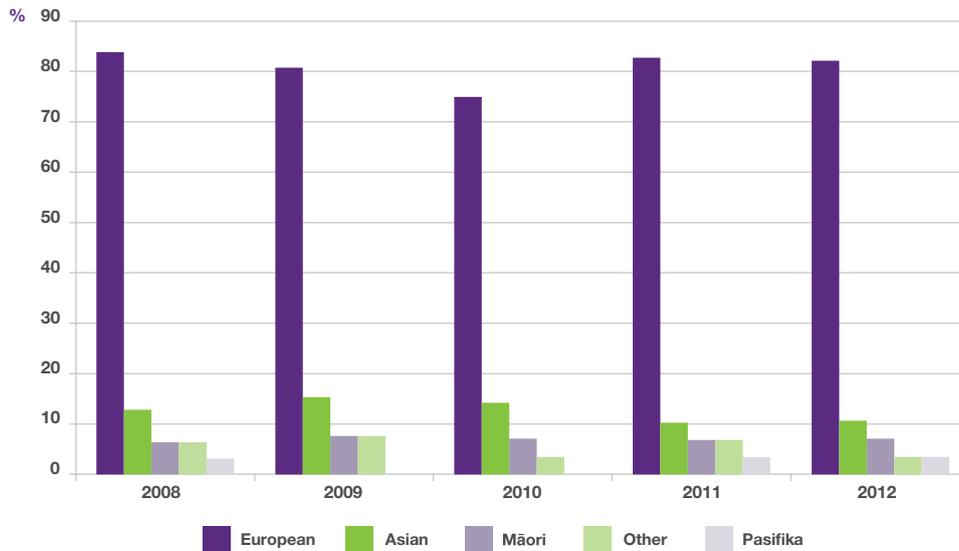
<sup>12</sup> The numbers do not add to 100 percent due to students being able to indicate that they have multiple ethnicities.

**Figure 2.11 Total student completions, 2008-2012**



Source: Education Counts, BERL

**Figure 2.12 Domestic student completions by ethnicity, 2008-2012**



Source: Education Counts, BERL

Similar to domestic student enrolments, information on the number of students who completed a degree by ethnicity suggests that more than 80 percent of students who graduated in 2012 indicated they were of European ethnicity, 11 percent indicated they were Asian, while seven percent indicated they were Māori, as shown in Figure 2.12.<sup>13</sup>

<sup>13</sup> The numbers do not add to 100 percent due to students being able to indicate that they have multiple ethnicities.

## 2.7 Registration as a physiotherapist

Once they have gained a Bachelor's degree, it is a legal requirement for practitioners to be registered with the Physiotherapist Board of New Zealand and hold a current Annual Practising Certificate (APC).

Throughout a practising year, people can apply for an APC. For example, during the 2012/2013 practising year 4,275 applications were received by the Board for an APC and 4,265 APCs were issued while nine APCs were issued with conditions.<sup>14</sup>

For internationally qualified physiotherapists to practise in New Zealand, the following is required:

- A physiotherapy qualification leading to initial registration as a physiotherapist in the country or state where the practitioner gained their qualification, and
- A pass in an assessment set by the Physiotherapy Board of New Zealand for persons holding a physiotherapy qualification gained overseas. This is an assessment against the Board's competencies.
- Registration as a physiotherapist in any state or territory in Australia that is a participating jurisdiction under the provisions of the Trans-Tasman Mutual Recognition Act 1997.

The Trans-Tasman Mutual Recognition Act 1997 allows physiotherapists who are fully registered and currently eligible to practise in Australia or New Zealand to apply for registration in the other country through a short-track process that excludes formal assessment.

## 2.8 Annual Practising Certificate

When we refer to physiotherapists in this report, we are referring to the total number of physiotherapists who are registered, hold an APC and are practising. All practising physiotherapists are required to have an APC, and these expire on March 31 of the current practising year.

In this project we have focused on the 2013/2014 practising year, which is the year from 1 April 2013 to 31 March 2014. In the 2013/2014 practising year, 4,040 APCs were issued by the Board.

Information contained within an APC provides the Board with some workforce information such as the age, sex, ethnicity, and address details of the applicant. A workforce survey is included with each invoice for an APC sent to a physiotherapist or as a practitioner registers online. Information from the workforce survey is further used in a non-identifiable, aggregated form to help the Board to respond to queries about workforce composition, monitor workforce trends, and plan workforce development. The survey is voluntary, and practitioners can choose not to participate. In 2014, the response rate to the survey was 85 percent.

This project has analysed the APC and workforce survey data and information for the 2013/2014 practising year. This is because the Physiotherapy Board database does not hold longitudinal records. When a physiotherapist updates their APC, their records are

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<sup>14</sup> The Physiotherapy Board of New Zealand. (2013). The Physiotherapy Board of New Zealand Annual Report 2012-2013. The Physiotherapy Board of New Zealand: Wellington.

also updated and over-written. This makes it difficult to determine longitudinal information such as how long people have been in the workforce, or the number of people who are internationally qualified and registered in New Zealand.

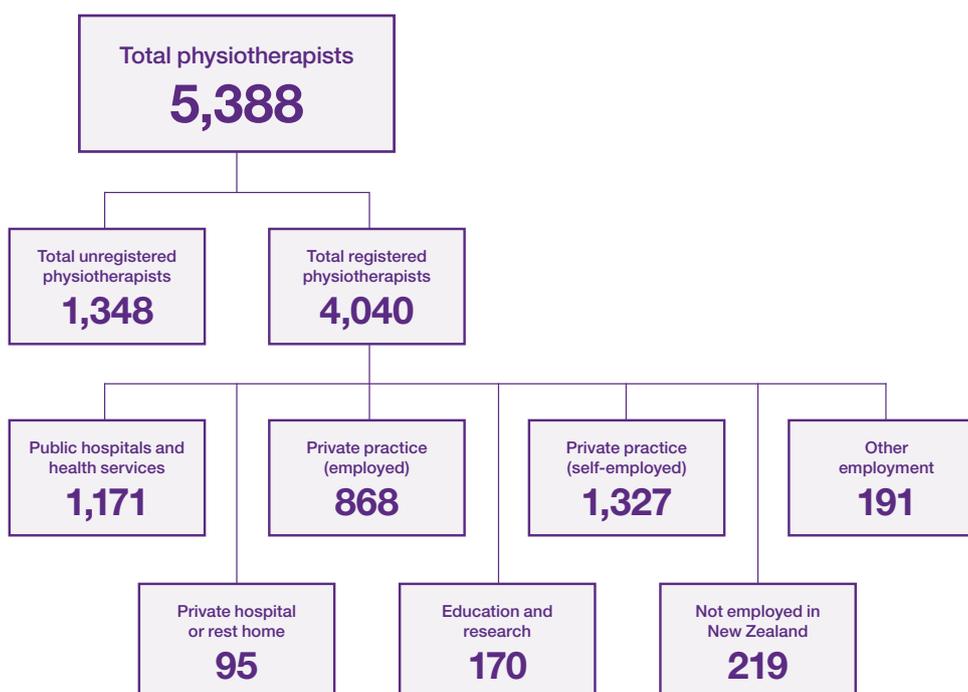
## 2.9 Workforce survey data

Workforce survey data, complimented by the latest Census data, therefore provides a snapshot of the physiotherapy workforce in 2013. This snapshot then assists us to quantify the supply of physiotherapists between 2014 and 2035, under various scenarios.

Figure 2.13 illustrates how the physiotherapy workforce broke down in the 2013/2014 practising year across each of the seven practise settings.

In 2013, 5,388 people received invoices to renew their APC with the Physiotherapy Board. Of this number, 4,040 physiotherapists renewed their APC and are working as a registered physiotherapist, while 1,348 physiotherapists did not renew their APC for the current practising year.

**Figure 2.13 Practise setting for registered physiotherapists, workforce survey 2014**



Examining firstly those who did not renew their APC, 811 responses were received as to why people did not renew their APC. The five key reasons given were people were practising outside of New Zealand (58 percent); parenting/maternity leave (seven percent); working in a non-health profession (six percent); non-practising and working outside of New Zealand (five percent); working in another health profession (three percent). Of those practising outside of New Zealand, 58 percent of this group of respondents had a qualification from outside of New Zealand.

Table 2.1 provides an overview of the 4,040 physiotherapists who renewed their APC and are working as a registered physiotherapist. The largest area of employment for these physiotherapists in 2014 was in private practise, where most were self-employed. These practitioners work an average of 33 hours a week and over 70 percent are female.

**Table 2.1 Registered physiotherapists, selected characteristics, workforce survey 2014**

Practice settings	Number	Average age	Aged 55 and over (percent)	Female (percent)	Average weekly hours worked	FTE rate(a)
Private practice (self employed)	1,327	42.6	16%	71%	32.6	26.56
Hospital and health service (DHB and PHO)	1,171	39.4	16%	89%	33.3	23.93
Private practice (employed)	868	34.2	6%	72%	33.6	17.89
Not in employment in New Zealand	219	33.6	4%	76%	35.7	4.79
Education and research	170	46.7	26%	80%	31.4	3.27
Other (including voluntary)	122	44.9	18%	84%	30.1	2.24
Private hospital or rest home	95	46.7	29%	90%	24.9	1.45
Industry or government	69	42.0	12%	70%	32.8	1.39
<b>Total</b>	<b>4,040</b>	<b>39.7</b>	<b>14%</b>	<b>78%</b>	<b>32.9</b>	<b>81.54</b>

Source: Workforce Survey 2014, BERL Calculations

(a) Full-time equivalent (FTE) number per 100,000 population. FTE is based on total weekly hours worked.

DHBs are another large area of employment for physiotherapists, and an even greater proportion of females are employed within these settings, at 89 percent. Not as many practitioners currently work within private hospitals or rest homes, but interestingly, this group of practitioners have one of the highest average age and the greatest proportion of people over the age of 55.



**Regulating for a Future Workforce;**  
**Physiotherapy regulation supports**  
**a flexible, responsible and**  
**sustainable workforce**

Strategic Plan 2014 – 2020

# 3.0

## Under a business as usual scenario

### Scenario description

A business as usual (BAU) scenario is used to illustrate what could happen to the physiotherapy workforce if no supply-side intervention was to occur, and workforce trends that were occurring between 2006 and 2013 were to continue towards 2035.

### 3.1 Background to the scenario

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

These ‘what if’ questions focused on New Zealand physiotherapist graduates, the number of internationally qualified physiotherapists working in New Zealand, the potential effects of a growing and ageing population on the physiotherapy workforce.

To establish the BAU scenario, we assessed relevant employment, income and turnover data. Our principal data sources were the Physiotherapy Board of New Zealand, Statistics New Zealand, the Ministry of Education, the Ministry of Business Innovation and Employment, and Immigration New Zealand. In regards to information on student enrolments, completions and attrition, we drew on official data from Education Counts at the Ministry of Education, and the Tertiary Education Commission.

We also reviewed relevant New Zealand public policy on health funding, tertiary education, workforce registration, and migration. As part of this review, we also briefly reviewed relevant international research on the physiotherapy workforce, and any issues raised by this research that may be relevant in a New Zealand context. Here, we focused on demographic changes that could impact on the international demand for New Zealand-trained physiotherapists, or the supply of internationally qualified physiotherapists into the New Zealand workforce.

### 3.2 Scenario assumptions

Under the BAU scenario, BERL assume that workforce trends between 2006 and 2013 continue through to 2035.

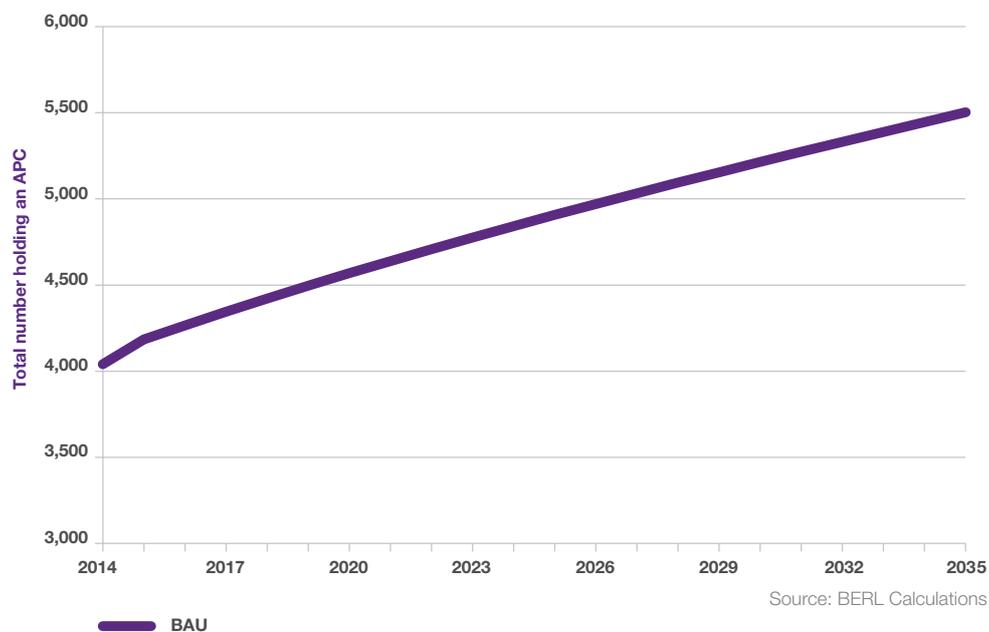
- The profile of the physiotherapy workforce remains the same in terms of the age, sex and ethnicity of the workforce in the 2013/2014 practising year. This assumption is consistent with the results of the 2014 Physiotherapy Workforce Annual Survey.
- The proportion of physiotherapists working in each practise setting, and full and part-time remains the same in 2035 as it was in the 2013/2014 practising year. This assumption is consistent with the results of the 2014 Physiotherapy Workforce Annual Survey.

- Annual turnover is 6.2 percent for both New Zealand trained and internationally qualified physiotherapists. Turnover includes all physiotherapists who leave the workforce. It does not include people who change employer or decrease the number of hours they work per week.
- The total number of students enrolled grows by an average of 0.6 percent per annum and approximately 22 percent of all enrolments complete their qualification after four years. This assumption is based on data from Education Counts on physiotherapy qualification enrolments and completions, and the average achievement of students over the period 2006 to 2012. During this period, an average of 900 domestic and 50 international students enrolled across the four year bachelor degree at the Auckland University of Technology and the University of Otago.
- Approximately 90 percent of New Zealand trained physiotherapists remain in New Zealand after graduation. However, while this assumption is based on the results of the 2014 Physiotherapy Workforce Annual Survey, it is unclear how long after graduation these practitioners remain in New Zealand.
- The proportion of internationally qualified physiotherapists in the New Zealand physiotherapist workforce remains the same towards 2035 as it was in the 2013/2014 practising year. This is based on the assumption that the number of successful applications from these physiotherapists for an Annual Practising Certificate grows at one percent per annum.

### 3.3 Scenario results

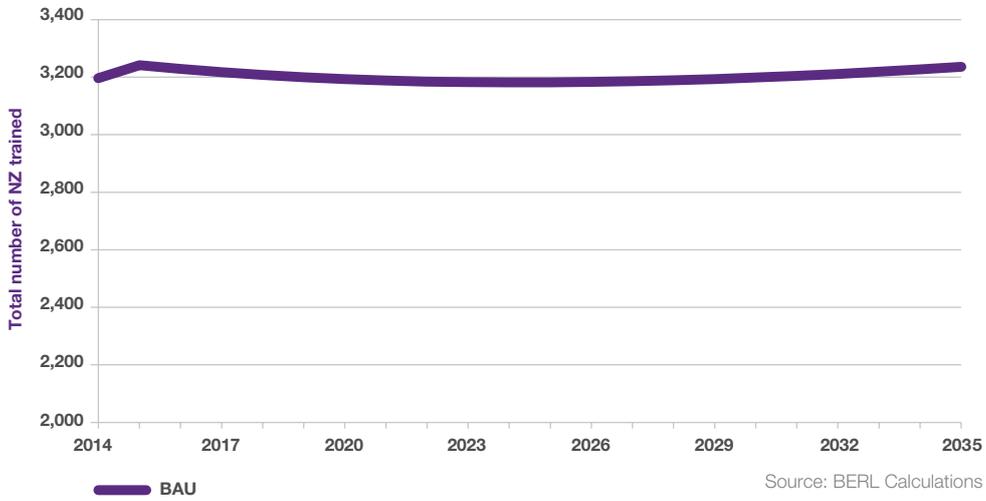
Under a BAU scenario, the number of registered physiotherapists holding an APC grows from 4,040 in 2013 to approximately 5,500 in 2035.

**Figure 3.1 Total employment growth, BAU scenario, 2014-2035**



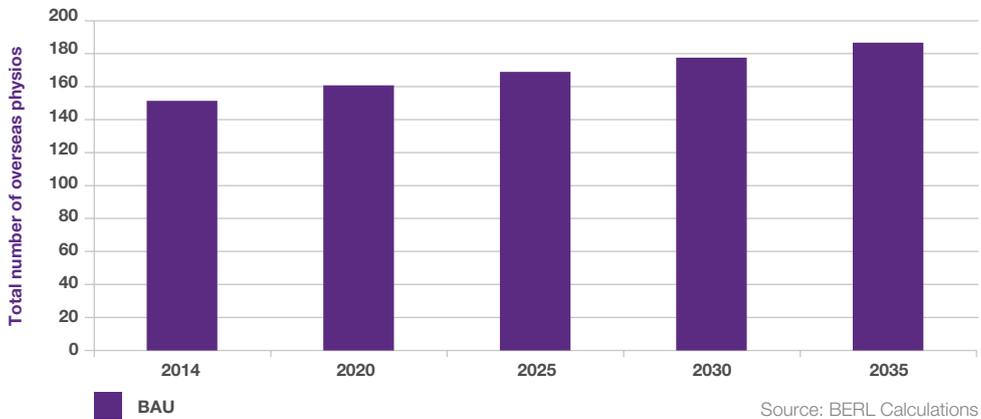
Under this scenario, the number of New Zealand trained physiotherapists grows from 3,200 to 3,240, while the number of internationally qualified physiotherapists grows from approximately 840 in 2013 to 2,270 in 2035.

**Figure 3.2 New Zealand trained physiotherapists, BAU scenario, 2014-2035**



The proportion of internationally qualified physiotherapists in the New Zealand physiotherapist workforce remains the same towards 2035 as it was in the 2013/2014 practising year. This is based on the assumption that the number of successful applications from these physiotherapists for an APC grows at one percent per annum, as shown in Figure 3.3.

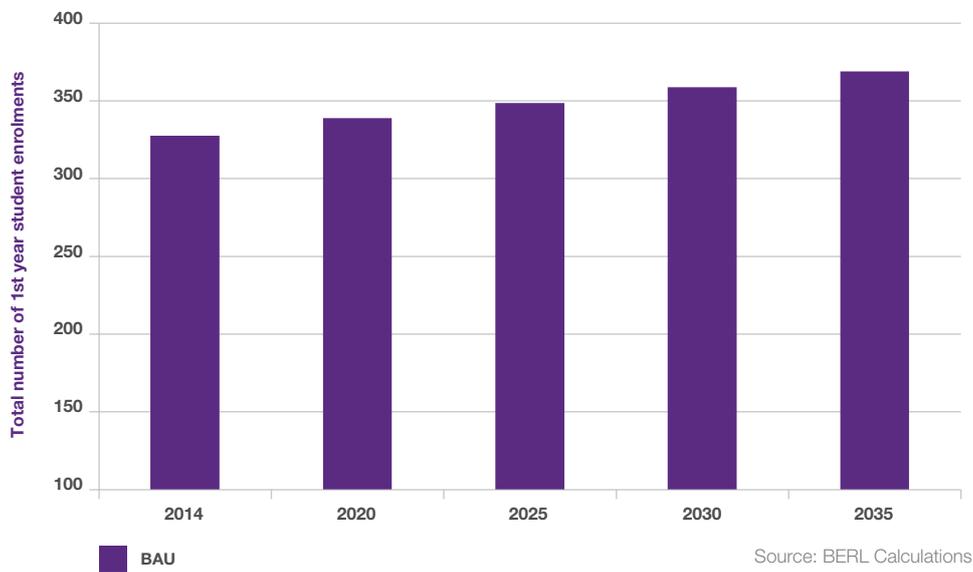
**Figure 3.3 Annual intake of internationally qualified physiotherapists, 2014-2035**



In terms of practise settings, the number of self-employed physiotherapists in private practise grows from 1,540 in 2013, to approximately 1,830 in 2035, while the number of physiotherapists employed within DHBs grows from approximately 1,370 in 2013 to 1,620 in 2035. The number of physiotherapists employed within private hospitals and/or rest homes remains the same, while those employed in private practice steadily grows from approximately 940 in 2013, to 1,200 in 2035.

The total number of students enrolled in physiotherapy grows by an average of 0.6 percent per annum, and approximately 22 percent of all enrolments complete their qualification after four years. This means the intake of students grows from approximately 330 students enrolling in 2014, to approximately 370 students enrolling in 2035.

**Figure 3.4 Annual first year enrolments, 2014-2035**



International student numbers under this scenario grow steadily from approximately 150 international students in 2014, to 190 in 2035. Also under this scenario, approximately 90 percent of New Zealand trained physiotherapists remain in New Zealand after graduation.

## 4.0 Under an unchanged service levels scenario

### Scenario description

The Unchanged Service Levels (USL) scenario assumes that the total number of physiotherapists remains at a constant ratio of one physiotherapist for every 1,055 people in New Zealand towards 2035. This is the current population to physiotherapist ratio and the current level of service that is provided to the New Zealand population.<sup>15</sup>

### 4.1 Background to the scenario

Under this scenario, there is an assumption that the current level of service of one physiotherapist for every 1,055 people will be provided to the New Zealand population through to 2035.

This scenario does not have any constraints, and to maintain the physiotherapist to total population ratio as the population grows, the number of New Zealand trained physiotherapist graduates increases, along with the number of internationally qualified physiotherapists practising in New Zealand.

<sup>15</sup> This ratio has been derived by averaging the total number of people employed as a physiotherapist against the total population in a given year. Here, we have taken the average ratio across the period 2009 to 2013.

This scenario has been constructed as a comparison to the GRD, ITL and SET scenarios. These subsequent scenarios assume that the ratio of one physiotherapist for every 1,055 people in New Zealand will be maintained each year from the 2014/2015 practising year to 2035 under a series of constraints.

As a comparison, in Australia the ratio of physiotherapists to the total population in 2012 was one physiotherapist for every 1,082 people. In Canada this ratio was higher with one physiotherapist for every 1,896 people in 2011.<sup>16</sup>

## 4.2 Scenario assumptions

The following assumptions have been made under the USL scenario:

- The total number of physiotherapists will maintain the current population to physiotherapist ratio of one physiotherapist for every 1,055 people in New Zealand.
- The profile of the physiotherapy workforce remains the same in terms of the age, sex and ethnicity of the workforce in the 2013/2014 practising year. This assumption is consistent with the results of the 2014 Physiotherapy Workforce Annual Survey.
- The proportion of physiotherapists working in each practise setting, and full and part-time remains the same in 2035 as it was in the 2013/2014 practising year. This assumption is consistent with the results of the 2014 Physiotherapy Workforce Annual Survey.
- Annual turnover is 6.2 percent for both New Zealand trained and internationally qualified physiotherapists.
- There are no limitations on student enrolments each year. The number of domestic and international students enrolling in physiotherapist qualifications increases or decreases, along with the number of places available at New Zealand physiotherapist schools, towards 2035. These changes are based on the demand for physiotherapists increasing or decreasing to meet the population to physiotherapist ratio.
- Approximately 90 percent of New Zealand trained physiotherapists remain in New Zealand after graduation. However, while this assumption is based on the results of the 2014 Physiotherapy Workforce Annual Survey, it is unclear how long after graduation these practitioners remain in New Zealand.
- There are no limitations on the number of internationally qualified physiotherapists allowed to enter or work in New Zealand each year.
- The proportion of internationally qualified physiotherapists in the New Zealand physiotherapist workforce increases or decreases towards 2035 based on the demand for physiotherapists to meet the population to physiotherapist ratio.
- The flow of internationally qualified physiotherapists is based on the assumption that New Zealand remains an attractive place for internationally qualified physiotherapists to migrate to, an appropriate number of applications from suitable candidates are received, and that these physiotherapists are successful in gaining an Annual Practising Certificate.

An average ratio of the number of physiotherapists with an APC to the total population was calculated for the period 2009 to 2013, as shown in Table 4.1. An average was calculated to avoid any bias caused by one-off events within a single year.

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<sup>16</sup> Data from Health Workforce Australia. (2013). Health Workforce by Numbers – Issue 2. ([www.hwa.gov.au](http://www.hwa.gov.au)); Canadian Institute for Health Information. (2011). Physiotherapists in Canada, 2011 – National and Jurisdictional Highlights. ([www.cihi.ca](http://www.cihi.ca)).

Total population estimates for 2009 to 2013 were sourced from Statistics New Zealand, along with population projections out to 2035.<sup>17</sup> Physiotherapist numbers were sourced from the annual reports of the Physiotherapy Board of New Zealand.

Using the current ratio, we calculated the total number of physiotherapists required each year to maintain this ratio towards 2035. Using this process we estimate that by 2035 when New Zealand's population reaches almost 5.3 million, there will be a need for 4,985 qualified physiotherapists with an APC to maintain the current level of physiotherapy services.<sup>18</sup>

Table 4.1 indicates the total New Zealand population and physiotherapist numbers for the five year period 2009 to 2013, and projections in bold through to 2035. This table shows how the New Zealand population and total physiotherapist numbers are projected to change during this period.

**Table 4.1 Projected New Zealand population and physiotherapist numbers, 2009-2035**

Year	Total Population	Total Physiotherapists	Ratio of physiotherapists to population
2009	4,315,800	4,016	1 to 1075
2010	4,367,800	4,166	1 to 1048
2011	4,405,200	4,195	1 to 1050
2012	4,433,000	4,202	1 to 1055
2013	4,471,100	4,274	1 to 1046
2020	<b>4,781,500</b>	<b>4,533</b>	<b>1 to 1055</b>
2025	<b>4,958,300</b>	<b>4,701</b>	<b>1 to 1055</b>
2030	<b>5,118,900</b>	<b>4,853</b>	<b>1 to 1055</b>
2035	<b>5,258,300</b>	<b>4,985</b>	<b>1 to 1055</b>

Source: Statistics NZ, BERL Calculations

### 4.3 Scenario results

Under this scenario, if the population grows to 5.3 million in 2035, 355 new physiotherapists will need to enter the workforce each year between 2014 and 2035. This steady growth in the workforce will maintain the physiotherapist to population ratio of one physiotherapist for every 1,055 New Zealanders.

To maintain this ratio and meet the demand for physiotherapy services, the total number of physiotherapists will need to grow from 4,040 physiotherapists with an APC in 2014, to 4,985 physiotherapists with an APC in 2035.

- Under this scenario, the greatest overall increase in physiotherapists will occur between 2014 and 2020. During this six year period, the total workforce will increase by approximately 490 practitioners.

<sup>17</sup> Statistics New Zealand population projections are based on a medium rate of fertility, a medium rate of mortality and a medium rate of migration.

<sup>18</sup> 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 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](http://www.statistics.govt.nz/tools_and_services/tools/TableBuilder/populationprojections-tables.aspx)).

- This growth is based on population projections, and an increase in suitable international applications, and student enrolments and completions.

Under this scenario, we have focused on increasing physiotherapist numbers through increasing the number of suitably qualified international applications, and student enrolments and completions.

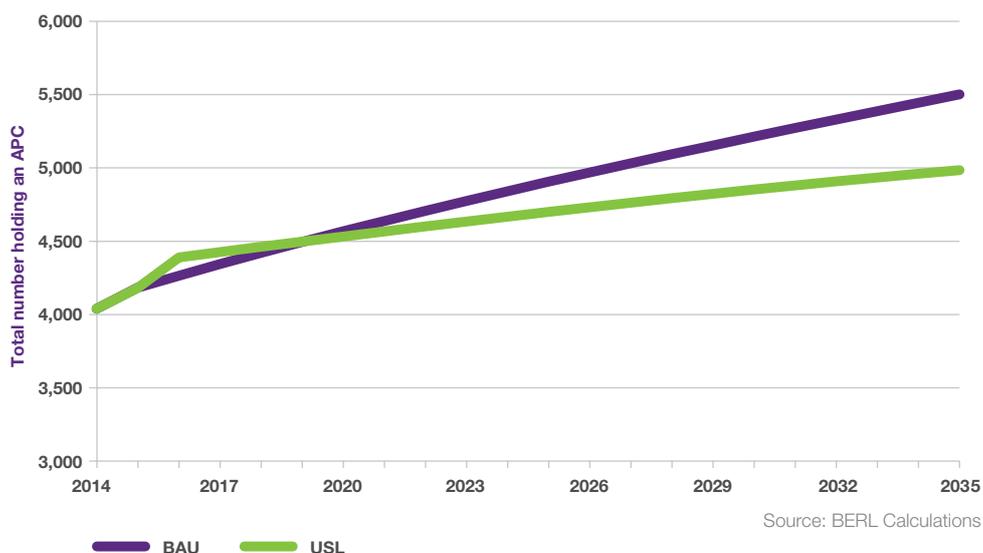
- The number of internationally qualified physiotherapists with a New Zealand APC will be 1,650 in 2035. This is an increase of approximately 810 practitioners from 2014.
- The number of New Zealand trained physiotherapists will be 3,335 in 2035. This is an increase of approximately 140 practitioners from 2014.
- This is because the number of internationally qualified physiotherapists working in New Zealand has the potential to increase faster than the change (increase) in enrolment funding caps permitted at the Schools of Physiotherapy.
- This growth in internationally qualified physiotherapists entering New Zealand to work would be assisted by the occupation physiotherapist remaining on the Long-Term Skills Shortage List administered by Immigration New Zealand and the Ministry of Business, Innovation and Employment (MBIE), and the Physiotherapy Board of New Zealand receiving applications from suitable qualified migrant physiotherapists.

We acknowledge that changing population needs may lead to changes in the way that physiotherapists deliver their services and their working conditions. However, our modelling is unable to account for this. Instead, our modelling focuses on the number of physiotherapists required to meet the health care needs of the total population. This means we have accounted for population growth by changing the number of physiotherapists required.

### 4.3.1 Comparison with the BAU scenario

Figure 4.1 compares the total number of physiotherapists employed under the BAU and USL scenarios between 2014 and 2035.

**Figure 4.1 Total physiotherapist workforce, BAU and USL scenarios, 2014-2035**



If we compare the results of this scenario with that of the BAU scenario towards 2035:

- On average, an additional 10 physiotherapist graduates will enter the workforce each year.
- On average, 45 fewer internationally trained physiotherapists will enter the workforce each year.

Under the USL scenario, a greater number of physiotherapists are expected to be employed between 2015 and 2020 than under the BAU scenario. This is because of the short-term need to increase the overall number of physiotherapists to maintain the physiotherapist to population ratio, which cannot be met by New Zealand graduates. But after this initial increase, employment under the USL scenario will fall behind that of the BAU scenario as the overall number of physiotherapists in the workforce is constrained.

Figure 4.2 shows the total number of New Zealand trained physiotherapists under the BAU and USL scenarios between 2014 and 2035. Under the BAU scenario the number of New Zealand trained physiotherapists remains fairly static over the period, while under the USL scenario there is a small increase of 140 practitioners due to growth in first year enrolments from 2015.

**Figure 4.2 Total New Zealand trained workforce, BAU and USL scenarios, 2014-2035**

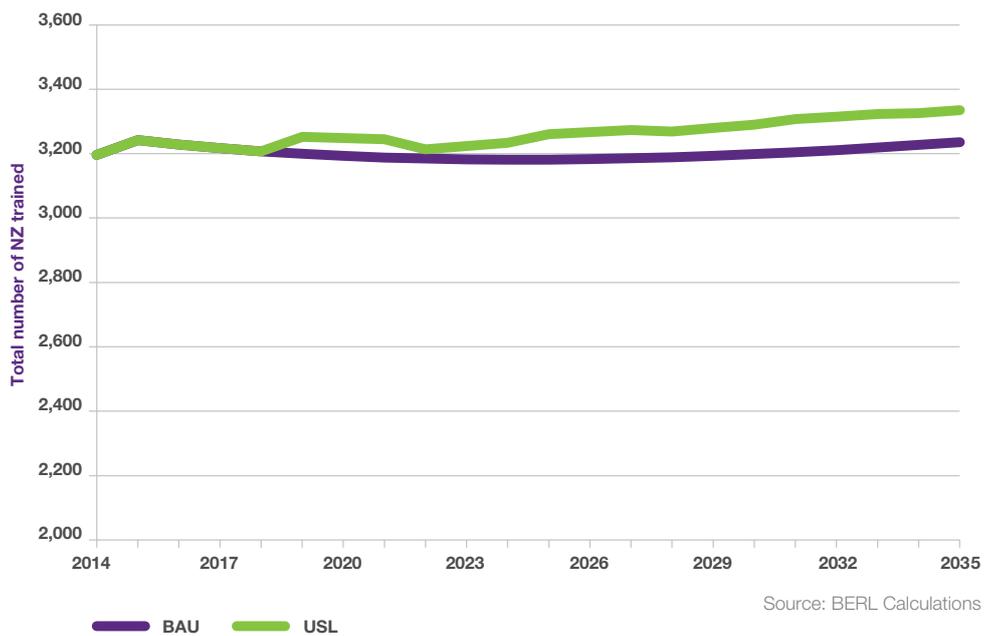


Figure 4.3 shows the overall number of internationally qualified physiotherapists under the BAU and USL scenarios between 2014 and 2035. After an initial increase in the number of internationally qualified physiotherapists entering the New Zealand workforce, this slows under the USL scenario as New Zealand graduate numbers catch-up and begin to meet the physiotherapist to population requirements.

**Figure 4.3 Total internationally qualified workforce, BAU and USL scenarios, 2014-2035**

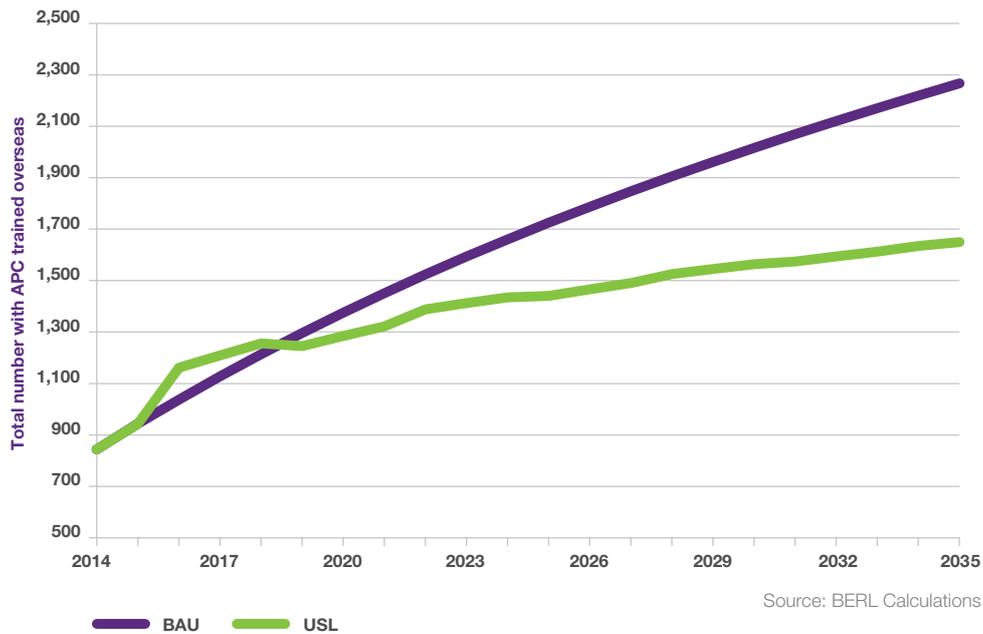
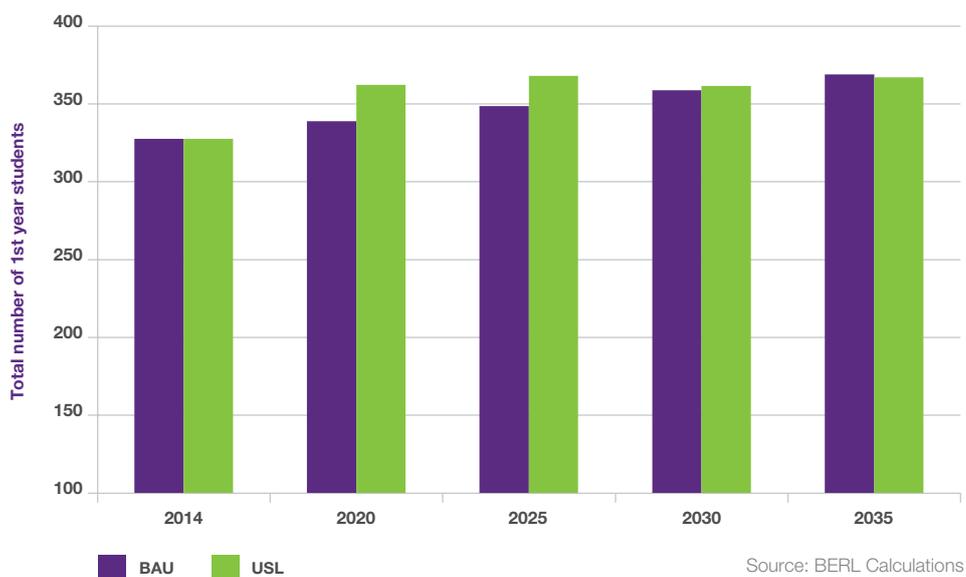


Figure 4.4 shows the annual number of first year enrolments under the BAU and USL scenarios, and how enrolments change across five snapshot years.

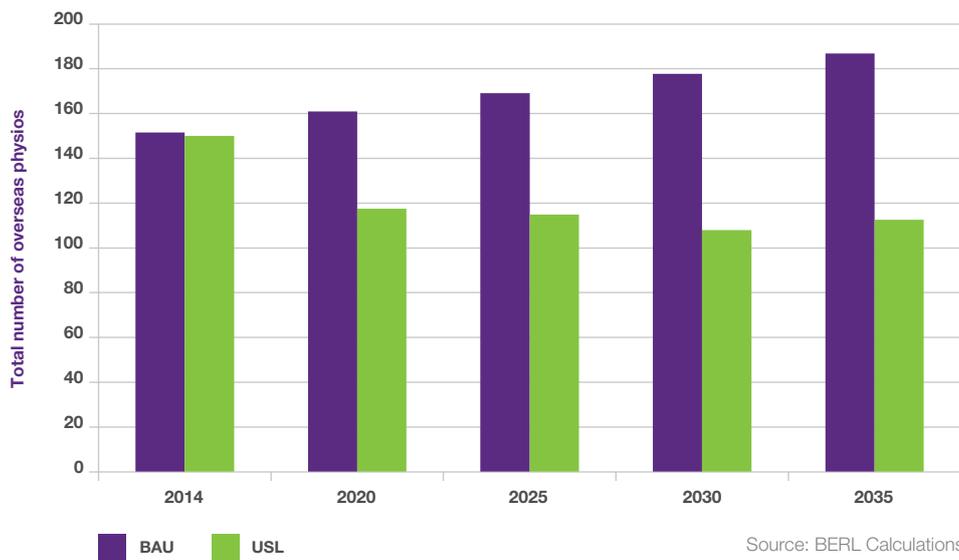
**Figure 4.4 Annual number of first year enrolments of NZ graduates, BAU & USL scenarios, 2014-2035**



Under the BAU scenario, the number of first year enrolments steadily increases from around 330 in 2014, to around 370 enrolments in 2035. Under the USL scenario, first year enrolments increase faster towards 2020, when around 360 students enrol; however, between 2020 and 2035 enrolments remain fairly static.

Figure 4.5 shows the number of internationally qualified physiotherapists entering the New Zealand workforce under the BAU and USL scenarios, and how this changes across five snapshot years.

**Figure 4.5 Internationally qualified physiotherapists, BAU and USL scenarios, snapshot years**



Under the BAU scenario, the number of internationally qualified physiotherapists entering the New Zealand workforce steadily increases from approximately 150 in 2014 to around 190 practitioners in 2035. Under the USL scenario, the number of internationally qualified physiotherapists working in New Zealand drops from 150 in 2014, to approximately 120 practitioners in 2035. The reason for this decline compared to the BAU scenario is, after an initial increase in internationally qualified physiotherapists, the majority of the growth needed to maintain the physiotherapist to population ratio comes from New Zealand trained physiotherapist graduates.

# 5.0

## Under a New Zealand graduate scenario

### Scenario description

Under the New Zealand graduate scenario (GRD), the number of students enrolling and completing physiotherapy qualifications grows compared to the BAU scenario. This growth in New Zealand trained physiotherapists is required to maintain the current physiotherapist to population ratio as the population grows towards 2035.

### 5.1 Background to scenario

Under this scenario, an increase in the number of New Zealand trained physiotherapists is also required due to a decline in the number of internationally qualified physiotherapists entering the New Zealand workforce.

This decline is due to a number of factors such as changes in the assessment and registration requirements to practise in New Zealand; changes in immigration policy that makes New Zealand an unattractive place for migrant physiotherapists to work; or changes in the home country of the migrant physiotherapist such as an increase in the salary of the physiotherapy workforce, improvement in working conditions, or greater demand for physiotherapy services.

### 5.2 Scenario assumptions

The following assumptions have been made under this scenario:

- The total number of physiotherapists will maintain the current population to physiotherapist ratio of **one physiotherapist for every 1,055 people** in New Zealand.
- The proportion of physiotherapists working in each practise setting, and full and part-time remains the same in 2035 as it was in the 2013/2014 practising year. This assumption is consistent with the results of the 2014 Physiotherapy Workforce Annual Survey.
- Annual turnover is **6.2 percent** for both New Zealand trained and internationally qualified physiotherapists.
- The total number of students enrolled grows by an average of **0.7 percent** per annum, between 2015 and 2021, and at an average of 1.4 percent per annum from 2022 to 2035.
- Approximately **22 percent** of all enrolments complete their qualification after four years.
- Approximately **90 percent** of New Zealand trained physiotherapists remain in New Zealand after graduation. However, while this assumption is based on the results of the 2014 Physiotherapy Workforce Annual Survey, it is unclear how long after graduation that these practitioners remain in New Zealand

- The proportion of internationally qualified physiotherapists in the total New Zealand physiotherapist workforce **will gradually decline** as these physiotherapists leave the workforce due to retirement, changing career, or returning to their home country.
- These internationally qualified physiotherapists are not replaced as the number of successful applications from internationally qualified physiotherapists for an Annual Practising Certificate **declines by two** percent per annum.

### 5.3 Scenario results

Under this scenario, if the population grows to 5.3 million, 355 new physiotherapists will need to enter the workforce each year between 2014 and 2035. This replacement rate will maintain the physiotherapist to population ratio of one physiotherapist for every 1,055 New Zealanders.

To maintain this ratio and meet the demand for physiotherapy services, the total number of physiotherapists will need to grow from 4,040 physiotherapists with an APC in 2014, to 4,985 physiotherapists with an APC in 2035.

In this scenario, we have focused on increasing physiotherapist numbers through increasing student enrolments.

- The number of domestic and international students enrolling and completing physiotherapy qualifications increases to 265 per annum by 2035, with the number of places available at New Zealand physiotherapist schools increasing from around 330 in 2014 to approximately 420 in 2035.
- In 2035, the number of New Zealand trained physiotherapists will be 3,359 this is an increase of 163 practitioners from 2014.
- In contrast, the number of internationally trained physiotherapists will be 1,627 in 2035 this is an increase of 783 practitioners from 2014.
- The greatest increase in physiotherapist numbers will occur between 2015 and 2020, when 320 new physiotherapists will be in employment each year.

We acknowledge that changes in health care needs may lead to changes in the way that physiotherapists deliver their services, and their working conditions. However, our modelling is unable to account for this. Instead, our modelling focuses on the number of physiotherapists required to meet the health care needs of the total population. This means we have accounted for population growth by changing the number of physiotherapists.

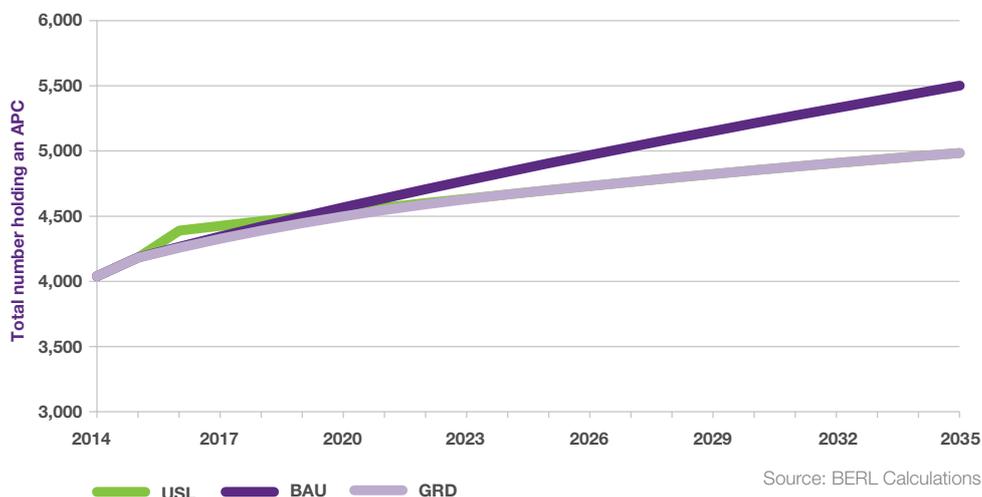
If we compare this scenario to the business as usual plus scenario:

- The number of physiotherapists under a USL scenario is expected to grow from 4,040 in 2014, to 4,985 in 2035.
- By 2035 there will be an additional 20 graduate physiotherapists entering the workforce each year, under this scenario, compared to the USL scenario.
- By 2035 there will be 15 less internationally trained physiotherapists entering the workforce each year, under this scenario, compared to the USL scenario.

How this scenario compares to the BAU and USL scenarios can be seen in more detail in the following five figures, which compare the overall number of physiotherapists, the overall number of New Zealand trained physiotherapists, overall number of internationally trained physiotherapists, the annual number of first year enrolments in a Bachelor of Physiotherapy, and the annual intake of internationally trained physiotherapists.

Figure 5.1 shows the overall number of physiotherapists under this scenario, the BAU, and the USL scenarios and the changes between 2014 and 2035 under each scenario.

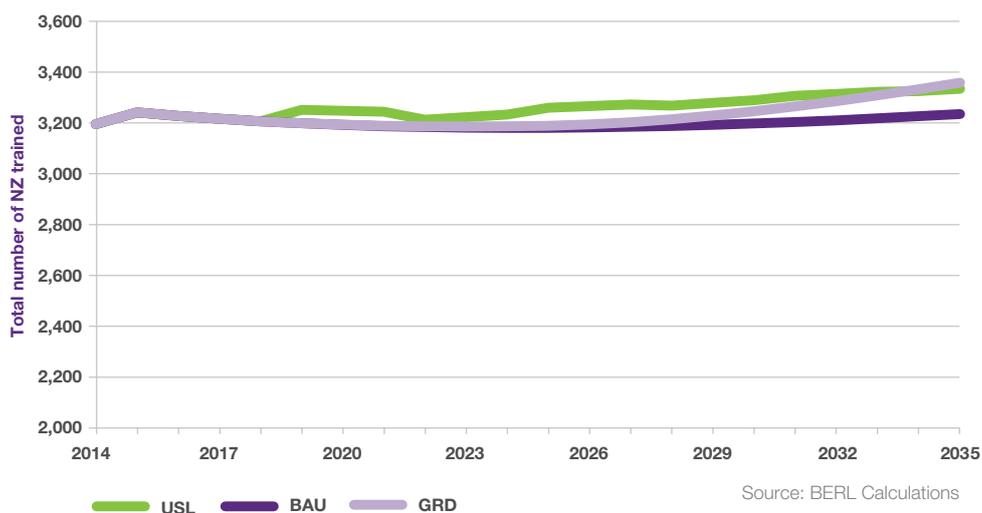
**Figure 5.1 Physiotherapist workforce, BAU, USL, GRD scenarios, 2014-2035**



Under this scenario, the overall number of physiotherapists will remain below the USL scenario until 2025. This is because any increase in the total workforce will come from New Zealand trained graduates. It is expected that it will take approximately 10 years to expand enrolment numbers sufficiently and for these students to complete their qualifications and join the physiotherapist workforce.

Figure 5.2 shows the overall number of New Zealand trained physiotherapists under this scenario, the BAU and USL scenarios, and how this changes between 2014 and 2035 under each scenario.

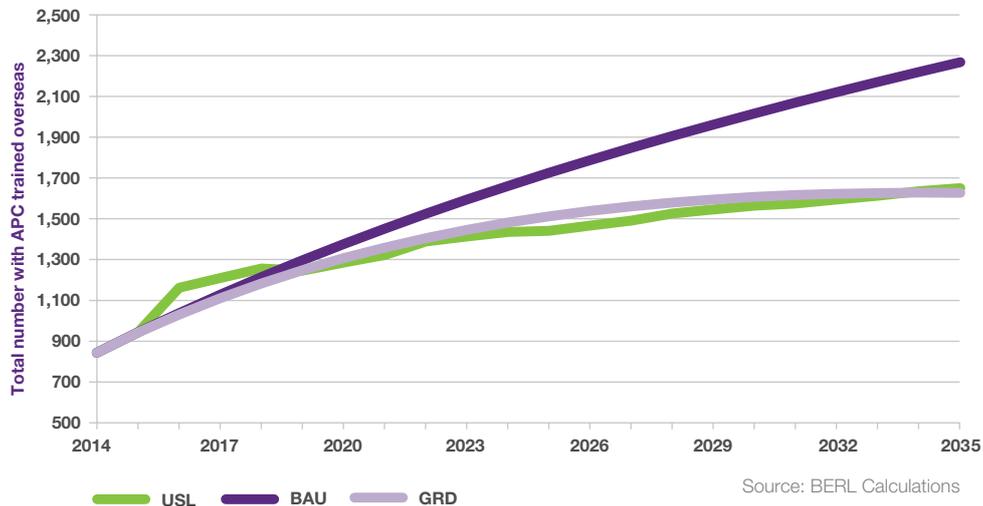
**Figure 5.2 Total New Zealand trained physiotherapists, BAU, USL, GRD, 2014-2035**



Under the USL scenario the overall number of New Zealand trained physiotherapists, increases by approximately 140 practitioners between 2014 and 2035. This is due partly to a strong increase in first year enrolments from 2015. Under the GRD scenario the number of New Zealand trained physiotherapists would increase by approximately 165 practitioners between 2014 and 2035, with the total number of New Zealand trained physiotherapists increasing past that seen under the USL scenario.

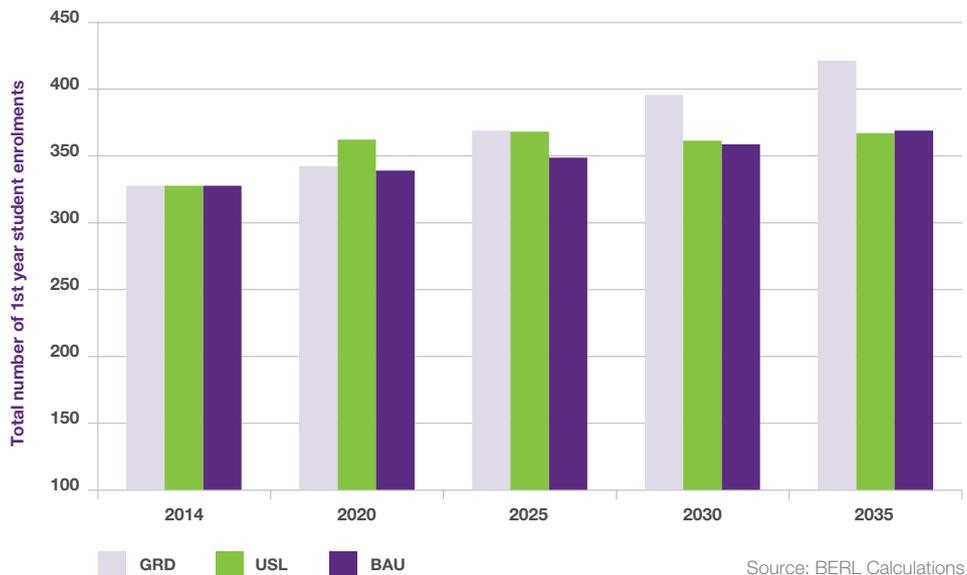
Figure 5.3 shows the overall number of internationally trained physiotherapists under this scenario, the BAU and USL scenarios, and the changes between 2014 and 2035. The number of internationally qualified is below that seen under the BAU, but similar to the USL scenario.

**Figure 5.3 Total internationally qualified physiotherapists, BAU, USL, GRD, 2014-2035**



Under this scenario, the number of students enrolling each year grows from approximately 330 in 2014 to 420 in 2035. Across each of the scenarios that we examine this is the largest increase in first year students, with an additional 50 first year students enrolled under this scenario than under the BAU and USL scenarios in 2035.

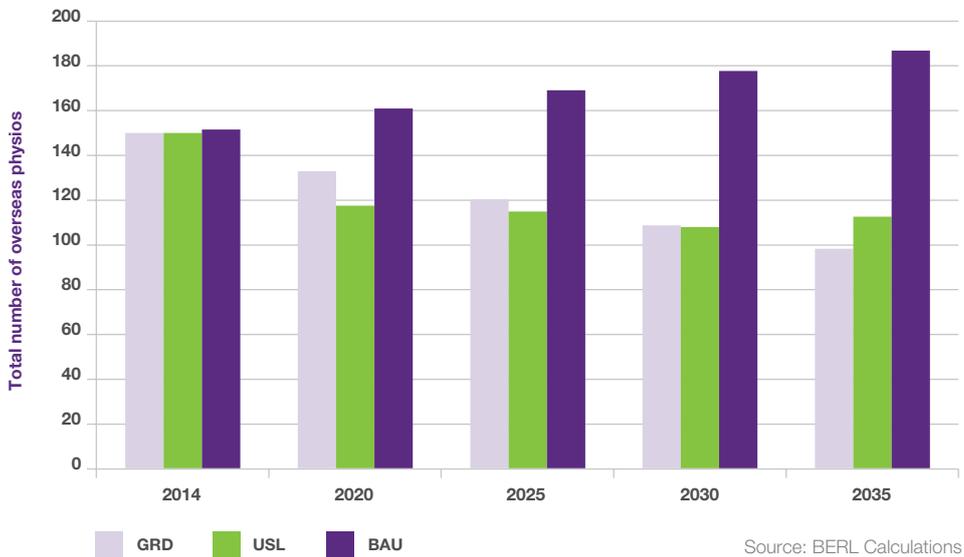
**Figure 5.4 Annual number of first year enrolments, BAU, USL, GRD, 2014-2035**



In turn, this scenario also has the lowest number of internationally qualified physiotherapists in the workforce as a concerted effort is put into training our own rather employing migrants. Under this scenario, less than 100 internationally qualified physiotherapists are entering the workforce each year by 2035. Under the BAU and USL scenarios, approximately 190 and 110 internationally qualified physiotherapists are entering the workforce, respectively, each year.

This noticeable decline in internationally qualified physiotherapists in the total workforce is shown in Figure 5.5.

**Figure 5.5 Annual number, internationally qualified physiotherapists arriving in NZ, 2014-2035**



## 6.0 Under an internationally qualified workforce scenario

### Scenario description

Under the ITL scenario, the number of students enrolling and completing physiotherapy qualifications declines compared to the BAU scenario. This leads to a labour constraint that is met by an increase in the number of internationally qualified physiotherapists working in New Zealand. This labour constraint occurs due to the Board actively working towards maintaining the current physiotherapist to population ratio as the population grows towards 2035.

### 6.1 Background to scenario

Under this scenario, the decline in student enrolments is due to a decline in the number of first year places offered at the Schools of Physiotherapy. This decline has been prompted by a number of factors including changes in the permitted enrolment funding caps; an overall decline in the funding received by the Schools from the Tertiary Education Commission; an increase in the average cost of training a full-time physiotherapy student; or difficulties in placing students in final year practise settings.

## 6.2 Scenario assumptions

The following assumptions have been made under this scenario:

- The total number of physiotherapists will maintain the current population to physiotherapist ratio of **one physiotherapist for every 1,055 people** in New Zealand.
- The proportion of physiotherapists working in each practise setting, and full and part-time remains the same in 2035 as it was in the 2013/2014 practising year. This assumption is consistent with the results of the 2014 Physiotherapy Workforce Annual Survey.
- Annual turnover is **6.2 percent** for both New Zealand trained and internationally qualified physiotherapists.
- The number of first year places at New Zealand physiotherapist schools declines from approximately 330 students in 2014 to approximately 300 students in 2035.
- Approximately **90 percent** of New Zealand trained physiotherapists remain in New Zealand after graduation. However, while this assumption is based on the results of the 2014 Physiotherapy Workforce Annual Survey, it is unclear how long after graduation that these practitioners remain in New Zealand.
- The number of successful applications from internationally qualified physiotherapists for an Annual Practising Certificate grows at **5.5 percent** per annum towards between 2015 and 2017, and then by **1.5 percent** per annum between 2019 and 2035.

## 6.3 Scenario results

Under this scenario, if the population grows to 5.3 million, 355 new physiotherapists will need to enter the workforce each year between 2014 and 2035. This will maintain the physiotherapist to population ratio of one physiotherapist for every 1,055 New Zealanders.

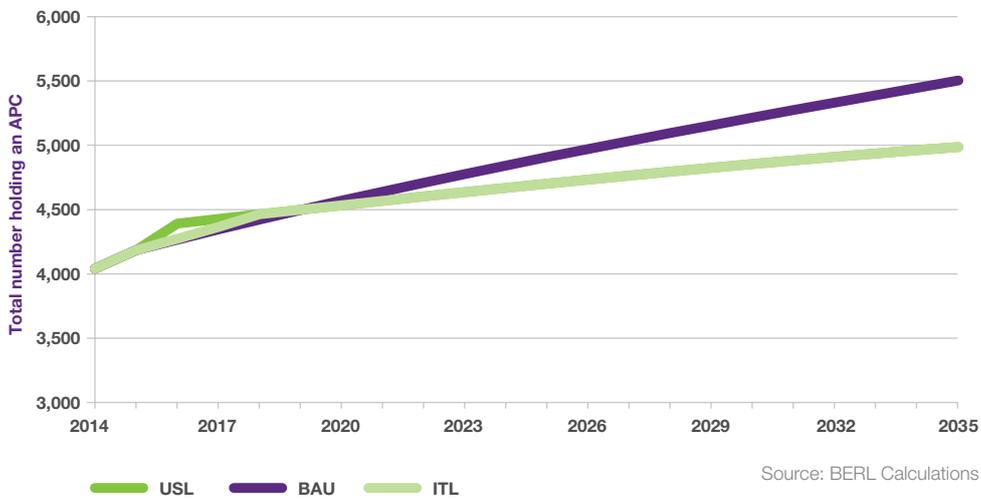
To maintain this ratio and meet the demand for physiotherapy services, the total number of physiotherapists will need to grow from 4,040 physiotherapists with an APC in 2014, to 4,985 physiotherapists with an APC in 2035.

Due to a decline in the number of New Zealand trained physiotherapists, the number of internationally qualified physiotherapists joining the New Zealand workforce will increase under the ITL scenario by around 150 practitioners per annum towards 2035.

- Under this scenario, the greatest overall increase in physiotherapists will occur between 2015 and 2020. During this five year period, the number of physiotherapists will increase by approximately 350 new practitioners and this growth will be largely driven by an increase in internationally qualified practitioners.
- The number of internationally qualified physiotherapists in the workforce will grow from approximately 840 in 2014, to approximately 1,970 under this scenario.
- In contrast, the number of New Zealand trained physiotherapists will decrease under this scenario, from approximately 3,200 in 2014 to 3,020 in 2035.

Figure 6.1 shows the physiotherapist workforce under the ITL, BAU and USL scenarios between 2014 and 2035. Under the USL scenario, there will be a higher number of physiotherapists in the workforce between 2015 and 2020, than under the BAU scenario. This is because of the short-term need to increase the overall number of physiotherapists to maintain the physiotherapist to population ratio, which cannot be met by New Zealand graduates. But after this initial increase the USL scenario will fall behind the BAU scenario as the overall number of physiotherapists in the workforce is constrained.

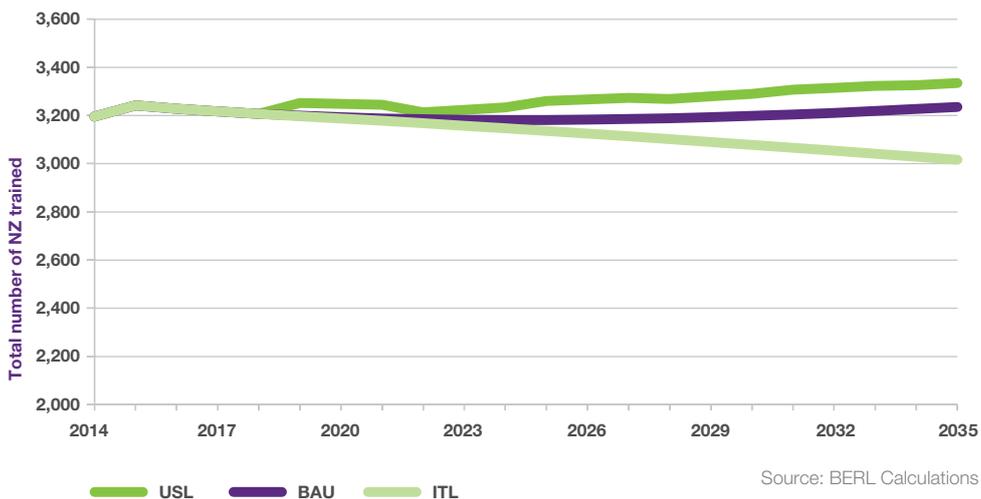
**Figure 6.1 Physiotherapist workforce, BAU, USL, ITL scenarios, 2014-2035**



Under the ITL scenario, the total number of physiotherapists will remain below the USL scenario until 2018. The reason for this is that the workforce is growing due to an increase in internationally qualified practitioners and it is expected to take around three years to increase these numbers sufficiently. It is expected that one of the main ways to attract greater numbers of internationally qualified physiotherapists will be to alter the current level of requirements to gain a New Zealand APC, and this could take time to decide on and implement.

Figure 6.2 shows the overall number of New Zealand trained physiotherapists under the ITL, BAU and USL scenarios between 2014 and 2035.

**Figure 6.2 Total New Zealand trained physiotherapists, BAU, USL, ITL scenarios, 2014-2035**



Under this scenario the total number of New Zealand trained physiotherapists decreases by approximately 180 practitioners between 2014 and 2035. The difference between this scenario and the USL scenario is that there are approximately 340 fewer New Zealand trained practitioners. Overall, the total workforce number will be the same under this scenario and the USL scenario, in that approximately 4,985 physiotherapists will be employed in 2035, but the composition of that workforce will vary as shown in Figure 6.3.

**Figure 6.3 Total internationally qualified physiotherapists, BAU, USL, ITL scenarios**

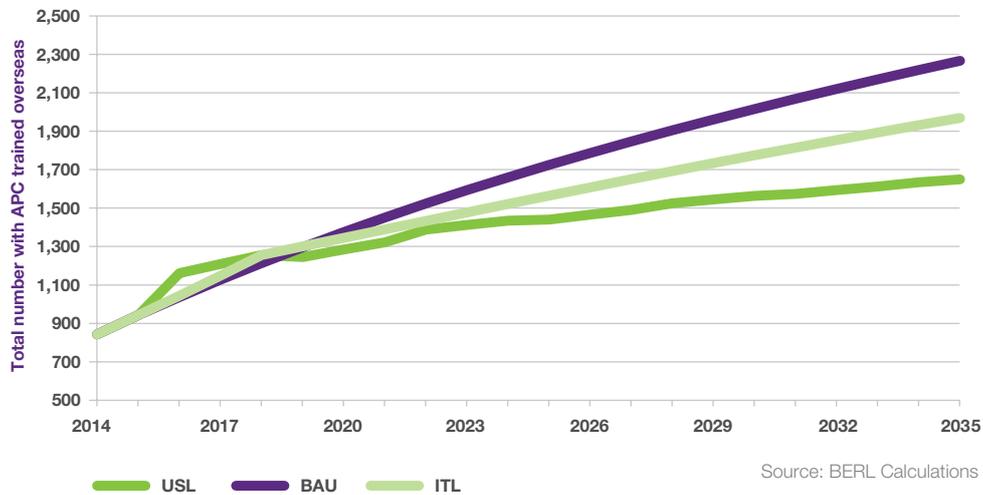
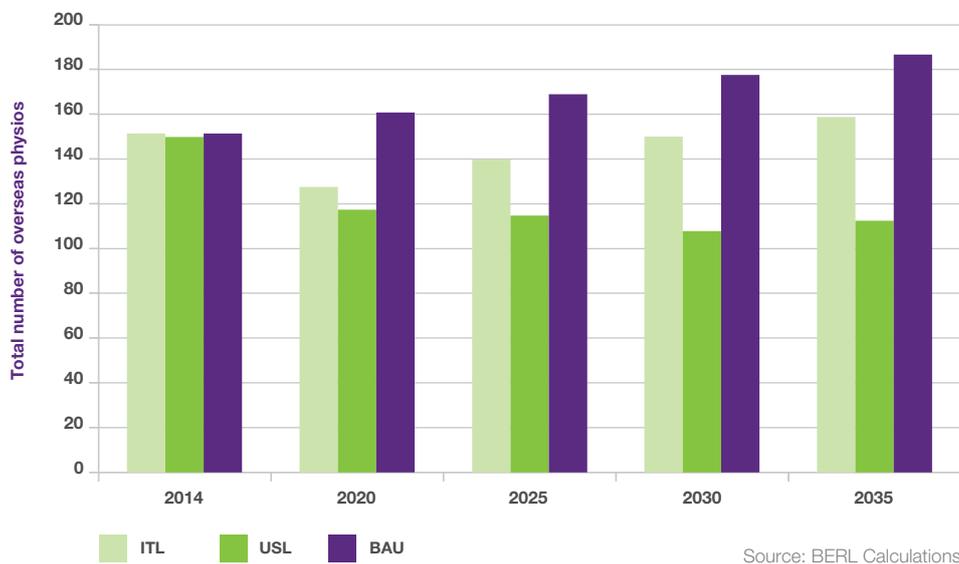


Figure 6.4 shows the number of internationally qualified physiotherapists entering the New Zealand workforce under the BAU and USL scenarios, compared to this scenario. Under this scenario, this figure is higher than the USL scenario but below that of the BAU.

**Figure 6.4 Annual number, internationally qualified physiotherapists arriving in NZ, 2014-2035**



Overall:

- By 2035 there will be 45 additional internationally trained physiotherapists entering the workforce each year under this scenario, compared to the USL scenario.
- By 2035 there will be 40 less graduate physiotherapists entering the workforce each year under this scenario, compared to the USL scenario.

# 7.0

## Under a growing and ageing population scenario

### Scenario description

Under the AGE scenario the focus is on how a growing and ageing population impacts on the average age and ethnic diversity of the physiotherapy workforce. We focus on the age and ethnicity of physiotherapists in our modelling to consider how these demographics could potentially change towards 2035. We also consider how a growing and ageing population may impact on where practitioners are employed.

### 7.1 Background to scenario

Similar to the USL scenario, we have focused on growing the physiotherapist workforce by increasing the number of first year places in the physiotherapy schools, and the successful registration of these graduates as physiotherapists. This means the following also holds true under this scenario:

- If the population grows to 5.3 million, 355 new physiotherapists will need to enter the workforce each year between 2014 and 2035. This replacement rate will maintain the physiotherapist to population ratio of one physiotherapist for every 1,055 New Zealanders.
- To maintain this ratio and meet the demand for physiotherapy services, the total number of physiotherapists will need to grow from 4,040 physiotherapists with an APC in 2014, to 4,985 physiotherapists with an APC in 2035.

### 7.2 Scenario assumptions

The following assumptions have been made under this scenario:

- The total number of physiotherapists will maintain the current population to physiotherapist ratio of **one physiotherapist for every 1,055 people** in New Zealand.
- The proportion of physiotherapists working in each practise setting, and full and part-time remains the same in 2035 as it was in the 2013/2014 practising year. This assumption is consistent with the results of the 2014 Physiotherapy Workforce Annual Survey.
- Annual turnover is **6.2 percent** for both New Zealand trained and internationally qualified physiotherapists.
- The number of domestic and international students enrolling and completing physiotherapy qualifications increases to 265 per annum by 2035, with the number of places available at New Zealand physiotherapist schools increasing from around 330 in 2014 to approximately 420 in 2035.
- The total number of students enrolled grows by an average of **0.7 percent** per annum, between 2015 and 2021, and at an average of 1.4 percent per annum from 2022 to 2035.
- Approximately **22 percent** of all enrolments complete their qualification after four years.

- Approximately **90 percent** of New Zealand trained physiotherapists remain in New Zealand after graduation. However, while this assumption is based on the results of the 2014 Physiotherapy Workforce Annual Survey, it is unclear how long after graduation that these practitioners remain in New Zealand.
- The proportion of internationally qualified physiotherapists in the total New Zealand physiotherapist workforce **will gradually decline** as these physiotherapists leave the workforce due to retirement, changing career, or returning to their home country.
- These internationally qualified physiotherapists are not replaced as the number of successful applications from internationally qualified physiotherapists for an Annual Practising Certificate **declines by 2 percent** per annum.

### 7.3 Scenario results

Ageing and increased life expectancy among the general population will impact on the health workforce. 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.<sup>19</sup> The number of people over the age of 65, for example, is expected to grow to 1.2 million in 2035, based on the total population reaching 5.3 million.

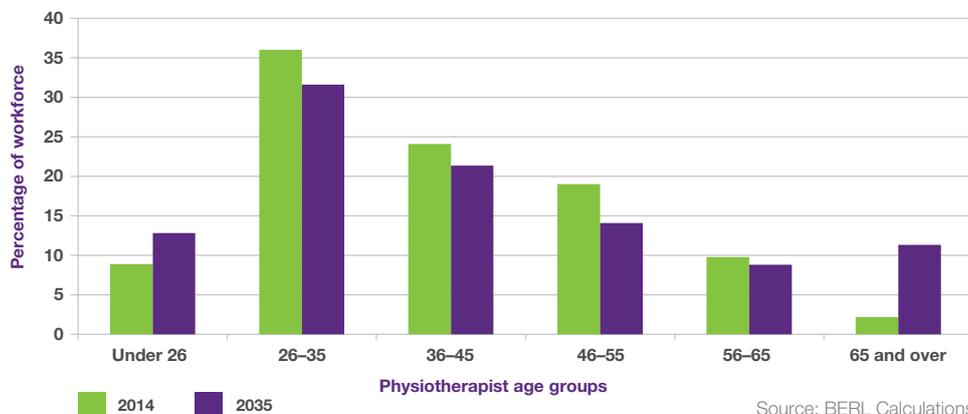
It is also expected that the demand for health services will change to meet changing population health needs towards 2035. These health needs could include the average age and changing ethnic mix of the population, the geographic dispersion of the population, increased consumer expectations and developments in technology.

#### 7.3.1 Projected age profile

As shown in Figure 7.1, the physiotherapist workforce is young, with 42 percent under the age of 34. Towards 2035, this proportion could increase to 45 percent under the age of 34, due to a greater number of practitioners under the age of 26. However, this assumption is based on physiotherapy remaining an attractive career for school leavers and young people, and all New Zealand trained graduates entering the workforce being in this age group.

In addition, our modelling indicates that a greater proportion of the physiotherapist workforce will be in the 55 and over age groups in 2035, at 20 percent. This compares to 12 percent of the workforce in 2014.

**Figure 7.1 Age distribution of physiotherapists, 2014 and 2035**



<sup>19</sup> Population projections on the number of children are 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.

Overall, this figure provides an early indication that there may be a need for the Physiotherapy Board to consider how an ageing workforce could impact on the hours of work and practise settings of practitioners in the future. Further, having a greater proportion of the workforce over the age of 55 may also impact on turnover, and the number of people that may be required to enter the workforce each year.

To model the age profile of the physiotherapist workforce in 2035, the following assumptions were made about the age of new graduates and internationally qualified physiotherapists joining the New Zealand workforce, and the turnover rate:

- All internationally qualified physiotherapists joining the New Zealand workforce will be evenly distributed across each of the six age groups using the following proportions: 12 percent under the age of 26, 68 percent between the ages of 26 and 35, 14 percent between the ages of 36 and 45, six percent between the ages of 46 and 55, and none over the age of 55. These proportions are consistent with the results of the 2014 Physiotherapy Workforce Annual Survey.
- All physiotherapists will be evenly distributed across the age groups. For example if there were 100 physiotherapists in the 26 to 35 year age group, 10 will be 26, 10 will be 27, etc.
- Each age group will have a turnover rate of 6.2 percent.

### 7.3.2 Projected ethnicity

In 2014, 85 percent of the physiotherapist workforce was of New Zealand European or European ethnicity.<sup>20</sup> The remaining 15 percent consisted of people who identified with Asian, Māori and other ethnic groups such as Samoan and Tongan.

Overall, the workforce in 2014 did not reflect the general population at this time where approximately 67 percent of the New Zealand population identified as being of New Zealand European ethnicity, while 13 percent indicated they were Māori, 11 percent indicated they were Asian and seven percent indicated they were Pasifika.

**Table 7.1 Ethnicity of physiotherapists, snapshot years, AGE scenario**

Year	NZ European / Pakeha	NZ Māori	Pacific	Asian	Total
2014	3,572	211	38	219	4,040
2020	3,752	193	35	521	4,500
2025	3,871	192	35	602	4,701
2030	3,981	196	36	640	4,853
2035	4,097	203	37	648	4,985

Source: BERL calculations

Under this scenario, there is a decline in the proportion of the workforce that identify as Māori, from approximately five percent in 2014 to four percent in 2035.<sup>21</sup> This is also at a point where Māori are projected to be 17 percent of the total population.

<sup>20</sup> The European ethnicity classification includes people from Britain, Ireland, Scotland, Western, Eastern and Central Europe, Canada, Australia, the United States of America, and South Africa.

<sup>21</sup> To calculate the overall New Zealand population for the Māori, Asian and Pacific Island ethnic group for each year between 2014 and 2035, we used national ethnic population forecasts from Statistics New Zealand, which provide estimates for each year for the Māori, Asian and Pacific Island ethnic groups.

In 2014, practitioners who identified as Asian were five percent of the workforce. By 2035, this proportion is projected to increase to 13 percent. This is also at a point where the Asian population in New Zealand is projected to be 19 percent of the total population.

Overall, these figures provide an early indication that there may be a need for the Physiotherapy Board and the Schools of Physiotherapy to consider how physiotherapy students and in turn practitioners better represent the population they currently serve, and how their client base may also change in the future.

The ethnicity of physiotherapists under this scenario is based on the ethnic breakdown provided by the 2014 Physiotherapy Workforce Annual Survey, with the following adjustments:

- New Zealand European/Pakeha, NZ Māori, Samoan, Cook Island Māori ethnic proportions in 2014 were applied each year to the total number of New Zealand trained physiotherapists in the workforce.
- The proportion of people in the ethnic groups Australia, United Kingdom, Asian, and North American were applied each year to the total number of internationally qualified physiotherapists in the New Zealand workforce.

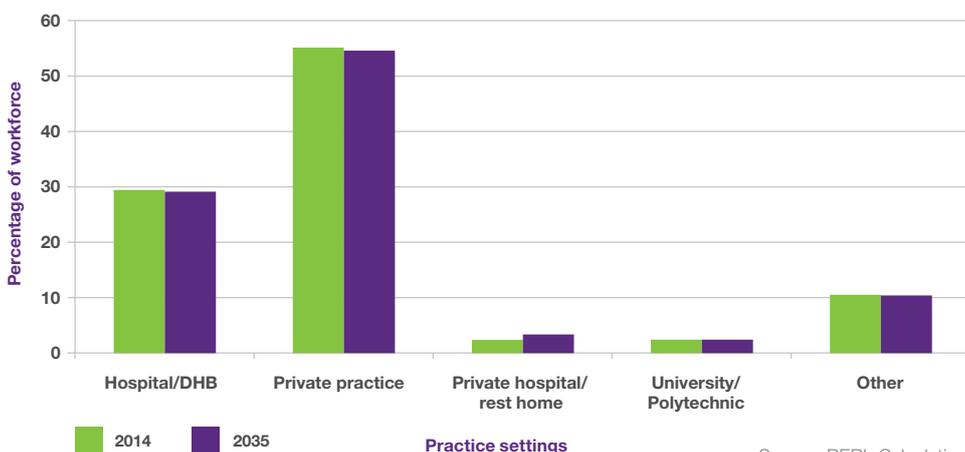
### 7.3.3 Practice settings

Under this scenario, we have used a worked example to illustrate how practise settings could change towards 2035. The example focuses on physiotherapy services offered in private hospitals and rest homes. Here we have assumed the physiotherapy services offered in private hospitals and rest homes remains the same across the period 2014 and 2035. To do this however, the number of physiotherapists employed in these practise settings will need to increase to keep up with the increase in the New Zealand population over the age of 65.

This increase will be at expense of other practise settings, as the total physiotherapist workforce is maintained under this scenario to meet the current population to physiotherapist ratio.

- On average, the proportion of New Zealand's population over the age of 65 is projected to grow by 2.6 percent per annum between 2014 and 2035. With physiotherapist's numbers employed in private hospitals and rest homes increasing by 2.6 percent per annum, the remaining practise settings continue to maintain the proportions shown in the 2014 Physiotherapy Workforce Annual Survey.

**Figure 7.2 Physiotherapist practice settings, 2014 and 2035, AGE scenario**



Source: BERL Calculations

## 8.0

# Considerations regarding the scenarios

The information and data derived from the workforce scenarios provides the Physiotherapy Board with a starting point to proactively engage in conversation with public policy funders and decision-makers, and provides the Board with an evidence base to respond to proposed public policy changes or funding decisions.

Overall, the workforce scenarios indicate:

- An average of 950 students enrolled across the bachelor of physiotherapy degree may be an under or over-estimation of workforce requirements. Student enrolment and completion rates need to be monitored, along with graduate destinations, to ensure that the supply of graduates is adequate to replace those who are retiring or leaving the profession.
- An ageing population and changing health needs will impact on the services required of physiotherapists. This may impact on the way that physiotherapists are trained in New Zealand, the skills, knowledge and prior experiences physiotherapy schools look for in prospective students, and the skills that graduates gain through their training. It may also impact on the attributes that we look for in international applicants and the types of people and qualifications that we try to attract from overseas.
- The services required of physiotherapists may change due to changes in their client base. Currently, the average age of physiotherapists varies across practise settings. However, practitioners who are employed within private hospitals and rest homes have the highest average age, and these settings have the greatest proportion of practitioners over the age of 55 years old. If there is a greater need for practitioners in this area in the future due to population ageing and changing health needs, this may impact on the career choices, scope of practise and practise settings of graduates and current practitioners.
- The student population and the physiotherapy workforce do not reflect the ethnic make-up of New Zealand. This difference could become starker in the future as the ethnic make-up of the New Zealand population is expected to change towards 2035 due to migration and a greater number of young Māori and Pasifika people in the overall population.

However, the modelling draws on trends – workforce trends, student enrolment and completions trends – and uses this data to make assumptions regarding behaviour in the future. These trends may or may not be a useful reflection of the future workforce or student behaviour. For example, they may illustrate a period where it was popular to undertake study in physiotherapy or when turnover was low within the profession as people were generally happy with their working conditions and continued to work for the same employer.

There is also a risk in assuming that the current situation in regards to the workforce – the total number of people employed, their qualifications, and areas of practice – is adequate, and that the size of the current workforce is adequately meeting demand and should continue to grow as per past trends.

This research has also highlighted that there are gaps in the workforce data regarding turnover, graduate destinations and outcomes, internationally qualified physiotherapists. It is important to fill these gaps and collect further data and information to monitor workforce developments and drive strategic workforce initiatives and policy.

This future data gathering and evaluation will allow the Board to engage in conversation with policy makers, funders and others within the health sector, and make decisions that are evidence-based.

## Appendix A

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- David Nicholls. Associate Professor and Head of Department, School of Rehabilitation and Occupation Studies, AUT. 24/02/2014.
- Janet Copeland and Karen McLeay. Physiotherapy New Zealand. 12/03/2014.
- David Baxter. Professor and Dean, School of Physiotherapy, University of Otago. 10/04/2014.

## Appendix B

# The Physiotherapy Board

The functions of the Physiotherapy Board under section 118 of the HPCA Act are:

- To prescribe the qualifications required for scopes of practice within the profession, and accredit and monitor educational institutions and programmes.
- To authorise the registration of physiotherapists and maintain a register.
- To consider applications for annual practising certificates
- To review and promote the competence of physiotherapists
- To recognise, accredit and set programmes to ensure the ongoing competence of physiotherapists
- To receive and act on information from health practitioners, employers and the Health and Disability Commissioner regarding the competence of physiotherapists
- To notify employers, ACC, the Director-General of Health, and the HDC when the practice of a physiotherapist may pose a risk of harm to the public
- To consider cases of health practitioners who may be unable to perform the functions required for the practice of physiotherapy
- To set standards of clinical competence, cultural competence and ethical conduct to be observed by the profession
- To liaise with other authorities appointed under the HPCD Act about matters of common interest
- To promote education and training in the profession
- To promote public awareness of the responsibilities of the authority
- To exercise and perform any other functions, powers and duties that are conferred or imposed on it by or under This Act or any other enactment.

## Appendix C

# Scopes of Practice

There are four defined scopes of practice in New Zealand. These are:

- General Scope of Practice: Physiotherapist
- Specialist Scope of Practice: Physiotherapy Specialist
- Visiting Physiotherapy Presenter/Educator
- Postgraduate Physiotherapist Student.

This study focuses on the General Scope of Practice: Physiotherapist. The number of people practising under the Specialist Scope of Practice: Physiotherapy Specialist is small and neither the Visiting Physiotherapy Presenter/Educator nor the Postgraduate Physiotherapist Student Scope of Practice are allowed to practise as a physiotherapist in New Zealand.

## General Scope of Practice: Physiotherapist definition

Physiotherapy provides services to individuals and populations to develop, maintain, restore and optimise health and function throughout the lifespan. This includes providing services to people compromised by ageing, injury, disease or environmental factors. Physiotherapy identifies and maximises quality of life and movement potential by using the principles of promotion, prevention, treatment/intervention, habituation and rehabilitation. This encompasses physical, psychological, emotional, and social well-being.

Physiotherapy involves the interaction between physiotherapists, patients/clients, other health professionals, families/whanau, care givers, and communities. This is a people-centred process where needs are assessed and goals are agreed using the knowledge and skills of physiotherapists.

Physiotherapists are registered health practitioners who are educated to practise autonomously by applying scientific knowledge and clinical reasoning to assess, diagnose and manage human function.

The practice of physiotherapy is not confined to clinical practice, and encompasses all roles that a physiotherapist may assume such as patient/client care, health management, research, policy making, educating and consulting, wherever there may be an issue of public health and safety.

## Specialist Scope of Practice

A new specialist scope of practice was gazetted in 1 November 2012 – Physiotherapy Specialist. The following is the definition of this scope of practice:

Physiotherapy specialists are expert physiotherapists who have advanced education, knowledge and skills to practise within a specific area of clinical practice:

- As specialist clinicians, they demonstrate leadership in consultancy, education and research
- They work collaboratively with the physiotherapy profession and within the wider health team across a range of health and disability settings
- Actively participate and take a leadership role in professional activities, including local and national strategy and policy development
- They work in partnership with individuals, whanaū, families and communities to optimise health outcomes.

## Special Purpose Scope of Practice

In the Physiotherapy Board of New Zealand Annual Report for 2012-2013, it was noted that 37 internationally qualified physiotherapists had gained registration under one of the two special purpose scopes of practice. These included 25 postgraduate physiotherapy students and 12 visiting physiotherapy presenters/educators. These registrations allow internationally qualified physiotherapists to undertake postgraduate physiotherapy study at the University of Otago or Auckland University of Technology, or for internationally qualified physiotherapists to participate in presentation or education activities in New Zealand.

## Appendix D

# Additional Census 2013 data

### Physiotherapists by birthplace, Census 2013

Birthplace	Number	Percent
New Zealand	2,109	67%
Australia	72	2%
Pacific	18	1%
United Kingdom	489	16%
Rest of Europe	144	5%
North America	42	1%
South Africa	96	3%
All Other Countries	177	6%
<b>Total</b>	<b>3,147</b>	<b>100%</b>

Source: 2013 Census, BERL Calculations

### Length of time in New Zealand by birthplace, Census 2013

Birthplace	Less Than 2 Years	2 - 4 Years	5 - 9 Years	10 Years or More	Total
Australia	0	6	12	51	72
Pacific	0	0	0	18	18
United Kingdom and Ireland	57	87	117	219	489
Rest of Europe	18	27	21	69	144
North America	0	0	6	27	42
South Africa	0	12	18	63	96
All Other Countries	6	9	27	132	177
<b>Total</b>	<b>93</b>	<b>150</b>	<b>201</b>	<b>579</b>	<b>1,038</b>

Source: 2013 Census, BERL Calculations



# Fostering excellence in physiotherapy