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# **The New Zealand Nursing Pre-Registration Education Pipeline**

June 2021

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## INTRODUCTION

Workforce is a key component for the delivery of New Zealand's healthcare. To enable a sustainable nursing workforce, we need to understand the current and future supply and demand needs. This paper presents information about the nursing pre-registration education pipeline in New Zealand. The purpose of the paper is to increase visibility and understanding of the patterns within the nursing pre-registration pipeline; to inform and support initiatives aimed at strengthening the pipeline over the long term – so that the national nursing workforce is best positioned to meet the current and future needs of the communities it serves.

Health care providers and the sector generally, have limited information on the actual and future undergraduate nursing pipeline. As such, there is no consolidated view at a national or regional level, of how many nursing students are in the education system, where they are, or who they are. This gap in visibility and co-ordination of the nursing student pipeline provides challenges in being able to confidently plan the future nursing workforce.

The Nursing Pre-Registration Pipeline Working Group has been established to collectively progress improvements to the nursing pre-registration pipeline in New Zealand and to support the nursing workforce's ability to meet current and future challenges. The Nursing Pre-registration Pipeline Working Group is a DHB Director of Nursing led programme of work in partnership with the Ministry of Health, NZNO, Nursing Council, Education providers, Aged Residential Care and nursing leaders from across the sector. The aim is to get a shared understanding of the pre-registration pipeline and to work with TEC and education providers to ensure the supply and demographics of nurses match both the demand and the needs of the populations nursing serves.

The provision of highly skilled and qualified health professionals with relatively long education pathways means it takes a substantial amount of time before adjustments can take effect. Achieving Māori health equity is a key priority for our health system. While addressing inequity is complex and requires multiple interventions, workforce development is one of the modifiable, and a deliberate and specific action that can be taken. The Pre-Registration Pipeline project will support the development of workforce interventions which can address modifiable human factors; including increasing Māori participation in the health workforce as a critical enabler to achieve health equity for Māori.

Māori data sovereignty has been a key consideration in the creation of this report, with a set of principles developed in relation to the nursing pre-registration pipeline project. These principles can be reviewed on the [TAS website](#).

The release of this report is the first step in understanding the pre-registration pipeline, and the insights obtained will be used to inform discussions to ensure a more collaborative, coordinated, whole of system approach to managing the nursing pre-registration pipeline is established.

## INTERPRETATION NOTES

The data used in this report was supplied by the Tertiary Education Commission (TEC).

- The data was provided by TEC on February 2021. We only have partial enrolment and completion data for 2020, and for this reason 2020 numbers have not been included in this report. **The TEC data is constantly being updated therefore please note some of the numbers/percentages in this report will be subject to change over time.**
- **Data only includes domestic students.**
- This analysis includes students enrolled in the following courses:
  - Bachelor of Nursing and Bachelor of Health Science (Nursing) degree courses

- Enrolled nursing diploma courses
- Completion year information has been supplied to TEC from each of the educational institution. There were a small number of gaps in the reported 2019 completions, due to COVID-19 lockdown disruptions. To correct for this, we have assumed that a student completed their course if their completed equivalent full-time student (EFTS) points were equal to or higher than the required EFTS for the course.
- Some students have enrolled in several nursing courses over time. For consistency and to avoid double counting, enrolments have only been counted the first time each student enrolled in a nursing course, rather than counting each enrolment.
- TEC ethnicity indicators have been prioritised to group individuals as Māori, Pacific, Asian or Other. The prioritised 'Other' group includes people whose ethnicity was reported to TEC as 'Unknown'.

## REGISTERED NURSES

### *Education in New Zealand*

Bachelor of Nursing or Bachelor of Health Science (Nursing) education programmes run for three years full time and are a combination of classroom and practical experience in hospitals, primary and community care settings. Currently there are 18 education institutions offering bachelor level nursing programmes in 2021.

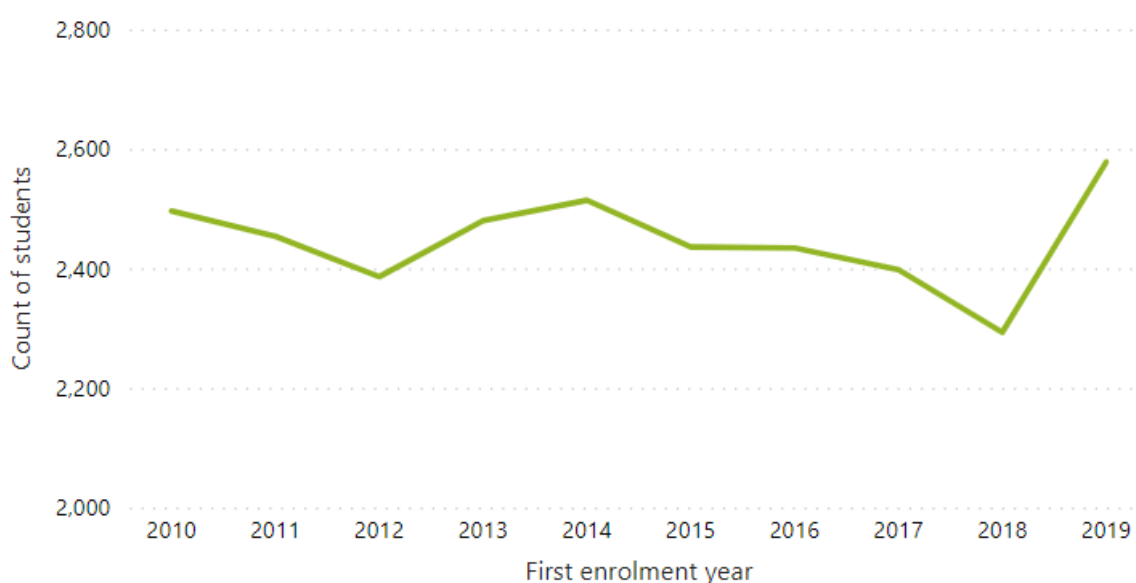
### *New enrolments in nursing bachelor programmes*

Since 2014, the number of new students enrolling in bachelor level nursing programmes had been decreasing; however, in 2019 there was an increase in new enrolments. At present we are not able to tell if this increase is a one off or the start of a trend. Over the period 2010-2018, the average number of new enrolments for the nursing bachelor courses averaged 2432 per year. In 2019, the total number of new enrolments was 2578, which is 3.3% higher than the 2010 figure of 2496 enrolments.

Enrolees in bachelor level nursing programmes are predominately female, making up an average of 91.1% of new enrolments. There were no significant changes in the gender distribution between 2010 and 2019.

*Figure 1: Annual new enrolments in a bachelor level nursing programme in New Zealand, 2010 - 2019*

#### **Students starting a nursing bachelor course by first enrolment year**



Analysis by ethnicity indicates fluctuations in the percentage of new enrolments in the different ethnic groups. The number of new enrolments for Māori has increased slightly over the years, rising from 348 in 2010 to 419 in 2019, with a peak of 462 new enrolments in 2017. The number of Māori new enrolments as

a proportion of all new enrolments averages 17% per year. New enrolments for Pacific and Asian students have risen over the same period, with Pacific students rising from 176 to 335 in 2019 and Asian students rising from 300 to 461.

Figure 2: Annual new enrolments in bachelor level nursing programme by ethnicity, 2010-2019

**Students starting a nursing bachelor course by first enrolment year and ethnicity**

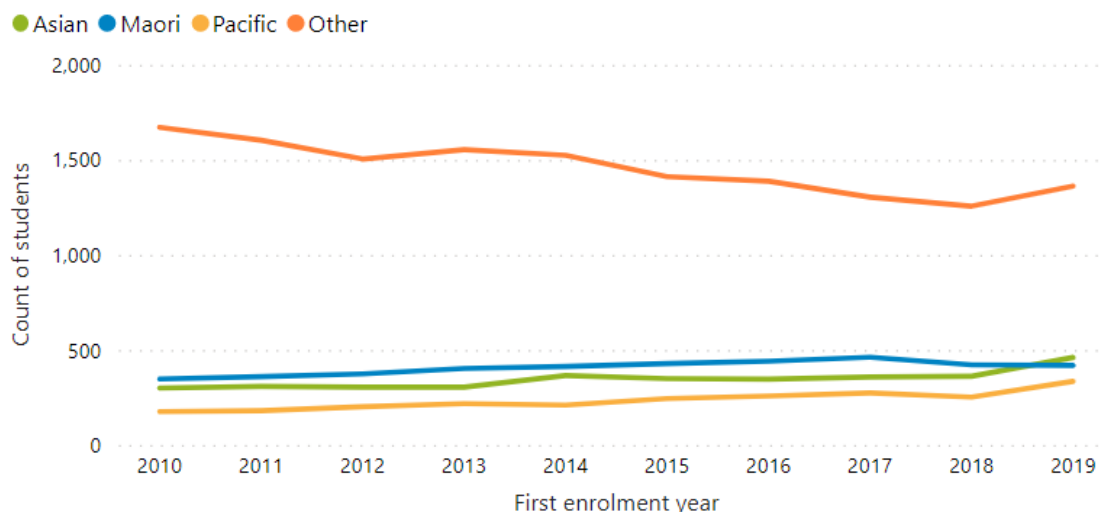
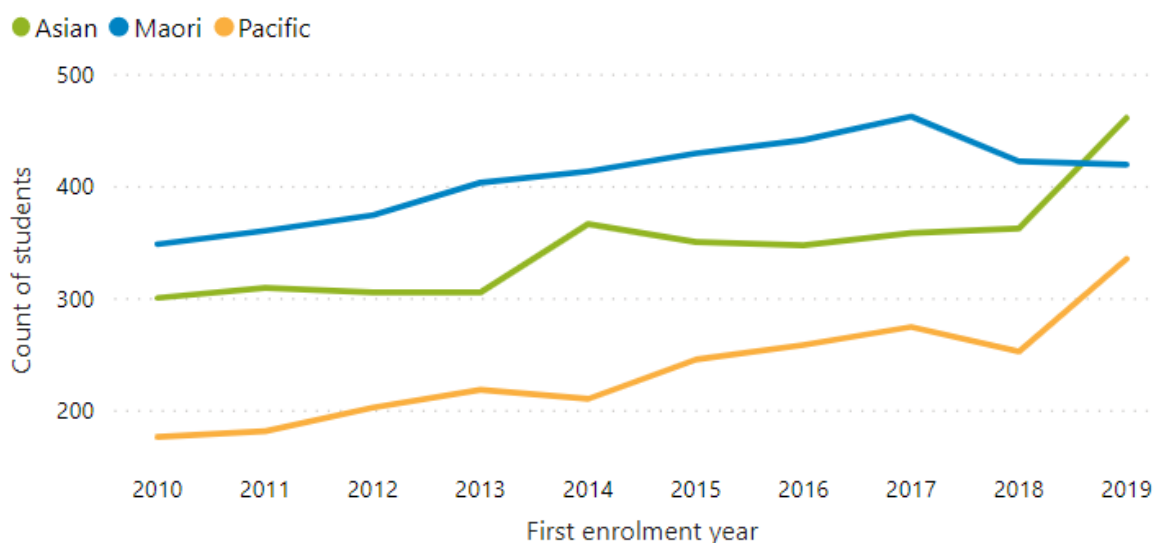


Figure 2a: Annual new enrolments in a bachelor level nursing programme for selected ethnicities, 2010-2019

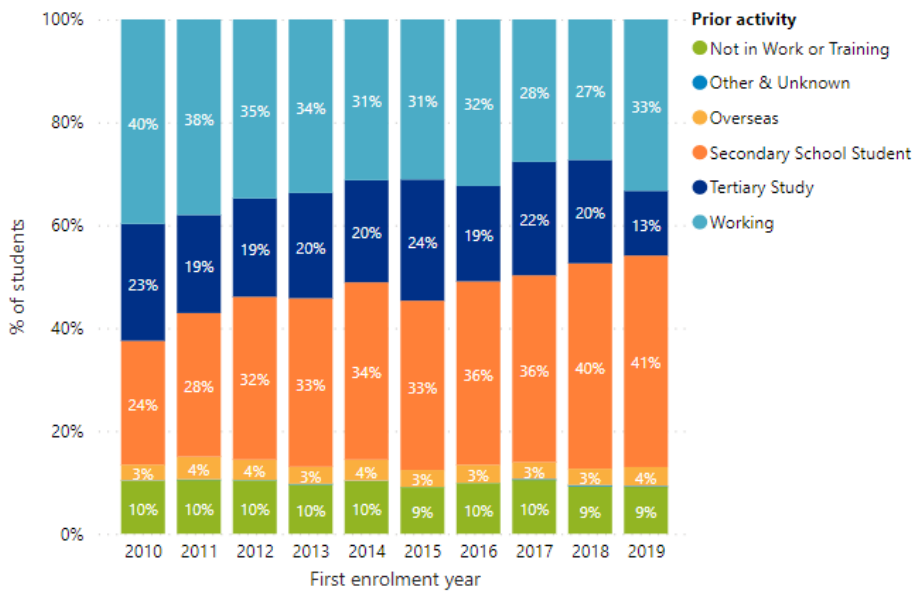
**Students starting a nursing bachelor course by first enrolment year and ethnicity (excl Other)**



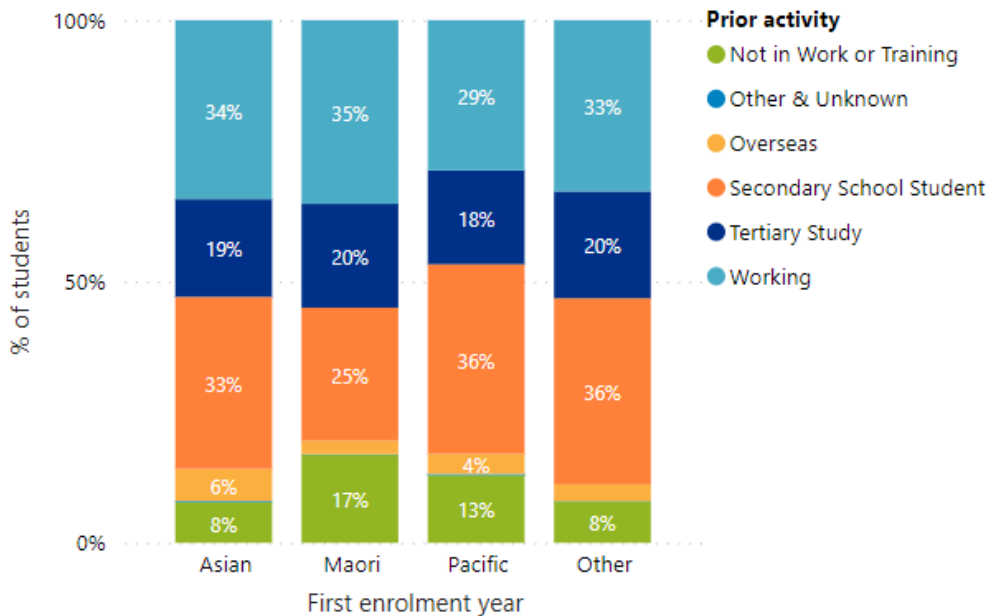
Analysis of the prior activity of new enrolments indicates a growth in the percentage that are coming straight from secondary school, rising from 24% in 2010 to 41% in 2019. The next largest group was those who were working prior to enrolling; however, this decreased between 2010 (40%) and 2019 (33%). Pacific and Other ethnic group students were more likely to have come straight from school over the same period, while Māori and Asian students were more likely to have come from work.

Figure 3: Annual new enrolments in a bachelor level nursing programme by prior activity and ethnicity, 2010-2019

**Prior activity of students starting a nursing bachelor course by first enrolment year**

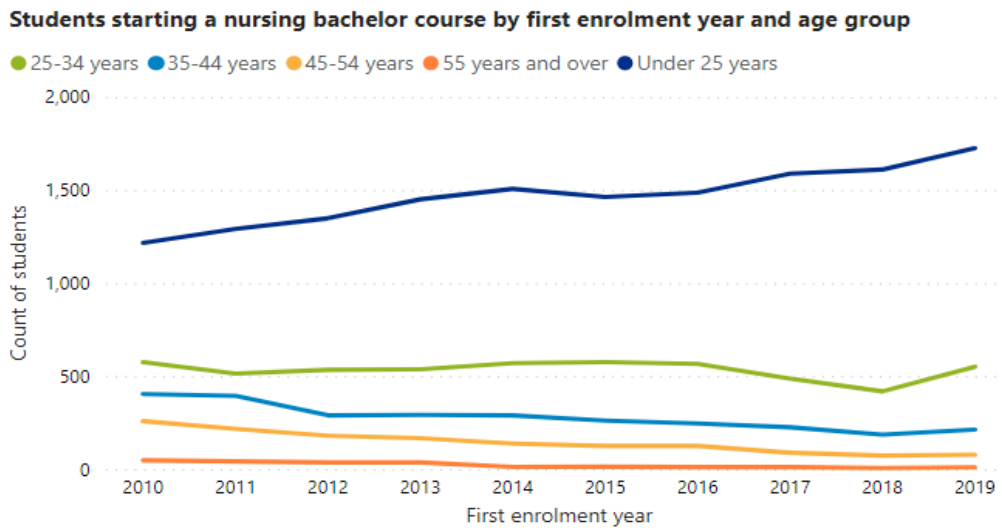


**Prior activity of students starting a nursing bachelor course in 2010-2019, by ethnicity**



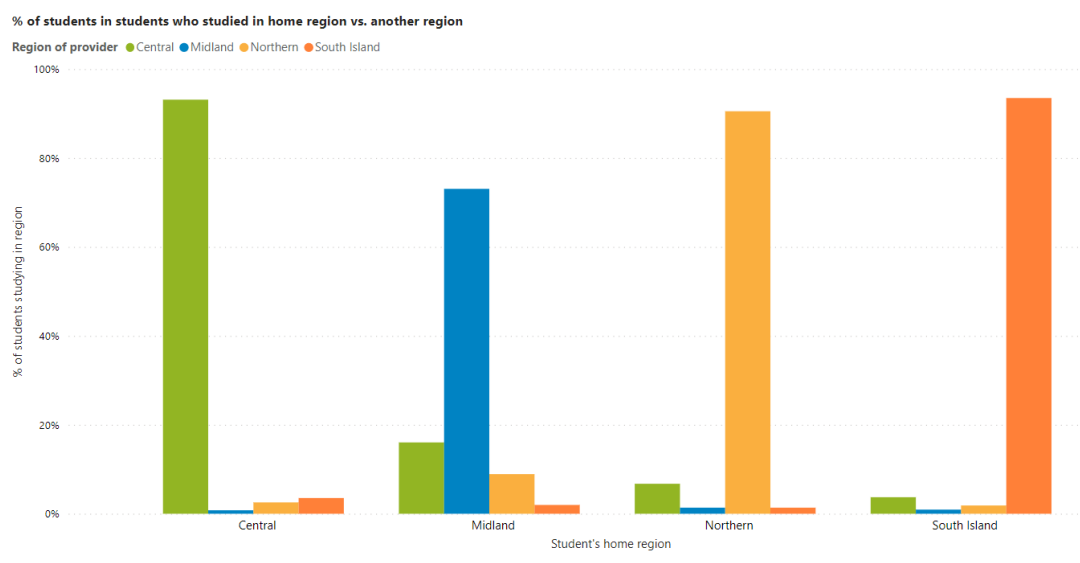
There has been a continuous increase in the number of new enrolments for bachelor level courses for students under the age of 25, while the number of new enrollees aged 35 and over has been decreasing over time. In the age group 25-34 the number of enrollees has been variable over time with no clear trend.

Figure 4: New enrolments in a bachelor level nursing programme by year and age group, 2010 -2019



Most students enrol with a provider in their home region (that is, the region they provided as their home address when enrolling in the course). When comparing students’ home regions<sup>1</sup> with the location of the campus, we can see that more than 90% of students from the Central, Northern and South Island regions studied in their home region. Students from the Midland region were more likely to study in another region, but 73% of them still chose to enrol with a Midland provider.

Figure 5: New enrolments in a bachelor level nursing programme by region of provider, 2019

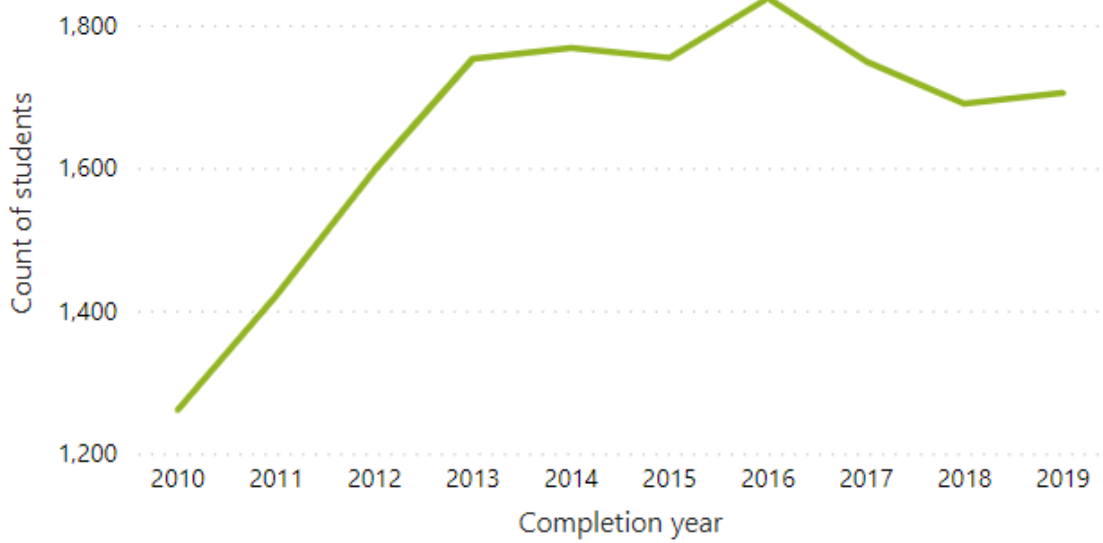


**Completion of bachelor level nursing programmes**

Annual completion figures for bachelor level nursing programmes increased between 2010 and 2016 but have gone down again in the last few years.

<sup>1</sup> **Central region** = Hawkes Bay DHB, MidCentral DHB, Whanganui DHB, Wairarapa DHB, Hutt DHB and Capital and Coast DHB  
**Northern region** = Northland DHB, Auckland DHB, Counties Manukau DHB and Waitemata DHB  
**Midland region** = Bay of Plenty DHB, Lakes DHB, Hauora Tairāwhiti, Taranaki DHB and Waikato DHB

Figure 6: Annual completions of a bachelor level nursing programme in New Zealand, 2010 -2019



Analysis of reported ethnicity of people who completed bachelor level nursing programmes from 2010 to 2019, indicates increasing numbers of Māori and Pacific People, while completions by those in the Other ethnic group have been decreasing slightly since 2016.

Figure 7: Annual completions of a bachelor level nursing programme by ethnicity, 2010-2019

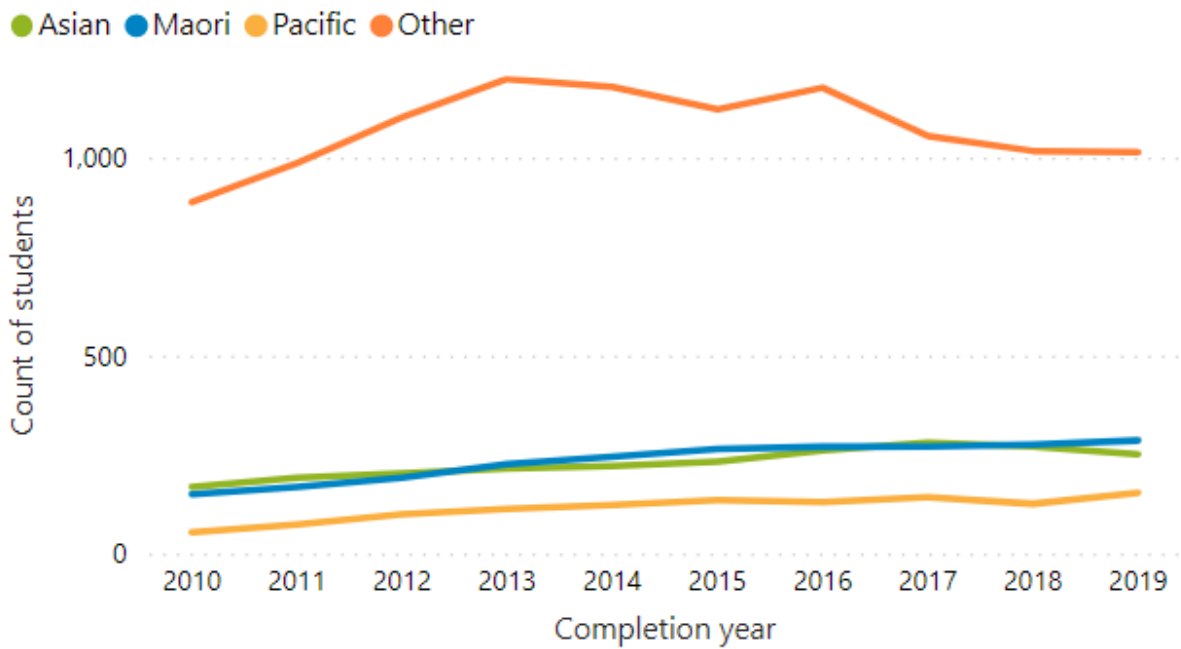
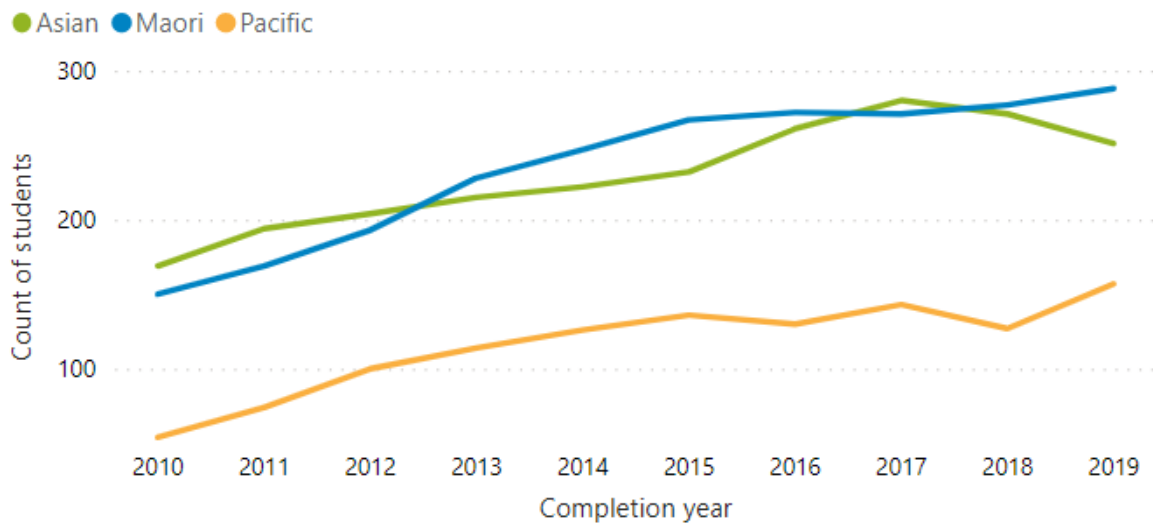




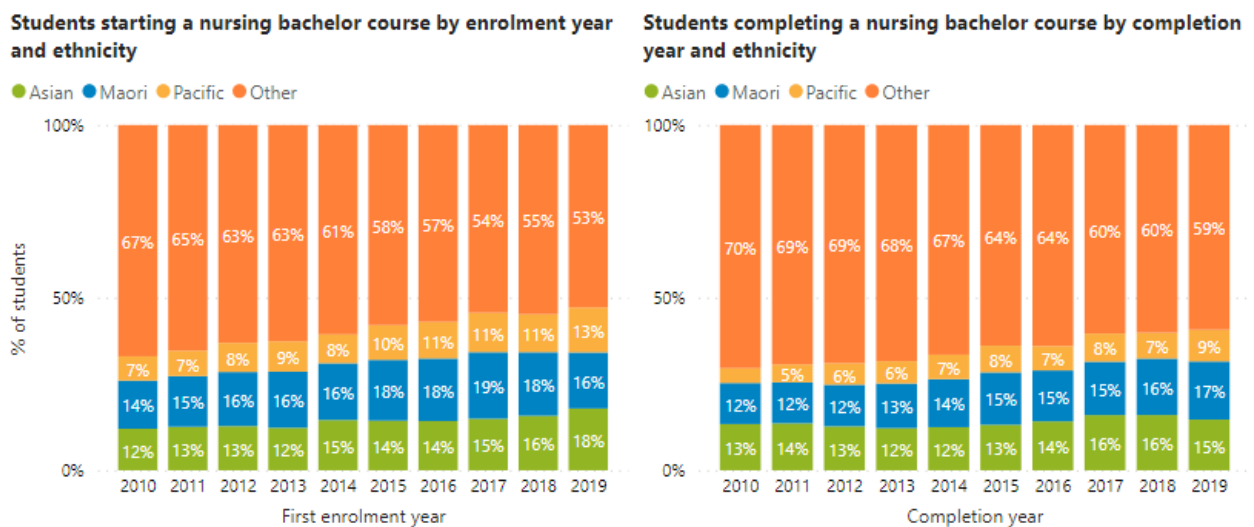
Figure 7a: Annual completions of a bachelor level nursing programme by selected ethnicities, 2010-2019

### Students completing a nursing bachelor course by completion year and ethnicity (excl Other)



Comparing the ethnicity distribution of new enrollees with the students completing the course indicates that the proportion of the Other ethnic group is higher in the completions than the enrolments. However, the proportion of Māori, Pacific and Asian students in the completions has been increasing.

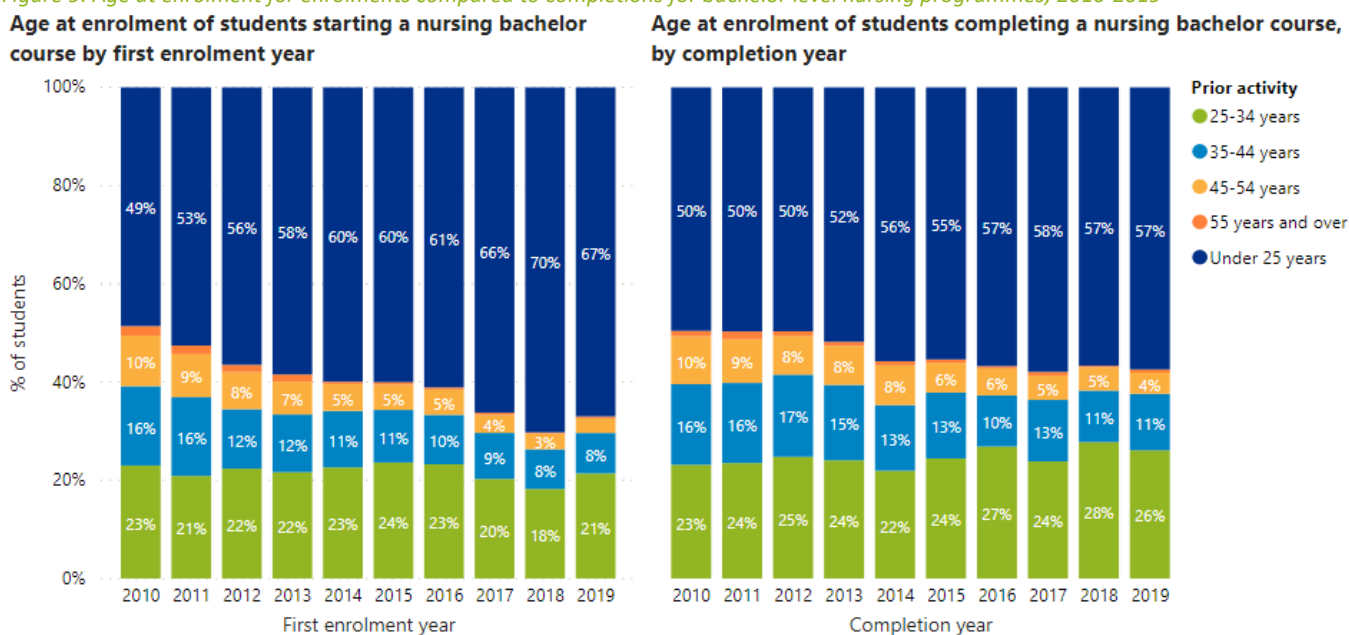
Figure 8: Ethnicity of bachelor level nursing programme enrolments compared to completions, 2010-2019



Note: these graphs are not directly comparable - If a student starts in 2017 then they are likely to be in the 2019 completion data.

The two charts below compare the distribution of students' enrolment age for enrolments and completions. Although the largest group in both cases is students under 25, they represent a smaller proportion of the completions than the enrolments. Students aged 25-44 years, on the other hand, make up a larger proportion of the completions than the enrolments, indicating that their completion rate is higher than the under 25 years age group.

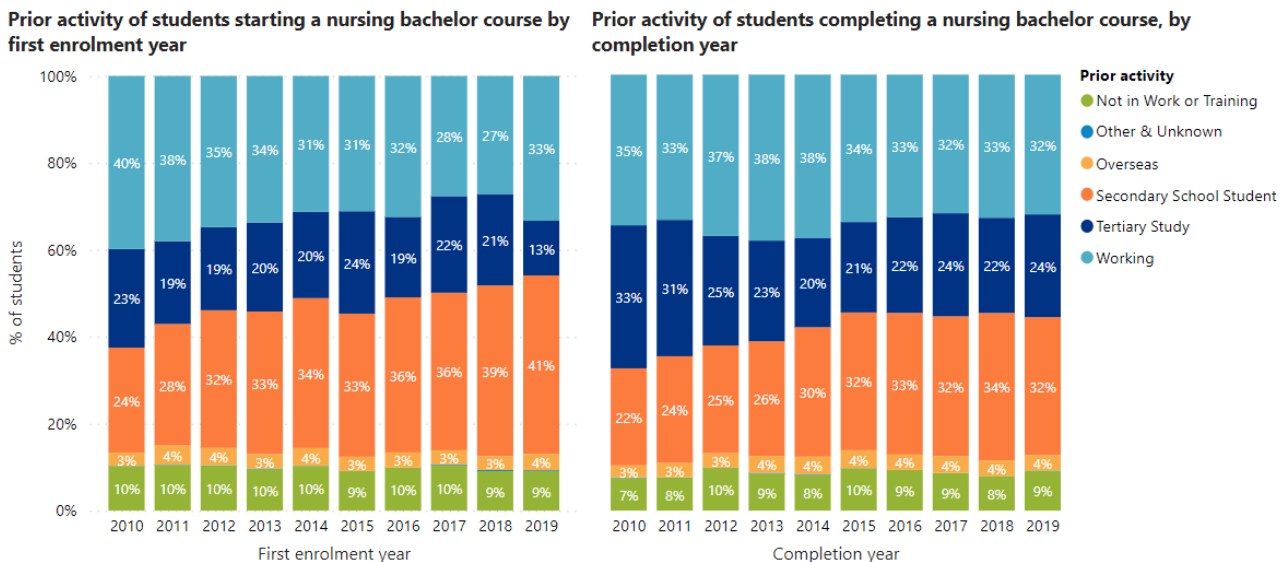
Figure 9: Age at enrolment for enrolments compared to completions for bachelor level nursing programmes, 2010-2019



Note: these graphs are not directly comparable - If a student starts in 2017 then they are likely to be in the 2019 completion data.

Analysing the trend in completions by students' prior activity indicates an increase in completions by students who came straight from secondary school. When compared to enrolments, the proportion of students previously in secondary school is slightly lower in the completions, while students from other tertiary studies make up a slightly larger proportion of the completions than the enrolments. This may indicate a higher completion rate for students coming from other tertiary studies than students from secondary school.

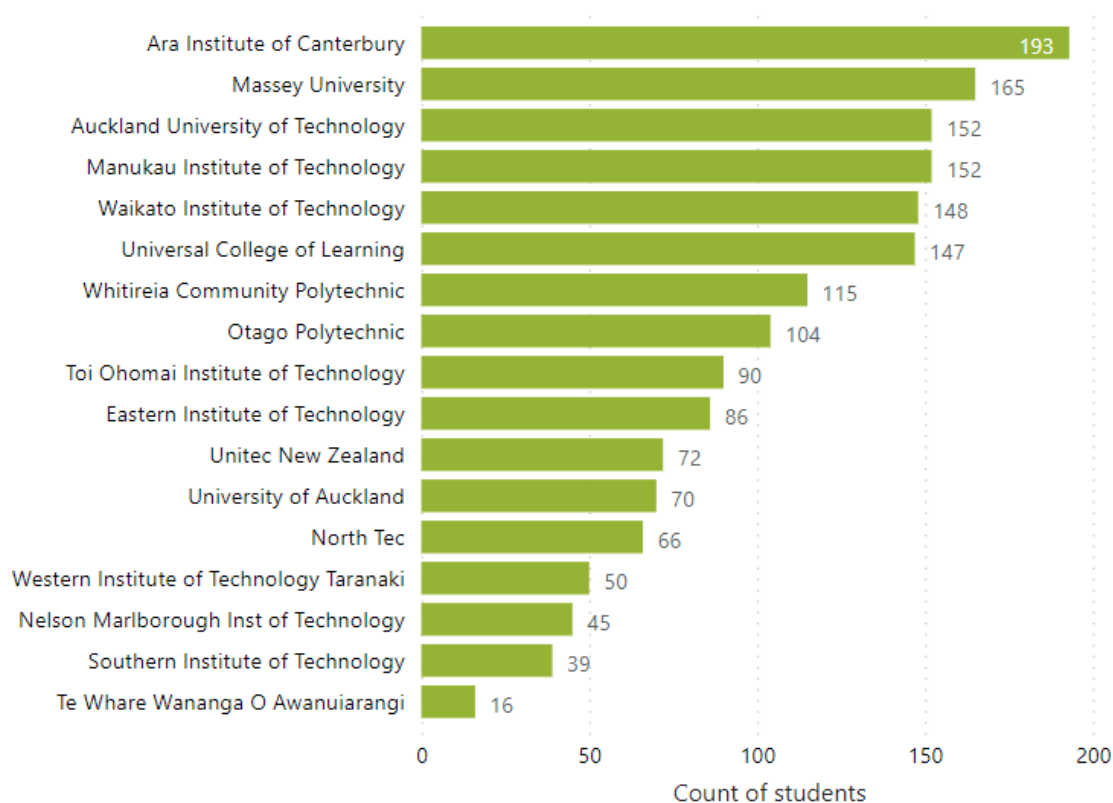
Figure 10: Prior activity for enrolments compared to completions for bachelor level nursing programmes, 2010-2019



Note: these graphs are not directly comparable - If a student starts in 2017 then they are likely to be in the 2019 completion data.

Figure 11: Number of bachelor level nursing programme completions by tertiary education provider, 2019

### Students who completed a nursing bachelor course in 2019, by provider



### Length of study for completed bachelor level degrees

The box and whisker plot below shows the distribution of students' length of study for completed courses, measured as the number of years from when they first started a bachelor course to when they completed it. This means that we include breaks in the studying, for example sabbaticals or periods spent working. To give an example, if a student studied for two years, took a year's break, then studied again for another year before completing the course, their length of study would be four years.

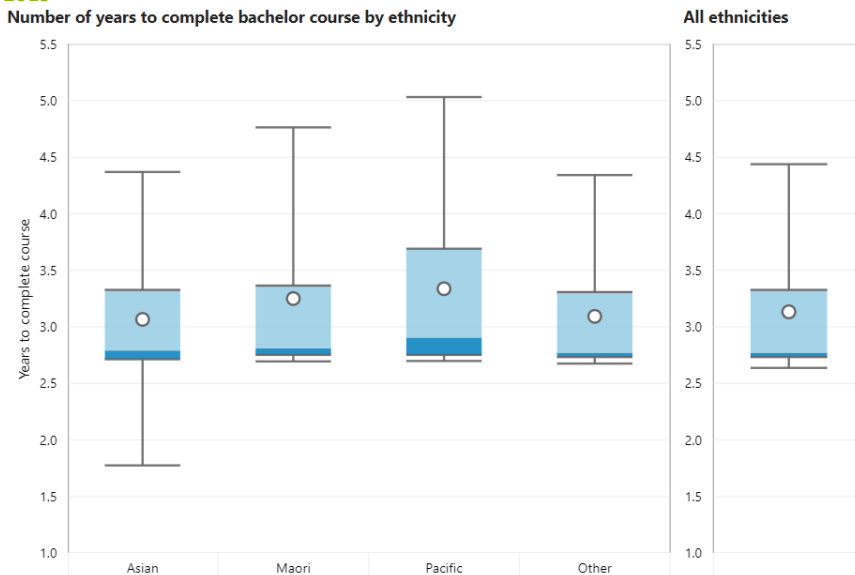
- The dot shows the mean length of study, while the line between the dark and light blue shows the median.
- The upper and lower limits of the box shows the 25% and 75% points (quartiles 1 and 3); i.e. 25%/75% of students completed their courses within that number of years.
- The upper and lower whiskers show the 5% and 95% points. This means that 90% of students completed their course within the number of years indicated by the whiskers, and that the top/bottom 5% are above/below the whiskers.

Please note, where the number of study years/equivalent full-time student (EFTS) completed is less than the standard course duration for the course, it is assumed that some credit for prior learning has been applied.

Overall, the median length of study for students completing a nursing bachelor course between 2015 and 2019 was about 2 years and 9 months. 75% of students completed the course within 3 years and 4 months. 5% of students took longer than 4.5 years to complete the course; this may have been due to studying part-time or to taking a break in their studies.

There is little difference in the length of study for the different ethnicities. Pacific students took slightly longer to complete their studies, with 75% of Pacific students completing the bachelor programme within 3 years and 8 months.

Figure 12: Number of years taken to complete a bachelor level nursing qualification by ethnicity, for completions between 2015 - 2019



### Assumed early exits from bachelor level nursing programmes

We do not currently have data on students who left a course and why; however, we can approximate the number of students who left by looking at the last course end date and completion status. We have defined students who left their courses as those whose last course end date was before 2020, and who have not yet completed the course. It is possible that some of these students are taking a break from their studies rather than having left completely, but we do not have access to this information. Students first enrolled from 2018 onwards have not been included since the full picture of their studies is not available yet.

Of the students enrolled in a nursing bachelor course between 2010 and 2017, approximately 29% have not yet completed the course. The rate of assumed early exits has also been increasing. For Pacific students, the assumed early exit rate averaged 37% in the same period and seems to be trending up. However, it is possible that some of the students enrolled in 2017 will still complete the course or completed the course after this data was submitted.

Figure 13: Total assumed early exits from bachelor level nursing programmes by first enrolment year, 2010-2017

**% of enrolled students who have not completed nursing bachelor course, by first enrolment year**

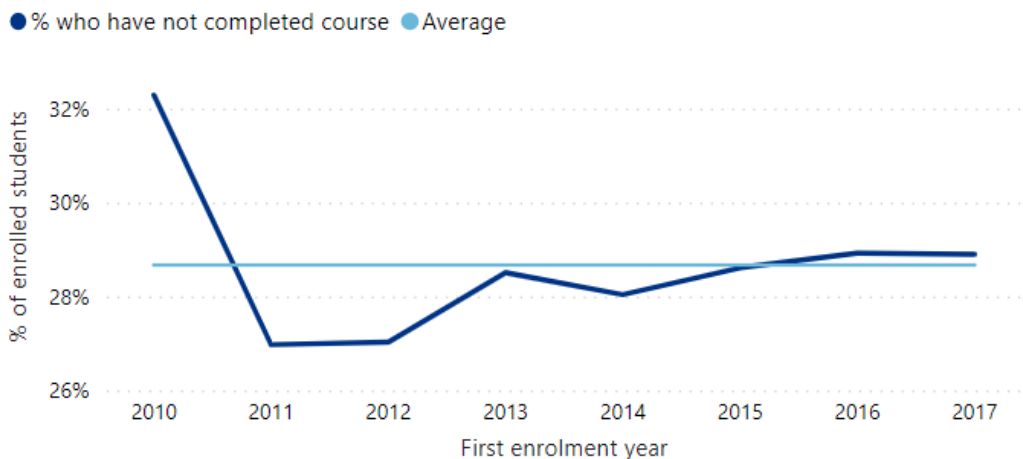
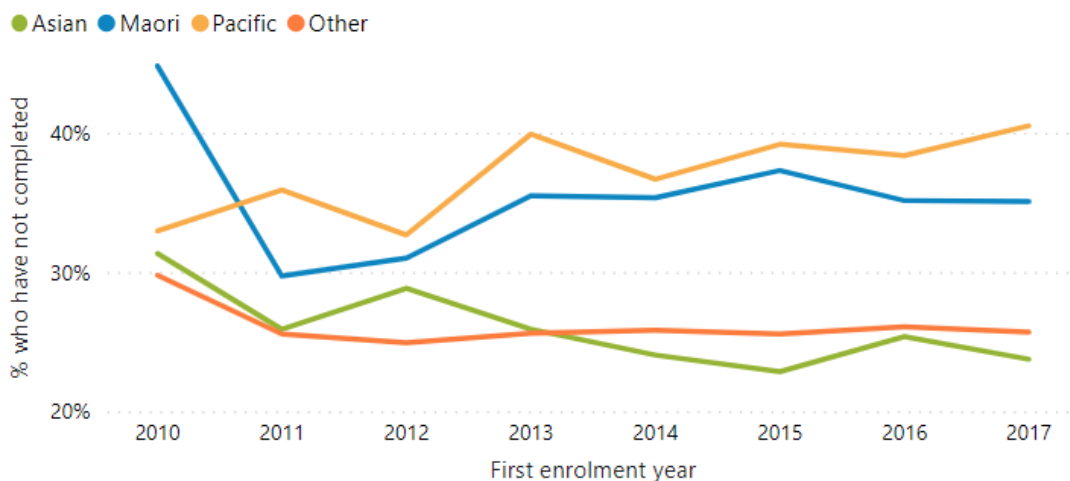


Figure 14: Assumed early exits from bachelor level nursing programmes by first enrolment year and ethnicity, 2010-2017

**% of enrolled students who have not completed nursing bachelor course, by enrolment year and ethnicity**



Of the students who seem to have left their nursing bachelor studies, 57% left within the first year. A further 25% left within the second year, meaning that 18% left after two years or more. Pacific students appear to be slightly more likely to leave after more than a year, while for the other ethnic groups they are more likely to leave in the first year.

Figure 15: Assumed early exits for bachelor level nursing programmes by years of study, 2010-2017

**At what point did students leave the course? Number of years of study before leaving course (students enrolled 2010-2017)**

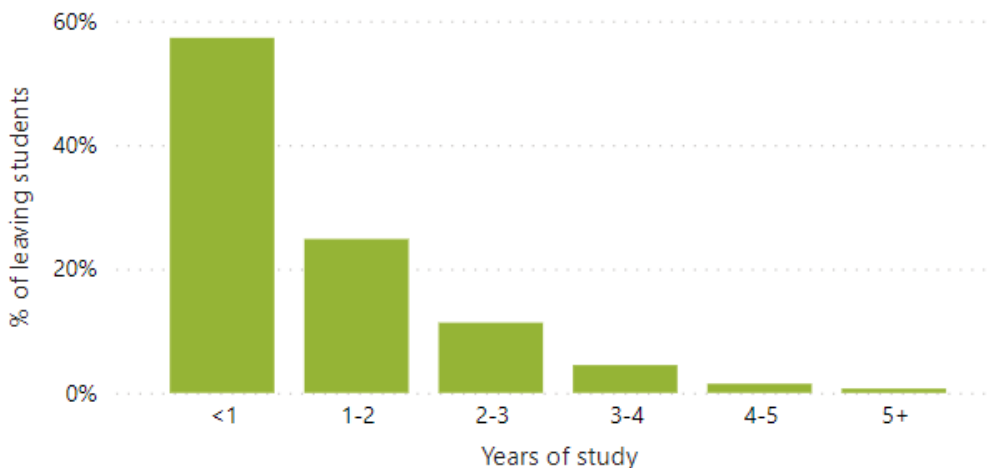
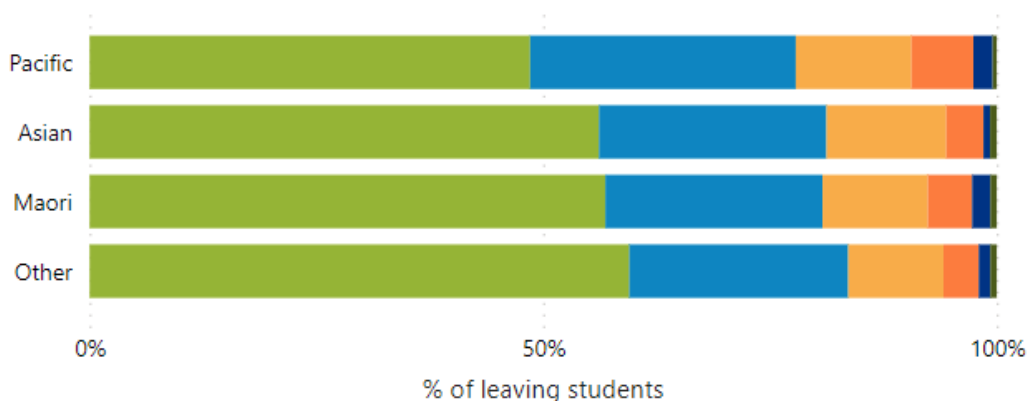


Figure 16: Assumed early exits for bachelor level nursing programmes by years of study and ethnicity, 2010-2017

**Comparison by ethnicity of number of years of study before leaving (students enrolled 2010-2017)**

Years of study ● <1 ● 1-2 ● 2-3 ● 3-4 ● 4-5 ● 5+



## ENROLLED NURSES

### Education in New Zealand

Enrolled nursing diploma programmes run for 18 months full time and are a combination of classroom and practical experience in hospitals, primary and community care settings. Currently there are 8 education institutions offering the enrolled nursing diploma programme in 2021.

From the start of the 2021 academic year those completing an enrolled nursing diploma course will be able to access free fees under the Targeted Training and Apprenticeship Fund (TTAF).

### New enrolments in enrolled nursing diploma programmes

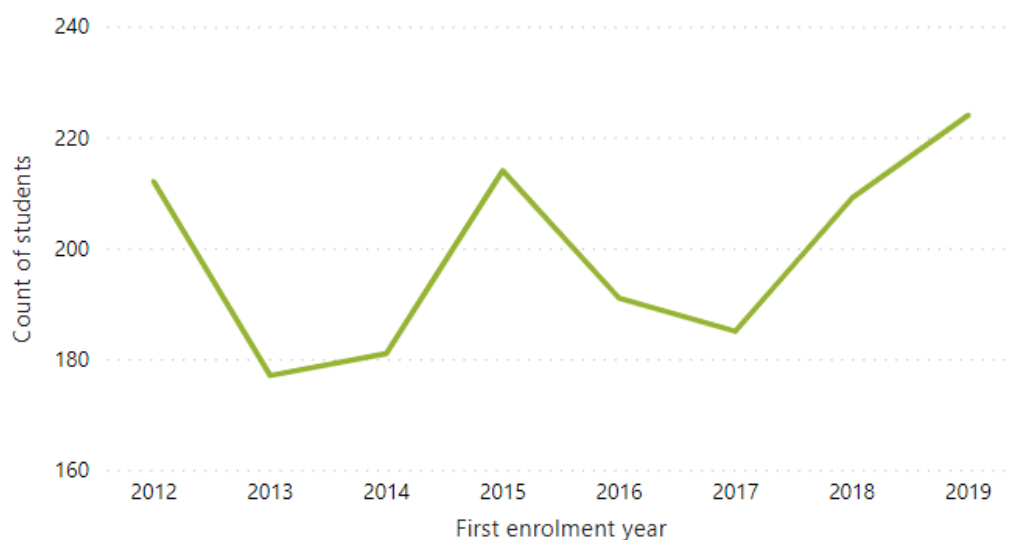
The number of new students enrolling in the enrolled nursing diploma programmes has been variable. Over the period 2012-2019, the average number of new enrolments for the enrolled nursing diploma courses was 199 enrolments per year.

Enrolees are predominately female, with males making up only 6% of enrolees over the period 2012-2019.

Enrolled nursing students are slightly more likely than bachelor level students to study in their home region; in the Central, Midland and South Island regions<sup>2</sup> more than 97% of diploma students enrolled to study in their home region. 20% of students from the Northern region enrolled to study outside of their home region, mainly in the Midland region.

Figure 17: Annual number of new enrolments in an enrolled nursing programme in New Zealand, 2012-2019

#### Students starting EN diploma course by first enrolment year



Analysis of the ethnicity of new enrolments indicates fluctuations in the percentage across all ethnic groups. The number of new enrolments for Māori students has fluctuated slightly over the years, with an increase in

<sup>2</sup> **Central region** = Hawkes Bay DHB, MidCentral DHB, Whanganui DHB, Wairarapa DHB, Hutt DHB and Capital and Coast DHB

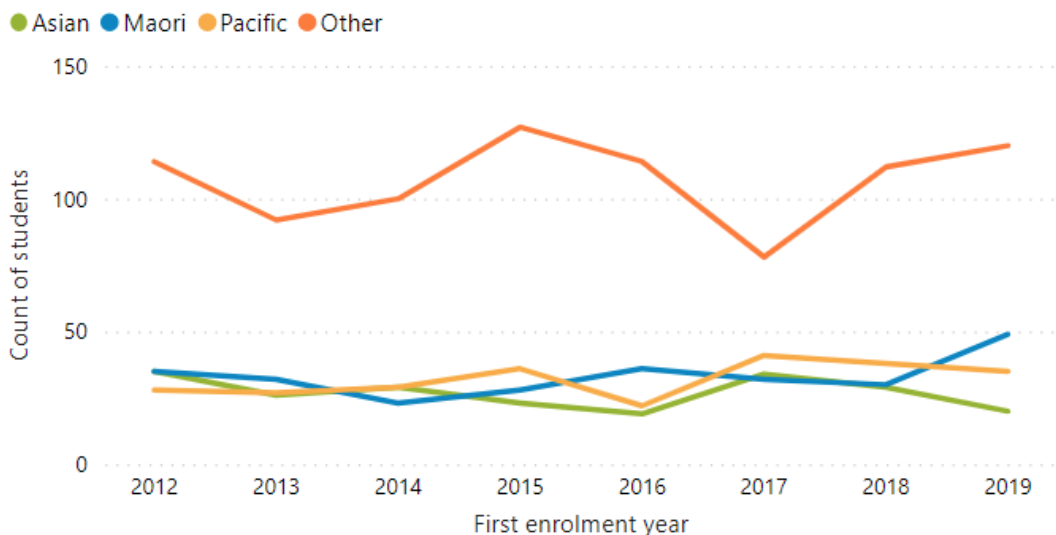
**Northern region** = Northland DHB, Auckland DHB, Counties Manukau DHB and Waitemata DHB

**Midland region** = Bay of Plenty DHB, Lakes DHB, Hauora Tairāwhiti, Taranaki DHB and Waikato DHB

2019. Over the period 2012-2019, the percentage of Māori new enrolments as a proportion of all new enrolments has averaged around 17% per year. Pacific and Asian new enrolments are slightly lower with 16% and 14% respectively.

Figure 18: Annual new enrolments in an enrolled nursing programme by ethnicity, 2012-2019

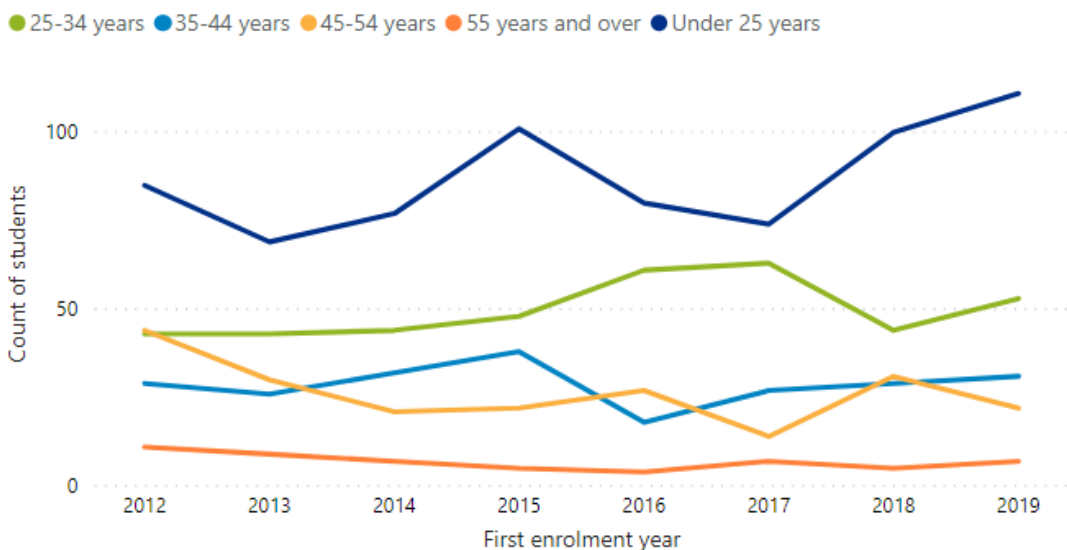
**Students starting EN diploma course by first enrolment year and ethnicity**



Most enrolments in an enrolled nursing diploma programme are under 25 years of age and on average they represent about 44% of enrollees. However, there is also a high proportion of students in the 25-34 age group with an average about 25% of enrollees.

Figure 19: New enrolments in an enrolled nursing programme by year and age group, 2012-2019

**Students starting EN diploma course by first enrolment year and age group**



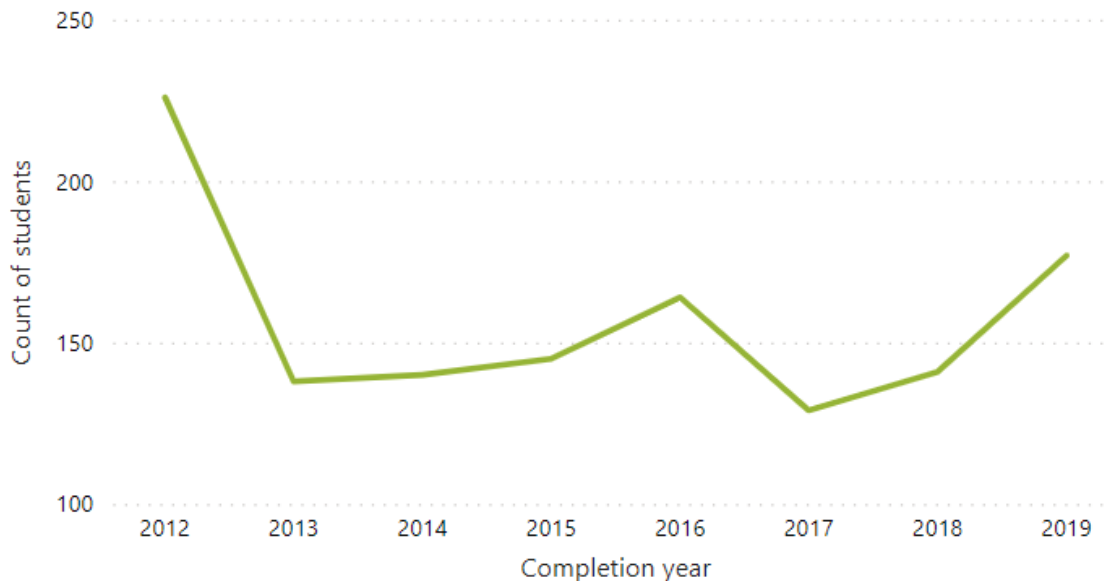
**Completion of enrolled nursing education programmes**

Annual completion figures for enrolled nursing education programmes have been variable, with an average of 158 completions per year. The higher completion numbers in 2012 are linked to a spike in the number of enrolments pre-2012.



Figure 20: Annual completions of an enrolled nursing programme in New Zealand, 2012-2019

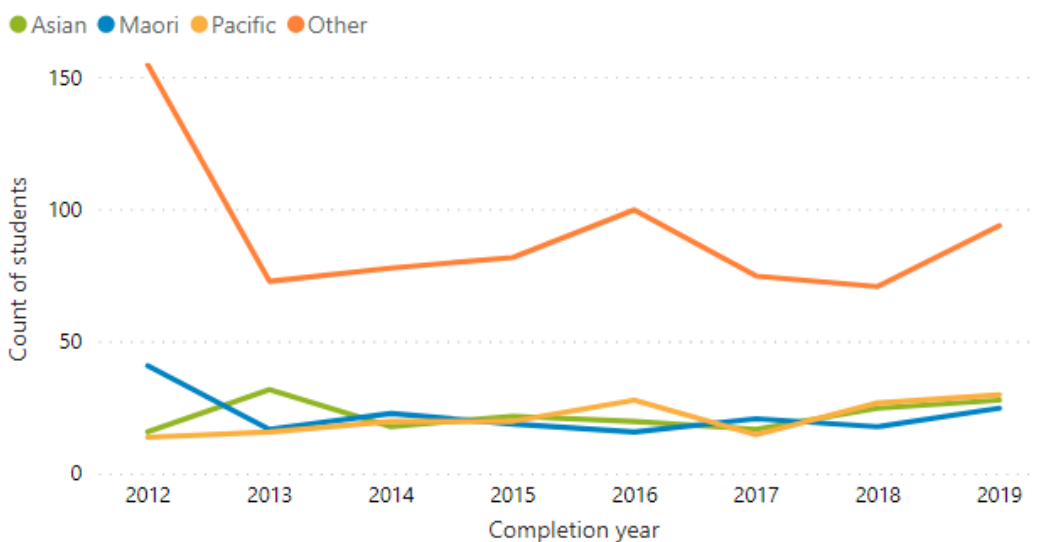
**Students completing EN diploma course by completion year**



Analysis of reported ethnicity of people who completed enrolled nursing diploma programmes between 2012 and 2019, indicates the proportion of Māori, Asian and Pacific People was almost identical on 14%, while completions by those in the Other ethnic group have been variable over the same period.

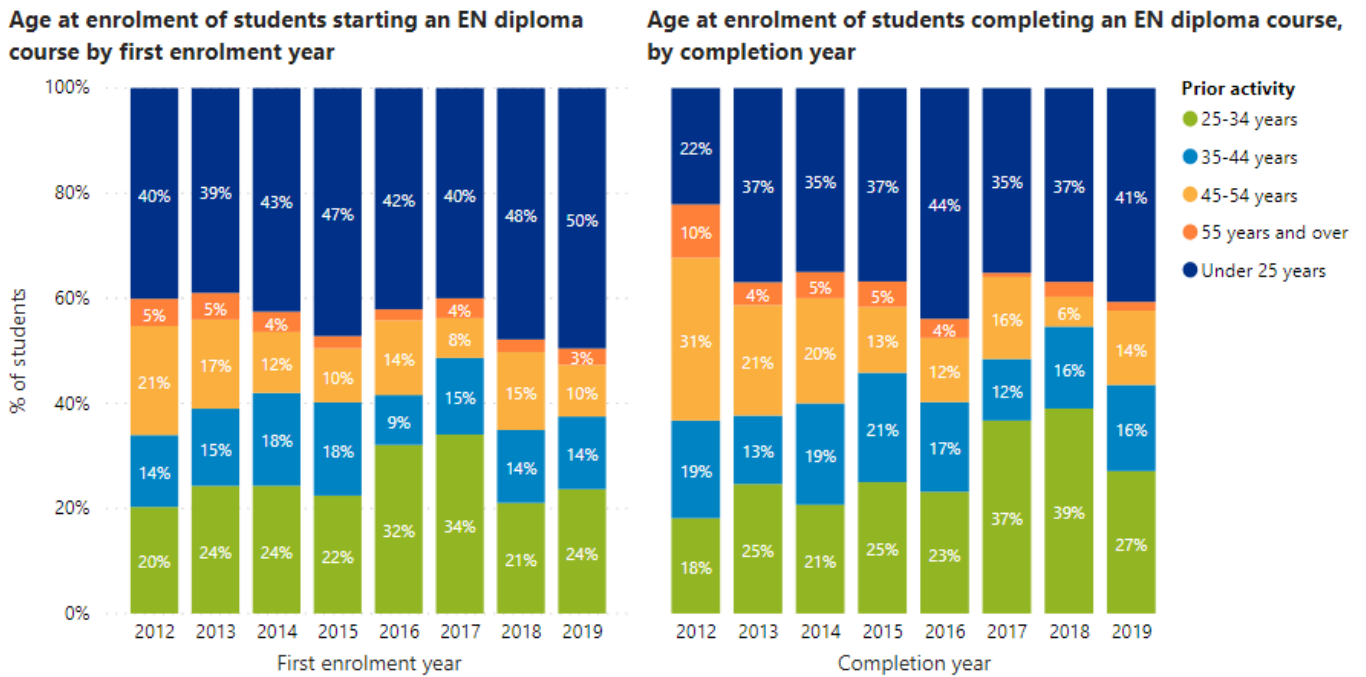
Figure 21: Annual completions of an enrolled nursing programme by Ethnicity, 2012-2019

**Students completing EN diploma course by completion year and ethnicity**



Analysis of the age of students at enrolment shows that although they have generally been the largest age group, they make up a slightly smaller proportion of the completions than the enrolments. This indicates that their completion rate is lower than for students enrolling at an older age.

Figure 22: Age at enrolment for enrolments compared to completions

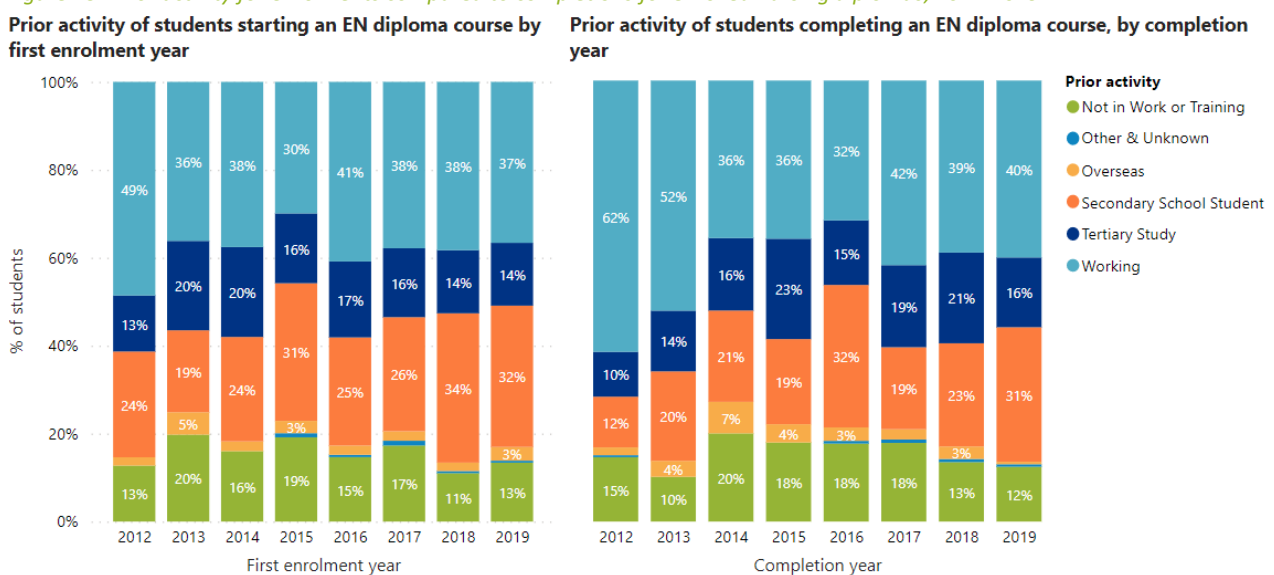


Note: these graphs are not directly comparable - If a student starts in 2018 then they are likely to be in the 2019 completion data.

Analysis of the activity of students before enrolling in an enrolled nursing diploma programme shows that the largest proportion of students were working before enrolment. The second largest group was students coming straight from secondary school, and this group increased in 2018 and 2019.

Most of the students who completed their course between 2010 and 2019 were working prior to commencing their enrolled nursing studies. The 'Working' category was also the largest for enrollees in the same period. The second largest group for the completions is students coming straight from secondary school; however, they appear to represent a slightly smaller proportion of the completions than the enrolments. This indicates a slightly lower than average completion rate for students coming straight from secondary school.

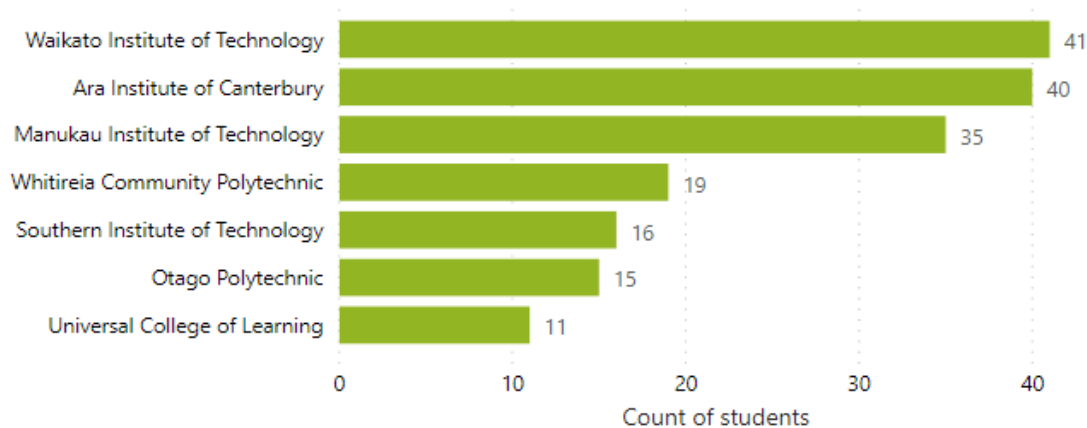
Figure 23: Prior activity for enrolments compared to completions for enrolled nursing diplomas, 2012-2019



Note: these graphs are not directly comparable - If a student starts in 2018 then they are likely to be in the 2019 completion data.

Figure 24: Number of completions for enrolled nursing diploma by tertiary education provider, 2019

**Students who completed an EN diploma course in 2019, by provider**



**Length of study for completed enrolled nursing diploma**

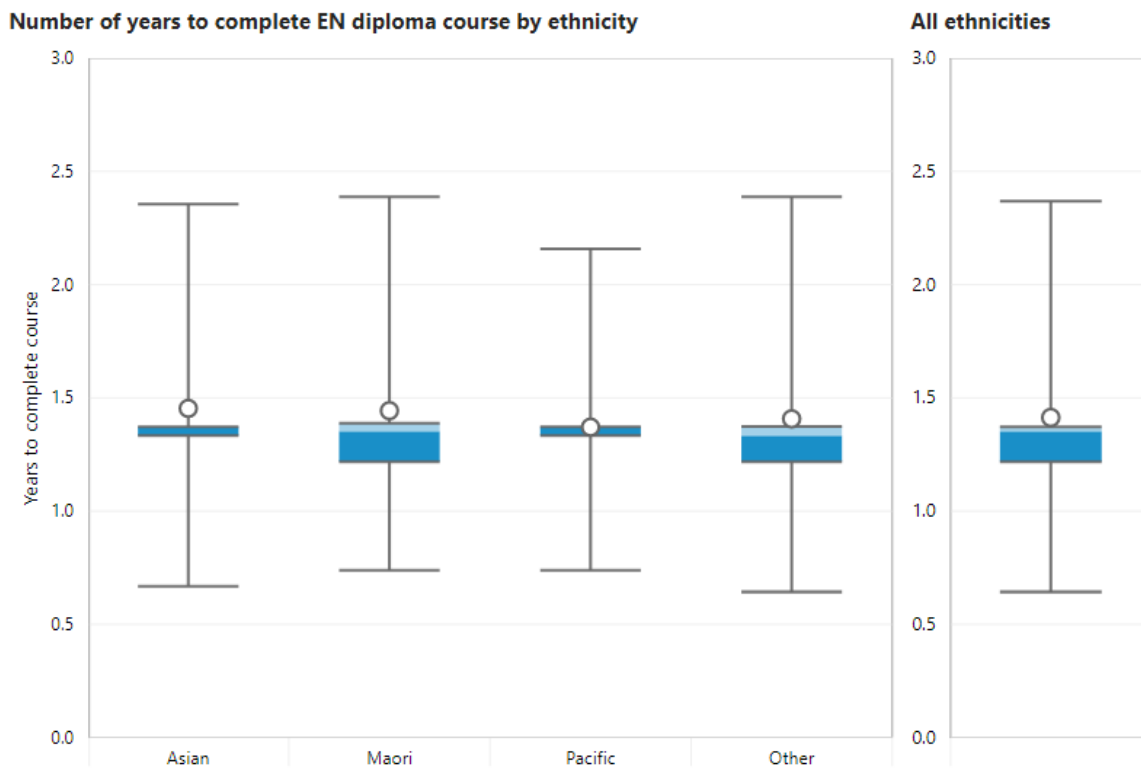
The box and whisker plot below shows the distribution of students' length of study for completed courses, measured as the number of years from when they first started their course to when they completed it. This means that we include breaks in the studying, for example sabbaticals or periods spent working. To give an example, if a student studied for two years, took a year's break, then studied again for another year before completing the course, their length of study would be four years.

- The dot shows the mean length of study, while the line between the dark and light blue shows the median.
- The upper and lower limits of the box shows the 25% and 75% points (quartiles 1 and 3), i.e. 25%/75% of students completed their courses within that number of years.
- The upper and lower whiskers show the 5% and 95% points. This means that 90% of students completed their course within the number of years indicated by the whiskers, and that the top/bottom 5% are above/below the whiskers.

Please note, where the number of study years/EFTS completed is less than the standard duration of the course, it is assumed that some credit for prior learning has been applied.

Of the students who completed an enrolled nursing diploma programme between 2015 and 2019, more than 75% of students completed the course within 16 months.

Figure 25: Number of years taken to complete qualification enrolled nursing diploma by ethnicity, for completions between 2015 and 2019



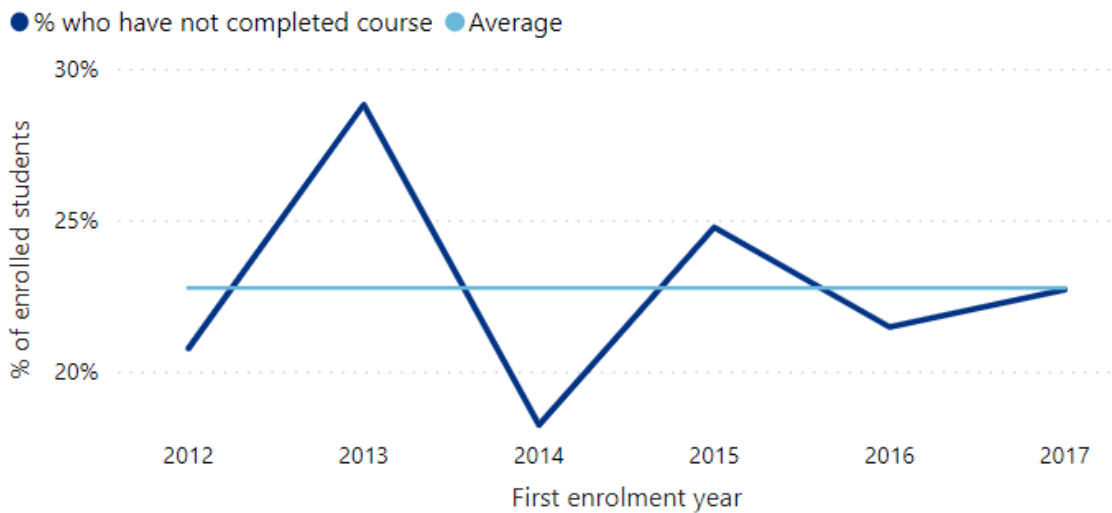
### Assumed early exits from enrolled nursing diploma programmes

We do not currently have data on students who left a course and why; however, we can approximate the number of students who left by looking at the last course end date and completion status. We have defined students who left their courses as those whose last course end date was before 2020, and who have not yet completed the course. It is possible that some of these students are taking a break from their studies rather than having left completely, but we do not have access to this information. Students first enrolled from 2018 onwards have not been included since the full picture of their studies is not available yet.

The average assumed early exit rate for students enrolled in an enrolled nursing diploma course between 2012 and 2017 was approximately 23%, which is lower than the assumed exit rate for nursing bachelor courses.

Figure 26: Total assumed early exits from enrolled nursing diploma by initial enrolment year, 2012-2017

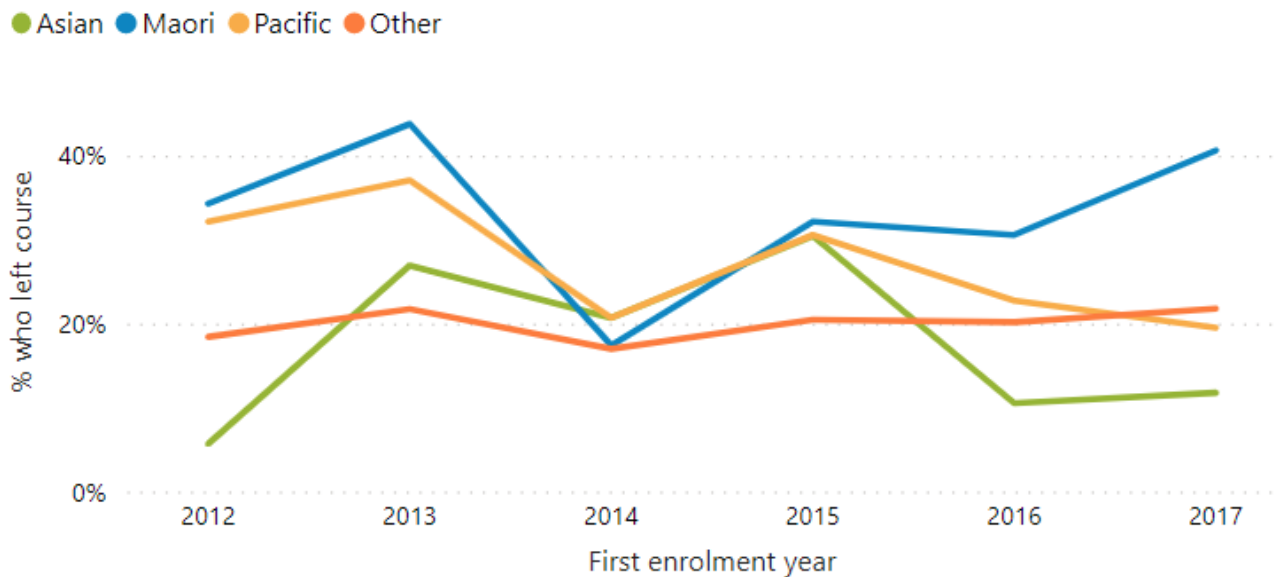
**% of enrolled students who have not completed EN diploma course, by first enrolment year**



The assumed early exit rate for Māori students has fluctuated significantly over the years 2012-2017, averaging about 33%. It should be noted that the low number of enrollees in enrolled nursing diploma courses, especially for some ethnic groups, may contribute to larger fluctuations in the assumed early exit rate. The change in the number of students who exit early may be relatively small, but it may represent a large percentage of the enrollees.

Figure 27: Assumed early exits from enrolled nursing diploma by initial enrolment year and ethnicity, 2012-2017

**% of enrolled students who have not completed EN diploma course, by enrolment year and ethnicity**



Approximately 76% of the diploma students who seem to have left the course, left in the first year of study. A further 20% left within the second year. For Asian students, almost 29% seemingly left in the second year. Since the enrolled nursing diploma is an 18-month course (if studied full-time), few people left at a later point.

Figure 28: Assumed early exits from enrolled nursing diploma by years of study, 2012-2017

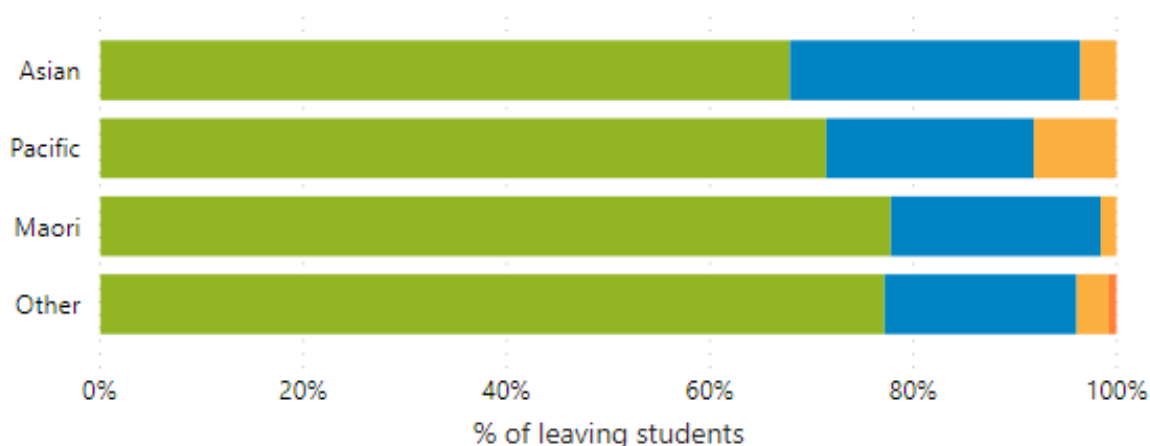
**At what point did students leave the course? Number of years of study before leaving course (students enrolled 2012-2017)**



Figure 29: Assumed early exits from enrolled nursing diploma by years of study and ethnicity, 2012-2017

**Comparison by ethnicity of number of years of study before leaving (students enrolled 2012-2017)**

Years of study ● <1 ● 1-2 ● 2-3 ● 3-4



**Enrolled nurse graduates who went on to enrol in a bachelor level nursing programme**

These charts look at students who completed a diploma in enrolled nursing between 2010-2015, who then went on to enrol in a bachelor level nursing degree. Overall, about 16% of students who completed an enrolled nursing diploma in this period subsequently enrolled in a nursing bachelor course. The proportion is higher for Pacific students, at almost 30%.

Of the students who went on to enrol in a nursing bachelor course after completing their enrolled nursing diploma, just over 51% have completed it so far. The completion rate is lower for Pacific students, at about 28%.

Figure 30: Percentage of enrolled nursing diploma graduates who went on to enrol in bachelor level nursing programmes, 2010-2015

**% of enrolled nursing diploma graduates who went on to enrol in nursing bachelor**

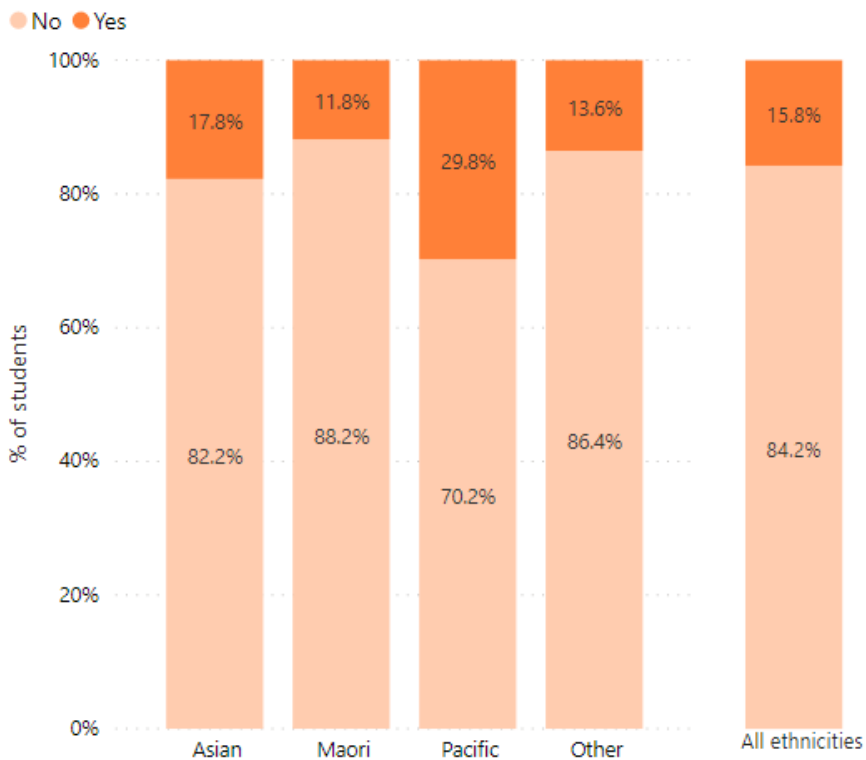


Figure 31: Percentage of enrolled nursing diploma graduates who went on to enrol in bachelor level nursing programmes who have completed their course, 2010-2015

**% of those students who have completed the bachelor course**

