



# Fact File

The Royal College of Pathologists of Australasia

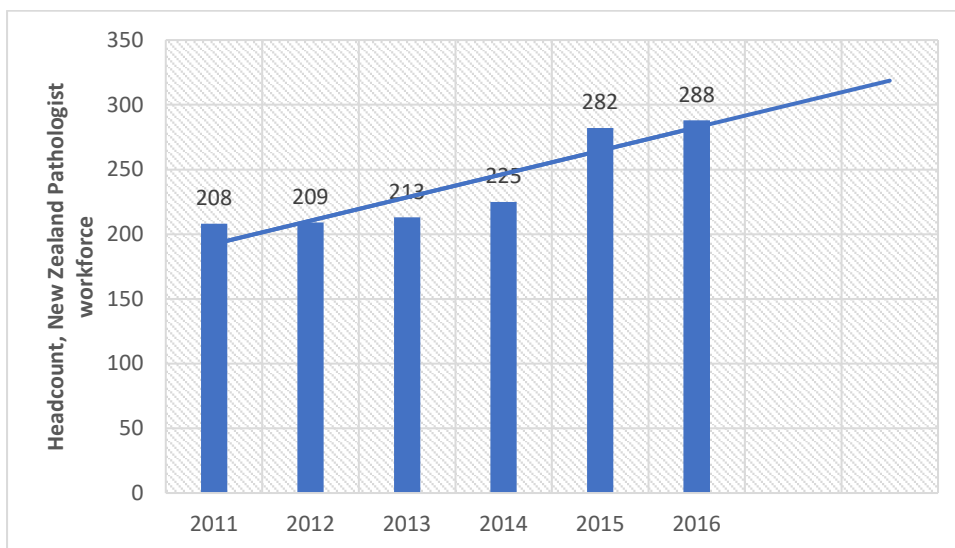
**New Zealand Pathologist  
Workforce Study 2018**

# NEW ZEALAND PATHOLOGIST WORKFORCE STUDY 2018

## WORKFORCE PROFILE AND TRENDS

The New Zealand Pathologist workforce has shown significant growth between 2011 and 2016 with the total workforce over the period increasing by of 7.7% per annum on average.

Figure 1: New Zealand Pathologist Workforce, Headcount, 2011 - 2016



Source: RCPA historic data 2011 to 2014, RCPA Data Base 2015 & 2016

Two different data sets have to be used in this analysis and may have resulted in some variations in workforce size, particularly between 2014 and 2015. However, a 2015 NZ workforce profile reported that the workforce size was 193 in 2013, 239 in 2014 and 273 in 2015. This is a variation of 3.2% in the estimate of workforce size between the two sources for 2015. The 2015 NZ workforce profile reported that the number of pathologists working in Pathology had increased over recent years, according to Medical Council of New Zealand data. The workforce size of 273 practitioners in 2015 was made up of 232 New Zealand Fellow members and a further 41 pathologists with recognised overseas gained Pathology qualifications giving them vocational registration in New Zealand.

Table 1: New Zealand Pathologist Workforce, Headcount by Discipline, 2011- 2016

New Zealand	Year						Trends 2011 to 2016		
	2011	2012	2013	2014	2015	2016	Var.	% Var	%Var. p.a.
Anatomical	102	102	105	112	145	152	50	49.0%	9.8%
Chemical	14	14	14	16	19	18	4	28.6%	5.7%
Forensic	4	4	3	3	4	5	1	25.0%	5.0%
General	7	7	6	5	7	7	0	0.0%	0.0%
Genetic									
Haematology	55	54	54	57	70	70	15	27.3%	5.5%
Immunopathology	5	5	5	5	7	7	2	40.0%	8.0%
Microbiology	21	23	25	25	29	29	8	38.1%	7.6%
Oral*			1	1	1		0		
Virology				1			0		
<b>Total</b>	<b>208</b>	<b>209</b>	<b>213</b>	<b>225</b>	<b>282</b>	<b>288</b>	<b>80</b>	<b>38.5%</b>	<b>7.7%</b>

Source: RCPA historic data 2011 to 2014, RCPA Data Base 2015 & 2016

Table 1 shows that there has been high growth in the disciplines of Anatomical Pathology (9.8% per annum on average), Immunopathology (8.0%) and Microbiology (7.6%). General Pathology showed no growth and numbers were the same at the beginning and the end of the period.

Table 2: New Zealand Pathologist Workforce, Percentage by Discipline by Year, 2011-2016

New Zealand	Year						Var.
	2011	2012	2013	2014	2015	2016	
Anatomical	49.0%	48.8%	49.3%	49.8%	51.4%	52.8%	3.7%
Chemical	6.7%	6.7%	6.6%	7.1%	6.7%	6.3%	-0.5%
Forensic	1.9%	1.9%	1.4%	1.3%	1.4%	1.7%	-0.2%
General	3.4%	3.3%	2.8%	2.2%	2.5%	2.4%	-0.9%
Genetic	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Haematology	26.4%	25.8%	25.4%	25.3%	24.8%	24.3%	-2.1%
Immunopathology	2.4%	2.4%	2.3%	2.2%	2.5%	2.4%	0.0%
Microbiology	10.1%	11.0%	11.7%	11.1%	10.3%	10.1%	0.0%
Oral*	0.0%	0.0%	0.5%	0.4%	0.4%	0.0%	0.0%
Virology	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	

Source: RCPA historic data 2011 to 2014, RCPA Data Base 2015 & 2016

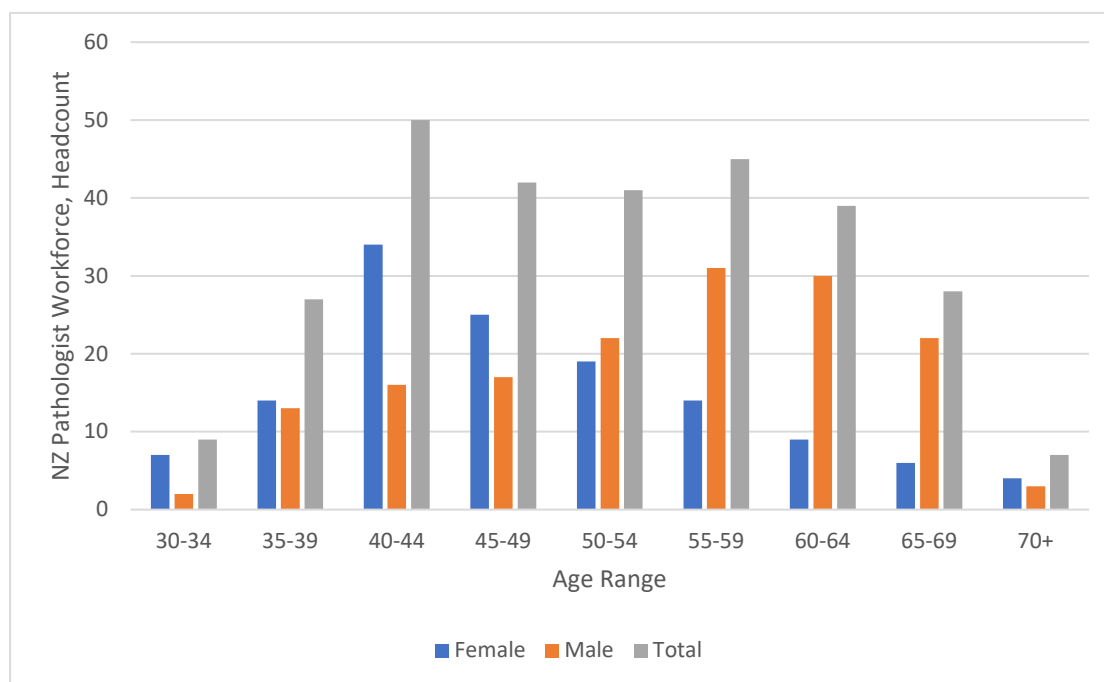
Table 2 shows that the only discipline that has increased its proportion of the total Pathologist workforce between 2011 and 2016 is Anatomical Pathology, increasing from 49.9% to 52.8%, and is the majority discipline. This is followed by Haematologists, who were 24.3% of the workforce in 2016. This varies from the Australian Pathologist workforce where Anatomical Pathologists were 44.5% of the workforce and Haematologists 27.1% of the workforce in 2016.

Table 3: New Zealand Pathologist Workforce, 2016, Age and Sex Profile

Age Group	Headcount			Percentage	Percentage
	Female	Male	Total	by Age	Female by Age
30-34	7	2	9	3.1%	77.8%
35-39	14	13	27	9.4%	51.9%
40-44	34	16	50	17.4%	68.0%
45-49	25	17	42	14.6%	59.5%
50-54	19	22	41	14.2%	46.3%
55-59	14	31	45	15.6%	31.1%
60-64	9	30	39	13.5%	23.1%
65-69	6	22	28	9.7%	21.4%
70+	4	3	7	2.4%	57.1%
<b>Total</b>	<b>132</b>	<b>156</b>	<b>288</b>	<b>100.0%</b>	<b>45.8%</b>
<b>55 years and older</b>	<b>33</b>	<b>86</b>	<b>119</b>		
<b>% 55 years and older</b>	<b>25.0%</b>	<b>55.1%</b>	<b>41.3%</b>		

Source: RCPA data base, 2016

Figure 2: New Zealand Pathologist Workforce, 2016, Age and Sex Profile



Source: RCPA data base, 2016

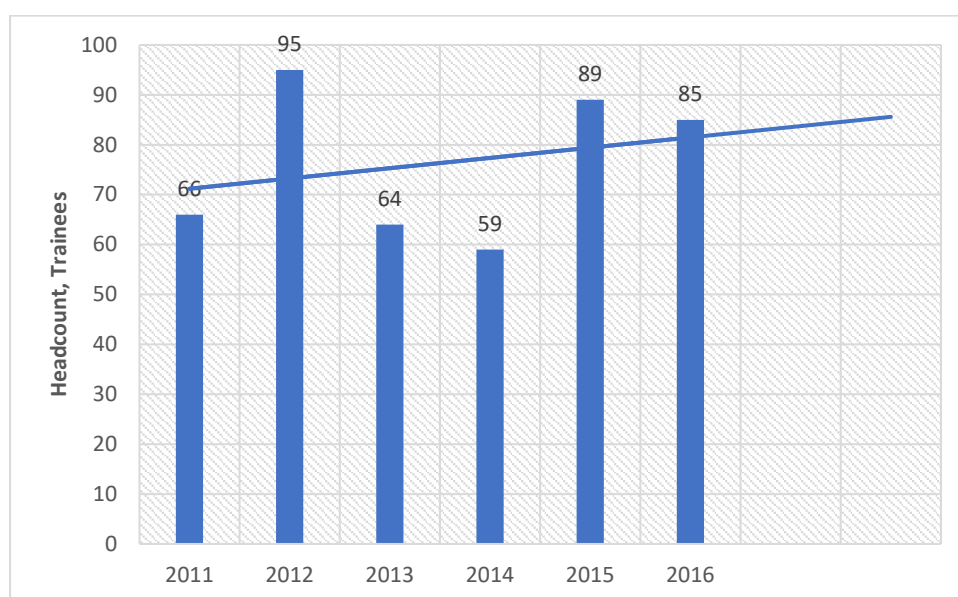
Table 3 and Figure 2 show that the Pathologist workforce is similar in age to the Australian Pathologist workforce, with the modal age range for the workforce at 40 to 44 years (17.4% of the total workforce), with a second large group between 55 to 59 years (15.6%). The modal age range for the female workforce is 40 to 44 years, and for the male workforce is 55 to 59 years. Females are in the majority in each age cohort up to 49 years and again at seventy years at older. Males are in the majority for age cohorts 50 years and over apart from seventy years and older.

More than four in ten of the workforce is older than 55 years (41.3%), with 25.0% of females in this age range, and over one half of males (55.1%). This profile has significant implications for the retirement of a large proportion of the workforce in the next ten years. There are 12.1% of the workforce aged 65 years and older, so that 35 New Zealand Pathologists will retire in a much shorter time frame.

The data shows that females are 45.8% of the workforce in 2016, with males (54.2%). This is higher than the Australian workforce where 42.8% of the workforce is female in 2016. The 2015 NZ workforce profile reports that females were 43% of the workforce in 2015, so the proportion of females has grown since 2015. This is reported as being consistent with the changes in the gender ratios for the total New Zealand medical workforce.

### TRENDS IN TRAINEE NUMBERS

Figure 3: New Zealand Pathologist Trainees, 2011-2016



Source: RCPA historic data 2011 to 2014, RCPA Data Base 2015 & 2016

Figure 3 shows that there has been large variation in the number of trainees over the period with the number of trainees at the highest in 2012 at 95 in total. This figure excludes international medical graduates who are enrolled in some form of training to achieve vocational registration and trainees on leave from the program. Trainee numbers declined significantly between 2012 and 2013 and have still not reached 2012 levels. Therefore, the growth between 2011 and 2016 was 28.8% or 5.8% on average per annum.

The 2015 NZ workforce profile reports that females were 67% of the total trainees in 2015 (n=67 in total), and the RCPA data base output indicates that females were 64.8% of trainees in 2015 and 65.5% in 2016.

Table 4: New Zealand Pathologist Trainees by Discipline, 2011-2016

New Zealand	2011	2012	2013	2014	2015	2016	Var.	% Var.	%Var. p.a.
Anatomical	40	57	42	39	49	46	6	15.0%	3.0%
Chemical	3	3	3	1	1	2	-1	-33.3%	-6.7%
Forensic					3	2	2	n.a.	n.a.
General		2					0	n.a.	n.a.
Genetic	2	1		1	2	2		n.a.	n.a.
Haematology	12	15	14	12	24	21	9	75.0%	15.0%
Immunopathology	3	3	2	1	2	4	1	33.3%	6.7%
Microbiology	4	11	3	5	7	7	3	75.0%	15.0%
Oral	2	3					-2	-100.0%	-20.0%
<b>Total</b>	<b>66</b>	<b>95</b>	<b>64</b>	<b>59</b>	<b>88*</b>	<b>84*</b>	<b>18</b>	<b>27.3%</b>	<b>5.5%</b>

Source: RCPA historic data 2011 to 2014, RCPA Data Base 2015 & 2016

Notes (1) U/K Discipline =1 for each of 2015 & 2016

The highest growth in trainees has been in the disciplines of Haematology and Microbiology, both showing average growth per annum of 15%. There has also been an introduction of Forensic Pathology Trainees in 2015 and 2016. These three disciplines are the same as three of the four disciplines with the highest growth in trainees in Australia. However Chemical Pathology has shown a decline in trainee numbers in New Zealand and there have been no Oral Pathology trainees since 2013 and no General Pathology trainees since 2012.

## WORKFORCE DEMAND AND SUPPLY

Demand drivers

### *Findings from Consultations and Secondary Sources*

The 2015 NZ workforce profile reported that there had been significant changes in the configuration of Pathology services since 2012. There have been significant changes to Government funding levels and financing arrangements, and governance and organisational structures.

Changes being implemented in 2014 were based on a move away from central government control.

‘Pathology will now be provided by regional contractors, who will tender for the work from each of the country’s 21 autonomous district health boards (DHBs) and be paid on a bulk-funding basis’

The three main population drivers of an ageing, more urban and more Auckland-centric population, combined with new technologies that could deliver superior diagnostic testing, are behind the moves to look at pathology resources differently. Automation has reduced costs (and increased volumes) for specific schedule tests, but an ever-expanding list of new ones – including genetic and ‘wellness’ testing – has increased costs. Therefore, the strategy is aimed at capping government costs by introducing DHB-specific models of funding based on both cooperative and competitive tendering processes.

Other issues identified as key implications for the workforce including:

- Shifting of gatekeeping responsibility from GPs to Pathologists, resulting in an improved ability to manage testing levels and patterns
- Lack of national framework for management of training and workforce issues such as retention
- Dislocation of workforce with at least one new organisational initiative being dissolved after a court ruling resulting in the new contract being invalidated.

The level of variation in the arrangements proposed at DHB level are outlined in the article. The models include public and private sector partnerships, hospital and community partnerships and maintenance of existing models. The trend to devolution of organisational responsibility differs from the predominant model in Australia where in most States and Territories public sector services have been centralised to be delivered by one provider within each State and Territory. It is unclear what the impact of these changes will be on the future demand for services within New Zealand.

### Supply Issues

The 2015 NZ workforce profile reported on retirement intentions and eighty percent responded to the question. The results indicated:

- 30% have no intention to retire within the next five years
- 16% are definitely intending on retiring within this timeframe, and a further 14% consider retirement a possibility
- 40% have no plans with respect to their retirement (p.3).

The data presented in Table 5 compare Australian and New Zealand data. The ratio of population per pathologist was added to compare with the 2015 NZ workforce profile.

**Table 5: New Zealand and Australian Pathologist Workforce, Ratio per Capita (millions) and Population per Pathologist, 2016**

State	Headcount	Percentage by State/Territory	Population ('000)	Percentage of Pop. by State/Territory	Ratio per capita (million)	Population per Pathologist
ACT	44	2.30%	406.4	1.70%	108.3	9,236
NSW	674	35.20%	7797.8	32.00%	86.4	11,569
NT	10	0.50%	245	1.00%	40.8	24,500
QLD	356	18.60%	4883.7	20.00%	72.9	13,718
SA	141	7.40%	1717	7.00%	82.1	12,177
TAS	44	2.30%	519.1	2.10%	84.8	11,798
VIC	426	22.20%	6244.2	25.60%	68.2	14,658
WA	218	11.40%	2567.8	10.50%	84.9	11,779
<b>Total</b>	<b>1915</b>	<b>100%</b>	<b>24385.6</b>	<b>100%</b>	<b>78.5</b>	<b>12,734</b>
<b>New Zealand</b>	<b>288</b>	<b>N.A.</b>	<b>4693.0</b>	<b>N.A.</b>	<b>61.4</b>	<b>16,295</b>

Source: RCPA Data Base & ABS (2016). Cat. No. 3101.0 - *Australian Demographic Statistics*, Dec.

Source: New Zealand Population Statistics.

Retrieved from:

[https://www.google.com.au/search?q=new+zealand+population+statistics+2016&rlz=1C1CHBD\\_en-GBAU705AU705&oq=New+Zealand+population+2016&ags=chrome.4.69i57j0i5.11071j0j8&sourceid=chrome&ie=UTF-8](https://www.google.com.au/search?q=new+zealand+population+statistics+2016&rlz=1C1CHBD_en-GBAU705AU705&oq=New+Zealand+population+2016&ags=chrome.4.69i57j0i5.11071j0j8&sourceid=chrome&ie=UTF-8)

Table 5 shows that New Zealand has a lower level of supply of Pathologists at 61.4 per million population compared to the national Australian supply of 78.4 per million population. This is lower than every State and Territory in Australia apart from the Northern Territory. The 2015 NZ workforce profile shows a ratio of one pathologist per 16,849 population (p.11), which is updated in Table 69 to one pathologist per 16,295 population in 2016. This indicates an improvement in supply. This is however again a lower level of supply than the Australian national ratio of one pathologist per 12,734 population.

However, comparisons are constrained by the differing organisational and service arrangements in each country and the role allocation of workforce in pathology laboratories.

### RESULTS OF PROJECTION MODELLING

The lack of available data on trends in services in New Zealand due to the lack of an available data source resulted in the decision to use Australian data on Medicare service trends for modelling demand. Therefore, the same assumptions were applied to the New Zealand modelling for services demand as were applied for the Australian national workforce modelling. The high scenario has 3.8% and the low scenario has 3.4%

Figure 4: Results of Projection Modelling for New Zealand Pathologist Workforce, High Scenario (Service Demand)

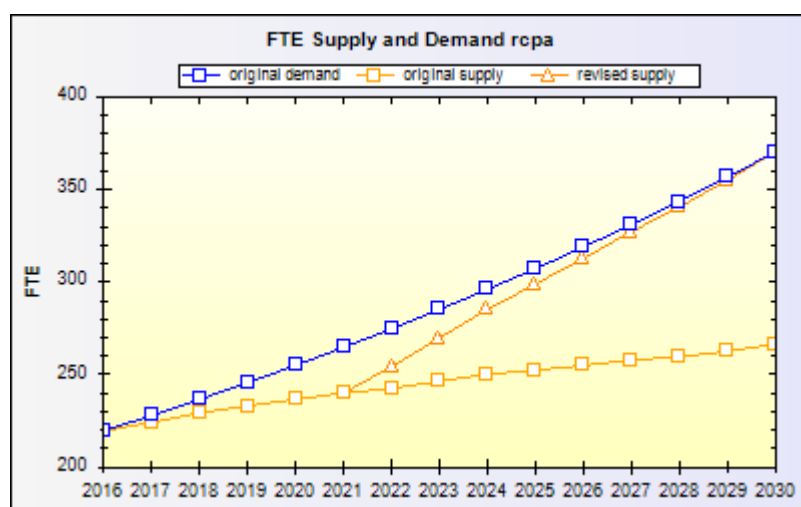




Figure 5: Results of Projection Modelling for New Zealand Pathologist Workforce, Low Scenario (Workforce Demand)

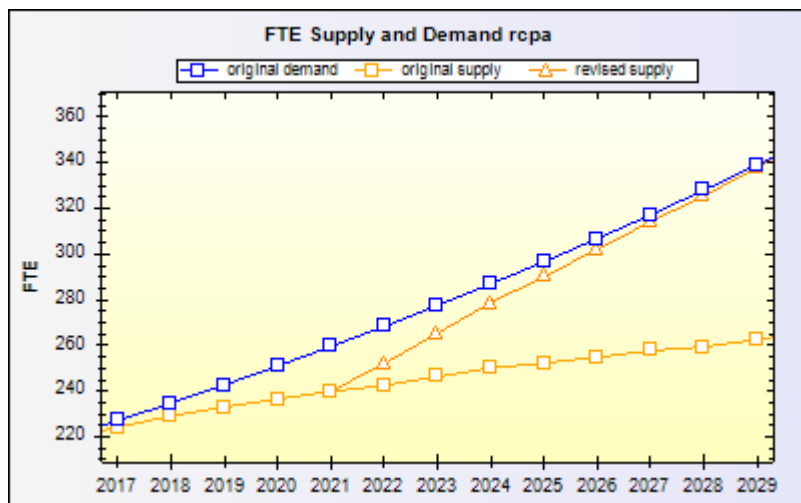


Table 6: Results of Workforce Modelling for New Zealand Pathologist Workforce

Discipline	Trainees				
	Base Year	Low Scenario	High Scenario	Gap Low Scenario	Gap High Scenario
	2016	2030	2030	2030	2030
Anatomical Pathology	8	11	11	3	3
Haematology	2	9	17	7	15
Other	1	6	6	5	5
<b>Total three disciplines</b>	<b>11</b>	<b>26</b>	<b>34</b>	<b>15</b>	<b>23</b>
<b>Total NZ Workforce</b>	<b>11</b>	<b>25</b>	<b>29</b>	<b>14</b>	<b>18</b>
<b>Difference Total and three Disciplines</b>	<b>0</b>	<b>-1</b>	<b>-5</b>	<b>-1</b>	<b>-5</b>
Discipline	New Fellows				
	Base Year	Low Scenario	High Scenario	Gap Low Scenario	Gap High Scenario
	2016	2030	2030	2030	2030
Anatomical Pathology	7	10	10	3	3
Haematology	2	8	15	6	13
Other	1	5	6	4	5
<b>Total three disciplines</b>	<b>10</b>	<b>23</b>	<b>31</b>	<b>13</b>	<b>21</b>
<b>Total NZ Workforce</b>	<b>10</b>	<b>23</b>	<b>26</b>	<b>13</b>	<b>16</b>
<b>Difference Total and three Disciplines</b>	<b>0</b>	<b>0</b>	<b>-5</b>	<b>0</b>	<b>-5</b>

The results of the projection modelling showed that there were an additional 14 trainees needed under the Low Scenario and 18 needed under the High Scenario for the total New Zealand Pathologist workforce. There was only one additional trainee needed under the Low Scenario when additional trainees needed were added together. However, the modelling for the High Scenario when the three disciplines were added together resulted in 23 additional trainees needed.

The largest number of additional trainees needed were for Haematologists under both scenarios (seven for the Low Scenario and 15 for the High Scenario), while there were an additional three Anatomical Pathologist Trainees needed under both scenarios. Five additional trainees are needed under the Low Scenario for Other disciplines and the same for the High Scenario.