



Fact File

The Royal College of Pathologists of Australasia

**Australian Pathologist
Workforce Study 2018**

AUSTRALIAN PATHOLOGIST WORKFORCE STUDY 2018

The 2018 Pathology Workforce Study reveals the profession faces a severe shortage of pathologists in the future.

The Report was produced by KBC Australia using workforce modelling tools from the Department of Health which are used by the Commonwealth Government for Workforce Planning

The results of this study clearly indicate that the current and future demand for Australian Pathologists and Senior Scientists is higher than current supply levels and that significant gaps are developing between the two sets of projections. This analysis mirrors the findings from earlier studies undertaken in both Australia and New Zealand and Internationally.

Workforce Projection

Two growth drivers for the national Pathologist workforce were used:

- Total MBS billed service items 2011 to 2016 for the MBS Pathology service grouping, adjusted for weighted service volume for Anatomical Pathology using RTUs service grouping Rate 3.8% (High Scenario)
- Trends in total workforce size 2011 to 2016. (Low Scenario) Rate 3.4%

Both Scenarios show the need to increase trainee numbers and new fellows in order to balance the Australian Pathologist workforce supply and demand by 2030. The methodology used allowed for the balancing of the workforce for the year following the completion of the additional trainees required.

Figure 1: Results of Projection Modelling for Australian Pathologist Workforce, High Scenario (Service Demand)

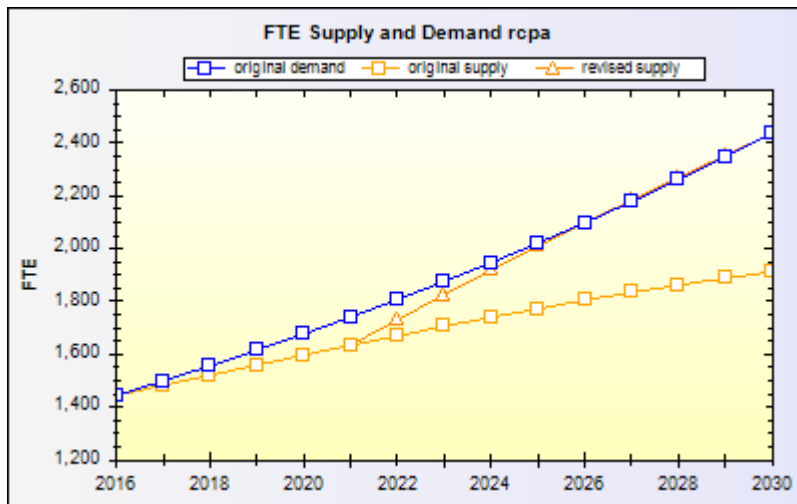
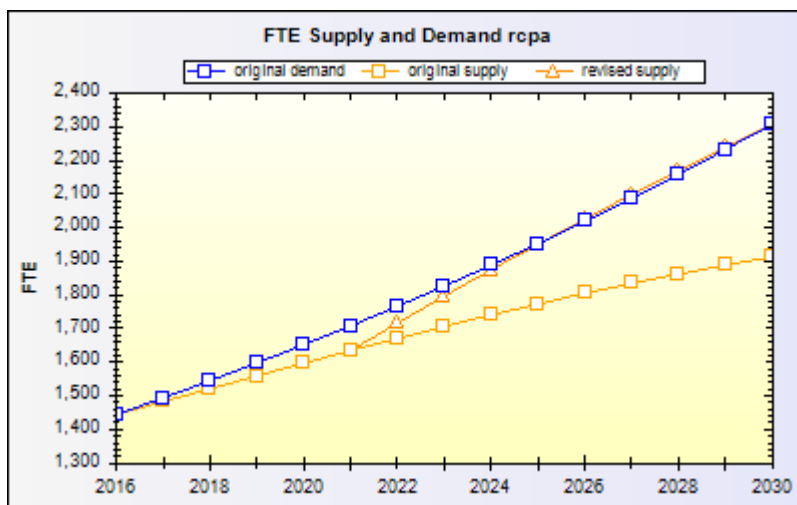


Figure 2: Results of Projection Modelling for Australian Pathologist Workforce, Low Scenario (Workforce Demand)



Results by Discipline

Table 1 shows the results of the workforce modelling for the Australian Pathologist workforce in total and for each of the six disciplines where quantitative modelling was undertaken.

Table 1: Results of Workforce Modelling for total Australian Pathologist Workforce and by Discipline

	Trainees				
Discipline	Base Year	Low Scenario	High Scenario	Gap Low Scenario	Gap High Scenario
	2016	2030	2030	2030	2030
Anatomical Pathology	46	86	91	40	45
Chemical Pathology	4	4	9	0	5
General Pathology	2	4	10	2	8
Haematology	32	32	57	0	25
Immunopathology	6	11	35	5	29
Microbiology	7	14	36	7	29
Total six disciplines	97	151	238	54	141
Total Australian Workforce	100	170	192	70	92
Difference Total and Six Disciplines	3	19	-46	16	-49
	New Fellows				
Discipline	Base Year	Low Scenario	High Scenario	Gap Low Scenario	Gap High Scenario
	2016	2030	2030	2030	2030
Anatomical Pathology	41	78	82	37	41
Chemical Pathology	4	4	8	0	4
General Pathology	2	4	9	2	7
Haematology	29	29	51	0	22
Immunopathology	5	10	31	5	26
Microbiology	6	13	32	7	26
Total six disciplines	87	138	213	51	126
Total Australian Workforce	90	153	173	63	83
Difference Total and Six Disciplines	3	15	-40	12	-43

Table 1 shows that the assumptions for the total Australian Pathologist workforce were that 100 trainees on average commence per year with 90 trainees becoming new fellows following the completion of training for the base year of the model (2016).

The results of the Low Scenario assumption for the total Australian Pathologist workforce (workforce demand) showed that trainee commencements per annum needed to increase to 170 and new fellows to increase to 153 to balance supply and demand. These numbers are higher than the sum of the trainee commencements for the six disciplines (151 per annum) and new fellows required (138 per annum). Therefore, the gap in trainee commencements of 19 per annum and of new fellows 15 per annum would allow for allocation of additional places to meet service requirements for the other disciplines which were not modelled (Forensic Pathologists and Genetics).

The results of the High Scenario assumption for the total Australian Pathologist workforce (service demand) showed that trainee commencements per annum needed to increase to 192 and new fellows to increase to 173 to balance supply and demand. However, the requirements by discipline for the High Scenario assumptions when added together for the six disciplines modelled were higher than for the total Australian Pathologist workforce. The sum of the trainee commencements for the six disciplines was 238 per annum and the total of new fellows required was 213 per annum. Therefore, the assumptions on demand growth by discipline and the impact of the supply dynamics on the modelling have led to the requirements for the six disciplines varying from those for the total Australian Pathologist workforce.

Results by State & Territory

Table 2 shows the results of the workforce modelling for the Australian Pathologist workforce in total and for each of the five States where quantitative modelling was undertaken.

Table 2: Results of Workforce Modelling for total Australian Pathologist Workforce and by State

	Trainees				
States	Base Year	Low Scenario	High Scenario	Gap Low Scenario	Gap High Scenario
	2016	2030	2030	2030	2030
NSW	39	39	47	0	8
Victoria	23	34	38	11	15
Queensland	16	33	42	17	26
Western Australia	11	22	26	11	15
South Australia	7	9	14	2	7
Total five States	96	137	167	41	71
Total Australian Workforce	100	170	192	70	92
Difference Total and Five States	4	33	25	29	21
	New Fellows				
States		Low Scenario	High Scenario	Gap Low Scenario	Gap High Scenario
	2016	2030	2030	2030	2030
NSW	35	35	43	0	8
Victoria	21	31	34	10	13
Queensland	14	29	38	15	24
Western Australia	10	20	23	10	13
South Australia	6	8	13	2	7
Total five States	86	123	151	37	65
Total Australian Workforce	90	153	173	63	83
Difference Total and Five States	4	30	22	26	18

The results of the workforce modelling for each of the five States show that under the Low Scenario of demand New South Wales needs no additional trainee commencements and South Australia needs only two per annum. Victoria, Queensland and Western Australia are the three States that need additional trainee commencements of over ten per annum per State. Queensland needs the largest number of additional trainee commencements (17 for the Low Scenario). For the High Scenario, all five States need additional trainee commencements and new fellows. Queensland still has the highest net deficit of 26 trainee commencements under the High Scenario assumptions.

There is a gap between requirements and trainee commencements and new fellows between the total numbers for the five States and the total Australian Pathologist workforce for both Scenarios. Therefore, the Scenarios allow for planning to meet the shortfalls identified in the projection modelling.

The results of the Low Scenario assumption for the total Australian Pathologist workforce (workforce demand) showed that trainee commencements per annum needed to increase to 170 and new fellows to increase to 153 to balance supply and demand.

The results of the High Scenario assumption for the total Australian Pathologist workforce (service demand) showed that trainee commencements per annum needed to increase to 192 and new fellows to increase to 173 to balance supply and demand.

Efficient and Cost Effective Workforce

The study revealed a highly efficient and cost effective workforce with increasing demand pressure and a changing work environment. Efficiencies in the profession have been achieved through consolidation, economies of scale, technological advancement, specialisation and operations (Ernst and Young, 2016).

General Workforce Statistics

Table 3: Australian Pathologist Workforce, Headcount by State/Territory & Ratio per Capita (millions), 2016

State	Headcount	Percentage by State/Territory	Population ('000)	Percentage of Pop. by State/Territory	Ratio per capita (million)
ACT	44	2.3%	406.4	1.7%	108.3
NSW	674	35.2%	7797.8	32.0%	86.4
NT	10	0.5%	245.0	1.0%	40.8
QLD	356	18.6%	4883.7	20.0%	72.9
SA	141	7.4%	1717.0	7.0%	82.1
TAS	44	2.3%	519.1	2.1%	84.8
VIC	426	22.2%	6244.2	25.6%	68.2
WA	218	11.4%	2567.8	10.5%	84.9
Total	1915	100%	24385.6	100%	78.5

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

Note: U/K = 9

The national ratio for the Australian Pathologist workforce is 78.5 headcount per million population. Table 11 shows that New South Wales has the largest proportion of the Australian Pathologist workforce at 35.2%, higher than its population share of 32.0%. It has a ratio per million population of 86.4 Pathologists in the workforce. The ACT has the highest ratio at 108.3 per million population followed by NSW (86.4 per million), Western Australia (84.9), Tasmania (84.8), and South Australia (82.1).

All other States and Territories have lower than the national ratio per million population. The Northern Territory has the lowest ratio per million population at 40.9 Pathologists and its workforce share is half of its population share, indicating undersupply. Victoria has the second lowest ratio per million population at 68.2 Pathologists and the workforce percentage at 22.2% is less than the population share. Queensland is also lower than the national ratio (72.9 per million population).

Table 4: Australian Pathologist Trainees, Percentage by State/Territory, 2011 & 2016

	Trainees			Percentage by State/Terr.		Av. Age
	2011	2016	Var.	2011	2016	2016
ACT	11	10	-1	2.5%	1.7%	34.6
NSW	145	201	56	33.5%	35.0%	33.9
NT	1	3	2	0.2%	0.5%	33.7
QLD	80	102	22	18.5%	17.8%	33.9
SA	20	37	17	4.6%	6.4%	34.9
TAS	7	13	6	1.6%	2.3%	37.1
VIC	123	149	26	28.4%	26.0%	33.6
WA	46	49	3	10.6%	8.5%	32.7
U/K		10	10	0.0%	1.7%	
Total	433	574	141	100.0%	100.0%	33.9

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

Table 4 show the distribution of Australian trainees by State and Territory between 2011 and 2016. The distribution shows that NSW had the largest number and percentage of trainees in both 2011 and 2016, although the percentage increased from 33.5% in 2011 to 35.0% in 2016. All States and Territories apart from the ACT show growth between 2011 and 2016, with the highest growth in the Northern Territory from one to three trainees. South Australia and Tasmania show the highest growth per annum after the Northern Territory. The ACT shows a small decline in trainees from eleven to ten trainees over the period. Western Australia shows the lowest positive growth at an average of 1.3% per annum, reducing its percentage share of trainees from 10.6% to 8.5%. The ACT, Queensland, Victoria and Western Australia all show a reduction in their percentage of trainees.

The Australian Pathologist workforce has grown since 2009, the base year of modelling for the HWA 2012 report, from 1,460 working fellows to 1,924 working fellows, a growth of 31.8% or an average growth of 4.5% per annum. In 2012, the Australian pathologist workforce was in shortage. This study was to determine if the workforce was still in shortage in 2016 and if the projections would continue to show future shortages based on the gap between supply and demand levels.

In less than a decade the profile of the workforce has changed and has become more feminised. In 2009, 36.5% of the pathology workforce were female (HWA, 2012) compared with 42.8% in 2016. This is consistent with trends for the total national medical practitioner workforce. However, Pathologists have a higher proportion of females than many main specialties of practice.

Over one third of the workforce is older than 55 years (36.6%), with almost one quarter of females in this age range (23.8%), and over forty percent of males (46.2%). This profile has significant implications for the retirement of a large proportion of the workforce in the next ten years. There are 12.9% of the workforce aged 65 and older, so that 248 Pathologists nationally will retire in a much shorter time frame.

The highest per annum growth in the workforce of Australian Pathologists was for those in the discipline of Forensic Pathology (6.5%), followed by Haematologists (5.5%) and then Anatomical Pathologists (4.3%). There was a decrease per annum on average in the number of General Pathologists of 3.0%.

There has been growth in Australian trainee numbers between 2011 and 2016. The per annum growth in Australian Trainees has decreased from 9.9% between 2011-12 to 2.1% between 2015-16, with an average growth per annum of 6.5%, higher than the workforce size growth. These figures exclude international medical graduates who are enrolled in some form of training to achieve vocational registration and trainees on leave from the program.

The largest growth in training numbers has been in Forensic Pathologist trainees increasing from four to eleven trainees over the period. The number of Haematology trainees has grown by 77 trainees in total, a growth of 61.1%. Chemical Pathology and Microbiology have shown growth higher than fifty percent in trainee numbers over the period (57.1% and 51.2% respectively). There has been a growth of 12.3% in Anatomical Pathology training. There has been no change in the number of Immunopathology trainees and a reduction in General Pathology trainees over the period.