



Fact File

The Royal College of Pathologists of Australasia

**Australian Pathologist Workforce 2018
Chemical Pathology**

AUSTRALIAN PATHOLOGIST WORKFORCE – CHEMICAL PATHOLOGY

Overview

Chemical Pathology is the field of Pathology which deals with the entire range of disease. It encompasses detecting changes in a wide range of substances in blood and body fluids (electrolytes, enzymes and proteins) in association with many diseases. In addition, it involves detecting and measuring tumour (cancer) markers, hormones, poisons and both therapeutic and illicit drugs. For example, Chemical Pathologists are involved in assessing levels of iron metabolism related compounds in the blood, measuring the levels of enzymes that are released into the blood after a heart attack to help in the diagnosis, and in the measurement of certain proteins produced by cancers to monitor the response to their treatment.

As with the other clinical pathology specialities, the largest part of a Chemical Pathologist's day is typically spent in clinical liaison. This involves advising clinicians about the appropriate tests for the investigation of a clinical problem, the interpretation of results and follow-up, and the effect of interferences e.g. by therapeutic drugs on test results. The working day also has a large component devoted to the validation and interpretation of test results, particularly for unusually abnormal results or more uncommon and highly specialised tests.

Evaluation of new technology and the development of new tests is an ongoing process in Chemical Pathology. This applies particularly to areas that are now emerging, such as the use of molecular biology techniques in diagnostic tests. Specialist areas of interest include such topics as inherited metabolic diseases, trace metals and environmental monitoring, drugs of abuse, and nutrition.

Workforce profile and trends

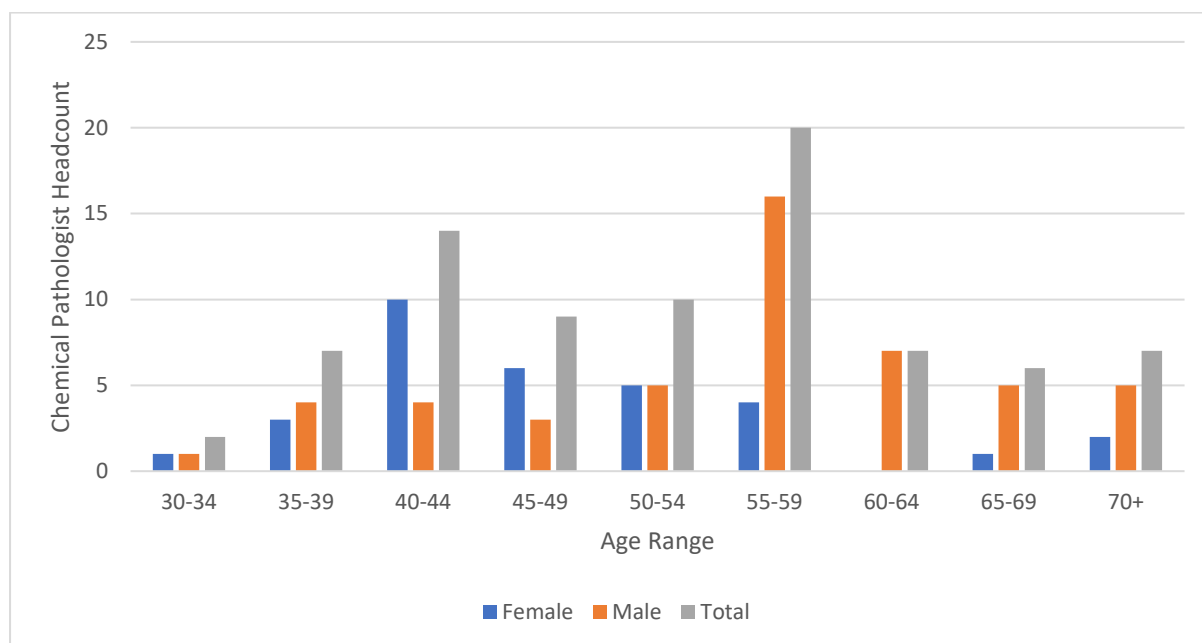
The Chemical Pathologist Workforce is 4.3% of the total Australian Pathologist workforce and experienced growth per annum of one percent between 2011 and 2016, as shown previously. This was an increase from 78 to 82 headcount over the period.

Table 1: Chemical Pathologist Workforce, 2016, Age and Sex Profile (Supply data)

Age Group	Headcount			Percentage	Percentage
	Female	Male	Total	by Age	Female by Age
30-34	1	1	2	2.4%	50.0%
35-39	3	4	7	8.5%	42.9%
40-44	10	4	14	17.1%	71.4%
45-49	6	3	9	11.0%	66.7%
50-54	5	5	10	12.2%	50.0%
55-59	4	16	20	24.4%	20.0%
60-64	0	7	7	8.5%	0.0%
65-69	1	5	6	7.3%	16.7%
70+	2	5	7	8.5%	28.6%
Total	32	50	82	100.0%	39.0%
55 years and older	7	33	40		
% 55 years and older	21.9%	66.0%	48.8%		

Source: RCPA Data Base

Figure 1: Chemical Pathologist Workforce, 2016, Age and Sex Profile (Supply data)



Source: RCPA Data Base

Table 1 and Figure 1 show that the modal age range for the workforce is 55 to 59 years, for the female workforce it is 40 to 44 years, and for the male workforce it is also 55 to 59 years. Females are in the majority in each age cohort up to 54 years, apart from those aged 35 to 39 years. Males are in the majority for all age cohorts 55 years and over.

Nearly one half of the workforce is older than 55 years (48.8%), with 21.9% of females in this age range, and just on two thirds of males (66.0%). This profile has significant implications for the retirement of a large proportion of the workforce in the next ten years. However, there are 15.8% of

the workforce aged 65 and older, so that 13 Chemical Pathologists nationally will retire in a much shorter time frame.

Workforce demand and supply

The Study found that population change including population growth and ageing was the key driver of demand for services with an increase in the number of tests per request per patient. It was felt that this volume increase was slightly ahead of population growth and ageing rates.

However, it was also felt that the impact of the funding method of only paying for the most expensive tests (coning) would result in the MBS services levels undercounting the volume of testing undertaken.

Increasing regulation of laboratory services was identified as a major demand driver for this discipline. However, this will be a one-off impact which will increase the workforce levels required in the short-term.

Trends in other disciplines will also impact on demand as there are increased joint trainees in areas such as Endocrinology and Chemical Pathology and the number of General Physicians being trained is increasing. They may look for increasing roles in areas such as Endocrinology.

In terms of the impact of other drivers there were few drivers that were identified as showing an impact on increasing demand for workforce numbers. There was ambivalence regarding the impact of Point of Care testing. It was felt that overall that the impact of Point of Care testing would be in general practice but that it would be for a limited number of tests. The role of quality assurance in areas such as Emergency Departments could potentially increase demand due to the need for pathologist oversight and advice. Other roles include the need to calibrate devices, selection of equipment and interpretation of results. The impact of Proteomics and Metabolomics is not yet known.

There was a general view that consolidation of service providers has led to increased efficiencies, especially for large private pathology companies. Therefore, while the service levels have increased the number of Chemical Pathologists has only slightly increased. In the public sector there are single State providers in most States and this process of consolidation has been completed. Technological innovation has resulted in decision support software which has allowed for increased volumes without the need to appoint additional staff. Therefore, the level of efficiency improvement has been significant for this discipline and this was supported in the UK Cancer Report (2016).

Chemical Pathologists make a significant contribution to the administration of pathology services in some jurisdictions. The contribution of Chemical Pathology to multi-disciplinary management of patients was considered to be small.

WORKFORCE PROJECTIONS

The Chemical Pathology workforce may be in over-supply apart from the impact of the imminent regulatory changes from NPAAC guidelines stipulating that pathology laboratories have to employ people with expertise in the areas where they are providing services. The workshops reported that there is significant under-employment in this discipline, with Chemical Pathologists seeking other employment. Therefore, the capacity to train has reduced with low numbers of trainees. After the adjustments for the regulatory requirements it was identified that there needs to be sufficient trainees

in the pipeline to maintain the existing workforce levels. As a result, it was decided to adjust the base workforce size upwards by ten percent to allow for this one-off adjustment.

A high Scenario growth in demand based on growth in MBS item numbers was used (rate 4.4%) and a Low Scenario growth rate based on workforce growth (rate 1%) was used.

Results of projection modelling

Figure 2: Results of Projection Modelling for Chemical Pathologist Workforce, High Scenario (Service Demand)

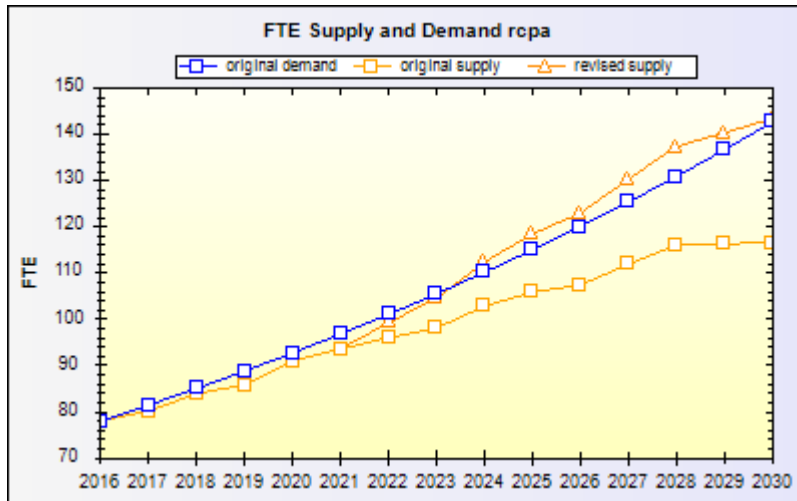


Figure 3: Results of Projection Modelling for Chemical Pathologist Workforce, Low Scenario (Workforce Demand)

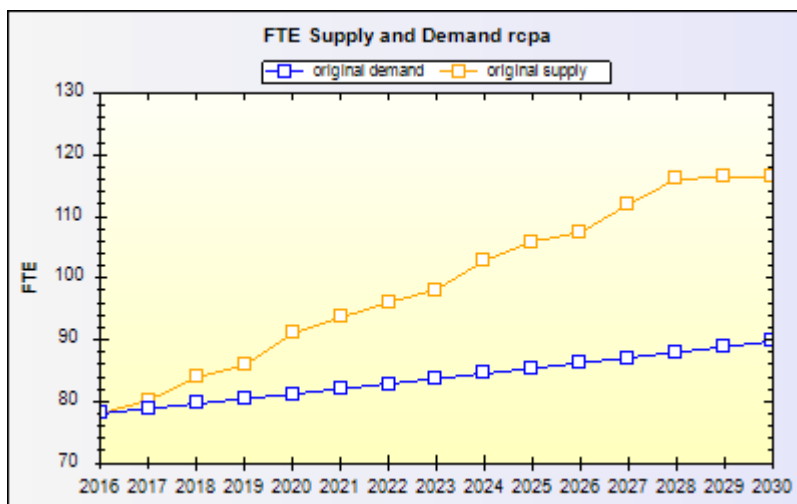


Table 2: Results of Workforce Modelling for Chemical Pathologist Workforce

	Trainees				
	Base Year	Low Scenario	High Scenario	Gap Low Scenario	Gap High Scenario
	2016	2030	2030	2030	2030
Chemical Pathology	4	4	9	0	5
Total six disciplines	97	151	238	54	141
Total Australian Workforce	100	170	192	70	92
	New Fellows				
Chemical Pathology	4	4	8	0	4
Total six disciplines	87	138	213	51	126
Total Australian Workforce	90	153	173	63	83

There was wide variation between the two demand assumptions used in the modelling. Therefore, the results show that for the Low Scenario supply continues to be higher than demand for the total period of the projection modelling (see Figure 3). However, there is a need to increase trainee commencements from four to nine trainee commencements and from four to eight new fellows using the High Scenario assumption of demand (See Figure 2 and Table 2).