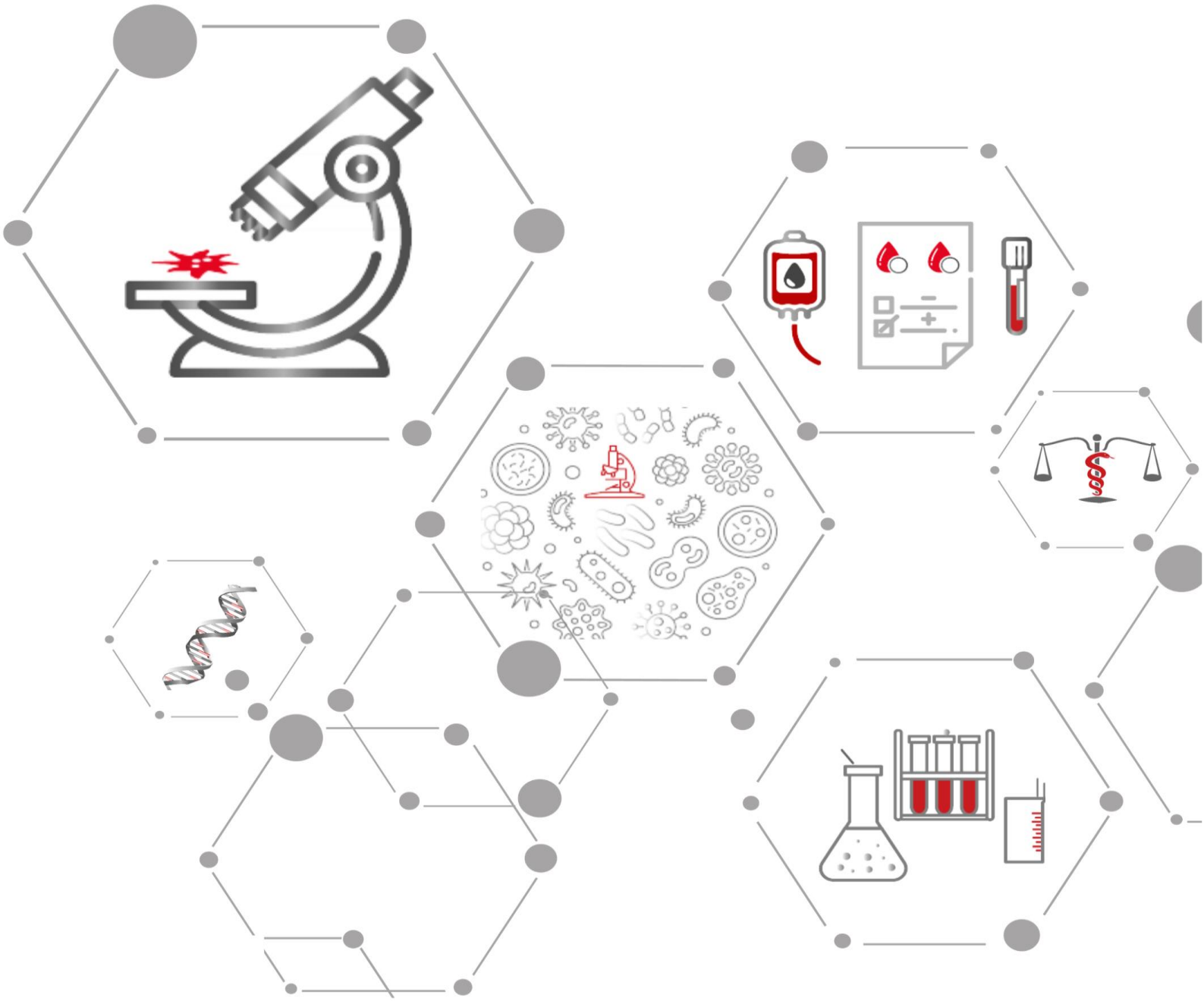
RCPA

The Royal College of Pathologists of Australasia



30 June 2024

Pathology Workforce – Capacity and competence. Workforce planning for the pathologists in subdisciplines and known shortages.

Document Control

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01 July 2024	V0.1	Draft	For review	V White
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Contents

1. Introduction

The Royal College of Pathologists of Australasia (RCPA) engaged an external consultant, HealthConsult to undertake a review of the Australian pathology workforce to understand the current and expected future composition of the workforce and to inform the design of workforce planning strategies that will ensure its growth and sustainability.

The Project objectives were to:

- review the current pathologist workforce, including current numbers of pathologists in each subdiscipline, and the future capacity of the pathology workforce over the next few years, in particular pathologists in rural and remote areas
- collect data on pathologist trainees in all states and territories, including the number of specialist training positions, trainee subdiscipline, and an indication of the distribution of trainees in public and private laboratories
- identify and develop workforce planning strategies for pathologists that are aimed at ensuring the effective increase and sustainable number of pathologists, especially in the identified pathology subdisciplines where there are known shortages e.g. biochemical genetics, cytogenetics, immunology, and chemical pathology

Pathology workforce shortages and workplace issues have been recognised by federal and state health departments and individual pathology service providers across both the public and private sectors over the past few years. This follows from a 2018 workforce study commissioned by RCPA that found the projected future demand for Australian pathologists and senior scientists was higher than workforce supply and that significant gaps are developing between the two sets of projections. Since the 2018 study, several trends and issues have also been noted by RCPA as impacting the pathologist and senior scientist workforces, and how they operate. These are additional to the background findings offered by the 2018 report and include:

- expansion of genomics
- digitisation of pathology workflows
- increasing usage of AI
- The Project was undertaken over a period of twelve months and involved a comprehensive environmental scan that established an understanding of key trends and issues impacting the pathology workforce in Australia, combined with consultations with key stakeholders that provided an understanding of issues relating to specific jurisdictions, sectors and disciplines. This data was then further analysed to develop the Australian pathology workforce supply, demand and capacity models, including data sources, limitations and proposed assumptions.

Appendix 1 presents the Final Report and recommendations from this body of work. It presents the

outcomes of modelling on the pathology and senior scientist workforces across Australia, summarises the issues impacting these workforces and provides recommendations to support the sustainability of the pathology workforce in Australia into the future.

2. Project Statement

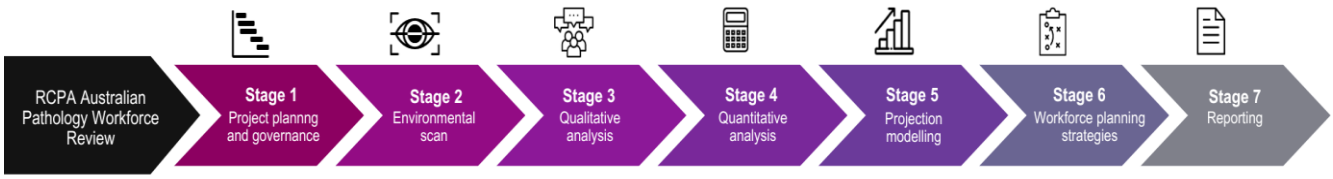
This Project was designed to undertake a review of the current pathologist workforce, including current numbers and relevant demographics of pathologists in each subdiscipline and the future capacity of the pathology workforce over the next few years with particular reference to rural and remote areas. This Project was built on a previous pathology workforce review, which was undertaken in 2018, that found the projected future demand for Australian Pathologists and senior scientists was higher than the workforce supply and that significant gaps were developing. Since the 2018 report was completed, there has been increasing recognition of pathology workforce shortages and other workplace issues by national and jurisdictional health departments and individual pathology service providers across the public and private sectors.

3. Scope

RCPA engaged an external consultant – HealthConsult 01 July 2023 to explore the current state of the pathology workforce in Australia with a particular focus on its composition, distribution, and future direction.

HealthConsult identified 7 key stages in Figure 1 below to be undertaken within the timeframe of the Project:

Figure 1: Project Plan

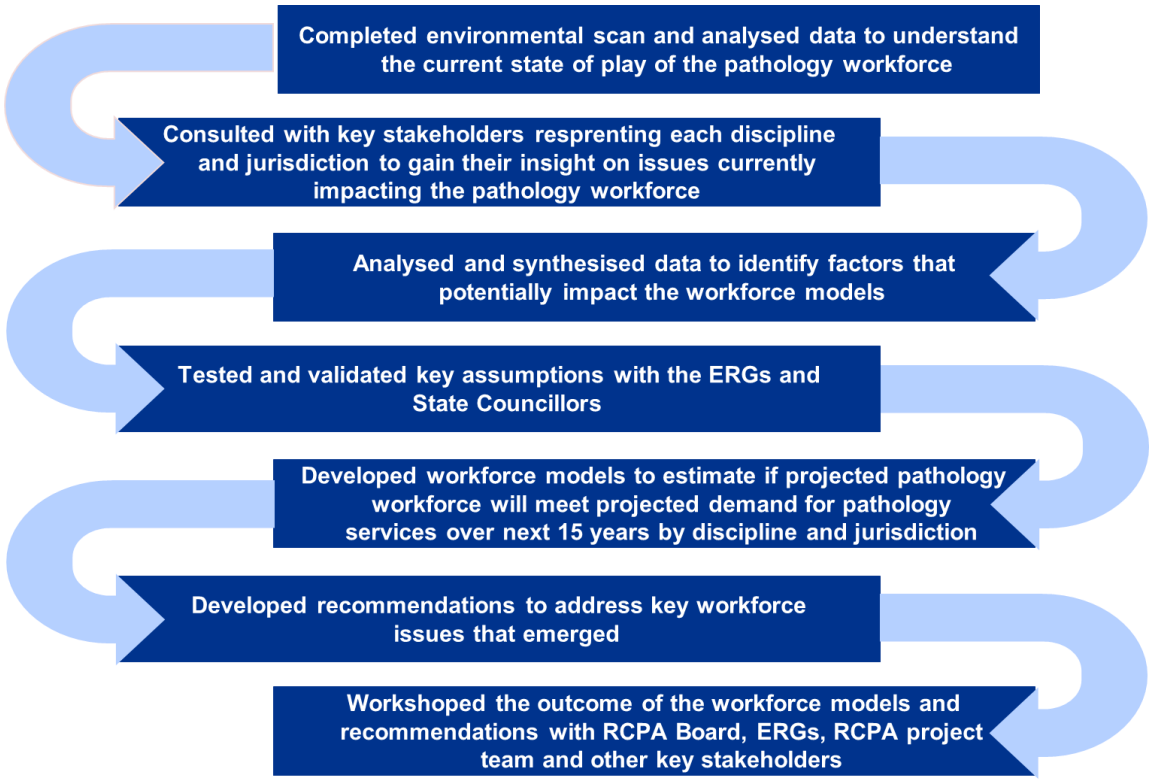


The initial focus of the review was to gain insight into the current state of the pathology workforce in Australia and to identify key issues and challenges. The work included undertaking a review of data and information provided by a number of key stakeholders including the RCPA, data sourced from the public domain, a scan of publicly available literature, and extensive stakeholder consultations. From this, an environmental scan (a separate document) was produced that articulated important trends and issues influencing the workforce.

The approach adopted to deliver this Project is summarised in Figure 2. The Project has been completed:

- by conducting an environmental scan
- undertaking a wide range of consultations with key stakeholders including representatives from each discipline, every Australian state and territory, public and private sectors and peak bodies to understand trends, developments and issues that may influence the workforce modelling and workforce planning strategies
- engaging with and seeking input from the RCPA Board, Expert Reference Groups (ERGs) and State and Regional Councillors; and working closely throughout each stage of the project with the RCPA project team
- gathering, synthesising and analysing quantitative and qualitative data pertaining to characteristics of the workforce
- developing the options for formulating assumptions in the workforce model and seeking input from the RCPA Board, ERGs, State and Regional Councillors, RCPA Project Team, Public Pathology Australia (PPA) and Pathology Australia (PA) through a series of workshops
- Developing, testing and refining recommendations on workforce planning strategies to improve the sustainability of the pathology workforce in the future.

Figure 2: Overview of the key steps within the Project methodology



The gathered data was then synthesised to identify the most relevant and robust data source required to undertake the workforce modelling. Through this process, data gaps were identified, and the assumptions developed, which were then tested and validated with RCPA's ERGs, and State and Regional Councillors.

Separate workforce models were developed that applied a Markov ‘stock and flow’ approach for forecasting supply and exponential triple smoothing forecasts for the demand for pathology services. The time horizon for the models spanned 15 years, from 2022 to 2037
Error! Reference source not found. summarises this Markov modelling methodology.

The time horizon for the models spanned 15 years, from 2022 to 2037. The Australian pathologist model was based on FTE, due to several pathologists having joint appointments. Headcount was used for the other model (Fellows of Faculty of Science (FFSc) for Australia) as Full Time Equivalent (FTE) data could not be reliably sourced.
Focusing on the Medicare Benefits Schedule (MBS) data, HealthConsult worked with the RCPA to agree on the relevant in-scope pathology groups within the MBS to be included for demand modelling. Historical data from 2015-16 to 2022-23 was extracted from Services Australia’s Medicare Item Reports and analysed, and a data cleansing process was undertaken. The historical time series data was then used to complete an initial demand forecast for the period from 2024 to 2037 using Microsoft Excel’s exponential triple smoothing (ETS) algorithm.
Demand and supply outputs were then brought together to analyse the capacity of the workforce and identify whether potential shortfalls may arise in future. The process of bringing demand and supply together to estimate over or under-supply is referred to as ‘capacity modelling’, as it describes the expected level of capacity that currently exists (for oversupply) or the level that would need to be created to meet demand (for under-supply).
Finally, recommendations on workforce planning strategies were developed based on the outcomes to improve the sustainability of the pathology workforce in the future. Both the model results and recommendations were tested and refined through a series of workshops with the RCPA Project Team, the RCPA Board, ERGs, State and Regional Councillors, PA and PPA. This process ensured the outcomes of the workforce modelling, and associated recommendations were appropriate, realistic, relevant, and representative of both demand and supply of the pathology workforce, now and in the future.

4. Findings and Outcomes

The prior review of the pathology workforce was undertaken for RCPA by KBC Australia in 2018.

There were several important differences in the modelling approach; most notably, KBC used headcount for the Australian pathologist model, and HealthConsult used FTE. While the workforce models are not readily comparable, the outcomes contain the same message, i.e. there is a shortage in the pathology workforce that is growing and will continue to worsen unless changes are made.

Some of the key outcomes from modelling individual disciplines within the Australian pathology workforce showed:

- Anatomical Pathology is the discipline with the largest adverse workforce gap in absolute terms. In 2027 the gap was estimated to be 78 FTE (or 8% of the workforce), growing to 132 FTE (or 12% of the workforce) by 2037. Growth in both demand and complexity are driving this outcome.
- Chemical Pathology proportion of projected workforce shortage was also of note. By 2037 there is expected to be a 48% shortfall in the workforce required, which is a gap of 39 FTE.
- Forensic Pathology had a predicted shortfall of 8 FTE in 2027 (14% of the workforce) this adverse gap widens to 18 FTE (29% of the workforce) in 2037.
- Genetic Pathologists proportionally have the largest undersupply of all disciplines in 2027. In 2027 the 19 FTE shortage is 80% of the workforce, with the gap widening to 101% of the workforce or 27 FTE by 2037. Similar to AP, both growth in demand and complexity are driving this outcome.
- General Pathology has the highest proportional undersupply by 2037, where the adverse gap of 35 FTE is 137% of the workforce. This is reflective of the older age profile of this discipline and the declining number of registrars who are willing to undertake this training pathway.
- Haematology is the only discipline showing an oversupply. In 2027 the model outcomes are indicating an oversupply of 21 FTE or 10% of the workforce, growing to 32% of the workforce by 2037. This is driven by the discipline having the highest number of new Fellows of any discipline (including AP), despite MBS demand decreasing. There is a large portion of Haematologists with dual qualifications with the Royal Australasian College of Physicians, resulting in a trend of increasing number of Haematologists who are increasingly spending less time in laboratories. Despite the predicted increases, this is not thought to impact laboratories as most of these Haematologists will be working in patient-facing roles.
- Immunopathology had the third largest proportionate workforce gap amongst the disciplines in 2027 at 26% or 10 FTE. In 2037 the adverse gap widens to 44% or 19 FTE.
- Microbiology had a gap of 10 FTE in 2027 which is 6% of the Microbiology workforce. By 2037 the adverse gap widens to 32 FTE or 16% of the workforce.
- Table 1 summarises the number of additional trainees required from the modelling.

Table 1: Summary of additional trainees required by discipline over a five, 10 or 15-year timeframe

Discipline	Timeframe	Current trainees per year FTE	Additional trainees per year FTE	Total trainees per year FTE
Anatomical Pathology	5 years	33.9	20.7	54.6
	10 years		11.3	45.2
	15 years		10.4	44.3
Chemical Pathology	5 years	2.7	5.3	8.0
	10 years		3.6	6.3
	15 years		3.6	6.3
Forensic Pathology	5 years	2.2	2.2	4.4
	10 years		1.5	3.7
	15 years		1.5	3.7
General Pathology	5 years	0.8	2.5	3.3
	10 years		3.3	4.1
	15 years		3.3	4.1
Genetic Pathology	5 years	1.3	5.2	6.5
	10 years		2.6	3.9
	15 years		2.6	3.9
Haematology	5 years	9.8	(5.3)	4.5
	10 years		(6.3)	3.5
	15 years		(6.3)	3.5
Immunopathology	5 years	1.5	2.7	4.2
	10 years		1.8	3.3
	15 years		1.8	3.3
Microbiology	5 years	7.6	2.9	10.5
	10 years		2.9	10.5
	15 years		2.3	9.9

Figure 4: Workforce gaps in absolute and relative terms for Australian pathologists and FFSc and Australian pathologists by discipline for five, 10 and 15 years

Figure 4 summarises the outcomes of modelling. The workforce gaps are presented for pathologists in Australia, FFSc in Australia and for each pathologist discipline in Australia both as absolute numbers as well as a proportion of the relevant workforce at a future point in time. The data is presented at five-year intervals across the 15 years modelled (2027, 2032 and 2037).

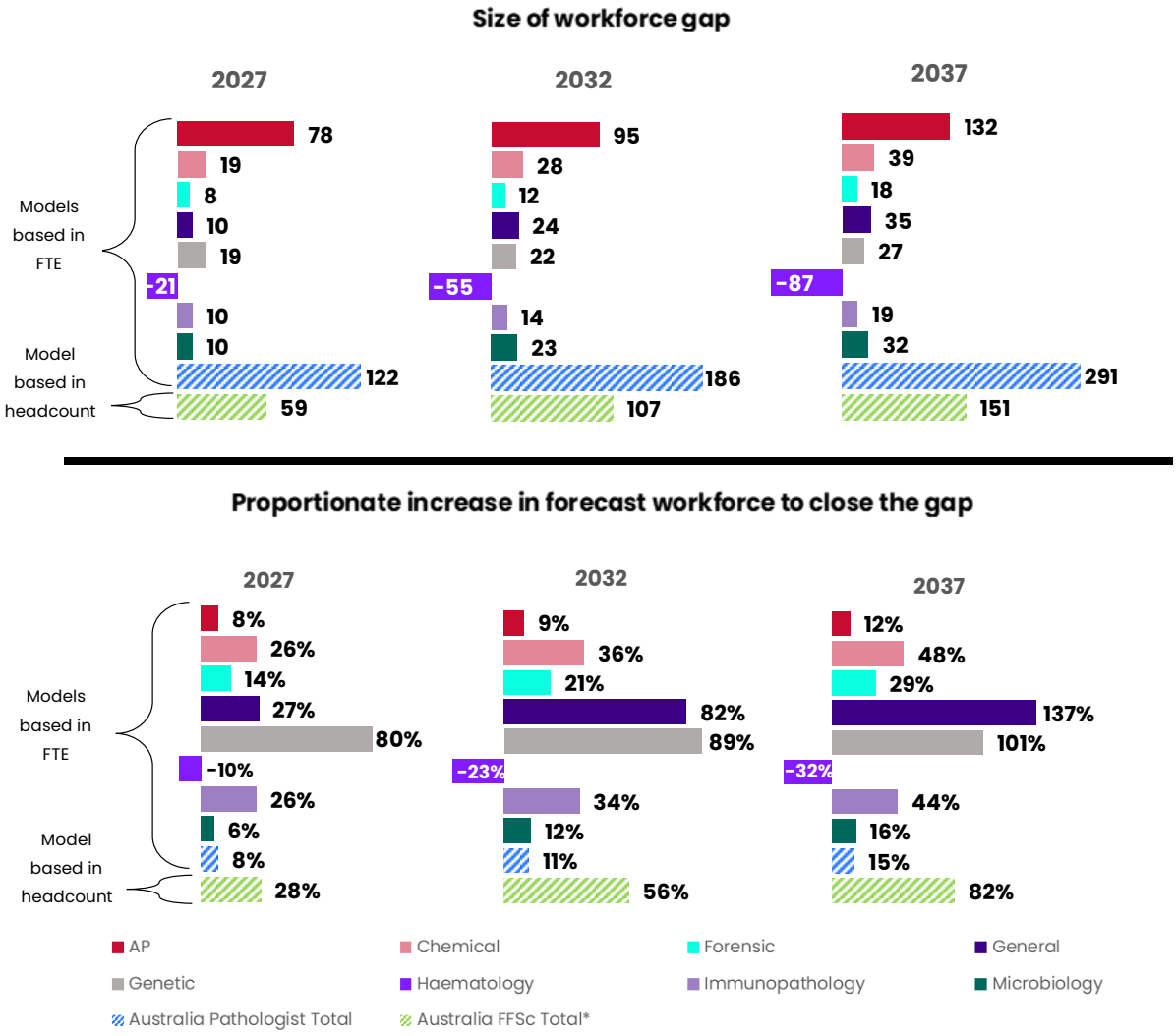
From an overall perspective for:

- Australian pathologists: the estimated workforce gap is 122 FTE in 2027, representing 8% of the workforce, increasing to 186 FTE in 2032 and 291 FTE in 2037 (15% of the workforce). The modelling demonstrates a worsening in the workforce shortage in both real and relative terms.

- FFSc in Australia: current shortages are predicted to worsen to a critical level. The forecast undersupply in 2027 of 59 headcount (28% of the workforce) is expected to increase to 151 headcount (82% of the workforce) by 2037.

The common pattern from the modelling is that workforce gaps are growing in relative and real terms over the next 15 years. Noting the overwhelming opinion from the consultations is that the situation is already critical, this indicates that the issue will only worsen unless action is taken to redress existing shortages.

Figure 4: Workforce gaps in absolute and relative terms for Australian pathologists and FFSc and Australian pathologists by discipline for five, 10 and 15 years



NB: the 'Australia Total' may not equal the summation of each discipline due to unique capacity assumptions that have been applied for some disciplines. Source: HealthConsult analysis

5. Issues addressed

- One of the initial challenges encountered by the Project was collecting data from public and private laboratory settings relating to headcount. It was agreed by the Project that

headcount data would provide the most accurate and complete starting point for the review, and the basis on which to perform the workforce projection modelling. This data could only be obtained directly from employers, which unfortunately took much longer than anticipated, delaying the completion of Stage 3 (quantitative analysis), which in turn had a direct impact on confirming base data for projection modelling (Stage 5). Requests for data were escalated through the appropriate delegated authorities within each of the outstanding settings to ensure the most appropriate and accurate data was submitted.

- Unavoidable delays with respect to Stage 4 – (qualitative analysis) were experienced due to the difficulty engaging with stakeholders. Scheduling one-on-one interviews with key stakeholders identified within each health service and private setting in the Project Plan was problematic due to leave and predetermined professional and personal commitments. In addition, scheduling convenient times to hold wider expert reference group meetings was also difficult for the same reasons. Scheduling separate meetings with each ERG posed difficulties with the timeline and the Project Team agreed to seek feedback offline from ERGs rather than through separate meetings with each to minimise delays related to scheduling meetings with ERGs.
- Data gaps arose from limited access to public pathology volume data. However, HealthConsult used the data available to the best extent possible. The Project Team agreed to seek advice from ERGs to agree on any assumptions and limitations on the sensitivity analysis to augment this.

6. Recommendations

One of the overarching objectives of this Project was to identify and develop workforce planning strategies for pathologists aimed at ensuring the effective increase and sustainable number of pathologists, especially in the identified pathology subdisciplines where there are known shortages. Ten recommendations have been made in this report to address key issues workforce, gaps and opportunities to positively impact the pathology workforce over the five, ten and fifteen years. The recommendations developed were workshopped with the RCPA Board, ERGs, RCPA Project Team and other key stakeholders and are outlined in Table 1 below.

Table 2: Summary of the recommendations

Recommendation	Priority
Recommendation 1: Advocate to the Australian Government for increased access to funding for training positions Continue to advocate for the Commonwealth Government to increase access to, and availability of, STP and other funding streams that support training in Australia.	High
Recommendation 2: Advocate to jurisdictional Governments for an increase in access to funding for training positions Continue to advocate to jurisdictional Governments for increased access to additional funding to be appropriated specifically for pathology training positions	High
Recommendation 3: Continue advocacy for all MBS fees for pathology items to receive annual indexation, for MBS items to be fit for purpose and reflect costs of service provision, and inclusive of new tests as they evolve RCPA continues to advocate to the Commonwealth Government to review MBS fees for pathology items and highlights the need for a broad review of MBS items to assess if they are fit for purpose, including if reflective of the current cost of service provision. It is noted that in the course of this review, the 2024-25 Commonwealth Budget announced the reintroduction of annual indexation for selected pathology services (including Haematology, Immunology and AP service groups) from 1 July 2025	High
Recommendation 4: Develop a pathology technology and innovation plan as a 'road map' to support increased efficiency Develop a pathology technology and innovation plan as a 'road map' to support increased efficiency, supported by research and evaluation	High
Recommendation 5: Add new roles to the pathology workforce to capitalise on the benefits of technology Support the implementation of the technology and innovation 'road map' by continuing to add new roles in bioinformatics, data analytics and software engineers to the pathology workforce to access and capitalise on the benefits of technology.	Medium
Recommendation 6: Streamline the SIMG pathway, while ensuring compliance with existing standards Review the SIMG pathway to identify opportunities to streamline the process by which internationally trained pathologists are assessed, and the duration of training required to be completed to attain RCPA Fellowship. Any change in the process must maintain appropriate skill level, orientation and onboarding to ensure the quality of service delivery and patient safety is maintained	High
Recommendation 7: Strategic review of future requirements for Molecular Pathology Conduct a strategic review of future requirements for Molecular Pathology	High
Recommendation 8: Develop a strategic approach to the future of the General Pathology discipline Develop a strategic approach to the future of the General Pathology discipline to guide decision-making around its future role in the pathology workforce	Medium

7. Future Directions

Increasing capacity within the pathology workforce involves several strategic steps aimed at addressing both short-term and long-term needs. The RCPA has just released its Strategic Plan 2024 - 2027 whereby the number one area of focus is Workforce, followed by Advocacy.

RCPA Areas of focus 2024-2027

In addition to the RCPA focussing on engaging with all levels of government and private sector providers, there is an increasing level of importance to raising public awareness about the role of pathologists in healthcare and the importance of pathology in diagnostics. The RCPA will advocate for adequate resources and funding to support pathology workforce capacity and development initiatives. Greater focus and emphasis on the role of the pathologist and pathology within the healthcare systems is required to effectively enhance the capacity of the pathology workforce, to ensure the ongoing quality of diagnostic services and to continue to advance the field of pathology to meet future healthcare challenges.

8. Appendices

Appendix 1: Australia Pathology Workforce Review – Final Report 24 June 2024 - HealthConsult