

Department of Health

Australia's Future Health Workforce – Ophthalmology

July 2018

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Executive Summary

The Australia's Future Health Workforce – Doctors (AFHW - Doctors) report published in December 2014 indicated that Australia's health workforce is under pressure and must undergo significant transformation to meet future demands for healthcare.

Despite the projected overall position of oversupply, imbalances within the medical specialty workforces currently exist and are projected to continue.

The medical workforce is a national resource; a resource that is valuable to the community both in terms of the cost of training, which is substantially borne by the taxpayer, and in terms of the benefit derived by the community from a well-trained health workforce.

In the past, uncoordinated decision making in the absence of an active workforce planning mechanism has seen a “boom and bust” cycle in medical training and resulting doctor numbers. This has been at a cost to the community.

The development of the AFHW – Doctors report was guided by the expert input of the National Medical Training Advisory Network (NMTAN), which has representation from all the key stakeholder groups in medical education, training and employment.

The report makes recommendations for future work including:

- updates to the workforce modelling results to determine requirements for future adjustments every two years; and
- prioritisation of future policy work to gain a better understanding of the prevocational years and overall capacity for and distribution of vocational medical training.

Ophthalmology was selected as a medical specialty to be considered in the first segment of analysis by the NMTAN, largely due to concerns identified in Health Workforce 2025 Medical specialties Volume 3 (HW 2025). That report identified a maldistribution of ophthalmologists with most working in urban locations, a higher than average reliance on international medical graduates, an impending critical shortage of paediatric ophthalmologists and a lack of funded training positions in the public sector. The report also outlined trials of care shared between ophthalmologists and optometrists designed to deliver high quality care more efficiently, and thus reduce the number of ophthalmologists needed.

Key considerations

It is important to note the following regarding demand and supply modelling for all specialties:

- Supply only includes the hours worked by specialist clinicians in the specific speciality being modelled
 - For ophthalmology this means only the hours worked by ophthalmology specialists in ophthalmology contribute toward the supply FTE. In particular there are 18 ophthalmology specialists who work in ophthalmology AND another speciality. Only the hours worked in ophthalmology contribute toward the supply FTE for ophthalmology.
- Projections
 - The scenarios provide an estimate of the likely outcome given the set of conditions upon which each scenario is based.

Key findings

Current workforce and trainees

There were 990 accredited ophthalmology specialists with current medical registration in 2016. The large majority were clinicians (97 per cent). Of those clinicians, 83 per cent were located in Modified Monash Model (MMM)¹ and 21 per cent were female. Only 16 per cent of the workforce worked in the public sector. The average age of the ophthalmology workforce was 53 years.

The Royal Australian and New Zealand College of Ophthalmologists (RANZCO) report 146 trainees in 2016; similarly, the National Health Workforce Data Set (NHWDS) reports 134 trainees, of which 34 per cent were female and the majority are located in MMM1.

Shared care models

The shared care models developed between ophthalmology and optometry reduced waiting times for new patients. Optometrists can assess vision; manage refractive errors through issuing glasses and screen for serious eye diseases; ophthalmologists then focus on diagnosis and management of eye disease. In some situations, optometrists provide routine follow-up for stable eye disease, referring back to ophthalmologists when needed. Patients benefit through accessible, high quality eye care and timely follow-up, thereby reducing the risk of adverse consequences of chronic diseases.

RANZCO asked the Department to analyse these models of care to determine the effects of the transfer of work to optometrists, and implications of demand for ophthalmology services. Upon investigation of the Medicare data, while there is much higher growth in the optometry services, there has been no noticeable halting or decline in growth of ophthalmology services – possible due to taking on the more complex cases, improved patient accessibility, and an increased aging population with an attendant increased incidence of eye disease.

Indigenous eye health

Research has demonstrated that access to eye care is disproportionately problematic for Indigenous people¹. Recommendations relevant for training were to train more Indigenous ophthalmologists, and that during training, eye health providers complete a core component of rural and Indigenous eye health work.

Results of the supply and demand projections

The demand for ophthalmology services is estimated to grow at 2.8 per cent to 2030. The results of the projections reveal an undersupply of ophthalmology specialists throughout the entire projection period.

Scenario 1: dynamic intake scenario

- This scenario uses the dynamic pipeline and assumes that the number of new fellows grows at three per cent each year based on historical trends. That is there would be 31 new trainees in 2018, increasing by one each year until the new intake to the program is set at 42 by 2030.
- Even with this increase in intake there would be an undersupply of 68 fellows by 2030 (or a shortfall of 5.5 per cent).

¹Taylor HR, Anjou MD, Boudville AI, McNeil RJ. The Roadmap to Close the Gap for Vision: Full Report. Melbourne: Indigenous Eye Health Unit, Melbourne School of Population Health, The University of Melbourne, ISBN 978073404756 4; 2012.

- The deficit is not as extensive as the results of the comparison scenario in HW 2025 which projected the workforce would be in undersupply by 162 ophthalmologists by 2025

Scenario 2: balance dynamic intake scenario

- This scenario attempts to balance the undersupply by increasing the first year trainee intake from 2019 to reduce the deficit between supply and demand.
- An additional 3 trainees per year, increases the intake to the program to 63 by 2030.
- Changes to the training intake from 2019 would result in additional new fellows entering the workforce in 2023.

Recommendations

- The supply and demand projection be closely monitored by NMTAN and updated every two years.
- An increased intake of trainees is needed to counter the predicted undersupply of ophthalmologists in 2030. An increase of three per year from 2019 is recommended. A small increase occurred in 2018 when the training intake increased from 29 to 31 but this is insufficient, and has been factored into the projections that arrive at undersupply.
- The RANZCO and the NMTAN continue to monitor the training numbers and transition rates to ensure an incremental increase in trainee intake.
- NMTAN, the Department and the RANZCO work together to develop strategies for Ophthalmology training in private and public settings particularly in regional, rural and remote areas.
- The RANZCO formalise training of additional supervisors, particularly in regional, rural and remote settings, with an established method for identifying potential supervisors and providing ongoing supervisor support. This will address the issue of the inability to accredit positions due to lack of supervision or a freeze in consultant FTE.
- The RANZCO increase their focus on recruiting more Indigenous trainees who may be better able to serve their communities (regardless of their location – remote or urban). Introducing a points system in the selection process to facilitate an increase in the number of Indigenous trainees may be an option.
- The RANZCO investigate potential mechanisms to address maldistribution through:
 - preferential selection of trainees with a rural background, or who have undertaken rural placements as a medical student, or worked as a junior doctor in a rural area
 - requiring trainees to undertake at least six months training in a regional, rural or remote area and/ or experience working within an Indigenous health service
 - ensure that final fellowship assessment demonstrates that Fellows are able to practise the full scope of ophthalmology across Australia
 - scholarships for regional, rural and remote trainees, including for final year trainees in these areas and in paediatric ophthalmology
- RANZCO to provide data on the number of Specialist International Medical Graduates (SIMG) applicants per annum, and the outcome of their assessment, and publish reports on the location of their work.

Introduction

An ophthalmologist is a medical doctor who has undertaken additional specialist training in the diagnosis and management of disorders of the eye and the visual system. Ophthalmologists provide the full spectrum of eye care, including prescription of glasses and contact lenses, medical treatment and complex microsurgery.

This report is dedicated to information pertaining to the ophthalmology workforce in 2016, in addition to updating the supply and demand projections previously completed by the former Health Workforce Australia (HWA) and published in *Health Workforce 2025 - Medical Specialists Volume 3* (HW 2025 Vol 3).

Based on the findings from the report and advice from the RANZCO and jurisdictions, the Department aims to make recommendations that will ensure a sustainable ophthalmology workforce into the future.

Current workforce status

Registration, accreditation and speciality fields

The Medical Board publishes quarterly statistics on Medical Practitioner Registrant Data². In the September 2016 edition, there were 997 registrants with a speciality of ophthalmology. According to the NHWDS, in 2016 there were 990 accredited ophthalmology specialists with current medical registration in Australia; seven fewer than reported in the Medical Board data. This is because the NHWDS is a snapshot at a point in time (as at the date of data extraction) and the figures only include medical practitioners with current registration. The Medical Board/AHPRA statistics report an annual figure and include medical practitioners who held a registration at some point in the year but may not have current registration.

In the NHWDS, there were 13 ophthalmology specialists who did not renew their medical registration in 2016; resulting in a difference of four between the NHWDS and the Medical Board statistics.

As can be seen in Figure 1, of the 990 accredited ophthalmology specialists with current medical registration, 920 (93 per cent) were employed in the medical workforce. While the majority (919) worked in ophthalmology, one did not work in ophthalmology. Those who worked in ophthalmology were mostly clinicians (97 per cent), with the remainder working as administrators, teachers/educators and researchers.

Two per cent (18) of ophthalmology specialist clinicians also worked in another specialty in addition to ophthalmology. The most common second specialties were surgery (12) and physician (3). While the other specialist hours worked by an ophthalmologist (average of 4.25 hours) may be ophthalmology related (i.e. ophthalmologists who have chosen to limit their practice to ophthalmic surgery - cataract and/or plastics surgery), given that they have accreditation in surgery there is no certain way of attributing their hours to ophthalmology as there is no restriction for them to work in either specialty. These hours will be included in the surgery supply and demand study.

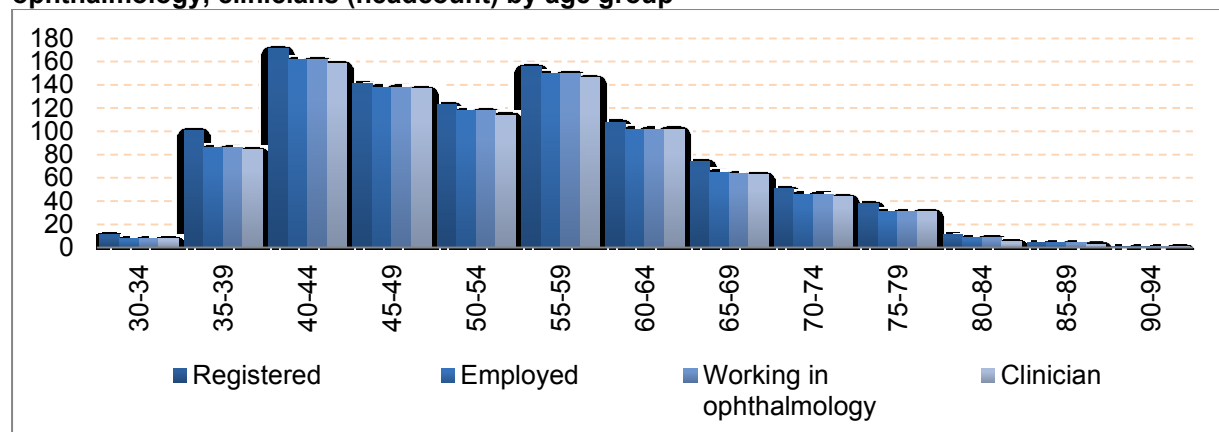
² [Medical Board](#)

Figure 1: Ophthalmology workforce by job role, 2016

Source: NHWDS, Medical Practitioner 2016

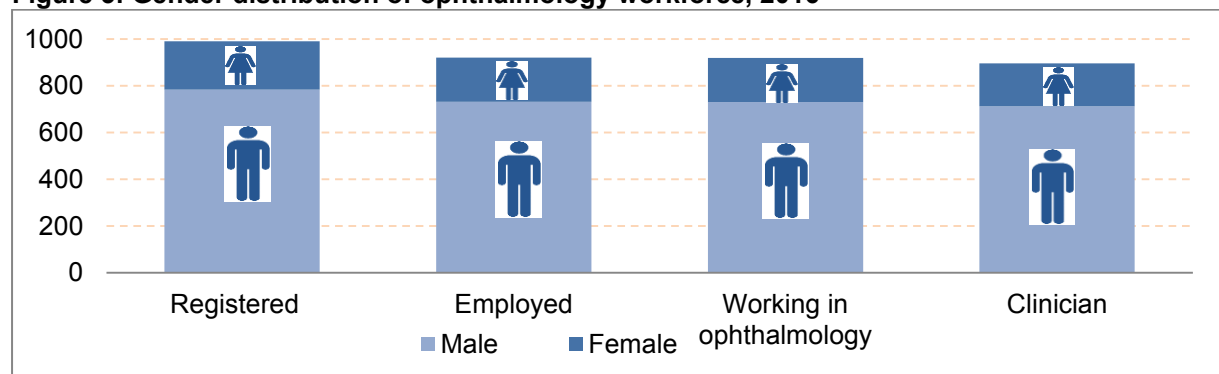
Aged and Gender

The age distribution of specialist ophthalmologists in Australia (Figure 2) shows the majority are in the 40-44 year age group, closely followed by the 55-59 age group for registered, employed, clinicians and those working in ophthalmology. The proportion of the registered, employed, clinicians and those working in ophthalmology were similar within each of these age groups. There is a relatively large drop from those aged 55-59 to those aged 60 and over. The numbers in the workforce reduce significantly beyond 79 years of age.

Figure 2: Comparison of specialist ophthalmologists that are registered, employed, working in ophthalmology, clinicians (headcount) by age group

Source: NHWDS, Medical Practitioner 2016

The gender distribution of the ophthalmology workforce (Figure 3) shows that the majority, about 80 per cent, are male across all groups: registered, employed, clinicians and those working in the field.

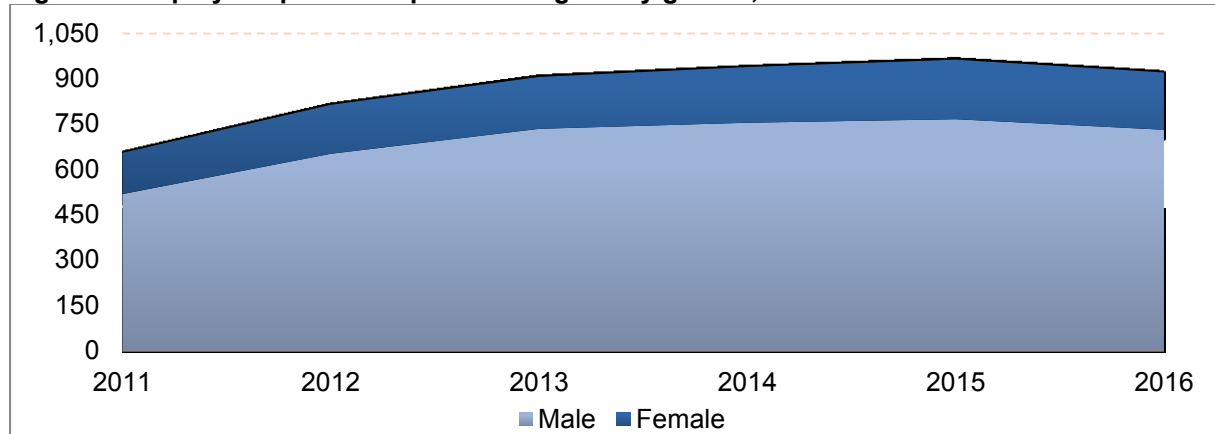
Figure 3: Gender distribution of ophthalmology workforce, 2016

Source: NHWDS, Medical Practitioner 2016

Growth

Figure 4 shows that the number of employed specialist ophthalmologists has grown over the years (average annual growth of 3.1 per cent), with female specialist ophthalmologists experiencing the largest growth over the last four years – at an average annual rate of 6.7 per cent, while males have only increased by 2.4 per cent (average annual growth). The proportion of females has increased from 17 per cent to 20 per cent between 2011 and 2016.

Figure 4: Employed specialist ophthalmologists by gender, 2011 to 2016

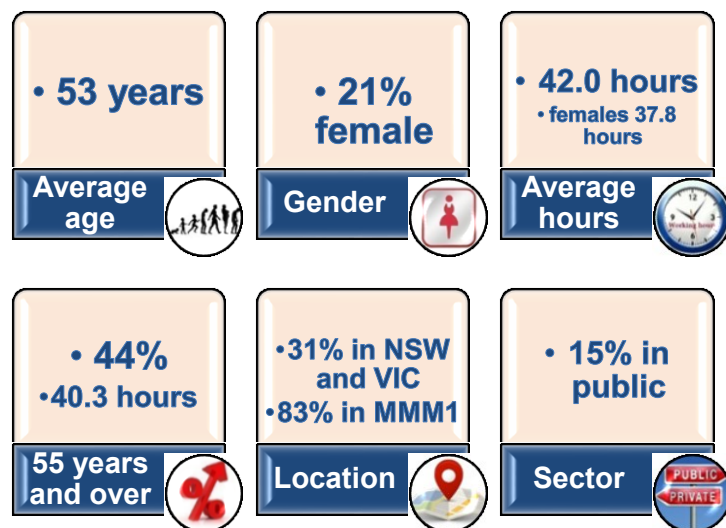


Sources: NHWDS: Medical Practitioners 2011 to 2016

Current specialist clinicians

According to the 2016 NHWDS, there were 896 specialist ophthalmologists who indicated they were employed and working as clinicians (ophthalmology workforce) with the following characteristics:

Figure 5: Demographics of the ophthalmology workforce, 2016



Source: NHWDS, Medical Practitioner 2016

Distribution

The previous geographic distribution classification system was based on the Australian Standard Geographical Classification – Remoteness Area (ASGC-RA) system. The Australian Bureau of Statistics (ABS) has now replaced ASGC with the Australian Statistical Geography Standard (ASGS). The ASGS uses the latest residential population data to

determine the five base categories. The MMM will overlay the ASGS for the purposes of administering some health workforce programs.

Table 1: Definitions of the Modified Monash Model Categories

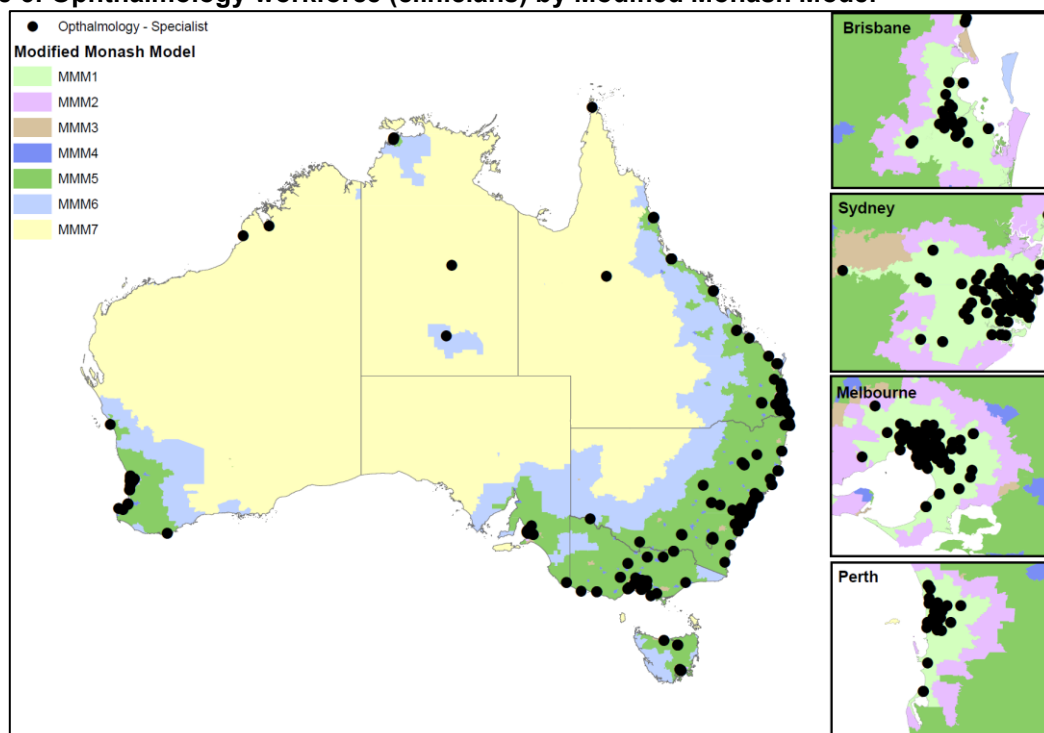
MMM Category	Definition
MMM1	All areas categorised ASGS-RA1.
MMM2	Areas categorised ASGS-RA 2 and ASGS-RA 3 that are in, or within 20km road distance, of a town with population >50,000.
MMM3	Areas categorised ASGS-RA 2 and ASGS-RA 3 that are not in MMM 2 and are in, or within 15km road distance, of a town with population between 15,000 and 50,000.
MMM4	Areas categorised ASGS-RA 2 and ASGS-RA 3 that are not in MMM 2 or MMM 3, and are in, or within 10km road distance, of a town with population between 5,000 and 15,000.
MMM5	All other areas in ASGS-RA 2 and 3.
MMM6	All areas categorised ASGS-RA 4 that are not on a populated island that is separated from the mainland in the ABS geography and is more than 5km offshore.
MMM7	All other areas – that being ASGS-RA 5 and areas on a populated island that is separated from the mainland in the ABS geography and is more than 5km offshore.

Source: [DoctorConnect](#)

Figure 6 illustrates the MMM and density of the ophthalmology workforce within these areas. The MMM is a classification system that better categorises metropolitan, regional, rural and remote areas according to both geographical remoteness and town size.

The system was developed to recognise the challenges in attracting health professionals to more remote and smaller communities. MMM1 indicates major cities and progresses to MMM7, which indicates very remote Australia. As can be seen in the map below, the ophthalmology workforce is located throughout Australia, but typically concentrated in metropolitan areas (84 per cent in MMM1).

Figure 6: Ophthalmology workforce (clinicians) by Modified Monash Model

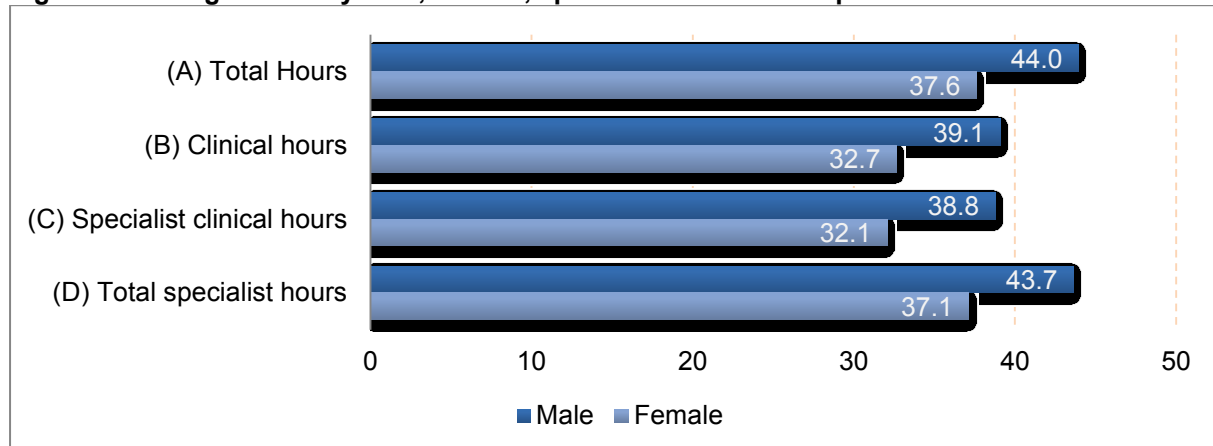


Source: NHWDS, Medical Practitioner 2016

Hours worked

There are a number of ways in which the hours of a medical practitioner can be analysed. Appendix 2 outlines the methodology for determining the most appropriate measure of hours for specialists; resulting in considering the clinical and non-clinical hours of the speciality amassing to total specialist hours. Figure 7 outlines the hours worked according to the different combinations of assessing hours. The total hours worked and the total specialist hours in the instance of ophthalmology are very closely aligned. For example, male ophthalmologists worked on average 44.0 total hours and 43.7 total specialist hours. The difference between the specialist clinical hours and the total specialist hours is almost five hours.

Figure 7: Average hours by total, clinical, specialist clinical and specialist total hours worked



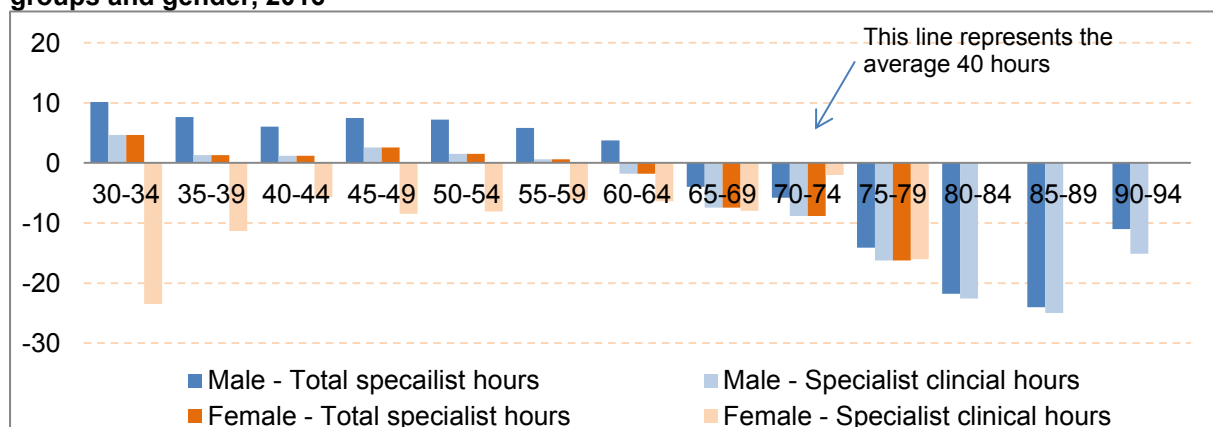
Source: NHWDS, Medical Practitioner 2016

The difference between the total specialist hours (D) and clinical specialist hours (C) by gender and age group are shown in Figure 8. The x-axis is assumed to be average hours worked (40 hours) and the bars in positive or negative position show the hours worked greater or less than 40 hours by age and gender respectively.

As expected, the younger age groups work greater than 40 hours and from 60 years onwards the hours begin to reduce (less than 40 hours). The males aged 30-55 years tend to work the greater proportion of over 40 hours per week, while female specialist clinical hours tend to be less than 40 hours throughout the age ranges.

The total specialist hours tend to be greater than the clinical hours for both males and females between the ages of 35-60 years, while it shifts between the ages of 65-79 where both the clinical and non-clinical (total) specialist hours reduce.

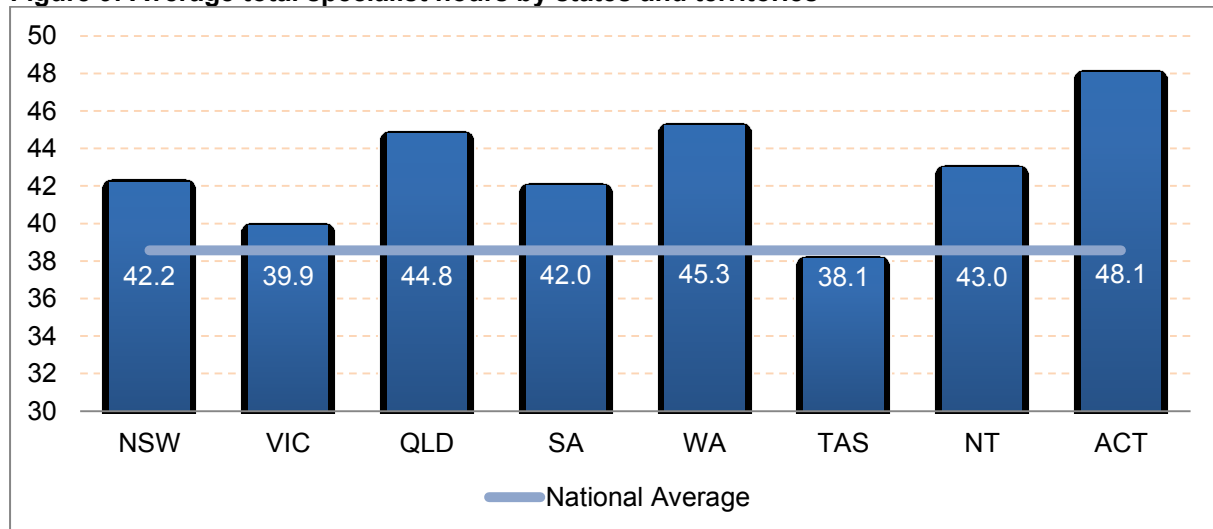
Figure 8: Total specialist and clinical specialist hours difference from average hours by age groups and gender, 2016



Source: NHWDS, Medical Practitioner 2016

The average total specialist hours worked by state and territory is shown below (Figure 9). There is around ten hours' variation between jurisdictions: specialist ophthalmologists in the ACT, WA and QLD tend to work more than the national average (38.6 hours), while those in TAS tend to work less than the national average.

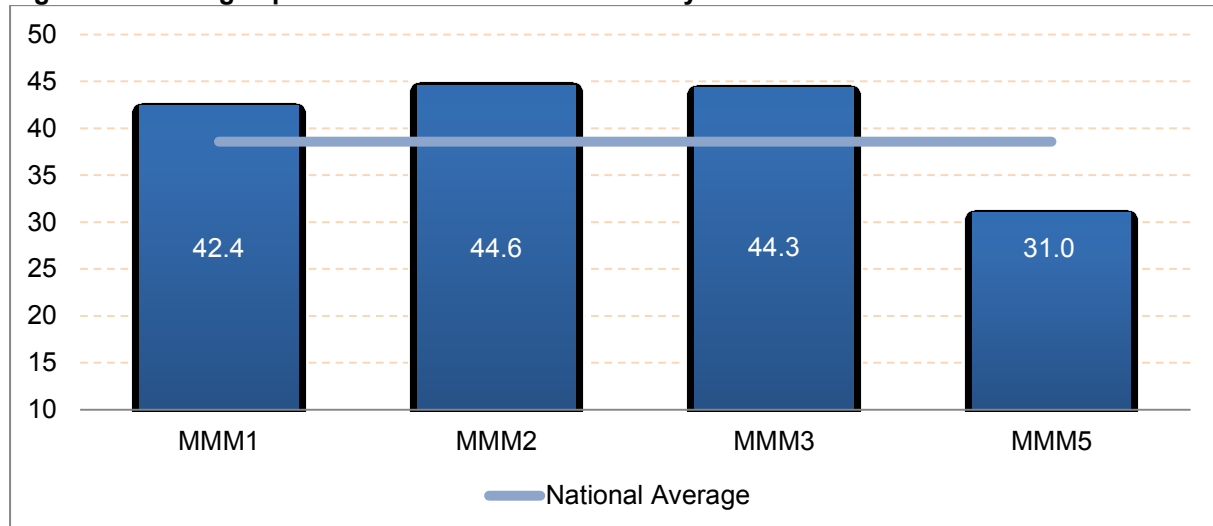
Figure 9: Average total specialist hours by states and territories



Source: NHWDS, Medical Practitioner 2016

Figure 10 shows that there is very little variation in the total specialist hours worked by the majority of specialist ophthalmologists who work in metropolitan and regional areas (MMM1 – MMM3). A small number of specialist ophthalmologists work in remote areas (MMM5) and they tend to work the lowest specialist hours on average.

Figure 10: Average specialist clinical hours worked by Modified Monash Model



Source: NHWDS, Medical Practitioner 2016

Table 2 indicates specialist ophthalmologist clinical workload between sectors and jurisdictions. The data shows, nationwide, the majority of specialist ophthalmologists FTE is spent in the private sector (84 per cent) with 16 per cent in the public sector. TAS had the highest proportion of clinical FTE in the private sector (91 per cent) while the NT had the lowest (22 per cent). The majority of specialist ophthalmologists are located in the highly populous states of NSW, VIC and QLD and proportionally less in lower populous territories such as NT, ACT and TAS.

Table 2: Ophthalmology specialist clinicians (headcount and sector: proportion of specialist clinical FTE in public and private) by state and territory

State and Territory	Headcount	Specialist clinical FTE	
		% Public	% Private
NSW	289	10.7	89.3
VIC	188	20.4	79.2
QLD	121	12.3	87.7
SA	51	22.9	77.1
WA	57	19.4	80.6
TAS	18	9.5	90.5
NT	5	77.6	22.4
ACT	9	35.9	64.1
Total	738	15.6	84.3

Source: NHWDS, Medical Practitioner 2016

Current trainees

Fellowship program

The RANZCO is the medical college responsible for the training and professional development of ophthalmologists in Australia and New Zealand.

To be eligible to enter the RANZCO training program registered medical practitioners must have completed 24 months in prevocational training (PGY1 and PGY2 years).

RANZCO training comprises:

- Basic training
 - o 2 years of basic training during which trainees must demonstrate integrated clinical skills and knowledge in the Ophthalmic Sciences (OS) and the Ophthalmic Basic Competencies and Knowledge (OBCK).
- Advanced training
 - o 2 years of advanced training during which trainees are expected to demonstrate integrated knowledge, clinical and surgical skills as documented in the clinical standards.
- Final year training
 - o A final year during which the trainee develops their specialist experience in preparation for specialist qualification and to function in the community as an independent general ophthalmologist.

Prior to applying for Fellowship of the College, trainees must meet the research requirement in Evidence-based Ophthalmic Practice.

A Specialist International Medical Graduate (SIMG) wanting to gain recognition as a specialist ophthalmologist in Australia must apply directly to RANZCO for assessment. Applications are made by submission of documents, including primary source verification of their relevant medical qualifications sought via the Australian Medical Council. The assessments are conducted by RANZCO's SIMG Committee which is made up of nine Fellows of the College and an external member. There are six stages in the assessment process:

- Stage 1: college staff assembles full documentation;
- Stage 2: SIMG Committee reviews documentation;
- Stage 3: SIMG Committee interview the applicant (including medico legal status);
- Stage 4: if required, SIMG's knowledge is further assessed by performance in RANZCO examinations (RACE - one or both components)

- Stage 5: if required, clinical skills are then assessed by performance in supervised assessment; and
- Stage 6: final interview by the SIMG Committee.

At Stage 2 in the process, an interim decision on comparability is made:

- SIMG applicants are deemed substantially comparable, pending interview, if their training, qualifications and experience are considered comparable to an ophthalmologist trained and qualified in Australia. Following the interview, RANZCO recommends specialist recognition to AHPRA, and the applicant is eligible to apply for RANZCO Fellowship (in some cases the applicant may be required to undergo a period of oversight before being eligible to apply for Fellowship);
- SIMG applicants are deemed partially comparable if the SIMG Committee has identified gaps in their knowledge or experience. The applicant is required to undertake further assessment or training, Stages 4 and 5, and if performing satisfactorily he/she proceeds to final interview, Stage 6. If successful in interview, the applicant is eligible to apply for Fellowship (in some cases the applicant may be required to undergo a period of oversight before being eligible to apply for Fellowship); or
- SIMG applicants are deemed not comparable if the SIMG Committee identifies gaps in their knowledge or experience which would require more than 24 months of specialist training in order to mitigate.

Decisions about comparability are made in accordance with attainment of the clinical curriculum areas, which underpin the practices of a general ophthalmologist in Australia³.

Trainee data

The NHWDS data is used to describe trainees (those that have identified as specialist-in-training [SIT] [Appendix 3]). For the purposes of modelling, the Department has used a combination of data from the RANZCO and the NHWDS: Medical Practitioner 2016 survey, noting that there are variances between these data sources. This is largely due to the self-reported nature of the medical workforce survey dataset and timing differences.

In comparison to the RANZCO data, the 2016 medical workforce survey data reported 12 fewer (nine per cent) ophthalmology trainees. There are a number of reasons for this, including that not every practitioner fills out the survey, they are not indicating that they are undertaking ophthalmology training, and each data set has a different collection time point/cut-off, which will affect the number of trainees counted in a given year.

The number of trainees by training level is also collected through the Medical Education and Training (MET) data collection each year from medical colleges and reported on in data tables. There are differences in the numbers in this report and the MET as the latter captures the number of trainees as at 30 June each year.

Trainee demographics

The following tables make comparisons with the data supplied from RANZCO and that from the NHWDS. Data supplied by RANZCO provides the total number of trainees by training level by state and territory for 2016. This data does not go into the part time training and/or other leave provisions of trainees.

³ MTRP 19th Report

Table 3 includes all trainees from basic training to advanced training; in 2016 there were a total of 146 trainees.

Table 3: Trainees (Headcount) by training level, age group

Age	Basic	Advanced	Final	Total
25-29	7	1		8
30-34	43	53	4	100
35-39	15	3	13	31
40-44	1	0	4	5
45-59	0	1	1	2
Total	66	58	22	146

Source: RANZCO, 2016

In comparison, Table 4 details the trainees by age group, gender and self-reported training year according to the NHWDS. The main trend that can be seen is that, the majority of trainees are within the 30-34 year age group (67.8 per cent males and 51.1 per cent females).

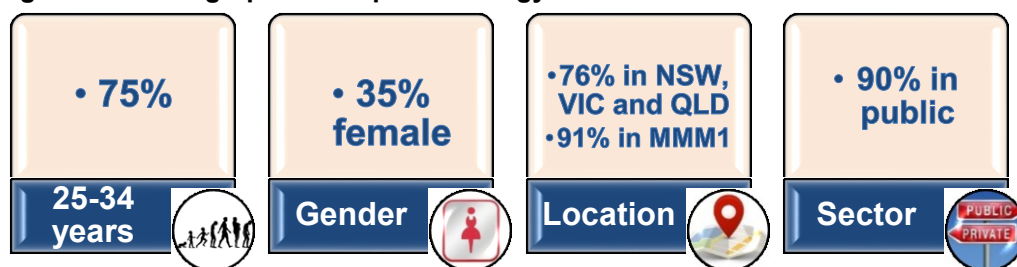
Table 4: Trainees (headcount) by age group, gender and current training year

Age	1st	2nd	3rd	4th	5th	6th	7th	8th	Unknown	Total
Male										
25-29	5	2	0	0	0	0	0	0	0	7
30-34	10	11	14	15	6	1	0	0	2	59
35-39	2	5	2	5	4	0	0	0	0	18
40-44	0	0	0	0	3	0	0	0	0	3
Total	17	18	16	20	13	1	0	0	2	87
Female										
25-29	6	3	2	0	0	0	0	0	0	11
30-34	1	4	5	10	3	0	0	1	0	24
35-39	0	2	1	0	3	0	0	0	0	6
40-44	0	0	0	2	2	0	0	0	0	4
Total	7	9	8	14	8	0	0	1	0	47
Grand Total	24	27	24	34	21	1	0	1	2	134

Source: NHWDS, Medical Practitioner 2016

According to the 2016 NHWDS, there were 134 ophthalmology trainees in Australia, with the following characteristics:

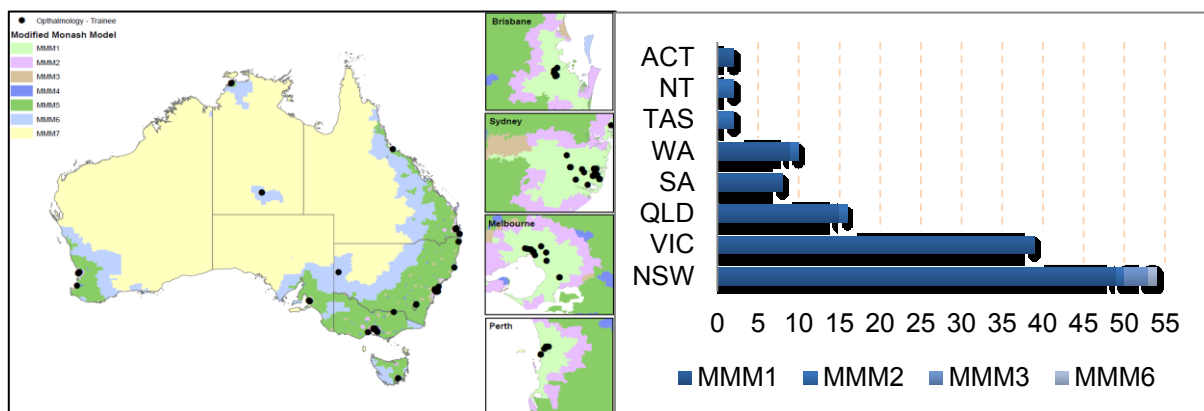
Figure 11: Demographics of ophthalmology trainees in 2016



Source: NHWDS, Medical Practitioner 2016

Figure 12: Trainees by state and territory and MMM outlines the distribution of trainees and shows that most trainees (85 per cent) are located in major cities (MMM1), with nine per cent of trainees in MMM2, three per cent in MMM3 and one per cent each in MMM6 and MMM7.

Figure 12: Trainees by state and territory and MMM



Source: NHWDS, Medical Practitioner 2016

Table 5 details the trainees (FTE) by location, current year of training and sector. Nationwide public sector based traineeships are still the dominant sector at 86 per cent.

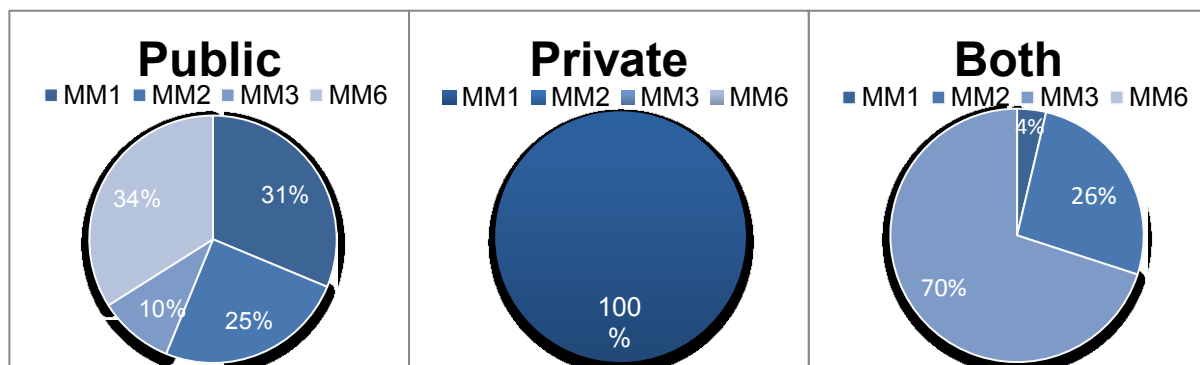
Table 5: Trainee FTE (total hours) by training year and sector

State	Sector	1st	2nd	3rd	4th	5th	6th	8th	*	Total
NSW	Public	10.1	12.4	10.7	14.9	14.7	0.0	1.6	0.0	64.4
	Private	1.1	0.0	0.0	1.3	0.0	0.0	0.0	1.1	3.5
	Both	0.0	1.9	0.0	1.0	0.0	0.0	0.0	0.0	2.9
VIC	Public	9.5	6.0	11.7	8.6	6.9	1.1	0.0	0.0	43.7
	Private	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	1.4
	Both	0.0	1.3	2.0	0.9	0.0	0.0	0.0	0.0	4.2
	Not Applicable	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0
QLD	Public	1.5	3.8	5.3	9.4	2.2	0.0	0.0	0.0	22.2
	Private	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	1.3
SA	Public	0.0	2.9	3.6	3.2	0.0	0.0	0.0	2.1	11.8
	Both	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0
WA	Public	2.3	2.3	1.2	3.4	0.0	0.0	0.0	0.0	9.1
	Both	0.0	0.0	1.3	0.0	1.0	0.0	0.0	0.0	2.3
NT	Public	2.1	1.1	0.0	1.6	0.0	0.0	0.0	0.0	4.8
ACT	Public	0.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0	2.8
Total	Public	14.3	18.3	18.2	23.0	13.4	0.6	0.9	1.2	89.8
	Private	0.6	0.0	0.0	1.4	0.0	0.0	0.0	0.6	2.7
	Both	0.7	1.8	1.8	1.1	1.1	0.0	0.0	0.0	6.4
	Not Applicable	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1

Source: NHWDS, Medical Practitioner 2016, * unknown

The proportion of trainees by MMM (Figure 13) also adds to the view that public sector based training is dominant in all MMM categories. It appears that private sector training is almost exclusively available in regional areas.

Figure 13: Proportion of trainee FTE by geographic distribution



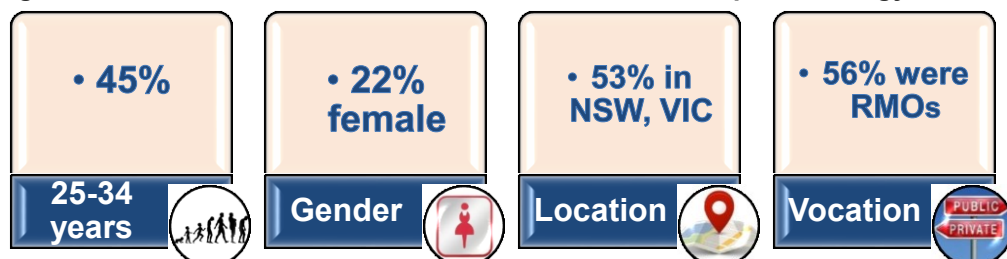
Source: NHWDS, Medical Practitioner 2016

Prevocational intentions

In 2013, new questions were included in the NHWDS Medical Practitioner Survey that identified those who intend to undertake vocational training. The information collected from these questions form part of the future planning process, providing an indicative number of the future intentions of trainees (Appendix 2).

Figure 14 details the characteristics of the 325 hospital non-specialists (HNSs) who indicated their intentions to undertake ophthalmology training, according to the 2016 NHWDS:

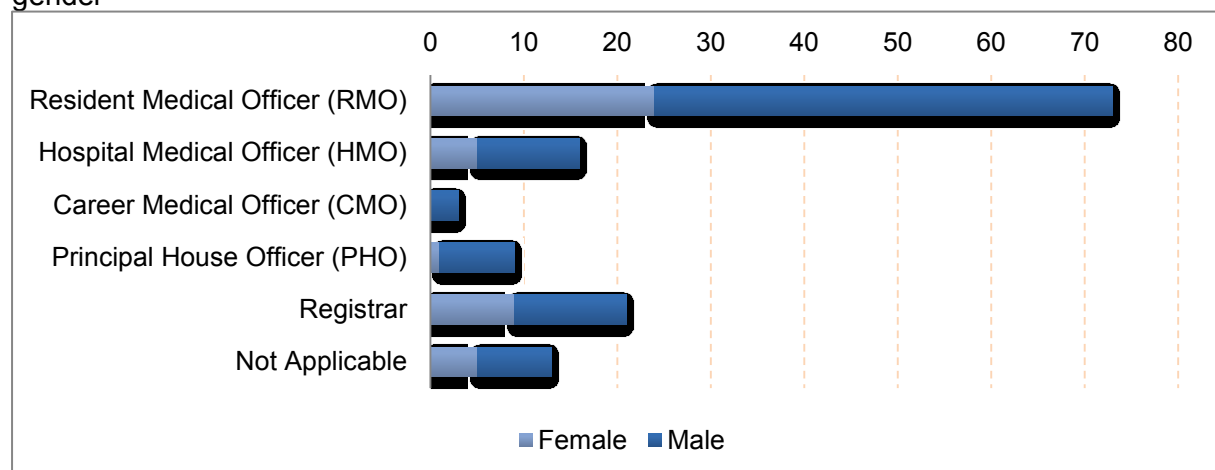
Figure 14: Characteristics of HNSs who intend to train in ophthalmology



Source: NHWDS, Medical Practitioner 2016 (RMOs – Resident Medical Officers)

The primary group of HNSs who intend to undertake ophthalmology training are RMOs, followed by Registrars and Hospital Medical Officers (Figure 15). Unlike the ophthalmology workforce, almost half of those who intended to undertake ophthalmology training were female.

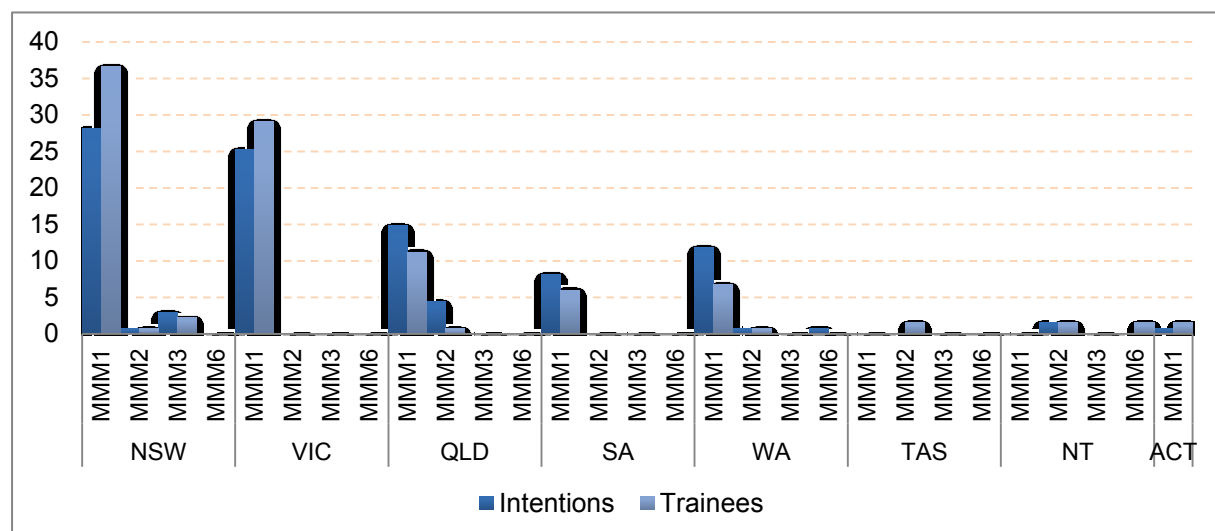
Figure 15: HNSs who intend to undertake ophthalmology specialist training by position and gender



Source: NHWDS, Medical Practitioner 2016

Similar to the location of trainees in Figure 12: Trainees by state and territory and MMM and Figure 13, HNSs with intentions of training in ophthalmology are mostly located in areas similar to current trainees - primarily major cities in NSW, VIC and QLD (Figure 16). Comparatively, there are a large number of HNSs with intentions to train in WA relative to the number of trainees in WA.

Figure 16: Proportion of HNSs with intentions and trainees by geographic distribution



Source: NHWDS, Medical Practitioner 2016

Summary of total workforce by remoteness classification

The following table and figure show the broad summary of the population and remoteness characteristics of the ophthalmology workforce – including the trainees and those who intend to train.

As can be seen, the density (per 100,000 population) of specialist ophthalmologists and trainees is 4.9 in MMM1 areas, 3.3 in MMM2 areas and 4.2 in MMM3 areas. In the more remote areas, the density ranges from 2.8 specialist ophthalmologists and trainees in MMM7 to only 0.2 in MMM5.

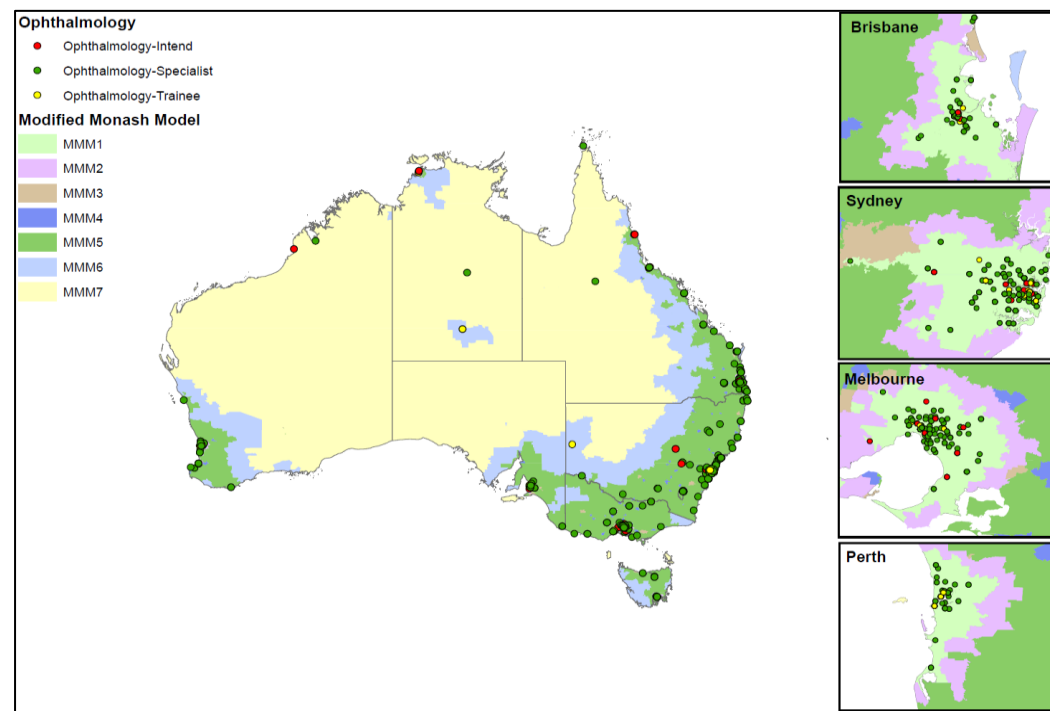
Table 6: Summary of ophthalmology workforce (Headcount and FTE) by MMM

Modified Monash Category	2015 population	Specialists and trainees (headcount)	Headcount per 100,000 population	Specialists and trainees (FTE)	FTE per 100,000 population
MMM1	16,885,670	830	4.9	880.1	5.2
MMM2	2,195,310	73	3.3	79.1	3.6
MMM3	1,543,912	65	4.2	72.8	4.7
MMM4	873,037	5	0.6	5.8	0.7
MMM5	1,779,535	4	0.2	3.7	0.2
MMM6	312,590	2	0.6	2.3	0.7
MMM7	218,161	6	2.8	6.3	2.9
Grand Total	23,808,215	985	4.1	1,050.1	4.4

Note – Trainee FTE is based on clinical hours and specialist FTE is based on total specialist hours.

Source: NHWDS, Medical Practitioner 2016

In Figure 17 the map shows the distribution of the ophthalmology workforce, trainees and those that intend to train within the MMMs – illustrating that much of the workforce and trainees are located within MMM1-MMM3.

Figure 17: Distribution of specialists, trainees and those that intend to train

Source: NHWDS, Medical Practitioner 2016

Shared care models with Optometrists

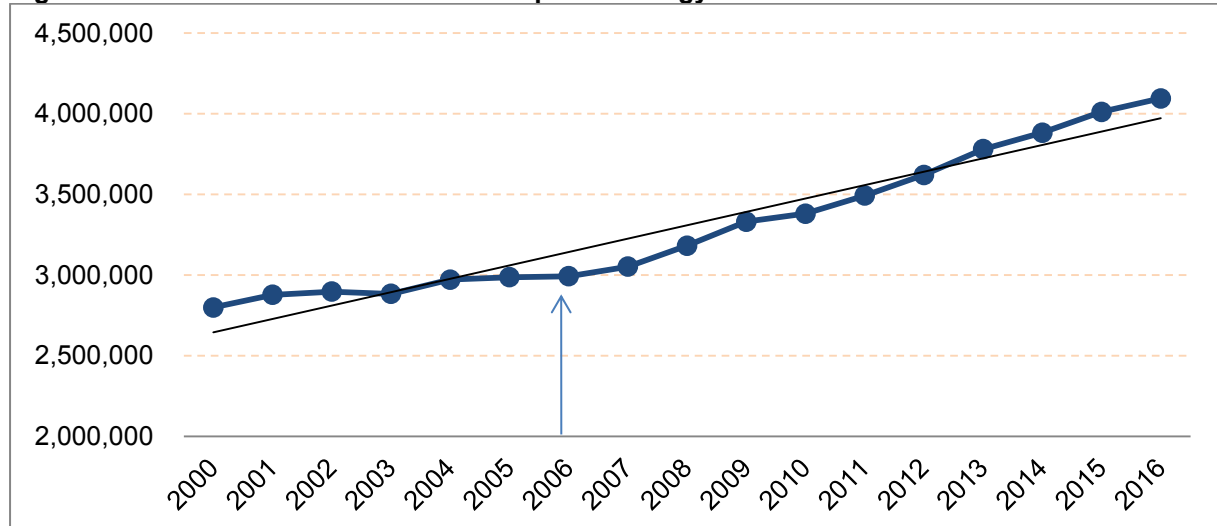
Background

RANZCO has established clinical care pathways for shared care with optometrists in the care of patients with glaucoma, age-related macular degeneration and diabetic retinopathy. RANZCO asked the Department of Health to analyse and model the extent to which these

changes have or will transfer work to optometrists, and thus reduce the demand for ophthalmology services.

The available Medicare data shows that there has been no noticeable decline or even slowing of growth in ophthalmology services.

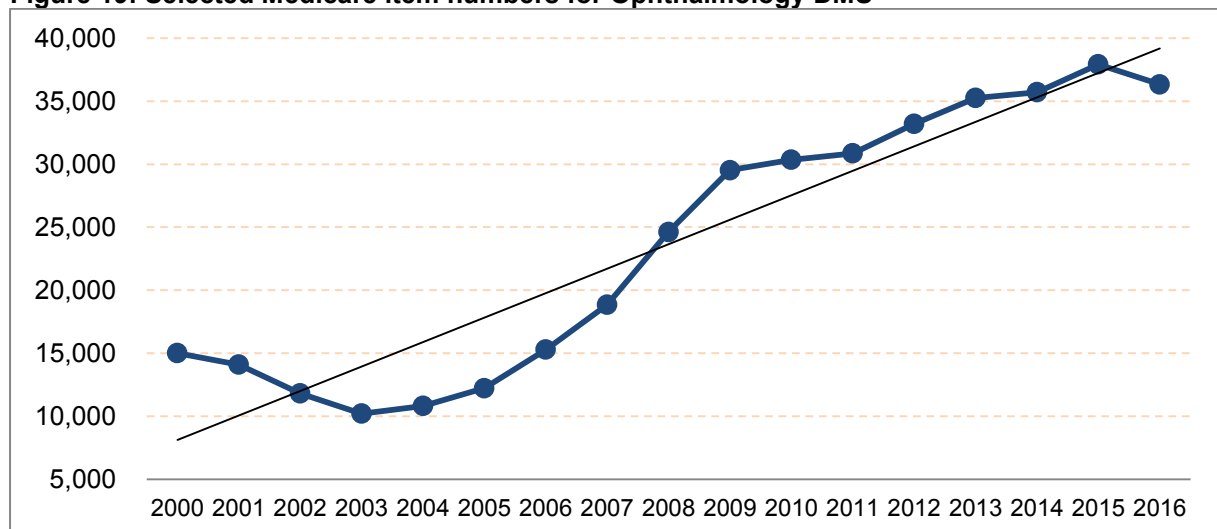
Figure 18: All Medicare items related to Ophthalmology services



MBS services as define by Derived Medical Specialty – Ophthalmology

The above graph shows that ophthalmology services are growing at 3.12 per cent per annum. From 2006, growth in services has actually been accelerating. The four-year growth rate has been between 3 and 3.5 per cent since 2011 (covering the period 2007 to 2011).

Figure 19: Selected Medicare item numbers for Ophthalmology DMS



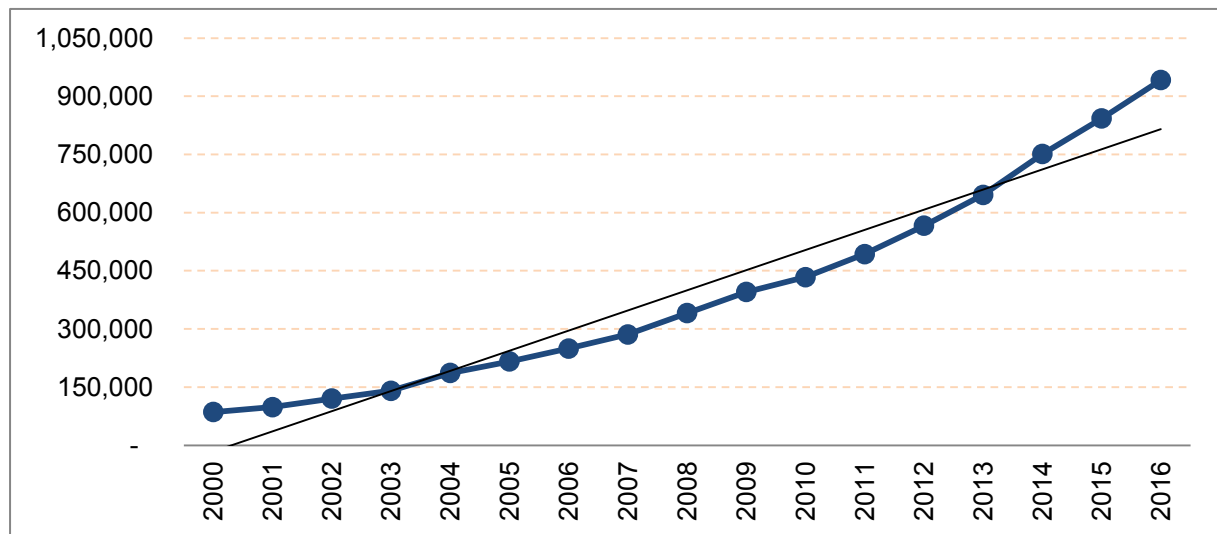
The graph above refers to: Selected Medicare item number - ('42752', '42744', '42746', '42749', '42752', '42782', '42794', '42755', '42770', '42783', '42764', '11200', '11222', '11225', '11203') related to glaucoma services for Derived Medical Specialty – Ophthalmology

The demand for glaucoma services for ophthalmologists is growing on average 2.29 per cent per annum. The overall demand rate for ophthalmologists was 2.8 per cent. This shows that there has not been any decline in glaucoma services by ophthalmologists, which could reasonably be expected to occur by 2030. The reduced growth rate in services for these items has been factored into the forecast growth rate.

When looking at the historic data for ophthalmology, the growth from 2012 to 2016 was at 3.12 per cent. This means that, regardless of any substitution which is occurring, there is a

demand (from a Medicare perspective) for approximately 3.2 per cent extra ophthalmologists per year.

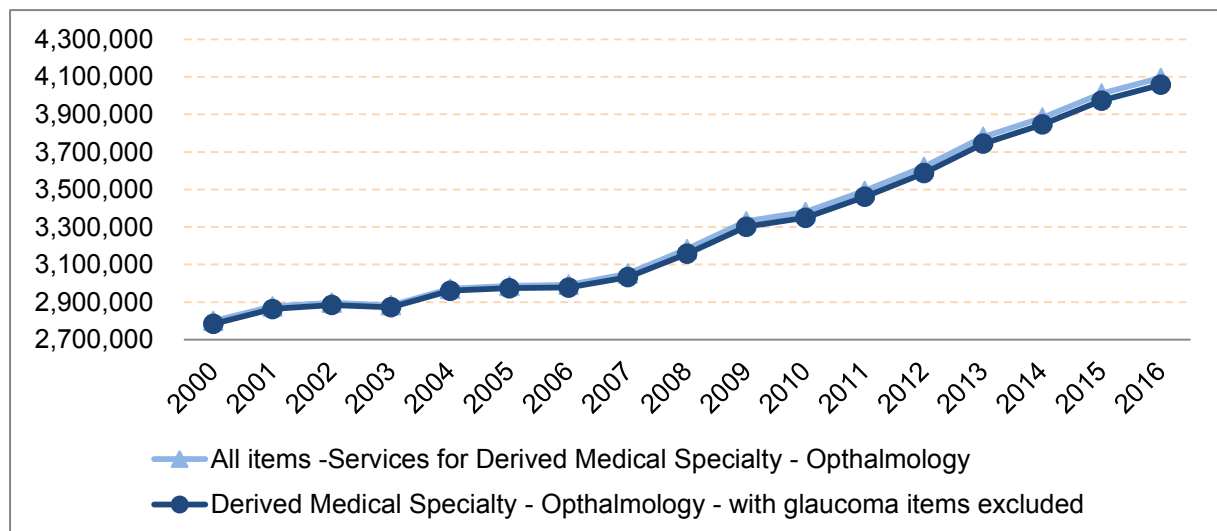
Figure 20 : Optometry items (10914, 10915 and 10944) for progressive disorders showing a high rate of growth



MBS services as define by Derived Medical Specialty – Ophthalmology

Optometry items are growing rapidly and there is no evidence of task substitution as there is no recent or noticeable decline in the growth rate for ophthalmology services. In addition, the selected Medicare items related to glaucoma services are only a small percentage of overall ophthalmology services.

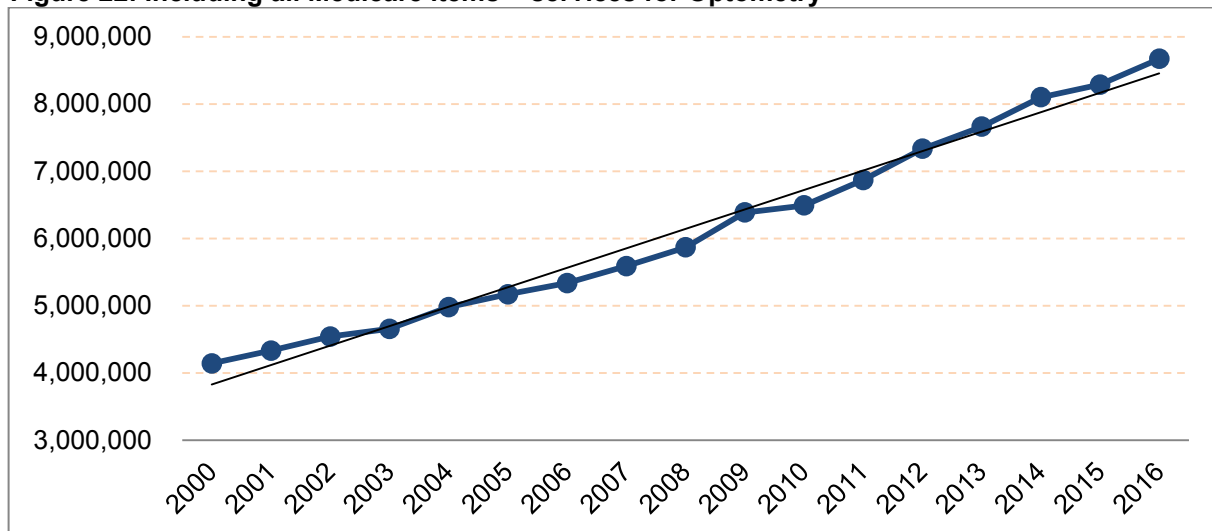
Figure 21: All items for Ophthalmology vs All items excluding items indicated for glaucoma



MBS services as define by Derived Medical Specialty – Ophthalmology

In 2016, there were over four million Medicare services delivered by ophthalmologists. Items usually used for patients with glaucoma were approximately 36,000 of those services.

Optometry services are growing at around 4.28 per cent per annum, which is comparable to ophthalmology. At this point, the data seems to show that both professions are serving an increasing population and experiencing steady growth. This fits with the facts of an ageing population; increasing rates of eye disease, such as diabetic retinopathy, and the availability of new treatments, such as for macular degeneration.

Figure 22: Including all Medicare items – services for Optometry

MBS services as define by Derived Medical Specialty – Ophthalmology

The growth rate for ophthalmology over the period (2011-2016) actually increases, when glaucoma items are excluded from demand, signifying that glaucoma-related services have a lower growth rate on average and contributes a small proportion of the total ophthalmology demand.

Based on Medicare items examined, there appears to be no substitution occurring which would have a significant impact on future demand.

Workforce projections

The approach to modelling supply and demand can be found in Appendix 1.

The initial year for the projections is 2016 where it is assumed that supply and demand is in balance. The demand rate for ophthalmology is estimated to grow at 2.8 per cent based on historical utilisation patterns. The inflow of new fellows uses the results from the trainee analysis pipeline (below), while the SIMG new fellows are assumed to remain static over the same time period.

The dynamic scenario and the corresponding balancing scenario have been modelled for the ophthalmology workforce. This was based on considering the two different options for new intakes into the training program – dynamic and static intake. These pipeline analyses can be found in Table 11 and Table 12. Based on historical trends, the dynamic scenario was used as the key scenario to conduct modelling on.

Sensitivity

The results presented are sensitive to changing assumptions; in particular, towards changes in the exit rate and changes to the number of new college fellows.

Interpretation of results for workforce position

It is acknowledged that workforce supply and demand modelling is not an exact science and relies on various assumptions holding true. It is recommended that the final workforce position be interpreted with an error margin of ± 3 per cent. That is, if the workforce is

projected to be in under or over – supply to the magnitude of 3 per cent or less, then the workforce is considered to be in balance.

Scenarios

The following projections are based on total specialist hours which incorporate both clinical and non-clinical (clinical support) hours (D) worked in ophthalmology. Modelling has been historically conducted using total clinical hours; however, due to feedback from stakeholders and improvements in data quality, total specialist hours are now used (as outlined in the hours worked section on page 8).

The RANZCO advised a slight amendment to the new intake number of trainees in 2018, which shifted from 29 new trainees to 31 new trainees (see Table 11). This has been reflected in the pipeline and the three per cent growth has continued with the increase in the new intake for 2018 (see Table 10).

Scenario 1: Dynamic intake scenario

This scenario uses the dynamic pipeline and assumes that the new intake number of trainees grows at three per cent each year based on historical trends. This results in a two per cent growth of new fellows per annum over the projection period. The projections indicate that the workforce would be in slight undersupply during the projection period. By 2030, the deficit accumulates to approximately 5.5 per cent of the required number of ophthalmologists.

Below in Table 7, supply (headcount) refers to the existing ophthalmology workforce supply and the number of new fellow supply projections. The Health Workforce Planning Tool (HWPT) assumes that the hours worked by each age cohort remain unchanged over time; therefore, the excess/shortfall in FTE by 2030 is also included. In the case of the ophthalmology workforce, it is evident that the hours remain constant throughout the age groups, resulting in the same gap in headcount and FTE.

Table 7: Dynamic intake scenario

	2016	2018	2020	2025	2030
Supply (Headcount)	896	944	1,036	1,107	1,227
Supply (FTE)	939	989	1,069	1,130	1,239
<i>New fellows</i>	23	24	27	30	34
<i>Overseas trained new fellows</i>	12	12	12	12	12
<i>Exits (% of supply)</i>	1.26%	1.27%	1.51%	1.59%	1.75%
Demand (Headcount)	896	947	1,063	1,151	1,295
Demand (FTE)	939	992	1,097	1,176	1,307
Excess/Shortfall	-	-3	-27	-45	-68
Excess/Shortfall (FTE)	-	-3	-28	-46	-68

Legend:

No perceived shortage	In balance ($\pm$ 3 per cent)	Only a slight perceived shortage	Perceived shortage
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Scenario 2: Balancing dynamic intake scenario

The following scenario indicates the effects of balancing the workforce; that is, attempting to bring supply and demand to equilibrium. This results in the supply increasing in order to meet the demand of ophthalmology services into the future (2030).

In scenario 1 above, the deficit of 68 ophthalmology fellows has been accumulated over the 14 year projection period (2016 – 2030). Changes could only occur to the training intake from 2019 and these additional new fellows would only start to flow through from 2023. To achieve a balance in the workforce over the seven years (2023 – 2030) period, this would require the intake to increase from three per cent each year, to 8.7 per cent each year across 2019 to 2030. In 2018, there were 31 new trainees, with this projected to be

increasing by 8.7 per cent per annum from 2019. An increase of 8.7 per annum results in 34 new trainees. Taking this forward to 2030 results in an increase of 63 new trainees.

Table 8 shows the result of a workforce which is in balance (± 3 per cent).

Table 8: Balancing dynamic scenario

	2016	2018	2020	2025	2030
Supply (Headcount)	896	945	1,037	1,110	1,278
Supply (FTE)	939	990	1,070	1,134	1,291
New fellows	23	24	26	34	49
Overseas trained new fellows	12	12	12	12	12
Exits (% of supply)	1.26%	1.27%	1.51%	1.59%	1.68%
Demand (Headcount)	896	947	1,063	1,151	1,294
Demand (FTE)	939	992	1,097	1,176	1,307
Excess/Shortfall	0	-2	-26	-41	-16
Excess/Shortfall (FTE)	0	-2	-27	-42	-16

Legend:

No perceived shortage	In balance (± 3 per cent)	Only a slight perceived shortage	Perceived shortage
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The table below shows the difference between the dynamic and balanced scenarios, in relation to the additional new trainees required and resulting new fellows. It shows the additional new trainees required each year to achieve a balanced workforce by 2030. Taking into account the new intake and the transitions calculated through the training analysis pipeline, these are flowed through and the resulting additional new fellows are shown in the table. For example, in 2023 an additional 12 new trainees are required (which take the original headcount of 35 to 47).

Table 9: Difference between scenario 1 and scenario 2

Difference	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
New intake	2	4	6	9	12	15	18	19	19	20	20	21
% increase in new intake	6%	12%	19%	26%	33%	41%	49%	49%	49%	49%	49%	49%
Domestic new fellows			0	0	1	3	5	7	9	12	14	16
% increase in domestic new fellows			0%	0%	5%	10%	16%	23%	30%	37%	43%	46%

Training Analysis Pipeline (TAP)

The purpose of the training analysis pipeline is to project future vocational training numbers entering the training program as a basis for forecasting the number of domestic and SIMG new fellows as inflows into the workforce. Table 10 shows the predicted movement of trainees from entering the college training program right through to becoming a new fellow (domestic or SIMG). The methodology focuses on moving through the training levels (which accounts for part-time and interrupted trainees) rather than on transitioning on a yearly basis. It is based on historical movements that have been calculated using the RANZCO data. In the future, when data over more time points have been collected from the RANZCO, more accurate transition rates can be calculated. The transition rates in Table 10 are data driven and calculated from the changes between two time points (2014 and 2015 RANZCO data) in particular. These rates are then consistently applied to pipeline trainees and SIMG. These results are shown in Table 11 and Table 12.

Table 10: TAP transition calculations

Movements	Per cent	Comments
New intake (dynamic)	3%	2013-2015 average annual increase
New intake (static)	27	Held constant at average of 2010 – 2015
Basic Training to Basic Training	7%	
Basic Training to Advanced Training	93%	
Advanced Training to Advanced Training	55%	
Advanced Training to Final Training	45%	
Final Training to Final Training	30%	
Final Training to New Fellow	70%	
Retention rate	98%	Basic Training
	97%	Advanced Training
	98%	Final Training
Through rate	90%	If everyone FT and complete in 60 months
	83%	Actual (incorporates PT, waiting for rotation etc.)
SIMG new fellow	12	Held constant at average of 2011 – 2015

Table 11 below shows the TAP method for the dynamic new intake each year. This TAP shows an increase of the new intake each year of three per cent based on the average annual increase in new intake observed over the prior three years. This results in a total of 600 new fellows over 2016 – 2030.

Table 11: Dynamic intake scenario TAP, 2010 – 2030

Training program	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
New intake	25	26	28	25	26	27	28	28	31	32	33	33	34	35	36	37	38	39	40	41	42
Basic trainees (YR1 & YR2)	30	27	27	28	30	28	30	30	33	34	35	36	37	38	39	40	41	42	43	44	45
Advanced trainees (YR3 & YR4)	45	86	80	90	57	57	56	57	58	61	64	66	68	70	71	73	75	77	79	81	83
Final trainees (YR5)					30	34	35	35	36	36	38	39	41	42	43	44	46	47	48	49	51
Total trainees	100	139	135	143	143	146	148	151	158	163	169	174	180	185	190	195	200	205	210	216	221
Domestic new fellows		19	25	24	28	24	23	24	24	24	25	26	27	28	29	30	31	31	32	33	34
SIMG new fellows		10	13	12	13	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Total New Fellows	26	29	38	36	41	35	35	36	36	36	37	38	39	40	41	42	42	43	44	45	46

Legend:

MTRP	College data
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Table 12 below shows the TAP method for the static new intake each year. This TAP holds the new intake at 27 each year (average for 2010 – 2015) constant over the period. This results in a total of 580 new fellows over 2016 – 2030.

Table 12: Static intake scenario TAP, 2010 - 2030

Training program	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
New intake	25	26	28	25	26	27	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
Basic trainees (YR1 & YR2)	30	27	27	28	30	28	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
Advanced trainees (YR3 & YR4)	45	86	80	90	57	57	56	60	62	63	64	64	65	65	65	65	65	65	65	65	65
Final trainees (YR5)					30	34	35	35	37	38	39	40	40	41	41	41	41	41	41	41	41
Total trainees	100	139	135	143	143	146	155	159	163	166	168	169	169	170	170	170	170	170	170	170	170
Domestic new fellows		19	25	24	28	24	23	24	24	25	26	27	28	28	28	28	28	28	28	28	28
SIMG new fellows		10	13	12	13	11	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Total New Fellows	26	29	38	36	41	35	35	36	36	37	38	39	39	40	40	40	40	40	40	40	40

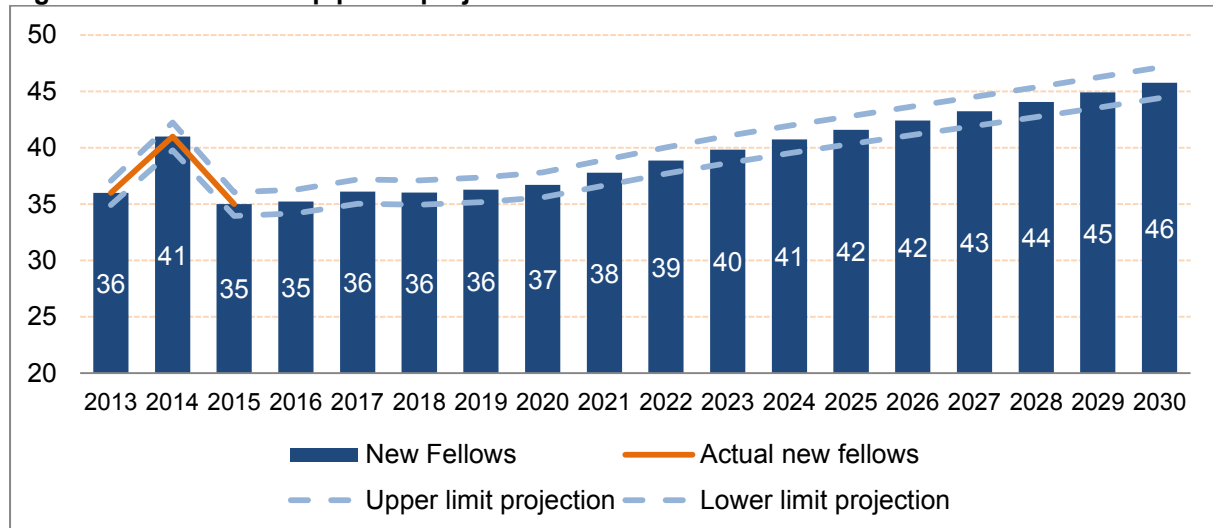
Legend:

MTRP	College data
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Results of pipelining

Figure 23 shows the historical number of new Fellows (2013 to 2015) and the projected number of new Fellows, based on the above transition rates. A lower and upper limit of $\pm$ three per cent has been included to show the range of the future projection of new fellows (domestic and SIMGs).

Figure 23: New Fellows pipeline projections



Source: MTRP reports, RANZCO data and TAP projections

Capacity and Distribution for Training

Vocational medical training is undertaken by most medical practitioners. Graduate numbers are only one component of the medical education pathway. The vocational medical training pipeline analysis highlights that, based on the existing demand for specialist services being carried forward (and other factors such as the number of expected graduates and a continued migration flow being held constant), there will be more medical practitioners seeking a vocational training position than places available.

Training capacity also impacts on vocational medical training. It recognises training capacity pressures are increasing as the larger cohorts of medical graduates move from intern to prevocational to vocational training positions. This is reflected in the 37 per cent increase in vocational training positions, with 15,478 in 2011 moving to 21,224 by 2016, with unclear links to future workforce requirements and the continued reliance on IMGS placing additional burden on the training capacity of the system.

The Department has continued to support the initiative to expand training capacity through the commitment to continue funding for the Specialist Training Program (STP), which provides funding for specialist training positions in expanded settings.

The STP provides funding for up to 1077 ongoing positions in 2018. These numbers include the 100 dedicated rural training positions under the Integrated Rural Training Pipeline Initiative. The program funds between 5 and 7 per cent of all specialist training positions nationally and is currently funded through 13 specialist medical colleges under standard funding agreements with the Department for the 2018 – 2020 period.

Responsibility for funding and organising vocational training lies with many parties: jurisdictions (for post-graduate and specialist training in the public sector) and Colleges (who operate Australia and New Zealand wide). To add to the complexity, medical practitioners will often cross jurisdictional, sectoral, specialty college and international boundaries throughout their training pathway. As a result of the division of responsibilities and the potential myriad of individual medical practitioner's pathways, imbalances in the vocational

training pipeline are complex to manage and resolve, and will require partnerships between governments, employers, the College and professional bodies.

The process of gaining a vocational training position in ophthalmology is highly competitive, with training provided through the RANZCO. The vocational medical training pipeline enables the number of training positions required under various scenarios to be modelled. It provides a representation of the medical workforce from the graduate level through to ophthalmology specialty Fellowship. The model draws together the known flows and inter-dependencies at each stage of the medical education and training pipeline in a dynamic, system wide projection of each component over the period to 2030.

Results of consultation

The Department is aware that supply and demand studies are an inexact science, and understanding the current situation and future scenarios can be challenging. Therefore, the Department consulted with both the training RANZCO and the professional association on the report.

The following section presents the views from the College and a jurisdictional perspective of ophthalmology from a more local level. The different views below highlight the need to update the modelling on a regular basis to ensure the latest data and understanding of the workforce is reflected in the studies.

Ophthalmology College views

Supervisory capacity requirements

The RANZCO has indicated the following:

- Adequate supervisory capacity is important - especially for more junior trainees. If this is best done in public hospitals, then sufficient funding and resources are needed to acquire specialist supervisory time to direct and supervise trainees and complete required reporting.
- There is difficulty in meeting the minimum supervision required for accreditation which is four supervised clinics and two supervised lists per week per trainee with access to appropriate equipment and administrative support. Each trainee requires access to the various areas of ophthalmology practice (rather than sub specialties which are generally not recognised in the ophthalmology scope of practice) and city and provincial experience through the course of their training.
- Reporting requirements are a key aspect of ensuring the quality of training and require concerted efforts and support from the jurisdiction and College. Appropriate measures are needed to balance administrative obligations with the supervisor's service delivery.
- Supervisors themselves need continued professional development of a 'train the trainer' and skills to develop 'soft skills' that are hard to develop; that is, communication and professionalism.

Identify non-workforce based requirements and limitations

The RANZCO has indicated the following:

- An appropriate balance needs to be struck between teaching and delivering services.
- Access to essential ophthalmic equipment to allow for the appropriate assessment and management of patients.
- Access to teaching sessions with dedicated tutorial time.
- Leave for study and examinations as required.
- Accommodation supplements for those on 'out-of-town' rotations.
- Rural and remote workforce needs a satisfactory locum arrangement.

Mapping of training capacity

The RANZCO has indicated the following:

- Beyond listing the trainee posts and trainee numbers in each location and the accredited training rosters in each, it is difficult to assert a perfect alignment between supply and demand of training. There is also likely to be under-utilised capacity in some posts, at given points in time throughout the year.
- There is no current formalised training of supervisors and tutors and no clarity on who appoints a supervisor (see above section on supervisory capacity requirements).
- There is greater potential for ophthalmologists who are willing to be tutors and supervisors and can offer suitable posts for accreditation with appropriate administrative support and hospital funding. Each state and territory qualification and education committee would determine if they have under-utilised capacity.
- There is agreement that the main areas of need are regional and remote ophthalmology, paediatric ophthalmology and public sector. There is ready access to private, adult ophthalmology in major cities.
- There is also a need for more Indigenous trainees who may be better able to service their communities (regardless of their location – remote or urban) – introducing a points system in the selection process to facilitate increase in Indigenous trainees may be an option for future consideration.
- While the evidence still needs to be examined there are potential ways in which mal-distribution could be evaluated – through a scholarship pathway for regional and remote trainees, which:
 - o Create a points system at selection so that those who grew up (and/or currently live) in remote or rural locations receive bonus points to maximise the Rural Bias Effect (RBE).
 - o Encourage formal rural/remote 5th year posts with a focus on general ophthalmology and enhancing skills such as glaucoma surgery, oculoplastics and paediatrics in the vocational training places.
 - o Consider a rural stream in Ophthalmology training with a greater emphasis on rural/remote rotations.
- Ensure access to a locum service to provide relief for those working in smaller centres as difficulties in finding a resource to support them may act as a disincentive.
- Promote the development of employment packages that are attractive enough to encourage any substantially comparably trained specialist (Australian or otherwise) to consider lifestyle reasons to take on a rural or remote role.
- Promote work/life balance by addressing logistical issues that systemically prevent part-time posts or allow for interruptions to study.

Specialist Training Program

The RANZCO has indicated that:

- STP posts for RANZCO increased from 12 FTE to 15 FTE in 2018, as per STP review recommendations.
- The timeliness of training post accreditation to increase the sites under RANZCO's auspices is reliant on resources already in high demand.
- It is a highly competitive process for applicants to enter the STP pathway, where there is a high barrier to entry placed on applicants to the STP to demonstrate their capacity and capability for a decision of educational merit for their site.

Ophthalmology jurisdictional views

Jurisdiction specific questions

There were four jurisdictions that provided input into this jurisdictional perspective, with some very similar experiences and others less severe in comparison. There are a number of strategies that have been identified to address the situations unique to each of these jurisdictions.

1. Is the speciality in under or over supply from a state/territory perspective?	
Victoria point of view	Programs or strategies to address the situation
Considers there to be a significant undersupply and geographic distribution issues.	
Western Australia point of view	Programs or strategies to address the situation
- In 2015, Ophthalmology supply in WA was below demand with a medium risk shortfall identified projected to increase to a critical shortfall risk by 2021. - Current data suggests that the discipline is now balanced. - The number of ophthalmologists working in the WA public sector is equivalent to 7.08 FTE mostly on a 1-2 session basis. While ophthalmologists are working across the private system and all public sites including Child & Adolescent Health are working on average 0.96 FTE clinically and 0.17 non-clinically.	This discipline will be carefully monitored due to the reported data differences between 2015 & 2018 and make comparison with the current Commonwealth Ophthalmology project.
South Australia point of view	Programs or strategies to address the situation
	There has recently been approval for one extra trainee per three years in SA.
Northern Territory point of view	Programs or strategies to address the situation
Overall there is an undersupply.	Fly In/Fly Out (FIFO) Ophthalmologists and ongoing optometrist presence.
Australian Capital Territory point of view	Programs or strategies to address the situation
Increasing demand and lack of some subspecialty cover at all, e.g. paediatrics, and glaucoma, and patchy cover in retinal.	Current developing proposal for future planning, and interim strategy.

2. Is the specialty over or under supply from geographical perspective?	
Victoria point of view	Programs or strategies to address the situation
- Very high reliance on FIFO model for rural locations but the extent of this is not possible to determine due to data limitations. - Gippsland has fewer ophthalmologists per head of population (by main job location) as Melbourne and Hume and Loddon-Mallee. - Average waiting times for ophthalmic surgery in the public sector is 36 days, but ranges from six days to 173 days, as of December 2017.	

2. Is the specialty over or under supply from geographical perspective?	
Western Australia point of view	Programs or strategies to address the situation
- In 2015, although only 10 per cent of specialists had a rural location as their principal place of practice, another 15 per cent were registered as providing services to metropolitan and rural areas in WA. Rural Health West facilities ophthalmology specialists to visit and deliver services to rural communities in WA through the Medical Specialist Outreach Assistance Program. - The 2016 APHRA survey results showed that 82 per cent of ophthalmologists within this particular jurisdiction indicated a metropolitan base for their practice, with 18 per cent having a base in regional and remote areas.	Continued monitoring.
South Australia point of view	Programs or strategies to address the situation
Under supply geographically as with all specialities.	
Northern Territory point of view	Programs or strategies to address the situation
- There is significant maldistribution. - In one location there is sufficient supply however patients in regional towns may be required to travel huge distances to access services. - While in another location there is an undersupply due to unsuccessful recruitment activity for the past two years.	Establishing a stand-alone service provision space which will improve the maldistribution of delivery of eye services.
Australian Capital Territory point of view	Programs or strategies to address the situation
Gross under supply, as there are no other retinal services between Eden and Sydney, all macula and retinal work flows to Canberra.	Understanding costing for running macula work, and view to outsource into the future.

3. Are there any concerns with the training or supervision of the speciality?	
Victoria point of view	Programs or strategies to address the situation
- Concern that there are not enough new trainees to match the numbers retiring. There seems to be a significantly older age profile for this workforce: 30 per cent of the existing workforce is aged over 60 years. - Based on the NHWDS survey, expressed retirement intentions Vic required a minimum of 12 new fellows per year would be required to maintain the current workforce, but the average number of new fellows in the near-term will be closer to 7-8 per annum.	
Western Australia point of view	Programs or strategies to address the situation
In 2015, there were nine vocational trainees in WA. To address projected growth in demand and retirements 6.9 specialists will be required per annum. The 2015 vocational trainee throughput was 1.26 specialists per annum which would be insufficient to replace approaching retirements and meet growth in service and retirement based demand.	

3. Are there any concerns with the training or supervision of the speciality?	
In 2018 the trainee numbers appear to have doubled, but there are still concerns regarding trainee access to supervised surgery and a shortage of supervisors previously highlighted in the 2015 report.	
South Australia point of view	Programs or strategies to address the situation
	As with other specialities, availability of salaried registrar positions and specialists to supervise is a limiting factor.
Northern Territory point of view	Programs or strategies to address the situation
One registrar in Alice Springs which requires two FTE for supervision through the College.	College has been lenient with two FTE supervision requirements.
Australian Capital Territory point of view	Programs or strategies to address the situation
Yes, no glaucoma work, or paediatrics, cataract follow up poorly done, in consistent cover of Vitreo Retinal work.	Bringing cataract follow up back into public sector, view to establish and attract glaucoma surgeon, otherwise good supervision, and operative experience

4. Are you current recruiting overseas for this specialty?	
Victoria point of view	Programs or strategies to address the situation
- No, but 37 per cent of the existing workforce were born in a non-English speaking country. - As of December 2017 no individuals in this specialty have temporary resident (skilled) visas in Vic, according to the most recent available migration data.	
Western Australia point of view	Programs or strategies to address the situation
No, but will be monitoring in WA.	If local supply insufficient or unavailable international medical graduates will continue to be used to address short to medium term shortfalls and meet gaps in service delivery.
South Australia point of view	Programs or strategies to address the situation
	IMGs often fill senior registrar positions.
Northern Territory point of view	Programs or strategies to address the situation
Yes in Central Australia.	
Australian Capital Territory point of view	Programs or strategies to address the situation
No overseas recruitment in ACT.	

5. Are there currently unfilled vacancies in the specialty?	
Victoria point of view	Programs or strategies to address the situation
	Considering prioritising ophthalmology in its forthcoming review of specialist medical training places.
Western Australia point of view	Programs or strategies to address the situation
Currently not aware of any as actual employment is done at more local level in WA; HR system does not indicate any.	Will be monitored.
South Australia point of view	Programs or strategies to address the situation
Nil response	
Northern Territory point of view	Programs or strategies to address the situation
Yes in Central Australia.	Currently advertised but not expecting to get anyone.
Australian Capital Territory point of view	Programs or strategies to address the situation
No unfilled vacancies in ACT.	

6. Are there any innovative models of care in place to address supply or demand of the specialty?	
Victoria point of view	Programs or strategies to address the situation
Shared care models	Shared care models in Vic with diabetic nurses and optometrists.
Western Australia point of view	Programs or strategies to address the situation
Strong support for private sector/public sector integrated educational and operational model in WA.	Regular data and model of care review required; Commonwealth report findings may change this approach.
South Australia point of view	Programs or strategies to address the situation
SA Health currently has a project to develop a recommended statewide model of care for the delivery of same day elective and outpatient adult ophthalmology services.	The project will include consideration of: - Evidence based and best practice models - Growth areas for ophthalmology services such as macular degeneration treatment - Innovative approaches to service delivery. The project is likely to include the consideration of workforce issues and any over or under supply of staffing related to the delivery of Ophthalmology services for same day elective and outpatient services.
Northern Territory point of view	Programs or strategies to address the situation
The ideal service provision will be an increased number of Ophthalmologists occupying fractional appointments in the public system, and providing a mixture of Public-Private service across the Top End.	Planning in progress towards establishing a stand-alone Ophthalmology Clinic at Katherine Hospital; this will aid the continuing presence of Optometrists, and will aid short (day only) operative visits by Ophthalmologists; such a service will increase provision of care closer to home, and will decongest Royal Darwin Hospital.
Australian Capital Territory point of view	Programs or strategies to address the situation
- Yes, outsourcing macula work. - Move of neurophthalmology from inpatient model to outpatient model. - Move from PBS approved injectables to block funding for Avastin.	- Costing of privatised macula work in ACT. - Consideration if funding for Avastin to take burden of PBS.

Appendices

Appendix 1: Summary of modelling inputs

Updating supply and demand

The supply side of the planning equation is determined using the characteristics of the known current workforce and projecting this forward with known and projected trainee inflows and exit trends from the workforce. The demand side uses historical service utilisation patterns and projects these forward based on population growth. It also relies on other factors that have shown to influence the utilisation patterns i.e. funding of specific programs that have either increased or decreased usage of services or seasonal patterns.

Descriptive characteristics of the ophthalmology workforce

The demographic characteristics of the current ophthalmology workforce are outlined as well describing the trainees and those intending to train. It is an important component in understanding the current supply and what is likely to be required into the future.

Capacity

The rapid growth in domestic medical graduates will continue to place pressure on medical training capacity. A significant amount of work has occurred to expand clinical training capacity across professional entry, intern and vocational training levels and additional work is underway to explore internships, however more needs to be done. While there have been recent expansions in medical training in alternate settings, medical training has traditionally been highly concentrated in public hospitals and in particular acute wards. It is important as medical training requirements continue to grow that capacity to expand medical training is considered. Training of registrars in the private sector is possible in a consultative capacity; however the Australian public shows very little enthusiasm for having training registrars operate upon them when they are being treated as a private patient. Changing the attitudes of insurers and patients to allow effective training in Private settings may not be easy.

Distribution

The growth in domestically trained medical graduates also presents an opportunity to distribute domestically trained doctors more effectively both geographically and into the traditionally less popular specialties. It has been argued that changing the distribution of medical training might contribute to an improvement in the distribution of the medical workforce. Based on evidence collected by Australian Rural Clinical Schools, it is proposed that if in the course of their training doctors could spend more time in rural locations or in primary care settings, they may be more likely to stay and practice in those settings.

Modelling inputs

The following information details the inputs that will be used in undertaking the modelling for the ophthalmology workforce. The ophthalmology workforce is defined by those medical practitioners that have an accreditation in ophthalmology and have identified ophthalmology as one of their main specialties of practice by age, gender and average hours worked, along with the number of new fellows and the number of active trainees by year of training.

The following parameters were specified as inputs for the projection modelling:

Flows in

- Workforce stock
- Domestic new fellows
- International new fellows
- Temporary migration (held at a constant total level)
- Skilled migration (exemptions)

Flows out

- Exits from the workforce include all permanent and temporary flows out of the workforce.

Supply assumptions

- Medical practitioners who are registered ophthalmology specialists through the Australian Health Practitioner Regulation Agency (AHPRA) have been identified through the use of the National Health Workforce Data Set (NHWDS), which includes registrants and the workforce survey.
- The ophthalmology workforce is defined as those that:
 - o Are employed (excluding those on leave for more than three months)
 - o Have clinician status
 - o Have specialist accreditation in ophthalmology
 - o Work the most or second most hours in the specialty field of ophthalmology.
- Inputs to the ophthalmology workforce are based on 2016 data and additional data from the RANZCO as required.
- The trainees that have been identified through the workforce survey have been defined through the following methodology, that assumes they:
 - o Are employed (excluding those on leave for more than three months)
 - o Currently undertaking specialist training in ophthalmology as their first field of training (excluding the second specialty field)
 - o Include those who have transitioned from trainee to holding a specialist accreditation in ophthalmology due to timing issues of registration and workforce survey.
 - o Includes those who were originally classified as intentions and trainees (due to AIHW imputation), these have been classified to be trainees only
 - o Includes those who were originally classified as trainee and specialist clinicians, if:
 - They don't have specialist accreditation, or
 - If they do have specialist accreditation, but the principal area of their main job in medicine was not specialist
- Hours worked are calculated and applied separately for each age/gender cohort for ophthalmology specialists. The data from which hours worked is calculated is taken from the hours reported by ophthalmology specialists on the relevant workforce survey items for 2015.

- Exit rates are calculated on a unique basis for ophthalmology specialists for each five year age/gender cohort.
- Exit rates are calculated by carrying forward the current distribution of ages of the workforce and assuming the same distribution in the future. The rates are based on observed retirements over recent years, not on retirement intentions.
- Exit rates are a composite measure including all forms of removal from the workforce, permanent or temporary.
- All ophthalmology specialists are assumed to remain in the workforce, even in situations of oversupply. That is, exit rates are not adjusted to take account of possible movements away from a profession in an oversupply situation.

Demand assumptions

- The demand forecasts use a combination of both public and privately delivered services.
- Projections of acute inpatient utilisation take into account population growth and ageing, as well as clinical trends, by projecting age by gender for same day or overnight stays, specialty-specific trends in admission rates and length of stay.
- Similarly the historical MBS data uses the number of services received by age of patient captured as a quarterly time series and forecasts the resulting estimates multiplied by the estimated residential population⁴.
- The utilisation rates are examined at the individual age group level and forecast using a series of Exponential Smoothing models. Forecasts for each individual age group have been generated using the SAS statistical package. Exponential smoothing has been chosen due to its successful use in the Department at forecasting MBS services for financial modelling purposes.
- Demand and supply start from an 'in balance' position (in 2016).
- The demand growth rate for ophthalmology is currently in the range of **2.8** per cent per annum.

⁴ Forecast services use ABS catalogue 3222 Population Projections Series B.

Appendix 2: Definition of a Specialist (example anaesthetist)

There are two sources of information used to determine the current supply of specialists; the medical workforce survey data and the AHPRA registration data. These two sources of information are combined by the AIHW into the *National Health Workforce Dataset: Medical Practitioners* (NHWDS). The NHWDS is used to determine whether a medical practitioner should be classified as a specialist (in up to two specialities). These classifications are used to determine supply for the purposes of modelling the medical workforce.

The Medical Workforce Survey provides a rich source of information regarding the current activities of medical practitioners. The answers to this survey are critical to ensure that that data remains an accurate snapshot of medical workforce trends.

The following example details the method for using the NHWDS data and associated survey questions to classify a medical practitioner as a specialist and therefore 'supply' in the specialty demand and supply modelling. This method applies to all specialities, but anaesthesia is used in this example.

In order to be classified as a specialist a record must pass three initial conditions.

- Be currently registered as medical practitioner
- Be accredited as an anaesthetist
- Be currently employed in the medical profession
- Be currently working as a clinician

Current registration as a medical practitioner and specialist accreditation in anaesthesia are data items maintained by AHPRA.

The following survey questions relate to whether the medical practitioner is employed and working as a clinician. To be classified as a specialist they must have answered that they are currently employed and working as a clinician.

Figure 24: Survey questions relating to Employment Status

4. LAST WEEK, were you working in medicine in Australia?

Mark one box only

☒ Yes (including on leave for less than three months)
Go to question 9

☐ Yes (but currently on leave for three months or more)
Go to question 9

☐ No
Go to the next question

Figure 25: Survey questions relating to Clinician Status

11. LAST WEEK, what was your principal role in your main job in medicine?

Mark one box only

☒ Clinician (including the provision of imaging and laboratory services and managers and supervisors also providing clinical services)

☐ Administrator (including managers not providing clinical services)

☐ Teacher or educator

☐ Researcher

☐ Other - Please specify:

In addition medical practitioners are required to specify that they are working clinical hours. If the practitioner specifies that they are working only non-clinical hours, then they will not be counted.

Figure 26: Survey questions relating to clinical and non-clinical hours

9. LAST WEEK, how many hours did you work in total in medicine?

Clinical roles <i>(including the provision of imaging and laboratory services and managers and supervisors also providing clinical services)</i>	0	4	0	hours
Non-clinical roles <i>(including teacher, researcher, administrator or other)</i>	0	1	0	hours
Total	0	5	0	hours

These conditions are applied initially to ensure a rigorous estimate of the current workforce based on the employment and accreditation status of medical practitioners. For example, to avoid counting medical practitioners who are in retirement the process checks to ensure that medical practitioners are currently employed and working as a clinician. This also avoids counting medical practitioners who are currently working as administrators and teachers.

The next step looks at the main area in which the medical practitioner is employed. This is the step where medical practitioners have the opportunity to specify on the survey, in which area of medicine they are currently employed. There is space to fill out two professions.

Figure 27: Survey questions relating to principal field of main specialties

23. In which specialty field(s) did you work the most hours LAST WEEK?

 Refer to the Specialty fields table on page 5. Find the relevant specialty field AND enter the corresponding number for the specialty field in the box below.

Specialty field 1 **Specialty field 2 (if applicable)**

6 9

24. LAST WEEK, how many clinical hours did you work in each sector in your specialty field(s)?

	Specialty field 1	Specialty field 2 (if applicable)
Private hospitals	0 0 5 hours	hours
Private rooms	0 0 5 hours	hours
Private – other	hours	hours
Public hospitals – inpatients	0 2 0 hours	hours
Public hospitals – outpatients	0 2 0 hours	hours
Public - other	hours	hours

The above survey question is crucial to the inclusion of a medical practitioner as an anaesthetist. This question indicates that the medical practitioner will be classified as a specialist in the recorded specialty provided that all previous criteria have been met.

If the medical practitioner is currently registered and is;

- employed,
- working as a clinician
- and has accreditation with AHPRA in anaesthesia

At this point they will be counted as an anaesthetist provided they have indicated so in question 23.

With the exception of three cases, that is the end of the classification process.

Case 1: Specialist and trainee

If the medical practitioner has also indicated that they are a current anaesthesia trainee and their year of completion is the year of the survey then they will be classified as a trainee and not a specialist. This can occur due to timing issues; the medical practitioner is in a training program on the date they complete the survey; however on the date of data extraction (which can be up to two months later) the medical practitioner has obtained Fellowship and AHPRA has recorded them as an accredited specialist. The decision was made to classify the medical practitioner according to the date of completion of the survey. In this instance the medical practitioner will be classified as an anaesthetist in the following year.

Figure 28: Survey questions relating to training

SECTION D: Specialist training

25. Are you in a specialty training program that will lead to fellowship of a college?

No ☐ Go to question 29

Yes ☒ Go to the next question

26. When you complete your training, in which specialty field(s) will you be qualified to practice?

Refer to the Specialty fields table on page 5. Find the relevant specialty field AND enter the corresponding number for the specialty field in the box below.

Specialty field 1	Specialty field 2 (if applicable)
6 9	

Case 2 – fails to answer question 23

If the medical practitioner fails to answer question 23 but currently is registered medical practitioner and is;

- employed,
- working as a clinician
- has accreditation with AHPRA in anaesthesia
- and has two or fewer specialties accredited with AHPRA

Then their survey response to question 23 is imputed as anaesthesia (69) and they are counted as a Specialist.

Case 3 - Erroneous answer recorded in question 23

The medical practitioner responds to the survey indicating that they are currently working as a vocationally registered GP. They do not currently have accreditation with AHPRA as a GP but they do have current accreditation as an anaesthetist and are; currently registered as a medical practitioner, employed, and working as a clinician. The response to question 23 is imputed as anaesthesia (69) and they are classified as an anaesthetist.

Figure 29: Erroneous answer recorded in question 23

23. In which specialty field(s) did you work the most hours LAST WEEK?

Refer to the Specialty fields table on page 5. Find the relevant specialty field AND enter the corresponding number for the specialty field in the box below.

Specialty field 1	Specialty field 2 (if applicable)
6 8	

Appendix 3: Hours worked

The Medical Practitioner Workforce Survey (Appendix 5) captures the hours worked at three levels as shown in Figure 30 below. The first row (A) is where a practitioner identifies the total hours they worked in the previous week. They are asked to split their total hours into (B) time spent in clinical roles and non-clinical roles. Non-clinical is defined as “including teacher, researcher, administrator and other”. They are then asked to split their clinical hours into (C) time spent in up to two specialities (clinical hours in specialty 1 and clinical hours in specialty 2).

For example, two per cent (28) of ophthalmology specialists worked hours in another specialty in addition to ophthalmology (most commonly general practice, physician, sexual health medicine and pain medicine). For this group of dual specialists, 57 per cent of their FTE was spent in ophthalmology, while 43 per cent was spent in their other specialty.

The grey ‘unknown’ area in row (C) can occur when the hours reported in specialty 1 and specialty 2 do not add up to the clinical hours (B). The unknown clinical hours may be due to an error when completing the survey form (the medical practitioner miscalculates their hours) or it may represent time worked as a non-vocationally registered General Practitioner (Non-VRGP) or in a third specialty. The unknown hours were not used in the modelling inputs. Furthermore, as can be seen in the grey ‘not asked in survey’ area in row (C), the non-clinical hours worked in each specialty are not captured in the survey.

Previously, specialty modelling was conducted using clinical hours. Figure 30 shows how the use of clinical hours (highlighted in row B) is flawed for the purposes of modelling individual medical specialties. As can be seen, the clinical hours can be much higher than the individual specialist clinical hours (C) as total clinical hours comprises hours worked in another specialty (other than the one being modelled) as well as unknown clinical hours. This results in the FTE being overestimated. Furthermore, using clinical hours only excludes an essential component of the workforce – the time spent undertaking clinical support (non-clinical hours).

Figure 30: Hours worked as captured in the workforce survey.

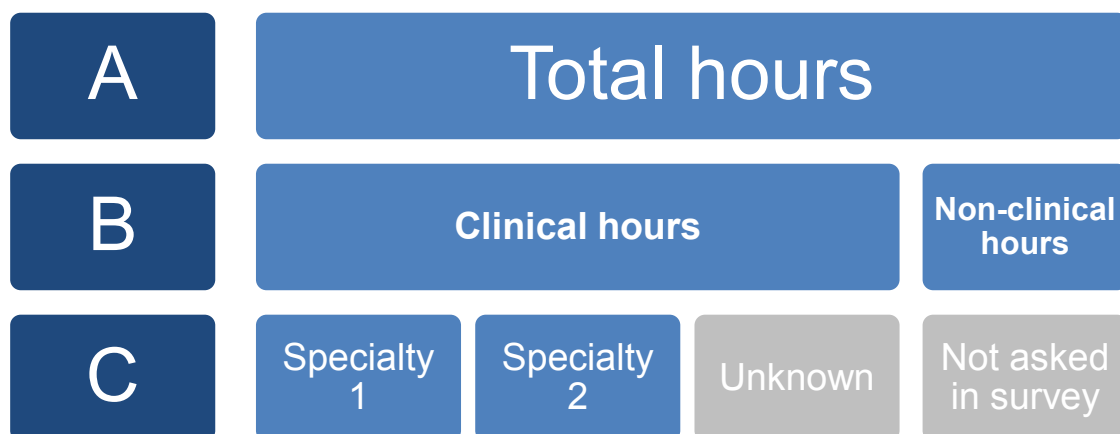


Figure 31 below shows how the hours for individual specialties have been estimated for modelling purposes in this report. In order to calculate (D), the total hours worked in ophthalmology (clinical and non-clinical), the non-clinical hours spent in the specialty needed to be estimated (orange boxes in row D). The proportion of the clinical hours for each of the specialties were used to attribute non-clinical hours to the specialties to give an indication of the total specialist hours (clinical and non-clinical) a practitioner is working in a given specialty.

Figure 31: Estimating total specialty hours

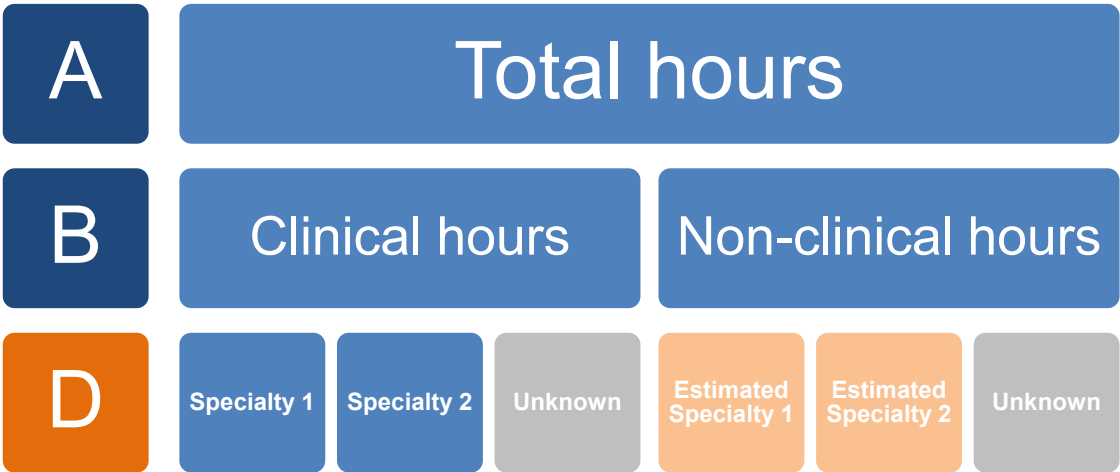
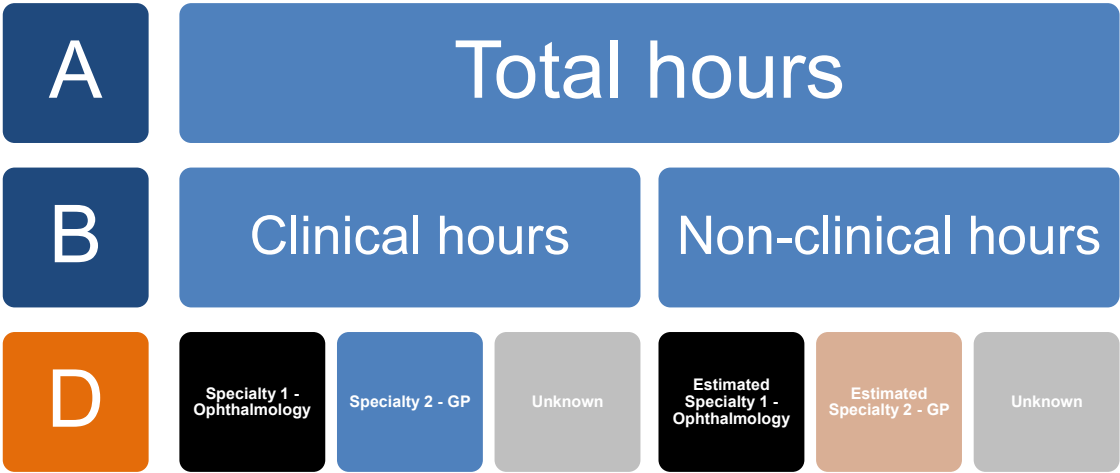


Figure 32 below shows which hours contribute to supply in the projections utilising total specialist hours. In this example, if a practitioner indicated in specialty field 1 they worked in Ophthalmology and in specialty field 2 they worked as a physician, then the clinical specialty 1 hours plus the estimated non-clinical specialty 1 hour (only the black boxes) are used in the modelling for Ophthalmology.

Figure 32: Total specialty hours used in modelling – example



Appendix 4: Trainees and Intentions

The classification of trainees and those intending to train is based on the medical workforce survey. To be classified as a trainee the medical practitioner must answer survey question 26 indicating that they're a current anaesthesia trainee they must also be;

- registered as a medical practitioner and
- employed as a medical practitioner

The only exception is if they indicate on the survey that they're also intending to train. If they have a current training year, then they're classified as a trainee.

Figure 33: Survey question related to current specialist training

SECTION D: Specialist training

25. Are you in a specialty training program that will lead to fellowship of a college?

No ☐ Go to question 29

Yes ☒ Go to the next question

26. When you complete your training, in which specialty field(s) will you be qualified to practice?

 Refer to the Specialty fields table on page 5. Find the relevant specialty field AND enter the corresponding number for the specialty field in the box below.

Specialty field 1	Specialty field 2 (if applicable)
6 9	

Figure 34: Survey question relating to current year of training program

28. What year of your training program(s) are you in?

 For example:
 1. If you are 1st year of an advanced training program but have done 3 years of basic training, please respond 4th year.
 2. If you have been completing your training part time for 3 years, but you are in the 2nd year of the training program, please respond 2nd year.

Specialty field 1	Specialty field 2 (if applicable)
☐ 1st year	☐ 1st year
☐ 2nd year	☐ 2nd year
☐ 3rd year	☐ 3rd year
☐ 4th year	☐ 4th year
☐ 5th year	☐ 5th year
☐ 6th year	☐ 6th year
☐ 7th year	☐ 7th year
☐ 8th year	☐ 8th year

To be classified as intending to train the medical practitioner needs to answer question 16 indicating that they're intending to undertake training as a specialist and answer question 17 to indicate that they intend to train as an anaesthetist.

Figure 35: Survey questions relating to intending to train

16. Do you intend to undertake specialty training?

No ☐ Go to question 18

Yes ☒ Go to the next question

17. In which specialty field do you intend to undertake training?

 Refer to the Specialty fields table on page 5. Find the relevant specialty field AND enter the corresponding number for the specialty field in the box below.

6 9

Appendix 5: Medical Practitioners Survey 2016



Workforce Survey Form Profession: Medical



COMPLETING THIS SURVEY

Information supplied on this form may be provided to other persons and agencies for workforce planning. The Medical Board of Australia and the Australian Health Practitioner Regulation Agency (AHPRA) are committed to ensuring the privacy and confidentiality of personal information held and will adhere to the National Privacy Principles under the Privacy Act 1988 (Cth) when collecting, using, disclosing, securing and providing access to private information.

- Read all instructions
- Print clearly in BLOCK LETTERS using a black or blue pen
- Place X in ALL applicable boxes
- These questions are optional

Today's date: / /

SECTION A: Your qualifications

1. Where did you obtain your initial medical degree?

Mark one box only

- ☐ Australia
☐ New Zealand
☐ Other overseas - Please specify country:

2. What year did you graduate from medical school?

--	--	--	--

(YYYY)

3. If you have a specialist qualification in medicine, where did you obtain your initial specialist qualification?

Mark one box only

- ☐ Do not have a specialist qualification
☐ Australia
☐ New Zealand
☐ Other overseas - Please specify country:

OFFICE USE ONLY

SECTION B: Your employment



For the following questions, employed includes:
The practice of medicine, or work that is principally concerned with that discipline, e.g. research, administration or teaching of medicine, in which you worked in Australia for a total of one hour or more LAST WEEK in a job or business (including own business) for pay, commission, payment in kind or profit.

4. LAST WEEK, were you working in medicine in Australia?

Mark one box only

- ☐ Yes (including on leave for less than three months)
Go to question 9
☐ Yes (but currently on leave for three months or more)
Go to question 9
☐ No
Go to the next question

5. LAST WEEK, why were you not working in medicine in Australia?

Mark one box only

- ☐ Working in medicine overseas
Go to the next question
☐ Working in an occupation other than medicine
Go to question 7
☐ Not working in paid employment at all
Go to question 8
☐ Retired from regular work
Go to question 32

6. LAST WEEK, what field of medicine were you working in?

Go to question 8

7. LAST WEEK, what was your occupation?



8. LAST WEEK, did you take active steps to look for work in medicine in Australia?



Looking for work includes (either part-time or full-time):

- applying for work
- enquiring about a job
- answering an advertisement
- registering with an employment agency
- advertising for work
- contacting people about a job.

No ☐ Go to question 32

Yes ☐ Go to question 32



For questions 9-20, if you were on leave last week, answer for a typical week. **Exclude** hours on call not worked.

9. LAST WEEK, how many hours did you work in total in medicine?

Clinical roles

(including the provision of imaging and laboratory services and managers and supervisors also providing clinical services)

hours

Non-clinical roles

(including teacher, researcher, administrator or other)

hours

Total

hours

10. In the last year, on average how many hours per week did you practice via tele-health in medicine?



Telehealth is the use of telecommunication techniques for the purpose of providing telemedicine, medical education, and health education over a distance.

11. LAST WEEK, of the hours that you worked in your clinical roles, how many hours did you work in each sector in medicine?

Private hospitals

hours

Public hospitals – inpatients

hours

Private rooms

hours

Public hospitals – outpatients

hours

Private – other

hours

Public – other

hours



For the following questions, answer for the job in which you worked the most hours last week.

12. LAST WEEK, what was your principal role in your main job in medicine?

Mark one box only

- ☐ Clinician (including the provision of imaging and laboratory services and managers and supervisors also providing clinical services)
- ☐ Administrator (including managers not providing clinical services)
- ☐ Teacher or educator
- ☐ Researcher
- ☐ Other - Please specify:

13. LAST WEEK, what was the principal area of your main job in medicine?

Mark one box only

- ☐ General practitioner (GP) (excluding AGPT program trainees)
Go to the next question
- ☐ Specialist (other than GP)
Go to question 19
- ☐ Specialist-in-training (including AGPT program trainees)
Go to question 19
- ☐ Hospital non-specialist (including pre-vocational doctors)
Go to question 16
- ☐ Other clinician
Go to question 17
- ☐ Non-clinician
Go to question 17

14. LAST WEEK, were you working in General Practice with specialist registration in General Practice?

Mark one box only

No ☐ Go to the next question

Yes ☐ Go to question 19

15. LAST WEEK, were you a RACGP/ ACRRM/ RVTS trainee?

No ☐ Go to question 19

Yes ☐ Go to question 19

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16. LAST WEEK, what was your position in the hospital?

Mark one box only

- ☐ Intern
☐ Resident Medical Officer (RMO)
☐ Hospital Medical Officer (HMO)
☐ Career Medical Officer (CMO)
☐ Principal House Officer (PHO)
☐ Registrar
☐ Other - Please specify:

17. Do you intend to undertake specialty training?

- No ☐ ➤ Go to question 19
Yes ☐ ➤ Go to the next question

18. In which specialty field do you intend to undertake training?



Refer to the Specialty fields table on page 5.
Find the relevant specialty field AND enter the corresponding number for the specialty field in the box below.

19. LAST WEEK, what was the principal work setting of your main job in medicine?

Mark one box only

- ☐ Solo Private Practice
☐ Group Private Practice
☐ Locum Private Practice
☐ Aboriginal health service
☐ Community mental health service
☐ Community drug and alcohol service
☐ Other community health care service
☐ Hospital (excluding outpatient service)
☐ Outpatient service
☐ Residential mental health care service
☐ Residential aged care facility
☐ Commercial/business service
☐ Tertiary educational facility
☐ School
☐ Other educational facility
☐ Correctional service
☐ Defence force
☐ Other government department or agency
☐ Other

20. LAST WEEK, where was the location of your main job in medicine?

For state and territory mark one box only

- ☐ NSW ☐ SA ☐ NT
☐ VIC ☐ WA ☐ ACT
☐ QLD ☐ TAS ☐ Other territories

Postcode

Suburb

21. Other than the location reported in question 19, do you also work in a regional, rural or remote location?

- No ☐ ➤ Go to question 23
Yes ☐ ➤ Specify state, postcode and suburb below, then go to the next question



If you work in more than one additional regional, rural or remote location, provide the one in which you work the most hours.

For state and territory mark one box only

- ☐ NSW ☐ SA ☐ NT
☐ VIC ☐ WA ☐ ACT
☐ QLD ☐ TAS ☐ Other territories

Postcode

Suburb

22. On average, how often do you work in this location?

Mark one box only, and report the frequency worked at this location

☐ Weekly	day(s) per week
OR ☐ Fortnightly	days per fortnight
OR ☐ Monthly	days per month
OR ☐ Quarterly	days per quarter
OR ☐ Annually	days per year

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SECTION C: Specialist registration

23. Do you have a specialist registration in medicine (including specialist registration in general practice)?

- No ☐ Go to question 26
Yes ☐ Go to the next question



For questions 24-25:
Specialty field 1 relates to the specialty in which you worked the most hours LAST WEEK.
Specialty field 2 (if applicable) relates to the specialty in which you worked the second most hours LAST WEEK.

24. In which specialty field(s) did you work the most hours LAST WEEK?



Refer to the Specialty fields table on page 5.
Find the relevant specialty field AND enter the corresponding number for the specialty field in the box below.

Specialty field 1

Specialty field 2 (if applicable)

25. LAST WEEK, how many clinical hours did you work in each sector in your specialty field(s)?

	Specialty field 1	Specialty field 2 (if applicable)
Private hospitals	hours	hours
Private rooms	hours	hours
Private – other	hours	hours
Public hospitals – inpatients	hours	hours
Public hospitals – outpatients	hours	hours
Public – other	hours	hours

SECTION D: Specialist training

26. Are you in a specialty training program that will lead to fellowship of a college?

- No ☐ Go to question 30
Yes ☐ Go to the next question

27. When you complete your training, in which specialty field(s) will you be qualified to practice?



Refer to the Specialty fields table on page 5.
Find the relevant specialty field AND enter the corresponding number for the specialty field in the box below.

Specialty field 1

Specialty field 2 (if applicable)

28. (a) In which year(s) did you commence your specialty training program(s)?

Specialty field 1

(YYYY)

Specialty field 2 (if applicable)

(YYYY)

(b) In which year(s) do you intend to complete your specialty training program(s)?

Specialty field 1

(YYYY)

Specialty field 2 (if applicable)

(YYYY)

29. What year of your training program(s) are you in?



- For example:
1. If you are 1st year of an advanced training program but have done 3 years of basic training, please respond 4th year.
2. If you have been completing your training part time for 3 years, but you are in the 2nd year of the training program, please respond 2nd year.

Specialty field 1

- ☐ 1st year
☐ 2nd year
☐ 3rd year
☐ 4th year
☐ 5th year
☐ 6th year
☐ 7th year
☐ 8th year

Specialty field 2 (if applicable)

- ☐ 1st year
☐ 2nd year
☐ 3rd year
☐ 4th year
☐ 5th year
☐ 6th year
☐ 7th year
☐ 8th year

SECTION E: Workforce intentions

30. In total, how many years have you worked in medicine in Australia?



Include years regardless of full-time or part-time status.
Exclude time spent not working and unpaid leave.

whole years

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31. How many more years do you intend to remain in the medicine workforce in Australia?

whole years

SECTION F: Your details

32. Are you of Aboriginal or Torres Strait Islander origin?

Mark one box only

- ☐ No
☐ Yes - Aboriginal
☐ Yes - Torres Strait Islander
☐ Both Aboriginal and Torres Strait Islander

33. Are you a temporary resident?

No ☐ Thank you, no further questions.

Yes ☐ Specify your visa type below

- ☐ 309 - Partner (offshore)
☐ 402 - Training and Research
☐ 417 - Working Holiday
☐ 422 - Medical Practitioner
☐ 444 - Special category
☐ 457 - Temporary Work (Skilled)
☐ 485 - Temporary Graduate
☐ 572 - Vocational Education and Training Sector
☐ 573 - Higher Education Sector
☐ 574 - Postgraduate Research Sector
☐ 820 - Partner (onshore)
☐ Other

Thank you, no further questions.

Please return this workforce survey to AHPRA in the same envelope as your renewal application

Physician	Radiology	57	Paediatric respiratory and sleep medicine
1 Cardiology	29 Diagnostic radiology	58	Paediatric rheumatology
2 Clinical genetics	30 Diagnostic ultrasound	59	Specialist paediatrician
3 Clinical pharmacology	31 Nuclear medicine	Pathology	
4 Endocrinology	Obstetrics and gynaecology		60 General pathology
5 Gastroenterology and hepatology	32 Gynaecological oncology	61	Anatomical pathology (including cytopathology)
6 General medicine	33 Maternal-fetal medicine	62	Chemical pathology
7 Geriatric medicine	34 Obstetrics and gynaecological ultrasound	63	Haematology
8 Haematology	35 Reproductive endocrinology and infertility	64	Immunology
9 Immunology and allergy	36 Urogynaecology	65	Microbiology
10 Infectious diseases	37 Specialist obstetrician and gynaecologist	66	Forensic pathology
11 Medical oncology	Paediatrics and child health		67 Specialist pathologist
12 Nephrology	38 Clinical genetics	Intensive care medicine	
13 Neurology	39 Community and child health	85	Paediatric intensive care medicine
14 Nuclear medicine	40 General paediatrics	86	Specialist intensive care physician
15 Respiratory and sleep medicine	41 Neonatal and perinatal medicine	General practice	
16 Rheumatology	42 Paediatric cardiology	69	Anaesthesia
17 Specialist physician	43 Paediatric clinical pharmacology	70	Psychiatry
Surgery		71	Emergency medicine
18 Cardio-thoracic surgery	44 Paediatric emergency medicine	72	Ophthalmology
19 General surgery	45 Paediatric endocrinology	73	Dermatology
20 Neurosurgery	46 Paediatric gastroenterology and hepatology	75	Rehabilitation medicine
21 Orthopaedic surgery	47 Paediatric haematology	76	Radiation oncology
22 Otolaryngology- head and neck surgery	48 Paediatric immunology and allergy	77	Public health medicine
23 Oral and maxillofacial surgery	49 Paediatric infectious diseases	78	Occupational and environmental medicine
24 Paediatric surgery	50 Paediatric intensive care medicine	79	Medical administration
25 Plastic surgery	51 Paediatric medical oncology	80	Palliative medicine
26 Urology	52 Paediatric nephrology	81	Sport and exercise medicine
27 Vascular surgery	53 Paediatric neurology	82	Sexual health medicine
28 Specialist surgeon	54 Paediatric nuclear medicine	83	Addiction medicine
	55 Paediatric palliative medicine	84	Pain medicine
	56 Paediatric rehabilitation medicine		

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