Department of Health

Australia's Future Health Workforce – Psychiatry

March 2016

The Australia's Future Health Workforce – Psychiatry Report was developed by the Commonwealth Department Health under the guidance of the National Medical Training Advisory Network.

The Australia's Future Health Workforce – Psychiatry Report was approved for publication by the Commonwealth and all State and Territory Health Ministers on 9 March 2016.

The recommendations contained in the Australia's Future Health Workforce – Psychiatry Report will be the subject of further consideration.

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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 development of the AFHW – Doctors report was guided by the expert input of the National Medical Training Advisory Network (NMTAN) that 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.

The NMTAN currently has three subcommittees that explore different aspects of medical training to inform workforce planning:

- changing work with the increase in burden of chronic disease;
- employment patterns and intentions of prevocational doctors and development of fact sheets on supply and demand in each of the medical specialties; and
- the capacity for and distribution of the medical training, including the geographic distribution of medical training and community needs.

This psychiatry report is the first to be produced under the capacity and distribution work. It involves 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).

The HW 2025 Vol 3 - Psychiatry chapter indicated that the workforce was perceived to be in shortage. The comparison scenario indicated that the workforce would be in undersupply by 452 fellows by 2025.

Stakeholder views were that workforce shortages for psychiatry are focused in the public sector, with acute psychiatry and adolescent psychiatry particular areas of concern. There are also issues with the distribution of the psychiatry workforce, evidenced by a high reliance on International Medical Graduates (IMGs) in regional areas.

The college indicated that there were: challenges in attracting Australian-trained graduates to the profession; under-utilisation of the private sector for training purposes (although the Specialist Training Programme (STP) has recently positively affected this); and strains on supervisory capacity.

The updated projections in this report indicate that these issues have changed, with the numbers of Australian trained psychiatrists increasing, but the problems highlighted with supervision still remain. The under-utilisation of private sector training has decreased significantly with the investment by the Commonwealth through the STP.

The largest change affecting the updated projections is the increase of the basic trainee intake into the psychiatry program. This increased from just over 650 in 2011 to over 804 in 2012, the majority of this increase was RANZCP increasing first year intake by 75 in 2012 reflecting the college's new training program structure of stage 1, 2, and 3.

Historically, there has been a bottleneck in trainees moving from basic to advanced training. The clinical exam appears to have been the barrier to trainees moving from basic to advanced training. With the introduction of the 2012 Fellowship program – which is competency based – the clinical exam is no longer a significant limiting factor for movement through the training program. The new program aims to decrease the transition time for trainees. As a result, the predicted shortfall of around 450 fellows by 2025 has now decreased to approximately 75, with the final projection to 2030 estimated to be a shortfall of around 125 psychiatrists.

The NMTAN will need to monitor the transition rates over the next three years to ensure that the historical bottleneck of trainees passing the clinical exam to move from basic to advanced training has not simply moved to a later stage of the training program.

An increase in the number of psychiatry trainees is only one aspect of addressing the psychiatry workforce shortage, which will require joint action from governments, employers, the college and trainees. There is a need to raise awareness of psychiatry as a career option from high school, with reinforcement during undergraduate and postgraduate medical training. Ongoing support and professional development opportunities for trainees, their supervisors and Directors of Training (DOTs) may address retention of trainees in the training program.

Key findings

Supply and demand projections

- Projections provided in this report indicate a future undersupply of 125 by 2030 for the psychiatry workforce. The modelling is based on an anticipated 2 per cent increase per year (from 194 in 2015 to 234 by 2030) on the first year intake to the program. The projections also included the high reliance on overseas trained doctors (OTDs) continuing, with OTDs being projected at 55 new fellows per year. To meet the expected undersupply projected by 2030, the new intake would need to increase from the projected 197 to 200 in 2016 up to 269 in 2025, which equates to an average annual increase of 3.3%.
- Local workforce and training needs must be taken into consideration for any strategy to be effective, which requires partnership between governments, employers, the college and trainees.

Recommendation: An extra at minimum 6 per cent increase in the first year intake be investigated and continue through Stage 1, Stage 2, and Stage 3, taking into account the impact on supervision and DOTs and the additional administrative support required for this increase.

Training program

- Given that a new training program has been introduced (2012 Fellowship program), the future pipeline will need to be reviewed once all the trainees have been migrated onto the new training program in 2016 and data becomes available in 2017. This will allow the 2012 Fellowship program to stabilise, and provide more accurate information about how trainees are transitioning through the program.

Recommendation: The College and the NMTAN continue to monitor the transition rate and clinical exam results.

Capacity and distribution for vocational training

Training capacity

- Currently, careful management of posts is required as there are often limits to the number of training posts in particular areas of practice. To guarantee access to posts, trainees are often rotated to other specialties first and may have to complete the Child and Adolescent Psychiatry (CAP) or Consultation Liaison Psychiatry (CL) posts (which need to be completed by the end of Stage 2) at a later date. It is important to have the ability to quantify and plan for the number of trainees that require CAP and CL rotations.
- Given the new training program is a competency based training program, other ways of learning and different settings to fulfil the CAP and CL rotations could be considered to minimise the bottleneck of trainees waiting to move through.
- It is important to note that psychiatry workforce shortages will not be solved by simply creating more training posts in Stage 1. There must be an equivalent increase in Stage 2 and 3 posts and these should be established according to local needs e.g. Western Australia may need more Psychiatry in Old Age posts while the Australian Capital Territory may need more CAP. Supervisors, DOTs and Branch Training Committees (BTCs), both professional and administrative will need to be supported in this work.

Recommendation: the NMTAN and the college need to monitor the impact of increasing the number of trainees entering the program and the flow on effects on training in all areas of practice, and in particular the availability of Advanced Training. This will require consideration of supervision capacity in Advanced Training and the impact on DOTs and local post administration.

Supervisory capacity requirements

- As the number of trainees increase, the number of supervisors required will increase. The college and employers need to assist in the identification and training of new supervisors. Development of resources such as online modules and peer support activities would provide additional support for supervisors, including in rural and remote areas.
- Consideration needs to be given to strategies to recruit and support supervisors in private practice and rural locations, but blended and remote models of supervision should be considered to ensure that trainees can receive appropriate supervision available to train in rural/remote areas.
- Administrative support for Branch Training Committees (BTCs) who oversee the jurisdictional training program will also require review.

Recommendation: There is a need to deliver more training in rural areas, which will require identifying and developing new supervisors, and developing new, innovative supervision models. All stakeholders need to collaborate to identify new supervisors and to ensure that they are adequately supported. Development of resources such as online modules and peer support activities would provide additional support to supervisors, including in rural and remote areas.

Specialist Training Programme

- Continue increasing the amount of training undertaken in the private sector, in primary care, in rural and remote locations and assistance to DOTs.
- Noting the STP is currently being reviewed, consider support projects to ensure adequate distribution, recruitment, retention, professional development and job satisfaction that build on the projects already under the STP, including:

- provide additional support for rural areas, for example piloting remote supervision models, the expansion of rural webinars, practice visits, networking, mentoring, peer support groups, supervisor access, and grants for educational support;
- investigate the options for the expansion of further online learning material for training and professional development of psychiatrists; improve recruitment into psychiatry projects;
- options for improving the quality and collection of data to assist with monitoring training demand and distribution of future training posts;
- improve recruitment into psychiatry projects;
- the college to investigate the expansion of mentoring and coaching to provide one-on-one support for trainees on the pathway to Fellowship; and
- the college to continue to expand upon the current Psychiatry Interest Forum (PIF) membership to include additional medical students and junior doctors.

Overview

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 a cost to the community.

The AFHW - Doctors report shows there are three key factors that underpin the importance of national workforce planning for doctors. First, there is an immediate need to deal with the significant increase in domestic medical students that has occurred over the last ten years. This presents an opportunity to influence further training for medical students, to encourage doctors to move into the locations and specialties that will be needed in the future.

Second, due to the age demographic of the medical workforce, a huge number of doctors will retire from 2025. The length of time it takes to train a doctor means that short term changes in training levels are not an effective response to short term imbalances between supply and demand. This re-enforces the need to plan over a medium term time horizon and to minimise short term movements in medical intakes, which could be better dealt with using temporary migration.

Third, the report states there is a lack of coordination across the medical training pipeline. Between governments, universities, medical colleges and the various employers of doctors, there are hundreds of individuals making decisions on how many doctors and what type of doctors are trained in Australia. Ensuring these individual decisions are aligned to what Australia needs from doctors in the future is essential.

The development of the AFHW – Doctors report was guided by the expert input of the National Medical Training Advisory Network (NMTAN) that 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.

Background

The establishment of the NMTAN was approved on 10 August 2012 by the then Standing Council on Health (SCOH) as a mechanism to enable a nationally coordinated medical training system in Australia. The NMTAN was established under the auspices of the former Health Workforce Australia (HWA) and held its first meeting in February 2014. Since August 2014, support to the NMTAN has been provided by the Commonwealth Department of Health.

The NMTAN provides guidance in the development of a series of medical training plans to inform government, health and education sectors. In addition, the NMTAN provides policy

advice about the planning and coordination of medical training in Australia, in collaboration with other networks involved in the medical training space.

The NMTAN currently has three subcommittees that explore different aspects of medical training to inform future workforce planning:

- the 'changing work with the increase in burden of chronic disease' subcommittee examines the implications of the increasing incidence of chronic disease and increased delivery of chronic disease management in the primary care setting. Modelling of the medical workforce will be undertaken based on a number of models of care. It is expected this work will be completed in 2016;
- the 'employment patterns and intentions of prevocational doctors' subcommittee aims to improve the modelling undertaken for the prevocational years in medicine and use this improved modelling to better inform career planning for junior doctors. The subcommittee has developed an internal report that provides a snapshot of the existing prevocational doctor workforce in Australia. This information will be used to develop a series of fact sheets on each of the medical specialties, to be made available on the Department's website. It is expected the factsheets will become available from June 2016; and
- the 'capacity for and distribution of medical training' subcommittee makes recommendations to the NMTAN Executive Committee on changes to policy and practices that could improve geographic distribution of medical training to produce the number and proportion of medical specialists needed to provide specialist healthcare to Australians. Members have identified a priority list of specialties to be modelled, with the focus initially on a small number of specialties seen to be at risk of workforce shortage or oversupply, and where there is capacity to address these issues with training.

In addition to the policy-focussed subcommittee, a fourth standing subcommittee – the data subcommittee – is responsible for the production of an annual report of medical education and training, including undergraduate, postgraduate and vocational training projects. The functions of this subcommittee were transferred from the Medical Training Review Panel to the NMTAN in 2015.

This psychiatry paper is the first of the reports under the capacity and distribution subcommittee work. It involves updating the supply and demand projections previously completed by the former HWA and published in HW 2025 – Medical Specialists Volume 3.

This work has been guided by the input of the NMTAN. The work has been completed in two stages:

- Stage 1: review and analysis of supply and demand through the modelling of the psychiatry workforce with projections to 2030 and analysis of current training capacity and identification of pipeline issues. This resulted in the development of an interim report for targeted consultation with NMTAN and relevant stakeholders/experts.
- Stage 2: consolidation of the feedback on the interim report to identify issues to develop training target ranges (including capacity in aggregation and by location) and policy recommendations for psychiatry.

Determining the Future Capacity for Training Needs

Australia's medical training system is delivered through a complex interconnection of funding and organisation channels that span Commonwealth and state and territory governments, as well as private and non-government agencies. The cross-sectional nature of delivering and funding medical training in Australia makes workforce planning difficult for

any particular agency or sector to deliver in isolation. There is also a risk there will be ongoing mismatch between the medical workforce that is trained and the medical workforce that is required to deliver necessary services.

The pathway to independent practice as a vocationally recognised specialist is long and there are multiple layers of investment in the training from university entrance to the completion of specialist vocational training. At the same time, there are numerous players involved in the training pathway, from universities to public and private hospitals and private medical practices.

The recent growth in the medical workforce is important in the calculated supply and demand for health services over the time period covered by the workforce modelling.

This increase in the number of medical students and graduates demonstrates a large increase in the inflows into the medical workforce over a short space of time. This has implications for clinical training capacity, initially at the university level but extending into the prevocational and vocational training years. This pressure has already been seen in the availability of intern training places, which to date has largely kept pace with the increasing number of graduates.

This pressure is now beginning to move into the next stages of the training pipeline. There has been an increase of 36 per cent in the number of vocational training positions between 2010 and 2014 with unclear links to future workforce requirements. Previous workforce modelling demonstrates an emerging mismatch between the number of trainees seeking a vocational training place and the availability of places based on community need. This mismatch emerges from around 2017 in the most recent modelling presented in the AFHW – Doctors report and extends to approximately 1,000 places by 2030.

Introduction

This report outlines an analysis of the psychiatry workforce and the results of updated supply and demand projections, as well as considering capacity and distribution for vocational training into the future. A document outlining the methodology to be undertaken to determine the supply and demand projections and the capacity and distribution for training for the psychiatry workforce by 2030 was approved by the NMTAN in February 2015.

A summary of the approved modelling inputs can be found in Appendix 1.

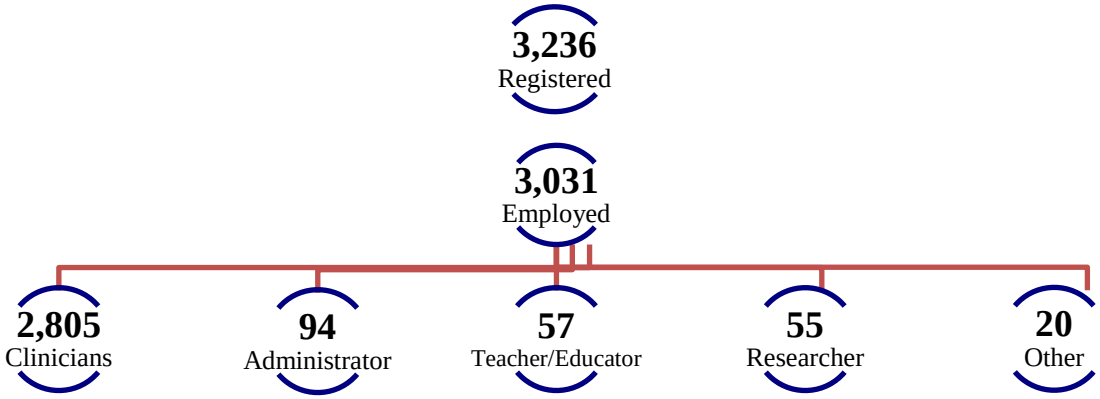
Psychiatry was selected as the first medical specialty to be considered by the NMTAN largely due to concerns identified in HW 2025 Volume 3 that indicated psychiatry was both in current under-supply and showed significant future workforce shortage. The attributing factors for the current and future shortages were identified by key stakeholders during HW 2025 Volume 3 consultation as the following:

- relatively shorter working hours, on average 38.5 hours per week, suggesting a high incidence of part-time practitioners;
- a comparatively large proportion of practitioners aged 55 years or over (43%) coupled with a high average age (53 years);
- challenges in attracting domestic graduates to the profession as evidenced by a high reliance on the participation of international medical practitioners in the specialty;
- a relatively long minimum training period (5 years) but which on average takes over 6 years; and
- a shortage of specialty training places compounded by an under-utilisation of the private sector for training.

Current workforce status

In 2013, there were 3,236 registered, accredited psychiatrists in Australia. Of these, 3,031 (94 per cent) were employed psychiatrists in the workforce, with the majority (93 per cent) working as clinicians; that is, practitioners who spend most of their time undertaking activities related to the diagnosis, treatment and prevention of mental illness and emotional problems.

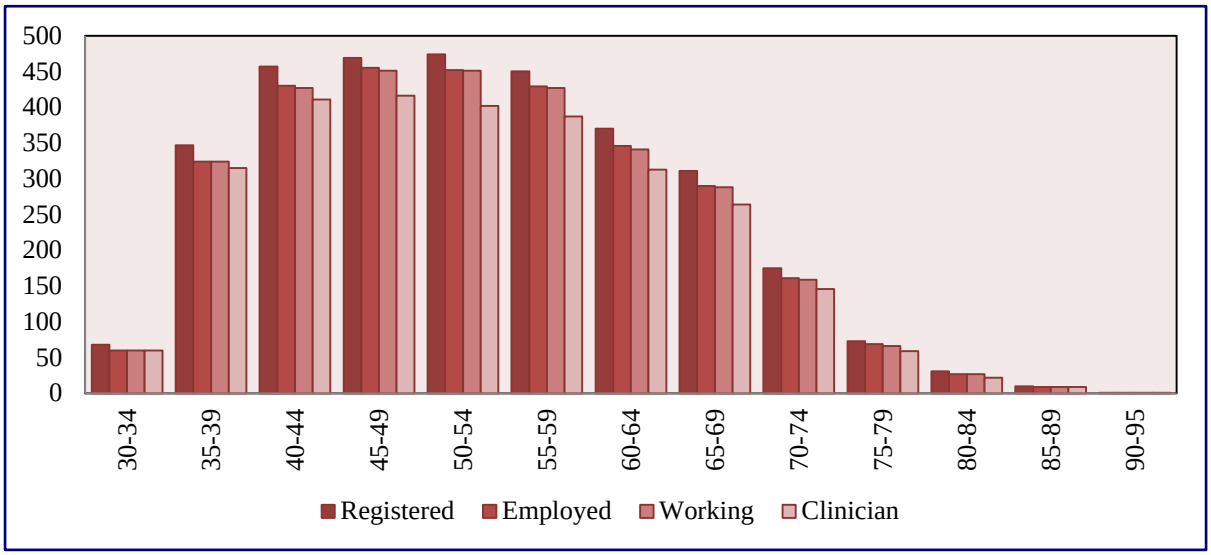
Figure 1 – Psychiatry workforce by job role, 2013



Source: NHWDS, Medical Practitioner 2013

Figure 2 shows the age distribution of psychiatrists that were registered, accredited and employed as working clinicians. All categories of workforce status follow the same distribution for all the age groups and as expected taper off as age increases past 55 – 59 years of age. As can be seen, the vast majority (58 per cent) of the psychiatry workforce was within the age groups 40 – 59 years.

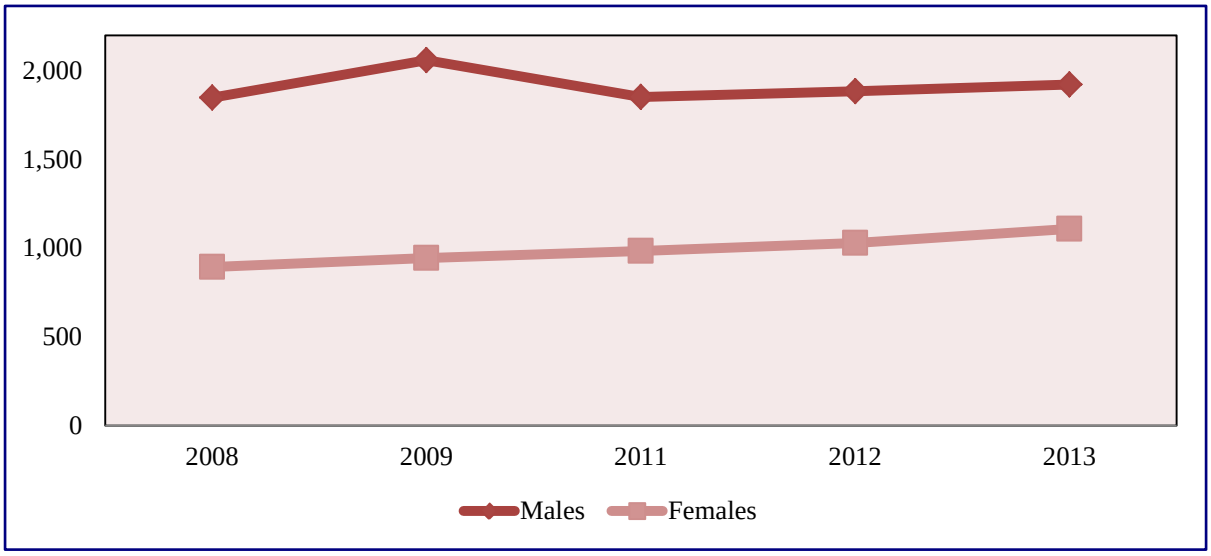
Figure 2 – Psychiatrists: registered, employed, working, clinicians (headcount) by age group



Source: NHWDS, Medical Practitioner 2013

The number of employed psychiatrists has grown over the years (2 per cent), with female psychiatrists experiencing the largest growth over the last five years, at a rate of 4 per cent, while males have only grown at 1 per cent. However, the split between males and females has remained fairly constant, with a slight narrowing of the disparity between males and females, with the relative rate remaining at 66 per cent and 34 per cent respectively.

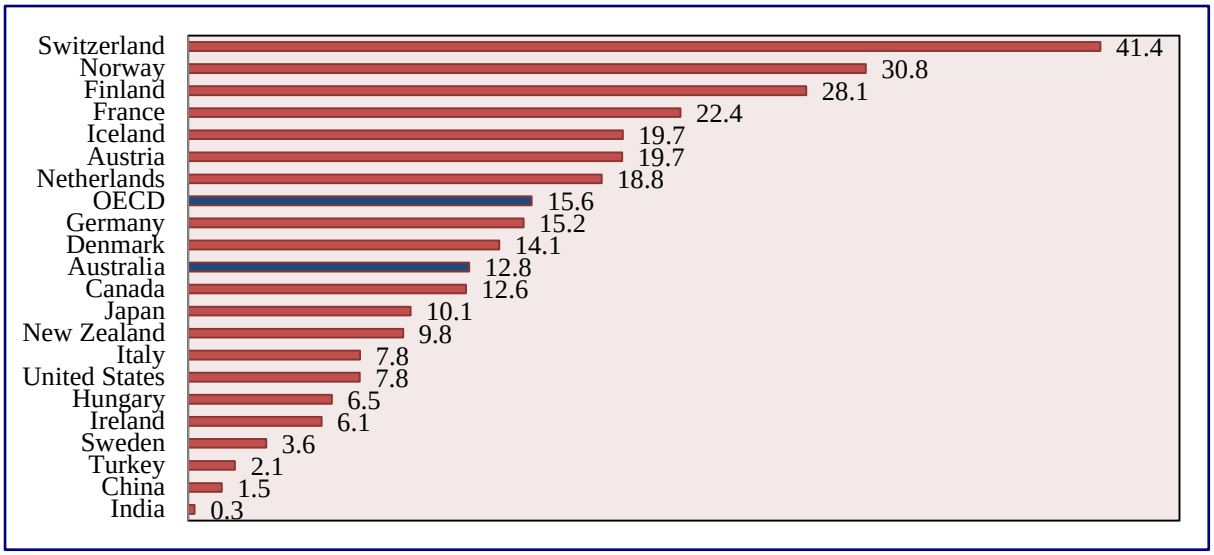
Figure 3 – Employed psychiatrists, by gender 2008 – 2013



Data for 2010 has been omitted as it excludes Queensland and Western Australia due to their registration closing after the national registration deadline of 30 September 2010.
Sources: AIHW Medical Labour Force Surveys 2008 and 2009; National Health Workforce Data Set: medical practitioners 2010 to 2013.

In 2013, Australia had 13.1 employed psychiatrists per 100,000 population. The latest data available to make comparisons with OECD data is 2011; in 2011, the rate was slightly lower at 12.8 per 100,000 – this is somewhat lower than the OECD average of 15.6 and placing Australia 11th highest out of 22 selected countries. This is an aggregate number and does not take into account geographic distributional differences; however it does provide a comparison with a number of other developed countries of employed psychiatrists.

Figure 4 – Psychiatrists, per 100 000 population, 2011



Source: OECD Health Statistics 2014; WHO GHO 2014.

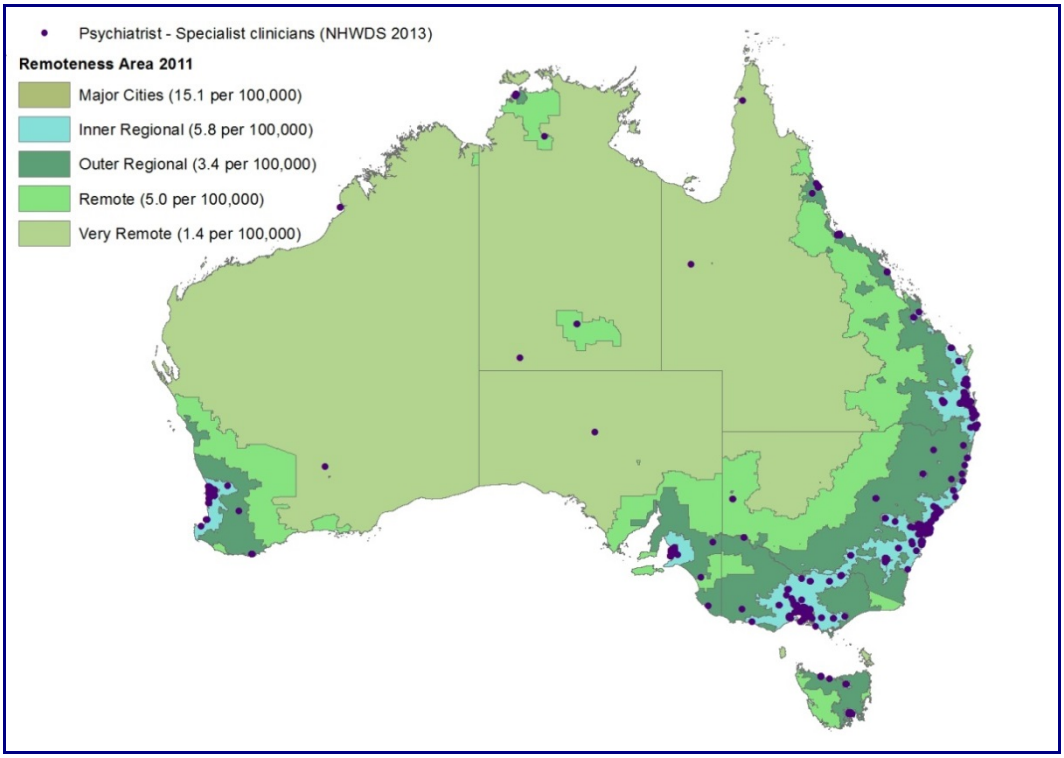
In 2013, the psychiatry workforce (clinicians) had the following characteristics:

- The average age of the clinician psychiatry workforce was 52.8 years.
- Females accounted for 37% of the workforce and worked an average of 33.5 hours per week.
- The average hours worked by a psychiatrist was 38.3 hours per week.
- 42.8% were aged 55 years and over and worked an average of 36.8 hours per week.
- 60% of all psychiatrists were located in NSW and VIC and 88% of all psychiatrists were located in major cities.
- 55% of psychiatrists clinical hours were provided in the private sector.

Source: NHWDS, Medical Practitioner 2013

While specialist clinician psychiatrists are located throughout Australia, in 2013 they were mainly concentrated along the eastern sea border. The follow map illustrates the remoteness areas and the density of psychiatrists within these remoteness areas.

Figure 5 – Psychiatrists (specialist clinicians) by remoteness areas, 2013



Source: NHWDS, Medical Practitioner 2013

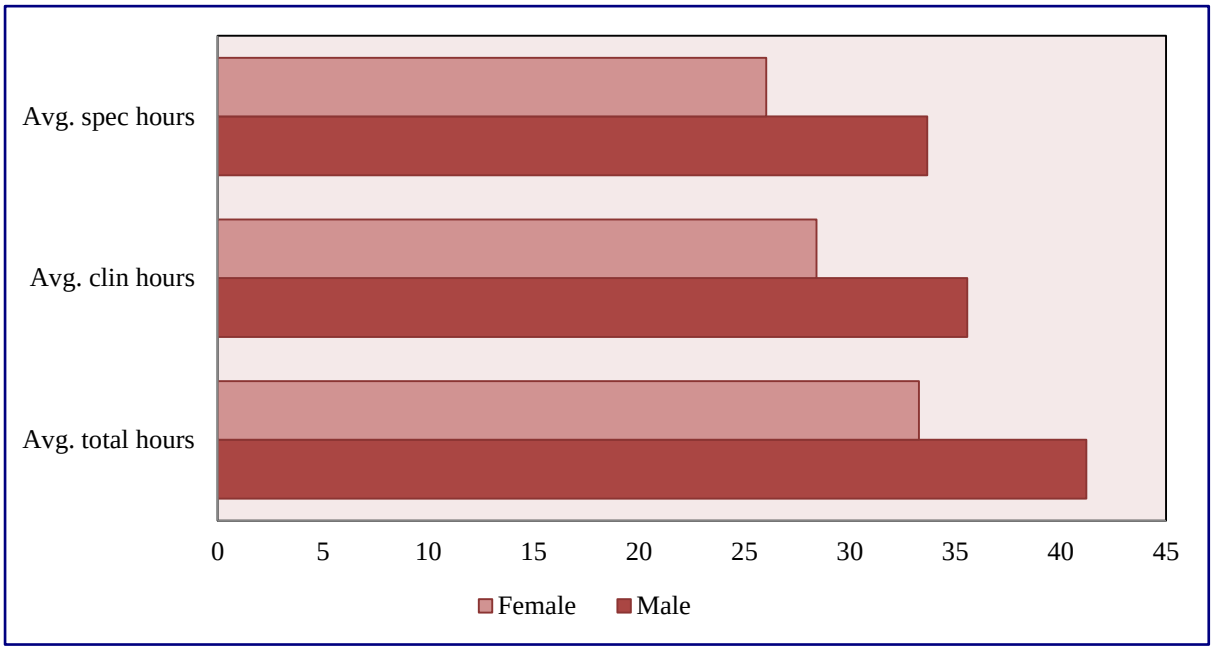
The hours worked by specialist clinician psychiatrists were reported in the 2013 medical workforce survey, where the question asked what their total hours were in a clinical and non-clinical role, and separated the clinical hours further into sectors. Another section of the survey for specialist registration further identified the hours most worked for a particular speciality, again by sector.

The following graphs illustrate the groups and gender by the following hierarchy of hours:

1. total average hours (clinical and non-clinical hours)
2. clinical average hours
3. specialist clinical average hours

This graph shows the difference between total average hours and clinical average hours for males and females, which were quite similar at 4.5 and 4.8 hours on average respectively. The difference between clinical average hours and specialist clinical average hours was much smaller in comparison, at 1.5 and 2.2 hours for males and females respectively. As would be expected for both males and females, the total average hours were greater than the clinical average hours and these were greater than the specialist clinical average hours.

Figure 6 - Average hours by total, clinical and specialist hours worked



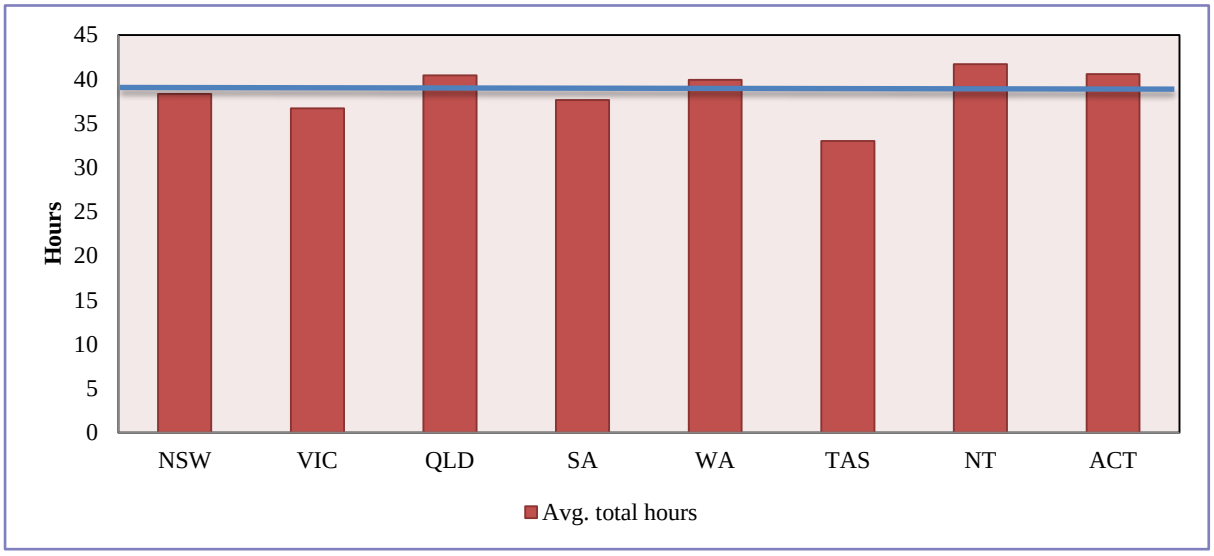
Source: NHWDS, Medical Practitioner 2013

For the purpose of modelling, the total average hours worked is used as it recognises that in treating patients there are clinical and non-clinical components that need to be considered.

The following two figures show the average total hours by location (state and territory and remoteness respectively). The national average is shown on the graphs. As can be seen in Figure 7, in 2013 there were a number of states and territories that had average hours greater than the national average. These states and territories tended to be those that had larger proportions of rural/remote areas or smaller workforces available to provide services.

Figure 7 – Average hours by total, by states and territories

National Average: 38.3

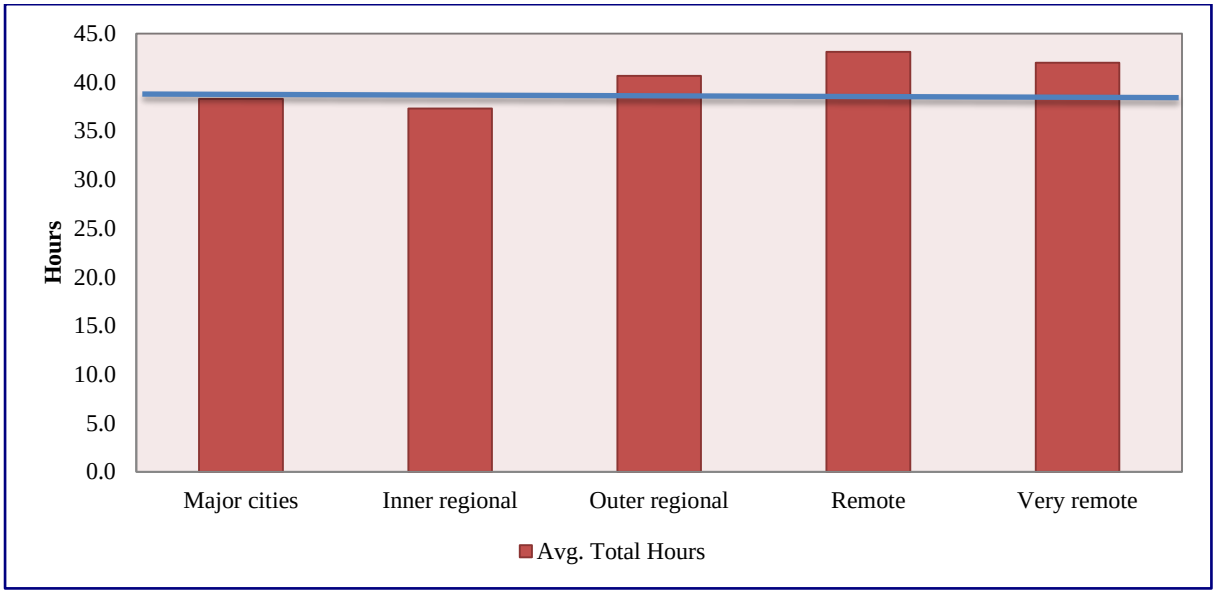


Source: NHWDS, Medical Practitioner 2013

Figure 8 shows a similar pattern, where the average total hours worked tended to be greater in the outer regional, remote and very remote areas. A possible reason for these greater total average hours could be the need to travel greater distances to access some of the remote areas.

Figure 8 – Average total hours remoteness

National average: 38.3



Source: NHWDS, Medical Practitioner 2013

Table 1 gives an indication of where the specialist clinicians were spending most of their working hours; that is, in the public or private sector by location (states and territories). The specialist psychiatrist clinicians are presented in the form of FTE, where 45 per cent of the full-time specialists worked in the public setting, while 55 per cent worked in the private setting. The table also shows that in 2013 New South Wales had the highest proportion of full-time psychiatrists (31 per cent) closely followed by Victoria (29 per cent) and Queensland (19 per cent).

Table 1 –Psychiatrist clinicians by state and territory and sector

	Male			Female			Total				
	Headcount	FTE		Headcount	FTE		Headcount	FTE			
		Public	Private		Public	Private		Public	% Public	Private	% Private
NSW	570	200.2	292.7	302	127.4	99.8	872	327.6	45.5%	392.5	54.5%
VIC	512	147.7	291.5	289	88.4	106.5	801	236	37.2%	397.9	62.8%
QLD	344	140	193	200	73.7	70.6	544	213.7	44.8%	263.6	55.2%
SA	140	57.1	67.8	99	41.8	26.7	239	98.8	51.1%	94.5	48.9%
WA	149	78.9	59.6	87	36.6	22.2	236	115.5	58.5%	81.8	41.5%
TAS	31	13.5	10.7	20	6.6	5.8	51	20.1	54.9%	16.5	45.0%
NT	6	4.5	0.8	8	4	1.7	14	8.5	77.1%	2.5	23.0%
ACT	25	13	9.7	23	13.8	4.7	48	26.9	65.1%	14.4	34.9%
Total	**1,777**	**654.8**	**925.6**	**1,028**	**392.2**	**338**	**2,805**	**1,047.0**	**45.3%**	**1,263.6**	**54.7%**

Source: NHWDS, Medical Practitioner 2013 (1 FTE equivalent to 40 hours)

Current trainee status

Fellowship program

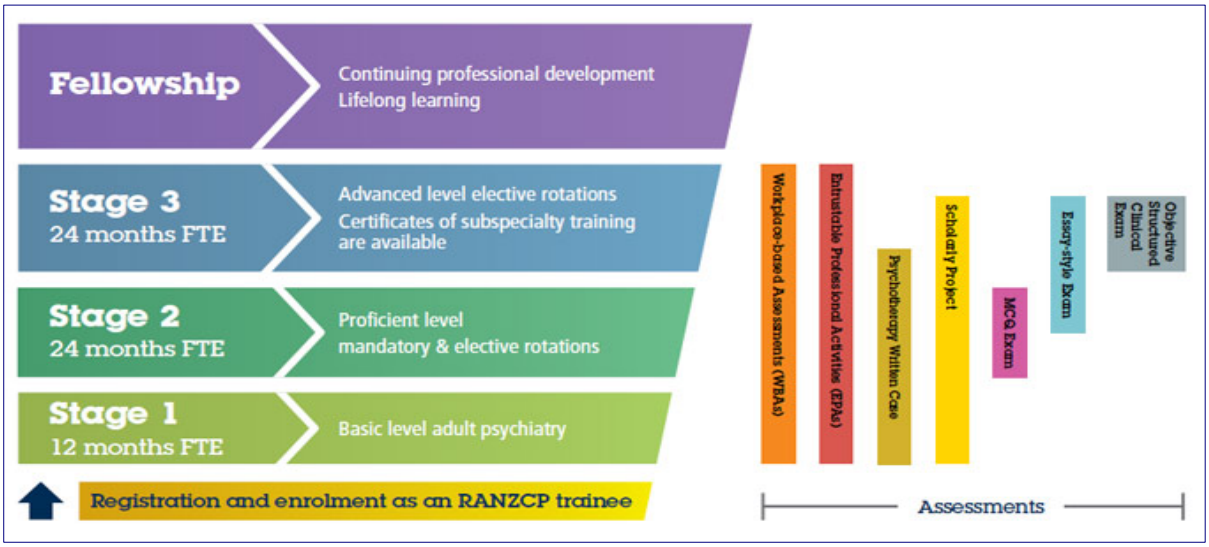
The Royal Australian and New Zealand College of Psychiatrists (RANZCP) oversees the training and qualification of psychiatrists in Australia and New Zealand. In January 2013, the RANZCP implemented the competency – based Fellowship program (the 2012 Fellowship program). The revised program includes a modified training structure with 3 levels, Stage 1, Stage 2 and Stage 3, completed over a minimum of 60 months in total.

The revised program includes a modified assessment structure with Entrustable Professional Activities (EPAs) and Workplace Based Assessments (WBAs).

The 2012 Fellowship program will follow a staggered implementation process according to the following schedule:

- Stage 1 to commence December 2012
- Stage 2 to commence December 2013
- Stage 3 to commence December 2015

Figure 9 – Flow chart of RANZCP 2012 Fellowship Program



Source: The Royal Australian and New Zealand College of Psychiatrists, 2013

The 2012 Fellowship program has a number of exams and assessments that are required to be completed for the attainment of Fellowship. These are outlined in table 2, which shows the months/stage at which they can first be attempted and by when they should be passed. This provides trainees with a baseline against which their progress will be monitored to ensure a steady progression.

Table 2 – Trainees progress trajectory of exams

2012 Fellowship Program Examinations	STAGE 1		STAGE 2				STAGE 3			
Months	6	12	18	24	30	36	42	48	54	60
Written Multiple Choice Question Exam										
Written Essay Exam										
Objective Structured Clinical Exam										
Scholarly Project										
Psychotherapy Written Case										

Source: RANZCP Trainee Progress Trajectory in CBFP v0.14

Data supplied by RANZCP has provided a geographical distribution of the total number of trainees by training program for 2014. The RANZCP is progressively introducing the 2012 Fellowship program (Stage 1 and Stage 2). Stage 1 was introduced in December 2012 in New Zealand and in January 2013 in Australia. Trainees began entering Stage 2 from December 2013.

The 2003 Fellowship program is separated into Basic Training and Advanced Training across 5 years. The minimum amount of time to complete basic training is 3 years and advanced training 2 years. As the 2012 Fellowship program is implemented, the 2003 Fellowship program (Basic and Advanced Training) is being phased out and trainees will be fully transitioned into the 2012 Fellowship program after 2015.

Table 3 includes all trainees from Stage 1 and Stage 2 of the 2012 Fellowship program and the 2003 Fellowship program (Basic Training and Advanced Training). In 2014, the RANZCP had a total of 1,072 domestic trainees.

Table 3 – Total number of trainees by training program and geographic distribution.

2012 Fellowship Program	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	Total
Stage 1	3	63	4	48	18	4	56	20	216
Stage 2	3	25	-	16	10	-	31	8	93
Basic	18	183	8	124	36	15	130	45	559
Advanced	2	75	1	46	8	5	55	12	204
Total	**26**	**346**	**13**	**234**	**72**	**24**	**272**	**85**	**1,072**

Source: RANZCP, 2014. (Table does not include 215 Fellows completing advanced training certificates)

With the introduction of the new training program, there are a number of unknown factors in relation to the pipeline and calculating transition rates through the training program. With the changes made to the training program, there may be a number of trainees that opt out of training if they have been in the training program for more than 13 years – after 13 years trainees need to show cause to continue training, regardless of where they are on the trajectory[1].

Whilst there is limited data to show how trainees will move through the training program, the existing bottlenecks in accessing CAP and CL posts in Stage 2 and for the completion of advanced certificates in Stage 3 are already known and are currently restricting intake into programs. The lack of advanced training posts are not just limited to CAP and CL but are also found in Psychiatry of Old Age and Addiction Psychiatry, which are experiencing bottlenecks and could potentially restrict the intake of trainees in some training zones/locations.

Advanced Training Certificate

In addition to general training, RANZCP offers a wide range of training programs in specialist areas of psychiatry which are available to trainees. These include: Addiction; Adult; Child and Adolescent; Consultation Liaison; Forensic; Psychiatry of Old Age; and Psychotherapies. The table below indicates the number of trainees by subspecialty and their location in 2014.

[1] www.ranzcp.org/Files/PreFellowship/2012-Fellowship-Program/RPP-PROGRESSION.aspx

Table 4– Advanced training numbers by subspecialty and geographic distribution, 2014

Advanced Subspecialties	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	Total
Addiction Psychiatry	-	3	-	4	-	1	-	-	8
Adult Psychiatry	1	1	-	1	1	-	-	-	4
Child and Adolescent	1	8	-	5	2	-	9	3	28
Consultation Liaison	-	3	-	7	1	-	2	1	14
Forensic Psychiatry	-	2	-	2	1	-	3	1	9
Psychiatry of Old Age	-	4	-	6		1	2	2	15
Psychotherapies	-	7	-	3	1	-	1	1	13
Total	**2**	**28**	**-**	**28**	**6**	**2**	**17**	**8**	**91**

Source: RANZCP, 2014

To do the Advanced Training certificate, a minimum of 36 months of training needs to have been completed before being able to commence. These can be completed concurrently with the final 2 years of training or in addition to the training program (i.e., after attaining Fellowship). It should be noted that the training pipeline in the table below may include some Fellows/trainees completing Advanced Training certificates who may have been counted in the trainee numbers in early data collections and who are not actually part of the general training program. The data from the RANZCP (Table 3) excludes 215 Fellows completing a Certificate of Advanced Training in sub-specialities. These are being completed post Fellowship.

Trainee demographics

Table 5 and 6 below outlines the trainees in 2013 and 2014 by age, gender and year of training provided by the RANZCP to the Medical Training Review Panel Report (MTRP). The 2013 data has been presented here as the modelling is based on a starting year of 2013. The table includes both full-time (FT) and part-time (PT) trainees.

Table 5 – Trainees by training level, age group and gender, from RANZCP 2013

Year of Training	1st	2nd	3rd	4th	5th	6th	7th	Interrup ted	Total
25-29	25	10	1	2	0	0	0	1	**39**
30-34	55	38	22	25	10	6	3	3	**162**
35-39	21	36	26	18	13	10	13	8	**145**
40-44	22	15	14	14	12	5	19	2	**103**
45-49	11	9	3	6	4	4	18	2	**57**
50+	3	6	3	4	4	5	34	2	**61**
Total	**137**	**114**	**69**	**69**	**43**	**30**	**87**	**18**	**567**
25-29	36	20	13	1	0	0	1	2	**73**
30-34	46	40	37	41	21	5	2	3	**195**
35-39	41	35	33	24	23	10	22	11	**199**
40-44	17	16	11	5	9	6	9	4	**77**
45-49	10	11	9	7	2	6	19	1	**65**
50+	13	9	6	6	4	10	23	3	**74**
Total	**163**	**131**	**109**	**84**	**59**	**37**	**76**	**24**	**683**
Grand total	**300**	**245**	**178**	**153**	**102**	**67**	**163**	**42**	**1,250**

Source: Medical Training Review Panel Seventeenth Report

Table 6 is the latest available data from the MTRP report. Similarly the table includes both FT and PT trainees. The 'year of training' in both instances is the year in training and not years of training as the RANZCP does not have determined transition points between each year.

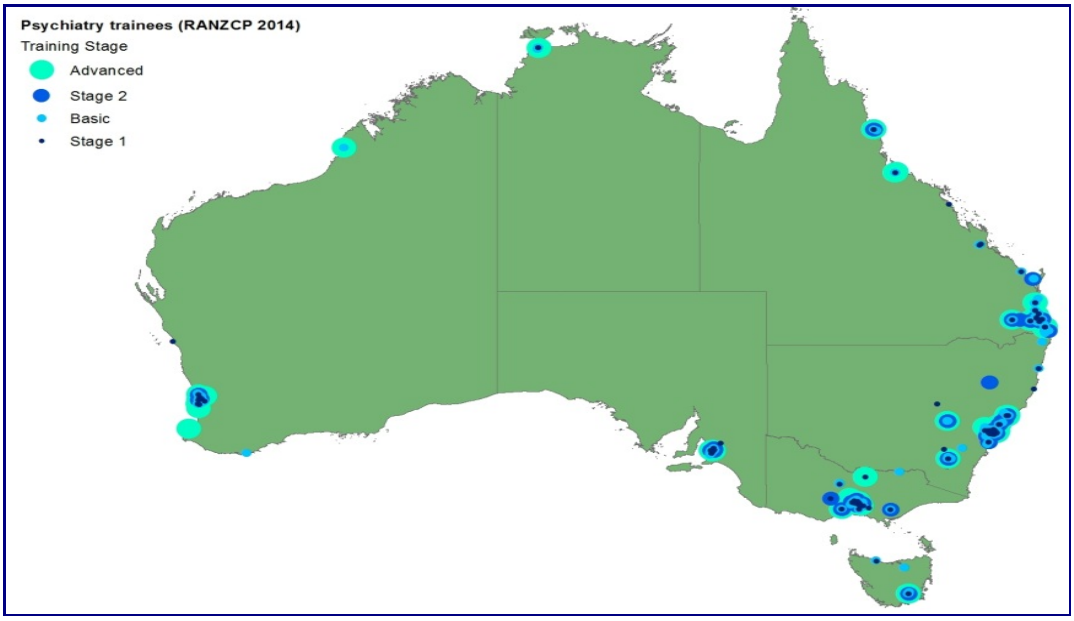
Table 4 - Trainees by training level, age group and gender, from RANZCP 2014

Year of Training	1st	2nd	3rd	4th	5th	6th	7th	Total
				Male				
25-29	48	17	3	1	0	0	0	**69**
30-34	73	41	20	19	14	6	5	**178**
35-39	34	15	14	14	17	7	19	**120**
40-44	11	7	6	9	12	3	13	**61**
45-49	5	8	3	3	5	3	14	**41**
50+	8	5	1	1	4	3	37	**59**
Total	**179**	**93**	**47**	**47**	**52**	**22**	**88**	**528**
				Female				
25-29	80	16	14	3	1	0	2	**116**
30-34	82	35	37	30	23	15	7	**229**
35-39	37	28	15	11	23	15	35	**164**
40-44	15	7	12	13	4	4	19	**74**
45-49	3	5	4	4	6	0	20	**42**
50+	14	19	11	8	8	4	39	**103**
Total	**231**	**110**	**93**	**69**	**65**	**38**	**122**	**728**
Grand total	**410**	**203**	**140**	**116**	**117**	**60**	**210**	**1256**

Source: Medical Training Review Panel Eighteenth Report

The following diagram gives a visual overview of where the psychiatry trainees are distributed throughout Australia. It should be noted that some locations are not necessarily their work location, but are most likely the trainee's home location. It should also be noted that there are trainees who can be at more than one location (there is only a discrepancy of 30 between table 5 and this data which is more detailed than the state and territory in which a trainee is based). On this map it appears that most of the psychiatry trainees are located along the eastern sea borders, with the bulk of trainees based in New South Wales (32 per cent), Victoria (26 per cent) and Queensland (22 per cent). The Basic and Stage 1 trainees make up the largest proportion of trainees, accounting for 73 per cent of all trainees.

Figure 10 – Map of psychiatry trainees, by training stage and location



Source: RANZCP, 2014

For the purpose of modelling, the Department has used a combination of data from MTRP reports, the RANZCP and the National Health Workforce Data Set (NHWDS), medical practitioner 2013 survey, noting that there are variances between all these data sources. This is largely due to the self-reported nature of the medical workforce survey data. In comparison to the above data, the 2013 medical workforce survey data reported a slightly lower (27 per cent) number of psychiatry trainees. There are a number of factors for this lower figure, including that not everyone fills out the survey and each data set has a different collection time point/cut-off, which will affect the number of trainees entering and exiting the training program in a given year.

According to the 2013 medical workforce survey, there were 910 psychiatry trainees in Australia, with the following characteristics:

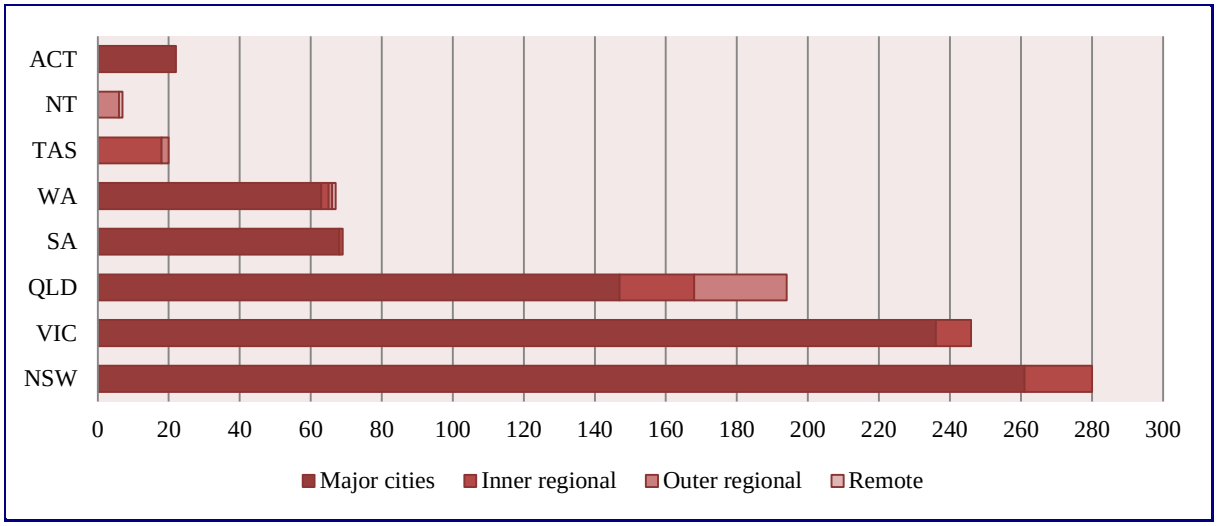
- 49% of all trainees were aged between 20 – 34 years.
- Females accounted for more than half (55%) of psychiatry trainees.
- 79% were located in NSW, VIC and QLD with the majority (88%) working in major cities.
- The public sector accounted for 95% of the FTE for clinical hours for psychiatry trainees.

Source: NHWDS, Medical Practitioner 2013

The following outlines the demographics of trainees who self-identified in the 2013 medical workforce survey by year of training. As previously mentioned these trainees are lower than the number of trainees reported through the RANZCP.

Figure 11 shows that the vast majority (88 per cent) of trainees were located in major cities across all states and territories, with the exception of Tasmania and Northern Territory which had trainees largely in inner regional (86 per cent) and outer regional (86 per cent) respectively.

Figure 11 – Trainees by geographic distribution (states and territories and remoteness area)



Source: NHWDS, Medical Practitioner 2013

The analysis of trainees further identifies which setting trainees spent most of their total hours training (FTE) by year of current training and state and territory. The vast majority were in the public sector (93 per cent) and very small proportions were working in private and/or both (4 per cent respectively).

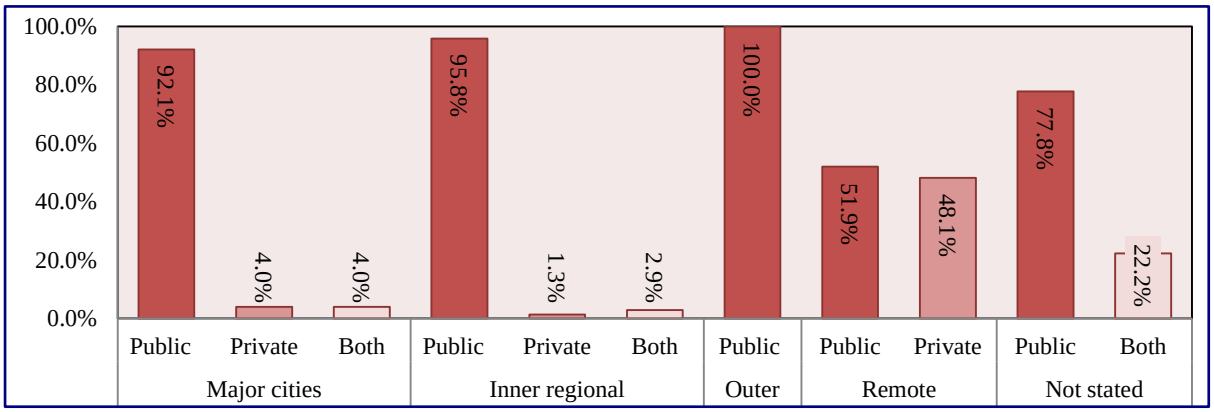
Table 5 – Trainees (FTE) by location, current year of training program and sector

Location	Setting	1st	2nd	3rd	4th	5th	6th	7th	8th	Not stated	Total
NSW	Public	51.3	41.4	46.6	66.9	47.3	6.5	11.0	11.0	7.1	288.9
NSW	Private	-	-	0.8	1.6	4.5	-	-	1.3	-	8.1
NSW	Both	-	1.3	1.1	0.8	7.1	-	-	1.3	-	11.5
VIC	Public	56.2	40.5	37.9	27.8	40.3	20.1	11.6	8.7	8.6	251.7
VIC	Private	-	2.2	1.1	4.3	3.3	1.1	1.1	-	-	13.1
VIC	Both	-	1.2	-	3.8	2.1	2.4	-	-	-	9.5
QLD	Public	33.4	38.2	39.0	37.3	16.9	6.2	8.2	11.6	2.4	192.8
QLD	Private	1.7	-	-	2.1	1.9	1.1	1.0	-	-	7.9
QLD	Both	1.0	-	1.2	5.0	1.1	-	1.9	-	-	10.1
SA	Public	18.3	13.5	14.5	4.9	14.9	3.3	3.3	2.0	-	74.5
SA	Both	-	-	-	1.1	-	-	-	-	-	1.1
WA	Public	11.7	20.4	11.0	7.2	8.0	1.5	3.5	-	2.0	65.1
WA	Private	-	-	-	1.0	1.9	0.6	-	-	1.0	4.5
WA	Both	1.2	.	1.2	1.0	1.0	-	-	-	-	4.4
TAS	Public	1.0	7.0	4.7	3.8	1.3	-	-	0.9	1.0	19.6
TAS	Both	-	-	1.3	-	-	-	-	-	-	1.3
NT	Public	-	2.8	.	1.8	1.0	-	-	-	-	5.5
NT	Private	1.0	-	-	-	-	-	-	-	-	1.0
ACT	Public	5.1	8.2	3.3	2.2	1.0	1.1	1.0	-	-	21.9
ACT	Private	-	1.0	1.0	-	-	-	-	-	-	2.0
Australia	% Public	97%	97%	95%	88%	85%	88%	91%	93%	95%	93%
Australia	% Private	2%	2%	2%	5%	8%	6%	5%	3%	5%	4%
Australia	% Both	1%	1%	3%	7%	7%	5%	4%	3%	0%	4%

Source: NHWDS, Medical Practitioner 2013

The majority of the trainees are located in the public sector throughout all remoteness areas, noting that in remote areas, almost equal numbers of trainees are located in the public (51.9 per cent) and private (48.1 per cent) sector. In the major cities and inner regional areas, there were small percentages of trainees who were training in both the public and private sector. In major cities, this percentage was the same as the private sector only trainees (4 per cent), while in inner regional areas those that were training in both the public and private sector was double those that were training in the private sector only.

Figure 12 – Proportion of trainees by geographic distribution (remoteness area) and sector



Source: NHWDS, Medical Practitioner 2013

Pre-vocational intentions

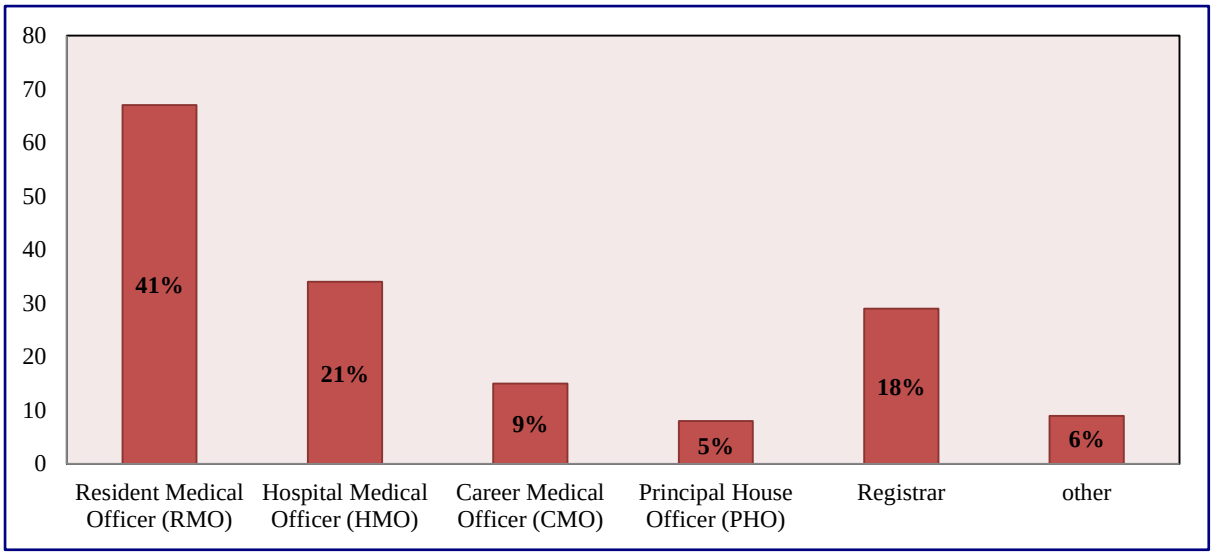
For the first time in 2013, the medical practitioner workforce survey asked a question pertaining to their workforce intentions, with 162 Hospital Non-Specialists (HNS) intending to undertake specialist psychiatry training, with the following characteristics:

- 65% of the HNS who intended to undertake specialist psychiatry training were aged between 25 – 34 years of age.
- Just over half (52%) of hospital non-specialists intending to undertake specialist psychiatry training were female.
- 75% of HNS intending to undertake specialist psychiatry training were located in major cities and 60% were located in the highly populated states of NSW and VIC.
- 41% of hospital non-specialists who intended to undertake specialist psychiatry training were working as Resident Medical Officers (RMOs).

Source: NHWDS, Medical Practitioner 2013

The majority (41 per cent) of HNS intending to undertake psychiatry training were in a vocation of RMO, as shown in Figure 13 below, followed by Hospital Medical Officers (21 per cent) and Registrars (18 per cent).

Figure 13 – HNS who intend to undertake psychiatry training by vocation



Source: NHWDS, Medical Practitioner 2013

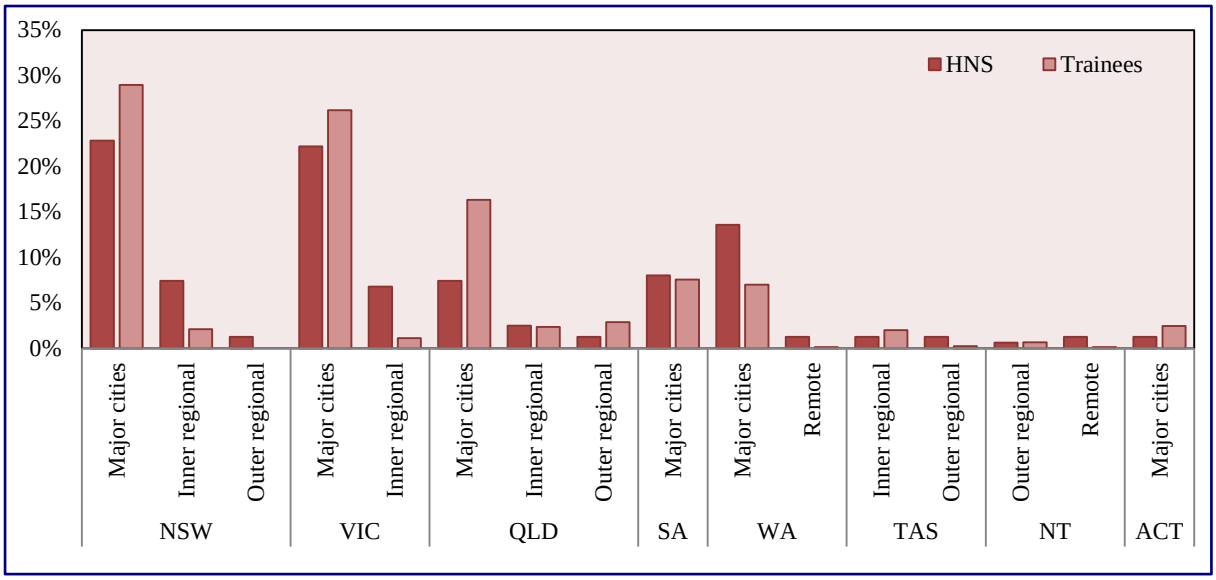
Figure 14 provides an analysis of the HNS who indicate their intentions to undertake psychiatry training against the current vocational trainees. This shows that those intending to train are concentrated largely in the major cities of New South Wales and Victoria (60 per cent), more so than even the vocational trainees at 55 per cent. There was a small number of HNS intending to undertake psychiatry training in remoteness areas that had no vocational trainees. These few exceptions included the New South Wales outer regional area, which had two HNS, and the Western Australia and Northern Territory remote areas, which were double the current trainee numbers.

As a percentage of the total number of HNS intending to undertake psychiatry training in outer regional areas, there were more than double (18 per cent) of all HNS compared to vocational trainees in the same area (8 per cent). This was the same for remote areas, where HNS intending to undertake psychiatry training was 2.5 per cent of the total HNS and vocational trainees accounted for 0.2 per cent of all trainees. The proportion of the number of HNS intending to undertake psychiatry training in outer regional was 3.9 per cent. There were no vocational trainees or HNS intending to undertake psychiatry training in the very

remote areas, as it would be difficult to provide adequate supervision, support, and continuing professional development opportunities in the very remote areas. However, the use of tele-psychiatry facilities/technology and fly in – fly out psychiatrists are options for supervision and support for trainees in very remote areas.

In 2013, of the 162 HNS intending to undertake psychiatry training, 16 per cent presented in the 2014 RANZCP data as either Basic or Stage 1 trainee.

Figure 14 –Trainees and HNS who intend to undertake training by region



Source: NHWDS, Medical Practitioner 2013

The table below provides a summary of the population, specialist ratio per 100,000 population in each state and territory, and the national average. It also provides the total average hours worked, trainees and HNS by geographic distribution (state and territory and remoteness). This table illustrates that in 2013 the ratio of specialists per 100,000 population was greater than the national average (12.1 per 100,000) in Victoria (14 per 100,000), South Australia (14.3 per 100,000) and the Australian Capital Territory (12.6 per 100,000). South Australia had the highest rate of psychiatrists in major cities (19.1 per 100,000) followed by Victoria (16.9 per 100,000) and Queensland (15.6 per 100,000), which were higher than the national average.

In very remote areas, South Australia had the highest rate of psychiatrists at 6.7 per 100,000 populations, compared to other states and territories that were on average 1.6 psychiatrists per 100,000 population.

The states and territories that have greater proportions of psychiatrists in areas outside major cities tended to have greater average hours worked.

Trainees were largely located within the major cities of states and territories, and the HNS generally followed suit, but there were a few HNS that were located where there were very low numbers of trainees – this shows some potential to increase numbers of trainees in these areas.

Table 6 - Population, Specialist, Hours, Trainees and HNS by geographic region

State & Territories	Remoteness Area	2013 Population	Psychiatrists	Per 100,000 population	Total average hours	Trainees	HNS intentions
NSW	Major Cities	5,496,578	780	14.2	38.4	261	37
	Inner Regional	1,429,580	81	5.7	37.1	19	12
	Outer Regional	444,928	10	2.2	43.2	-	2
	Total	**7,410,399**	**871**	**11.8**	**38.3**	**280**	**51**
VIC	Major Cities	4,393,319	742	16.9	36.7	236	36
	Inner Regional	1,096,069	56	5.1	37.1	10	11
	Outer Regional	245,367	3	1.2	34.3	-	-
	Total	**5,739,341**	**801**	**14**	**36.7**	**246**	**47**
QLD	Major Cities	2,888,985	450	15.6	40.4	147	12
	Inner Regional	944,202	49	5.2	41.1	21	4
	Outer Regional	684,568	42	6.1	40.8	26	2
	Very Remote	59,207	1	1.7	40	-	-
	Total	**4,656,803**	**542**	**11.6**	**40.4**	**194**	**18**
SA	Major Cities	1,226,770	234	19.1	37.7	68	13
	Inner Regional	181,273	1	0.6	34	1	-
	Outer Regional	202,204	3	1.5	34.7	-	-
	Very Remote	14,886	1	6.7	33	-	-
	Total	**1,670,827**	**239**	**14.3**	**37.6**	**69**	**13**
WA	Major Cities	1,932,792	214	11.1	39.5	63	22
	Inner Regional	227,888	10	4.4	43.2	2	-
	Outer Regional	187,967	6	3.2	42.2	1	-
	Remote	103,881	4	3.9	46.3	1	2
	Very Remote	66,793	1	1.5	55	-	-
	Total	**2,519,321**	**235**	**9.3**	**39.9**	**67**	**24**
TAS	Inner Regional	336,869	45	13.4	32.4	18	2
	Outer Regional	165,682	6	3.6	37.2	2	2
	Total	**513,159**	**51**	**9.9**	**33**	**20**	**4**
NT	Outer Regional	136,245	8	5.9	42.6	6	1
	Remote	49,694	5	10.1	40.6	1	2
	Very Remote	54,820	1	1.8	40	-	-
	Total	**240,759**	**14**	**5.8**	**41.7**	**7**	**3**
ACT	Major Cities	380,700	48	12.6	40.6	22	2
	Total	**381,488**	**48**	**12.6**	**40.6**	**22**	**2**
Australia	Major Cities	16,319,144	2,468	15.1	38.3	797	122
	Inner Regional	4,217,079	242	5.7	37.3	71	29
	Outer Regional	2,066,961	78	3.8	40.6	35	5
	Remote	322,749	9	2.8	43.1	2	4
	Very Remote	209,348	4	1.9	42	-	-
	Total	**23,135,281**	**2,801**	**12.1**	**38.3**	**905**	**162**

Source: NHWDS, Medical Practitioner 2013 and ABS population projections

Current workforce projections

Supply

Health professionals who are registered as a psychiatrist through the Australian Health Practitioner Regulation Agency (AHPRA) have been identified using the National Health Workforce Data Set (NHWDS), which includes registrant data and other characteristics obtained through the voluntary medical workforce survey as shown in the demographic data in section 1 – 4.

In this analysis, only those who were registered, employed clinicians in 2013 are included (i.e. does not include those in the categories of administration, teacher/educator, researcher and 'others'). Health professionals who are hospital non-specialists (HNS) or specialists-in-training (SIT) with intentions of entering psychiatry training, or working towards the specialisation, are excluded at this point of modelling.

Demand

The demand forecasts use a combination of acute hospital and Medicare Benefits Schedule (MBS) data, with the acute hospital inpatient data used to form the basis of the public component and the MBS data the private component. This utilisation is assigned accordingly to the hours reported by the psychiatrists through the medical workforce survey. Projections of acute inpatient utilisation take into account population growth and ageing, as well as clinical trends, by projecting age by sex 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 population[2].

Projections

The updated workforce projection results for psychiatrists are shown in Table 9 below. The initial year for the projections has been updated to start at 2013, and assumes that in this year supply and demand is in balance. The demand rate for psychiatry is estimated to grow at 4.2 per cent. This scenario assumes maintaining the current utilisation patterns throughout the projection period, which indicates that demand for psychiatrists will exceed supply across the entire projection period to 2030. The inflow of new Fellows uses the dynamic methodology of the training pipeline, while the OTS new Fellows are assumed to remain static over the same time period.

Table 7 – Status quo scenario – summary of workforce projections

Headcount	2013	2016	2020	2025	2030
Supply	**2,805**	**3,138**	**3,631**	**4,236**	**4,809**
New fellows	85	106	122	130	138
OTS new fellows	56	55	55	55	55
Exits (% of supply)	*1.19%*	*1.30%*	*1.45%*	*1.55%*	*1.74%*
Demand	**2,805**	**3,176**	**3,677**	**4,310**	**4,933**
Excess/Shortfall		**-38**	**-46**	**-74**	**-124**

Given the high reliance on OTS within the specialty of psychiatry (approximately 37 per cent of the total number of new Fellows in 2013), in addition to maintaining the status quo, a scenario to evaluate the migration has been conducted. The following scenario highlights the strong reliance on OTS. The number of OTS Fellows is reduced each year to reach 50% of

[2] Forecast services use ABS catalogue 3222 Population Projections Series B.

the original projection by 2030, resulting in a revised shortfall of almost three-fold that of the status quo scenario.

Table 8 –50% self-sufficiency scenario – summary of workforce projections

Headcount	2013	2016	2020	2025	2030
Supply	**2,805**	**3,133**	**3,595**	**4,124**	**4,577**
New fellows	85	106	122	130	138
OTS new fellows	56	50	43	34	28
Exits (% of supply)	*1.19%*	*1.30%*	*1.46%*	*1.59%*	*1.83%*
Demand	**2,805**	**3,176**	**3,677**	**4,310**	**4,933**
Excess/Shortfall		**-43**	**-82**	**-186**	**-356**

Changed assumptions

The original number of the psychiatry workforce is lower than the HW 2025 Volume 3, due to greater refinements of the NHWDS and the ability to more accurately identify those that are employed clinicians in 2013. These supply and demand projections are only the first step of the process in determining capacity. The next step is determining the training pathway and trajectory and to ascertain the reasons behind the shortfall. The development of such a training plan begins to unpick the issues and recognise the drivers and/or barriers that a long term plan will need to address to maintain adequate supply to meet demand in the future. This will also be closely monitored by continually adjusting the modelling projection to address policy changes and other government initiatives that are likely to impact on the supply and demand for psychiatry. It, however, does not factor in unmet demand.

Training pipeline

The purpose of the training pipeline analysis is to project future vocational training numbers entering the training program as a basis for forecasting the number of domestic and OTS new Fellows as inflows into the workforce projections.

Table11 shows the predicted movement of trainees from Stage 1 right through to becoming a new Fellow (domestic or OTS) in a static and dynamic pipeline. The College has always been clear that they do not base transitions on a year to year basis. Therefore, the new methodology tries to focus on moving through the stages rather than on a yearly basis. It is still based on historical movements that have been reported in the MTRP, combined with data requested from the College to assist in more accurately determining the movement.

Table 9 – Training Pipeline Transitions / Churn

Movements	Per cent	Comments
New intake	199 or 22%	– Static: is an average of stage 1 trainees since 2006, or – Dynamic where its 22% of total basic trainees per year
Stage 1 to Stage 1	24%	
Stage 1 to Stage 2	76%	
Stage 2 to Stage 2	76%	(High % as stage 2 is 2 years)
Stage 2 to Stage 3	24%	
Stage 3 to Stage 3	46%	
Stage 3 to New Fellows	49%	
Retention rate	95%	In future should have different rate for each stage
Through rate	77%	If everyone FT and complete in 60 months
	49%	Actual (incorporates PT, waiting for rotation etc.)
OTS trainees	203	Static inflow
Partially comparable	15%	Of OTS trainees
Substantially comparable	20%	Of OTS trainees
OTS new fellow	27%	% of OTS trainees in previous year

The two tables (12 and 13) below show the differences between using a static and dynamic method for the new intake each year. The static version becomes very linear quite quickly and results in high numbers of new Fellows quite early in the projections. The dynamic version takes a percentage of the total number of Basic trainees (which has a more historic basis and are projected forward); while it is also linear, the number of new Fellows has a more gradual increase. Therefore, the dynamic pipeline was selected as the preferred option and has been used for the modelling of new Fellows to 2030. The following observations of the trainee pipeline have been made on the dynamic version:

- The new intake is solely those that have entered stage 1/basic training and have not been carried over from the previous year.
- Almost as many start in the first year as they do carry over from the previous year, but the vast majority move into the next stage of training.
- There is a relatively high retention rate throughout all the training stages, and as the data improves we will be able to calculate a retention rate for each stage movement.
- As indicated by the College, trainees are not finishing the program within a 60 month timeframe but on average are finishing within 6.1 years. If those that train part time and/or take a break in training are removed from the dataset, the median shifts to slightly less; 5.9 years. Up to 30 per cent of trainees finish between 5 to 5.5 years and approximately 47% take either a break in training or train part time. Therefore, this gives an insight into why the through rate is so low, at approximately 49 per cent.
- The OTS trainees are those that do not have to go through the whole training program, but may be required to do a part of the training program, undertake supervised practice, CPD, or any other assessment requirements of the College.
    - The number of OTSs is an average of the last 2 years – the analysis will improve with time and as we have more data points.
    - Data from the MTRP (Chapter 5) reports the number of substantially and partially comparable OTS, which are considered to be the new inflows into the OTS trainee pool.
    - The subsequent outflow from this OTS trainee pool is those that then become new Fellows, provided through the MTRP report.

- Given the total OTS trainee pool remains constant over the projection period the number of OTS new fellows are static.

- The remaining trainees that have not successfully moved to the next stage of training are assumed to be in the same stage the following year.
- The number of Basic and Advanced trainees has grown steadily between 2009 and 2014, on average 5.9 per cent and 6.3 per cent per annum respectively.

Table 10 – Static trainee pipeline analysis, 2009 – 2030

2003 program	2012 Fellowship program	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
New intake										194	199	199	199	199	199	199	199	199	199	199	199	199	199	199	199	199
BASIC (YR1)	Stage 1	124	90	109	118	223	239	314	313	265	260	258	258	258	258	258	258	258	258	258	258	258	258	258	258	258
BASIC (YR2 & YR3)	Stage 2	478	520	514	543	454	422	490	520	603	628	643	652	659	664	668	670	672	673	674	675	675	676	676	676	676
TOTAL Basic trainees		602	610	623	661	677	661	804	833	868	888	901	911	917	922	925	928	930	931	932	933	933	934	934	934	934
ADV YR1 & YR2	Stage 3	178	177	278	322	189	198	188	196	203	225	240	250	256	261	264	266	267	268	269	270	270	270	271	271	271
Fellows completing advanced certificate						161	170	229	222	215																
TOTAL advanced trainees		178	177	278	322	350	368	417	418	418																
Substantially comparable						47	73	40	43	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42
Partially comparable						40	43	38	22	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
OTS trainees								206	199	203	203	203	203	203	203	203	203	203	203	203	203	203	203	203	203	203
Domestic new fellows						82	72	104	85	92	95	106	113	**117**	**120**	**122**	**124**	**125**	**126**	**126**	**126**	**127**	**127**	**127**	**127**	**127**
OTS new fellows						72	59	32	56	54	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55
Total New Fellows		90	72	147	125	154	131	136	141	146	150	161	168	172	175	177	179	180	181	181	181	182	182	182	182	182

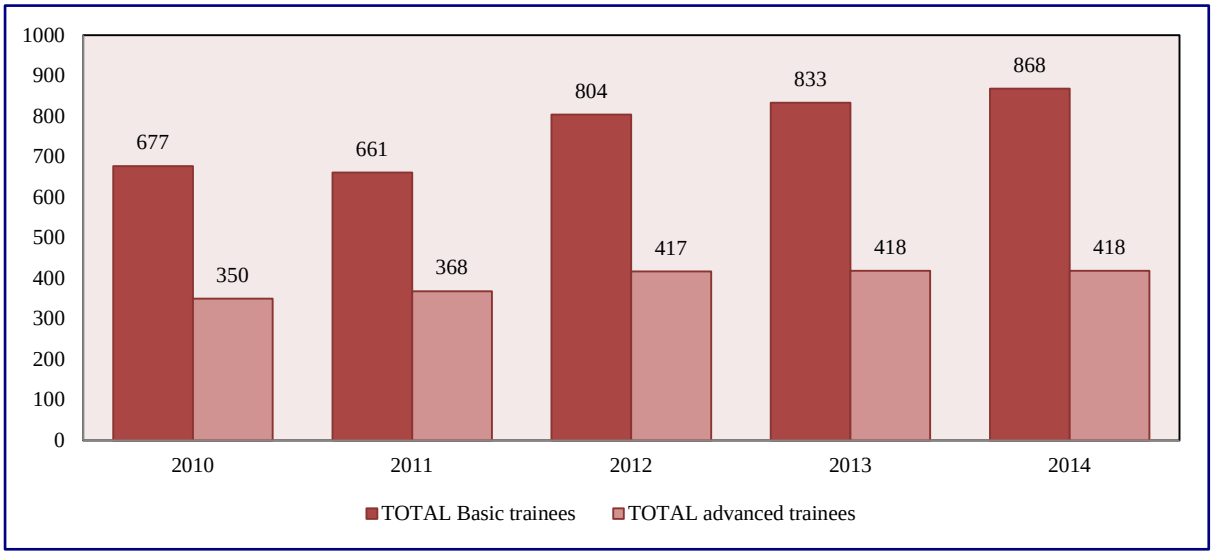
Table 11 – Dynamic trainee pipeline analysis, 2009 – 2030

2003 program	2012 Fellowship program	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
New intake										194	194	197	200	202	205	207	210	212	215	217	220	223	225	228	231	234
BASIC (YR1)	Stage 1	124	90	109	118	223	239	314	313	265	254	255	258	261	264	267	270	273	277	280	283	287	290	294	297	301
BASIC (YR2 & YR3)	Stage 2	478	520	514	543	454	422	490	520	603	628	639	647	655	663	671	679	687	695	704	712	721	730	738	747	756
TOTAL Basic trainees		602	610	623	661	677	661	804	833	868	883	894	905	916	927	938	949	961	972	984	996	1008	1020	1032	1045	1057
ADV YR1 & YR2	Stage 3	178	177	278	322	189	198	188	196	203	225	240	249	255	259	263	266	270	273	276	280	283	286	290	293	297
TOTAL advanced trainees		178	177	278	322	350	368	417	418	418																
Substantially comparable						47	73	40	43	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42
Partially comparable						40	43	38	22	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
OTS trainees								206	199	203	203	203	203	203	203	203	203	203	203	203	203	203	203	203	203	203
Domestic new fellows						82	72	104	85	92	95	106	113	117	120	122	123	125	127	128	130	131	133	134	136	138
OTS new fellows						72	59	32	56	54	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55
Total New Fellows		90	72	147	125	154	131	136	141	146	150	161	168	172	175	177	178	180	182	183	185	186	188	189	191	193

2006 to 2014 is historical data from MTRP/RANZCP (2013 to 2018 shows the minimum time to complete training with the historical rates applied to these future projections).

Figure 15, below shows the number of basic and advanced trainees from 2010 to 2014 from the MTRP reports. This increasing growth contributes to the greater number of new Fellows likely to be admitted to the RANZCP as Fellows in the future.

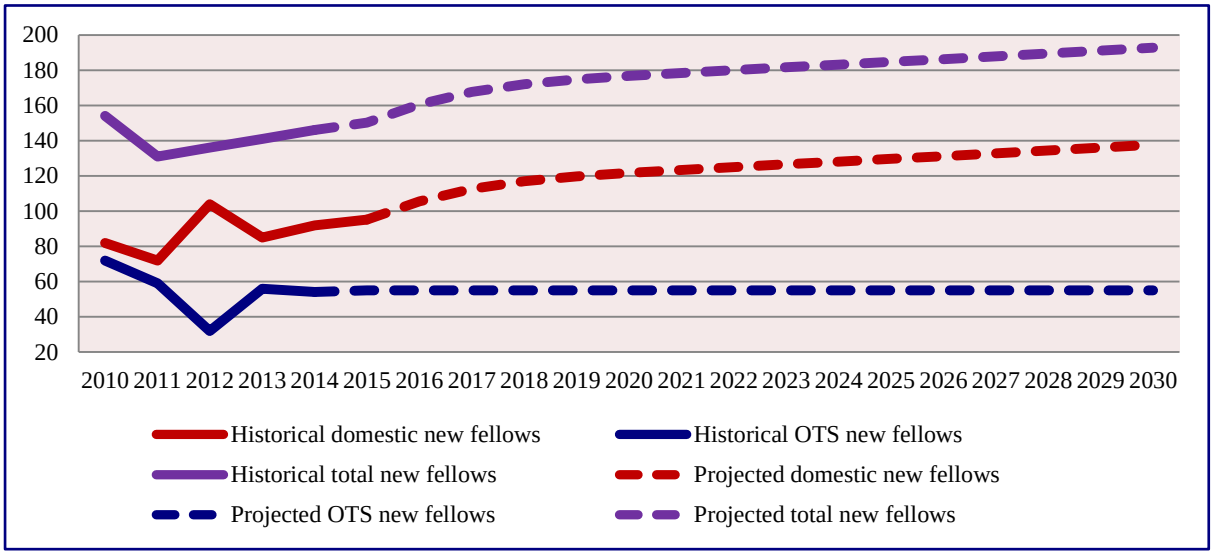
Figure 15 – Number of trainees, 2010 – 2014, MTRP Reports



Source: MTRP reports (the advanced trainee numbers includes Fellows completing subspecialty advanced training certificates)

In 2014, there were 868 Basic trainees, which aligns with Stage 1 and Stage 2 trainees, and 204 Advanced trainees, which aligns with Stage 3 trainees[3]. The above transition rates have been kept constant over the projection period to 2030. The resulting projected new Fellows are used as inflows into the workforce each year for the workforce supply and demand over the projection period. Figure 16 shows the historical number of domestic and overseas trained new Fellows and the forecasted number of domestic and overseas trained new Fellows, based on the above transition rates. The overseas trained new Fellows have been estimated based on an average percentage of previous year's OTS and this percentage has been attributed to the forecasted number of domestic new Fellows.

Figure 16 – New fellows Pipeline Projections



Source: MTRP reports and training pipeline projections based on historical trends

[3] MTRP 18th Report, supplement with additional RANZCP data.

The training pipeline analysis in Table 13 above uses historical data to construct a future pipeline of trainees moving through the training program. This table shows the trainees actually transitioning through the training program, within the minimum required time.

The RANZCP is facing a period of transition between training programs. The 2003 Fellowship program will cease and all trainees will be transitioned across to the 2012 Fellowship program in 2016. This results in difficulties in tracking the progress and predicting movements through training. In addition, there are inherent risks in using 2003 and 2012 combined program data as the program will be in a state of flux until 2017:

- Transition: 2003 program trainees will transition into the 2012 program during 2016 either into Stage 2 or Stage 3 (an estimated 800 trainees will transition between programs). This may result in a reduction of trainee numbers as they self-select out.
- Failure to progress will apply to all trainees from 2016, so this may also lead to a reduction in trainee numbers as 'long term trainees' who fail to progress are excluded/withdraw.

The College has indicated that moving all trainees to the new program creates some difficulties due to the different stages of training and different situations. One of the complexities that arise involves creating new trainee records for all trainees at all stages of the training program that transfer across to the new program. A key difficulty is assessing each trainee's current stage of training and where they will continue within the structure of the new program; often this will be a case by case basis and will take time. Historically, there has been a transition rate of 48 percent of final year trainees admitted to Fellowship, therefore growing the pipeline of trainees is critical to boosting the psychiatry workforce.

The RANZCP believes that the application of the 2012 Fellowship program structure will assist the pipelining for the NMTAN. In particular, using Stage 1, Stage 2, and Stage 3 as key groupings would fit with the training program dimensions. Assessing the time to complete (allowing for part time and break in training) the stages and overall training program allows for the identification of barriers and sticking points. It is important to note that the RANZCP training programs have a minimum of 5 years to complete. This is not the recommended timeframe for completion, just the minimum time. A maximum of 13 years will be allowed for trainees to complete the program, allowing for lifestyle factors to be incorporated. The new training program tightens the rules around time to complete and implements a failure to progress policy to identify those that are not progressing in an adequate timeframe. Once transition has occurred, it will be easier for the RANZCP to map out the trajectory to Fellowship. It is acknowledged that patterns will not emerge until substantial numbers have attained Fellowship through the new program.

Key findings

Given that a new training program has been introduced (the 2012 Fellowship program), the future pipeline will need to be reviewed once all the trainees have been migrated onto the new training program in 2016 and data becomes available in 2017. This will allow the 2012 Fellowship program to stabilise and provide better information on how trainees are transitioning through the program. In the meantime, it can be seen that historically there has been a trainee bottleneck from Basic to Advanced Training, but with the introduction of the 2012 Fellowship program the clinical exam is no longer the critical limiting factor for moving through the program.

Capacity and distribution for vocational training

Vocational medical training is undertaken by most medical practitioners. The process of gaining a vocational training position is competitive, with training provided through the College. 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 psychiatry 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.

Graduate numbers are only one component of the medical education pathway, with many medical practitioners choosing to pursue vocational training. 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 medial graduates move from intern to prevocational to vocational training positions. This is reflected in the 31 per cent increase in the total number of vocational training positions that has occurred between 2010 and 2014. The continued reliance on OTDs places additional burden on the training capacity of the system.

The Commonwealth has continued to support the initiative to expand training capacity through the commitment to continue funding for the STP, which provides funding for specialist training positions in expanded settings for 900 training rotations a year in 2014 and to be continued to 2017.

However, the Commonwealth is only a small contributor to the overall number of training places nationally through funding of the STP posts. Responsibility for funding of and organising vocational training lies with many parties: jurisdictions (for post-graduate and specialist training in the public sector) and Colleges (who operate in 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.

Capacity Analysis

With the completion of the training pipeline analysis and supply and demand analysis, it is clear that while the number of trainees entering the training program and the number of new Fellows is increasing, this still appears to be insufficient to meet the demand for services. There appear to be a number of barriers in the trainee's movement through the program.

This next section aims to define the current training requirements and provide analysis of any gaps that are impeding a trainee's progress through the training program within the minimum timeframe.

[4] Medical Training Review Panel Eighteenth Report, May 2015

An analysis tool called the Capacity Analysis Tool (CATool) was developed, which is essentially a dynamic dashboard that enables the interrogation of vast amounts of data to find meaningful insights through interactive data visualisations. More information regarding the CATool can be found in Appendix 2.

Results of the analysis

Supervisory capacity requirements

The RANZCP sets supervision requirements. The accreditation visits review and assess supervision conditions; however, the allocation of supervision time/capacity is driven by workplace needs. The RANZCP can make recommendations and set standards but cannot enforce supervision; this is completed by the relevant workforce authority. The RANZCP can only monitor and review what is occurring, with patient and trainee safety the priority.

The RANZCP sets a number of standards regarding the physical infrastructure provided for trainees and supervisors. The accreditation visits assess the site's capacity to meet these standards, however, the RANZCP can only recommend that changes are made and do not have the capacity or authority to request for additional physical infrastructure to meet the standards. The RANZCP can only make suggestions or recommendations aimed at improving the workplace conditions. In addition, the RANZCP can de-accredit sites if standards are not met, noting that this is a rare occurrence but within the powers of the accreditation site visits and College governance arrangements.

The CATool has the ability to map the location of supervisor's main job location in 2013, in addition to all the specialist clinicians, the OTS (exemptions) and the trainees. The CATool can be quickly interrogated to determine the particular workforce composition at a point in time at a certain location.

The overall aim of this section was to have the ability to conduct further analysis of the supervisors and the FTE supervision hours. But as is the case with many colleges, the FTE for supervision was not available as this item would be dependent upon local jurisdiction and employment details, as well as needing to have the ability to overlay supervisory requirements and capacity on a facility basis. The Department was also only able to reconcile about 70 per cent of the data for supervisors. Another limitation of the current data is that some supervisors have up to four work locations which create difficulties for current data analysis.

Key Findings

- As the number of trainees increases, the number of supervisors required will increase and this will also impact on supervisor training and support. All stakeholders need to collaborate to identify new supervisors and to ensure that they are adequately supported. Development of resources such as online modules and peer support activities would provide additional support for supervisors, including in rural and remote areas.
- Given the fact that trainees will be trained in multiple areas of practice, both mandatory and elective, it is unlikely that they will have the same supervisor throughout training. It is therefore difficult to match supervisors to trainees and provide meaningful data in this area.
- Improved local data from each jurisdiction would ensure a greater ability to identify supervisors and FTE for supervision at various work locations.
- Consideration needs to be given to strategies to recruit and support supervisors in private practice and rural locations, and/or to trial remote supervision of trainees. Blended and innovative models of supervision may be considered to ensure that trainees can receive

appropriate supervision available to train in rural/remote areas. There is a review of STP occurring, which may be one mechanism to consider strategies to address this finding.

- Administrative support for Branch Training Committees who oversee the jurisdictional training program will also require review.

Mapping of training capacity

Using the CATool, the trainees were mapped along with the other workforce types. It gave information about where the trainees were located compared with supervisors, specialist clinicians, OTS, STP posts as well as the facilities and the services being delivered – at a national, state and suburb level.

But these maps need to be interpreted with care, as it does not give the ability to simply draw the conclusion that there are some supervisors that do not have trainees and therefore there is still capacity for more trainees to be placed in those locations. There are many factors that need to be taken into consideration that have not been able to be included in this version of the CATool. These include but are not limited to:

Infrastructure

- Where there is currently limited physical space for trainees in some locations to practice and in some instances they are sharing rooms with other specialist trainees.

Capacity for rotations

- The CAP and CL rotations (6 months FTE) are more difficult to access in some locations. These rotations are completed on average between 28 and 30 months from the start of training.
- Measures are needed to ensure that the advanced training certificate Fellows are not in a STP rotation that has been identified as CAP or CL.
- The limited number of posts are restricting training intake in many locations at present. In other words, only a limited number of trainees are being accepted as there are not enough posts for them. This has flow on effects for Advanced Training, as those wanting to complete a sub-speciality in CAP or CL have limited access as they require the same post for a longer period of time.
- The future increase in the number of trainees will create further bottlenecks as the capacity to place them in training posts does not match.
- There is a shortage of Child and Adolescent Psychiatrists, as well as a shortage of CAP posts, which will create a barrier to progression as trainee numbers increase, as this is a mandatory requirement in Stage 2.
- The shortage of CL posts will create a barrier to progression as trainee numbers increase, as this is a mandatory requirement in Stage 2.
- Specific locations may not be accessible, where the issue is across a region and not a specific location; for example, the ACT has limited access to CAP posts. The actual location of the posts is not the issue; it is the broader access to the posts within that particular health jurisdiction.
- The College does not have data on barriers to progression in the new 2012 training program as yet. It is anticipated there will be fewer barriers and may be more related to availability of posts in mandatory rotations, for example, CAP and CL.

Exams

- Trainees are delaying attempting the psychological methods case and clinical exams.
- The clinical exams, especially the Observed Clinical Interview, are more difficult to attain, with candidates taking more attempts to pass. The overall pass rate for 2013 was 52%. On average, 92% of trainees pass by their 3rd attempt.

Therefore, at this point in time, it is not possible to identify gaps in service, as the data does not allow for accurate measurement of the current level of supervision and trainee at the same point in time. In addition, it is not possible consider within this analysis the non-workforce influences that contribute to the hold up of a trainee obtaining Fellowship.

Temporary and permanent solutions will still need to be considered in the future, as some rural/remote areas will continue to be filled by an OTS or those on a 19AB restriction. That is, the area has been identified as having no capacity for trainees due to lack of capacity to provide supervision.

Key Findings

- Currently, careful management of posts is required as there are often limits to the number of training posts in particular areas of practice. To guarantee access to posts, trainees are often rotated to other specialties first and may have to complete the CAP or CL posts (which need to be completed by the end of Stage 2) at a later date. It is important to have the ability to quantify and plan for the number of trainees that require CAP and CL rotation.
- Careful consideration needs to be given to the impact of increasing the number of trainees entering the program and the flow on effects on training in all areas of practice, in particular the availability of advanced training posts in areas of practice other than CAP and CL. This will also require consideration of the supervision requirements in Advanced Training and the impact on DOTs and local post administration.
- Given the new training program is a competency based training program, considering other ways of learning and different settings to fulfil the CAP and CL rotations could be a possibility to minimise the bottleneck of trainees moving through the rotations.
- It is important to note that psychiatry workforce shortages will not be solved by simply creating more training posts in Stage 1. There must be an equivalent increase in Stage 2 and 3 posts and these should be established according to local needs. For example, WA may need more Psychiatry Old Age posts while ACT may need more CAP. Supervisors, DOTs and BTCs, both professional and administrative will need to be support in this work.

Specialist Training Programme

Commonwealth funding of the STP provides an important, albeit small overall, contribution to the total number of training places available nationally, with STP posts supporting the training program as trainee numbers increase and providing trainee exposure to high prevalence-low acuity disorders, which may not be as available in public hospital settings. The RANZCP currently has contracts with 178 STP posts to achieve a target of 160 FTE filled. Funding for STP posts is distributed by the RANZCP, however the positions are primarily controlled by branches and health services. So it is essentially an employment and branch decision on the type/location of positions that apply for funding under STP.

The CATool shows the difference between the trainees and the STP posts. In Queensland the number of trainees was greater than the number of STP posts; not all trainees were located at an STP post, and in fact there were an additional 177 trainees that were located at facilities

that were funded through Queensland Health. Data was requested from all jurisdictions on their number of publically funded training posts. Note the Department was unable to map all the training posts as not all jurisdiction provided data for this to be done. However, Queensland did provide data and reported 230 registrars training at a Queensland Health facility.

STP funding agreements vary between colleges, as does the number of supported STP posts. There are a number of STP support projects for psychiatry that the Commonwealth funds, which will be considered as part of the STP review. These programs include:

a) Current support for rural trainees (mentoring, webinars, exam preparation and rural grants) to enhance the rural experience and therefore encourage uptake of rural training posts/post Fellowship employment.
b) Recruitment into psychiatry (short courses, competitions, scholarships to congress, psychiatry interest forum), which has increased the profile of psychiatry among medical students and junior doctors. The RANZCP currently has 1,323 Psychiatry interest forum (PIF) members; 81 PIF members have joined the training program (24% of those deemed eligible) with more conversions anticipated in the future. Introduction to psychiatry short courses have been held for 106 participants, the majority of whom state that this has encouraged them to consider a future in psychiatry.
c) Support for Directors of Training – the RANZCP calculates the amount of administrative support and funding for a DOT based on a formula related to the total number of trainees and involvement in course conduction. The amount of funding differs due to different numbers of trainees and different health systems. The formula is 0.5 FTE DOT time for every 20 trainees for training support, teaching, remediation, and administration, 0.4 FTE if there is a separate Formal Education Course or Master's program. Administrative support is 0.4 FTE administrations staffing per 20 trainees.

Key findings

- Investigate the pre-requisites to increasing the amount of training undertaken in the private sector, in primary care, in rural and remote locations and assistance to DOTs.
- In order to fully support any newly created training posts and ensure the ongoing success of existing ones, it is important to consider that the funding allocated to STP posts does not cover the actual costs to the service of maintaining the posts. This will be an important factor in encouraging more private sector and rural and remote training.
- Other support projects to ensure adequate distribution, recruitment, retention, professional development and job satisfaction should build on the projects already under the STP, including:
  - Rural Support:
    - Provide additional support for rural areas, for example piloting remote supervision models, the expansion of rural webinars, practice visits, networking, mentoring, peer support groups, supervisor access, and grants for educational support.
    - Examining remote and innovative supervision models.
  - Online Learning Modules
    - Investigate the options for the expansion of further online learning material for training and professional development of psychiatrists.
  - Improvements to Data
    - Options for improving the quality and collection of data to assist with monitoring future training demand and distribution of training posts. This should be in the form of the college expanding the data they receive from state offices on the overall training program requirements including supervision hours, number and duration of each trainee rotating through each post.

- Recruitment in Psychiatry: increase and expand existing recruitment into psychiatry projects.
  - For example, through the Psychiatry Interest Forum (PIF), by continuing to expand upon the current PIF membership to include additional medical students and junior doctors, and providing information to high-school students regarding the role of the psychiatrist and career pathways in psychiatry
- Developing Capacity in the Private Sector
  - Investigate the development and capacity of the private sector to provide additional training posts with an emphasis on posts where there is an area of practice shortage.
- Coaching and Mentoring
  - Investigate the expansion of mentoring and coaching to provide one-on-one support for trainees on the pathway to Fellowship.

Appendices

Appendix 1: 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 psychiatry workforce

The demographic characteristics of the current psychiatry workforce are outlined as well as 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.

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 psychiatry workforce. The psychiatry workforce is defined by those medical practitioners that have an accreditation in psychiatry and have identified psychiatry as their main speciality 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 as a psychiatrist through Australian Health Practitioner Regulation Agency (AHPRA) have been identified through the use of the National Health Workforce Data Set (NHWDS), which includes the registrants and the labour force survey (LFS).
- The psychiatry workforce is defined as those that:
  - Are employed (excluding those on leave for more than three months)
  - Have clinician status
  - Have specialist accreditation in psychiatry
  - Work the most or second most hours in the specialty field of psychiatry, and only include practitioners who have one or two accredited specialities in total (with one of them being psychiatry).
- Inputs to the psychiatry workforce are based on 2013 data and additional data from the RANZCP as required.
- The trainees that have been identified through the LFS have been defined through the following methodology, that assumes that they:
  - Are employed (excluding those on leave for more than three months)
  - Currently undertaking specialist training in psychiatry as their first field of training (excluding the second specialty field)
  - Include those who have transitioned from trainee to holding a specialist accreditation in psychiatry due to timing issues of registration and LFS.
  - Includes those who were originally classified as intentions and trainees, these were considered to be trainees only (due to AIHW imputation)
  - 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, then the principal area of their main job in medicine was not specialist
- Overseas trained specialists enter into the model through either the temporary or permanent migration streams. The inflow of psychiatrists via migration is obtained from the Department of Immigration and Border Protection (DIBP) and reconciled with the RANZCP data.
- Hours worked are calculated and applied separately for each age/gender cohort for psychiatry. The data from which hours worked is calculated is taken from the hours reported by psychiatrists on the relevant LFS items for 2013.
- Exit rates are calculated on a unique basis for psychiatrists 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 psychiatrists 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 acute inpatient hospital and Medicare Benefits Schedule (MBS) data with the acute hospital inpatient data used to form the basis of the public component and MBS data the private component.
- This utilisation is assigned accordingly to the hours reported by the psychiatrists through the labour force survey.
- Projections of acute inpatient utilisation take into account population growth and ageing, as well as clinical trends, by projecting age by sex 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 population[5].
- A constant, linear growth rate is then applied to the various age/gender cohorts. This provides for variation in demand as a result of different sizes of age/gender cohorts over time, but not due to different demand patterns within an age/gender cohort.
- Demand and supply start from an 'in balance' position.
    - The demand growth rate for psychiatry is currently in the range of 4.2 per annum.

[5] Forecast services use ABS catalogue 3222 Population Projections Series B.

Appendix 2: Capacity Analysis Tool (CATool)

The software used to develop the CATool is called Qlik® Sense Desktop.

Multiple data sources were included in the CATool in order to combine the large amounts of data variables to create a visual representation of where the location of the workforce, supervisors, trainees, overseas trained specialists (exemptions) and services were being delivered, albeit only a point in time.

The following data variables were included in the CATool:

Table 14 - Data variables and sources of the CATool

Data variables	Data sources
Geography	• 1270.0.55.003 - Australian Statistical Geography Standard (ASGS): Volume 3 - Non ABS Structures, July 2011(State Suburbs ASGS Non ABS Structures Ed 2011 Digital Boundaries in ESRI Shapefile Format). • Geometric values – XY coordinates of the centroid using ABS digital boundaries.
Population	• Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), Australia, 2011, ABS 2033.0.55.001 (datacube - SSC indexes).
Socio-Economic Indexes for Areas	• Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), Australia, 2011, ABS 2033.0.55.001 (datacube - SSC indexes).
MBS services	• Australia Government Department of Health, Medical Benefits Division
Hospital Separations	• Australia Government Department of Health, Acute Care Division
Hospital Facilities	• Australia Government Department of Health, GIS server and included the category of facility by XY location.
Specialist Training Programme (STP) posts	• Australia Government Department of Health, Health Training Branch
Trainees	• RANZCP 2014 and NHWDS medical practitioner 2013
Supervisors	• RANZCP 2014 and NHWDS medical practitioner 2013
Specialist clinicians	• NHWDS medical practitioner 2013
Overseas trained specialists	• RANZCP 2014 and NHWDS medical practitioner 2013

Future consideration of the CATool

While in its infancy the CATool gives the ability to visualise the data and build the evidence required to make informed decisions. Its intention is to be a dynamic visual analytic tool that allows access to big datasets quickly and easily and that can identify specific areas of interest relevant to different stakeholders. As the recommendations above outline:

- Further development of data is needed;
- The margins of errors need to be further analysed;
- Analysis requires working closely with the College and jurisdictions.