

# AUSTRALIA'S FUTURE HEALTH WORKFORCE – DOCTORS

August 2014



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The Australia's Future Health Workforce – Doctors report was developed by Health Workforce Australia with the input of key stakeholders for the consideration of Commonwealth, State and Territory Health Ministers.

Health Workforce Australia was abolished on 8 October 2014.

The Australia's Future Health Workforce – Doctors Report was approved for publication by the Commonwealth and all State and Territory Health Ministers on 10 October 2014.

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

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# 1. Executive summary

Health Workforce Australia delivers a national, coordinated approach to health workforce reform. In common with other nations, Australia's health workforce is under tremendous pressure and must undergo significant transformation to meet the rapidly rising demands for healthcare.

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.

Uncoordinated decision making in the past 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 and a cost to the taxpayer.

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 for us to decide where we want medical students to go in the future to end up with doctors in the right 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, is the 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 the nation needs from doctors in the future is essential.

This report builds on the work undertaken in Health Workforce 2025 (HW2025). Importantly, the work is 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.

This report firstly describes the current medical workforce in Australia and the future challenges outlined above.

It goes on to provide a projection of the supply of and demand for doctors to 2030. This is provided as a comparison scenario that allows us to see a "do nothing" outcome and compare the effects of taking action. This demonstrates that without change, relative to the starting point (2012) the workforce would be in oversupply to 2017 before dropping to

undersupply from the early 2020s. This leads to an emerging gap between supply and demand of 2,500 in 2025 moving to a shortfall of 5,000 by 2030.

The NMTAN executive committee informed the development of a combined scenario based on the best possible prediction of the future. This includes applying a constraint in the growth of the medical workforce that is equal to the long range forecast for the growth in gross domestic product (GDP) and a productivity gain of 2 per cent over the fifteen year projection period.

The application of this real world outlook on the projections is an ability to make recommendations for the future supply of medical practitioners which is to;

- Keep medical school intake constant for 2015; and
- Utilise immigration settings to achieve a balance between projected supply and demand

The report also makes recommendations for future work including;

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

This all crucially supports the health system's goal to continue to provide high quality, accessible, affordable healthcare for all Australians.

## 2. Recommendations

**Recommendation 1: Planning for the future medical workforce should be based on:**

- **A link between growth in the economy and demand for doctors over the long term; and**
- **A small proportion of productivity gains being used to reduce workforce requirements.**

These recommendations are based on the premise that growth in the medical workforce is subject to an economic constraint. With Treasury projections of future growth being lower than the historic rate of growth this suggests a slowing in the rate of growth in demand for doctors. Further, it is assumed that 2% of the productivity gains achieved over the next 15 years will result in a reduction in the required workforce.

Based on these assumptions the following recommendations are made:

1.1: No change should be made to the total (domestic and international) medical student intake in 2015

1.2: A gradual reduction in temporary migration should be pursued to achieve a balance between medical workforce supply and demand over time.

**Recommendation 2: Workforce modelling results are reviewed annually to determine requirements for future adjustments**

Workforce planning based on modelling in a complex environment should not be considered a one off exercise, rather it should be continuously updated as new information on actual outcomes becomes available through each workforce survey.

Future adjustments to medical school intakes and immigration policy in relation to the medical workforce should be made on the basis of annual updates to the workforce modelling.

**Recommendation 3: The National Medical Training Advisory Network should prioritise further policy work in the following areas**

Further work for the NMTAN should include:

- Capacity for and distribution of medical training
- Employment patterns and intentions of prevocational doctors

## 3. Introduction

### 3.1 Why is national workforce planning for doctors important?

There are three key factors to 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 for us to decide where we want medical students to go in the future to end up with doctors in the right locations and specialties that will be needed in the future.

Second, a large number of doctors will retire from 2025. It is critical that we have a plan to replace these retiring doctors now especially because it takes such a long time to train a doctor ie, between 10 – 15 years. 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, is the lack of coordination across the medical training pipeline - between universities, medical colleges, the Medical Board 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 the nation needs from doctors in the future is essential.

With these three factors in mind, the government established the National Medical Training Advisory Network (NMTAN) as the mechanism to bring together the key decision-makers to better coordinate medical training.

With the agreement of the Standing Council on Health, the NMTAN was established in February 2014. The NMTAN has a role in advising Health Workforce Australia in two key areas: the development of the National Medical Training Plan and development of policy advice for health ministers on reforms required in medical education and training to ensure a medical workforce well prepared to meet Australia's future health care needs.

The NMTAN has provided advice to HWA through the development of the annual workforce projections presented in this report and the development of the recommendations.

### 3.2 National health workforce planning

#### 3.2.1 The past

Released in 2012 by HWA, Health Workforce 2025: Doctors, Nurses and Midwives (HW2025) provided Australia's first long-term, national projections for doctors through to 2025. The report presented eight potential options of future workforce supply and demand. It showed that under current policy settings, Australia may not have enough of the right type of doctors in the right locations for the communities that need them. It also indicated the current medical training system is inefficient and uncoordinated, there will not be

enough postgraduate medical training places for the number of graduates seeking them and Australia will continue to remain highly dependent on international health professionals.

HW2025 provided commentary on the impacts on training, immigration and workforce reform including what should be done in the future to tackle these issues. It also concluded that the workforce projections be updated regularly to help inform future policy decisions.

### 3.2.2 The future

This report, Australia's Future Health Workforce – Doctors (AFHW - Doctors) provides an update to workforce projections for doctors. It uses new and improved planning data to project Australia's future health workforce requirements for the medical profession from 2012 to 2030. It also updates the figures from the original HW2025 report as well as including new projections and scenarios.

This report makes recommendations to achieve an appropriate balance between future health workforce supply and demand required. Instead of eight possible options, AFHW - Doctors concludes with one view that reflects the most likely scenario that will occur. It provides recommendations on medical training levels, immigration and future workforce planning that is needed to achieve this balance.

The recommendations constitute the first iteration of a National Medical Training Plan. A National Training Plan must begin with recommendations in areas that will have the greatest impact on aggregate workforce supply; in the case of doctors, medical student intakes and migration levels.

The future work of the NMTAN, combined with updated supply and demand projections for individual medical specialties will constitute the next iteration of the National Medical Training Plan and provide more specific recommendations regarding medical workforce distribution.

## 4. Australia's current medical workforce

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.

To conduct effective workforce analysis, it is important to understand the current workforce and trends in the workforce that will have predictable impacts in years to come.

Australia's medical workforce is supplied through domestic medical training of local and international students and through immigration.

The pathway to independent practice as a vocationally recognised specialist is long and there are multiple layers of government involved in funding 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 hospitals and private medical practices.

Uncoordinated decision making in the past has seen a "boom and bust" cycle in medical training and resulting doctor numbers.

This section presents a profile of the current medical workforce including the size of the total medical workforce, comparison to the number of doctors per person among Organisation for Economic Development (OECD) countries, trends in medical student intakes and medical graduations; trends in immigration of doctors, changes in the distribution of the medical workforce, both geographically and among types of doctor. This section also outlines a number of pressures that impact on the demographics of the future medical workforce such as increasing retirement rates and the emerging training pressures created by a rapid expansion in the number of commencing medical students over the past decade.

Together this information presents a picture of a medical workforce that has expanded rapidly in recent years even when population growth is taken into account. The numbers of doctors per person has increased in all remoteness areas and across both general practice and other specialties. This growth has occurred against a backdrop where Australia currently enjoys a high density of doctors compared to other OECD countries.

### **The medical workforce is a costly resource that should be utilised wisely.**

In 2011-12 total spending on health in Australia was over \$140.0 billion which equates to 9.5 per cent of gross domestic product (GDP). The Australian Institute of Health and Welfare (AIHW) estimate the average real growth in health spending over the period 1999-2000 to

2009-10 as 5.3 percent per year compared with a 3.1 percent increase in GDP per year over the same period<sup>1</sup>.

The workforce costs almost 2/3 of the current spend on health care which alone makes a strong case for supporting planning that estimates future workforce needs and takes measures to keep supply and demand close to equilibrium.

If planning fails to get the balance right between supply and demand for the medical workforce there is potentially wasted health dollars spent on training and the supply of services.

It is difficult to get a complete training cost from professional entry level (university) to the completion of vocational training, however, various elements can be costed to provide an indication of the costs involved and this is demonstrated in the table below.

**Table 1- Commonwealth funding for medical training**

| Level of Training  | Cost per student per annum (\$)                                     |
|--|---|
| Professional entry (university)                          | 31,358 (Commonwealth and individuals through deferred HECS payment) |
| Commonwealth Intern Placement Program                    | 100,000 (Commonwealth) <sup>2</sup>                                 |
| Prevocational General Practice Placement Program (PGPPP) | 218,000 (Commonwealth) <sup>3</sup>                                 |
| Australian General Practice Training Program (AGPT)      | 60,000 (Commonwealth) <sup>4</sup>                                  |
| Specialist Training Program (STP)                        | 120,000 (Commonwealth) <sup>5</sup>                                 |

Notes:

1. The costs of training above are provided for illustrative purposes only and represent a mixture of training cost and service delivery cost.
2. State and Territory Governments supply a significant proportion of the funding for clinical placements, intern and specialty training.

Beyond the training period, in a country with an uncapped Medicare system that supports episodes of medical care, there is a material cost to the system in having an excess of medical practitioners.

Uncoordinated management of the medical workforce supply risks costing excess valuable health dollars.

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<sup>1</sup> AIHW 2012

<sup>2</sup> The Hon Peter Dutton MP. [Media release: More doctors in rural areas](#), 20 February 2014 [PDF, 250 KB].

<sup>3</sup> Review of Australian Government Health Workforce Programs, Jenny Mason, April 2013

<sup>4</sup> Review of Australian Government Health Workforce Programs, Jenny Mason, April 2013

<sup>5</sup> Review of Australian Government Health Workforce Programs, Jenny Mason, April 2013

## Training takes time

It takes a long time to produce independently practicing vocationally trained specialists.

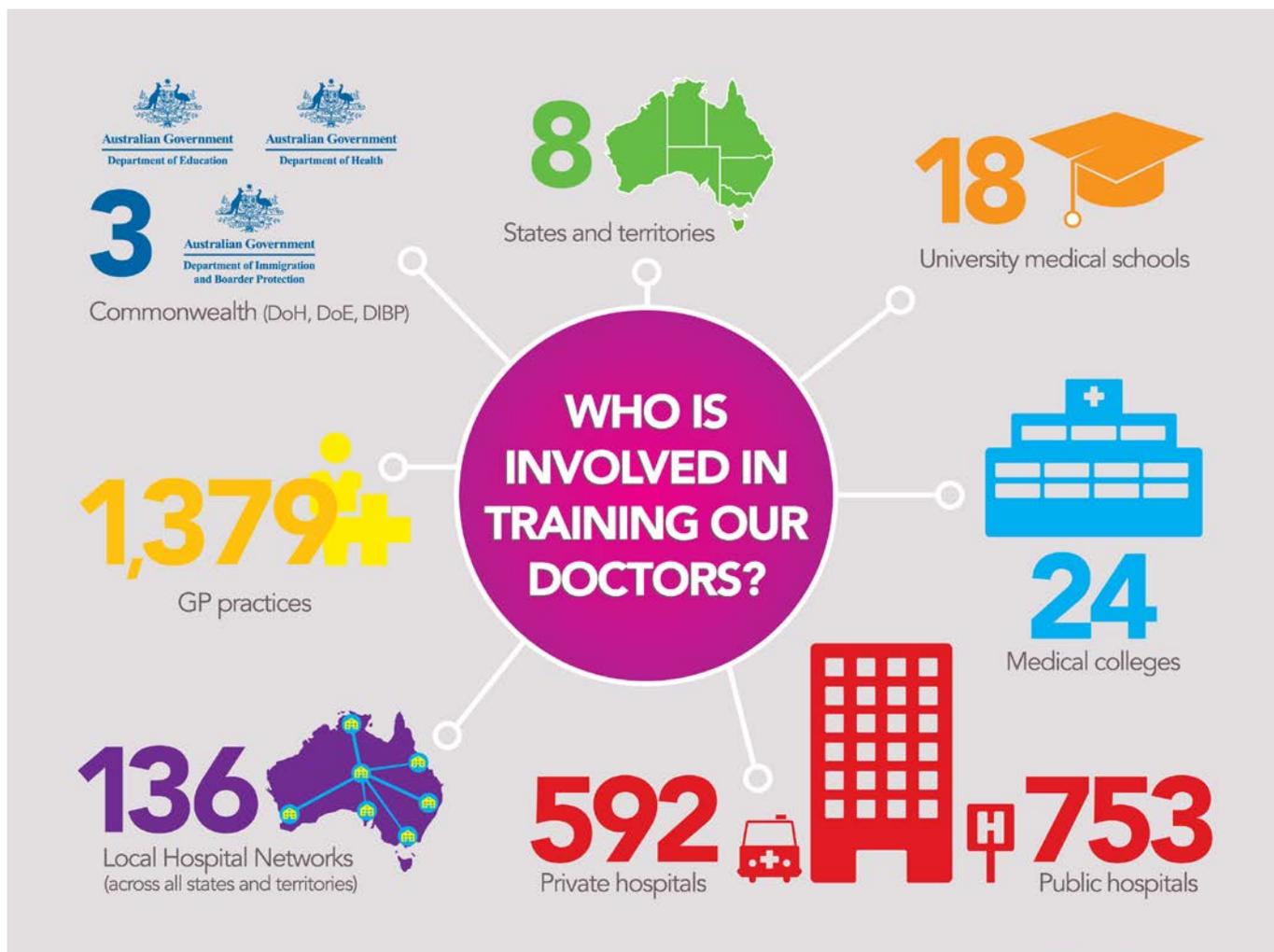
A professional entry student commencing university education in 2014 would complete specialty training in 2026 (based on 5 years medical school, intern year, post graduate year 2 (PGY2) and 5 years to complete specialty training). See diagram below.



This means that any policy adjustments made at the beginning of the training pipeline will not have a full effect at the service delivery end for more than a decade. If future needs are not anticipated and planned for then the boom and bust periods of under and over supply will continue. Once doctors complete their training they typically have a long medical career. These facts in combination mean that adjusting medical student numbers is not an effective means to deal with short term imbalances between supply and demand for doctors.

## There are numerous bodies responsible for medical workforce training

Australia's medical training system is delivered through a complex interconnection of funding and organisational channels that span Commonwealth and state and territory governments, as well as private and non-government agencies. As a result matching supply to demand is difficult, not least because of the number of stakeholders involved.



The cross-sectoral nature of delivering and funding medical training in Australia makes good workforce planning difficult for any one agency or sector to deliver in isolation.

Unless there is a coordinating mechanism that can operate across these bodies, there is a risk that there will be an ongoing mismatch in the medical workforce that is trained and the medical workforce that the community requires to provide services.

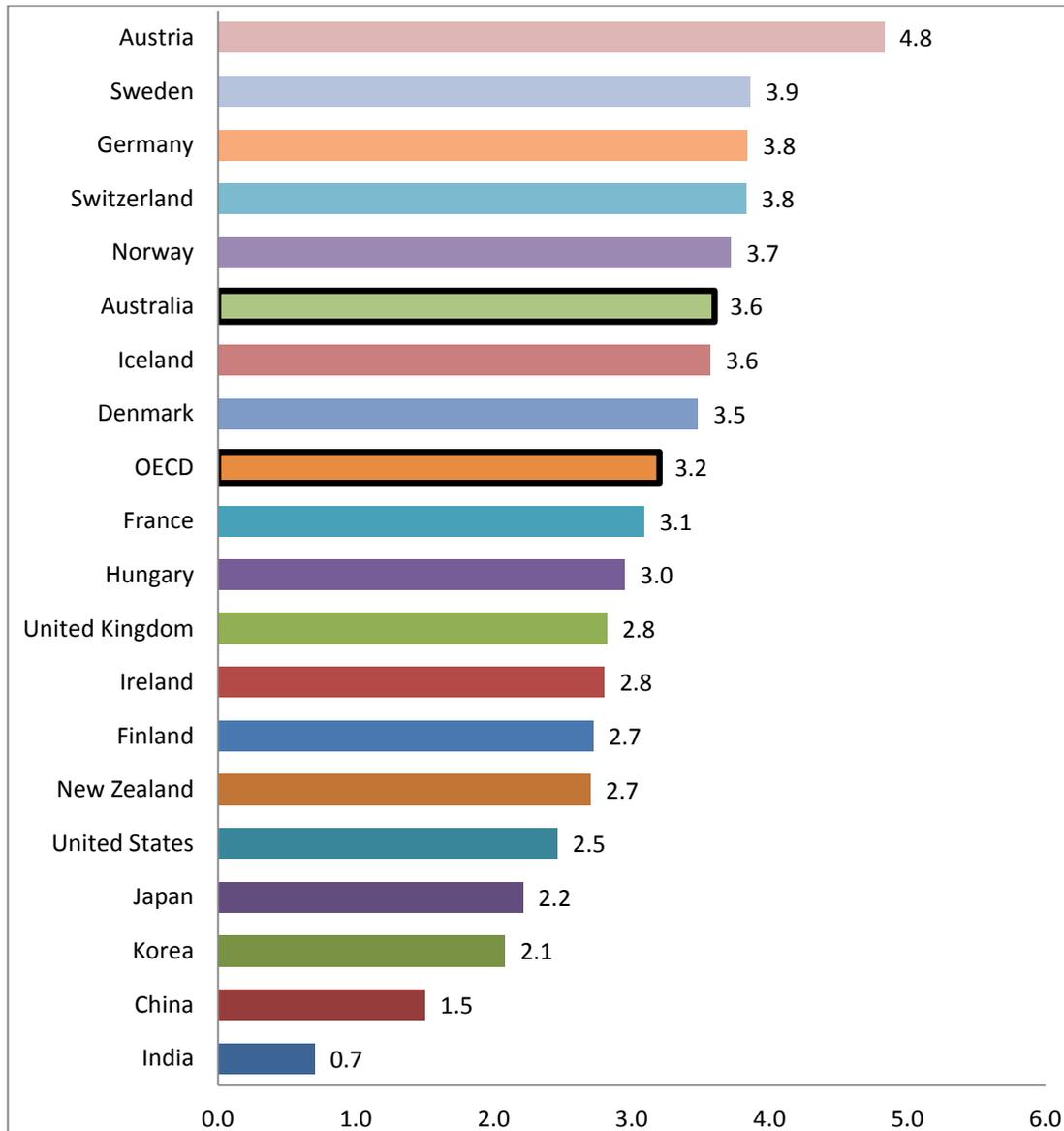
### Australia has a high number of doctors compared to other OECD countries

In 2012 Australia had 3.6 doctors per 100,000 population. This is more than the OECD average of 3.3 and places us sixth highest of nineteen countries.<sup>6</sup>

This is an aggregate number and does not take into account geographic distributional differences; however it does provide an illustration of the aggregate supply in comparison to a number of other developed economies.

<sup>6</sup> OECD Health Data: Health care resources: OECD Health Statistics (database).

**Graph 1 - Doctors per 1,000 population Selected Countries 2012**



1. Graph is based on OECD practising physician real time data. Data extracted on 10 Apr 2014 from OECD.Stat
2. India, China and OECD practising doctors per 1,000 taken from OECD (2013), [Health at a Glance 2013: OECD Indicators](#), OECD Publishing.
3. Australian doctors per 1 000 derived from Health Workforce Australia: Australian Future Health Workforce - Doctors projections and Australian Bureau of Statistic population projections series B (from ABS data 3222.0 extracted 17th December 2013)

### **Australia's medical workforce is growing**

There were 91,504 medical practitioners registered in Australia in 2012, with 93% of these (or 79,653) employed in the medical workforce.

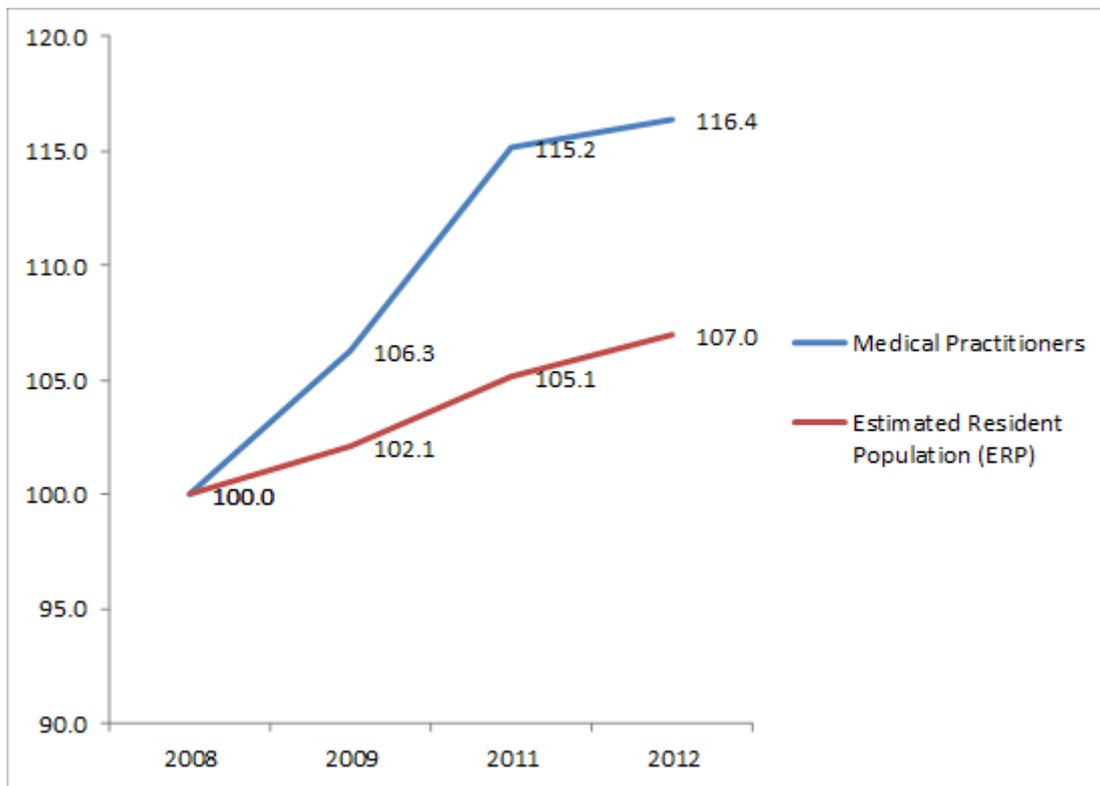
Of the employed medical practitioners:

- 94.5% were working as clinicians, that is, doctors who spend most of their time working on the diagnosis, care and treatment of patients.

- Non-clinicians such as administrators, teachers or educators, and researchers comprise the remainder of those in the medical workforce. <sup>7</sup>

There has been a rapid growth in the registered medical workforce in recent years. During the period 2008 to 2012, the number of registered medical practitioners increased by 16.4%. This compares to an increase in the population of 7%<sup>8</sup>.

**Chart 1- Growth in medical practitioners compared to population growth 2008-2012**



### Growth in the workforce is uneven

The growth in the medical workforce has not been even across geography or among types of doctors.

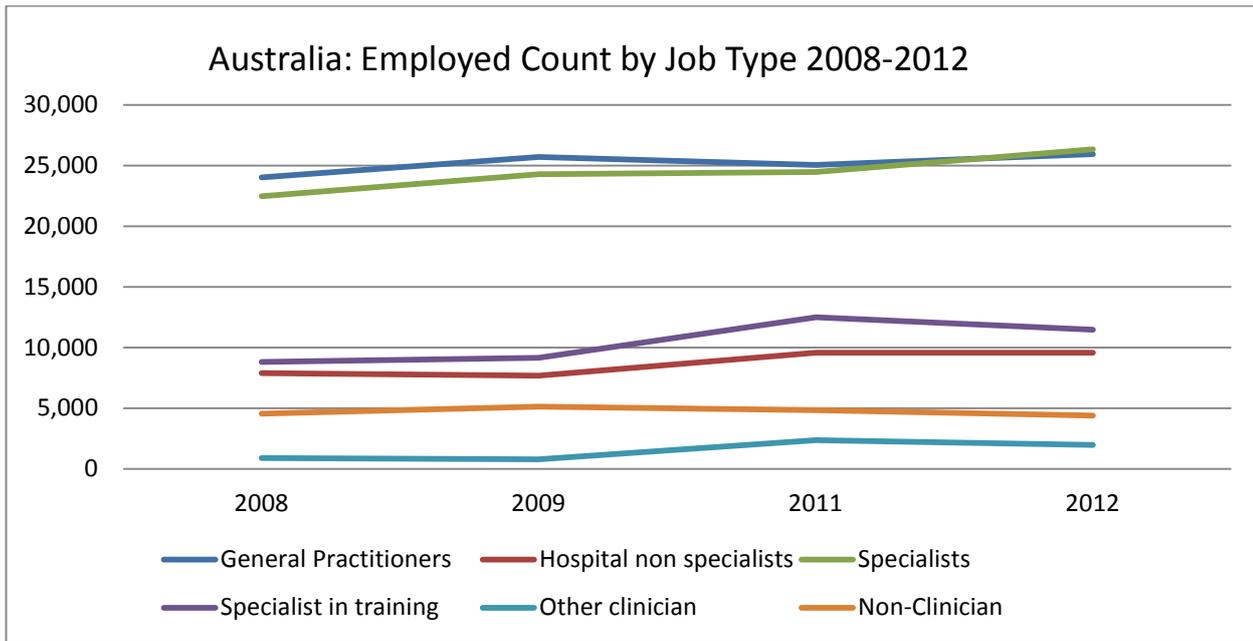
The recent growth in the medical workforce is important as it plays a role in the calculated demand for health services over the time period that the future workforce modelling is based on.

Within the overall growth of the medical consultants from 2008 - 2012, the growth of the consultant specialties (other than general practitioners) outstripped that of general practitioners. The increase in the number of specialists was 67% compared to the growth in general practitioners of 33%, which could indicate a move away from a generalist workforce.

<sup>7</sup> Australian Institute of Health and Welfare 2014. Medical Workforce 2012. National health workforce series no.8 Cat. No. HWL 54. Canberra:AIHW

<sup>8</sup> ABS 3101.0 Australian Demographic Statistics

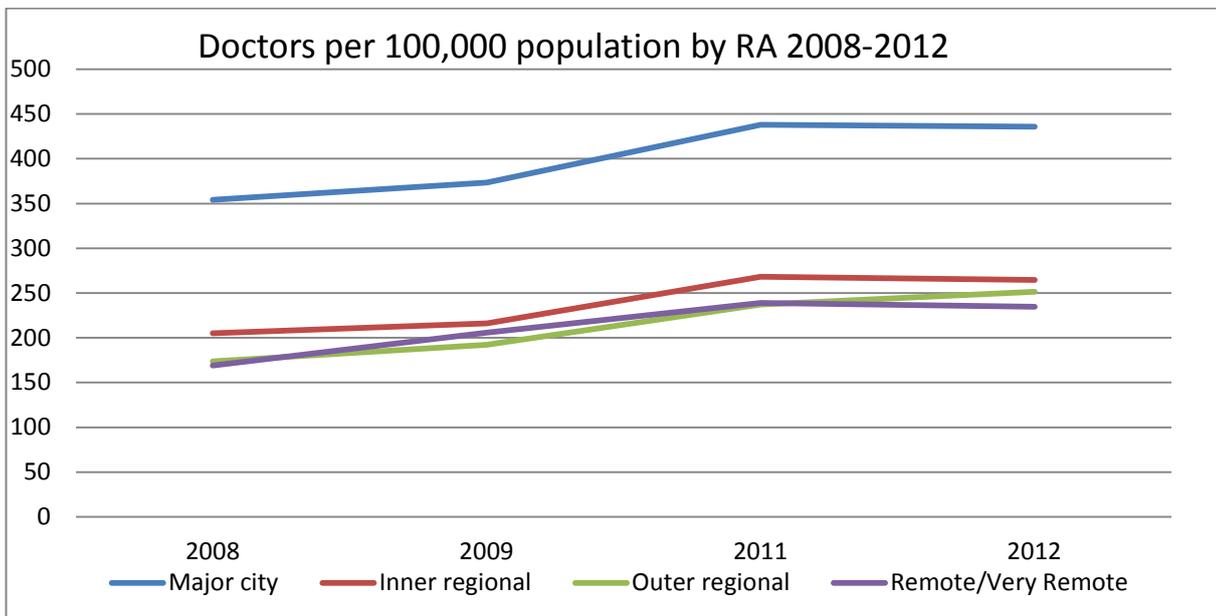
Chart 2 – Employed doctors by job type 2008 - 2012



**Disparities continue to exist in the geographic distribution of the medical workforce**

The number of doctors per head of population has increased across all geographic areas; however a disparity persists between **inner** metropolitan areas (ASGC-RA1) and the rest of the country (ASGC-RA 2-5). Building on an already large difference in medical workforce, per head of population, the gap between inner metropolitan areas and the rest of Australia has widened further.

Chart 3 – Doctors by Remoteness Area 2008 - 2012



Against the backdrop of high aggregate numbers of doctors and a growth rate higher than population growth, the geographic distribution remains uneven. This is important because it matches a disparity in health outcomes for communities in regional and rural Australia.

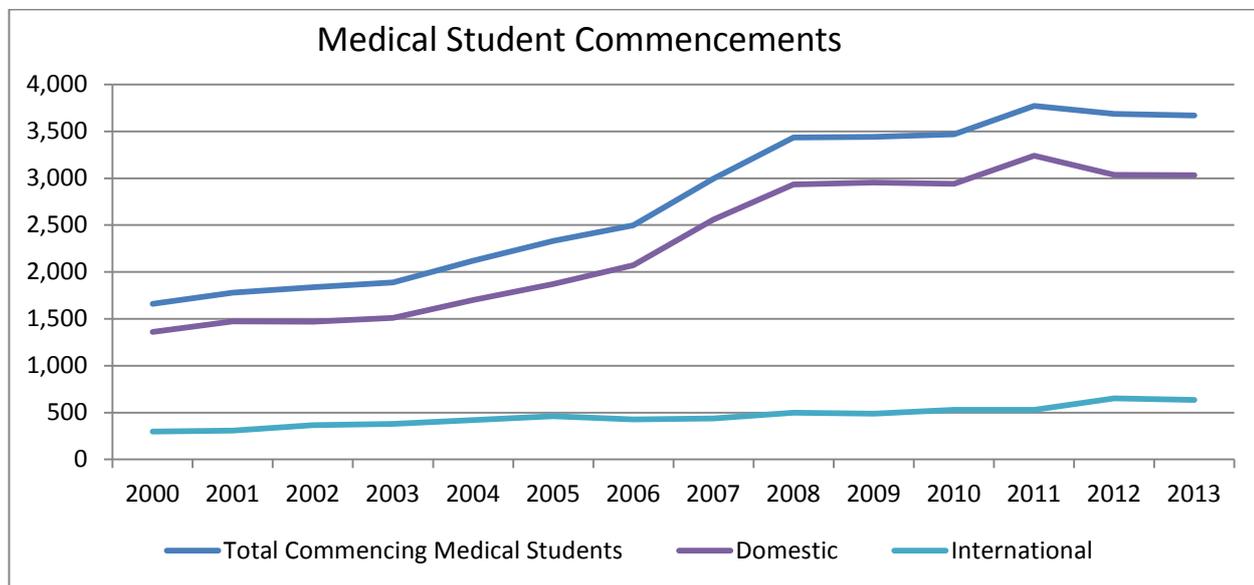
This report provides planning at the aggregate level, however it is important that there are concurrent policy considerations that aim to provide an equitable distribution of the workforce noting that this does not equate to having the same doctor density across all areas.

### Commencements and completions have more than doubled since 2000

There has been a rapid increase in the number of commencing medical students from the early 2000s. Ongoing increases in domestic students have tapered off in the last five years; however international medical student numbers have continued to increase.

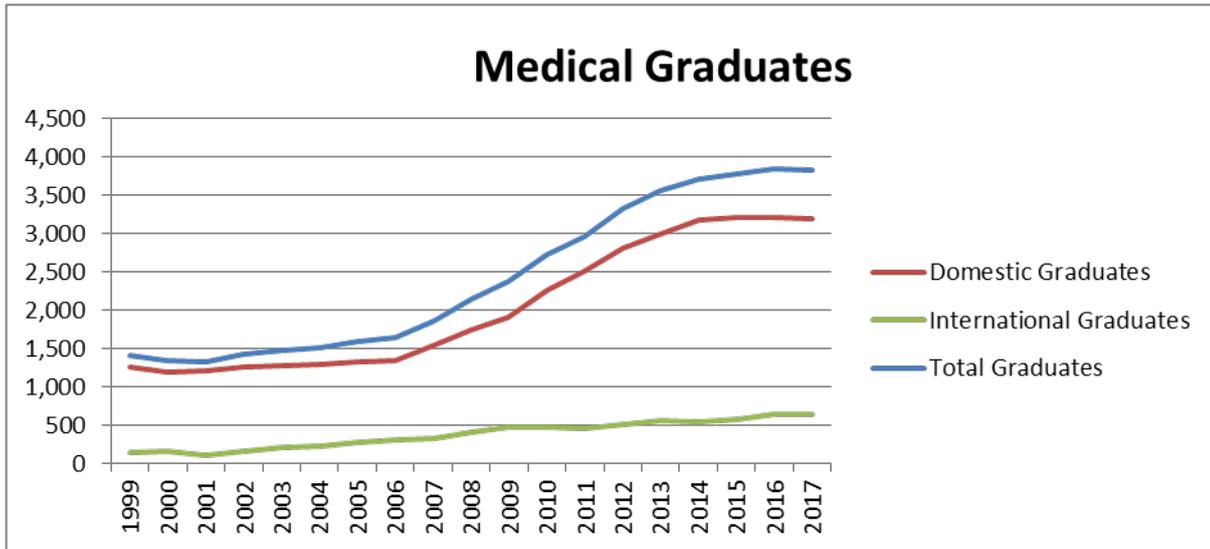
This is in an environment where the number of domestic Commonwealth Supported Places is determined by government policy and the numbers of international and full fee paying domestic students are determined by individual universities.

**Chart 4 – Medical student commencements 2000 - 2013**



Medical graduates have increased in line with the increases in medical student commencements and with the time delay we will expect to see a tapering of further increases from 2014. There is very limited attrition from university medical courses

Chart 5 – Medical graduates 1999 - 2017

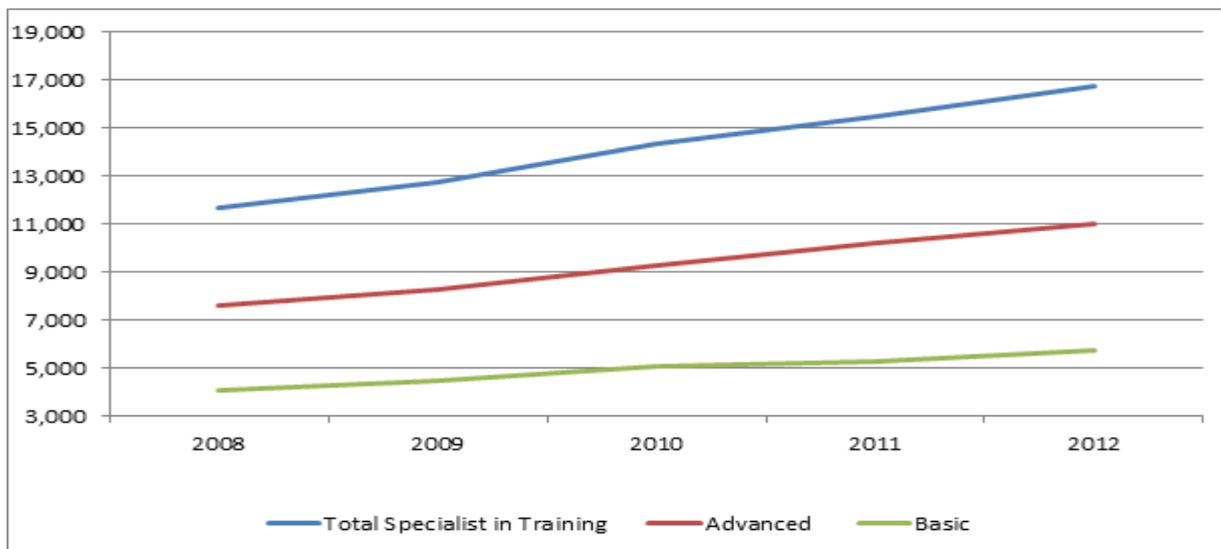


This increase in the number of medical students and graduates is important because it demonstrates a large increase in the inflows into the medical workforce over a short space of time. This has implications for clinical training capacity, initially at the university level but extending into the prevocational and vocational training years. We have already seen this pressure in the availability of intern training places which to date has kept pace with the increasing number of graduates. This pressure is beginning to move into the next stages of the training pipeline.

**The number of vocational training positions has increased**

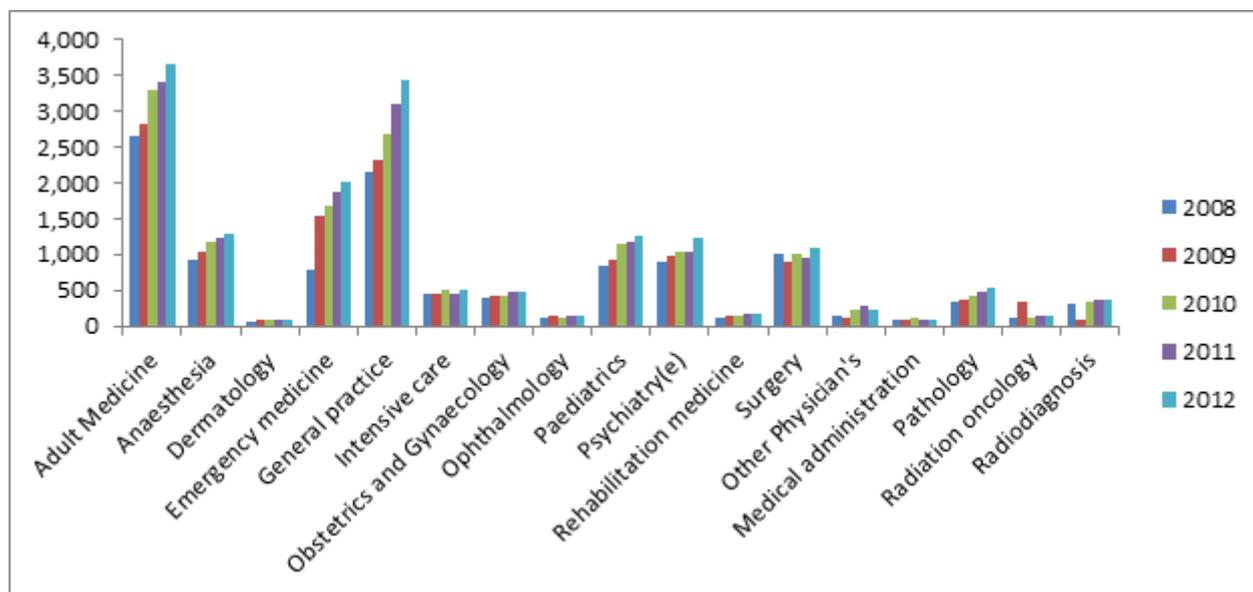
There has been a 43% increase in the number of vocational training positions between 2008 and 2012.

Chart 6 – Number of training positions 2008 - 2012



This growth has varied across specialties, for example the number of emergency medicine advanced trainees has increased by 150% between 2008 and 2012 while the number of radiodiagnosis advanced trainees only increased by 18.5%.<sup>9</sup>

**Figure 2 - Growth in advanced vocational training positions 2008 - 2012**



While differences in growth rates across specialties should be expected, the relationship between Australia's future medical workforce requirements, the growth in specialist training observed, and the distribution of this growth among specialties is unclear.

This is important because as the increase in domestically trained graduates begins to emerge into vocational training there is an opportunity to plan to deliver training that is more closely matched to the community's requirements for specialty services rather than be driven by factors such as trainee preference and immediate service delivery needs in public hospitals.

### There are more graduates than there are training opportunities

Despite the recent increase in vocational training there is an emerging mismatch between the number of domestic medical graduates and the availability of vocational training opportunities

The current end point of medical training for the majority of medical practitioners is the completion of vocational training in a specialty and commencement of independent practice as a vocationally registered medical specialist.

Medical 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 and extends to approximately 1,000 places by 2030. For a number of reasons, this

<sup>9</sup> MTRP 16<sup>th</sup> report

mismatch is projected to be less than that demonstrated in HW2025, the most significant of which is an amendment in the projected graduate numbers by universities.

**Table 2- Demand for advanced training places compared to available places<sup>10</sup>**

| Category   | 2012  | 2018  | 2024  | 2030  |
|--|-------|-------|-------|-------|
| First year advanced training positions available       | 2,335 | 3,103 | 3,272 | 3,526 |
| Doctors seeking first year advanced training positions | 2,558 | 3,672 | 3,961 | 4,537 |
| Difference   | 224   | 569   | 689   | 1,011 |

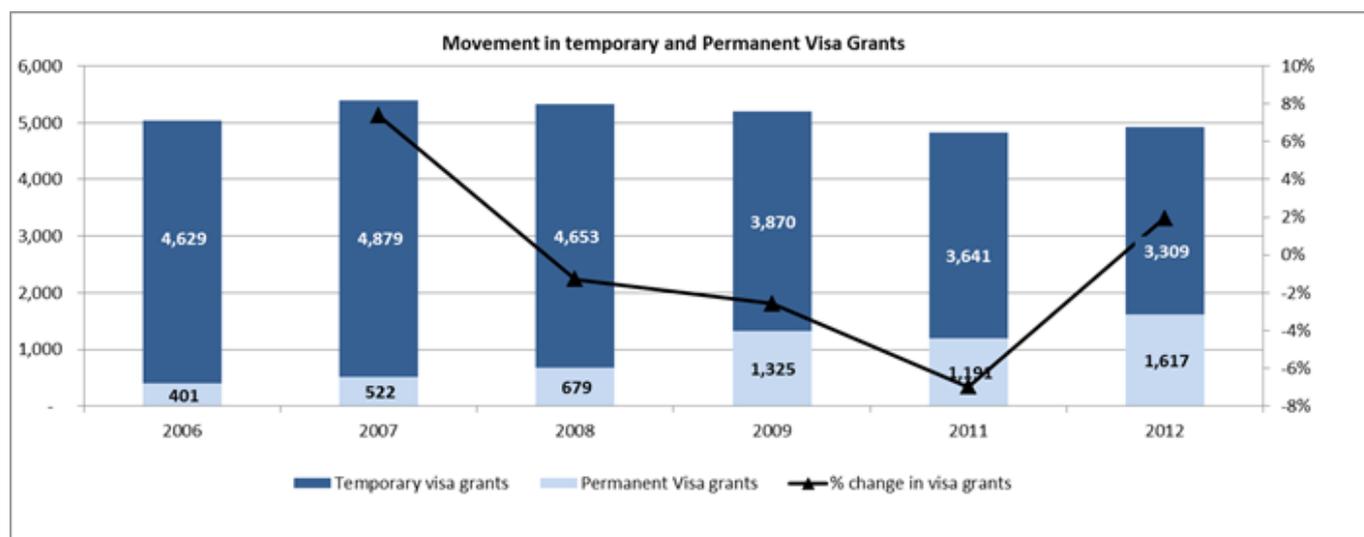
The high cost of training and the continued reliance on immigration to fill workforce gaps mean that it is important to consider this emerging issue to ensure that the potential benefits to the community of these doctors is fully realised. This may mean the development of pathways that help to fill workforce gaps are considered.

### Our dependence on immigration remains high

Australia, like the majority of OECD nations, has been highly dependant on immigration to meet medical workforce shortages. The total number of visas granted to international medical graduates (IMGs) remained around 5,000 a year between 2006-2012, however there is a significant change in the proportion with an increase in permanent visas compared to temporary ones. Further work is required to fully understand this, however, changes in immigration policy and the development of new pathways into registration are likely to have contributed to this.

IMGs are disproportionately represented in rural and regional areas as well as in the less “popular” specialties.

**Chart 7 – Temporary & permanent visa grant 2006 - 2012**



<sup>10</sup> Health Workforce Australia, 2014

Immigration has provided a significant proportion of the overall medical workforce for a long period of time. It remains a very useful lever in the face of long training times and maldistribution of the Australian trained workforce, however, given the size of the immigration supply, there clearly remains scope to replace a portion of medical migration with the increasing domestic supply.

This section highlights:

- Issues with the sustainability of health spending, a high proportion of which is related to the medical workforce.
- The costs and complexities of medical training in Australia
- A growing medical workforce
- Ongoing distributional issues
- An increase in medical students that are placing pressure on the training capacity of the health system, and
- Ongoing reliance on immigration

This clearly demonstrates the need to plan for the future medical workforce needs. The following section provides planning information for the future medical workforce and recommendations on future medical school intakes.

# 5. Australia's future medical workforce modelling

## 5.1 Comparison "no policy change" Scenario

This section provides an update of the forecast model outputs for the medical workforce as the comparison (or baseline) scenario. The scenario is constructed in the same way as that provided in HW2025. The result of this modelling is not a prediction of the future, rather it provides a comparison scenario that allows us to see a "do nothing" outcome and compare the effects of taking action. A scenario is a vision or hypotheses of future health care delivery that can guide data modelling to project future health workforce requirements. A good scenario takes into account the plausible range of ways the drivers of both supply and demand might unfold and can be used to test policy options.

For the purpose of this report there have been changes and updates to the data sources reflecting the passing of time since volume one and important data quality and methodological improvements. These changes and updates involve:

- Basing the opening workforce data on labour force surveys undertaken by the Australian Health Practitioner Regulation Agency (AHPRA) with a 2012 start year rather than the Australian Institute of Health and Welfare (AIHW) labour force survey with a 2009 start year;
- Extending the 'consultant led' nature of the model with separate sub-modelling of the hospital non-specialist workforce as well as specialists-in-training;
- Producing workforce projections out to 2030 rather than 2025;
- Updating demand, migration and new fellows inputs for changes since the data available at the time of the initial projections

The change in the survey questions from the 2009 data to the 2012 data has enabled better separation and identification of sub-groups of doctors. As a consequence, within the overall medical workforce sub-groups of doctors such as hospital non-specialists and specialists-in-training are now able to be modelled with characteristics specific to them.

In general, the updated data has led to a refinement of the model rather than a significant change, particularly as many of the changing inputs (such as increases in some training programs and the expected flow-through impacts of increased medical school intakes) were anticipated at the time of the initial modelling for HW2025. This will feed through to the next stage of modelling when the overarching model is updated.

The modelling work has been guided by a set of principles agreed in the establishment of the NMTAN. These can be found at Appendix 5.

In this report the comparison scenario projection takes the conditions in 2012 and projects them out to 2030 without change using a stock and flow process where people entering and exiting the workforce (flows) periodically adjust the initial number in the workforce (stock).

The workforce is broken down into age and gender cohorts and different flow rates are applied to each cohort. The model then takes these different flow rates into account by progressive ageing of the workforce through iteration of the stock and flow process.

In projecting 2012 conditions into the future the modelling takes into account a number of factors including:

- Known patterns in graduation rates of medical students and their subsequent movement into further training and practice
- Movement of trainees through vocational training programs
- The ageing of the current workforce and demographics of new entrants into the workforce
- Current hours of work broken down into age and gender cohorts to capture the known changes in hours
- Migration is held constant throughout.

The demand projections are built up using the utilisation approach [see methodology paper for more detail]. This means that while expected change in population size and composition is accounted for over the projection period, there is an assumption that the current patterns of service use remain unchanged.

A detailed methodology paper including discussion of data sources and calculation processes for model parameters is available on the [HWA website](#).

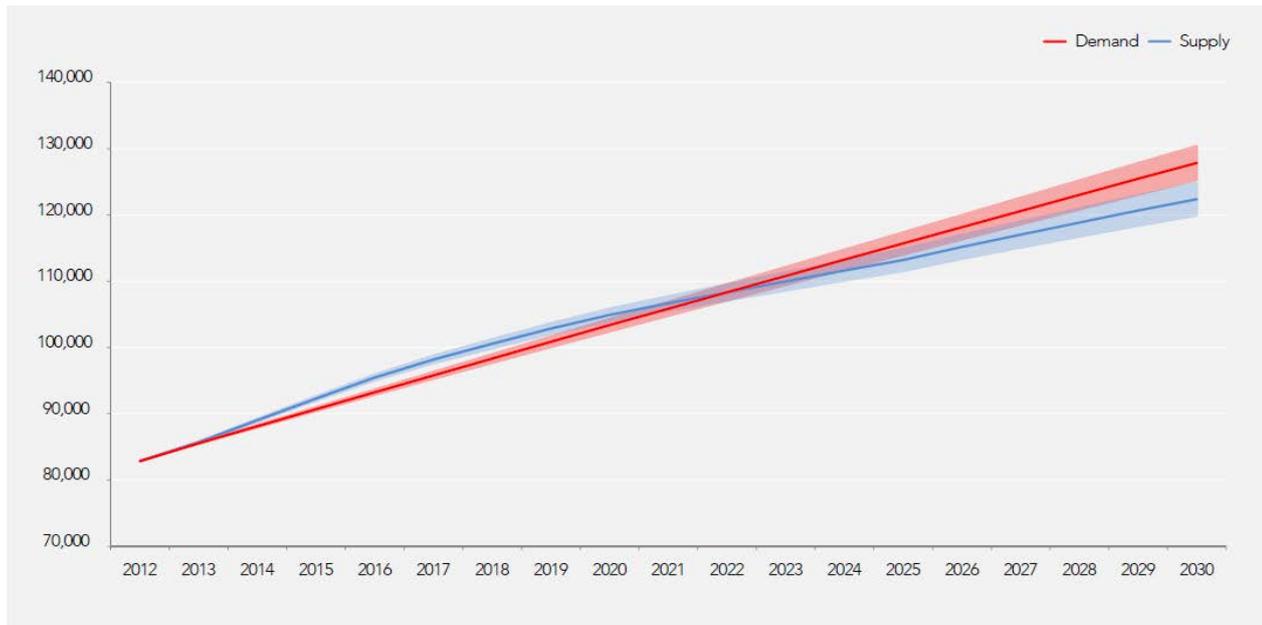
### The results- the comparison scenario

The comparison scenario demonstrates that relative to the starting point (2012) the workforce would be in oversupply to 2017 before dropping to undersupply from the early 2020s. This leads to an emerging gap between supply and demand of 2,500 in 2025 moving to a shortfall of 5,000 by 2030.

This is broadly consistent with HW2025 that utilised 2009 as a starting point and showed a shortfall of 2,700 in 2025.

All scenarios reflect a variation or variations on the comparison scenario. Reflecting the inherent uncertainty involved in workforce projections, the results are presented visually and make use of a variation band approach. In each scenario, results for both demand and supply projections are displayed with a plus or minus two percent 'variation' allowance through to the end of the projections in 2030. Areas of intersection within these variation bands suggest a workforce projected to be in relative balance from the initial starting point.

**Chart 8 - Comparison scenario**



It should be noted, HWA does not support the comparison scenario as a basis for future medical workforce planning. Section 5.2 develops a range of assumptions that HWA believes are a more realistic basis for workforce planning, presented in the “combined scenario” which provides the basis for the recommendations of this report.

## 5.2 Combined scenario

HWA worked with groups of stakeholders in late 2013 to generate a range of plausible scenarios to 2030 for the Australian medical workforce. The NMTAN Executive Committee took account of the list of scenarios and developed views on the highest impact supply and demand drivers out of which a combined scenario is constructed. This combined scenario consists of:

- The application of an economic constraint on growth in future demand
- A small proportion of productivity gains achieved result in a reduced requirement for doctors
- A reduction in the migration inflows

The final stage of this process is an analysis of the resultant gap against which a recommendation is made for future medical school intakes.

This represents the first stage of the National Medical Training Plan (NMTP).

This section provides a sequential description of the combined scenario and provides recommendations on professional entry intakes to Australia’s medical schools.

### Economic constraint will affect the supply of medical practitioners

The comparison, or “do nothing” scenario is based on an assumption that past trends will continue into the future.

Federal Treasury's projections for the future however, show a lower long-run economic growth rate in the decades ahead (2.7% p.a.) which is lower than the long-run historical growth rate (3.3% p.a.) - a 22% decline

There is a very broad long-run link between economic growth rates, medical activity demand and the resulting demand for the doctor workforce.

Limiting demand growth for the medical workforce to a measure that corresponds to the long term ability for the country to pay for health services is another way of planning for the future. This scenario limits demand for the health workforce to predicted economic growth.

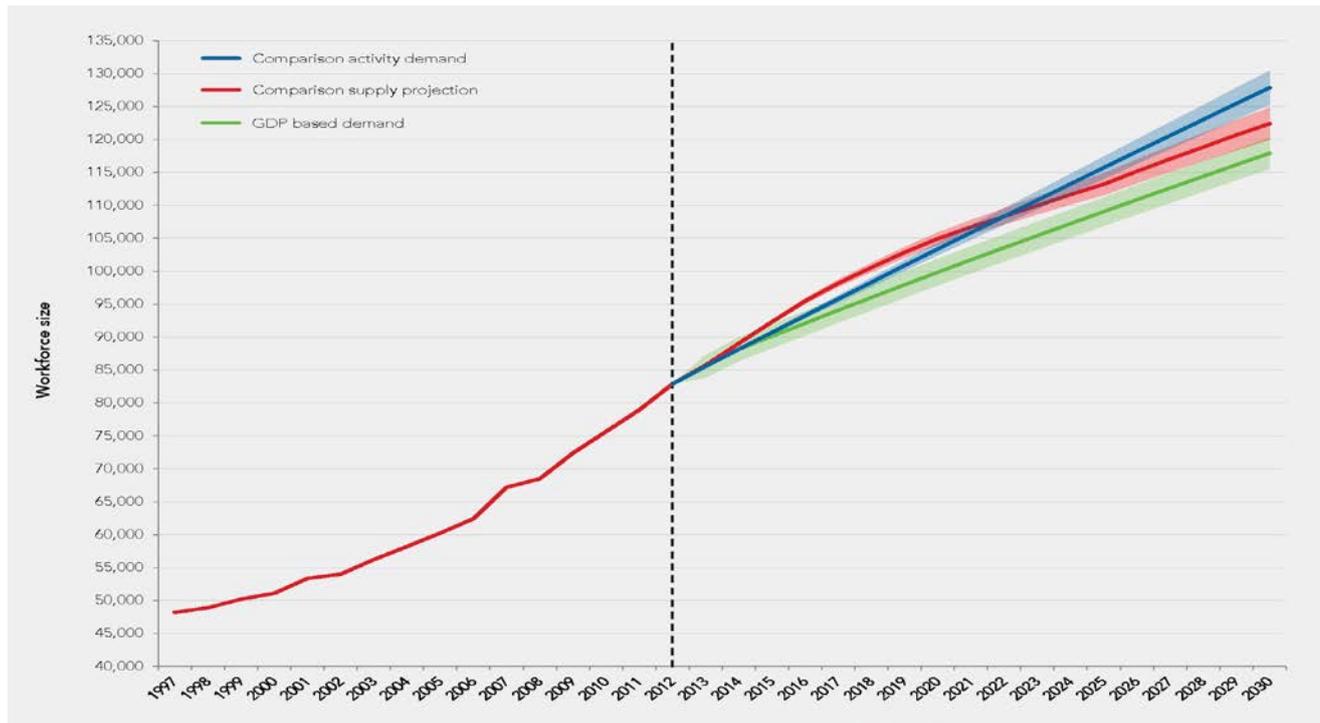
The first step in developing the recommendation for future medical school intakes is therefore based on constraining activity demand by the projected decline in economic growth in the decades ahead.

This is outlined in the following table and chart that demonstrates the change in the projected workforce balance in 2030 from a small undersupply relative to the starting point of 5,464 to a small oversupply of 4,494. This amounts to a reduced projected workforce demand in 2030 of 7.8% relative to the comparison scenario.

**Table 3 - Economic constraint results**

| Scenario                   | 2012   | 2016   | 2020    | 2025    | 2030    |
|----------------------------|--------|--------|---------|---------|---------|
| Comparison supply          | 82,877 | 95,490 | 104,918 | 113,203 | 122,390 |
| Comparison activity demand | 82,877 | 93,251 | 103,375 | 115,702 | 127,854 |
| - projected gap            | -0     | 2,239  | 1,542   | -2,499  | -5,464  |
| GDP based demand           | 82,877 | 92,113 | 99,847  | 109,041 | 117,896 |
| - projected gap            | -0     | 3,377  | 5,070   | 4,162   | 4,494   |

Chart 9- Economic constraint scenario



Economic constraint can be applied to the health system in a number of ways and would require government policy change to effect change.

### The health system should aim to achieve a small productivity gain

In this scenario, the constrained economic scenario described above is combined with a small proportion of productivity gains achieved resulting in a reduced requirement for doctors over the projection period.

The productivity gain is modelled as a further reduction in medical workforce demand equal to a cumulative 2% reduction by 2030.

It represents one potential but realistic combination of developments likely to impact on the future demand for the medical workforce.

This equates to a productivity increase of 0.111% per cent each year by the aggregate medical workforce.

This compares to long run productivity growth across the economy of 2.5% per annum.

While a 0.111% productivity target seems an achievable goal when compared to other sections of the economy, such gains in the past have generally been channelled into increased service provision.

Nonetheless when considering developing a training plan, it would be reasonable to include an assumption of some productivity gain over the projection period, reducing the required workforce supply.

A productivity gain in the delivery of health services can potentially be achieved through a number of different means.

- Workforce reforms such as changing models of care can enhance the productivity of the health care team. For example, providing increased out of hospital support for new parents can lead to early discharge and the ability to manage increased numbers of deliveries in maternity wards or birthing centres.
- Adjustments to skill mix in the workplace can increase the productivity of the medical workforce by moving toward a situation where the medical workforce can concentrate on those tasks that only they can undertake. For example, in a busy general practice surgery if administrative staff are able to ensure test results are in the patient's files on presentation then the general practitioner can spend less time during the consultation doing this and see a greater number of patients.
- Health professionals working to their full or expanded scope of practice can lead to productivity improvements. For example, if nurse practitioners in the emergency department are trained to assess, treat and discharge patients with particular conditions within their scope of practice, then productivity gains in relation to the number of patients treated in the department per medical practitioner can be made.
- Technology changes can enable health professionals to treat a greater number of patients in a given amount of time. For example, cataract surgery now takes a significantly shorter amount of time per procedure due to advances in technology and techniques.

The productivity gain is modelled as a linear annual decrease in demand that cumulatively equates to a two percentage point reduction by 2030.

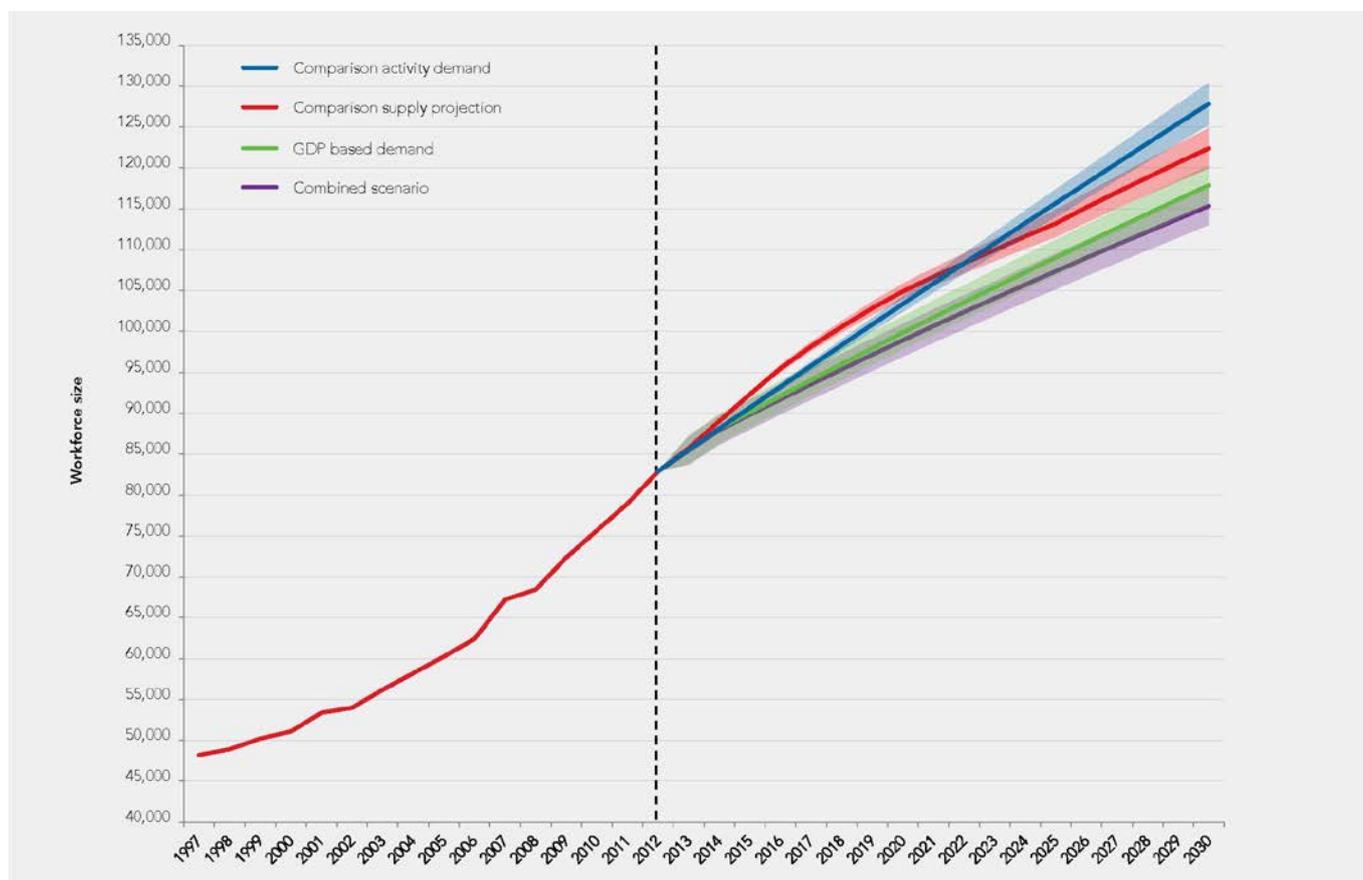
When compared to the comparison scenario, this reduces projected workforce demand in 2025 by 7.2% and in 2030 by 9.8%.

This has the impact of changing the projected balance in 2030 in the comparison scenario from a small undersupply of 5,464 relative to the starting point to a small oversupply of 7,052. The total change is a difference of 12,516 which becomes a significant change.

**Table 4 - Economic constraint with productivity gain**

| Scenario                   | 2012   | 2016   | 2020    | 2025    | 2030    |
|----------------------------|--------|--------|---------|---------|---------|
| Comparison supply          | 82,877 | 95,490 | 104,918 | 113,203 | 122,390 |
| Comparison activity demand | 82,877 | 93,251 | 103,375 | 115,702 | 127,854 |
| - projected gap            | -0     | 2,239  | 1,542   | -2,499  | 5,464   |
| Combined scenario demand   | 82,877 | 91,699 | 98,928  | 107,370 | 115,339 |
| - projected gap            | -0     | 3,791  | 5,989   | 5,833   | 7,052   |

**Chart 10 - Economic constraint with productivity gain**



### Filling the gap between supply and demand

Planning for the future requires the projected difference between medical workforce supply and demand to be filled

The combined scenario results in a small projected oversupply of the medical workforce. This gap can be addressed through adjusting domestic supply, adjusting international supply or a combination.

Australia has a strong reliance on IMGs. In 2009, one-quarter of working doctors in Australia obtained their first medical qualification overseas. This reliance is even greater in rural and remote areas with 51 per cent of general practitioners working in outer regional areas being overseas trained.<sup>11</sup>

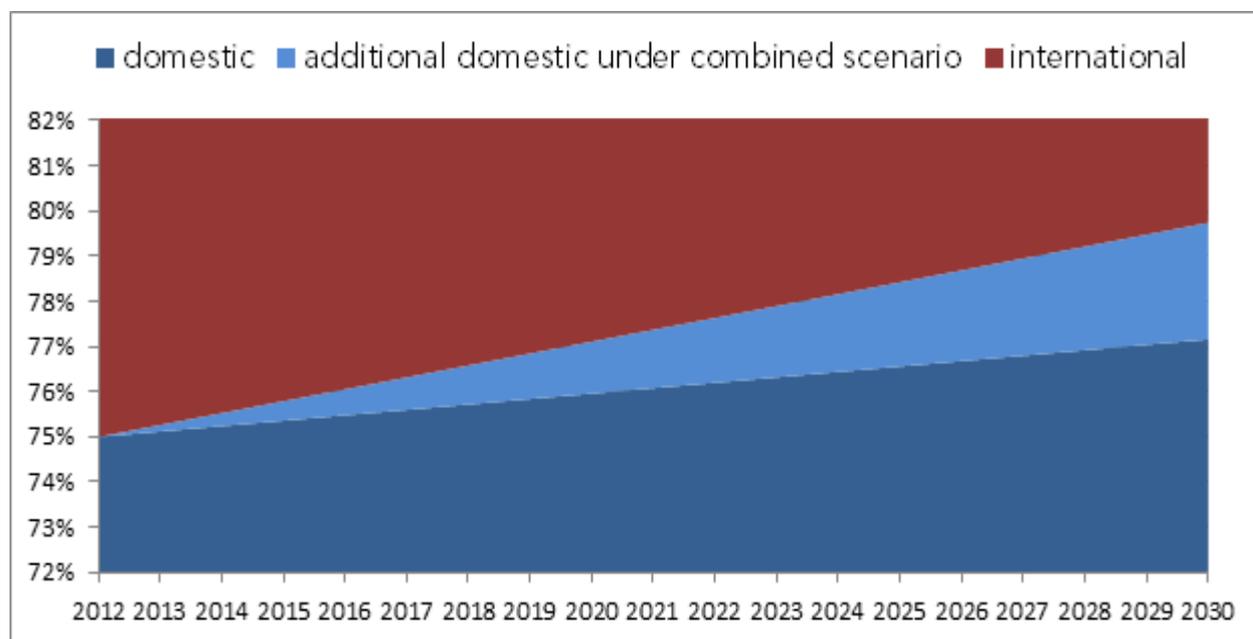
Immigration remains the most flexible means of meeting short term supply gaps and distributional issues relating to the medical workforce, however with long term projections this proportion of supply can be targeted to achieve workforce balance.

The principle taken by the NMTAN in considering how to address the gap is that Australian trained students should have the opportunity to train and join the medical workforce in preference to meeting our medical workforce needs through active migration programs. This still recognises that there will also continue to be movement of medical practitioners across international boundaries as part of training and career pathways.

The projected oversupply in the combined scenario could be offset by reducing the migration intake to 67% of the current level.

The domestically sourced share of the doctor workforce would rise to around 80% in 2030 from its current share of around 75% and a projected share of 78% under the comparison scenario.

**Chart 11 - Change in proportion of domestic trained and internationally trained doctors in the workforce**



To practically achieve this outcome, medical migration levers would need to be examined in more detail and changes made to actively decrease the level of migration while remaining responsive to community need.

<sup>11</sup> Health Workforce 2025

Migration plays a significant role in medical workforce distribution. Any measures that actively restricted medical migration would need to be counterbalanced with policies that facilitated the domestically trained workforce fulfilling the geographical distribution requirements.

Overseas trained doctors receive their training or a proportion of their training outside of Australia and policies that decreased the proportion of the overseas workforce with concurrent increases in the domestic workforce will have an impact on clinical training capacity.

### Is it possible to create a medical workforce shortage if the estimates are wrong?

Immigration remains the most flexible means of meeting short term supply gaps and distributional issues relating to the medical workforce.

Adjustments to migration could manage a 3% margin of error in the estimates in the combined scenario:

- If the actual workforce requirement was 3% higher than in the combined scenario, balance could be achieved by decreasing migration to 81% of its current annual level rather than 67%
- If the actual workforce requirement was 3% lower than in the combined scenario, balance could be achieved by decreasing migration to 45% of its current annual level (rather than 67%)

Recommendation 1: Planning for the future medical workforce should be based on:

- A link between growth in the economy and demand for doctors over the long term; and
- A small proportion of productivity gains being used to reduce workforce requirements.

This recommendation is based on the premise that growth in the medical workforce is subject to an economic constraint. With Treasury projections of future growth being lower than the historic rate of growth this suggests a slowing in the rate of growth in demand for doctors. Further, it is assumed that 2% of the productivity gains achieved over the next 15 years will result in a reduction in the required workforce.

Based on these assumptions the following additional recommendations are made:

1.1: No change should be made to the total medical student intake in 2015

1.2: A gradual reduction in temporary migration should be pursued to achieve a balance between medical workforce supply and demand over time.

Recommendation 2: Workforce modelling results are reviewed annually to determine requirements for future adjustments

Workforce planning based on modelling in a complex environment should not be considered a one off exercise, rather it should be continuously updated as new information on actual outcomes becomes available through each workforce survey.

Future adjustments to medical school intakes and immigration policy in relation to the medical workforce should be made on the basis of annual updates to the workforce modelling.

## 6. Policy considerations

This report provides a number of recommendations regarding medical training with a focus on those actions that could have the greatest impact on aggregate medical workforce supply. Its analysis and recommendations do however raise a number of other important policy issues. The rapid growth in medical student intakes combined with a projected slowing in the rate of demand growth will reduce Australia's reliance on migration over time. This will shift the balance of domestically trained doctors with three major consequences. First the need to consider the means by which a domestically trained workforce can be distributed to the locations and specialties in which they are needed. Second, there will be a growing pool of pre-vocational doctors who are unlikely to achieve a specialist training post, at least in the specialty of their choice. Third there is an opportunity to look at how the growth in domestic graduates and a shift in the distribution of training could be used to achieve a better workforce distribution.

### Career pathways for a growing pool of domestically trained doctors

The rapid growth in Australian trained medical students over the last 10 years is a key driver for a range of other policy considerations. Predictably increased student intakes and medical graduates create demand for intern places; pre-vocational training posts and then vocational training. This report highlights that, without change there will be a growing mismatch between the number of junior doctors wanting a training position and Australia's specialist workforce requirements. In the absence of any change it is likely that a growing number of pre-vocational doctors who want to get on to a specialist training program will not be offered a specialist training place.

This provides an opportunity to progress the development of policy which better aligns training with community requirements. For example, there is an ongoing imbalance in the number of doctors who are pursuing generalist careers- in general practice as well as the generalist consultant specialty areas - compared to the more subspecialised area of practice. This limits the development of policy that seeks to provide more care in the primary care sector which delivers better outcomes at a more affordable price.

To inform policy makers, HWA through the NTMAN will undertake a project to better understand the characteristics of this group, the dynamics of their likely future careers and how well this aligns with community requirements.

Specifically HWA through the NMTAN, will:

- Update modelling of workforce supply and demand for individual specialties to provide a better understanding of supply and demand characteristics for individual specialties which has not been considered in this report. This will include the consideration of the balance between generalism and subspecialisation.
- Investigate the career intentions of pre-vocational doctors so any mismatches between students and junior doctors aspirations and future medical workforce needs are better understood

- Investigate Australian and international approaches to dealing with this issue. Within Australia, there are examples of the development of training and support for a growing hospital non-specialist workforce. In the United Kingdom, a “consultant-led” approach is being pursued which assumes all doctors will pursue a pathway to practice as a specialist.

### Implications of a reduced reliance on migration

The growing number of domestic medical graduates also has implications for Australia’s reliance on immigration. This report’s recommendations would result in a future increase in Australia’s share of medical workforce who are domestically trained. While the projected change is modest and gradual – a shift from 75% to around 80% over the next 15 years, the impact of this change will be felt most acutely in the less popular specialties and in geographic locations that struggle to attract doctors.

The projected medical workforce requirements make an assumption that there will be ongoing availability of the international medical workforce as a source of supply. There are a number of factors that may impact upon this assumption, including the rapid development of medical workforces in large rapidly growing economies such as China.

At present, some rural and remote locations are heavily reliant on migration to fill doctor jobs without an active response, this shift could exacerbate existing problems with the distribution of the medical workforce to inform policy makers, HWA through NMTAN is:

- Undertaking a project examining the effectiveness of different mechanisms to distribute the medical workforce. This work will be informed by the NMTAN. Drawing on the findings of the report, policy makers will need to consider improvements to either incentive programs or other mechanisms to direct a domestically trained medical workforce into the specialties and locations Australia will need in the future.

### How to cope with increased training demand?

#### Capacity

The rapid growth in domestic medical graduates will continue to place pressure on the capacity of the medical system to train. 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 in particular in 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. It is proposed that, if in the course of their training, doctors could spend more time in rural locations or in primary care settings, which means they may be more likely to stay and practice in these settings. To inform policy makers HWA, through the NMTAN will:

- Identify current training volumes
- Identify potential approaches to expand training capacity
- Investigate approaches to improving training efficiency
- Identify the pre-requisites to increasing the amount of training undertaken in; the private sector, in primary care and in rural and remote locations.

## Conclusion and next steps:

This report represents a further advance on HWAs HW2025 reports. For the first time, through the NMTAN, employers, educators, regulators and policy makers have come together to inform a single best estimate of our future medical workforce requirements.

This has resulted in clear advice on what should happen with Australian medical student intakes in the near term.

The recommendations of the report constitute the first National Medical Training Plan. A National Training Plan necessarily begins with recommendations that impact most significantly on aggregate supply. These are medical student intakes and migration settings. The policy work of the NMTAN described above, combined with updated estimates of supply and demand for individual specialties will provide the basis of the next iteration of the National Medical Training plan later in 2014.

Beyond this, the report highlights a number of policy challenges and opportunities facing medical education and training in Australia. These challenges form the basis of the workplan for the NMTAN over the next twelve months.

While it is true to say that many of the issues raised by this report are not new, Australia is better placed than ever to respond constructively to the challenges ahead by bringing together all the key players and decision makers through the NMTAN with a focus on the medical workforce as a collective national asset.

### Recommendation 3- The NMTAN should prioritise the following policy work

#### 1. Employment patterns and intentions of prevocational doctors

NTMAN will undertake a project to better understand the characteristics of doctors in their prevocational years, the dynamics of their likely future careers and how well this aligns with community requirements.

Specifically, this work will:

- update modelling of workforce supply and demand for individual specialties to provide a better understanding of supply and demand characteristics for individual specialties which has not been considered in this report. This will include the consideration of the balance between generalism and subspecialisation.
- investigate the career intentions of pre-vocational doctors so any mismatches between students' and junior doctors' aspirations and future medical workforce needs are better understood
- investigate Australian and international approaches to dealing with this issue.

#### 2. Capacity for and distribution of medical training

This work will identify:

- current training volumes
- potential approaches to expand training capacity
- the pre-requisites to increasing the amount of training undertaken in; the private sector, in primary care and in rural and remote locations.

It will further investigate approaches to improving training efficiency

# Appendix 1: Glossary

**Advanced trainee:** A medical practitioner undertaking a period of defined and structured education and training in a particular speciality that, when complete, will be eligible to apply for fellowship of that specialist medical college.

**Basic trainee:** A medical practitioner undertaking a period of basic training prior to commencing an advanced training program.

**Clinicians:** Doctors who spend most of their total weekly working hours engaged in clinical practice (that is time in diagnosis and/or treatment of patients including recommending preventative action).

**Comparison Scenario:** A scenario where current trends are assumed to continue into the future. This is compared with a range of alternative scenarios.

**Fellow:** A trainee, who has been granted fellowship of a specialist medical college through completion of a college training program or by other mechanism.

**Gross domestic product (GDP):** GDP equals final consumption plus gross capital formation plus net exports. Final consumption of households includes goods and services used by households or the community to satisfy their individual needs. It includes final consumption expenditure of households, general government and non-profit institutions serving households.

**Generalist:** Refers to the primary care general practice workforce, the rural generalist workforce (a subset of the general practice workforce) and generalist specialists, specifically general physicians, general surgeons and general pathologists.

**Headcount:** The initial headcount in the model is based on actual Australian Institute of Health and Welfare 2009 Labour Force Survey numbers, grouped according to the relevant medical specialty or nursing area of practice being modelled. Individuals in non-clinical roles are out of scope. Each individual record contains a specialty/area of practice, gender, age and hours worked data item.

**Hospital non-specialist:** A medical practitioner mainly employed in a salaried position in a hospital who does not have a recognised specialist qualification, and who is not in training to gain a recognised specialist qualification. The category includes interns, resident medical officers, career medical officers and other salaried hospital practitioners.

**Intern or Intern year:** An intern year marks the transition from student to medical practitioner. The mandatory intern year involves at least 48 weeks of supervised clinical experience which must be completed satisfactorily to allow full registration.

**International medical students (IMS):** Private or sponsored students in an Australian medical school who are not Australian citizens, permanent residents or New Zealand citizens. In the modelling contained within this report, 70 percent of international students are assumed to remain in Australia following completion of their medical degree.

**International medical graduates (IMG) or Overseas trained doctors (OTD):** Medical Practitioners whose basic medical qualifications were acquired in a country other than Australia (includes IMGs who have applied and whose qualifications have been assessed as suitable for entering into a specialist training program to allow them eligibility for fellowship to the specialist medical college).

**Non-clinicians:** Medical practitioners who spend most of their total weekly working hours not engaged in clinical practice. This includes administrators, teachers or educators and researchers.

**Postgraduate year 2 (PGY2):** Medical graduates who have completed their intern year and are in their second year of postgraduate training. In the overarching medical modelling, PGY2s are capable of moving to vocational training (in either a basic or advanced specialist program) or becoming (temporarily or permanently) a career medical officer.

**Professional entry:** Study undertaken to gain a qualification that allows practice in a specific profession (including the meeting of registration requirements where applicable).

**Productivity:** Productivity is the ratio of output produced from a given level of inputs used.

**Vocational training or Specialist training:** The required training for medical practitioners to specialise in a chosen medical field, including general practice.

**Specialist:** Under the National Law, a specialist is a person who holds specialist registration who has met the eligibility, suitability and qualification requirements identified in the National Law and by the Medical Board of Australia.

**Specialist in-training:** A medical practitioner accepted by a specialist medical college into a training position supervised by a member of the college.

## Appendix 2: NMTAN Executive Committee Members

| Organisation   | Executive Committee member   |
|--|------------------------------|
| Health Workforce Australia                                       | Prof John Horvath AO (Chair) |
| Catholic Health Australia  | Dr Annette Pantle            |
| Department of Health VIC   | Mr Dan Jefferson             |
| Royal Australian College of General Practitioners (RACGP)        | Dr Elizabeth Marles          |
| Australian Private Hospital Association                          | Mr Gavin O'Meara             |
| Australian Medical Association (AMA)                             | Prof Geoffrey Dobb           |
| Rural Doctors Association of Australia (RDAA)                    | Dr Ian Kamerman              |
| Australian Medical Association Council of Doctors-in-Training    | Dr James Churchill           |
| Australian Medicare Local Alliance                               | Ms Julie Porritt             |
| Australian Medical Students Association (AMSA)                   | Mr Kunal Luthra              |
| Committee of Presidents of Medical Colleges                      | A/Prof Michael Hollands      |
| Department of Health   | Ms Penny Shakespeare         |
| Central Adelaide Local Health Network                            | Dr Peter Satterthwaite       |
| Medical Board of Australia                                       | Prof Peter Procopis          |
| Medical Deans Australia and New Zealand Inc                      | Prof Peter Smith             |
| Royal Australasian College of Physicians (RACP)                  | Prof Richard Doherty         |
| General Practice Education and Training (GPET) Limited           | Mr Robert Hale               |
| Australian Medical Council                                       | Prof Robin Mortimer AO       |
| New South Wales Ministry of Health                               | Ms Robyn Burley              |
| Australian Indigenous Doctors' Assoc (AIDA)                      | Dr Tammy Kimpton             |
| WA Department of Health  | Emeritus Prof Louis Landau   |
| Confederation of Postgraduate Medical Education Councils (CPMEC) | A/Prof Terry Brown           |
| National Rural Health Alliance                                   | Dr Timothy Kelly             |

# Appendix 3: NMTAN project advisory group and NMTAN/ AFHW-Doctors stakeholder involvement

## NMTAN project advisory group

### Jurisdictions

- Dr Barbara Bauert - Department of Health Northern Territory
- Dr Dinesh Arya – Department of Health Northern Territory (proxy)
- Dr Craig White – Department of Health and Human Services Tasmania
- Mr Dan Jefferson – Department of Health Victoria
- Professor Frank Bowden- ACT Health
- Dr Humsha Naidoo – Queensland Health
- Emeritus Professor Louis Landau – WA Health
- Ms Lynne Cowan - SA Health
- Assistant Prof Alison Jones – SA Health (proxy)
- Ms Penny Shakespeare – Department of Health
- Ms Robyn Burley – NSW Ministry of Health

### Independent

- Dr Annette Pantle
- Mr Gavin O'Meara
- Dr Joanna Flynn
- Professor John Horvath AO
- Professor Justin Beilby
- Professor Kate Leslie
- Professor Katherine McGrath
- Dr Michael Bonning
- Professor Richard Murray
- Professor Robin Mortimer AO
- Professor Simon Willcock
- Mr Warwick Hough

## Appendix 4: Stakeholder involvement

| Nature of engagement                    | Detail   |
|---|--|
| One-on-one meetings                     | Meetings were held with 32 organisations from across the medical sector to engage organisations in the project and ensure no key input was excluded from consideration.  |
| Public consultation                     | Public consultation on a discussion paper was held from 22 February until 30 April 2013. This consultation received 45 submissions from a broad range of medical stakeholders. Further consultation was undertaken through a workshop on 13 March 2013 involving 43 stakeholders.                    |
| Project Advisory Group                  | This group of 22 members from across the medical training pipeline was brought together for four meetings and two workshops to provide expert advice on the National Medical Training Advisory Network. This included the provision of advice on the generation of new workforce planning scenarios. |
| Scenario workshop                       | 34 stakeholders with an interest in medical training attended a workshop in November 2013 to refine workforce planning scenarios as well as to prioritise scenarios according to plausibility and impact on medical training.  |
| Executive Committee                     | 23 members have met on two occasions to provide advice on workforce planning scenarios and to provide input on the policy analysis and recommendations of the AFHW-Doctors.  |
| Presentation at/ briefings for meetings | In addition to the above, the HWA project team has presented information on the NMTAN to at least 31 meetings of medical stakeholders and 16 meetings of internal stakeholders.  |
| Project correspondence                  | The project team has provided contextual information on the project and responded to information requests on at 212 occasions.   |

## Appendix 5: National Medical Training Advisory Network guiding principles

The NMTAN was established following extensive national consultation on the ways in which a national group of health sector experts with funding, training and health service delivery expertise can support the delivery of coordinated medical training.

The following guiding principles have been agreed during the development of the NMTAN:

- Training of the medical workforce should be matched to the community's requirements for health services, including where those services are required geographically and in what specialty.
- Matching supply and demand for medical training should recognise the changing dynamics of the healthcare system over time, including advances in service models and workforce development trends.
- Medical training should be provided in the most cost effective and efficient way that preserves the high quality and safety of Australia's current training system and the sustainability of the health service delivery system.
- Training requirements should be informed by relevant and up-to-date information about future service needs.
- Priority should be given to Australian trained medical graduates over overseas trained applicants for training positions. Notwithstanding this, longstanding distribution challenges mean we continue to recruit and to train overseas trained doctors to fill workforce gaps. There will also continue to be movement of medical practitioners across international boundaries as part of training and career pathways.
- The medical training system will recognise the balance between today's service delivery demands and providing the supportive environment to meet the training needs of the doctors Australia will need in the future. Better mechanisms to adjust the training system will aid in guiding career opportunities, choices and expectations of doctors, resulting in fulfilling and rewarding careers for doctors of all levels, specialties and roles.

# Appendix 6: Scenario modelling

This section demonstrates the effect of a number of single variable changes on the projected supply and demand gap. All scenarios reflect a variation or variations on the comparison scenario.

Reflecting the inherent uncertainty involved in workforce projections, the results are presented visually and make use of a variation band approach.

In each scenario, results for both demand and supply projections are displayed with a plus/ minus two percent 'variation' allowance through to the end of the projections in 2030. Areas of intersection within these variation bands suggest a workforce projected to be in relative balance from the initial starting point.

## Demand scenarios

### Demand (low)

The low demand scenario models the impact of a reduction in demand for health services.

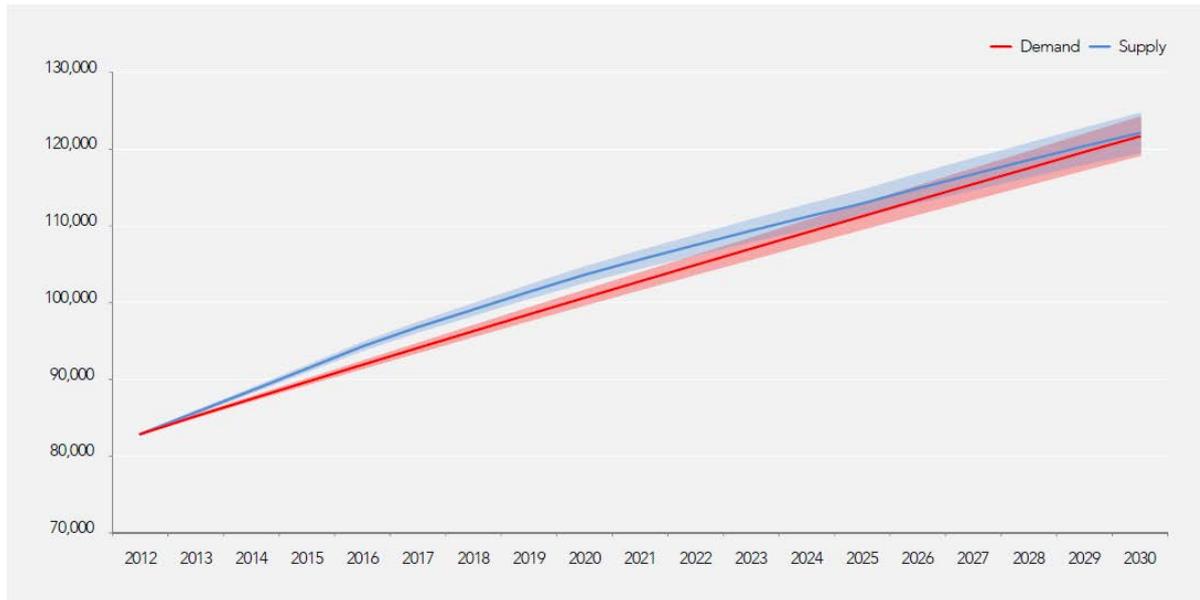
This scenario was modelled by decreasing the projected annual demand growth rate by 25% over the comparison scenario rate. This equates to a reduction in demand of 0.28% to 2.16% each year which is modest in quantum but goes against the known trends in demand for health services which have historically grown at 2.44%.

To practically achieve a decrease in demand for health services there needs to be active reform to either:

- Decrease individual's requirements/ demand for health services through investing in better preventative measures, self management and changing expectations.
- Shift some of services currently delivered by medical practitioners to other health professionals.

Both of these reforms will take time to achieve results; however the effects become cumulative over time.

Chart 12 - Low demand growth scenario



This scenario demonstrates that a change in demand as described leads to a workforce that is in oversupply over the entire projection period with a peak imbalance around 2019.

### Demand (high)

The high demand scenario models the impact of an increase in demand for health services.

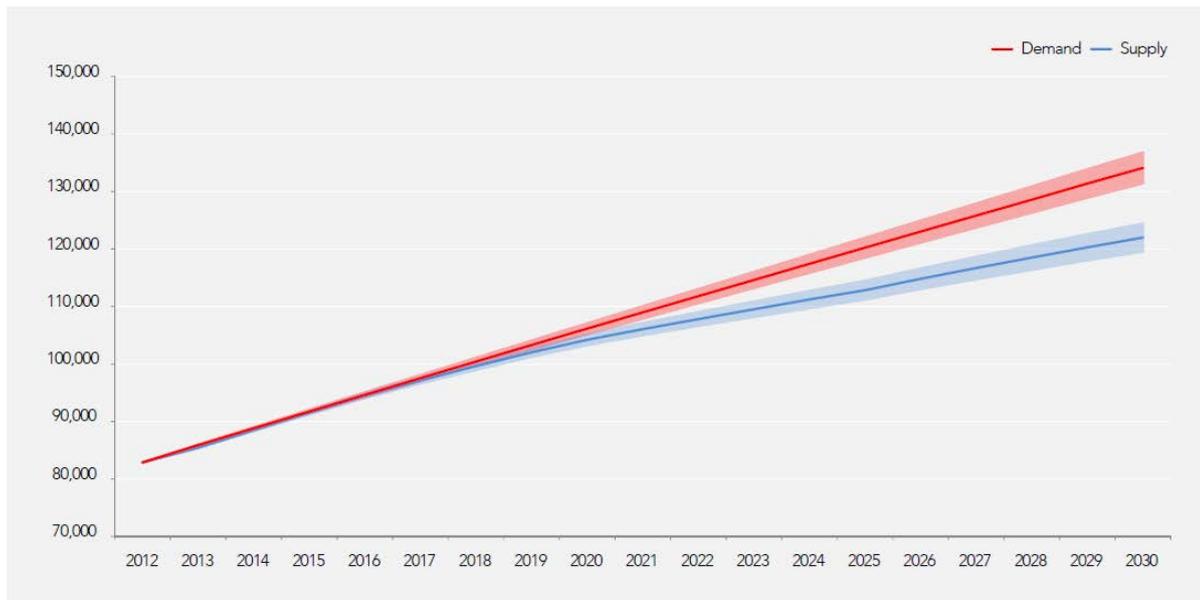
This scenario was modelled by increasing the projected annual demand growth rate by 25% over the comparison scenario rate. This equates to an annual increase in demand of 0.27% to 2.71% each year compared to the historical growth rate of 2.44%.

There are a number of factors that may result in this scenario. The majority of these are factors that are likely to happen in the absence of active decisions by Governments and health services. They include:

- Increasing community expectations about the availability of health services in an environment where supply has some elasticity and can extend to service that increased demand.
- An unexpected change in the burden of disease beyond rates predictable by known effects such as the ageing of the population. This could be through increasing levels of obesity induced disease or environmental factors.
- Medical advances that mean that there are more treatments available for the same burden of disease. For example, the successful management of glaucoma through intraocular injections has led to an increase in the demand for ophthalmology services.

Given the serious economic impacts of an increase in demand for health services, there needs to be active consideration and action in relation to the factors that may contribute to this scenario.

**Chart 13 - High demand growth scenario**



This scenario demonstrates that a change in demand as described leads to a workforce that is in approximate balance until 2019, then significant undersupply to 2030.

### Population growth

The following scenarios limit the growth in the demand for health services to population growth alone in each of the ABS population growth series. The known past actual growth rate of services is not considered in the projections.

The Australian Bureau of Statistics (ABS) makes projections about future population growth based on known trends. They provide three series of projections that correspond to high (Series A), medium (Series B) and low (Series C) growth.

The comparison scenario utilises Series B, however it also includes a variable based on actual growth rate of services which change over the projection period.

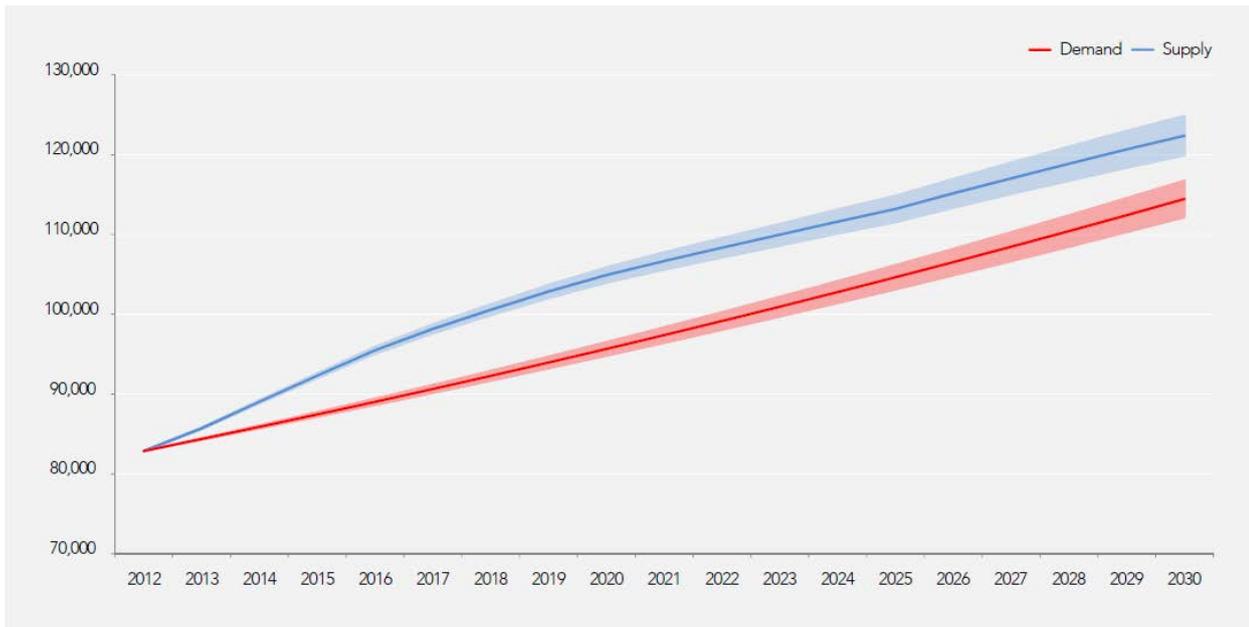
These scenarios demonstrate that for low, medium and high population growth scenarios there is a projected oversupply of the medical workforce based on current intakes into medical school.

If the medical workforce supply were to be determined based on expected population growth alone then active consideration would have to be made in relation to constraining demand growth which has historically driven the increasing supply of the medical workforce. These drivers are the same as those identified in the Low Demand scenario above.

### Population growth ABS Series A – high variant

In this scenario, growth in medical workforce demand is limited to 1.81 per cent per annum. This is equivalent to overall population growth for series B (medium-growth).

**Chart 14 - High population growth scenario**

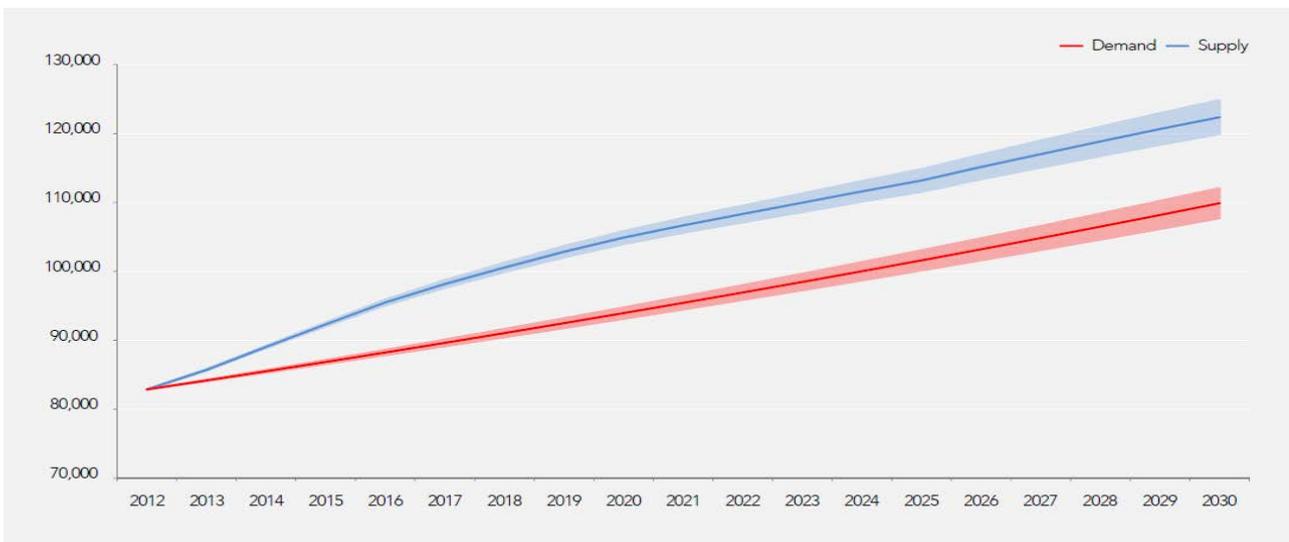


By limiting increasing demand to the rate of population growth alone there is a projected oversupply of the medical workforce over the entire projection period.

**Population Growth ABS Series B – medium variant**

In this scenario, growth in medical workforce demand is limited to 1.58 per cent per annum. This is equivalent to overall population growth for series B (medium-growth).

**Chart 15 - Medium population growth scenario**



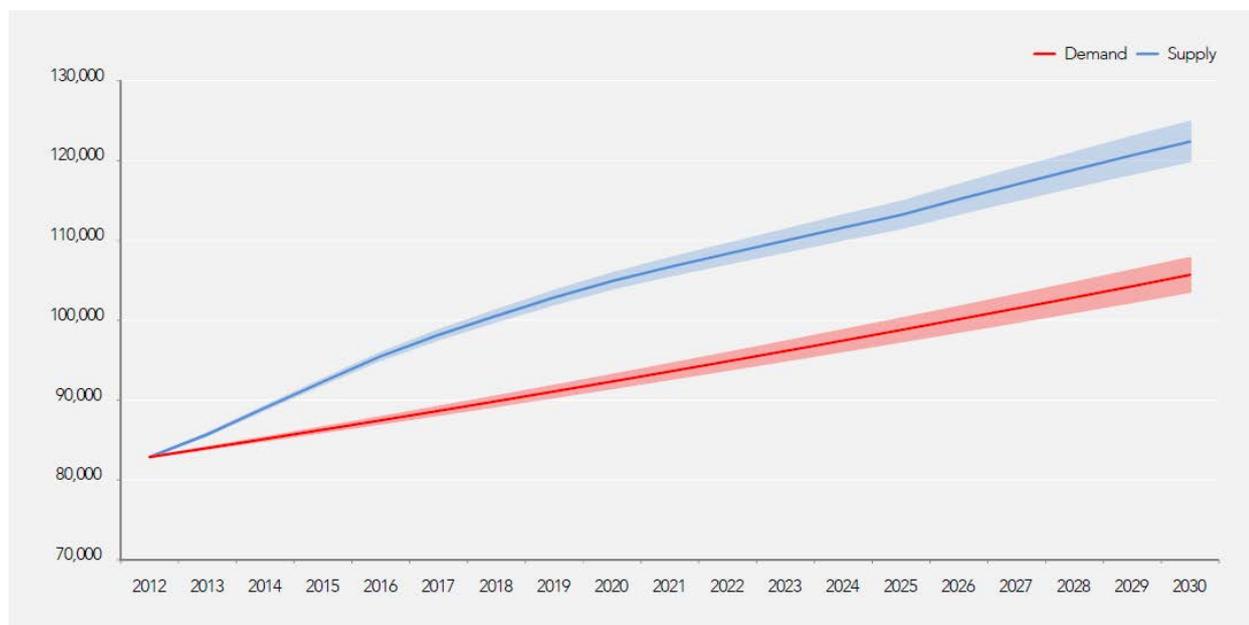
By limiting increasing demand to the rate of population growth alone there is a projected oversupply of the medical workforce over the entire projection period.

**Population Growth ABS Series C – low variant**

In this scenario, growth in medical workforce demand is limited to 1.36 per cent per annum. This is equivalent to overall population growth for series C (low-growth).

The average annual compound growth rate from 2012 to 2030 is calculated based on the ABS data and applied to the opening year workforce demand.

**Chart 16 - Low population growth scenario**



By limiting increasing demand to the rate of population growth alone there is a projected significant oversupply of the medical workforce over the entire projection period.

### Supply scenarios

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 inputs and exits from the workforce. The following scenarios seek to demonstrate the effect of varying one component of the supply side on the overall projected workforce balance. Following extensive consultation, it was decided to concentrate the scenarios on those that were most likely to represent potential real world changes in the future. These are:

- Productivity improvements
- Constrained working hours
- Changing migration patterns
- Changing retirement patterns.

### Constrained working hours

This scenario models a maximum of fifty working hours for each medical practitioner. Those practitioners working less than fifty hours do not have their hours changed in this scenario.

The maximum of fifty hours a week modelled in this scenario is a notional amount and is not intended to imply that all medical practitioners will work this amount. It is simply a way to demonstrate the impact of a potential change in the pattern of working hours.

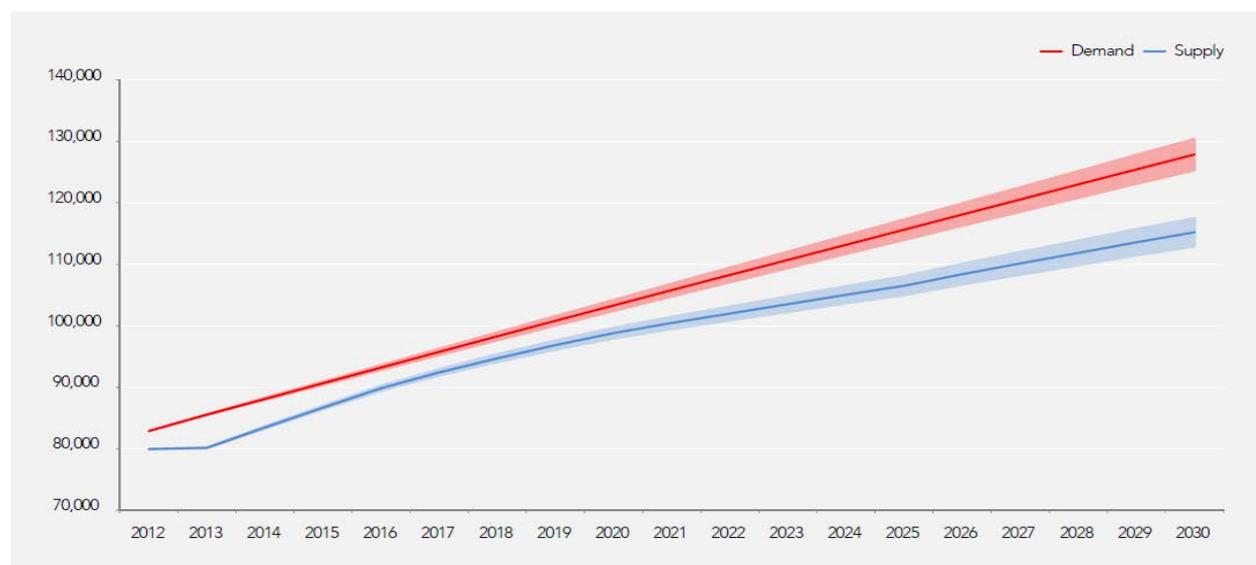
The average working hours of medical practitioners has decreased over the past ten years; however medical workforce data from 2012 indicates that the average weekly hours worked by employed medical practitioners remained stable between 2008 and 2012 with male medical practitioners working an average of 45 hours per week, while female medical practitioners worked an average of 38 hours per week<sup>12</sup>.

Extensive consultation indicates that working hours may continue to decrease if;

- Changing expectations of new graduates in relation to working hours result in decreasing working hours compared to those exiting the workforce at the conclusion of their careers,
- There is action in relation to the ongoing recognition that in some sectors doctors are continuing to work long hours. The 2011 AMA Safe Hours Audit indicates that 53% of doctors working within the public hospital system are working unsafe hours<sup>13</sup>.

It should be noted that this scenario does not directly reduce headcount, only the total number of hours worked, the full time equivalent of these hours is converted back to headcount in order to maintain a consistent unit of comparison.

**Chart 17 - Constrained working hours scenario**



This scenario results in a consistent undersupply in the medical workforce until the early 2020's when the gap becomes noticeably larger.

### Self-sufficiency

Australia has a strong reliance on IMGs. In 2009, one-quarter of working doctors in Australia obtained their first medical qualification overseas. This reliance is even greater in rural and

<sup>12</sup> Medical Workforce 2012, AIHW, 2014

<sup>13</sup> AMA Safe Hours Audit 2011

remote areas with 51 per cent of general practitioners working in outer regional areas being overseas trained.<sup>14</sup>

Immigration remains the most flexible means of meeting short term supply gaps and distributional issues relating to the medical workforce.

The following scenarios demonstrate the effect on supply of decreasing migration by 50 per cent and 85 per cent.

Migration plays a significant role in medical workforce distribution. Any measures that actively restricted medical migration would need to be counterbalanced with policies that facilitated the domestically trained workforce fulfilling the geographical distribution requirements.

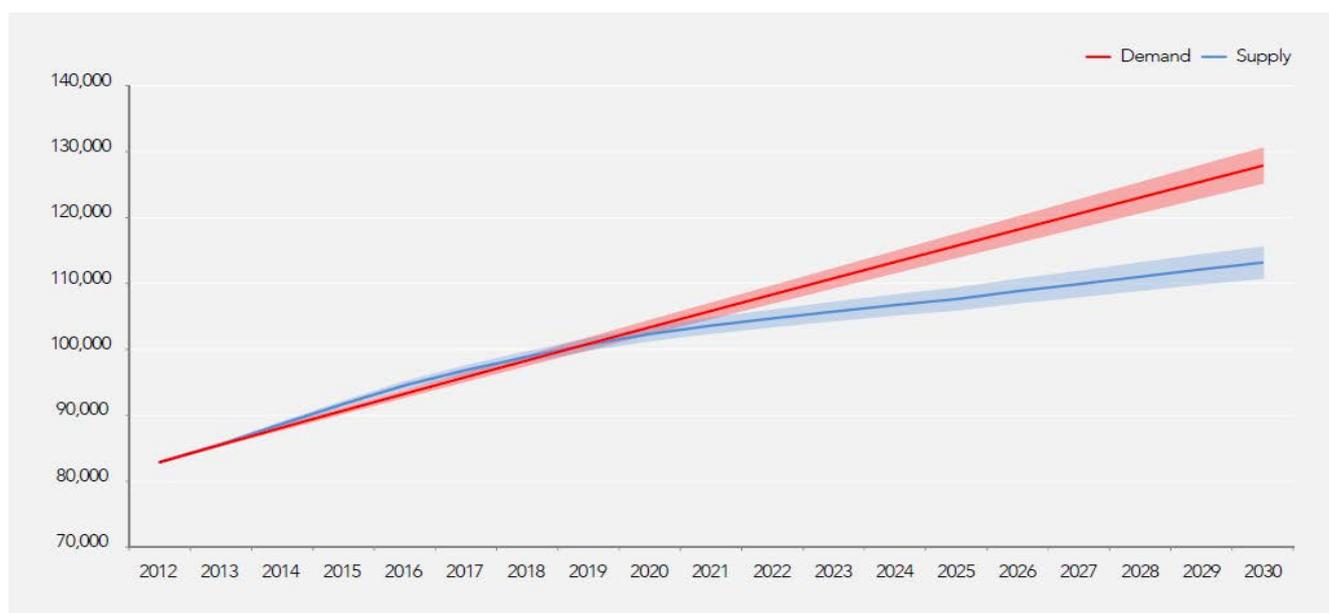
Overseas trained doctors receive their training or a proportion of their training outside of Australia and policies that decreased the proportion of the overseas workforce with concurrent increases in the domestic workforce will have an impact on clinical training capacity.

### Reduction in migration by 50 per cent

Total migration input (temporary as well as permanent) into the medical workforce supply is reduced to 50 per cent by using small annual increments to achieve a 50 per cent reduction by 2030.

International students trained at Australian medical schools in Australia are not considered to be a migration input in the model..

**Chart 18 - Reduction in migration by 50 per cent scenario**



In this scenario, the medical workforce remains in oversupply until 2018 before rapidly descending into undersupply.

## Retirement

The retirement of individuals from the medical workforce is an important supply variable that can have a significant effect on the balance of the workforce.

The comparison scenario determines retirements from the workforce by looking at sequential labour force data and calculating who has been lost from the workforce each year then projecting that forward as a standard rate.

The following scenarios build alternate retirement profiles based on intention to retire and by retiring everyone at 75.

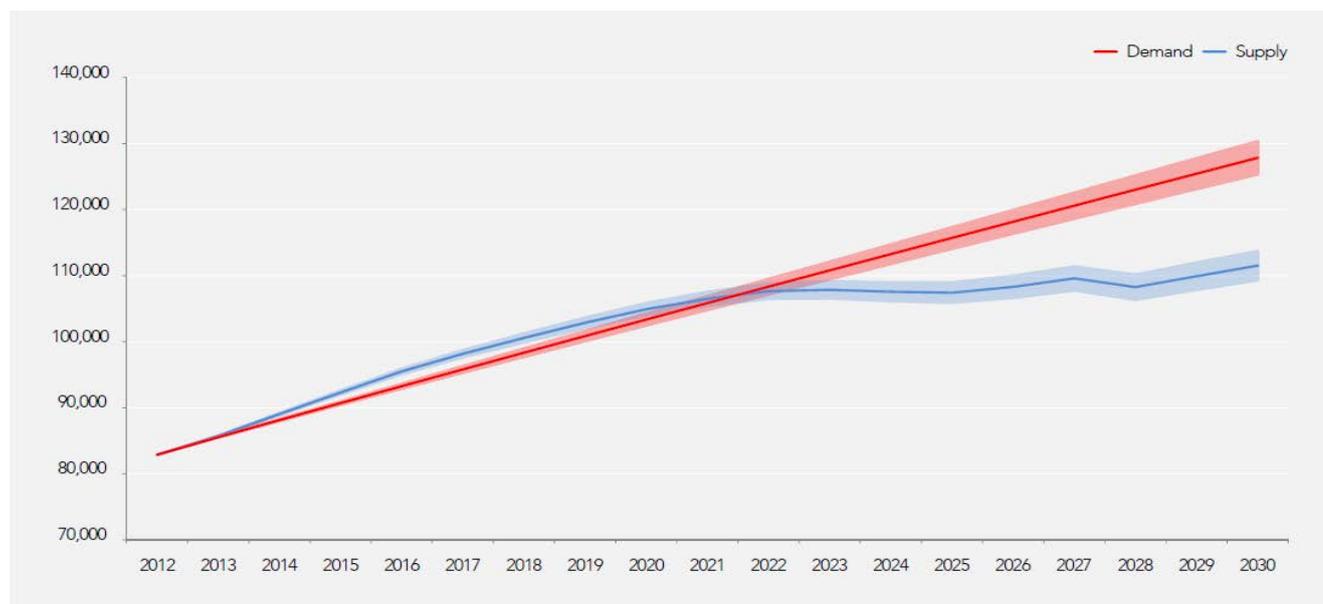
### Intention to retire

In this scenario, intention to retire data from the AHPRA medical workforce labour survey is used to build an alternative retirement profile of the workforce. It attempts to reflect the views of some stakeholders that the retirement rates will increase as there was an effect of the global financial crisis in reducing the retirement rates reflected in the comparison scenario.

There is no strong evidence to suggest that retirement intentions are a good predictor of behaviour.

This change is phased in (to existing retirement assumptions) over five years then held constant throughout the projection period to 2030.

**Chart 19 - Intention to retire scenario**



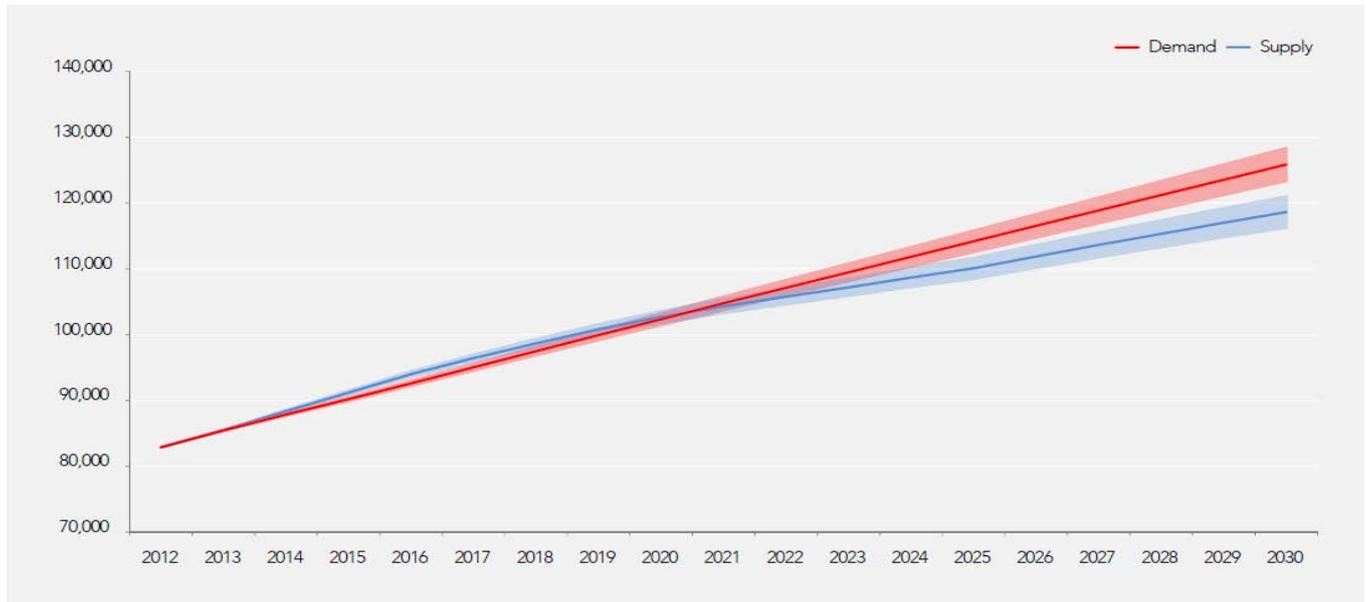
In this scenario the workforce remains in oversupply until around 2022 when there is a rapid shift to a projected undersupply.

## Retirement at age 75

In this scenario, the workforce is retired at the age of 75.

This is in contrast to the existing workforce data which suggests, depending on the medical specialty or type of doctor, there are significant differences in 'typical' retirement age.

**Chart 20 - Retirement at age 75 scenario**



This scenario creates a small oversupply until around 2021 when the projections transition to a small but growing undersupply.

