Estimation of Australian Medical Workforce Requirements

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Disclaimer: This submission is a personal submission and is not authorised by or intended to reflect the views of my employer, the SA Department of Health.

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The intent of this submission is to estimate the annual number of new doctors required in Australia.

Summary

1. Currently it could be argued there is a substantial undersupply of doctors in Australia. Adequate numbers of doctors is a pre-requisite to solving a range of medical workforce and health system problems. No amount of workforce restructuring and re-jigging will make a significant difference until this occurs.

2. A simple model detailed below estimates that between 3,069 and 4,164 new doctors intending a full medical career in Australia are required each year under current policy conditions to maintain the medical workforce conditions at roughly current levels of balance between supply and demand.

3. Approximately 1250 Australians (or permanent residents) complete medical training each year at present. This will rise to around 1700 by 2009, and 1900 by 2013.

4. Unless the estimated shortfall of between 1,000 and 2,000 per annum extra doctors can be made up from permanently migrating overseas trained doctors the current balance of supply and demand will move substantially in the direction of unmet demand and increasingly inadequate supply of doctors. Any current shortage (if that is what currently exists) will intensify.

5. On this simplistic analysis Australia will need to import an estimated 30-50% of its medical workforce needs for the foreseeable future, or for at least 10-20 years if further substantial increases in medical training and major work substitution initiatives are implemented implemented.

1. The Existence of a Medical Workforce Undersupply

For many years the standard assessment of the Australian medical workforce has been that there is an overall oversupply of doctors but a maldistribution of the workforce. The situation is described as undersupply and shortages in rural and unpopular practice areas, with a more than counterbalancing oversupply in more popular areas of practice.

It is extremely important to know whether the current situation is an overall oversupply, undersupply, or roughly balanced level of supply and demand, as the correct policy responses are dramatically different in each situation.

The view that rather than an undersupply there is a geographic maldistribution of the workforce with a substantial oversupply in some geographic areas makes little sense from an economic perspective. In the absence of involuntary unemployment there is generally considered not to be an "economic" oversupply. Currently virtually the entire workforce which wishes to work either has paid employment (and hence is required by an employer) or is in private practice and earning sufficient income to keep them in their current locality.

Currently there are many signs of an undersupply in the medical workforce. In particular:

- High levels of job vacancies
- Virtually non-existent unemployment
- Upward pressure on medical wages
- Doctors able to increase prices (ie increase gap payments)
- High wages keeping dissatisfied doctors in the profession
- Non-price rationing (ie waiting lists) in the private sector
- Doctors delaying retirement and working longer hours than desired
- Lowered recruitment standards

Admittedly much of the evidence of this undersupply is anecdotal, but it seems pervasive and self evident.

In an environment of excess demand relative to supply recruitment and retention measures and initiatives to increase numbers in specific specialty areas will inevitably be "robbing Peter to pay Paul" and just shift the shortages from one area to another.

2. Estimate of New Doctor Requirements

The following calculations are designed to estimate numbers of new doctors required in Australia

1) to maintain current levels of service in Australia
2) to meet expected higher levels of service demand

	Low	High
1. Population Growth	1.10%	1.10%
2. Replacing Retirees	2.50%	3.00%
3. Decreasing Hours per Doctor	1.00%	1.50%
4. Ageing	0.50%	0.50%
5. Non Demographic Increases in Demand	0.50%	1.50%
Total	5.60%	7.60%

Table 1: Sources of increasing requirements for practicing doctors.

Table 1 gives an estimate of the percentage increase required to firstly maintain current service levels and secondly provide expected increases in service

requirements. This is a simplistic model but seems a logical first step in any medical workforce planning process.

In 2002 there were 59,023 registered medical practitioners in Australia, of which 54,796 were in the medical labour force (AIHW, Medical Labour Force 2002). Estimated yearly requirements based on the assumptions in Table 1 on the figure of 54,796 current practicing doctors are in Table 2. They range from a low of 3,069 annually to a high figure of 4,164 annually.

	Low	High
Number of Doctors Required (based on 5.6% and 7.6%of 54,796)	3069	4164

Table 2: Estimated Yearly Australian Requirements for Additional Practicing Doctors

Notes on sources of increased demand.

1. Population Growth

Current levels of population growth in Australia are 1.1% per year. This is used as the low and high estimate. Population growth is expected to decrease in the future.

2. Replacing Retirees

It is not possible to predict the average career length per practicing doctor. The low case estimate of 2.5% retirements per annum corresponds to an average 40 year career. The high case estimates of 3% retirements correspond to an average career length 33 years. The general community experience is of people retiring at earlier ages and of reducing hours worked as part of their transition to retirement.

It may be of relevance that Australian retirement savings policies (ie compulsory superannuation), high investment returns, and a prolonged

In 2002 the average age of the medical workforce was 46.6 years, 32% of male practitioners were over 55, and there was number of doctors aged 75+ still practicing. If the average doctor retired at 65 then half the workforce might be expected to retire over the next 18.4 years, giving a requirement for 2.7% of the workforce retiring each year.

The average age of completion of a medical degree is now probably around 27 years. The Postgraduate Medical Council of New South Wales (http://www.medeserv.com.au/pmc/about/flexible_working_project.htm accessed 7/7/05), states “the age profile of junior doctors undertaking internship in NSW and the ACT has also changed …. In 2003 only 13% were 24 or under, 67% were 25-29, 15% were 30-35 and 5% were 36-45.

This indicates that in the long term achieving an average 40 year career per doctor would require an average retirement age of 67. This corresponds to the low case of 2.5%, and would seem to be highly optimistic given present trends.

It is relevant that doctors recruited from overseas will have shorter working careers in Australia due to their higher age when they start practicing here.

3. Hours Worked per doctor

Between 1997 and 2002 the AIHW report found average weekly hours worked fell from 47.6 in 1997 to 44.4 in 2002, a fall of 6.5%, or 1.3% per year. Between 1997 and 2002 average clinical hours fell from 45.6 in 1997 to 39.6 in 2002, a fall of 13% or 2.6% per year.

A figure of 1.0% is used as the low estimate for the increase in doctors needed on a yearly basis to off-set falling hours worked. This assumes that there is a lessening in the rate at which weekly hours falls. A high estimate of 1.5% is used. This ensures that the estimate of doctors required errs on the low side.

There are a number of factors causing hours worked per doctor to fall. Firstly, the proportion of female doctors rose from 28% in 1997 to 31.6% in 2002, and will continue to rise as currently over 50% of Australian medical students are female. Female practitioners work less hours than males; 37.3 hours v 47.7 hours in 2002. Other factors include moves for “safe hours”, changing social attitudes and desire for greater “work-life balance”.

4. Ageing – A Source of Extra Demand

The ageing of the population results in an increased demand for services per person. The 2002 Commonwealth Treasury Intergenerational Report estimated ageing resulted in a 0.5% per annum increase in health expenditure. This figure is used as the low, median, and high estimate.

5. Non Demographic Increases in Demand for Medical Services

This is increases in demand for medical services due to factors other than increased population and ageing. In general this reflects new technology resulting in new service demands, rising expectations for the manner of health care delivery, longer consultations with greater focus on educating patients and informed consent. Different components of the health system have grown at different rates. Over the past decade, real non-demographic growth in Commonwealth spending on public hospitals has been 1.6% per year. Real non-demographic growth for MBS subsidies has been about 2% per year since the introduction of Medicare in 1984. (Intergenerational Report).

The low and high estimates used in the calculations are 0.5% and 1.5%.

Real growth rates for Commonwealth health spending (per cent)

	1984-85 to 2000-01	1989-90 to 2000-01
Non-demographic (population and age structure removed)	2.1	3.2
Population	1.2	1.2
Age structure	0.5	0.5
Total	**3.8**	**4.9**

Note: Growth trends of health spending are very sensitive to the start and end dates chosen and the inclusion or exclusion of policy changes. Both growth rates exclude the introduction of Medicare, the largest policy change over the last two decades, and the introduction of the Private Health Insurance Rebate (introduced on 1 January 1999). The start date of 1989-90 excludes several years following the introduction of Medicare, allowing a more stable trend to appear.
Source: Australian Institute of Health and Welfare and Treasury estimates.

Copied from Commonwealth Treasury Intergenerational Report

3. Current training of doctors in Australia.

From 1993 to 2002 university medical completions for permanent residents and Australian citizens ranged from 1196 to 1327 with an average of around 1250.

The 2003-04 AMWAC Annual Report (page 1) states that “from 2009 Australian medical school output will be 1700 (plus additional full fee paying students)”, and that “overall by 2007 Australian medical school intake is expected to be at least 1860-1900”. They also state that “the Australian Government expects that by 2007 an additional 725 appropriately qualified overseas trained doctors will be working in Australia.”

4. Estimated Shortfall

If requirements are for between 3,069 and 4,164 doctors annually, the current level of medical school output of 1250 is far too low. The shortfall is between 1,819 and 2,914 per annum.

The health system would find it very difficult to assess, supervise, and absorb anything like this number of overseas trained doctors each year. It is possible that allowing full fee paying non-resident medical students from overseas to stay permanently could meet some of the shortfall.

If the above analysis were accurate then the workforce stresses are likely to intensify rapidly over the next decade.

5. Requirement to Recruit Overseas Trained Doctors

Even when the higher numbers of Australian doctors begin entering the workforce there will still be a need to recruit between 1,000 and 2,000 extra long-term career doctors (ie 30-50% of the medical workforce) from sources other than local medical graduates.

Discussion

The simplest, least risky approach is to substantially raise the numbers of local medical students. In the unlikely event of an excess of doctors at some time in the future, this could be addressed in the same way as every other occupational group by reducing medical remuneration and limiting government subsidised practice opportunities, resulting in higher rates of exit from the profession.

It is quite possible that there exist countervailing factors which are reducing medical workforce demands. For example the internet may enable more self-care, computerisation may increase medical productivity, and work substitution may result in other health professions taking over part of the work of the medical profession.

Factors increasing medical workforce demand would include greater paperwork, patient demand for longer consultation to discuss treatment options and informed consent, increased job opportunities in medical research and universities, requirements to be involved in quality related activities and CME.

The simplest, and perhaps the only practical method of balancing these factors and any other unidentified factors is observing the experience in the marketplace which seems to indicate an intensifying undersupply.

The logic behind the longstanding belief in an oversupply and policy of constraining medical workforce from my observations relates to:

- The belief in supplier driven demand in health markets, and that doctor numbers drive over-servicing and increased overall health spending – constraining doctor numbers being an attractive means to control cost
- The idea that medical incomes are too high and that the “real solution” is work substitution, and this requires constraints on doctor numbers.

The supplier driven demand approach dovetails with arguments that Government interventions in the market for services (ie subsidies) can result in greater levels of service than would otherwise be the case. This conceptual view that Government subsidies for medical services drives excessive demand for services is probably at the heart of most opinions that Australia has too many doctors.

However, some countervailing factors relevant to this issue exist.

First, though Medicare subsidises medical services there are legal rules limiting any further medical gap insurance for non-inpatient medical services. This is a regulatory factor likely to reduce demand for medical services.

Second, the US with a system predominantly funded by private insurance has much higher levels of medical expenditure than Australia. Many European countries operate with social health insurance systems and have similar or higher levels of medical expenditure. It is not that clear that an acceptable alternative organisation of health funding exists which would result in lower levels of demand for medical services in Australia. In fact some of the alternatives would quite possibly increase demand.

High medical incomes are partly justified by the level of training, difficulty, and responsibility of medical work. To the degree that incomes are excessively high it is to a large degree a result of a general shortage of doctors, and the logical long-term strategy is increasing the supply of doctors. It is not mathematically possible to solve all specific shortages in the presence of an overall shortage.

Work substitution or getting less highly paid staff to do part of the medical work is an attractive option, particularly amongst people who hold the view that doctors do too much relatively simple work. This may well be possible but the bottom line is that people need appropriate high quality training for the work that they do, and supportive viable professional bodies which monitor and maintain standards. All the trends in health are for increasingly high levels of training of staff.

An example often quoted is the existence of 30,000 nurse anaesthetists in the US. (See http://www.aana.com/about/history.asp) They have over 100 years of history to develop a viable profession including training programs, professional supports, and develop the role they have today. In Australia all of this would need to be developed from scratch.

The use of nurse practitioners and nurse prescribers has been pursued successfully in the UK, though not necessarily resulting in cheaper services.

The development of similar substantial programs of work substitution in Australia would require large lead times. The decision to pursue work substitution initiatives needs to be made on the basis of identifying appropriate levels of training for the work, and understanding that a lengthy process of developing the new practitioner role and its professional underpinnings is required.

These work substitution initiatives would need to be incredibly successful and vigorous to make a substantial inroad into the estimated shortfall of 1,000 to 2,000 doctors per annum.