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General practice

Workforce gaps now and in 2020

Background

The general practice workforce required for Australia in the future will depend on many factors, including geographic areas and patient utilisation of general practice services.

Objective

This article examines the current and future general practice workforce requirements by way of an analysis of geographic areas accounting for differing patient utilisation.

Discussion

The results showed that, compared with major cities, inner regional areas had 24.4% higher expected patient general practice utilisation per general practitioner, outer regional 33.2%, and remote/very remote 21.4%. Balanced distribution would mean 1129 fewer GPs in major cities: 639 more in inner regional, 423 more in outer regional and 66 more in remote/very remote. With the population projected to increase 18.6–26.1% by 2020, expected general practice utilisation will increase by 27.0–33.1%. Initiatives addressing general practice workforce shortages should account for increasing general practice utilisation due to the aging population, or risk exacerbating the unequal distribution of general practice services.

Keywords: general practice; workforce; Australia



Australia currently has a workforce shortage of general practitioners,¹ particularly in rural areas.^{2–4} Decreasing working hours and feminisation of the workforce^{3,5} will exacerbate these shortages in coming years. The Australian Federal Government plans to increase general practice training places from 700 in 2010, to 1200 per year by 2014⁶ to address this shortage.

Future general practice workforce planning is important for overall management of the healthcare system and requires information about supply and demand. The simplest way to measure general practice supply is a basic GP to population ratio. However, Australia's population is aging⁷ and older people are more likely to have a chronic condition⁸ and multimorbidity,⁹ resulting in higher general practice visit rates.¹⁰ This additional utilisation of general practice services should be considered, to accurately calculate the relationship between GP supply and patient demand.

Efforts made to account for this increased utilisation have used either crude mortality rates (Robin Hood Index)^{2,11} or the number of items of service.^{1,12} However, mortality rates overlook patient demand due to the increasing focus on earlier primary and secondary prevention, and Medicare Benefits Schedule consultation numbers do not consider variance in consultation length or consultations paid for by the Department of Veterans' Affairs (DVA), which are heavily skewed toward older patients.

In this article, we present a simple method to calculate average annual GP utilisation for each age/gender group, current workforce distribution across Australia, and the number of additional GPs required to meet future utilisation.

Method used

General practice consultations for 2005–2006 by age/gender were supplied by the Department of Health and Ageing's Medicare Statistics Unit, and the Department of Veterans' Affairs. The average number of consultations for people in an age/gender group was calculated as total consultations for each age/gender group divided by the number of people in each age/gender group (drawn from Australian Bureau of Statistics 2006 census).¹³ Length of consultation was sourced from a substudy of the Bettering the Evaluation and Care of Health (BEACH) program.¹⁴ The expected consultation length for each area (age/gender of the population) was compared with the observed length of consultation for that area (from the BEACH substudy). For each age/gender group, the average number of consultations was multiplied by average length of consultation to calculate average GP utilisation (ie. face-to-face clinical time) for an



age/gender group. The Australian Standard Geographical Classification (ASGC)¹⁵ was used to categorise levels of remoteness. To calculate each ASGC area's expected level of general practice utilisation, we applied average general practice utilisation to each person residing in each area by their age/gender group. Number of GPs in ASGC areas was sourced from Australian Institute of Health and Welfare (AIHW) medical labour force report 2006.¹⁶

Current general practice utilisation per GP was calculated as total general practice utilisation for an area divided by number of GPs in that area and results compared across ASGC levels.

Future expected general practice utilisation was calculated by applying the current utilisation to ABS future population projections for each age/gender group.¹⁷ The projected number of GPs required was calculated as total level of future general practice utilisation divided by the number of clinical hours worked by an average Australian GP.

Ethics approval for the BEACH study was obtained through the Human Ethics Committee of the University of Sydney and the Ethics Committee of the AIHW.

Results

General practice utilisation

The average number of consultations per person in 2005–2006 was higher for females than males, with lowest visit frequencies among

early teens increasing with age (*Table 1*). On average, females also had slightly longer consultations than males (15.48 minutes 95% CI: 15.30–15.65, *cf.* 14.72, 95% CI: 14.54–14.90). The shortest average consultation lengths were with children aged 5–9 years for both genders, increasing with age until approximately 45 years of age and then staying relatively stable.

Average annual general practice utilisation did not differ between genders in children, but for people aged 15–79 years, females had higher utilisation than males. For people aged 80 years and older, males had higher utilisation than females. Annual utilisation for both genders averaged about 1 hour per year for children aged 0–4 years, decreased to about 30 minutes per year for people aged 10–14 years, then increased with patient age to 243 minutes (4 hours) for women and 291 minutes (4.9 hours) for men aged 85 years and older.

There was no significant difference between observed and expected length of consultation in any area except the 'remote/very remote' area where the average observed consultation was significantly longer than expected for the age/gender distribution of the population. This was due to young Aboriginal and Torres Strait Islander patients in these regions having longer consultations than the wider community.

To account for this difference, when calculating average clinical demand for remote/very remote areas, we used observed, rather than expected, length of consultation (*Table 2*, [b]). After adjusting for

Table 1. Average number of consultations, length of consultation and clinical utilisation for each age/gender group

Age group (years)	Female population			Male population		
	Average number of consultations (per year)	Average consultation length (minutes)	Average annual general practice utilisation (minutes)	Average number of consultations (per year)	Average consultation length (minutes)	Average annual general practice utilisation (minutes)
0–4	5.44	12.32	66.97	5.89	12.39	72.94
5–9	2.82	11.75	33.07	2.81	11.83	33.29
10–14	2.30	12.32	28.38	2.28	12.38	28.24
15–19	3.84	14.71	56.45	2.31	13.45	31.05
20–24	4.83	15.06	72.72	2.48	14.06	34.90
25–29	5.05	15.64	78.98	2.68	14.48	38.81
30–34	5.32	15.72	83.59	3.02	15.42	46.53
35–39	4.96	16.22	80.45	3.14	15.42	48.46
40–44	5.03	16.32	82.07	3.50	15.18	53.15
45–49	5.30	16.53	87.52	3.78	15.51	58.62
50–54	5.81	16.59	96.43	4.31	15.72	67.78
55–59	6.37	16.34	104.14	5.34	15.67	83.65
60–64	7.13	15.97	113.90	6.17	15.71	96.99
65–69	8.62	15.48	133.45	7.73	14.72	113.75
70–74	10.21	15.50	158.18	9.53	14.86	141.56
75–79	12.87	15.40	198.20	11.87	15.06	178.66
80–84	15.33	15.52	237.83	18.08	15.21	275.07
85+	15.91	15.28	243.22	18.89	15.39	290.76
All ages	5.90	15.48	91.33	4.50	14.72	66.21



the longer observed consultations, people living in remote/very remote areas had the highest average clinical demand (82.58 minutes) and those in major city areas the lowest (78.06 minutes).

GP supply versus expected general practice utilisation

Table 2 (a) shows the 22 954 practising GPs across Australia by ASGC. Table 2 (c) examines the theoretical workload of GPs within each ASGC to meet the current general practice utilisation of the population. To provide the same clinical time to their patients, GPs in outer regional areas would have to work 24.2% more clinical hours than the national average. To provide the same clinical time as major cities, inner regional GPs would have to work 24.4% more hours than GPs in major cities.

Table 2 (d), shows (using current supply of GPs), the number of GPs required for each area compared with the number of GPs currently there. To achieve the same level of general practice access across Australia would require movement of 1129 GPs from major cities to inner regional areas (639), outer regional (423) and remote/very remote (66) areas. The

lower half of Table 2 (d), shows the number of GPs required in each area to achieve the same level of general practice access as currently exists in major cities – an additional 1663 GPs – 975 in inner regional, 581 in outer regional and 107 in remote/very remote areas.

The future

The ABS projects that Australia’s population will grow 18.6–26.1% between 2006 and 2020 (Figure 1), which will require an additional 4200–5892 GPs to maintain the 2006 population-doctor ratio. However, applying current general practice utilisation to the projected older 2020 population, growth in general practice utilisation between 2006 and 2020 will be 27.0–33.1%. Maintaining the 2006 utilisation ratio would require an additional 6101–7481 GPs by 2020.

Discussion

This short study provides further evidence of the unequal distribution of the general practice workforce between urban and rural areas. On average, older people have over eight times the general practice utilisation of younger

Table 2. GP supply and population general practice utilisation in Australia and across ASGC areas

ASGC	Major city	Inner regional	Outer regional	Remote/very remote	Australia
Raw bases for calculations (a)					
Population	14 167 961	4 080 202	1 961 849	489 096	20 699 108
Number of GPs (individuals)	16 702	4000	1749	503	22 954
Observed and expected consultation length, and estimated average clinical demand (b)					
Observed average consultation length (minutes)	15.10	15.16	15.13	17.50	15.16
Expected average consultation length (minutes)	15.09	15.08	15.06	14.91	15.08
Average annual clinical demand per area	78.06	80.74	78.64	82.58* (70.35)	78.75*
Clinical hours per year (c)					
Clinical hours per GP per annum	1103.6	1372.7	1470.0	1339.4	1183.6
Compared with Australian average	-6.76%	15.98%	24.20%	13.17%	-
Compared with major cities	-	24.38%	33.20%	21.37%	-
Number of GPs required and available (d)					
Australian average as benchmark of general practice utilisation					
• Required number of GPs	15 574	4639	2173	569	
• Current number of individual GPs available	16 702	4000	1749	503	
• Over/under supply	1129	-639	-423	-66	0
Major city average as benchmark of GP utilisation					
• Required number of GPs	16 702	4975	2330	610	
• Current number individual GPs available	16 702	4000	1749	503	
• Over/under supply	0	-975	-581	-107	-1663
* Observed length of consultation is used for remote/very remote areas, the Australian average is also adjusted for this effect					



people, so areas with high levels of retirees will have higher utilisation than areas with many young families. By 2020, the increase in general practice utilisation as a result of population aging could increase the estimated number of required GPs by up to 45% above that of demand from population increase alone. If the extra utilisation from the aging population is not accounted for in future workforce planning, the current maldistribution will deepen and workforce shortages will be exacerbated.

There are limitations in this study. We assumed that, given the opportunity, GPs would work similar average hours per week. However, GPs in rural areas already work longer hours than their city peers.³ Even with the opportunity to work 'normal' hours, some GPs would continue working their current hours. Our estimation of future needs assumes new GPs entering the workforce will work the same hours as an average GP did in 2006 and it is possible we have underestimated the number of future GPs required as new cohorts of GPs are working fewer hours than their older colleagues were at the same age.¹⁸ This is especially true for new female GPs who account for more than half of GPs aged less than 35 years.¹⁶ We also assume the current primary care model and the structure of general practice will remain the same. If primary medical service delivery radically changes, more or fewer GPs may be needed. For example, the workload undertaken by nurse practitioners and practice nurses in the future may affect the number of GPs required. Our method does not acknowledge the considerable distances often involved for patients and/or GPs to receive/provide

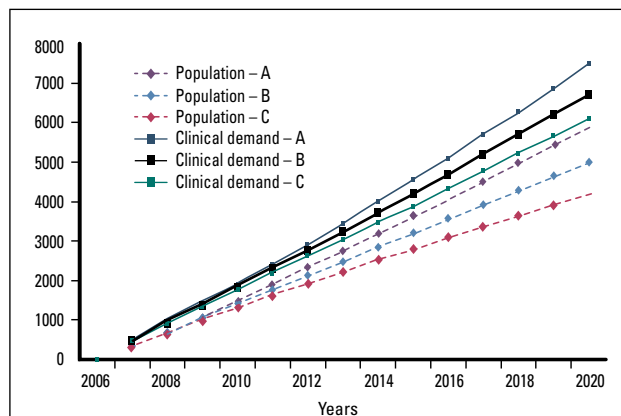


Figure 1. Additional GPs required between 2006–2020 based on projected population growth and projected general practice utilisation

Population projections based on the ABS population projections, 2006–2101¹⁷

Series A based on a fertility rate of 2.0, net overseas migration of 220 000 and life expectancy male 93.9 years, female 96.1 years

Series B based on a fertility rate of 1.8, net overseas migration of 180 000 and life expectancy male 85.0 years, female 88.0 years

Series C based on a fertility rate of 1.6, net overseas migration of 140 000 and life expectancy male 85.0 years, female 88.0 years

Projected general practice utilisation – Series A, B and C projections based on these population estimates

services, nor the scarcity of other healthcare resources (eg. hospitals, other health professionals) in remote areas.¹⁶

This study has implications for the Australian Federal Government's funding of increased general practice training places, which are certainly needed. However, the reduction in GP working hours and the approaching mass retirement in the older workforce (in 2006, 1 in 3 GPs were 55 years or older¹⁶), means that these new training places may be insufficient to cover future needs. Measures will also need to be taken to ensure that enough new GPs work in regional areas, otherwise the current health inequities will be exacerbated.

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