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## Australia's Medical Workforce: maldistributed and lately never enough.

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**Abbreviations:** ABS Australian Bureau of Statistics. ACRRM Australian College of Rural and Remote Medicine. AGPT Australian General Practice Training. AHPRA Australian Health Practitioners Registration Authority. Registration Categories<sup>1</sup> AMC Australian Medical Council. AMWAC Australian Medical Workforce Advisory Committee. ANZTD Australia New Zealand Trained Doctor. ASGC Australian Standard Geographical Classification. BB Bulk-bill(ing). DoH National Department of Health (variously named). DPA Distribution Priority Area. FACRRM Fellow of the ACRRM. FSE Full Service Equivalence. FRACGP Fellow of the RACGP. FTD Foreign Trained Doctor (OECD term). FTE<sup>40</sup> Fulltime Equivalence of 40 hours weekly. GP General Practitioner, General Practice. GPFTE GP full time equivalent (DoH). HMO Hospital Medical Officer. HWA Health Workforce Australia. HWD Health Workforce Data. NHWDS National Health Workforce Dataset. IFPG International fee-paying graduates (from Australian Medical Schools). IMG International Medical graduate. LGA Local Government Area. MLF Medical Labour Force. MMM Modified Monash Model<sup>2</sup>. MWF Medical Workforce (workforce comprising doctors). NOM Net Overseas Migration. OTD Overseas Trained Doctor (Legal description). RACGP Royal

<sup>1</sup> Registration Categories relevant to this paper are **Provisional** (first year domestic graduates and those foreign trained who have passed the 2<sup>nd</sup> part of the AMC exam), **Limited** (mostly foreign trained doctors in area of need or under supervision), and **General** (accepted domestic and overseas qualification and completed required supervision), <https://www.medicalboard.gov.au/registration/types.aspx>.

<sup>2</sup> The Modified Monash Model classification identifies populations by remoteness and size. MMM 1 identifies major cities of Sydney, Newcastle, Wollongong, Melbourne, Geelong, Brisbane, Sunshine Coast, Gold Coast, ACT, ACT, Adelaide, and Perth. MMM 2-6 are inner regional areas with populations of >50,000, 15-50,000, 5-15,000, and <5,000, while MMM 6-7 are remote and very remote.

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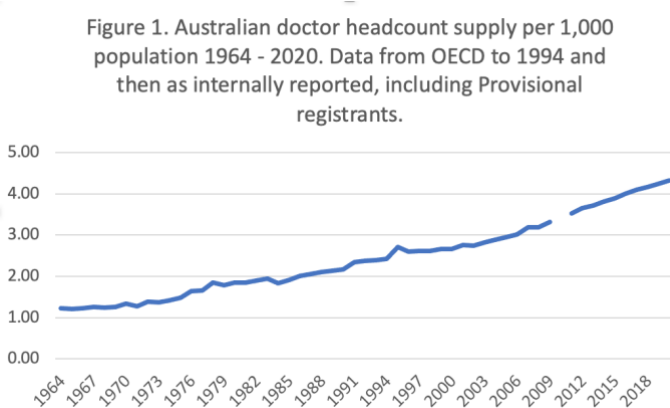
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## Executive Summary

This paper covers the spread of, and interactions within, the medical workforce in recent decades. It does this in order to illustrate the way in which a bias towards hospital and specialist care has occurred. This bias is the result of the continual expansion of hospital overnight inpatient care. The expansion is against the OECD trend. It has caused an excessive level of specialist training and the diversion of domestic medical graduates to the non-GP specialties, thus limiting the numbers who specialise in General Practice. This trend away from General Practice has resulted in high dependence on overseas recruitment of GPs, especially in rural areas, from where most of these overseas doctors move to the cities in time. Hospitals also have also been lavish in their recruitment of foreign-trained graduates.



Because some findings in this paper run against popular perception, particular attention is paid to the compilation and presentation of data. These data are available from a wide range of sources. The findings are then fully discussed in the last section. The essential picture is one of oversupply and maldistribution. The problems as identified are probably not remediable without a

major change in emphasis within, if not of the structure of, healthcare provision. A detailed knowledge of the medical workforce on the part of the reader is not assumed.

Australia's active medical workforce headcount started growing ahead of population growth in 1976 and this trend accelerated from 2003 on.<sup>3, 4</sup> Population growth itself has pursued a straight line, currently increasing by 12-13% per decade (Figure 2). Working doctor headcount per 1,000 population has increased from 1.22 in 1964 to 2.01 in 1996, and 4.32 in 2020. (This figure is considerably higher than the 3.8 per 1,000 reported by OECD). The overall estimated Fulltime Equivalent (FTE) number of working doctors itself is higher than the headcount.<sup>5</sup>

While the Omicron variant of Covid-19 has been raging in 2022, there have been assertions of doctor shortage both of specialists<sup>6</sup> and of GPs.<sup>7</sup> Bulk billing is said to be on the verge of

<sup>3</sup> Working doctor total numbers in this paper include provisional registrants, excluded from reporting since 2012 but considered by OECD to be part of active workforce, and reported in AHPRA quarterly medical registrant data.

<sup>4</sup> Working registrants from DoH Health Workforce Data National Health Workforce dataset online data tool with added AHPRA registrant data for provisional registrants (not included since 2011).

<sup>5</sup> Full-time equivalence (FTE) of doctors remains higher than headcount because as a group they work more than 40 hours weekly, hospital doctors more and GPs less. AIHW changed MWF FTE from 45 to 40 hours in 2008. Years prior to that are recalculated to 40 in this paper. The DoH has leanings to classify the FTE of GPs as 35 hours.

<sup>6</sup> See Duckett S. 'Bill shock: the unhealthy truth about medical specialist fees', *The Age*, 7.3.22 "...the supply of specialists has not kept pace with population growth". Non GP Specialist workforce is well in excess of population growth and likely in oversupply (Table 2). It is this that leads to excessive specialist bills. "Fee for service is especially inflationary in the context of physician oversupply: there is nothing more expensive than an underemployed specialist". Robinson J C 'Theory and Practice in the Design of Physician Payment Incentives'. *The Millbank Quarterly*, Vol. 79, No 2 2001.

<sup>7</sup> 'Health Minister to focus on 'terrifying trend' of GP shortfall'. Fitzsimmons C. SMH July 30, 2022.

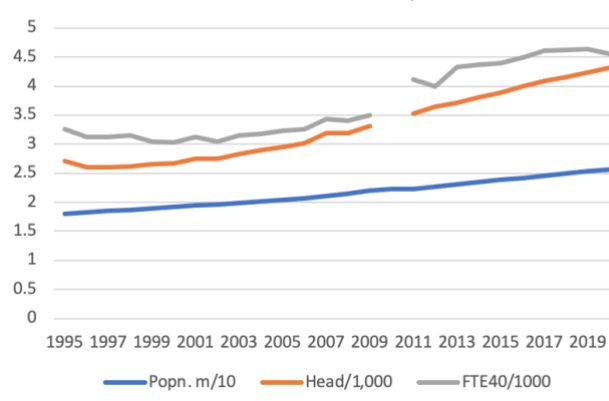
collapse.<sup>8</sup> However, the public hospital Full-time equivalent of 40 hours weekly (FTE<sup>40</sup>) medical workforce measured against population has grown by 149% since 1996, and the Non-GP specialist workforce by 51%. General practice FTE has contracted by six percent but GP services per capita have continued to increase.<sup>9</sup>

Hospital medical workforce supply has grown steadily. Public hospital specialists spend as much as 70% of their time with private patients. This increases the number of non-specialist hospital doctors required for inpatient hospital care. Incentives to attract these doctors include specialist training as well as comprehensive pay arrangements somewhat superior to those offered to GP trainees. In addition, since 2004 public hospitals have conducted significant recruitment from overseas of junior staff, trainee specialists and already qualified specialists with approved overseas qualifications. Because there are only a limited number of non-GP specialist positions in hospitals, 55% of non-GP specialist fellows<sup>10</sup> are based in the community.<sup>11</sup>

The Commonwealth has contributed to these processes through its reluctance to train an adequate number of GPs. As a consequence, 62% of GPs were already older than 55 years in 2017-18 (Figure 5).<sup>12</sup> Wholesale recruitment from overseas to rural General practice, now to be extended to outer metropolitan areas, has been necessary for rural medical care. At least 76% of those recruited have subsequently on-located to the cities, where they have been necessary to keep up the GP numbers. Foreign-trained non-GP specialists who have been recruited to rural areas on-locate to the cities in the same way.

The sentinel years selected for comparison are: 1996 (revision of Health Insurance Act, commencement of compulsory specialist fellowship for access to Medicare rebates, and the

Figure 2. Working Australian Medical Workforce supply and FTE per 1,000 population 1995-2020 (AIHW and on-line health workforce data).



<sup>8</sup> Bulk Billing 'on the verge of collapse'. Robinson N, The Australian Aug 6<sup>th</sup>, 2022. Although fears about reduced bulk billing have often surfaced over the years, bulk bill rates have risen every year, and in every State and Territory, from 2003 (68%) to 2020 financial years when they stood around 90%, suggesting viability of rebate levels at least for this purpose (MBS statistics).

<sup>9</sup> FTE as used in this paper follows the AIHW in using self-reported weekly working hours of 40 per FTE doctor, now available for calculation through the HWD data tool. The DoH is using FTE calculations based on billing patterns. For the whole workforce between 1996 and 2020, female doctors rose from 28% to 43% and GP fellow working hours self-reported at annual registration dropped from 50 to 42 per week. Population for the same period increased 40% (Table 2). Annual Medical working hours per capita of population have increased from 6 to 8.4.

<sup>10</sup> Fellowship, awarded by medical specialist Colleges, including GP, is the academic end point of Australian post-graduate medical training. See footnote 29.

<sup>11</sup> This is the 'pull' of the non-GP specialist sector. Massively subsidised private health insurance in part enables the high earning potential of non-GP specialists, twice that of GPs. As well they are permitted to highly surcharge patients (see footnote 6). Surcharging incidentally is not allowed in Canada by both GPs and specialists. Combining those based both in public hospitals and the community, there is almost certainly oversupply of non-GP specialists to the community.

<sup>12</sup> 2017-18 DoH GP workforce statistics. These provide the last complete set of GP workforce data with age of whole GP workforce.

inception of systematic data collection)<sup>13</sup>, 2004 (switch to demand-based medical recruitment from overseas and a three-year program of an overall increased medical school intake with additional new medical schools)<sup>14</sup>, 2013 (plateauing of the increased university output of medical graduates, and the commencement of internet-based medical workforce data tables<sup>15</sup>), and 2020 for the latest data, together with some recently available 2021 data. Where the Covid pandemic has affected trends, this is made clear and 2018 data are used, for example regarding temporary reductions in hospitalisation rates.

## Introduction.

Population health is largely determined by conditions and habits of living. Over and above this, it is closely associated with access to healthcare and the quality of that healthcare.<sup>16</sup> This paper distinguishes between costly hospitalised (overnight) care,<sup>17</sup> and ambulant or community based care as provided by GPs, non-GP specialists, hospital outpatients and day procedure units. In 2020 72% of acute overnight admitted care was provided by Public hospitals and 28% by private hospitals. Inadequate community care leads to excess hospitalisation. On an international scale, Australia's rate of hospitalisation of acute care patients is high. It is up to double that of other top countries. As will be discussed, such a rate is also not necessary to achieve high effectiveness of healthcare (Table 12). There is overprovision of salaried medical workforce in public hospitals and neglect of community-based strategies to prevent admissions.

The OECD trend is to reduce hospitalisation rates. Australia apart, the OECD average for ('curative') *acute* overnight hospitalisations per 1,000 population *declined* 7% from 2008 to 2018, and by a further 14% during the first two years of the pandemic.<sup>18</sup> Using available AIHW figures<sup>19</sup> for Australia, the rate per 1,000 *rose* 3% in the 10 years to 2018, peaking in 2014, and then fell by only 6% in the first pandemic year.

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<sup>13</sup> Medical workforce is monitored through analysis of questionnaires filled at annual registration. These were analysed by AIHW until 2015 and since then by DoH. Provisional, and probably Limited, working registrants are not included in the survey, together totalling 8,661 in 2022.

<sup>14</sup> Eight extra medical schools were opened from 2004 to 2008. These were ANU, Griffith, Notre Dame (Fremantle and Sydney, Bond, Western Sydney, Wollongong, and Deakin. Geffen L. A brief history of Medical Education in Australia. MJA 201 (1) 7.7.14. Graduate output increased 79% from 2004 to 2013 (Data in Table 1).

<sup>15</sup> The National Health Workforce Dataset (NHWDS) is now available for analysis in the on-line data tool for 2013 onwards from the Health Workforce Data section of DoH.

<sup>16</sup> Australia was 5<sup>th</sup> worldwide this century for Health Access and Quality (HAQ) and was 7<sup>th</sup> in 1990 and 2000. 'Measuring performance on the Healthcare Access and Quality Index for 192 countries and territories and selected subnational locations: a systematic analysis from the Global Burden of Disease study'. 2016. Rafael Lozano and collaborators (first named Nancy Fullman). Lancet 2018; 391: 2236-71. Healthcare performance for 32 disease groups was measured. Mental disease, physical fitness and obesity were not included.

<sup>17</sup> Overnight hospitalisations cost up to 9 times that of day procedural admission. IPHA National Hospital Cost Data collection round 20 (2015-16) Table 4. Subsequent reports have not differentiated between overnight and day case admissions. There is significant variation in the States and Territories. This parameter is therefore the best indicator of hospital activity and cost.

<sup>18</sup> Acute overnight admissions are reported by the OECD as 'curative'. OECD Statistics, Health, Healthcare utilisation, hospital aggregates, curative care discharges.

<sup>19</sup> It would appear from the data that OECD has been reporting all, not just acute, Australian overnight hospitalisations since 2012.

**Table 1. Medical Workforce doctor supply including provisional registrants\*: sentinel data.**

Supply	1996	2004	2013	2020
All Registrants	<sup>1</sup> 52,720 <sup>1997</sup>	<sup>1</sup> 65,439	<sup>10</sup> 95,690	<sup>10</sup> 125,641
Registrants not identified as Australian-trained <sup>1</sup>			37,810	45,538
% Registrants not identified as Australian-trained <sup>1</sup>			39.8	37.6
Working Registrants including provisional <sup>1,2,12</sup>	<sup>2</sup> 47,682	<sup>2</sup> 59,004	<sup>18</sup> 5,903	<sup>11</sup> 10,947
Headcount working registrant per 1,000 population	2.60	2.93	3.71	4.31
Working domestic graduate headcount <sup>1,2,12,13</sup>	<sup>2</sup> 36,673	<sup>2</sup> 44,509	<sup>15</sup> 4,757	<sup>17</sup> 2,213
Female % (Excluding Prov. Reg 2013 and 2020).	<sup>2</sup> 27.7	<sup>2</sup> 30.1	<sup>13</sup> 8.5	<sup>14</sup> 3.2
Wkng registrants not identified as Australian-trained <sup>1,2,12</sup>	<sup>2</sup> 10,416	<sup>2</sup> 14,495 <sup>2006</sup>	<sup>13</sup> 1,173	<sup>13</sup> 8,633
% all working <sup>1,2,12</sup>	23.1	22.8 <sup>2006</sup>	36.3	34.9
FTE <sup>40</sup> working registrant	59,960	64,904	94,708	116,772
FTE <sup>40</sup> working registrant supply per 1,000 population <sup>5</sup>	3.12	3.22	4.09	4.55
Hospital bed number 1,000 and supply/1,000 population	81/4.3	80/4.0 <sup>2003</sup>	90/3.9	95/3.9 <sup>2017</sup>
Hospital MWF head. ( <sup>1</sup> Calculated, <sup>2</sup> HWD Data tool) <sup>2,1</sup>	<sup>1</sup> 13,322	<sup>1</sup> 17,828	<sup>2</sup> 35,825	<sup>2</sup> 42,081
Hospital MWF Headcount % whole MWF	27.7	30.2	41.7	42.6
Domestic graduates in Hospital MWF Headcount %			64.7	68.2
Hospital salaried FTE <sup>40</sup> (reported <sup>6</sup> )	14,210	21,394	37,086	49,761 <sup>2019</sup>
Hospital salaried FTE <sup>40</sup> supply per 1,000 population	0.78	1.07	1.59	1.94 <sup>2019</sup>
Hospital salaried headcount per 1,000 population (Calc)	0.73	1.10	1.32	1.65 <sup>2019</sup>
Hospital salaried headcount % active workforce	27.9	37.5	45.2s	42.7 <sup>2019</sup>
Working Non-GP Specialists	<sup>2</sup> 15,744	<sup>2</sup> 19,043	<sup>12</sup> 9,187	<sup>13</sup> 8,399
Working Non-GP Specialists per 1,000 population	1.04	1.12	1.42	1.57
All Doctors working in GP headcount <sup>7</sup>	23,466	22,640	31,911	38,388
Working in GP Headcount per 1,000 population	1.27	1.14	1.38	1.49
FTE <sup>40</sup> GP per 1,000 population	<sup>2</sup> 1.47	<sup>2</sup> 1.12	<sup>2</sup> 1.34	1.38 <sup>Est</sup>
Working in GP as % of whole workforce	49.2	38.4	37.1	34.6
ANZTD % all in GP	75.7	72.3	61.5	58.6
Self-reported hours worked per doctor	<sup>2</sup> 50.3	<sup>2</sup> 44.0	<sup>11</sup> 44.1	<sup>11</sup> 42.1
Female self-reported hours worked per doctor	<sup>2</sup> 40.2	<sup>2</sup> 37.7	<sup>2</sup> 38.7	<sup>13</sup> 9.1
Hospital self-reported hours worked per doctor	48.0	Assume 48	48.1	47.3
GP hours worked per GP	<sup>2</sup> 46.0	<sup>2</sup> 40.4	<sup>13</sup> 9.0	<sup>13</sup> 7.0
Medical hours worked per capita of population	6.0	5.9	7.5	8.3
GP hours worked per capita of population	3.52	2.13	2.55	2.59
<b>Training</b>				
Annual first year domestic medical undergrad entry <sup>3,8,9</sup>	<sup>8</sup> 1,200	<sup>3</sup> 1,699	<sup>3</sup> 3,033	<sup>9</sup> 3,411
Annual domestic medical graduates <sup>4,5</sup>	<sup>4</sup> 1,227	<sup>4</sup> 1,287	<sup>5</sup> 2,944	<sup>5</sup> 3,066
Annual on-shore International fee-paying graduates <sup>4</sup>	150	446	497	609
First postgraduate year hospital entry of on-shore grads <sup>3,4</sup>		<sup>3</sup> 1531	<sup>4</sup> 3118	<sup>4</sup> 3,365 <sup>2018</sup>
Listed number of Provisional Registrants (Dom/non-Dom) <sup>10</sup>			3,252	5,583
First year advanced non-GP specialist training places <sup>3,4</sup>	969 <sup>1998</sup>	1,152	2,032	2,238 <sup>2018</sup>
Trainees in advanced non-GP specialist training <sup>3,4</sup>	4,052 <sup>1997</sup>	6,619	7,783	9,973 <sup>2018</sup>
Trainees in basic non-GP specialist training <sup>3,4</sup>	1,369 <sup>1997</sup>	1,783	5,784	5,958 <sup>2018</sup>
Total trainees in non-GP specialist training stream	4,814	6,619	13,801	15,822 <sup>2018</sup>
Non GP specialist fellows total including not working <sup>1,3</sup>		25,198 <sup>2008</sup>	29,667	39,257
Trainees in advanced GP specialist training (no basic) <sup>3,4</sup>	1,603	1,569	4,174	5,676 <sup>2018</sup>
GP specialist fellows total including not working		<sup>11</sup> 1,210 <sup>2008</sup>	<sup>10</sup> 23,422	<sup>10</sup> 28,359
<b>Population m</b>	18.31	20.13	23.15	25.69

**Sources:** <sup>1</sup>DoH HWD Datatool, National Health Workforce Dataset (NHWDs). <sup>2</sup>AIHW Medical Labour Reports. <sup>3</sup>Medical Training Review Panel reports (to 2015). <sup>4</sup>DoH HWD Datatool, Medical Education and Training (2016-18). <sup>5</sup>ANZ Medical Deans student statistics report 2021. <sup>6</sup>AIHW Hospital Resources. <sup>7</sup>DoH GP Statistics, 2013, 2017 and 2021 Datasets. <sup>8</sup>AMWAC Benchmarks 1995. <sup>9</sup>Medical Deans Statistics 2021. <sup>10</sup>AHPRA June quarter medical registrant data. <sup>11</sup>Calculated from Datatool. **Notes:** \*Provisional registrants are undergoing supervision post-graduation or after obtaining the AMC examination pass (Footnote 1). <sup>12</sup>Includes provisional registrant. <sup>13</sup>Australian-trained provisional registrant number estimated from reported first postgraduate year hospital numbers, all assumed to be Australian-trained (DoH Datatool). Hospital FTE remains higher than Headcount because of long hours worked. Sentinel years chosen are 1996: commencement of detailed AIHW reporting, 2004: change to demand driven medical workforce recruitment, 2013: commencement of more detailed data from DoH Health Workforce Data Datatool, 2020: latest data. Domestic Medical school enrolments rose from 3,211 in 2017 to 3,533 in 2021 (Medical Deans on-line customised statistics facility). Comparable FTE GP data for all years not available. Working year assumed to be 46 weeks.

Total hospital overnight bed numbers, public and private, have stayed at around four per 1,000 population, increasing 20% from 80,000 in 1996 to 96,000 when last reported in 2017.<sup>20</sup> In contrast, the international trend has been to reduce bed supply and to focus on the capacity to prevent hospitalisation of ambulant patients.<sup>21</sup>

Doctors working in Australia are based either in public hospitals or in the community.<sup>22</sup> There is a very small private hospital salaried workforce of around 1,300. Public Hospital medical workforce (MWF) *headcount* expansion, concerned principally with overnight care, has gone well beyond the increase in bed numbers. It rose by 255% over the decade to 2018, from 28% to 43% of whole working medical workforce. Further data are to be found in Table 1.

States and Territories individually determine the size of their public hospital networks. These provide around two thirds of total overnight beds. The headcount of salaried Hospital Medical Officers (that is, doctors) is a product of the aspirations and viewpoints of governments, hospital administrators, employed specialists and sundry influences outside hospitals on specialist training rates.

All salaried public hospital specialists are able to treat patients in private hospitals, spending perhaps rather less than half of their time with public patients.<sup>23</sup> Specialists in training are therefore the mainstay of overnight hospital care. By comparison patients in private hospitals are serviced by their treating specialist. Forty five percent of non-GP specialists are salaried and work in public hospitals. The balance is in the private sector.<sup>24</sup>

From OECD comparisons the combined acute medical workload of public and private hospitals has potential to decrease much further, and allow reduction in bed supply.<sup>25</sup> This, and any reduction of Emergency Department load, depends on effective management of ambulant patients by GPs, hospital outpatient departments, and private non-GP specialists in the community, as well as by the increasing numbers of ancillary medical personnel. Patients sick on the day should be managed on the day.<sup>26</sup> As it is, patients are often not managed in a

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<sup>20</sup> Australian overnight separations peaked at 209/1,000 population in 1985-6. The majority (90-95%) would have been acute, but this was not reported as a category until 2004. Total patient bed days per capita had peaked in 1974-5 but were reducing from decreasing length of stay, which decreased from 10.3 days in 1965-66 to 6.7 days in 1985-6 ( and from 6 in 2004 to 4.6 in 2012). Acute bed supply was 6.4/1,000 in 1970 and fell steadily to 4.0 in 2001. Bed occupancy is no longer reported for Australia as it is for the OECD as a whole, but ran around 70% in the late 1970s and 80s, a relatively low figure, so could beneficially be monitored in Public Hospitals at least. AIHW Australia's Health 1988 Section 8.3. It can be observed that these reductions have been accompanied by inversely larger increases in medical personnel.

<sup>21</sup> OECD statistics, Hospital beds by function of Health Care, Curative (acute) care beds per 1,000 population.

<sup>22</sup> The introduction this century of health coaching initiatives by Public Hospitals for patients is a sign of fragmentation of primary healthcare provision and over-resourcing of these hospitals.

<sup>23</sup> All specialists salaried in public hospitals have rights of private practice, which is often in adjacent private hospitals. While 45% of them are salaried in public hospitals, Specialists of 9 surveyed specialties were found to spend less than 30% of their time in public hospital work. (Public or private care: where do specialists spend their time? Freed G L et al. Aust Health Rev. 2017 Oct;41(5): 541-545.doi: 10.1071/AH15228). To free up time for private work, salaried specialists therefore tend to displace work onto their subordinates and to endeavour to enlarge their teams to this end.

<sup>24</sup> In 2020, of 38,399 non-GP specialists with medical college fellowship, 17,451 identified hospitals as their primary location leaving 20,948 not so identified. With high levels of specialist training, numbers based in the community can be expected to increase steadily against population. The GP workforce was reported at 38,388 in 2020 (DoH).

<sup>25</sup> 11 of the top 20 countries (19 OECD) for Healthcare Access and Quality have acute overnight hospitalisation rates under 150/1,000 population and 6 under 120. Australia is 3<sup>rd</sup> of the high admitters in this group. Table 11.

<sup>26</sup> All patients phoning for a GP appointment can be asked ".... are you sick today?". With remuneration now for telephone consultations there is no impediment to initiation of management. There needs to be some kind of obligation for General



timely fashion, often ending up in ambulances ‘ramped’ up at over-subscribed Emergency Departments before being attended to.<sup>27</sup> Incidental attendance at a General Practice for trivial illness is also an opportunity for preventive care and no patient declaring his or herself sick on the day should be turned away.

*A reduction of acute hospitalisations to public hospitals would in turn mean a reduction of public hospital doctor numbers, including qualified specialists, specialist in training and junior hospital doctors, together with a reduction in the number of community based specialists and reduced number of low value private hospital admissions. These would all tend to increase the number of domestic graduates entering GP. To achieve better ambulant medical care, greater emphasis needs to be placed upon the operation of hospital outpatient facilities for referred care of the 55% of patients without health insurance.*<sup>28</sup>

### Workforce disposition

Medical Workforce sectors are interconnected in terms of supply. Figure 3 sets out the process of distribution.<sup>29</sup> Doctors wishing to access Commonwealth Medicare rebates must acquire medical fellowship or work in specified locations exempt from this requirement. Doctors working in hospitals (excluding Commonwealth funded outpatients facilities) are exempt from this requirement.<sup>30</sup> Fellowship is based on training programs or approval of overseas-acquired qualifications. From the available data, GP fellowship aspirants comprised 35% of specialist training entrants from 2010-2018.<sup>31</sup> This percentage reflects the steady drop in GP as a proportion of medical workforce, from 49% to 34% this century.

The propensity of the Public Hospital MWF to expand, together with the allure of community-based non-GP specialist private practice, has led to the overprovision of specialist training positions in public hospitals. This has meant that the annual proportion of domestic graduate entrants to the *rural* GP training program has been as low as 34% (Table 10). This is part of the ongoing crisis in rural GP supply.<sup>32</sup> *There is still good reason to view rural GP as a*

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Practices. Walk-in GP practices are to be found all over Canada, where large practices often have a walk in section and there is a smart phone application for up to the minute walk-in waiting times in large towns.

<sup>27</sup> The 5 year decrease in presentation to Victorian EDs merits further examination (Table 6).

<sup>28</sup> Data for this important sector is not adequate for analysis of its function and contribution to health care.

<sup>29</sup> New graduates start in hospitals for a year of curriculum driven supervised training. They continue in junior hospital positions until entering an accredited non-GP specialist training stream, mostly in hospital, or in general practice as a GP trainee, where they remain until acquiring specialist fellowship. Non-GP specialists either stay in hospital or move to the community where they consult in rooms or provide services in private and public hospitals as ‘visiting medical officers’. Overseas recruits start directly at any level, few in the first intern year (PGY1) and progress in the same manner.

<sup>30</sup> Doctors failing to obtain specialist qualifications and continuing to work in hospitals are described as career HMOs. An organised Hospitalist category is yet to emerge in Australia.

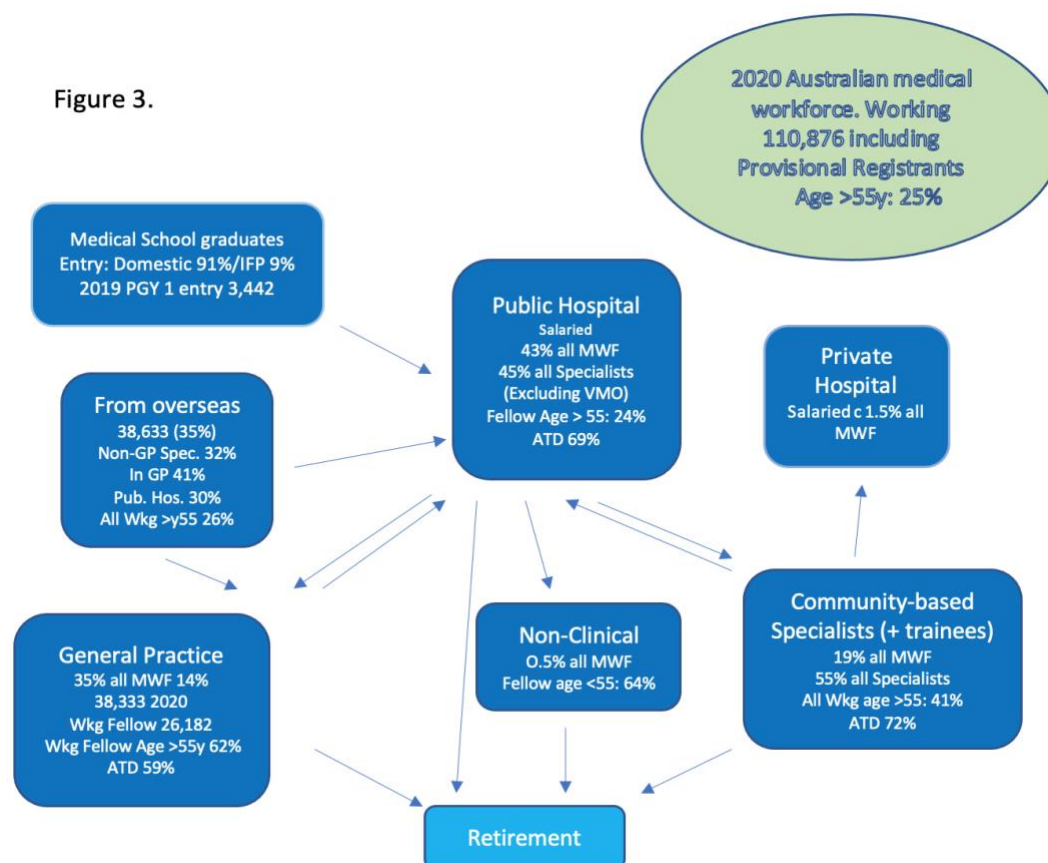
<sup>31</sup> This calculation is complex. Basic (8 specialties) and advanced trainees are combined to yield overall annual increase. To this are added exits to College fellowship, calculated by subtracting new fellows with approved overseas qualifications, (reported from 2010 to 2018 only), from total new fellows (MRTP and MET annual reports). GP program entrant data was obtained from AGPT (Table 7). NB, cuts made by DoH to MWF reporting are making calculations such as this more difficult.

<sup>32</sup> Foreign trained graduates are debarred from the major city GP training program (50% of GP training places), which has been comfortably filled with domestic graduates. Not enough domestic graduates have been available to fill the rural 50% or less of the training program. Moreover, since 2018 not enough overseas graduates approved through the AGPT assessment process have been available to fill the remaining places, despite applicants exceeding approvals by around 600 each year. (Figure 60. Health of the Nation, 2020). Domestic graduates training in rural GP mostly stay on in rural. Between 2000 and 2007 non-city domestic graduate GPs increased by less than 200 but did by nearly 2,000 over the next 10 years. The prospect for further increase is compromised by the age profile and will be followed with anxiety.



*viable life-long career.* Domestic graduate GPs are much more likely to stay long term in rural than are those with basic training overseas. GP numbers in the cities have only kept up by dint of the on-migration of overseas recruits from rural areas, where they in turn have to be continuously replaced.<sup>33</sup> In 2020, 76% of GP *fellows* with original training overseas were located in major cities, where they comprised 45% of all GPs with fellowship.

Figure 3.



Specialist training commences after at least one year's internship. The number of doctors with non-GP specialist fellowship now equals that of total GP workforce including those in training. Non-GP specialist trainees in hospital enjoy significantly superior remuneration to GP trainees, and can look forward to twice the income once they are qualified as specialists.<sup>34</sup> Eight specialties offer early training in so-called basic training streams (Table 4). Surgical specialties favour work in surgical units from the second year on, and in the early 1990s rejected a proposal to establish a UK model of two 'foundation' years' rotating hospital experience for all medical graduates. This had been designed to delay specialisation and give

<sup>33</sup> 76% of overseas-recruited doctors working in GP were working in cities in 2018 when last reported (DoH GP statistics), and in 2020 also 76% of overseas graduates with GP fellowship.

<sup>34</sup> Remuneration in hospital is salary packaged, a distinct advantage especially for married individuals in their 30s. Once qualified, income prospects were 3.7 x average wage in 2019, (decreased from 5.3 in 2005), compared to 1.8 x for GPs (probably including trainees), decreased from 2.1 in 2005. OECD Health at a glance 2021 (Figure 8.10) and 2007. As these tables demonstrate, Australian GPs are near the bottom of the barrel in OECD terms, in comparison both with specialists and average country income. GP Medicare rebates were frozen from 2014 until 1.7.22 when they were increased by 1.6% with intense pressure on the new administration from the profession.

time for a more informed decision about what specialist training pathway to follow. Any thoughts in this direction became lost in the hectic expansion of the hospital MWF after 2004.

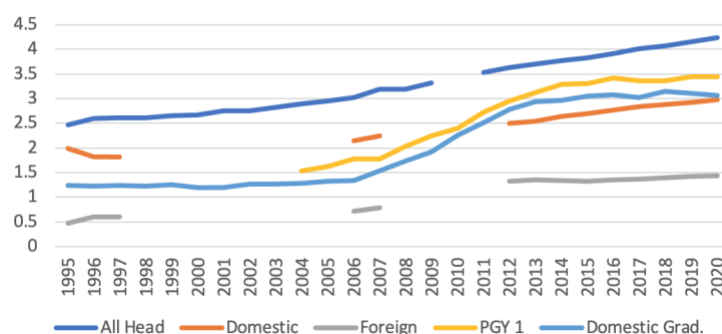
### Domestic and Overseas workforce entry

Entry into the MWF was strictly controlled until 2004, when control was mostly removed.<sup>35</sup> Entry occurs in two ways from Australian Universities and from overseas. On-shore graduates enter as first year interns ('PGY1'). Places always exceed the total domestic graduate output, and numbers are topped up as needed by those new graduates who had been fee-paying international students.<sup>36</sup> Qualified doctors are recruited from overseas into years other than PGY1 into public hospitals and approved community practice.

An approximation of foreign-trained doctor entry is possible for 2014 to 2020 which suggests that such entry rose from what was a hiatus at 429 in 2014 to 1,579 in 2018 and a Covid-related drop back to 1,078 in 2020.<sup>37</sup> Available (scant) data gives a net annual average increase in doctors trained overseas of around 1,700 for 2007-17. This number, added to

new first-year interns gives a rise in total workforce entry from around 3,700 in 2014 to 4,600 in 2019. It equates to a headcount increase of 4.7 % per year of all working doctors (including provisional registrants – footnote 1). This is three times the average population growth of 1.6% over the decade to 2019.<sup>38</sup> Roughly speaking, overseas recruitment appears to be around 1/3 of the total entry into the MWF.

Figure 4. All working MWF, domestic and overseas graduates per 1,000 population, domestic graduate output and first year graduate headcount entry to Public Hospitals. Available data 1995-2020



<sup>35</sup> Earlier evaluations included the 1974 Karmel report, the 1981 Jamison Inquiry, and the 1988 Doherty Inquiry into Medical Education (all cited by AMWAC). The Australian Medical Workforce Advisory Committee (AMWAC) was established in 1996, which made recommendations for graduate output and importation, and for postgraduate training. Prior to this there had been the occasional review and university intake was varied according to perceptions of supply. The AMWAC was discontinued at the end of 2005.

<sup>36</sup> Numbers of first year hospital positions have stayed ahead of domestic graduate output consistently this century (Figure 4). The balance, averaging 12%, has been made up by international fee-paying graduates (IFPG). First postgraduate year entry as first reported in 2004 was 1,531 against 1,287 domestic graduates. In 2019 it was 3,442 against 3,265. The University business model for IFPGs depends on this disparity to provide some places as incentive for them. Those not obtaining places return to their own countries for first year experience.

<sup>37</sup> To calculate total foreign-trained (OECD term) entry, estimated attrition is added to the annual headcount increase derived from published headcount (HWD data tool). Foreign-trained numbers are assumed in this paper to be all those not identifying as Australian-trained, which includes NZ, other overseas and the 'not-stated' category. Age cohort headcounts are available from 2013. Of 36,445 non-ATD in the MWF in 2020, 25% were aged 55 or more, from whom 3.7% retired, calculated by estimating attrition, based on other data available, as 2% for age 55-64, 5% for 65-74 and 10% for over age 75. This estimate will be improved once 2023 data is available to yield a 10 year cohort. The calculated net entry total amounted to 1/4 of total workforce entry from 2014-2020 (7,669 of 31,354). This is far less than the level often assumed (See for example 'Essential decisions for national success. Securing the future of Australia's Medical Workforce'. Page 7. Group of 8 Australia (Universities) 2022. It nonetheless needs substantial reduction.

<sup>38</sup> Note full-time equivalence remains higher than headcount for workforce as a whole.

Figure 4<sup>39</sup> illustrates the increase of total, domestic and foreign-recruited streams per 1,000 population, together with the domestic graduate output and first year entry to hospital internships (PGY1), both of which rose steeply from 2004 to 2013.<sup>40</sup> Provisional and Limited registrants from overseas (footnote 1) are not included in this analysis. First time data for Provisional registrants in mid 2022 showed 3,918 first year domestic and NZ registrants and 2,198 from overseas. This indicates that 38% of the permanent workforce entry for this year has been from overseas.<sup>41</sup> 'Limited' registrants<sup>42</sup> change to Provisional registration when the requirements for transition through to 'general' registration<sup>43</sup> have been satisfied. The overall MWF proportion of overseas graduates was steady around 23% until 2004, after which it rose to 36% in 2013, remaining at 35% in 2020 (table 1). The OECD average is 18%, the main anglophone economies ranking high.<sup>44</sup>

Foreign-trained doctors gain employment in Australia in a variety of ways. There is a worldwide network of testing stations for the Australian Medical Council multiple choice examination, the screening test for medical employment through limited registration.<sup>45</sup> Many IMGs have already gained Australian residence by other means.<sup>46</sup> For Medicare-funded community practice, employer sponsorship gives direct entry to an area of need practice for approved overseas-trained specialists (GP and non-GP<sup>47</sup>) as well as aspirant GPs. Public hospitals have also been free to recruit directly. Early data are absent but by 2013 domestic graduates working in public hospitals had fallen to 65% of the total salaried workforce (Table

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<sup>39</sup> Figure 4 sources: AIHW Medical Labour force reports, Health Workforce Data, Medical Training Review Panel reports, Medical Education and Training reports, and Medical Deans' reports. Domestic graduates are estimated from total workforce and available overseas-trained figures as reported by AIHW. Graduate and PGY1 data divided by 1,000.

<sup>40</sup> Medical school intake had already increased by 25% from 2000 to 2004. Eight extra medical schools were opened from 2004 to 2008. These were ANU, Griffith, Notre Dame (Fremantle and Sydney, Bond, Western Sydney, Wollongong, and Deakin. Geffen L. A brief history of Medical Education in Australia. MJA 201 (1) 7.7.14. It largely plateaued from 2013 but is continuing to rise gently. It is the predominant factor in MWF increase.

<sup>41</sup> AHPRA quarterly medical registrant data for 30.6.22. Competent pathway IMGs numbered 1,482 and standard pathway 358. At the same time, the number of Limited registrants stood at 2,903. Even though some of these are temporarily in Australia (probably fewer in 2022) they are still part of the workforce, as they have been for many years, (4,812 in 2013). The gross undercounting of active medical workforce amounted to 8% in 2020. Note that AHPRA includes NZ registrants with Australian trained, whereas this paper and HWD count them as overseas derived.

<sup>42</sup> The 'Limited' category of medical registrant (2,903 in June 2022) includes area of need doctors with multiple choice AMC examination pass and doctors from overseas in Australia for supervised hospital experience. This category is also probably not included in medical workforce headcount.

<sup>43</sup> 'General' registration means full registration. A further category of 'specialist' registration is conferred when medical Specialist Fellowship is acquired, when the individual is described as having 'general and specialist' registration.

<sup>44</sup> OECD Health at a Glance 2019 figure 8.23. New Zealand 43% and Ireland 41% are ahead of Australia, followed by the UK 30%, the US 25% and Canada 24%.

<sup>45</sup> Only Australian residents were examined prior to 1998. There are around 300 overseas testing stations. (AMC 2017 Annual report p22). AMC examination results have been reported back to 1992. From 2004 to 2017, 23,436 doctors without AMC approved qualifications sat the MCQ exam one or more times, 84% passing. 13,679 sat the clinical one or more times, 71% passing. Face-to-face clinical examinations were initially suspended after the onset of the covid pandemic. They resumed in 2021 by teleconference but this service was only 25% subscribed (AMC 2020 Annual report). Clinical examination passes, necessary to gain provisional registration, averaged 47% for 1992-99, 60% for 2003-12, and 29% for 2013-19 (No data for 2000-2002).

<sup>46</sup> ABS 2016 census. For the 23% with mainly English-speaking background (MESB), 85.9% had secured medical employment, 90% for males, and 82% for females. For the 77% not (NESB), the figure was only 63.8%, 75% for males, and 82% for females. Medical employment was only 68% of 21,117 arrivals. In the 2006 census this was 53%. International Migration: what is the future for Australia? Hawthorn L. MJA open 1 Suppl 3 July 2012.

<sup>47</sup> Approved overseas specialists joining the workforce were reported for 2010 to 2018, 2,016 Non-GP and 2,015 GP ('Fellow ad eundum gradum'). MRTP reports.

1), recovering to 68% in 2020.<sup>48</sup> Recruitment of doctors from overseas remains a significant industry.

Table 2. 2020 Domestic graduate % of fellow\* MWF by Capital city LGA and Monash Model zone for States & Territories.

Towns/LGA	MMM	NSW	Vic	Q	WA	SA	T	NT	ACT	Total	Headcount
Inner Captl		73	73	66	65	76					
Capital Rim		59	58	53	43	68					
Major city	1	68	69	66	58	71			67	67	55,872
> 50,000	2	66	61	53	58	72	73	64		59	5,760
15-50,000	3	64	53	43	55	57	36			58	3,791
5-15,000	4	56	53	65	54	59				57	1,335
<5,000	5	52	60	53	50	60	62			55	1,164
Remote	6	35	60	62	60	66	75	68		70	567
V. Remote	7	63		76	59	64	50	81		70	317
All MMM	All	67	67	63	57	70	68	66	67	65	68,806
Headcount		21,858	18,071	13,726	5,244	6,096	1,612	852	1,347	68,806	

**Source:** DoH HWD Datatool 2020. **Notes:** \*Postgraduate fellowship degree from AMC approved medical college. LGA distribution was found to be more amenable than SA4 populations for capital city GP distribution, for which only GP fellow data is available (66% of total). ATD proportion less than 60% is deemed to represent excessive dependency. Figures exclude provisional registrants. Colour coding: green satisfactory, blue less than satisfactory, yellow poor, red very poor.

The level of dependence on overseas recruitment is higher in outer metropolitan areas and in the regions (Table 2). The bulk of the MWF is concentrated in and around the major public and private hospitals. High dependency would be below 75% Australian trained doctors (ATD) (highlighted blue) and excessive below 60% (highlighted yellow). Only 3 zones fall above 75%, two in very remote. OECD average for domestic graduates in 2019 was 77%. Australia's average prior to 2004 was above 75%.

All domestic and overseas graduates since 1996 are required to obtain specialist fellowship to gain approval for access to Medicare rebates. This does not apply to those employed in hospitals but it is advantageous for all hospital doctors to enter specialist training. Training takes 3-4 years for GPs and 5-7 years for non-GPs, which as will be observed, does not translate into earlier fellow GP workforce entry. With graduation averaging around the age of 28,<sup>49</sup> specialist training commences mostly after the age of 30.<sup>50</sup> Few obtain specialist fellowship before the age of 35 and as will be discussed, the percentage of fellows aged less than 40 is very low.<sup>51</sup> The significantly long time taken to obtain specialist status deserves more debate. Post fellowship career is around 30 years.<sup>52</sup>

<sup>48</sup> This does not include an unspecified number of 'visiting medical officer' (VMO) community based specialists, the budget for whom was \$1.5b in 2018-19 (AIHW hospital recurrent cost).

<sup>49</sup> This has risen from the age of 25.

<sup>50</sup> The average age of Medical graduation has gradually increased from 25 to 28 (Workforce demographics, National MWF strategy 2021-31). The proportion undertaking a preliminary science-based degree has steadily risen. The prolonged time taken from leaving school to fully fledged medical or specialist medical practice is seldom questioned.

<sup>51</sup> Only 6% of both GP and non-GP fellow specialists in 2020 were aged under 35. A steady estimated 19% Non-GP specialists are aged under 40, commensurate with a 6-7 year training period and a 30 year career. A surprisingly low 16% of GP specialists, risen from 13% in 2013, are aged under 40, despite their shorter training years. This indicates that they are deferring training for some years. Are a proportion trying and failing to obtain specialist training positions?

<sup>52</sup> There are essentially 4 cohorts. The 35-44 age cohort is larger than the under 35s because of older overseas additions. There is some loss from the 45-54 cohort which will be clarified in the 2023 Health Workforce Dataset. The 55-75 cohort, with progressive retirements, is altogether around 20% higher than the 45-54, but roughly equal in work output. Less than 2% remain after the age of 75.

## Discontinuations and Retirements.

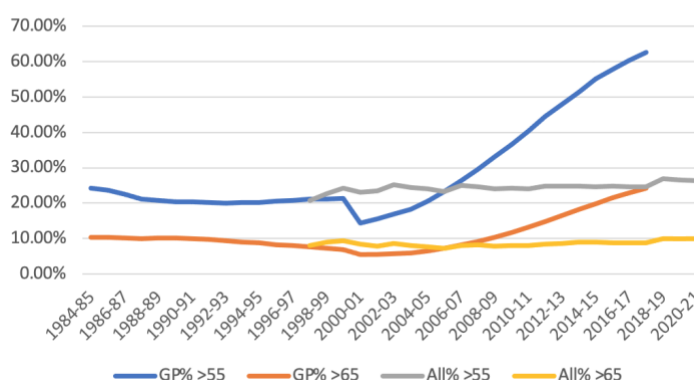
The MWF is reported in 10 year age cohorts. The rate of retirement is low from the 45-54 group but is obscured by the entry of older doctors from overseas. Calculation of the proportion retiring from the older age groups requires a 10 year data set, which for the whole MWF will not be available until 2024.<sup>53</sup> Current retirement rates are low because they are from the previous much smaller workforce. For the GP workforce, calculations from GP data yield retirement from all age groups as 0.7% annually for 1989-1999, 1% for 2000-2010, and 1.1% for 2007-2017 financial years but, as will be detailed, has probably increased significantly since then.

Prospective retirement is indicated by the over 55 age groups. GP cohort analysis indicates that roughly 20% of the 55-64 cohort retire by age 65 and a further 50% by 75 in the cohorts mentioned above. For whole MWF, from OECD data on Australia, the 55 to 65 age group loss is around 30%, indicating that a higher proportion of non-GP specialists retire in this age range, presumably because of their greater career income.<sup>54</sup>

The proportion of GPs aged over 55 has been rapidly increasing (Figure 5).<sup>55</sup> It would not be surprising if, as anecdotally reported, some of these have brought their retirements forward as a result of exigencies during the

Covid pandemic.<sup>56</sup> These statistics may have been the ‘terrifying trend’ of GP shortfall’ referred to recently by Federal Minister Butler as quoted above, although the worrying aspects apply more to smaller town rural than urban, as will be discussed. The proportion of the medical workforce as a whole who are aged over 55 and 65 years is flatlining at around 25% and 10% (Figure 5). The complexities of GP workforce provision are discussed further on and it can be noted that the sharp upturn in average services per GP occurred well before the Covid pandemic (Figure 7).

Figure 5. Australian whole MWF % aged over 55 and 65 from 1997 (OECD & DoH HWD datatool) and whole GP workforce 1984 to 2017. (DoH GP 2013 & 2017 Db to 2017 only).



<sup>53</sup> Age Cohorts have been available for whole Australian medical workforce from OECD since 1997. They have been around 9% under-reported in comparison with AIHW data, but this probably involves younger age groups, especially provisional registrants. GP cohorts were reported from 1984 to 2017. The 2013-2023 first decade of MWF data will be available from Health Workforce Data in 2024. Calculations from OECD data yield 1% of the whole workforce retiring annually for 1997-2007, and 1.4% for 2006-16 (which includes identified discontinuation from the 45-54 cohort). There was no data for 2010. Full 10 year HWD cohorts will be available in 2024. Combined OECD and HWD data yields 1.0% for 2009-2019. A figure of 1.2% can be expected for whole workforce for 2021-2030 because of recently accelerated graduate output. A stable workforce has a rate of about 3%, but that would now take decades to achieve.

<sup>54</sup> Doctors in Australia have to save and develop an income stream for their retirement.

<sup>55</sup> Male ATDs comprised 48% of GP workforce in 2000 (DoH 2014 dataset published and purchased data). They comprised 28% of AGPT entrants for 2008-17, but 32% for 2018 (Information from AGPT 2018). They were 30% of GP fellows in 2020 (HWD datatool). The loss of male rural GPs is creating substantial problems for rural hospitals.

<sup>56</sup> ‘Huge exodus of GPs. Doctors suffer burnout’ The Age 26.9.22. The evidence is anecdotal and the next set of DoH GP statistics in late 2022 is awaited to verify trends in GP numbers.

## Hours worked

From 1996 to 2004 the average self-reported weekly hours for all of the MWF dropped from 50 to 44 hours (see Table 1) but were then stable until 2013. They then remained relatively stable but have dropped to 42 hours during the covid years. Working hours in hospitals stayed at 48 from 1996 to 2013 but had dropped 46.6 in 2020, with females' working hours falling slightly more than males. Hours worked have a normal distribution, skewed to the left. 9% of GP and 6% of Non-GP specialists work less than 20 hours a week (Table 3), while 38% of GP and 26% of non-GP specialists work less than 35 hours a week. For female domestic graduates the figure rises to 17% less than 20 hours for GP, but to only 8% for non-GP, specialists. A virtue of the foreign-trained MWF is that they often work longer hours than locals, especially in General Practice, and significantly fewer of them are part time.

Whether hours worked per week increase again post-Covid remains to be seen and it is to be hoped that they will not further reduce. The stability of female working hours is encouraging. Whether or not males stay above 40 hours per week will be of interest. A reduction of hours is consistent with aspiration to a particular income goal. This supposition is further discussed below with respect to GPs. The low output of female GPs is understandable given the domestic load that many of them experience, but is nonetheless worrisome considering the resources devoted to their training. In terms of future supply the major considerations are a potential decline in working hours with the further feminisation of the medical workforce, and the numbers of foreign trained workforce who might be recruited.

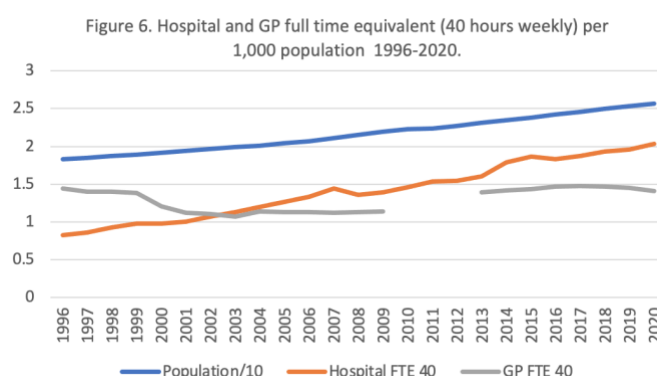
Table 3. 2020 Specialist MWF Weekly hours worked by gender, origin of training and part-time employment.

	Non-GP Specialist			GP Specialist		
	Weekly hrs	% <20 hrs	% <34 hrs	Weekly hrs	% <20 hrs	% <34 hrs
All	42.1	6	26	37.7	9	38
All Male	44.2	7	20	41.4	7	24
All Female	38.3	13	39	33.0	10	54
Domestic Grad.	42.0	7	28	36.2	12	45
Domestic Grad. Male	44.1	7	22	40.5	7	30
Domestic Grad. Female	38.1	8	41	31.2	17	62
Non-Domestic Grad.	42.5	4	22	39.7	5	28
Non-Domestic Grad. Male	44.4	4	16	42.6	3	17
Non-Domestic Grad. Female	38.7	5	35	35.7	8	43

**Source:** DoH HWD Data tool accessed August 2022. **Notes:** mean hours worked for reported groups are assumed to be 10, 27, 42, 57, 72 and 100.

## Hospital and Specialist medical workforce.

In 2020 the Public Hospital MWF headcount (from Table 1) had increased 164% since 2004, and by 32% since 2013, (In comparison the GP workforce increased by 70% and 20% over the same periods). Overnight acute hospitalisations are the principal



indicator of hospital activity and expense.<sup>57</sup> Public Hospitals are responsible for 72% of these hospitalisations and it is probable that the overall level of acuity of admissions into public hospitals is much higher than in private hospitals. In 2020 they had increased 33% per annum since 2004 (when first reported) but only 5% since 2013.<sup>58</sup>

The purposeful restriction of GP numbers from 1996 to 2004, and the increase of non-GP specialist training, allowed the Hospital FTE<sup>40</sup> workforce to grow at a faster rate than population. This trend has continued since, with occasional accelerations (Figure 6<sup>59</sup>), contrasting with the plateauing of GP FTE workforce. As already mentioned, hospital first year positions are topped up with a varying number of international fee-paying graduates. As well as that hospitals, not prepared to wait for the increased graduate output, recruited large numbers of foreign trained graduates. In 2013, for which figures are first available, doctors from overseas comprised 38% of the public hospital MWF.<sup>60</sup> From 2013 to 2020 their headcount in hospitals increased by 9%, though with the great increase in domestic graduates, their overall percentage in hospitals dropped to 31%.

Hospital overnight ('curative') bed numbers, both public and private, had been severely pruned down to four per 1,000 population by the turn of the century but have stayed level since then. Amongst the top 20 OECD countries for Healthcare access and quality, the average ('curative') acute bed supply has been decreasing all century and is now below that of Australia (see Footnote 21). A length of hospital bed stay lowest in the OECD was an Australian virtue from the 1960s to 2019. However, Australian acute bed days per capita remain flat at 0.8 while OECD countries have steadily reduced their average from 1.0 to 0.7 since 2011.<sup>61</sup>

Australian overnight hospitalisations per capita in 2016 were nearly the highest in the top 20 OECD countries for Health Access and Quality (Table 12).<sup>62</sup> As already mentioned, they *fell* 6% in 2019-20 with the inception of the pandemic.<sup>63</sup> The proportion of medical workforce devoted to this aspect of care is a principal concern of this paper because of its overall effect on MWF distribution. The number of acute overnight separations in Public Hospitals per salaried *full-time equivalent* hospital medical officer *per annum* fell from 86 in 2004 to 55 in

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<sup>57</sup> Acute (curative) overnight hospitalisations form the bulk of hospital expense. In 2015-16, the last reported year, total cost was \$24,399m for overnight separations and \$3,897m for day-case separations, per separation \$9,808 for overnight and \$1,319 for same day. IPHA National Hospital Cost Data collection round 20 (2015-16) Table 4. Subsequent reports have not differentiated between overnight and day case admissions. There is significant variation in the States and Territories.

<sup>58</sup> Acute overnight 'separations' (hospitalisations) have been reported by AIHW back to 2004. They correspond to 'curative care discharges' published by OECD (OECD Statistics, Health, Healthcare utilisation, Hospital Aggregates). Total acute and non-acute overnight public hospital hospitalisations are available back to 1997. They amounted to 13% more than acute admissions. The excess to an extent represents bed availability and therefore increased by excess bed provision.

<sup>59</sup> GPs in training were removed from practising GPs and placed with all specialist trainees by AIHW in 2011, giving a hiatus in continuity of data. Calculations were made from the on-line data-tool from 2013. The FTE figures in Figure 6 are taken from AIHW hospital data and converted in 2008 from FTE<sup>45</sup> to FTE<sup>40</sup>, perhaps creating the downward adjustment that year.

<sup>60</sup> This calculation excludes provisional registrants, 3,522 in 2013 (AHPRA registrant data), a hospital supervised category for the first postgraduate year and for overseas recruits, who are not counted in the NHWDS.

<sup>61</sup> OECD statistics, Health, Healthcare utilisation, Hospital Aggregates, Curative Care Bed Days.

<sup>62</sup> Australia 171/1,000 popn. (AIHW), Austria 188, Germany 202. Bar Ireland, Australia was the only country not to reduce acute overnight hospitalisations in 2020. OECD Stats, Healthcare Utilisation, Hospital aggregates, curative care discharges.

<sup>63</sup> Reported public hospital acute overnight hospitalisations fell from 114.5/1,000 in 2019 to 100.7/1,000 in 2020. The number was only slightly lower at 113.2 in 2013. The proportion of admissions in the over 65s rose from 37% to 41% for the six years to 2019.



2020.<sup>64</sup> In 2018, prior to pandemic-associated reductions it was 60. This is barely one overnight hospitalisation per week per doctor. Obviously, there is a great deal of activity associated with rapid management and early discharge and there are a wide variety of specialties represented in public hospitals. Nonetheless the sheer size of the salaried hospital, medical workforce compared to the level of hospital activity and its consequences especially for the supply of GPs, needs to be addressed.

From available data, over the seven years between 2013 and 2020, the public hospital non-GP specialist headcount increased by 41%, at an average of 4.6% per annum, ahead of 4.1% for whole hospital medical workforce.<sup>65</sup> (Emergency physicians increased by 95%). In the community the numbers of non-GP specialists increased by 24%. In the whole MWF, reflecting the previous 15 years' wave of medical immigration, the proportion of overseas trained doctors obtaining fellowship was much higher than for those domestically trained.<sup>66</sup> There is an excess of increase in non-GP specialists over the training rate. This is an indication of the number of directly recruited overseas specialists from overseas (see footnote 47). This cohort was last reported in 2018.

Specialist training commences after time spent in junior hospital and intern positions, where performance is monitored. Trainees are reported as either basic or advanced (Table 4).<sup>67</sup> In 2019 a total of 21,530 trainees were reported. They amounted to 19% of the total workforce including Provisional Registrants. The *training rate* (Basic and Advanced Trainee headcount combined as a percentage of total working fellows in a particular specialty), is an important predictor of future numbers (Table 4). The overall training rate in 2019 for *non-GP* specialist trainee numbers was 43%. Allowing an average of six years for training<sup>68</sup> and a possibly over-generous guestimate of an attrition rate of 14%, the 10 year growth might be as much as 60%, against 12% growth for population.<sup>69</sup>

Curiously, although non-GP specialist training is longer than GP training (5-7 against 3-4 years), the proportion in 2020 aged under 40 of those in non-GP training (19%) was somewhat higher than for GPs (16%).<sup>70</sup> The discrepancy is partly accounted for by the older age of overseas recruits, but the number of years being taken by domestic graduates to mature as GP fellows is surprising and they appear to be in no great hurry to achieve

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<sup>64</sup> From AIHW hospital reports, for 2004 and 2020, public hospital acute overnight separations were 2,065,000 and 2,753,000, 101.4 and 100.7 per 1,000 population. FTE medical officers were 21,394<sup>FTE45</sup> (24,068<sup>FTE40</sup>) and 49,781<sup>FTE40</sup>. This translates to 86 admissions per FTE *per annum* in 2004 and 55 in 2020.

<sup>65</sup> Hospital medical workforce headcount numbers from 2013-20 were 32,707, 34,024, 34,793, 36,363, 38,354, 39,753, 42,051 and 43,933 (DoH HWD Datatool). The numbers correlate fairly closely with headcount calculated from published AIHW figures for FTE salaried hospital employees.

<sup>66</sup> Non-GP specialists working increased by 32% from 29,187 in 2013 to 38,399 in 2020. Non-GP specialists not identifying as Australian trained increased by 42% from 8,666 (30%) to 12,275 (32%).

<sup>67</sup> 8 non-GP specialty groups have separate basic trainee cohorts, amounting to 33% of all non-GP specialist trainees. The time spent in basic training is included in the 5-7 year training period. This is a device to screen in suitable trainees for continuation into advanced training but it also locks in graduates to non-GP specialist training. Surgeons simply allow continued employment in surgical teams as 'unaccredited surgical trainees'. The number of these is not quantitated or acknowledged but could be added to the total in training.

<sup>68</sup> Non-GP specialist training takes 5-7 years. Rates for individual specialties are available from 2017 HWD fact sheets.

<sup>69</sup> Source: Centre for Population 2021, Population Statement: National Population Projections, 2020-21 to 2031-32, the Australian Government, Canberra.

<sup>70</sup> The non-ATD specialist workforce is slightly older than the ATD. The % of Non-GP specialists aged under 40 remained constant around 19% from 2013 to 2020. For ATD's it rose from 19% to 21% and for Non-ATDs from 14% to 17%. For GP specialists it rose from 13% to 16%, 12% to 17% for ATDs and 13% to 15% for non-ATDs.

fellowship. Part-time trainees, 15% of the total for GP and 10% for non-GP, slow up supply of new fellows.

Table 4. 2019 Main specialty group headcount and % over age 55, trainee number and % of working fellow total.

	<sup>1</sup> Wkg Fellow	<sup>2</sup> Advanc. Trainees	Basic Train.	Trainee % All Working	<sup>1</sup> % Age 55+	<sup>1</sup> F %	<sup>1</sup> Hrs /wk	% PH	% RA1
Addiction Medicine	121	44	0	36	69	30	37	23	86
Anaesthesia	4,687	717	601	28	28	32	41	71	84
Dermatology	543	14	23	7	36	48	39	3	93
Emergency med.	2,211	1,625	520	97	15	37	41	88	78
Intensive care med.	754	313	0	42	23	22	51	90	85
Medical admin.	215	118	0	55	64	38	43	60	77
Obstetrics and gyn.	1,870	185	285	25	38	53	45	34	83
Occup & envir. med.	241	97	0	40	62	24	36	3	90
Ophthalmology	965	79	60	14	44	24	40	3	84
Paediatrics & child H	2,265	820	920	77	27	55	40	48	85
Pain medicine	161	45	31	47	41	26	43	22	89
Palliative medicine	292	55	0	19	27	64	38	75	84
Pathology	1,417	547	0	39	41	49	41	46	91
Physician - Adult	8,694	1,872	3,216	59	31	34	43	44	87
Psychiatry	3,717	1,617	0	44	42	42	39	26	87
Public health med.	262	89	0	34	62	52	44	5	79
Radiation Oncology	379	110	0	29	26	43	44	16	85
Radiology	2,208	496	0	22	34	29	40	40	87
Rehabilitation med.	470	222	0	47	35	53	38	74	84
Sexual health med.	95	31	0	33	50	59	37	0	89
Sport and ex. med.	122	53	0	43	47	24	41	0	95
Surgery	5,331	1,031	0	19	37	14	46	35	84
Total Non-GP Spec	37,020	10,180 <sup>3</sup>	5,656	43	33	35	42	45	85
All doctors in GP	38,221				62 <sup>2018</sup>	44			
GP Fellow	26,182	5,694 <sup>4</sup>	0	22	46	45	38	5	74

**Sources:** <sup>1</sup>DoH Health Workforce Data Datatool accessed August 2022 for NHWDS and <sup>2</sup>MET Data. **Notes:** The 22 main groups of specialties as reported are used rather than the 83 total specialties and sub-specialties. <sup>3</sup>Basic trainees are added to advanced to calculate training ratio. <sup>4</sup>For GPs however non-vocationally trained OTDs are all working towards fellowship and should be counted together with program trainees, giving a training rate of 36% but with a lower fellowship pass. PH = Public Hospital. The number of GP program trainees reported by Medical Education and Training exceeds the number accessing GP Medicare rebates (4,363 in 2019) because of numbers in compulsory hospital terms. Direct recruitment of fellowship equivalents from overseas totalled 4,615 from 2010 to 2017 but has not been reported since. A number of specialty groups have multiple subspecialties.

Short term (under 10 year) approaches to specialist training require adjustment towards long term need. Table 4 illustrates major variation in training rates. Surgery, Ophthalmology, Obstetrics/Gynaecology and Anaesthetics all have low training rates, which suggests intervention is required to prevent future shortage.<sup>71</sup> Some high training rates are justified by the advanced age of fellows in that particular specialty (Table 4). Questionable training rates would be for Pathology (39%), Paediatrics (77%), Adult Physicians (59%). Intensive Care Medicine (42%), Psychiatry (44%) and Emergency Medicine (97%) (for which 100% oversupply by 2030 has been predicted).<sup>72</sup> A 30% ceiling on training rates might be considered. The percentage of Females in each specialty also merits consideration, with the

<sup>71</sup> The low training rates in these specialties and below average female participation (OG excepted) suggest a psychological disposition requiring governmental counterweight.

<sup>72</sup> <https://www.health.gov.au/resources/publications/emergency-medicine-australias-future-health-workforce-report>.

extraordinarily low 14% for surgery standing out (Table 4). Orthopaedic surgeons in particular deserve examination.<sup>73</sup>

The increases are set to continue at current training rates. Onflow into the community can be expected to increase as hospital requirements saturate. In the community specialists develop portfolios of practice locations and private hospital visiting rights. In this they benefit from the private health insurance tax rebate, a direct subsidy to private hospital care, which was \$6b in 2018-19.<sup>74</sup> Additionally, anecdotally one hears and reads of extraordinarily high surcharges for office visits. This can result from oversupply as much as undersupply. (Footnote 6).

The pattern of emergency department (ED) presentations, measured against 1000 population over five years, is also of interest as it shows major differences across Australia (Table 5). This suggests a variable use of General Practice for acute illness but also offers some potential for success. For example in Victoria usage has *contracted*<sup>75</sup> but in Queensland it increased immensely, which must reflect differences in the effectiveness of ambulant GP and non-GP care.

Table 5. 1 and 5 year % increase in ED presentations per 1,000 population by State and Territory 2020-21.

	NSW	Vic	Q	WA	SA	T	ACT	NT	All
1 year increase	5.44	-0.64	17.87	7.53	9.14	11.02	9.15	7.92	7.23
5 year increase	15.91	-4.50	27.57	17.80	16.80	9.79	10.27	17.46	13.29

**Source:** Table 2.2: Emergency department presentations, by state and territory, 2016–17 to 2020–21. AIHW  
Emergency department care 2020–21: Australian hospital statistics. **Notes:** 2020-21 activity varied in relation to Covid respiratory and fever clinics and overall State and Territory Covid pandemic management.

Table 6 shows that, Non-GP Specialists are to be found throughout the Monash Model zones, 85% in the cities, where FTE supply of doctors per 1000 people is also much higher. Their headcount increased rapidly by 27% from 2014-2020. 26% in the cities. At the same time the FTE<sup>40</sup> for population rose by only 11% because working fell by 2.6 hours a week.

The proportion of domestic graduate non-GP specialists is 70% in the cities but drops to 55-58% outside them except for the small number in towns under 5,000 population (Table 6). MMM 2-7 is therefore 40-45% dependent on overseas recruitment for specialists. Nonetheless, 80% of foreign-trained non-GP specialists in total are to be found in the cities, and as it is with GPs, those who start outside the cities mostly on-locate to the cities when they are allowed to do so. Relieving the impost on rural inhabitants of having to travel to cities for specialist care is a major issue. Queensland has to an extent remedied this through its rural generalist program.

<sup>73</sup> Whenever problems with healthcare are discussed, orthopaedic waiting lists are the first example cited. Health workforce data reveals that of 1,419 reported working orthopaedic surgeons, 78% are Australian trained, only 7% are female, the training ratio is only 16%, and only 15% of trainees are female. Only 24% are based in Public Hospitals, 40% are aged over 55, and only 14% are aged under 40. 84% are situated in major cities. Gap fees are 2<sup>nd</sup> only to reconstructive surgery and far ahead of all other specialties (Saving Private Health Duckett S 2019).

<sup>74</sup> 'Is it time to ditch the private Health Insurance Rebate?' Duckett S. The Conversation 28.2.19.

<sup>75</sup> A Victorian study revealed a 36% drop in ED attendances in a cohort of 4,868 frequent attenders I the first Covid year. Jessup et al. 'Impact of Covid-19 on emergency department attendance in an Australian Hospital: a parallel convergent mixed methods study'. BMJ open Nov. 2021.

Table 6. 2020 working Non-GP Specialist data by Monash model distribution, 6 year growth.

	MMM 1 ASGC RA 1	MMM 2 >50,000	MMM 3 15-50,000	MMM 4 5-15,000	MMM 5 <5,000	MMM 6 ASGC RA 4	MMM 7 ASGC RA 5	Total All Aust.
2020 Population m	18.322	2.247	1.587	0.969	1.748	0.282	0.213	25.361
Popn. % + 2014-20	9.8	6.6	3.8	3.5	2.3	-3.8	3.7	8.1
Head 2020	32,650	3,253	1,953	200	113	157	24	38,326
% Change '14-20	26	34	29	25	45	34	-9	27
Weekly hours 2020	41.9	43.5	43.6	40.0	38.5	46.1	27.9	42.1
% Change -14-20	-2.8	-1.2	-1.1	-4.7	-6.2	1.4	-41.1	-2.6
FTE <sup>40</sup> 2020	34,201	3,538	2,129	200	109	181	17	40,338
% Change '14-20	19	27	23	13	57	22	-43	19
FTE <sup>40</sup> /1,000 pop	1.87	1.57	1.34	0.21	0.06	0.64	<0.1	1.59
% Change '14-20	8	19	19	9	53	26	<0.1	11
% Domestic Graduate	70	56	57	56	72	55	58	68

**Sources:** DoH HWD Datatool. Populations not published but estimated from 2021 DoH GP statistical data. **Notes:** A few non-GP specialists irregularly reported in MMM 7. FTE<sup>40</sup> calculated from hours worked.

There is an increasing tendency for non-GP specialists to focus on a particular area of their specialty. This is described as subspecialisation.<sup>76</sup> It is an increasing trend. It points to the need for well-trained GPs to refer directly to the appropriate subspecialist rather than for the patient to have to see more than one specialist to obtain required care. There are general specialists in a number of disciplines and their proportion in the cities overall is slightly lower, at 80% or less than the 85% for whole non-GP specialist workforce.

Analysing the increase in the number of doctors per head of population, and their proportions both in cities and in rural areas, is a simplified way of evaluating the situation concerning the medical workforce. But we do have to draw a line somewhere to preserve balance in the Medical Workforce without allowing career aspiration to predominate over the health priorities of Australia's population, for which data are required. A great deal of work on medical specialties has been done since 2011 by Health Workforce Australia and the National Medical Training Network, but the degree to which this has impacted on training levels, from Table 4, remains in question. A few reports are available from the current oversight body, which is the Medical Workforce Reform Advisory Committee.<sup>77</sup>

### General Practice – (Is there a shortage?)

It is generally accepted that the principle aims of medical workforce provision are the earliest recognition and most appropriate management of defined physical and mental ailments. Especially in Australia's widely dispersed population, these aims are, in the first place, best met by a well-trained, large, adequately dispersed, general practice workforce (comprised of

<sup>76</sup> There are 22 groups of non-GP specialists, which expand to 84 when subspecialties for Emergency Medicine, Intensive Care, Obstetrics and Gynaecology, Paediatrics, Pathology, Adult Physicians. Radiology and Surgery are added.

<sup>77</sup> <https://www.health.gov.au/committees-and-groups/medical-workforce-reform-advisory-committee#meetings>. It can be noted that specialty fact sheets have not been updated since 2017. Only 6 specialty-specific reports have been issued.

all doctors accessing primary care rebates).<sup>78, 79</sup> Their role includes response to the epidemic of overweight/obesity and its major onflow of physical and mental morbidity, most of which is amenable to GP management. Mental health problems are also a major aspect of GP care.<sup>80</sup> 68% of doctors accessing Medicare GP rebates are fellows of the RACGP or the ACRRM.<sup>81</sup> An indeterminate number, perhaps around 4,000 without formal fellowship examination passes and now nearing retirement, have been grandfathered with Vocational Recognition for full Medicare Rebates.<sup>82</sup> The remaining 22% are training for fellowship inside or outside of the formal training program.

In retrospect Australia is known to have been already seventh best worldwide for Health Access and Quality in 1990,<sup>83</sup> when the GP workforce was 49% of all working doctors. That proportion has now reduced to 34% (Table 1), and moreover it is severely aged (Figure 5) and extremely dependent on overseas recruitment. Australia was seventh best in 2000 and fifth in 2016, but it is the contention of this paper that maintenance of this position will depend on the future effective functioning of a viable GP workforce.

In 1996 general practice was thought to cost too much and to be oversupplied in the cities.<sup>84</sup> At the same time fellowship acquisition (for all categories) was made compulsory for doctors who wished to be given access to Medicare rebates (unless by special exemption).<sup>85</sup> GP fellowship training was cut right back, and numbers of GPs per 1000 population immediately began to fall.

By 2003 there was a bit of a crisis in GP supply, especially in marginal fringe metropolitan electorates (Table 8). By 2004 FTE<sup>40</sup> GP supply had dropped by 24%. Bulk-billing rates had

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<sup>78</sup> Allowing Government-funded direct patient access to non-GP specialists would be wasteful and a threat to health especially when the specialist is inappropriately chosen. GP skills include management of early ill-defined symptoms. Widespread available well-developed protocols enable safe, early, and often continued management by GPs. The sheer volume of morbidity renders management impossible by specialists alone.

<sup>79</sup> The 2005 AMWAC Guiding Principle for GP were: 1. The Australian Community should have an adequate number of qualified and experienced GPs, appropriately distributed to provide the services it requires. 2. The community is best served when GPs have high standards of qualification and work with a high level of ongoing experience. 3. Standards of practice will be highest if GPs perform a reasonable volume to relevant work. 4. The best assurance of standards is a high-quality requirement for entry to practice.

<sup>80</sup> GPs provide 82% of all individual mental health services nationwide (RACGP 2021 Health of the Nation). 87% of Psychiatrists are located in the cities (Table 4). 46% of adult Australians had had at least one episode of mental disorder in the 2007 National Survey. The 2021 results are awaited in 2023. Prevalence may be increasing. In 2007 20% had an episode in the preceding year and the 2021 figure was 21.4% (AIHW Mental Health Prevalence and Impact 2022). Adequate data for the Pandemic are awaited. The huge numbers require a strong GP workforce capable of filtering, diagnosing, and assisting affect persons within the capability of the individual GP. Medical undergraduate training has a major psychiatric component, increasingly delivered by GPs. The effect of growing overseas recruitment to GP requires evaluation in this sector of care. 53% of working doctors are foreign born against 30% of resident population. 40% of foreign-born doctors in Australia received their medical education in Australia (OECD 'Recent trends in international migration of Doctors, Nurses and Medical Students' 2019).

<sup>81</sup> The AHPRA, and hence the National Health Workforce dataset (NHWDS) doesn't acknowledge the differential between RACGP and ACRRM fellows, creating a problem if Government wishes to further develop the rural GP workforce. Data is to be found in Medical Training Review Panel and Medical Education and Training annual reports.

<sup>82</sup> Vocational recognition for GPs, with grandfathering for non-fellows, commenced in 1989. Phasing out of the category commenced in 2020. <https://www.ama.com.au/gpnn/issue-20-number-33/articles/cessation-vocational-register>.

<sup>83</sup> Ibid Lozano et al.

<sup>84</sup> GP workforce numbers had been growing rapidly, facilitated by the lack of restriction to entry. This provoked competition amongst GPs, and a response that caused increased services per capita and per GP. Once new GP numbers fell back, GPs cut down their activity.

<sup>85</sup> 1996 edition of the Health Insurance Act.

dropped back to 1992 levels.<sup>86</sup> From 2003, with the 2004 federal election in mind, a raft of measures were implemented. These included improved GP remuneration, deregulation of overseas recruitment, a special program for outer metropolitan, and plans to greatly increase domestic medical graduate output (Footnote 14). Thoughts of self-sufficiency as far as Australia training its own medicos was concerned were cast aside despite statements to the contrary.<sup>87</sup>

In the early years of the century there was extensive wrangling about GP supply but by 2005 the AMWAC had worked out that there would be a major shortage in the future if this supply were not increased.<sup>88</sup> It did begin to be increased, but hardly at all until 2009 (Table 10). The numbers stipulated in 2005 were not reached until 2014. Moreover, the expansion especially of the more procedural non-GP specialties has continued to draw domestic graduates away from careers as rural GPs. Gaps in rural areas continued to be filled by overseas graduates, most of whom gravitated to the cities in due course, as they do to the present day. Overseas graduates with aspiration to GP fellowship do not have access to the metropolitan program, and so have comprised up to 66% of entrants to the rural GP training program (Table 10). In the cities, the population of which has increased 39% this century, the GP supply per 1000 population has been sustained only because of the on-location of IMG GPs from rural.

As reported in annual GP workforce statistics since 2013, the annual increase of total GP workforce headcount peaked at 1,747 in 2013-14, since when it has declined to 492 in 2021.<sup>89</sup> During these years, the number of working GP *fellows*, from the Health Workforce Data tool increased by 4,399 and non-GP by 9,212. However, domestic graduate GP fellows increased by only 1,357, compared to 3,042 for non-domestic GP fellows (net of attrition). *The increase in domestic GP fellows was all female*. New domestic male GP fellows were just enough to maintain numbers. In terms of full-time equivalence this represented an increase of just 1,064 domestic graduate (female) GP fellows. This is nowhere near enough to match population increase, let alone aspirations towards self-sufficiency.

Domestic and NZ graduate GPs, as a proportion of all doctors accessing primary care rebates, fell from 77% in 1986 to 76% in 1996, to 72% in 2004, 62% in 2013 and 59% in 2020 (Table 1). GP headcount has been kept up through recruitment of doctors from overseas. It has increased in all zones (Table 7). OTDs have to enter locations of need (currently described as distribution priority area, DPA). These locations are mostly outside the cities. They are confined to areas thus classified until specified length of service (up to

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<sup>86</sup> GP Bulk-billing rates are directly proportional to GP supply, dropping when supply drops.

<sup>87</sup> "Australia should focus on achieving, at a minimum, national self-sufficiency in health workforce supply, whilst acknowledging it is part of a global market". Guiding Principle No. 1, p14, National Health Workforce strategic framework, Australian Health Ministers' conference April 2004. There is no evidence of this principle being followed since then. It actually marks the point at which the goal of self-sufficiency was abandoned.

<sup>88</sup> "This projection results at a national level show that – to ensure a balanced workforce by 2013 – the number of workforce entrants should be in the range of 1,105 to 1,200 per year from 2007 onwards. This represents a large increase from current estimates of approximately 700 workforce entrants per year." The General Practice workforce in Australia. Supply and Requirements to 2013. AMWAC report 2005.2. This recommendation was ignored by Government (see Australian AGPTP Table 7). From 2006 to 2012 the GP training entry deficit, reckoned at 1,150 a year optimum, was 2,951. The AMWAC was dissolved at the end of 2005.

<sup>89</sup> GP workforce expansion was healthy to the mid 90s but fell into negative territory over the turn of the century. It picked up to 476 in 2004, continuing to increase, and averaged over 1.100 from 2008 to 2015. Since then it has averaged 638.

10 years<sup>90</sup>) has been served. After this they generally migrate to the cities, where, as already observed, 76% of them were located in 2020. This internal on-migration necessitates the continuing recruitment of more OTDs to DPA. As a result of this pattern of external and internal immigration, the prevalence of the two groups is near the same in the cities and outside them.

Table 7. 2020 ‘GPFTE ‘ (DoH) by Monash model distribution, 6 year growth.

	MMM 1 ASGC RA 1	MMM 2 >50,000	MMM 3 15-50,000	MMM 4 5-15,000	MMM 5 <5,000	MMM 6 ASGC RA 4	MMM 7 ASGC RA 5	Total All Aust.
2020 Population m	18.322	2.247	1.587	0.969	1.748	0.282	0.213	25.361
Popn. %+ 2014-20	9.8	6.6	3.8	3.5	2.3	-3.8	-3.2	8.1
GP Head 2020	26,276	3489	2848	1938	2158	505	571	37,785
% Change ‘14-20	17	17	12	12	11	-12	0.4	15
GPFTE 2020	21,803	2,530	2,027	1,277	1,420	220	143	29,419
% Change ‘14-20	20.4	22	11.6	13.5	12.4	3.8	7.4	18.9
GPFTE/1,000 pop. ‘20	1.19	1.13	1.28	1.32	0.81	0.78	0.67	1.16
% Change ‘14-20	9.6	14.4	7.5	9.6	9.9	7.9	11	10.1
GPFTE % Headct ‘20	83.0	72.5	71.2	65.9	65.8	43.6	25.1	77.9
% Change ‘14-20	2.1	3.2	-0.5	1	1.1	6.8	1.7	2.3
% Non-ATD 2020	44.5	42.7	38.1	34.4	39.0	37.2	33.3	43.1
2013-20 Non-ATD %+	38.8	34.4	38.9	35.1	22.5	16.2	13.8	37.0

*Sources:* 2020-21 DoH GP data. *Notes:* FTE as calculated by DoH: see database for methodology which is based on throughput and length of consultation as billed. This differs from calculation from self-reported working hours used by AIHW and elsewhere in this paper.

The National Department of Health (DoH) calculates GP full-time Equivalent (GPFTE) numbers as having risen 10% since 2014 (Table 7). It uses both throughput and estimated length of consultation to produce the data. If however the FTE for GPs is calculated on the basis of GPs’ self-reported hours worked, the metric used for the rest of MWF, then a different result is obtained (Table 8). This shows that the FTE<sup>40</sup> supply for population was a little lower in 2020 than it had been in 1996, when the level of servicing was considered to be too high. Bulk-bill rates and services per capita however were considerably higher than 1996.<sup>91</sup> Bulk-billing rates dropped marginally in 2021-22.<sup>92</sup>

<sup>90</sup> ‘Moratorium periods’, so called as they relieve OTD service obligations under section 19AB of the Health Insurance Act, vary from 5 years in very remote to 10 years in city DPA. They are calculated by ‘scaling’ according to length of time spent in various locations. <https://www.health.gov.au/health-topics/doctors-and-specialists/what-we-do/19ab/moratorium>.

<sup>91</sup> Services per capita have been rising in every age group, and interestingly least in the 64-84 groups, highest in the <85 group, and continued in 2020-21. Children under 14 fell in the first pandemic year. DoH 20-21 GP statistics, National, patients.

<sup>92</sup> The bulk-bill rate dropped from 88.8% to 88.3% in the 2021-22 FY (MBS quarterly statistics), ending a continuous rise from 2004. Described as ‘tumbling’, it was enough for the incoming Labor Administration to end the 8 year GP Medicare rebate freeze, increasing rates by 1.6%. The freeze itself was to limit GP Medicare expenditure, which grew 3.8% over the year to \$9.1b, 64% over 10 years from increasing workforce numbers and services per capita (Figure 7).



A comparison of the supply of GPs per 1,000 population, Medicare services per GP and per capita, together with bulk billing rates, is of interest (Table 7). As GP supply rose in the 1990s so did services per GP<sup>93</sup>, services per capita and bulk bill rates. This pattern reversed as the supply of GPs was deliberately reduced, as already described, and there was a shortage by 2003. GP headcount supply then progressively increased again. Services per GP rose a fair amount in a repeat of the previous pattern, but fell off again around 2010, although services per capita and bulk billing rates continued to increase, signs of increased competition. The rebate freeze was now imposed in 2013. Services per GP continued to drop initially, but from 2016 turned sharply up, together with services per capita as well as a continued rise in Bulk-bill rates. It is proposed that fears of reduced income have stimulated the most recent pattern. That this practice has been successful is suggested by a reduction in hours worked (Table 10). Such a reduction is an indication that individual income goals are being realised. The data underlying these patterns are presented in Table 8, together with changes in the first covid year.<sup>94</sup>

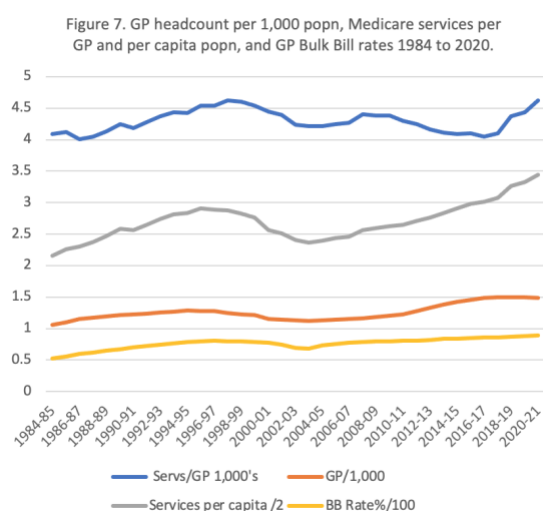


Table 8. Sentinel (all) GP data 1996-2020.

	1996	2004	2013	2020	2021
Average annual services per doctor, all in GP	4,541	4,210	4,091	4,620	4997
VR GP average annual services	5,550	4,596	4,547	4,993	5349
Non-VR GP average annual services	1,963	2,562	3,222	3,670	3615
GP in Training average annual services	2,996	2,305	2,196	2,929	3559
Doctors working in GP as % of whole MWF	49.2	38.4	37.1	34.6	
GP Services per capita of population	5.78	4.78	5.67	6.90	7.5
Bulk Bill rates %	80.6	73.2	83.4	88.8	88.3 <sup>1</sup>
GP annual hours worked per capita of population	3.52	2.13	2.55	2.59	
GP weekly hours worked ( <sup>1</sup> AIHW, <sup>2</sup> GP fellows)	<sup>1</sup> 46.0	<sup>1</sup> 40.4	<sup>1</sup> 40.5	<sup>2</sup> 38.3	
Working in GP Headcount per 1,000 population	1.27	1.14	1.38	1.49	1.49
FTE <sup>40</sup> GP per 1,000 population	1.47	1.12	1.34	1.41 <sup>Est</sup>	1.42 <sup>Est</sup>

Sources: DoH GP Financial year Statistics for 2013, 2017 and 2020. AIHW Annual MWF reports 1996, and 2013, HWD. ABS and Population centre populations. *Note:* hours self-reported at annual registration. 2013 and 2020 extrapolated from HWD data for GP Fellows. <sup>1</sup>2022 June Quarter.

<sup>93</sup> The number of services rendered annually by the average GP varies between 2 and over 16,000 in a Gaussian normal distribution with a long tail into the higher servicing levels. An annual level of 5,000 translates into a fairly low average of 22 consultations a day, five days a week, 46 weeks a year. Levels around 80 a day for short periods or 16,000 a year are identified and notified to the Professional Services Review (Annual reports. With respect to present public debate, the Department through Medicare has access to individual annual billing totals, though there might be a barrier to individual identity for privacy reasons. The data is classified as 'protected' under secrecy legislation. The highest number of rebates known to have been accessed in one year was 22,000 (Corporatisation of General Practice – impact and implications. Erny-Albrecht K, Bywood P, PHCRIS August 2016).

<sup>94</sup> The billing patterns indicate that doctors have a significant influence on the frequency of patient attendance which at times can over-ride public resistance to excess attendance. Ignoring probably covid-related excess services in 2021, GP services per capita were in 2020 19% higher than 1996, and 33% higher than 1990 (5.18), when the pattern shown in Figure 7 began. This has relevance to Medicare expenditure, especially because extra tests are often used to assure reattendance.

Both the GP headcount and FTE against population are very high by OECD standards. The high bulk-billing rates reflect high supply, and there is probably not a GP shortage per se. It is not inconceivable that the filling of appointment books with low value services to counter the rebate freeze creates the appearance of shortage. It can do this by increasing waiting time for appointments, together with refusal to see sick patients on the day.

The reduction in working hours as measured for Fellow GPs from 2013 to 2020 has been across all of the Monash model zones but is more pronounced in rural zones and particularly applies to male GPs. Hours worked by female GP fellows were essentially static in MM 1 and 2 but *rose* in MM 3,4,6 and 7 (see Table 9). When these data are analysed by age groups as well as gender, female fellow GPs under 45 increased their hours, while those aged over 45 decreased their hours. This trend may augur well for future stability.

Table 9. 2013 and 2020 GP Fellow self-reported weekly hours worked by Monash Model Zone and gender

		1	2	3	4	5	6	7	All
All	2013	39.3	40.5	41.7	45.6	46.1	47.6	51.4	40.3
	2020	36.8	37.9	38.9	42.5	40.8	44.9	48.2	37.7
Male	2013	43.9	44.5	45.4	48.5	49.3	52.0	54.1	44.8
	2020	40.8	41.4	41.7	44.6	43.5	46.9	51.0	41.4
Female	2013	32.8	34.0	34.6	37.2	39.0	40.3	43.1	33.6
	2020	32.1	33.7	35.0	38.4	36.7	42.6	44.5	33.0

**Source** DoH HWD Datatool. **Notes.** Hours dropped in all categories, much more in males, but rose for females in MMM 3,4,6 & 7,

Would present parameters allow stability in the number of GPs? The annual GP Training program intake for GP trainees has been around 1500 since 2015 (Table 10). The numbers fell below this in 2018 despite the fact that many foreign-trained junior hospital medical officers were not gaining specialist training places (see Notes to Table 10).<sup>95</sup> Overseas recruitment to locations of need ('DPA') is set to continue and to expand, but as detailed above, growth in the GP workforce has slowed considerably since 2015. This has resulted in a considerable reduction in the number of overseas doctors recruited directly to DPA and studying for fellowship outside the training program. These doctors are classified as non-vocationally registered in DoH annual GP statistics).<sup>96</sup> GP fellows are younger than the overall GP workforce, with 46% of the latter aged over 55 in 2020. In contrast, from the last available data, 62% of all those working in general practice (including older non-fellow) were aged over 55 in 2017-18 (Figure 5).<sup>97</sup>

The combined number of GPs in training for fellowship in any one year is comprised of trainees able to access Medicare rebates, trainees working in hospitals, and non-vocationally trained overseas graduates working in DPA. In 2019 these three groups totalled 9,538, a training rate of 36% as a proportion of the then 25,038 fellows. This was well in excess of the

<sup>95</sup> Around 1500 visas are currently approved annually for JHMOs. AG Home affairs Temporary Resident (skilled) reports. <https://www.homeaffairs.gov.au/research-and-statistics/statistics/visa-statistics/work>. In hospital they gain valuable experience and pass their AMC clinical examination if they have not done so already.

<sup>96</sup> Non-Vocationally trained doctors not in the formal registrar training program accessing GP rebates peaked at 5,596 in 2016 and fell to 3,866 in 2020 and 2,454 in 2021. (GP dataset for 2014-2021 released 5.9.22). This is obviously affecting recruitment to smaller rural populations and will be exacerbated when, as portended, DPA is opened up in outer metropolitan and MMM 2. It is also restricting onflow post-fellowship to the GP corporate sector, and a factor in the clamour for more GPs.

<sup>97</sup> DoH GP statistics 2017-18 dataset.

25-30% necessary to maintain GP fellow numbers, but necessary to increase these relatively low numbers and counteract the large number of elderly GPs.<sup>98</sup> There is in addition a cohort of approved fellowship-equivalent GPs from overseas. They are mainly from the UK and numbered 2,015 from 2010 to 2018, But they have not been reported since that period.<sup>99</sup>

Table 10. Australian GP Training Program (AGPT) entry 2006-2018, by origin of basic training.

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
All	548	608	581	677	744	906	1035	1144	1244	1536	1547	1524	1447	13541
ANZTD	388	453	432	479	538	606	735	808	1009	1214	1218	1155	1054	10089
OTD (Rural)	160	155	149	198	206	300	300	336	235	322	329	369	393	3452
OTD %	29	25	26	29	28	33	29	29	19	21	21	24	27	25

**Source:** data from AGPT to TAPRI. **Notes:** AGPT entry was 450 in 2002. There were 243 NZTD GP fellows in 2020 (HWD Datatool). NZ graduates are included with domestic as 'Foreign Graduates of Approved Medical Schools'. Total entrants for 2019, 2020 and 2021 were 1,407, 1,329, and 1,434 (RACGP Health of the Nation 2021. This probably did not include ACRRM trainees. 33% of OTDs in 2011 meant 66% in the rural program, altogether 50% for the period.

Data on the whole GP workforce by age cohorts were last available in 2017. Since then, doctors accessing Medicare primary care rebates annually have increased by only 2,213 despite input of 6,000 trainees and other overseas recruits. This indicates the number of discontinuations and retirement at around 4,000 since 2017, i.e. an increased retirement rate well in excess of the previous 10 years, which was 3,160, or 13% of the 2007 workforce. As already commented, this supports anecdotal reports that more GPs have been retiring during the Covid-19 pandemic.

The current rate of retirement also reflects the high level of GPs aged over 55 illustrated in Figure 5.<sup>100</sup> Nonetheless, over 10 years, there will be at least 1,400 GP program trainees obtaining fellowship annually, 14,000 for the period, tow which can be added additional DPA recruitment (which could grow to 1,000 a year if Government intentions are fulfilled). Even if 50% of the 13,695 GPs who were aged over-55 cohort of 13,694 retire before 2027, the GP workforce could still grow by 10,000 over the decade. If this were to occur, the GP headcount would be around 1.70/1,000 population (using the Centre for Population projection). This is far in excess of numbers needed.<sup>101</sup> The onflow to the cities would of course continue, as would the problem of too few GPs in rural if the problem of maldistribution were not better addressed.

<sup>98</sup> GP fellow numbers amounted in 2020 to 0.97 per 1,000 population. This needs to increase significantly to accommodate feminisation. It is not certain how well the program of overseas recruitment to GP outside the formal training program has been performing in terms of fellowships generated, which might account for the reduction in non-VR GP numbers because of overseas-derived GPs forced out of practice because of failure to obtain fellowship. The underfilling of Training places (Table 10) over the last few years raises concern that overseas recruitment might not be yielding sufficient numbers of adequate capability to fill available GP training program places.

<sup>99</sup> Medical Training Review Panel and Medical Education and Training annual reports.

<sup>100</sup> The number and distribution of Vocationally registered (VR) GPs without formal fellowship is not published and is not possible to quantify from available data. They are all elderly. The % of VR GPs aged over 55 increased from 30% to 48% this century, slightly less in rural. GPs with formal fellowship are 26% over age 55 as a group, but this rises to 39% in MMM 5. There are probably a large number of GPs with grandfathered fellowships of the ACRRM in the VR group.

<sup>101</sup> As comparison Canada is reported as having 1.33/1,000 in 2020 (OECD data: Health, Health Care Resources, Physicians by categories, General Practitioners, density per 1,000 population (head counts). NB Only 4 countries have GP density of more than 1/1,000, namely Australia, Canada, Belgium, and Portugal. Portugal introduced the GP category only in 1983 and quite intentionally has grown it to 2.54/1,000, thereby increasing HAQ score from 67 to 86, in 32<sup>nd</sup> position worldwide.

The problem therefore is not one of numbers but of distribution, and this problem will only be solved by changing the dynamics of non-GP Specialist training and reducing the size of hospitals and that of the hospital medical workforce so as to increase the recruitment of domestic graduates to general practice. The UK system of approved geographical GP positions probably has too many downsides for implementation to be considered and would almost certainly lead to commercial exploitation.<sup>102</sup>

Emergency medicine is popular among medical graduates and many of them have joined the training program (see Table 4). This, as already discussed, has led to oversupply in this field. At least 45% of ED work is general practice in nature.<sup>103</sup> Additionally, because rural doctors routinely see emergencies, there is as yet an unfilled rural niche for this kind of work which would appeal to domestic graduates.<sup>104</sup> Notwithstanding recent increases of ACRRM fellowship training positions to meet oversubscription of applications, it is suggested that any suitable qualified candidate should be allowed to uptake FACRRM training with no ceiling. Cost should not be a consideration. This might atone for past neglect this century.<sup>105</sup>

In essence general practice is increasingly conducted by overseas graduates, who are already responsible for well more than half of all GP services.<sup>106</sup> In 2017-18 individual ANZTD doctors in GP provided 3,327 services each and those from overseas 5,219.<sup>107</sup> Domestic university medical undergraduate training has been redesigned over the last 30 years to give significant exposure to general practice, even to the extent of one year attachments in GP itself. This does not seem to have worked in terms of recruitment. Quite plainly non-GP specialist careers remain more attractive to domestic graduates, to not mention the more attractive industrial conditions.

## Discussion

This paper covers ground that is already well-travelled, but it re-examines available data in detail from a range of sources. It attempts to describe a unitary model of the way in which

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<sup>102</sup> In the UK there are geographically specified positions for GPs. As the UK has a chronic shortage of GPs, with virtually no increase in headcount occurring, there is still significant geographical maldistribution. This system is held by some in Australia to be a form of conscription and therefore forbidden under section 51xxiiiA of the constitution.

<sup>103</sup> About 45% of ED attendances are GP type (State-wide retrospective study of low acuity presentations in New South Wales, Australia, Who, What, Where and Why? Dinh et al BMJ open, 2016;6: e010964).

<sup>104</sup> Rural GPs need to be well grounded in the management of psychological and physical health as well as early management of acute illness, for all of which the AMC approved fellowship of the Australian College of Rural and Remote Medicine was specifically designed.

<sup>105</sup> It can be noted that, reflecting the views of the wider profession, the AMC declined to approve rural generalism as a specialty and it was the 2007 Queensland Government decision to adopt the FACRRM that constrained the Federal Government to follow suit by including it in the specialty of General Practice. This was followed by some years' possibly avoidable delay in approving the fellowship for implementation. It did not prevent the Queensland Government from progressing their very successful rural generalist program and including rural generalists in the State medical specialist pay award.

<sup>106</sup> Domestic and NZ graduates in 2020-21 provided 84,001k services and overseas graduates 93,388k. DoH GP statistics 2015-2021 FY. <https://hwd.health.gov.au/resources/data/gp-primarycare.html>.

<sup>107</sup> The level of servicing per patient could be calculated from data held by the Department. This would give information about potential overservicing in each group of GPs by available parameters, including gender, qualification, and original training. It would be surprising if the Department had not already done this. Like all Medicare data pertaining to individuals, this information is subject to secrecy legislation.

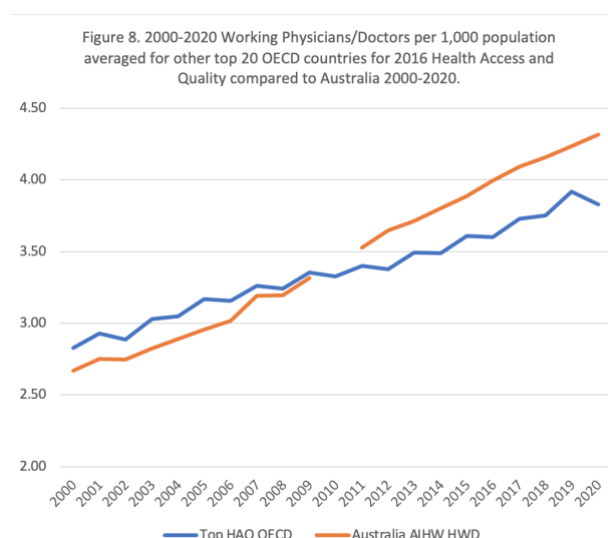
the medical workforce is currently generated in Australia. Over the study period from 1996 to 2020 the medical workforce headcount has increased by 133%. During this period the population has grown by the lesser figure of 40%. Overall, FTE<sup>40</sup> count is higher than headcount.<sup>108</sup> Doctor headcount per 1,000 population has risen by 66% and FTE<sup>40</sup> by 46%, less because hours were so much higher in 1996 (Data in table 2).<sup>109</sup> Following OECD guidelines, Provisional registrants have been included in this analysis.<sup>110</sup> Compared with the other 19 top 20 OECD countries for Health Access and Quality (Table 12), Australia has been enlarging its supply of medical workforce to a greater degree this century (table 11 and Figure 8<sup>111</sup>).

**Table 11. 2000 to 2020 Working Doctors per 1,000 population. Australia compared to average of other Top 20 OECD countries for health access and quality (Lozano et al 2016).**

Year	Aust.	OECD	Year	Aust.	OECD	Year	Aust.	OECD
2000	2.67	2.83	2007	3.19	3.26	2014	3.80	3.49
2001	2.75	2.93	2008	3.19	3.24	2015	3.89	3.61
2002	2.75	2.89	2009	3.31	3.35	2016	4.00	3.60
2003	2.82	3.03	2010		3.33	2017	4.09	3.73
2004	2.89	3.05	2011	3.53	3.40	2018	4.16	3.75
2005	2.95	3.17	2012	3.65	3.38	2019	4.24	3.92
2006	3.02	3.16	2013	3.71	3.49	2020	4.42	3.83

**Source:** OECD Statistics, Health, Healthcare resources, Practising Physicians, Density per 1,000 Population (headcounts). For Australia 2000-2012 from AIHW Medical Labour Reports and for 2013-2020 the DoH HWD Datatool, and AHPRA quarterly registrant data to include Provisional Registrants. **Notes:** OECD Data variably available for 15-19 countries each year.

The increasing size of the medical workforce and its imbalance have been long observed. This paper quantifies them.<sup>112</sup> Key underlying factors include an unregulated supply,<sup>113</sup> the inexorable tendency of the hospital salaried MWF to expand, the private practice privileges of hospital specialists, excess junior hospital staff, excess non-GP specialist trainees, the diversion of domestic graduates to non-GP specialist training, the favourable income of hospital medical staff (see footnote 34), the \$6b Federal subsidy to the private health sector, fewer than 50% of domestic graduates in the rural GP training stream, the under-provision of formal rural training in rural medicine to attract



<sup>108</sup> The non-GP hospital workforce works considerably more than 40 hours a week and the GP workforce less (Table 1).

<sup>109</sup> While Hospital doctor hours worked per week are only slightly less, GP hours have dropped from 46 to 37 (Table 1).

<sup>110</sup> See footnote 1 and notes to Table 1. 5,583 (working) Provisional Registrants were reported by the AHPRA in 2020. The have been excluded from Health Workforce data since 2011. The extra 3,000 included in 2021 were those on the Pandemic response sub-register and have not been included in 2022. The 2,522 Limited Registrants have not been included as it is not clear what proportion if any are included in the NHWDS.

<sup>111</sup> Of the 19 selected countries, data for 15-19 were available for each year and the average taken. This might account for the irregular pattern in the graph.

<sup>112</sup> The Australian increase has been graphed in the last 3 editions of the OECD biennial 'Health at a Glance'.

<sup>113</sup> This includes supply of on-shore international fee-paying graduates and foreign-trained doctors.

serious-minded doctors away from non-GP specialist training streams, and uncapped recruitment from overseas through use of the skilled occupations list (a list not legislated for mass recruitment of listed occupations).<sup>114</sup>

Against the OECD trend, hospital bed numbers have remained around four per 1,000 this century, while total Public Hospital bed numbers have increased 23%. The ratio of overnight patient load per hospital doctor has dropped dramatically. A high rate of medical mishap in Australia has been identified in HAQ studies; this may reflect inadequate learning stemming from reduced clinical experience. The training rates are too low in the surgical non-GP specialties and too high in the majority of physician specialties. An excess number of public hospital specialists are drawn into the private sector, attracted by the financial gains to be made there.<sup>115, 116</sup>

In the face of this surfeit of specialists, too few domestic graduates find their way into the general practice sector, and those who do so discover this path rather later than would be desired.<sup>117</sup> There needs to be more GP training places in the cities, but only if sufficient domestic graduates can be, by all means possible, attracted into the rural sector. They are valuable in this sector because of their propensity to stay there, often on a permanent basis. There is a consistent trend of most doctors recruited from overseas to move to the cities as soon as they are allowed, bolstering numbers there and requiring replacement from overseas in rural.

The 2021 – 2031 National Medical Workforce Strategy<sup>118</sup> restates many ideas from the last 30 years. Its swing towards medical generalism is welcome as far as it goes. It would have been helpful in the first decade of this century but it is not a panacea for improving the MWF. Specialism works well in large population concentrations and generalism in smaller concentrations. The problem is how to prevent the former from dominating the latter.<sup>119</sup>

Furthermore, such heavy and convenient dependence on overseas recruitment means that it is not possible to create the flexible and responsive workforce that the population needs. There are also strong indications that this dependence will continue under the current Federal administration. Education for medical practice starts at school with the encouragement of (Australian) prosocial attitudes. Medical school curricula were altered to reflect the needs of general practice in the 1990s. A significant proportion of undergraduate

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<sup>114</sup> The Skilled Occupations List is “not a (list of) occupations experiencing current shortages. It identifies occupations that are of high value, and which will assist in meeting the medium and long-term skill needs of the Australian economy. It is intended to facilitate sufficient numbers of skilled migrants, without distorting the underlying domestic training and labour markets.” Definition from DIBP information sheet downloaded in 2015.

<sup>115</sup> Figure 8.10 ‘Health at a glance’ OECD 2021. The differential is 1.8 x average income for GPs and 3.7 for non-GPs. This estimation includes physicians in training and so is an underestimate.

<sup>116</sup> By contrast Canada has no private hospitals and surcharging patients over the Medicare rebate is banned for both GP and non-GP specialists. Both get paid considerably more than their Australian counterparts, and the differential is much less. Figure 8.10, OECD Health at a glance 2021.

<sup>117</sup> GP specialists in 2020 were 84% over the age of 40 compared to 80% for non-GP specialists (from 87% in 2013. Female GP fellows over 40 fell from 83% in 2013 to 80% of total in 2020.

<sup>118</sup> <https://www.health.gov.au/sites/default/files/documents/2022/03/national-medical-workforce-strategy-2021-2031.pdf>

<sup>119</sup> There have been multiple attempts to generate general specialist workforce for rural but these, not to mention the process of development of rural generalism met with considerable bioresistance. Many specialist physicians and surgeons are still labelled ‘general’ but mostly work in the cities and in most cases focus on a subset of conditions within their specialty.

medical education now takes place in general practice in blocks up to one year's duration. Extensive overseas recruitment significantly dilutes the outcomes of all such measures.

The prevailing situation of a skew towards hospital and specialist care, and dependence on overseas recruitment, is a product of healthcare structure and policy. While it is difficult to see the necessary reform occurring in the near future, there is a raft of the initiatives which would help adjust the situation. These could be implemented incrementally.

Australia needs to move towards the mainstream of OECD hospitalisation rates and to shift care from hospitals into the community.<sup>120</sup> Removing the private health subsidy would restore market equilibrium. It would diminish the pull towards non-GP specialist careers in the private sector and curtail the developing oversupply of non-GP specialists. It would reduce the number of private hospital beds.<sup>121</sup> A reduction in the supply of public hospital overnight beds and medical staffing is also essential if care is to shift from hospitals into the community; this requires budgetary reduction implemented through Commonwealth/State agreements. The non-GP Specialist training rate of 43% trainees as proportion of total working non-GP specialist headcount overall probably needs halving, since only 33% overall are above the age of 55. This section of MWF does not need to grow above its present level of supply. Restraining its growth might be difficult to implement but must be done.<sup>122</sup>

As the production of non-GP specialists reduces, in conjunction with a reduction of overseas recruitment, pressure will grow on domestic graduates to enter general practice. This needs to be accompanied by a renewed respect for the immense complexity of properly conducted general practice, as well as by a narrowing of the pay differential between specialists and generalists. In Australia this pay differential is particularly striking.<sup>123</sup> The desired improvement of GP income can probably only be achieved by changing the payment model for general practice away from pure fee-for-service while ensuring continued open access to general practitioner care.<sup>124</sup>

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<sup>120</sup> OECD data shows acute (curative) bed supply falling in most countries. Australia (from AIHW 'Australia's Health' as reporting to OECD is lacking), reduced it from 5.7/1000 in 1987 to 3.9 in 2000 since when it has been mostly 4/1,000. Canada is a useful comparison. The abolition of private hospitals there in 1984 has been, by Australian standards, extraordinarily well tolerated. Combined public and not-for-profit hospital acute bed supply has been maintained around 2/1,000 this century. Covid hospitalisations appear to have been adroitly managed in Canada through networking, which was planned from the onset of the pandemic and facilitated by already greater supply of intensive care beds. Like Australia, Canada has high GP supply (Table 11).

<sup>121</sup> There have been calls to do this. 'Is it time to ditch the private Health Insurance Rebate?' Duckett S. The Conversation 28.2.19. Duckett estimated that the proportion of population covered would drop back from 45% to the pre-subsidy level of 30%.

<sup>122</sup> The very high training rates in General Medicine, Paediatrics and Emergency Medicine need questioning. What is the Business case? Only Emergency Medicine (2017) has been the subject of a paper in the Australia's Future Health Workforce series, which made it clear that the specialty was heading into 100% oversupply but which has not resulted, in most recent data, to have effected discernible reduction of the training rate.

<sup>123</sup> In 2021 average Australian non-GP specialist remuneration was 3.7 times average wage, GPs 1.8 times (both including trainee specialists). Iceland, consistently top ranked for HAQ worldwide, pays specialists and GPs equally (Fig. 8.10 OECD Health at a Glance 2021). General Practice is worth promoting. The works of Barbara Starfield (d2011) demonstrated the superior effectiveness of primary care in the US. The average salary per FTE hospital salaried medical officer increased 88% from 2004 to 2020 FY against inflation of 44% for the period (AIHW annual Hospital expenditure reports), whereas GP net income calculated at 60% of billings (MBS statistics) increased by only 52% and was 64% of hospital salaried FTE pay in 2020.

<sup>124</sup> In the interest of good healthcare access and quality, care must be taken not to over-burden GPs unnecessarily with administrative function as has been done in the UK, making general practice unpopular with doctors.



To maintain and improve accessibility there might have to be changes in the general practice model. It might involve a reduction of GP supply against population combined with the introduction of medical staffing responsible for triage and management. This would include the introduction of Physicians' Assistants, a category so far successfully resisted by the Profession.<sup>125</sup> Major initiatives for the rural general practice sector are required. Some of these have been outlined, but all should have the initial aim of greatly increasing domestic participation in the rural general practice training stream.

As an essential item, much greater attention should be paid to hospital outpatient services as a sector. A good 50% of the population rely on these services for their non-GP ambulant specialist medical care. The available data do not allow sufficient analysis of the role of this sector, which is critical to Health Access and Quality. A separate set of Medicare item numbers is recommended.

Table 12. 2016 Top 20 OECD Countries for Health Access and Quality: selected parameters.

	<sup>1</sup> HAQ Score 2016 <sup>Rank</sup>	Life Expectancy (WB)	% Urban (WB)	Working Physicians /1000 <sup>2019</sup> pop. <sup>OECD</sup>	GP/1000 Pop. <sup>OECD</sup> 2019	2016 Over-night curative Hospitalisation /1000 pop. <sup>OECD</sup>	Curative Care Bed Days per Capita <sup>OECD</sup>	<sup>2</sup> %Overweight <sup>SR</sup> Self-reported <sup>M</sup> Measured <sup>OECD</sup>
Iceland	97.1 <sup>1</sup>	83.1	94	3.9	0.6	114	0.6	65 <sup>sr</sup>
Norway	96.6 <sup>2</sup>	83.2	82	5.0	0.87	158	0.8	48 <sup>sr</sup>
Netherlands	96.1 <sup>3</sup>	83.1	91	3.7	0.91	100	0.4	48 <sup>sr</sup>
Luxembourg	96.0 <sup>4</sup>	81.7	91	3.0	0.90	146	0.9	48 <sup>sr</sup>
Australia	95.9 <sup>5</sup>	83.2	86	3.8	1.23	163	0.8	65 <sup>m</sup>
Finland	95.9 <sup>5</sup>	82.1	85	3.2		162	1.0	68 <sup>m</sup>
Switzerland	95.6 <sup>7</sup>	83.1	74	4.4		159	1.0	42 <sup>sr</sup>
Sweden	95.5 <sup>8</sup>	82.4	87	4.3	0.62	142	0.7	49
Italy	94.9 <sup>9</sup>	82.3	70	4.1	0.70	104	0.6	46 <sup>sr</sup>
Ireland	94.6 <sup>11</sup>	82.2	63	3.3	0.87	137	0.8	61 <sup>m</sup>
Japan	94.1 <sup>12</sup>	84.6	92	2.5		118		27 <sup>m</sup>
Austria	93.9 <sup>13</sup>	81.2	56	5.3	0.75	235	1.4	51 <sup>sr</sup>
Canada	93.8 <sup>14</sup>	81.8	81	2.7	1.33	83	0.6	60 <sup>m</sup>
Belgium	92.9 <sup>15</sup>	80.8	98	3.2	1.19	165	1.1	51 <sup>m</sup>
N. Zealand	92.4 <sup>16</sup>	82.1	87	3.4	0.97	131	0.6	65 <sup>m</sup>
Denmark	92.1 <sup>17</sup>	81.6	88	4.2		131 <sup>2009</sup>		40 <sup>sr</sup>
Germany	92.0 <sup>18</sup>	80.9	77	4.4	0.72	237	1.5	60 <sup>m</sup>
Spain	91.7 <sup>19</sup>	82.3	80	4.4	0.92	114	0.6	50 <sup>sr</sup>
France	91.7 <sup>19</sup>	82.2	80	3.2	0.85	165	0.8	49 <sup>m</sup>
Slovenia	90.8 <sup>21</sup>	80.5	55	3.3	0.62	166	0.9	57 <sup>sr</sup>

**Sources:** <sup>1</sup>Countries extracted from: 'Measuring performance on the Healthcare Access and Quality (HAQ) Index for 195 countries and territories and Selected subnational locations: a systematic analysis from the Global Burden of Disease study 2016'. Lozano et al. Lancet 2018: 391; 2236-71. OECD Statistics. World Bank data tabulated Wikipedia. <sup>2</sup>OECD Health at a Glance 2021, Figures 4.15 and 4.16. **Notes:** OECD nations comprise 20 of the top 21 countries for HAQ (Andorra, 10<sup>th</sup> in 2016, excluded); all 30 morbidity categories have nations which score 100%. Curative bed days refers to acute overnight hospitalisations - **Australia taken here from AIHW as over-reported in OECD data.** Actual working doctors per 1000 population were 4.3/1,000 population not 3.8 as under-reported by OECD. Urbanisation in general favours higher life expectancy (the 86% for Australia represents populations of >10,000 but 91% of Australians live in aggregations of 5,000 or more (Monash Model 1-4), more in keeping with reporting from other countries down to 2-3,000.

As already observed (footnote 16), Australia has ranked highly on the international table for score in Health Access and Quality (HAQ), based on the Global burden of disease study.<sup>126</sup>

<sup>125</sup> See AMA and RACGP position statements on Physician's Assistants. There is an Association, and training in the University of Adelaide and James Cook University.

<sup>126</sup> Ibid Lozano.

Table 12 gives a comparison of the top 20 OECD countries.<sup>127</sup> Australia was fifth worldwide in 2016, from seventh in 2000 and 1990. As a result Australia's life expectancy is high, (apart from the distressingly low levels for first nation persons which would not include them in the top 100 countries).

Acute overnight hospitalisations in Australia are very high. Total acute bed care days per person as a result are middling despite the length of overnight bed-stay being near lowest in the OECD. Australia's levels for overweight/obesity levels are near the highest in the OECD and this should sound an alarm that general practice needs shaping up so as to meet the challenges posed by this epidemic. As observed in the footnotes of table 12, Australian medical workforce supply is under-reported by the OECD, as is the degree of urbanisation by the World Bank.

In a Federal system, what works best is for the Commonwealth to set parameters, with an obligation for the States to work within these parameters. It is not appropriate for the Commonwealth to attempt overarching reform in detail. The Commonwealth could confine itself to aspects such as budgetary restriction with, as canvassed above, specific agreements with the States and Territories. It can directly place limits on non-GP specialist training.<sup>128</sup> It can limit supply of foreign-trained doctors.<sup>129</sup> The maldistribution of medical workforce and lack of domestically trained GPs affects the whole Commonwealth and needs an effective working framework to improve it. The appeal of hospital bed provision as a political tool needs to be reduced.

The oversupply of medical workforce is leading to a proliferation of low-value care. In the fee for service context this displays as an excess of contact (too many repeat patient visits). In the salaried situation it leads to an excess of providers.<sup>130</sup> Oversupply in the GP workforce is leading to a proliferation in services per capita of population *in all age groups*.<sup>131</sup> Apart from cost, further problems with oversupply include deskilling from lack of clinical load as well as inadequate supervision and training of junior doctors.<sup>132</sup> Provision of good access to high quality medical care is not a simple matter of increasing the number of doctors.<sup>133</sup> The recent

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<sup>127</sup> These match world rankings with the exception of Andorra (10<sup>th</sup>).

<sup>128</sup> Medical Training is a Commonwealth function.

<sup>129</sup> An initial overseas-derived target of 25% of workforce might be appropriate. It may not be possible to go below 20% without unacceptable restrictions on employment.

<sup>130</sup> Parkinson's Law applies as much to Australian Hospitals as it did to the increase in Admiralty staff as the British Navy steadily shrunk.

<sup>131</sup> DoH dataset-GP-financial-years-201516-2020-21, National-patients, number of services by patient age group. (Children under 9 have dropped during Covid years only).

<sup>132</sup> This is reflected in Australia's poor HAQ score for adverse medical treatment (88 against 96 for the other top 10 countries, though better than the average 81 in the second 10).

<sup>133</sup> How many doctors for population are appropriate? The average for the top 20 OECD countries for Health Access and Quality (HAQ) score is 3.9 compared to 4.3 calculated here for Australia in 2020 (110,876 working registrants (of 128,003 total registrants), from HWD Datatool 105,293 working general and specialist registrant questionnaires in 2020 and 5,583 AHPRA 30.6.20 reported Provisional Registrants (excluded from counts since 2011 against OECD reporting requirement for all postgraduate working physicians), against end of year population of 25,728,700 (Population Centre). Not included are 3,149 Limited Registrants (AHPRA) of uncertain workforce reporting status, which if added would put supply at 4.4/1,000. Of other countries, the UK and Korea, 2016 HAQ equal ranking of 23, can be noted, with working doctors of 3.0 and 2.5/1,000 respectively. Korea's spectacular rise from 60<sup>th</sup> position in 1990 shows what can be done. How easy it is to forgo gains in healthcare effectiveness is shown by the US (2.6/1,000), in the throes of the opioid epidemic, which had slipped from 15<sup>th</sup> to 29<sup>th</sup> position this century.

request by the Universities for an extra 1,000 medical school places does not stand up to scrutiny.<sup>134</sup>

The question of burgeoning cost of healthcare is beyond the scope of this paper.<sup>135</sup> In the wake of Covid the States are calling on the Commonwealth to fund public hospitals at a higher level. However, their cost is already on a trajectory to double in a decade.<sup>136</sup> Unless measures are taken to limit low-value medical care in the community and to open up access to the genuinely sick, the desired reduction in hospital admissions may not occur. Advances have been made in hospital payment models which have curtailed length of stay but do not affect hospitalisation rates. This activity-base funding needs to be extended to private hospitals.<sup>137</sup> To lower hospitalisation rates the provision of prompt effective ambulant care needs to be improved. General practice, because it is universal, is key.

*In conclusion, there is an imbalance in the medical workforce in Australia. This is leading to over-emphasis on hospital and specialist medical care, a medical workforce oversupply, a lack of domestic medical graduates outside the cities, and (an unethical) over-dependence on foreign-trained doctors. Substantial reorganisation of healthcare provision is required to redress these imbalances. All of the aspects of these imbalances pose a threat to healthcare access and quality on the one hand, and to overall healthcare cost on the other.*

*Can present trends really be allowed to continue? The inherent independence of the States and Territories in control of hospital function needs to be modified through appropriately managed budgetary provision.*

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<sup>134</sup> Ibid. Group of 8 Australia (Universities) 2022.

<sup>135</sup> Healthcare has been forecast by Stefan Hajkowicz of CSIRO to rise to 43% of Government spending by 2040. 'Australia's spending on healthcare unsustainable, CSIRO futurist says'. SMH 195.16.

<sup>136</sup> 'States want more Hospital money' The Age 23.9.22. The ask is to exceed the annual 6.5% cap on rise of (total) Public Hospital expenditure. (It was 7.1% for the 2017-18 Financial Years, 7.8% for 2016-17, 4.8% for 2015-16, and 6.1% for 2014-15. AIHW data). This rate of increase is likely to double public hospital expenditure in 10-12 years.

<sup>137</sup> 'Saving Private Health' Duckett S. Grattan Institute 2019. Low value services in Private Hospitals were estimated at \$1.7b annually.