

9. Further labour market issues

9.1 Uneven workloads and varying work patterns

A principle of primary care medical workforce provision proposed by the 1988 Doherty Committee was that it is far better to have a few too many GPs than not quite enough (Committee of Inquiry into Medical Education and Medical Workforce, 1988). Outside the densely populated metropolitan areas, the Australian population is not distributed in neat workloads for individual practitioners. In reality a small town with a catchment population that has a patient workload of 120% of that desirable for a full-time GP can normally at best hope for one full-time GP, much the same as a town with perhaps 80% of a desirable workload. Larger towns do not have workloads than neatly fit to two, three, four or five GPs.

Furthermore, the practice patterns of individual doctors vary considerably. For example, a doctor with teenage children attending a boarding school is much more likely to be prepared to work long hours to meet his family financial commitments, than a doctor whose life cycle has passed that phase, or a doctor under 35 years of age with a very young family involved in shared child rearing activities.

Hence having some surplus capacity to fit together the rough edges of workforce and population is highly desirable. However, the geographic areas in most need of this surplus capacity are rural areas experiencing shortages. In Western Australia, rural GP shortages have largely been solved by drawing on surplus capacity in Perth to provide locum and other support services to the longer term resident GP workforce (personal communication, Dr Brian Williams, Director, Western Australian Centre for Remote and Rural Medicine, 1996).

9.2 Elasticity of work effort

Richard A Cooper MD (1995) noted large over-supply in a number of States of the USA compared with the national norm. In respect of these he said:

Unlike other labour markets where surpluses lead to unemployment, the elasticity of physician work effort tends to reduce the general level of effort among physicians, masking true surpluses. The magnitude of this elasticity is unknown. Questions persist concerning how physicians will change their work effort to accommodate their own lifestyle preferences and to compensate for physician surpluses in their communities.

What does this mean in plain English? In Australia, new entrants to the GP workforce have been relatively more likely to join an over-supplied workforce in a capital city than start in a rural or remote area experiencing shortages (table 7). Many of the new entrants, if not most, have provided the staff for the large, profitable extended hour medical centres. None of the new entrants need become unemployed because of what it is termed the elasticity of the market.

This elasticity means that, even though the market has a much higher number of doctors per 100,000 population than rural cities experiencing no shortage of doctors, expansion of the patient workload occurs to make medical practice viable, although profitability may suffer for some practices. Despite fewer patients on average per doctor, the overall patient workload expands through activities including the following, a number of which represent improvements in patient care:

- established practices with fewer patients filling vacant bookings by encouraging patients to make return visits to check on progress;
- encouraging or directing patients with multiple problems to make multiple visits;
- expanding the volume and range of subspecialty practice areas, such as acupuncture, Chinese medicine, counselling, sex therapy, impotence clinics, family planning, travel medicine, sports medicine, medico-legal activity and others. A number of these are advertised GP services in phone books and newspapers in capital cities that would seldom be advertised as services in rural areas;
- where not already done, introduction of patient follow-up and public health marketing for preventive medicine activities such as pap smears, vaccinations and check-ups;
- introduction of new technology and new medical knowledge allowing conditions to be treated successfully for the first time, or in new ways for the first time; and
- over time, ageing of the population increasing the numbers of consultations needed. However, this is offset by what demographers describe as the 'doughnut' effect, ie. declining populations in inner city suburbs. The average household size of inner city populations drops as children grow up and leave home, while most young families reside in the mortgage belt outer suburbs. As the mortgage belt suburbs age and children grow up and leave home, the inner area of declining or stable population expands. Redevelopment of these areas tends to only slow down rather than arrest the population decline. However, these inner areas of the metropolitan doughnuts have the highest residential concentrations of doctors.

9.3 High inner suburb concentrations

The highest concentrations of GPs are in the inner suburbs of the metropolitan areas. These suburbs have declining average household size and ageing populations. The lowest metropolitan concentrations are in the new, rapidly growing, outer, mortgage-belt suburbs (*Australian Medical Workforce Benchmarks*; table 26, appendix 1). For example, in Sydney the Eastern Suburbs statistical subdivision had the lowest patient workload per FTE GP in 1994 (785 standard whole-patient equivalents), lowest population per dwelling (2.41), a low population proportion under 15 years of age (13.7%) and a high population proportion aged 65 or more (17.4%). In contrast, Fairfield-Liverpool had the highest patient workload per FTE GP in 1994 (1,155 standard whole-patient equivalents), highest population per dwelling (3.28), high population proportion under 15 years of age (24.1%) and low population proportion aged 65 or more (11.3%).

The reasons for high concentrations of general practitioners in inner city areas include, not in any order of relative importance:

- historical;
- lifestyle-related: access to amenities, shopping, theatre, restaurants, major sports facilities etc.;
- spouse-related: greater employment opportunities for spouses who are professionals;
- child-related: better access to secondary and tertiary education services;
- professional, family and social ties and ambitions; and
- economics. Demand for bulk-billing is very high from young families with heavy mortgage commitments in the new, mortgage belt suburbs. The economics of long-term financial viability from bulk-billing at a new practice in an outer suburb are that it probably needs to be a large, group practice with extended, or 24 hour, 7 day per week

opening hours. The medical entrepreneur making the capital investment to establish such a practice may only afford to pay relatively low salaries, whereas what is needed is a premium to compensate for living in an area without the lifestyle, spouse employment and education access opportunities of inner city living. In contrast, inner city group practices in high socioeconomic areas can, for the most part, successfully charge patient co-payments, only bulk-billing low income earners. For example, in Sydney in 1994, high socioeconomic Hornsby-Kuringai had an average GP co-payment of 12.9% compared with the 2.7% for low socioeconomic inner Sydney and 5.6% for mid-socioeconomic outer Western Sydney. In the inner suburbs, there are likely to be sufficient numbers of older GPs retiring and new entrepreneurial 24 hour medical clinics starting up to offer a sizeable annual job market for new GPs coming into the labour market.

Dr Jack Sparrow, Chief Medical Officer, Tasmanian Department of Health and Community Services notes that these reasons also apply to the rural medical workforce, and they cannot be solved passively by market forces, because market forces (including the lifestyle and family influences listed) are responsible for the disincentives for practice in outer metropolitan and rural areas. He points to the limited success of Commonwealth, State and local government financial and other incentives in increasing the rural GP workforce (table 7 and figure 1). However, for further improvements to occur, he feels that research and policy consideration should be given to additional incentives and disincentives, including geographically based differential medical rebates and geographically restricted provider numbers (Dr Jack Sparrow, comments on draft of this paper). The option of measures to compel doctors to work in rural areas if current incentive schemes do not work has been raised by Dr Brendan Nelson MP, chairman of the Commonwealth Government's health committee, in a meeting on 11 March 1998 with the AMA and Rural Doctors Association of Australia to discuss increasing rural medical workforce (Canberra Times, 12 March 1998). New rural doctor initiatives announced by the major parties in the 1998 federal election campaign included retention incentives for rural doctors (the Government) and bonded scholarships for medical students (the Australian Labor Party).

In addition, Dr Bill Coote, AMA Secretary-General, argues that the GP recruitment difficulties of metropolitan areas will not be solved by adding more and more GPs to capital city workforce supply. The remuneration and other disincentives must be addressed first; otherwise the market, lifestyle, family and professional influences discussed work against the additional GPs practising where they are most needed and exacerbate over-supply problems (comments on draft).

9.4 Effect on recruitment of medical labour market elasticity

Because a new practice can start up in an over-supplied area and the market responds by increasing the volume of patient consultations for the area, there is no pool of unemployed doctors waiting for jobs, other than a small pool of doctors at any point in time who are new entrants or re-entrants to the workforce. Hence when vacancies are created in practices, whether in under-supplied, adequately supplied or over-supplied areas, there will be difficulty in recruitment, particularly at those times of the year when new fellows of the RACGP are not entering the market. Inability to recruit cannot therefore be taken as prima facie evidence of workforce shortage in areas which overall are well supplied with GPs. However, the pool of new RACGP fellows entering the labour market has been cut back to 400 per year, and the net increase in the GP workforce had declined from 594 in 1990-91 to 170 in 1995-96 and 150 in 1996-97. Recruitment for this smaller new graduate pool is therefore much more competitive than in the early 1990s, particularly because the demographic profile of new graduates has changed. One outcome of this is that incentives

for employment in less attractive areas may need to be stronger to attract doctors from this smaller new entrant pool.

9.5 Factors contributing to excess supply

Kilham (1995) says that there are a number of factors which have contributed to excess supply in Australia, further factors which are adding to the over-supply, and several which are helping to absorb over-supply. These provide an additional understanding of the medical labour force market.

He attributes past excess supply to:

- too many medical graduates;
- too many medical immigrants;
- lower population growth because of a slowdown in birth rates and lower immigration;
- productivity growth through new technology; and
- changes in care patterns with shorter average patient stays in hospital and rising use of day surgery.

He says particular problems have arisen in the GP area because of:

- lower barriers to entry to the workforce until recently, compared with the specialties;
- incursions by specialties into what GPs do; and
- incursions by para-medical professions.

He feels that factors adding to over-supply include:

- population growth slowing even further;
- new medical technologies markedly reducing the costs of care and substantially increasing the productivity of the medical workforce;
- possible expansion of managed care arrangements in the private health care sector; and
- possible widespread introduction of health care rationing by governments.

9.6 Factors absorbing excess supply

Factors Kilham sees as helping to absorb some of the excess supply include:

- increased demand for health care as household incomes rise;
- new medical technologies which push back the boundaries of feasible treatments and ferment demand;
- the ageing of the population;
- the rising female percentage of the medical workforce, coupled with a rising proportion of the workforce part-time; and
- measures to address the shortages in rural and remote areas and measures to address the shortages in some specialties.

9.7 Demand for services of the best performers

In *Australian Doctor* on 27 February 1998, RACGP President Dr Peter Joseph asked why, if the GP workforce is in over-supply, it cannot keep up with demand. His particular interest

was in the future of GPs practising 'quality general practice', as opposed to 'rapid turnover' practice.

In any field of service provision, the service providers who provide the best customer service outcomes will generally generate the highest levels of demand for their services. Assuming equal levels of marketing of services, the best restaurants within each price and taste range will attract the most customers, the best surgeons the largest waiting lists, the best radio announcers the highest ratings, the best musicians the largest audiences, the best football teams the greatest crowds, and so on.

In general practice, and in primary care in general, word-of-mouth assessments and referrals may be expected to contribute greatly to the level of demand for the services of any individual GP, physiotherapist, chiropractor, masseur or other provider. In 1995-96, only 35.7% of patients consulted just one GP, with more than one-third consulting three or more. This demonstrates widespread exposure by the population to more than one GP. Those with high patient satisfaction levels will be more likely to generate high return visits and high rates of word-of-mouth recommendation. The reverse will be true for GPs with low patient satisfaction levels. However, it is also true that standards for medical registration in Australia are very high, and, for ad hoc episodic GP attendances for minor ailments, the 24 hour medical clinic may adequately and conveniently meet the needs of much of the population, despite the fact that the consumer may see a different doctor each time.

Table 9: Medicare: number and percentage of patients by number of general practitioners consulted, 1995-96

	Number	Per cent
Not consulting a GP	3,051,421	16.3
Consulting a GP	15,657,944	83.7
Number of GPs consulted:		
1	5,594,954	35.7
2	4,319,724	27.6
3	2,575,953	16.5
4	1,417,469	9.1
5 or more	1,749,844	11.2
Total	15,657,944	100.0

Source: Health Insurance Commission.

In summary, in a market where Dr Joseph argues that the economics of bulk-billing and the level of the Medicare rebate have forced more and more GPs to a 'rapid turnover', 'commercial model' of general practice, it can be argued that:

- demand might be expected to increase for GPs who still provide longer consultations and good outcomes for patients with more severe, chronic or complex problems, especially if the numbers of such GPs are declining and if rapid turnover practices are less likely to provide enough consultation time to these patients; and
- consumer demand will also be strong for free, quick turnover, short waiting time, open-all-hours, GP services for patients needing a quick service such as a medical certificate and medication for a respiratory illness, the most common reason for a GP consultation in the 1995 national health survey.

9.8 Government financial and regulatory incentives

Given the high level of rural medical workforce shortage documented in *Australian Medical Workforce Benchmarks* (1996), and the strong market forces discussed in this paper which act to maintain that maldistribution, government financial and regulatory incentives have a major role to play in providing adequate medical services to the rural population.

The three tiers of government all offer, to a greater or lesser extent across the States and the Northern Territory, incentives to attract practitioners to rural practice.

The Commonwealth Government's General Practice Rural Incentives Program has five principal elements:

- relocation grants – one-off incentive grants of \$20,000 to GPs to assist in relocation from well-serviced areas to identified under-serviced areas;
- training grants – individually based grants of up to \$78,000 for relocating GPs or those already in rural practice, to allow GPs to upgrade their skills in areas necessary for rural general practice;
- remote area grants – up to \$50,000 per annum, for GPs practising in isolated and difficult areas where the economic base of the practice may be marginal and there are increased professional difficulties;
- continuing medical education/locum grants – to encourage rural GPs to maintain and increase skills in areas relevant to rural practice and to obtain leave; and
- rural undergraduate support grants.

Family support and other specific purpose grants have also been made (*DHFS 1997a*).

Commonwealth government 1996–97 budget measures included:

- in addition to \$15 million per year for the GP Rural Incentives Program, \$20 million per year in real terms to rural hospitals and medical schools to fund projects to provide opportunities for medical undergraduates and graduates to train and work in rural areas;
- \$27 million over four years for six university departments of rural health to be established;
- \$1 million over four years for improved availability of locum services so that rural doctors are able to take leave and undertake further training and continuing education;
- nearly \$4 million over four years for up to 150 scholarships per year under the newly introduced John Flynn Scholarship scheme which will enable medical students to spend time training in a rural area;
- continued funding of Health Jobs Australia, a pilot national medical vacancy system;
- the Advanced Specialist Training Posts Program which aims to improve access to specialist medical services in rural areas by establishing new specialist training posts in major rural centres; and
- continued grant-in-aid to the Royal Flying Doctor Service.

In 1997, the Commonwealth Government provided funds for training of 100 permanent resident overseas-trained doctors unable to gain Australian registration, providing these doctors work in rural areas on completing their training.

State Governments have a significant role to play through their salaried and contract staffing arrangements for rural hospitals, including the level of accident and emergency and outpatient department services. These arrangements vary from State to State. A number of

State Governments subsidise the indemnity insurance premiums of rural general practitioners to ensure that obstetrics practice is financially viable for these practitioners.

It is becoming more and more common for a local government body to attempt to attract a GP to practise in a town without a doctor by offering a significant incentive package such as a house and surgery and spouse support service.

The limited success of these measures in increasing workforce numbers and patient access can be seen in the data in tables 7 and 8.

9.9 Self-management

During the last decade, specialist colleges have made a major effort to organise networks of outreach services to rural populations, and thereby ameliorate the disadvantage to rural communities of low numbers of resident specialists.

In general practice, Divisions of General Practice are becoming more involved in examining workforce provision and addressing shortages.

9.10 GP and OMP turnover and length of stay

The rates of both turnover and retention have a major effect on the labour market in both rural and urban areas. GP and OMP turnover and length of stay were analysed by geographic area in *General Practice in Australia: 1996*. From 1985–86 to 1994–95, annual GP and OMP turnover increased in remote areas from around 20% to more than 30%, but annual turnover in all other categories of rural area was steady at around 10 to 15%. A major contributor to the high turnover in remote areas would be completion of contracts by temporary-resident overseas-trained doctors filling area-of-need positions.

Rural areas had 62% of GPs and OMPs remaining in the same area after one year, declining to 25% after nine years; retention rates were lower for remote areas.

9.11 Summing up: the macro versus micro conflict

In summary, the distribution of the medical workforce in Australia is characterised by the following.

- Under current health system structure and remuneration, there are economic and social market forces which act against distributing the medical workforce equitably to meet population need in the geographic regions of Australia.
- Efforts being made to counter these economic and social market forces include incentives and support services offered by government authorities; control of global supply inputs by government; self-management of service imbalances by specialist colleges and other professional bodies; medical entrepreneurs and others restructuring the market place; and medical schools revamping both student intakes and training.
- Real growth in national and household wealth does not appear to be keeping up with increasing patient demand for health services expenditure mainly arising from population growth, population ageing, new drugs and new technology extending treatment boundaries and improving existing treatment protocols, and increased public health awareness. Hence there is pressure in the current budgetary climate to constrain growth in government outlays on health services.
- There have been very significant gains in improving access to medical services in rural and remote areas. However, these gains have been accompanied by even greater gains in

GP medical workforce provision per 100,000 population to metropolitan areas considered to be experiencing over-supply in the mid-1980s.

- Such workforce increases in general practice in metropolitan areas are of public policy concern because of perceptions of diminution in quality of care, of levels of servicing over and above servicing to improve health outcomes, and of expenditure on the latter which might be better spent elsewhere. The increases are of private practitioner concern because of fewer patients per doctor, and competitive pressure to universally bulk-bill and change medical practice to less satisfying medicine to maintain income.
- Constraining future growth in the metropolitan GP workforce is therefore highly desirable, but reductions in RACGP training output appear to have diminished the flow of new GP graduates to under-served rural areas, created frustration amongst metropolitan practices unable to obtain locums or fill genuine vacancies, and not been welcomed by junior hospital doctors denied access to provider numbers for private practice.
- Stronger incentives may therefore be needed to attract new workforce entrants from a smaller pool to less attractive workforce positions with high patient need. Action taken by medical schools to produce graduates more likely to work in rural areas will take more than a decade to begin to make an impact.
- A more rapid restructuring of the GP workforce in metropolitan areas from a present majority of small practices to large group practices may address some of the micro problems of the metropolitan workforce.
- Specialist colleges appear to have achieved significant success in addressing under-servicing of the rural population by self-managing service provision with outreach programs (AMWAC 1998.7). There are strong labour market demographic, lifestyle and social and peer support reasons why it is highly unlikely that rural and remote areas will ever have 'enough' resident general practitioners. Divisions of General Practice across Australia, supported by other medical bodies and government, would appear to provide the infrastructure needed to facilitate self-management outreach programs to rural populations which may assist in overcoming apparent under-servicing. The Western Australian Centre for Remote and Rural Medicine has claimed considerable success in this field in that State.
- Studies by the New South Wales Health Department on the role of nurse practitioners indicate that an enhanced role and greater participation by registered nurse practitioners have the potential to relieve medical service provision pressures in rural and remote areas and in public hospitals.

10. Data issues

Australia has the most comprehensive range of medical workforce data collections of any country in the world. Only the United Kingdom with its highly regulated National Health Service and a few other European countries appear to have comprehensive annual data collection, and their health systems are different to Australia's. New Zealand has a labour force survey at registration only every three or four years, and the content is not as comprehensive as that in the Australian survey. In Canada and the United States, only a few provinces and States undertake detailed medical workforce data collection; the national population census and some limited administrative databases appear to be the primary sources of medical workforce data.

The Australian Institute of Health and Welfare has produced a paper which summarises Australia's medical workforce data collections, discusses strengths and weaknesses and outlines possible processes and time frames which may be considered to improve coverage and quality of data (AIHW cat. HWL8).

Since *Australian Medical Workforce Benchmarks* was released in 1996, more recent and more comprehensive data and information have become available from many sources:

- the AIHW national labour force survey (1995, 1996 and 1997 data);
- Medicare 1995–96, 1996–97 and 1997–98 data;
- the ABS 1994–95 survey of medical practices;
- the ABS 1995 national health survey;
- the ABS 1996 national population census;
- the AIHW-AMWAC report *Female Participation in the Australian Medical Workforce* and subsequent AMWAC report *Influences on Female Participation in the Australian Medical Workforce* (AMWAC 1998.4);
- the AIHW-AMWAC report *Characteristics of Students Entering Australian Medical Schools 1989 to 1997* (AMWAC 1997.7);
- AMWAC reports on the workforce requirements of several additional specialties;
- the AMWAC report *Sustainable Specialist Services: A Compendium of Requirements* (AMWAC 1998.7);
- Department of Health and Family Services' 1996 and 1997 reports on general practice in Australia;
- Health Insurance Commission annual statistical reports for 1995–96 and 1996–97;
- the ABS-AIHW report *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples*;
- the AIHW report *Rural, Remote and Metropolitan Area Health Differentials: A Summary of Preliminary Findings*.
- the AHMAC report *Australia's Health System in 2010*;
- the first report of the Medical Training Review Panel (MTRP); and
- the 1998 AIHW and National Centre for Epidemiology and Population Health report *Expenditures on Health Services for Aboriginal and Torres Strait Islander People* by Deeble et al.

Internationally a number of reports have been published on medical workforce benchmarking and other methods of medical workforce planning in other countries. In November 1997, Professor John Horvath, Chair of AMWAC, attended the second Trilateral Physician Workforce Conference for the USA, United Kingdom and Canada, at which a range of relevant papers were presented. Professor Horvath reported from this conference that Australia's information systems on the medical workforce are much more advanced than those in Canada and the USA.

Nevertheless, there are gaps in medical workforce information in Australia that limit, to some extent, ability to analyse supply and demand. Some of the main gaps include:

1. General practice morbidity and treatment data

The most recent study of general practice service provision in Australia collecting data on morbidity and treatment was the Australian Morbidity and Treatment Survey 1990-91 conducted by the Family Medicine Research Unit (FMRU) of the University of Sydney. The FMRU, in collaboration with the AIHW, commenced a new continuous study in April 1998, using a sample of 1,000 randomly selected active VRGPs, each recording 100 consecutive consultations, to provide an annual database of 100,000 encounters.

2. Duration of consultation and weeks worked per year

Estimation of how many GPs are required to service a given consultation workload would be assisted by data on duration of consultations and numbers of weeks worked per year in patient care by type of practice. The Medical Benefits Schedule is unhelpful as well over 90% of consultations are level B, which involves one or more problems of less than 20 minutes. No other data on duration of consultation are collected.

3. Responsibility for patient treatment in hospitals

The national hospitals data collection does not identify the health professionals principally involved in providing the care. For example, for an uncomplicated birth in a hospital, it is not known whether the baby was delivered by a midwife, a junior hospital doctor, a Career Medical Officer, a Hospital Medical Officer, a GP, or a visiting obstetrician. This makes planning the future workforce requirements for obstetrics services very difficult.

4. VRGPs and OMPs practising mainly in other fields

Medical practitioners classified on the basis of their billing activity as VRGPs and OMPs by the Health Insurance Commission include up to several thousand doctors whom Divisions of General Practice would not consider as active general practitioners for the purpose of Division workforce planning on the basis of their main activity and/or on level of activity. While numbers of hospital doctors and other non-GPs can be estimated reasonably well at the national level by comparing Medicare and national labour force survey statistics for GPs and OMPs, this is not the case at the local area level where Divisions want reliable up-to-date workforce numbers for active providers of defined general practice services. What constitutes these defined GP services is unclear but they may exclude GPs practising mainly in specialised fields of primary care such as impotence clinics, public health medicine, and travel medicine.

5. Waiting times for specialist consultations

Waiting times for non-urgent consultations are considered an important indicator of the adequacy of workforce supply for specialist services. Although national data are collected for hospital waiting lists and waiting times, data are not routinely collected on waiting times by specialty for non-urgent consultations in private rooms. Several AMWAC specialist reviews have collected these data on a one-off basis by surveying Fellows of the relevant specialist colleges.

Feedback will be welcomed on other gaps in data.

11. Some methodology issues in benchmark analysis

11.1 Overview

Australian Medical Workforce Benchmarks (1996) found that in 1994 there was considerable maldistribution of the Australian medical workforce. The review of the international literature in this discussion paper confirms that the methodology used was fundamentally sound but can be strengthened in several areas, and that the problem of maldistribution is an international one where possibly only the United Kingdom with a highly regulated medical workforce does not suffer from similar problems to Australia.

There continues to be the need to reconcile macro decisions on long-term medical student and migration numbers and micro decisions on distortions of supply. This reconciliation includes taking into account factors which will influence these distortions over time, including:

- population growth and ageing of the population;
- increased demand as household incomes rise;
- new medical technologies;
- a rising proportion of female doctors in the medical workforce;
- any decisions taken by public hospitals to reduce the hours worked by junior hospital doctors, an issue highlighted by the safe working hours campaign being developed by the AMA;
- government announcements in the 1996–97 budget papers that:
 - i. From 1 November 1997, temporary resident doctors will not be able to be deemed as ‘medical practitioners’ for Medicare purposes unless they have relevant overseas postgraduate qualifications in their field;
 - ii. No temporary resident doctors will be deemed as medical practitioners for Medicare purposes after 1 January 2000;
- lack of access by junior hospital doctors to Medicare provider numbers until they are accepted into a recognised GP or specialist training program;
- the introduction of a postgraduate medical degree in a number of medical schools. This will shorten the working life of medical graduates of the future as new graduates will be older on average than in the past;
- changes to the role of general practitioners in the health system:
 - coordinated care trials underway are testing alternative roles for GPs in coordinated care models for patients with chronic conditions;
 - After Hours Primary Medical Care Trials are also testing changed roles for GPs;
 - the Relative Values Study task force being undertaken by the Department of Health and Family Services and the Australian Medical Association is considering a revised consultation structure for remunerating doctors for their Medicare services to reward time spent with patients. This may alter the dynamics of GP practice;
 - the GP Strategy Review Groups Report identified, for immediate action, the promotion of ‘new practice arrangements to increase efficiency and provide better lifestyle and career choices for GPs’. The report has called for innovative solutions to provide full access to GPs’ skills and services by rural populations, disadvantaged groups, Indigenous people, some people with chronic illness and

others currently not receiving full access. The report has identified 'scope for an expanded role for GPs in public health issues' by 'engaging GPs in activities beyond individual patient care'. The Government supported these recommendations and will establish a program costing \$20 million for micro-economic reform and restructuring, including incentives for practice amalgamations;

- Divisions of General Practice are moving to outcomes-based funding models; and
- an expansion of the role of nurses and other health care professionals in provision of medical care. The nursing workforce is now much more highly trained and is already providing limited primary medical care in remote areas. During the 1990s, the NSW Health Department has undertaken a three-stage detailed review of the role of nurse practitioners, followed by pilot projects at 10 sites. In its April 1996 report, the steering committee concluded that 'the evidence from the research conducted by each pilot project, and the across-project research, supported that nurse practitioners were feasible, safe and effective in their roles and provide quality health services in the range of settings researched'. It said 'the Nurse Practitioner model provides a legal and professional framework for specialist advanced nursing practice in a range of contexts'. The Minister announced in August 1998 that the Government intended to seek legislation to establish up to 40 nurse practitioner positions in selected areas of the State where there is demonstrated local need, local agreement and local support for them. Some other State health authorities are also considering a similar expanded role for nurse practitioners.

For the future, key concerns are how quickly these factors will soak up, or increase, any areas of over-supply, and whether, in this process, under-supplied areas will be adversely affected. Hence an update of *Australian Medical Workforce Benchmarks* will have to include disaggregated projections of the medical workforce which address these questions, and not stop at total projections of the workforce, the methodology used in the previous benchmarks report.

11.2 Improvements in technology and increases in consumer demand

Of the preceding factors, the most difficult to assess will be the impacts on workforce requirements of improvements in technology and increases in consumer demand as real household incomes increase and information available to consumers continues to increase. The two are related to an extent: rising living standards lift community expectations about affordability of advances in medicine. In *Australian Medical Workforce Benchmarks* (1996), three scenarios were presented in respect of increases in demand for unreferral and specialist attendances and services for operations due to advances in medicine. A low annual increase in demand was assumed to be 0.3% pa, a medium increase 0.6% pa, and a high increase 0.9% pa. These assumptions are crucial for future benchmark studies.

11.3 Changes in practice models

Kletke et al. (1996) reported that in the USA, between 1983 and 1994, the proportion of patient care physicians practising as employees rose from 24.2% to 42.3%, the proportion self-employed in solo practices fell from 40.5% to 29.3%, and the proportion self-employed in group practices fell from 35.3% to 28.4%. 'These trends, which are evident in virtually every segment of the patient care physician population, are especially prominent among young physicians.'

While changes in USA healthcare to greater HMO employment of physicians has accelerated such changes, there are similar trends in practice arrangements in Australia although the great majority of practices in Australia are still small. In the 1994–95 ABS survey, 77.0% of general practice medical services and 93.9% of specialist medical services in 1994–95 had only one or two medical practitioners (ABS, 1997). However, ABS classified practices using legal entity definitions; data from other sources suggest a significant number of single legal entities operate in group arrangements in medical centres, and one-third or more of GPs now work in large group practices. However, the proportion of solo practitioners is 50% higher in remote areas (DHFS, *General Practice in Australia: 1996*).

Large group extended-hour practices are increasing for the economic and consumer reasons already discussed in this paper, and because of the medical workforce labour market – rising numbers of young female doctors in the workforce, and to a lesser extent, male doctors, for whom these practices offer desirable employment arrangements. This restructuring reduces the need in the workforce for locum and deputising services as large practices can organise staff to cover such needs. It also increases doctor productivity as administrative overhead time per doctor is reduced.

In the general practice workforce in over-supplied metropolitan areas, competition from large practices threatens the financial viability of solo practitioners. For many years the AMA has suggested that the solution for the solo practitioner will be to enter into ‘shared management practices, in which groups of GPs operate from a large centre and share management costs, while retaining, if appropriate, independent solo practice and individual goodwill’ (Brand, 1996a). This model is seen to achieve the financial, professional and consumer benefits of the large practice employing salaried practitioners. Market forces are likely to steer the GP workforce increasingly towards large practice arrangements, achieving a more efficient and productive GP workforce.

The GP Strategy Review Group Report strongly recommended new organisational arrangements:

- ‘A program be developed over the next 5 years to assist general practices to embrace microeconomic reform which should include improved practice and workforce efficiencies, amalgamation of practices and other models of cooperative working.
- Following implementation of the program proposed in the previous recommendation, a mechanism be developed for a planning framework to address the distribution of general practices and to encourage the establishment of new practices in areas of need. This mechanism to be based on an exploration of the issues and on the development of guidelines agreed between consumers, GPs and the Government.’

The Government will be establishing a program costing \$20 million for micro-economic reform and restructuring, including incentives for practice amalgamations. This should expedite the processes occurring naturally through market forces.

A reduction in the proportion of small practices over time suggests that a productivity improvement factor is desirable in projections of the GP workforce in metropolitan areas for the period beyond the next five years. However, offsetting this is expected to be a reduction in the proportion of practitioners with very high through-put statistics after recommendation 87 of the GP Strategy Review Group Report is implemented. This recommendation, strongly supported by the Government, said:

In the interests of quality and safety, the RACGP with the support of other national GP organisations research and jointly develop, within 12 months, a statement on what level of services in a defined period it is appropriate for GPs as individuals to

provide, taking into account what is a reasonable workload for safe practice, a balanced lifestyle and the time required to provide appropriate care for each patient.

11.4 Impacts of rising participation in the workforce by female doctors

The rising percentage of the workforce which is female will have other major effects on workforce supply. In *Female Participation in the Australian Medical Workforce* (AMWAC, AIHW, 1996), the Institute calculated that, over a lifetime, a female GP is estimated to work 62.8% of the total hours worked by a male GP. For specialist practice, the proportion is around 75%. In addition, female general practitioners have been shown to practise differently to males, managing different types of medical conditions, with some differences due to patient mix and patient selectivity, and others inherent to the sex of the physician (Britt et al., 1996).

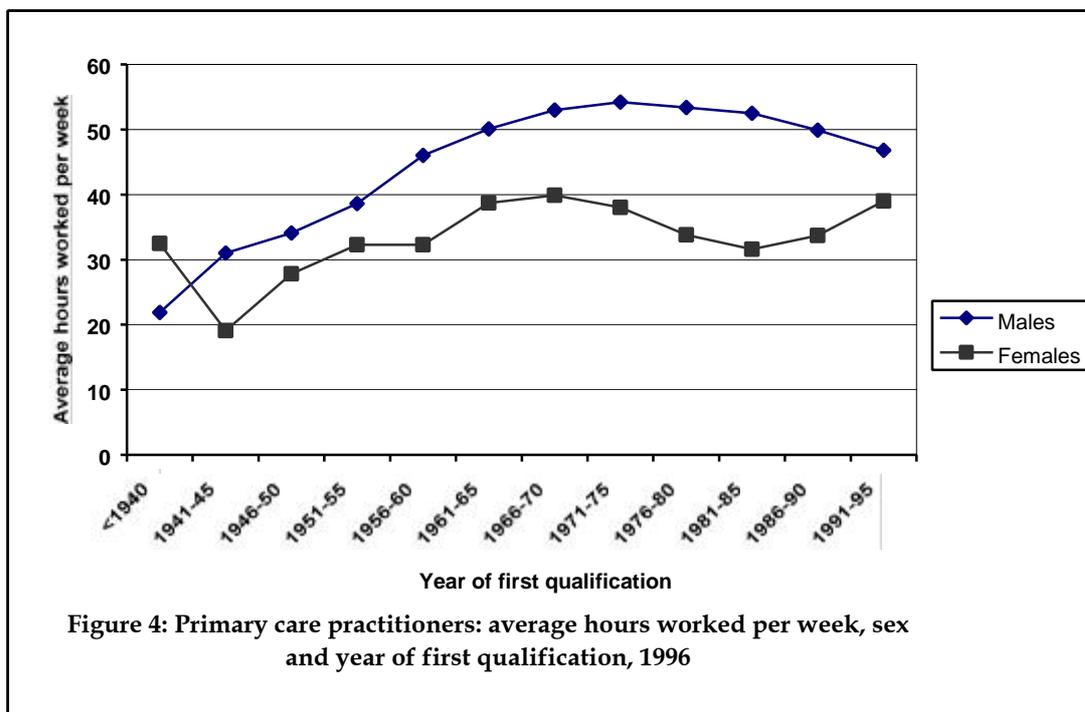


Table 10: Australian medical workforce: per cent female, 1993 to 1996

Occupation	1993	1994	1995	1996
<i>Clinician:</i>	25.0	26.3	27.0	27.5
Primary care/GP trainee	29.9	31.0	31.7	32.5
Hospital non-specialist	40.6	41.9	42.0	43.2
Specialist/specialist trainee	17.0	17.8	17.9	18.7
<i>Non-clinician:</i>	28.0	29.9	31.5	31.5
Administrator	26.9	28.7	31.3	31.0
Teacher/educator	22.7	28.9	29.1	29.5
Researcher	27.6	26.7	33.5	38.3
Public health physician	35.8	43.2	39.5	39.6
Occupational health physician	21.1	23.6	16.0	20.0
Other	29.3	28.6	31.4	29.0
Total	25.2	26.5	27.2	27.7

Source: AIHW.

Therefore the speed of the increase in the proportion of females in the medical workforce will have a major impact on the total hours of clinical time available for patients.

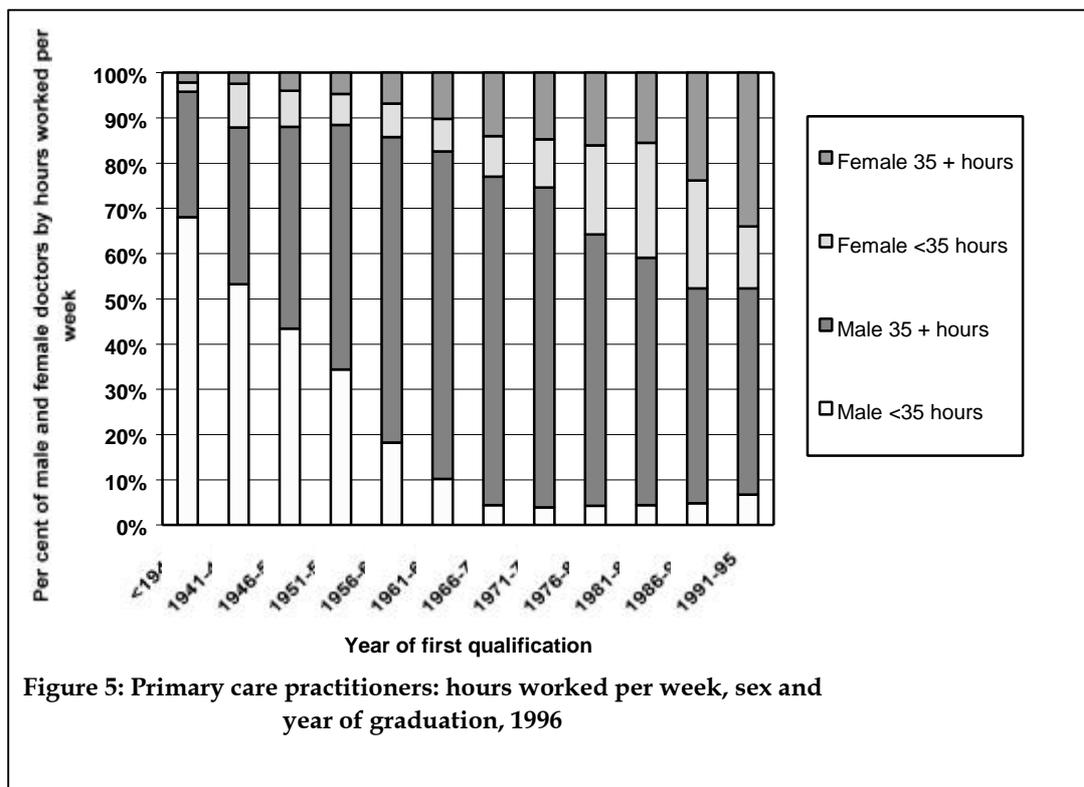
Table 11: Australian medical workforce: projected per cent female, 2000 to 2030

Occupation	2000	2010	2020	2030
<i>Clinician:</i>	30.6	37.8	45.1	52.4
Primary care/GP trainee	35.8	43.9	52.0	60.1
Hospital non-specialist	46.3	54.3	62.3	70.3
Specialist/specialist trainee	20.6	25.7	30.8	35.9
<i>Non-clinician</i>	36.1	45.9	55.9	65.9
Total	30.8	38.1	45.4	52.7

Note: Linear projection of trend from 1993 to 1996 data. However, this assumes that the proportion of female medical students will continue to rise to 70% (an unlikely assumption), producing a hospital non-specialist workforce which is 70% female.

Source: AIHW.

If a linear projection is made of the trends from 1993 to 1996, it can be seen that it will take another generation of medical practitioners before the numbers of males and females in the workforce are roughly equal, and then only if the proportion of medical students which is female rises to more than two-thirds by 2025. Although this has happened in pharmacy, physiotherapy and some other health professions, it is unlikely to happen in medicine.



11.5 The hospital workforce

Trends in patient care in hospitals during the last decade which have impacted on the hospital non-specialist medical workforce include more intensive use of beds with more patients passing through more quickly. This has increased the level of stress on the hospital non-specialist workforce, now caring for many more patients during a working week than a decade ago. Hence it is much less feasible to continue working the excessively long hours of the past and cope with the increase in intensity of practice. Therefore it is expected that in the future working hours for hospital non-specialist doctors will reduce significantly and this will have to be factored in to projections of workforce need.

Improved career arrangements for salaried hospital doctors, the contraction in the numbers who can enter general practice, and lack of access to Medicare provider numbers to temporary-resident doctors, should significantly increase the numbers of doctors available to work as hospital non-specialists.

Benchmarking of the hospital non-specialist workforce therefore has to be guided by workforce requirement scenarios if working hours of the current workforce were reduced, and if there is an increase in the numbers of temporary-resident doctors (TRDs) available in hospitals because of increasing restrictions on access to private practice for TRDs under Medicare. Inequities in distribution and adequacy of the current workforce are very difficult to assess because of substitution arrangements with alternative providers including visiting GPs and specialists, and because of the extent of outreach services provided.

11.6 The specialist workforce

In the previous Australian medical workforce benchmark study data available on the workforce requirements for individual specialities was very limited. Since then AMWAC has either completed or commenced comprehensive studies of the workforce requirements of medical specialties encompassing more than 50% of the specialist workforce. These assess future demand growth from population growth and ageing, research and technology, and other factors. Nearly all of these studies have concluded that some workforce shortage existed, and recommended temporary increases in training numbers to AHMAC to address the shortages. These recommendations have been accepted by AHMAC and steps taken to implement the recommendations and monitor the training and workforce situation on an ongoing basis.

To estimate benchmark requirements for the total specialist workforce, it will be necessary to make assumptions about the workforce adequacy of the medical specialties which AMWAC has not studied, while reviewing the most recent data available on inequities in distribution of specialists among States and Territories and in specialty service provision for residents of rural, remote and metropolitan areas.

11.7 Delivery of medical services to Aboriginal and Torres Strait Islander people

Aboriginal health services have a major role in delivering medical services to Aboriginal and Torres Strait Islander people. These employ salaried doctors whose contribution may not be included in Medicare provider and patient utilisation statistics.

In examining GP workforce requirements, *Australian Medical Workforce Benchmarks* (1996) used Medicare data and did not make any adjustments for delivery of primary care medical services outside the Medicare system, especially for Aboriginal and Torres Strait Islander people in rural and remote areas. Hence shortages of GPs in remote areas may have been over-stated.

Data are now available from three sources which may lead to such adjustments being feasible:

- 1996 census data on the distribution of Aboriginal and Torres Strait Islander people throughout Australia;
- the 1998 AIHW and National Centre for Epidemiology and Population Health report *Expenditures on Health Services for Aboriginal and Torres Strait Islander People* by Deeble et al.; and
- AIHW national medical labour force survey data on doctors employed in Aboriginal health services.

The expenditure report found that, per person, Aboriginal and Torres Strait Islander people received benefits under Medicare only 27% of the average for non-Indigenous people, and under the Pharmaceutical Benefits Scheme only 22% of the non-Indigenous average. 'The pattern of use of services by Aboriginal and Torres Strait Islander people was quite different to the average for other Australians. They relied much more on publicly-provided hospital and community health services than the typical non-Indigenous person.' Overall, in 1995-96, total health spending for and by Aboriginal and Torres Strait Islander people was \$2,320 per person, about 8% higher than that for and by other Australians.