

## **WHO ARE THE DOCTORS OF TOMORROW? – SOME AUSTRALIAN PERSPECTIVES AND THOUGHTS**

**Paul Gavel, Julian Evans, Jeannette Young**

In this paper we aim to give some thought and suggested answers to the question who are the doctors of tomorrow? Obviously these thoughts are from the Australian perspective. They have been shaped by what we see as the evolving profile of the Australian medical workforce, the challenges facing the Australian workforce as a whole, and some of the likely future directions for our health system.

Note for the purposes of this paper tomorrow has been defined as the next 10 years.

### **The Evolving Profile of the Australian Medical Workforce**

The profile of the Australian medical workforce is continually changing. In 2005 Australia has more doctors than it has ever had and the female proportion is increasing every year (Table 1; Figure 1). This profile is the same for our medical students and our vocational trainees. The one difference is that our medical students are now predominantly female (Figure 3); which means that if this trend continues ultimately our medical workforce will also be predominantly female; as increasingly larger numbers of young women replace the older cohort of predominantly male doctors (AMWAC 2005, AIHW 2005, MTRP 2005).

Our medical workforce is also older and working fewer hours than it did ten years ago; with the change in average hours worked per week greatest amongst male doctors and in the younger age groups (Table 1; Figure 2 and AMWAC 2005; AIHW 2005). It is also notable that some disciplines, surgery in particular, continue to be the domain of mostly male practitioners; and that those disciplines most favoured by women remain those where hours of work are comparatively more reliable and/or can be structured around other commitments – so preferred areas of practice for women remain paediatrics, general practice, obstetrics and gynaecology, pathology, psychiatry, public health medicine (MTRP 2005).

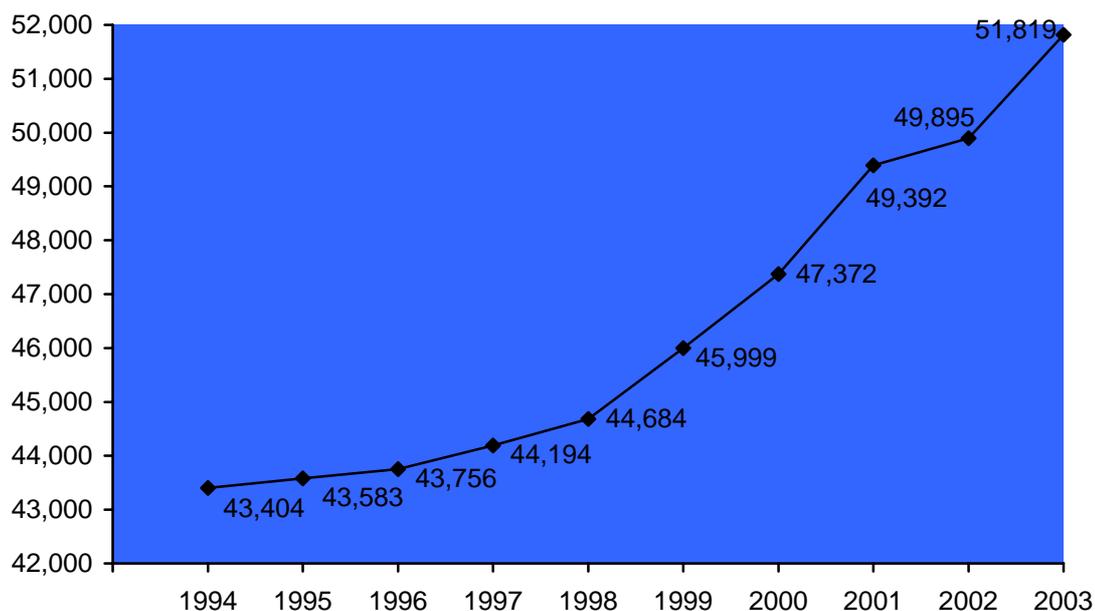
Greater female practice has other impacts as well, for example the work of Britt et al has highlighted that female general practitioners have longer consultations than male general practitioners (Britt et al 2005, Charles et al 2004, Britt et al 2002).

**Table 1: Medical workforce, key characteristics, Australia, 1996 and 2003**

Characteristic	1996	2003	Change 1996-2003
Number of medical practitioners	43,756	51,819	+ 8,063
Practitioners per 100,000 population	246	283	+ 37
% female	27.6	31.9	+ 4.3% points
Average hours worked	48.1	44.4	- 3.7 hours
Average male hours	51.1	47.5	- 3.6 hours
Average female hours	40.2	37.8	- 2.4 hours
% working more than 50 hours per week	53.0	43.7	- 9.3 % points
Average age (years)	44.9	45.9	+ 1 year
% aged 35 to 45 years	29.6	27.4	- 2.2% points
% aged over 55 years	21.8	24.9	+ 3.1% points
FTE participation (45 hours/week) rate per 100,000 population	278	279	+ 1 FTE

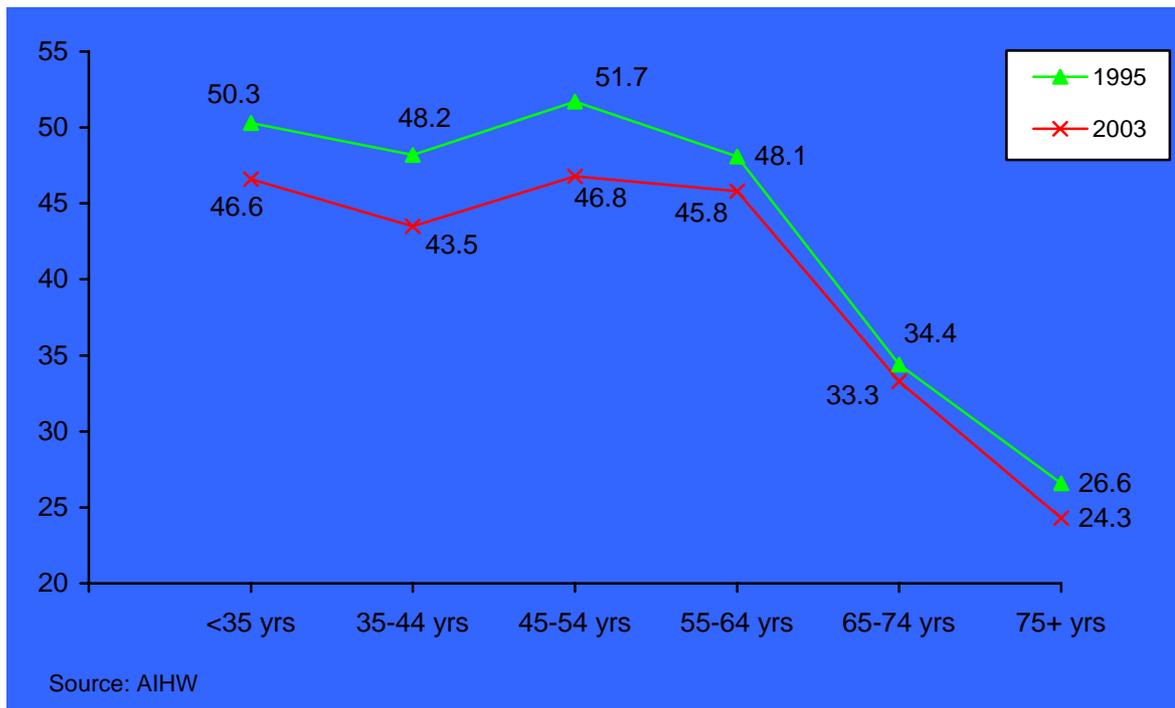
Source: AIHW

**Figure 1: Medical practitioners, employed practitioners, Australia, 1994-2003**

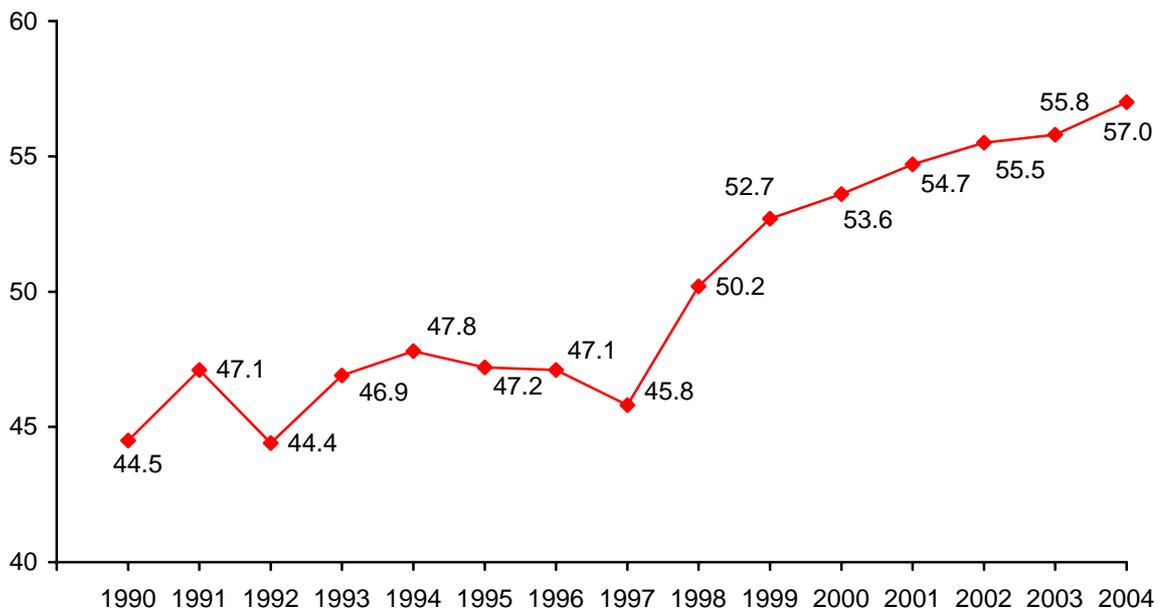


Source: AIHW

**Figure 2: Employed medical practitioners, average hours worked, by age group, Australia, 1995 and 2003**



**Figure 3: Medical students, commencements, % female, Australia, 1990-2003**



Source: AIHW, DEST, Australian Medical Schools

Particular disciplines now continually carry vacancies, not just in the vocational training program but also in the workforce, for example psychiatry, emergency medicine and pathology (Australian Health Ministers 2004, AMWAC 2005.3). Interestingly, this is despite workforce numbers, vocational trainee numbers and medical student numbers all being at record levels and having increased markedly over the past decade; indeed the increases since 1997 have been 17%, 35% and 39% respectively (AMWAC 2005.3). Similarly, some geographic areas continue to struggle to attract sufficient doctors; even though overall rural doctor numbers have increased in recent years (AIHW 2005).

There have also been changes in the way doctors are trained and how they are selected for medical school in the first place. Australian policy decisions over the last 15 years have promoted much greater numbers of graduate entry to medical courses (now over half of all new medical school enrolments) and required all practitioners to successfully complete a vocational training course before they can access the Medicare health care financing system. All medical schools now have selection processes that are not based solely on secondary education completion mark but also incorporate interview and assessment (Prideaux et al 2001, AMWAC 2000, Lawson et al 1998). In addition, several medical colleges have rejigged their training programs, revising content and requirements, with several adding an additional year to the length of the program. State/Territory governments have also put in place processes for supporting and training doctors in their first two postgraduate years through the establishment of postgraduate medical education councils.

In strict numerical terms all these changes have lengthened the time it takes doctors to complete all their initial education and training requirements; meaning that many are now in their mid to late thirties when completion of training is occurring.

Our young workforce is now drawn exclusively from the next generation – generation Y (born post 1980); and this generation has completely different views on work from their predecessor generations – generation X (born between 1965 and 1980) and the baby boomers (born between 1945 and 1964). In particular, generation Y has shown significant differences in attitudes to balancing career and personal life (AHWOC 2005, AMWAC 2004, AMWAC 2003).

These changes are all quite profound but in some ways have probably ‘snuck up’ on us or initially been dealt with through disbelief and/or denial; in the Australian context this is particularly true of the decline in hours worked amongst young male doctors. Denial is no longer an option. The profile of our medical workforce has changed dramatically over the past decade and every expectation now is that the profile will continue to change over the next decades. Indeed the change in the next two decades is likely to be more profound and more quickly noticeable given the base it is building from in 2005 and the momentum that has already been attained.

So it is quite easy to speculate that by 2015-2020 our medical workforce could well be much larger, maybe around 15,000 more than today, predominantly female and probably working still less hours per week, given that:

- many of the doctors aged over 55 years will progressively reduce their hours worked and then move through to retirement;
- this predominantly older male cohort will be replaced by a predominantly female cohort of new graduates working comparatively fewer hours per week; and
- the overall trend amongst young doctors (regardless of sex) to work less hours per week than their predecessors.

In addition, there may also be a more fluid movement into and out of active participation in the workforce; given generation Ys views on balancing work and life and the role female doctors play in raising a family (AHWOC 2005, AMWAC 2003).

In turn, because of the above factors, overall full time equivalent medical workforce supply capacity may only increase slightly over the next ten years despite the historically large increase in national supply intakes underway and scheduled to continue over the period up to 2015.

And yet on the demand side of the equation an upward trend just continues, with an upward trend in just about any health demand indicator you want to choose be it based on health service delivery, the cost of those services, demographic profiles, or health and disease trends.

So medical workforce supply and demand are almost moving in opposite directions and this raises important issues around sustainability of our health workforce and what is the best use of our workforce and some headline themes around capacity, time, productivity, and best use of skills - capacity to meet demand; time to fix imbalances; the productive use of working time; and the best use of skills in terms of who could and should do what. In turn this focuses the policy spotlight on workforce adaptability, workforce design and the work place. Indeed, how the doctors of 2015 will be practicing is much more difficult to speculate on, although the evidence of history will tell you that it will inevitably be different – technology advance will alone dictate that (just as we can sit here today and recall the technology induced changes that have occurred over the past 10 to 20 years).

And what solutions may have to be put in place to deal with continued doctor shortages in some disciplines and geographic areas are equally difficult to contemplate – other than the conclusion that solutions of the future may indeed turn out to be quite ‘radical’ from today’s viewpoint, given that it is inconceivable that communities and governments will tolerate sustained shortfalls for too long and not turn to work design, alternative provider and work environment solutions as part of a more broad ranging, multifaceted, suite of actions (especially as the past decade has focused on expanding workforce intakes and this is now being seen as an insufficient response). Indeed these more ‘radical’ notions have been part of many of the solutions proposed in stakeholder submissions to the current national inquiry into the

health workforce being undertaken by the Productivity Commission (all submissions to the review can be viewed on the Commission's website at [www.pc.com.au](http://www.pc.com.au)).

Picking up on these themes the Commission, in its recently released position paper on the Australian health workforce, highlights just this idea noting that whilst increasing supply intakes will continue to be important they will be insufficient on their own and as such it is now time for Australia to tackle the systemic issues impeding workforce productivity and effectiveness, including the challenges of fragmented roles and responsibilities, inadequate coordination mechanisms, inflexible and inconsistent regulation, perverse funding and payment incentives, and entrenched work place behaviours (Productivity Commission 2005).

So will there be changes in who does what over the next 10 years? – undoubtedly. Indeed this is an area of constant evolution with many small, localised, changes in practice constantly occurring. Yet whilst there has been reasonable discussion on the role of alternative providers and work design in assisting with our workforce capacity and productivity challenges, useful research on recognisable benefits has been minimal. Similarly, some areas of change have been long, drawn out, processes, for example the introduction of nurse practitioners (Productivity Commission 2005, Duckett 2005).

### **Australian Workforce Challenges**

The single biggest workforce challenge in Australia is the diminishing growth in the national labour pool. In Australia today, the national workforce grows at the rate of about 170,000 per year. By 2020 this is growth is predicted to be around just 12,500 a year; or put another way, for the whole of the decade 2020-2030 the workforce will grow less than it currently does each year (Department of Health and Aged Care 2001). This is an issue for Australia as a working nation and for all employers, not just the health sector; and it means that over the next decades workers will become an increasingly scarce and valuable resource. Organisations will need to be well positioned to deal with this challenge. It will impact not just on future supply but also on an organisation's existing workforce, how work is organised in the work place, how jobs and tasks are designed, and skill requirements – all of which in the doctor context will impact, as noted above, on what the doctors of tomorrow will be asked to do and how they will be required to practice and interact with other health workers.

The other major national workforce challenge is generational change. Different generations have different defining values, attitudes and characteristics and these transfer through into the work place through their work preferences and the things that are most valued and favoured about work and the work place. For example, generations X and Y have a preference for flexible working hours, work-life balance, continuous personal development and techno-literate communication. Generations X and Y also have a range of views about what is expected of a medical practitioner and what makes an organisation a good employer and worth working for (AHWOC 2005). In turn, these significant differences in attitude to work and life balance and

the importance of career goals and aspirations between generations, are adding to the challenges of managing the doctors of tomorrow.

Taken together these two challenges mean that the challenge for Australian employers, including the health sector, can be summarised as competing for, and retaining, scarce talent against the backdrop of diminishing workforce supply growth whilst in the midst of generational change within the workforce. The workforce priority will be very much about ensuring and securing supply and it will necessitate strategies around:

- ensuring attractiveness to potential / existing staff;
- developing the flexibility to keep and extend / develop staff;
- motivating and organising for productivity gains and the efficient use of time and skills; and
- having access to readily available pools of new talent.

A continuing challenge for the health sector revolves around the use and uptake of new technologies. Advances in health technology have always been readily incorporated into the provision of health care, with an impact on demand, productivity or practice. The expectation for the future is that health care advances and innovations will be upon us at an astounding rate, with pressure from increasingly well informed consumers for their prompt uptake and universal application. Key influences are likely to be nanotechnology, gene technology, robotics and e technologies (Australian Health Ministers 2004, Productivity Commission 2005, AMWAC 2005). Indeed it has been speculated by at least one commentator that robotics could ultimately come to predominate the provision of care in hospitals reducing our need for a large health workforce – but this will take longer than the next 20 years (Walsh 2002).

For the immediate future, the technology implications for doctors and the health workforce are new opportunities in diagnosis, testing, treatment and surveillance and the support of each of these processes, and an ever expanding need for training and skill updates throughout their careers as the quantum of diseases, procedures and techniques they are expected to deal with expands. No doubt there will also be implications for working arrangements and working relationships.

In addition, we are now also seeing a substantial technology impact on health training, with an ever increasing use of simulation and e-learning; and given the infrastructure constraints that are now emerging with the traditional training model of clinical placements it is likely that alternative training opportunities will need to be found, developed and/or exploited.

### **Factors Influencing Junior Doctor Career Choices**

It is interesting to contemplate the factors influencing junior doctors' career choice and workforce participation decisions. These are tomorrow's doctors and their views on influences and work offer an interesting insight. Emulating work in the UK through

the Oxford Careers Research Group, AMWAC and the Australian Government Department of Health and Ageing, have embarked on a longitudinal study of doctors in vocational training. The first survey was conducted in 2002 and the first follow up survey was undertaken in 2004 (AMWAC 2003.2; Harris et al 2005). The 2002 survey highlighted:

- the intrinsic factors rated as having the greatest influence were appraisal of own skills and aptitudes, the intellectual content of the specialty and interest in helping people;
- the extrinsic factors rated the most important of which were the atmosphere/work culture typical of the specialty, work experience since graduation and opportunity to work flexible hours;
- general practice trainees, compared with other trainees, ascribed greater importance to interest in helping people, appraisal of own domestic circumstances, opportunity to work flexible hours, number of years required to complete training, and experience of specialty as a medical student;
- trainees in emergency medicine, anaesthesia, psychiatry, pathology and ophthalmology were more likely to ascribe importance to opportunity to work flexible hours, while this factor was of less importance to trainees in obstetrics and gynaecology and adult medicine;
- trainees in surgery ascribed greater importance to the influence of consultants/mentors than trainees in the other nine training programs;
- not surprisingly, opportunity to do procedural work was of greater importance to trainees in surgery, obstetrics and gynaecology, ophthalmology, anaesthesia and emergency medicine than to trainees in the other programs;
- factors of particular importance to women compared with men were opportunity to work flexible hours and hours of work;
- factors of more importance to partnered doctors than to single doctors were hours of work and opportunity to work flexible hours;
- not surprisingly, appraisal of own domestic circumstances was of greater importance to doctors with children than to doctors without children, and more important for female doctors than male doctors; and
- only 14% of respondents indicated any interest in rural practice.

(Preliminary indications are that the 2004 cohort survey is showing similar results but a full analysis will not be available until early in 2006.)

These findings confirm that choice of specialty is a complex decision, strongly influenced by personal attributes and preferences (intrinsic factors) followed by contact with the work environment (extrinsic factors), and, for women in particular, their domestic circumstances. Extrinsic factors of greatest importance are the work culture typical of the specialty, work experience since graduation, opportunity to work flexible hours, influence of consultants/mentors, and hours of work typical of the specialty. So balancing work and life is an absolute priority for the younger generation. Also of note is that for 80% of doctors, the decision about choice of specialty is made by the end of postgraduate year 3.

The findings of the Australian study are strengthened by the fact that they are similar to those of Goldacre et al who reported that career choices of UK medical graduates were influenced by appraisal of their own skills and aptitudes and enthusiasm for the specialty. As in our study, these researchers noted that women doctors were more influenced by domestic circumstances and hours of work and working conditions than were male doctors.

### **The Future of Our Health System**

Futures exercises are a fairly common occurrence in health systems these days. The themes that seem to relate to the health workforce generally revolve around workforce availability, sustainability, adaptability; meeting the health needs of the community; linking service, workforce and infrastructure planning and maximising the potential of technology.

In Australia, development of our first National Health Workforce Strategic Framework was a significant event (Australian Health Ministers 2004). The Framework encompasses a vision of where we want our health workforce to be in 10 years and outlines some guiding principles for stakeholders to use in collaborating to deliver that vision. The vision is:

“Australia will have a sustainable health workforce that is knowledgeable, skilled and adaptable. The workforce will be distributed to achieve equitable health outcomes, suitably trained and competent. The workforce will be valued and able to work within a supportive environment and culture. It will provide safe, quality, preventative, curative and supportive care, that is population and health consumer focused and capable of meeting the health needs of the Australian community.”

This is a useful summary of many of the key themes of the foregoing discussion and the Framework principles set the direction that Australian health workforce policy will pursue over the next decade.

In terms of specific actions and over-arching national structural reforms to deal with our health workforce challenges, much will depend on the outcomes of the Productivity Commissions inquiry, which concludes at the end of 2005 and should be released early in 2006. The Commission has indicated it intends to set broad structural parameters around adoption of innovation, allocation of education and training funding, education and training content, accreditation, practitioner registration, and health workforce planning. The Commission has endorsed the National Health Workforce Strategic Framework and so it should be expected that its findings and recommendations will be consistent with the Framework’s vision and guiding principles (Productivity Commission 2005).

## **Some Possible Conclusions**

So where does this leave us with an answer to the question who are the doctors of tomorrow? Well we believe the answer is that the Australian doctors of tomorrow (with tomorrow defined as the next 10 to 20 years) will be similar to today's doctors but different. Similar because they will still be doctors, working to maintain and restore health, and they will still have a key role in delivering and leading the provision of care and much of what they will be able to do will remain technology driven; but different because they will be shaped by their generational preferences and the needs and realities of our health system.

Some things do seem more certain than others - there will be more doctors, many more will be female (indeed it is now possible to foresee a time when our medical workforce is predominantly female), and overall they will be working fewer hours than now.

Education and training will be different – in particular sheer volume will probably overwhelm infrastructure availability and capacity; so there is likely to be more emphasis on simulation in training, e training, training in specific skill sets and reskilling.

There is likely to be a greater requirement to focus on chronic illness and wellness promotion in their work. Being part of a multi-practitioner team will continue to be important to quality care and service delivery; and it is likely that, within any team, there will be new roles for old disciplines and possibly some new practitioners altogether. Technology will continue to enable ever more things to be done, to ever more people, with ever more skill and accuracy.

Generational change and increasing female participation can be expected to further change the culture and conventions around medical practice as the Generation Y cohort (which is predominantly female and large in numerical terms) exerts influence over the direction and practices of their profession and health systems. In turn, employers and education and training organisations are likely to be challenged to adapt to the new realities and viewpoints about work and life in order to retain their attractiveness for the doctors of tomorrow.

And are the future doctors out there? – well yes; will we get sufficient people interested in medicine and health care as a career – well hopefully but perhaps only if health care training is recognised as a national priority and treated accordingly and only if many of the systemic negatives associated with health care work and health work environments are dealt with and overcome.

And is there anything terribly profound in the foregoing discussion? The temptation maybe to say perhaps not, but it remains a useful exercise to outline existing realities, current trends, expected needs, visions of the future and thoughts on ideas that will probably be pursued in shaping that future. Of course the most important factor remains to be able to meaningfully and coherently connect everything up so

that we have maximum impact on our workforce's capacity and its productivity, on the one hand, and most importantly, on the patients they will be asked to care for and our nation's health, on the other.

## References

Australian Health Ministers (2004), National Health Workforce Strategic Framework, Sydney

Australian Institute of Health and Welfare (2005), Medical Labour Force 2003, Canberra

Australian Health Workforce Officials Committee (2005), Extending Participation in the Health Workforces, Health Workforce Information Paper No.4 (forthcoming)

Australian Medical Workforce Advisory Committee (2005), Technology and Health Workforce Planning, Health Workforce Information Paper No.2, 2005.1

Australian Medical Workforce Advisory Committee (2005), Annual Report 2004-05, AMWAC Report 2005.3 (forthcoming)

Australian Medical Workforce Advisory Committee (2004), Annual Report 2003-04, AMWAC Report 2004.5

Australian Medical Workforce Advisory Committee (2004), The Public Hospital Workforce In Australia, AMWAC Report 2004.3

Australian Medical Workforce Advisory Committee (2003), Career Decision Making By Doctors In Vocational Training, AMWAC Report 2003.2

Australian Medical Workforce Advisory Committee (2002), Career Decision Making By Doctors In Their Postgraduate Years — A Literature Review, AMWAC Report 2002.1

Australian Medical Workforce Advisory Committee (2000), Innovations in medical education to meet workforce challenges, *Australian Health Review*, 23 (4): 43-59

Britt HC, Valenti L, Miller GC (2005), Determinants of consultation length in Australian general practice, *Medical Journal of Australia*, 183 (2): 68-71

Britt HC, Valenti L, Miller GC (2004), Time for care – length of general practice consultations in Australia, *Australian Family Physician*, 31 (9): 876-880

Charles J, Britt HC, Valenti L (2004), The evolution of the general practice workforce in Australia 1991-2003, *Medical Journal of Australia*, 181 (2): 85-90

Davidson JM, Lambert TW, Goldacre MJ. (1998), Career pathways and destinations 18 years on among doctors who qualified in the United Kingdom in 1977: postal questionnaire survey. *British Medical Journal*, 317: 1425-1428

Department of Health and Aged Care (Australia) (2001), Population Ageing And The Economy, Research prepared by Access Economics, Canberra

Duckett S (2005), Health workforce design for the 21<sup>st</sup> century, *Australian Health Review*, 29 (2): 201-210

Goldacre MJ, Lambert TW. (2000), Stability and change in career choices of junior doctors: postal questionnaire surveys of the United Kingdom qualifiers of 1993. *Medical Education*, 34: 700-707

Goldacre MJ, Turner G, Lambert TW. (2004), Variation by medical school in career choices of UK graduates of 1999 and 2000. *Medical Education*, 38: 249-258

Harris MG, Gavel PH, Young JR (2005), Factors influencing the choice of specialty of Australian medical graduates, *Medical Journal of Australia*, 183 (6): 295-300

Lambert TW, Goldacre MJ, Parkhouse J, Edwards C. (1996), Career destinations in 1994 of United Kingdom medical graduates of 1983: results of questionnaire survey. *British Medical Journal*, 312: 893-897

Lawson KA, Armstrong RM, Van Der Weyden MB (1998), A sea change in Australian medical education. *Medical Journal of Australia*, 169: 653-656

Medical Training Review Panel (2004), Medical Training Review Panel, 8th report, Canberra: Australian Department of Health and Ageing

Prideaux D, Saunders N, Scholfield K, et al. (2001), Country report: Australia, *Medical Education*, 35: 495-504

Productivity Commission (2005), Australia's Health Workforce – Productivity Commission Position Paper, Canberra

Walsh MK (2002), The future of hospitals, *Australian Health Review*, 25 (5): 32-44