Australian Medical Workforce Advisory Committee
Australian Institute of Health and Welfare

Medical Workforce Supply and Demand in Australia: A Discussion Paper

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Foreword

In the three years since the first *Australian Medical Workforce Benchmarks* report was finalised, substantial changes have occurred in the Australian health sector which impact on the medical workforce. The Commonwealth Government has taken a number of decisions impacting directly on the size and structure of the medical workforce. Coordinated care trials are suggesting new models for health care delivery. Graduate entry medical courses have been established in three universities. Recently *General Practice: Changing The Future Through Partnerships*, the report of the General Practice Strategy Review Group, and *General Practice Education: The Way Forward*, the Review of General Practice Education and Training, were released and the Government has accepted nearly all of the recommendations of these reviews.

It is timely therefore to review the benchmark work. To do this, a broad ranging discussion paper has been prepared by a working group of the Australian Workforce Advisory Committee (AMWAC) and reviewed by AMWAC members. It does not put forward firm views but aims to stimulate an informal discussion on the need for medical workforce planning and possible approaches to estimation of future workforce needs.

Because of the detailed work that has now been completed, or is underway, on various segments of the medical workforce, AMWAC's current view is to base future estimates on an aggregate of estimates for the various workforce segments, as well as to consider an overarching approach as was adopted in the previous benchmarking exercise. The workforce requirements for the key general practitioner segment have not yet been examined by AMWAC, but this will now be commenced in the light of the recent changes and policy decisions.

Comments on the discussion paper and suggestions will be welcome, and should be addressed to the AMWAC Secretariat at Level 10, 73 Miller St, North Sydney NSW 2060.

Richard Madden
Chair
AMWAC Benchmark Working Group

John Horvath
Chair
AMWAC

Abbreviations

ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
AHMAC	Australian Health Ministers Advisory Council
AHMC	Australian Health Ministers Conference
AIHW	Australian Institute of Health and Welfare
AMA	Australian Medical Association
AMWAC	Australian Medical Workforce Advisory Committee
BMJ	British Medical Journal
CME	Continuing medical education
DHFS	Department of Health and Family Services
DPR	Doctor to patient ratio
FMRU	Family Medicine Research Unit
FTE	Full-time-equivalent
GDP	Gross domestic product
GP	General practitioner
HIC	Health Insurance Commission
HMO	Health maintenance organisation
JAMA	Journal of the American Medical Association
MBS	Medical Benefits Schedule
MDC	Major diagnosis category
MJA	Medical Journal of Australia
NCEPH	National Centre for Epidemiology and Population Health
NHS	National Health Service, United Kingdom
NSW	New South Wales
OECD	Organisation for Economic Co-operation and Development
OMP	Other medical practitioner
OTD	Overseas-trained doctor
RACGP	Royal Australian College of General Practitioners
RMO	Resident Medical Officer
RRMA	Rural Remote and Metropolitan Areas Classification
SEIFA	Socioeconomic Indicators for Areas, Australian Bureau of Statistics
SID	Supplier-induced demand
TRD	Temporary-resident doctor
UK	United Kingdom
USA	United States of America
VRGP	Vocationally registered general practitioner

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Terms of reference of AMWAC and the benchmark working group

The Australian Health Ministers' Advisory Council (AHMAC) established the Australian Medical Workforce Advisory Committee (AMWAC) to advise on medical workforce matters, including workforce supply, distribution and future requirements.

AMWAC held its first meeting in April 1995.

AMWAC Terms of Reference

1. To provide advice to AHMAC on a range of medical workforce matters, including:
   - the structure, balance and geographic distribution of the medical workforce in Australia;
   - the present and required education and training needs as suggested by population health status and practice developments;
   - medical workforce supply and demand;
   - medical workforce financing; and
   - models for describing and predicting future medical workforce requirements.
2. To develop tools for describing and managing medical workforce supply and demand which can be used by employing and workforce controlling bodies including Governments, Learned Colleges and Tertiary Institutions.
3. To oversee the establishment and development of data collections concerned with the medical workforce and analyse and report on those data to assist workforce planning.

Benchmark Working Group Terms of Reference

In 1997 AMWAC established a benchmark working group to update the 1995 Australian medical workforce benchmarks study.

The terms of reference are:

1. Review and critically assess relevant world literature since the 1995 study.
2. Identify the major measurable factors that determine need and demand for medical workforce in Australia and those that determine the contribution of individual doctors to meeting this need and demand. In particular, identify policy and administrative changes developed since 1995 which will affect need and demand for medical workforce in Australia.
3. Propose one or more options for determining an appropriate benchmark for supply of general practitioners, hospital non-specialists and specialist medical practitioners in Australia.
4. Recommend supply targets for the years 1998, 2000, 2005, 2010, 2015 and 2020, based on these benchmarks, making reasonable assumptions about trends in the factors which influence the benchmarks.

Membership of AMWAC

Independent Chairman

Professor John Horvath, Physician, Sydney

Members

Mr Eric Brookbanks, Assistant Secretary, Business and Temporary Entry Branch, Commonwealth Department of Immigration and Multicultural Affairs

Ms Meredith Carter, Director, Health Issues Centre

Dr William Coote, Secretary General, Australian Medical Association

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Membership of the AMWAC benchmark working group

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Comments were contributed by AMWAC working group members, and by Dr Peter Joseph, Dr Ron Tomlins and Dr Michael Bollen of the Royal Australian College of General Practitioners; Dr Bill Coote, Ms Prue Power, and Mr Gabe Herr of the Australian Medical Association; Mr Roger Kilham of Access Economics; Dr Richard Scotton of the Centre for Health Program Evaluation; Associate Professor Jane Hall, Professor John Horvath and Mr Paul Gavel of AMWAC; and Mr Allan Keith, Dr Rob Pegram, Mr Patrick Colmer and Mr Gordon Calcino of the Department of Health and Family Services.

Executive summary

1. The Australian medical workforce more than doubled between 1976 and 1996, from 21,150 to 44,000 practising clinicians, compared with population growth of 30%. Despite such a rapid increase in the workforce in just 20 years, significant shortages have remained in important segments of the workforce. AMWAC has identified reduction of maldistribution as a key medical workforce issue.
2. Growth in patient demand for medical services has also been much faster than population growth. Factors contributing to this have included ageing of the population, lower up-front prices under Medicare, research and technology increasing diagnosis and treatment methods, increased access to services, rising real household incomes and increased consumer education and awareness.
3. Evidence of the strong growth in demand can be seen in a 47.1% increase in hospital patients treated from 1985–86 to 1995–96 and rising average numbers of Medicare services per person.
4. Labour market forces have not operated to produce evenly distributed matching of strong workforce growth with patient needs. In Australia's health system, an over-supplied medical workforce in a given geographic area does not result in unemployed doctors; Medicare data indicate that in these areas patient use of medical services has expanded, maintaining employment and medical incomes. In under-supplied areas, financial and other incentives have had limited success in attracting doctors. Furthermore the economic incentives of medical practice operate in a complex broader environment with strong influences on the decisions of individual doctors about where to practise. These include the personal influences of family, social and professional ties, commitments and ambitions; geographic location of upbringing; and lifestyle preferences. In the health system, regional and local health service management often includes administrative and structural impediments to improvements in the distribution of the medical workforce.
5. Workforce shortages have undesirable outcomes including poor access, unmet need, potentially poorer health outcomes for patients, overworked doctors and expensive strategy responses to the shortages by government.
6. Medical workforce supply well in excess of need has undesirable outcomes including large unnecessary training costs, the costs of servicing above levels where it is likely that improvements in health status are effected, poorer health outcomes in some fields of over-servicing, and reduction in quality of care to the consumer if consultation time is reduced too much or if all medical problems cannot be considered in the one consultation.
7. From 1976 to 1996, real annual gross domestic product (GDP) per person increased by 40.4%, creating growth in government and private capacity to fund additional health services expenditure, including medical services expenditure. However, from 1976 to 1996, real growth in health expenditure per person and medical expenditure per person was 56.3% and 81.5% respectively, faster than GDP growth per person. Government decisions have been made on medical supply which will have the effect of constraining growth in medical and health expenditure.
8. Growth in medical services expenditure has been higher than growth in health expenditure. Reasons for this include a shift in care from institutional care to community care, increased medical knowledge and workforce sub-specialisation, the rate of growth in the number of medical practitioners and consumer and supplier-induced demand.

9. Growth in demand has exceeded the willingness of governments to pay, and led to attempts to constrain growth in health expenditure. These have included measures to reduce the level of growth of the medical workforce in Australia.
10. While illness and injury are the main factors contributing to patient demand for medical services, there are many other influences on levels of illness and injury and demand for these services in a particular geographic area. These include the socioeconomic and demographic characteristics of the population and environment characteristics of the locality.
11. Historically, the major improvements in health outcomes in populations around the world have been achieved by advances in public health infrastructure, lifestyle changes, increasing community wealth and socioeconomic status, rising levels of education, new drugs, developments in medical interventions and improved access to higher quality medical services. Because there are many influences on population health outcomes in addition to the contribution of doctors, there is a lack of research studies to demonstrate the gains, if any, of increasing the medical workforce in a given geographic area. However, health outcome measures include quality of life as well as morbidity and mortality, and it can be hypothesised that increasing medical workforce supply in circumstances of unmet need and excessive waiting times will improve health outcomes. It has been suggested in the literature that increasing supply to the point where significant over-servicing occurs, or where there are insufficient patients for doctors to maintain skills in certain specialist fields, will result in poorer health outcomes.
12. The international literature indicates that medical workforce maldistribution is a common problem around the world. Canada is similar to Australia in health system, high concentrations of doctors in metropolitan areas and shortages in rural areas. The United States and United Kingdom have shortages of primary care practitioners, and the United States suffers from an over-supply of specialists. Several European countries have over-supply of doctors to the extent of significant practitioner unemployment.
13. The international literature provides some useful additional tools for Australia to consider for measuring surplus supply and shortages—use of lean but adequate supply benchmarks, use of premature mortality as an indicator of need, and use of sustainable practice measures.
14. Possible indicators of a medical workforce shortage include:
doctor provision well below the national norm; prices significantly above the average; under-servicing and unmet need; higher waiting times; over worked practitioners; high levels of dissatisfaction with the stresses of overwork and inability to meet population need; substitution by alternative providers; and employment of temporary-resident doctors to fill unmet need.
15. Possible indicators of medical workforce supply in excess of need include:
doctor provision well above the national norm; growth of the workforce well in excess of population growth from a starting point of adequate supply; prices significantly below the average, or high adherence to a floor price; declining average practitioner incomes; supplier-induced demand and over-servicing; under-employment; certain forms of market restructuring; and growth in marketing effort.
16. Possible indicators of a medical workforce in balance include:
a 'lean' but adequate workforce with waiting times generally accepted by the community as reasonable; pricing of services neither at the floor price nor at a level which discourages patient attendances; long hours or short hours are worked by choice and not necessity; workforce growth in line with need indicators.

17. Surpluses can be masked by elasticity of medical practice. This elasticity involves expansion of the patient workload to compensate for declining numbers of patients per doctor in an over-supplied area.
18. Geographically, the highest concentrations of doctors in Australia are in inner suburbs of capital cities. Market forces (economic, lifestyle and family) act to attract new entrants to the workforce to these areas and act as a disincentive to new entrants and existing practitioners to move to under-supplied rural areas.
19. Historical reasons for excess supply of general practitioners in Australia include too many medical graduates, too many medical immigrants, a slow-down in population growth since the 1970s, productivity growth through new technology, and changes in care patterns with shorter average patient stays in hospital and rising use of day surgery.
20. There are many incentive schemes in place by the three tiers of government to attract and retain doctors to work in rural areas. These have had limited success in countering the market forces attracting and retaining doctors in the capital cities.
21. A large range of additional data is now available to support another analysis of Australian medical workforce benchmarks. These are data which were not available in 1995 for the analysis published in *Australian Medical Workforce Benchmarks* (1996). However, there are still gaps in data and some of these will be filled during the next few years.
22. The AMWAC working party on medical workforce benchmarks has found that the methodology in *Australian Medical Workforce Benchmarks* (1996) was fundamentally sound, but can be strengthened in several areas. These include:
    - taking into account government medical workforce policy changes which have been implemented or accepted since 1995;
    - improved modelling of the effect of rising participation in the workforce by female doctors;
    - disaggregating workforce projections into segments of the workforce;
    - examining under-representation of Aboriginal and Torres Strait Islanders in the medical workforce and under-representation of medical services delivered to Aboriginal and Torres Strait Islander people in Medicare data;
    - use of fully and partially completed AMWAC studies on medical specialties to assess benchmarks for medical specialists;
    - modelling the effect of shorter working hours on the numbers of hospital non-specialists required.

    In particular, AMWAC considers that, before setting new benchmarks, it is important to review the general practice workforce, using a similar approach to the methodology in each AMWAC review of the medical specialty workforces.
23. Feedback on this issues paper is being sought from interested readers as input to undertaking future Australian medical workforce benchmarks studies.