

Australian Medical Workforce Advisory Committee
Australian Institute of Health and Welfare

CHARACTERISTICS OF STUDENTS ENTERING AUSTRALIAN MEDICAL SCHOOLS 1989 to 1997



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Australian Institute of Health and Welfare

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AUSTRALIAN MEDICAL SCHOOLS
1989 to 1997**

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ABBREVIATIONS

ABS	Australian Bureau of Statistics
AHMAC	Australian Health Ministers' Advisory Council
AIHW	Australian Institute of Health and Welfare
AMWAC	Australian Medical Workforce Advisory Committee
Aust	Australia
DEETYA	Commonwealth Department of Employment, Education and Training and Youth Affairs
DHFS	Commonwealth Department of Health and Family Services
ESL	English as a second language
FTE	Full-time-equivalent
FUSA	The Flinders University of South Australia
GAMSAT	Graduate Australian Medical School Admissions Test
GMC	Graduate Medical Course
GMP	Graduate Medical Program
GP	General Practitioner
GPA	Grade Point Average
GSM	Graduate School of Medicine
HSC	Higher School Certificate
MBBS	Bachelor of Medicine, Bachelor of Surgery
MCAT	North American Medical College Admission Test
Monash	Monash University
MOSA	Monash Orientation Scheme for Aborigines
MTRP	Medical Training Review Panel
NSW	New South Wales
OTDs	Overseas Trained Doctors
Pop	Population
Qld	Queensland
RDRN	Rural Doctors Resource Network
RMO	Registered Medical Officer

RRMAC	Rural, Remote, Metropolitan Areas classification
RUSC	Rural Undergraduate Steering Committee
SA	South Australia
SACE	South Australian Certificate of Education
SES	Socio-economic status
TAP	Targeted Access Program
Tas	Tasmania
TER	Tertiary Entrance Rank
TPS	Tertiary Performance Score
TRD	Temporary Resident Doctor
UAC	University Admission Centre
UAd	University of Adelaide
UK	United Kingdom
UMAT	Undergraduate Medical Admissions Test
UMelb	University of Melbourne
UNC	University of Newcastle
Uni	University
UNSW	The University of New South Wales
UQld	The University of Queensland
US	United States of America
USyd	The University of Sydney
UTas	The University of Tasmania
UWA	The University of Western Australia
Vic	Victoria
WA	Western Australia

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MEMBERSHIP OF AMWAC

AMWAC was formed in early 1995 to assist with the development of a more strategic focus on medical workforce planning in Australia. AMWAC is an advisory body which reports to the Australian Health Ministers' Advisory Committee. The prime focus of AMWACs work is Australian medical workforce research and data analysis, although AMWAC also aims to provide workable policy solutions where appropriate.

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Dr Robert Stable	Director General, Queensland Department of Health
Dr David Theile	Surgeon, Brisbane (former President, Royal Australasian College of Surgeons)

PREFACE

This Report examines the impact of doctor characteristics on workforce structure, describes changes in the characteristics of medical students likely to impact on the structure of the future workforce, reports university medical school admission policies and strategies influencing the characteristics of medical students and discusses the likely impact of trends in medical student characteristics on the future Australian medical workforce.

The focus of the paper is medical school intake of DEETYA funded initial degree students. These students are Australian citizens and permanent residents of Australia. The Report does not examine the characteristics of full-fee paying international medical students nor does it address the characteristics of medical students undertaking postgraduate studies.

The Report draws on the literature, reports the findings of an AMWAC survey of Medical Schools and an analysis of data conducted by the Labour Force Unit of the Australian Institute of Health and Welfare (AIHW) of information provided by the Commonwealth Department of Employment, Education and Training and Youth Affairs (DEETYA).

The project was overseen by Professor John Hamilton, AMWAC member and Dean, Faculty of Medicine and Health Sciences, University of Newcastle (Until January 1998).

The Report was presented in draft form to the Deans of Medical Schools, August/September/October 1997 for their consideration and comment.

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- Deans and staff of the ten Australian University Medical Schools;
- Staff of the General Practice Branch, Commonwealth Department of Health and Family Services (DHFS);
- Staff of the Faculty of Medicine and Health Sciences, University of Newcastle;
- Gail Garvey, Aboriginal Liaison Officer, University of Newcastle;
- Paul Gavel, Executive Officer, AMWAC;
- John Harding, Head, Labour Force Unit, AIHW.

EXECUTIVE SUMMARY

This report examines the characteristics of students entering Australian medical schools and explores potential community health consequences of changes in student characteristics. The focus of the paper is medical school intake of Department of Employment, Education and Training and Youth Affairs (DEETYA) funded initial degree students. These students are Australian citizens and permanent residents of Australia. The Report does not examine the characteristics of full-fee paying international medical students nor does it address the characteristics of medical students undertaking postgraduate studies.

Impact of doctor characteristics on workforce structure

- Doctor characteristics influence workforce structure, hence, the characteristics of medical students require monitoring and adjusting in line with changing population health needs. Among the most influential characteristics are age and gender. Less well understood are the influence of home background (rural, country of birth, Aboriginal and Torres Strait Islander, socio-economic status) and personal preferences on choice of specialty, location of practice and workforce participation.

Characteristics of the Australian medical workforce

- The current workforce is characterised by an oversupply of general practitioners in urban areas, a relative shortage of specialists and an undersupply of doctors in many rural and remote areas.
- Between 1984-85 and 1995-96 the number of Medicare providers increased by 48% from 27,327 (174 per 100,000 population) to 40,428 (224 per 100,000 population).
- The medical workforce is ageing, with 42.5% of the workforce aged 45 years and over in 1995, compared with 35% in 1981.
- In 1995, 27% of employed practitioners were women compared with 19% in 1981.
- In 1995, 16% of doctors were practising in a rural area (29% of the population resided in a rural area); and 0.05% of doctors were Aboriginal and Torres Strait Islanders (2% of the Australian population).
- In 1994, 61% of the medical workforce were born in Australia (75% of the population), 14% of doctors were born in the United Kingdom/Ireland (6% of the population), and 11.3% of doctors were born in an Asian country (4% of the population).

Medical student characteristics: 1989 to 1997

- Between 1989 and 1995, 9,441 students completed a medical course.
- Since 1989, there has been an 11.7% decrease in the number of students enrolling in DEETYA funded initial degree medical courses, with most of this decrease associated with three universities having reduced intakes in 1994, 1995 and 1996 as they moved from a six

year undergraduate entry program to a four year graduate entry program. In order to avoid any doubling up in medical student output, these universities took very few entries for two successive years. However, once all universities have a full intake of students it is expected that there will be little change in overall medical student numbers.

- States/Territories with medical student outputs in 1995 below their regional population share were Queensland, Western Australia and New South Wales/Australian Capital Territory while South Australia/Northern Territory and Tasmania had outputs above their regional population share. However, the appraisal of ratios of student outputs by State/Territory population would appear to be of diminishing relevance as a guide to determining the appropriateness of medical school quotas since the legal ruling that there be no State/Territory boundaries restricting professional opportunity, including access to training.
- The age at which students commence medical studies is increasing with almost 20% of commencing students in 1997 aged 25 years and over compared with 6.9% in 1989 and 6.6% in 1994. This trend is associated with changes in admission policies, most notably the move to graduate entry programs. This trend will influence the age at which completing students commence vocational training and therefore the lifetime contribution they make to the workforce.
- In 1997, 46% of commencing medical students were female and 54% were male. The trend is towards a gender mix among medical students close to that of the Australian community. However, there is wide variation among medical schools in the representation of women and some of this variation appears to be influenced by the ethnic mix of the student population as defined by country of birth.
- Aboriginal and Torres Strait Islander people represented 2.0% of the Australian population at the 1996 population census. Compared with this proportion, they are under-represented among medical students, although the percentage of Aboriginal and Torres Strait Islander medical students is rising. They represented 0.4% of commencing medical students in 1989 and 0.7% in 1997.
- Some progress has been made in increasing the representation of rural background students, with 10.7% rural in 1989 and 17.3% in 1997.
- There is an increasing diversity in the medical student body with regard to culture, country of birth and life experience. This is both a challenge and an opportunity to medical educators to provide an appropriate cultural and practical medical education which respects the diverse needs of students and prepares graduates to serve an increasingly diverse Australian population.

University policies and strategies: 1997 and beyond

- In the main, five criteria are employed to assess applicants to medical schools:
 - performance in Higher School Certificate (or equivalent such as the South Australian Certificate of Education);

- performance in prior university studies;
 - for graduate entry students only, performance in the Graduate Australian Medical Schools Admissions Test (GAMSAT);
 - ability as indicated by performance in psychometric tests such as the Undergraduate Medical Admissions Test (UMAT);
 - performance in structured interview.
- At both graduate and undergraduate entry levels, the aim of the evolving admissions procedures is to select students who are academically able and who possess other skills and personal qualities appropriate to the study and practice of medicine.
 - Changes are expected in both graduate entry and undergraduate entry medical schools. These changes are likely to:
 - alter the mix of students studying medicine to a group more representative of the wider community;
 - increase the number of rural background students entering medical courses; and
 - to a lesser extent, increase the number of Aboriginal and Torres Strait Islander students entering a medical course.
 - There is increasing collaboration among medical schools in the selection of medical students.
 - There is growing awareness among medical schools of the need to implement and foster strategies which lead to the graduation of more Aboriginal and Torres Strait Islander doctors and graduates who want to work in rural areas.

Issues requiring further attention

- As the AIHW statistical profile concludes (see Appendix), in terms of meeting current and future workforce requirements the data suggests:
 - there are imbalances in the numbers of medical students among the States when medical student distribution is compared to the medical workforce provision per 100,000 population and population distribution among the States and Territories. However, preliminary studies indicate an increase in the movement of commencing medical students between States. For example in 1996, three quarters of commencing medical students at the Flinders University of South Australia were from interstate and in 1997, one third of medical students enrolled at the University of Newcastle were from interstate;
 - the relative and absolute numbers of students training in Queensland and Western Australia will be inadequate to replace temporary resident overseas trained doctors (TRDs) employed in those States and other strategies may be needed after 1 January 2000 when TRDs will not be deemed as medical practitioners for Medicare purposes; and
 - there are considerable differences among universities in the proportions of rural and Aboriginal students.

- The impact on the workforce of changes in the age, gender and ethnic profile (as defined by country of birth) of medical students requires monitoring and further analysis. The introduction of graduate-entry medical degrees at three universities will increase the average age of completing students and, in turn, shorten their lifetime contribution to the workforce.
- The University of Newcastle is providing a powerful lead in the graduation of Aboriginal and Torres Strait Islander doctors. The recruitment, admission and support strategies used by the University are worthy of wider consideration.
- In view of the changes occurring within medical schools and the external environment, it is important that medical schools continue to work with the AMWAC in the establishment of a longitudinal data set to:
 - monitor the characteristics of the future workforce and the effects of any university policy changes on workforce participation and distribution;
 - identify factors in the learning experience which influence career choices;
 - monitor the effects of the movement of students between States on workforce distribution; and
 - evaluate the effectiveness of policy changes implemented by the various medical schools to address workforce issues.

1 INTRODUCTION

This paper examines the characteristics of students entering Australian medical schools and explores potential community health consequences of changes in student characteristics. The objective is to assist in informing governments of any long term implications of these changes for the structure of the Australian medical workforce.

The focus of the paper is medical school intake of DEETYA funded initial degree students. These students are Australian citizens and permanent residents of Australia. The Report does not examine the characteristics of full-fee paying international medical students nor does it address the characteristics of medical students undertaking postgraduate studies.

Issues of particular interest are student demographic characteristics (age, gender and student background, namely, rural/non rural, Indigenous/non-Indigenous, country of birth and socio-economic status) and the likely impact of university admission policies and procedures, including affirmative action strategies, on student recruitment.

Mature age admission policies and graduate medical courses are influencing the age at which students begin to study medicine, as well as the life experiences that they bring to the study and practice of medicine. Community expectations are also influencing the characteristics of medical students. For example, the community expects that women enjoy equity of opportunity in accessing medical courses and that doctors with appropriate expertise are available in areas where they are most needed. It is common knowledge that Australia's population is ageing, that Indigenous Australians experience poor health status and that rural communities lack doctors while urban areas are oversupplied.

Age and gender are known to have a substantial impact on doctor supply and distribution (AMWAC/AIHW, 1996b). Among the factors influenced by age and gender are average hours worked, level of part time work, age of retirement, location of practice, type of practice and type of problems managed. Hence, change in the age and gender of students entering medical schools requires consideration by workforce planners. Less is known about the effects of doctor country of origin on workforce participation and distribution of graduate doctors. Anecdotal evidence suggests that it may be important. Information about trends in the number of students entering medical courses from Aboriginal and rural backgrounds provides insight into the effectiveness of university affirmative action policies.

This paper does not provide a history of the evolution of medical education in Australia, nor the factors that have led to policy changes in the selection of medical students. Nor does it explore the influence of inputs beyond university entrance (such as university experience, hospital intern year, general practice training and specialty training) on the characteristics of medical trainees and the impact they ultimately have on the community. It is anticipated that some of these issues will be addressed in future AMWAC work.

The entering class for each medical school is determined both by the choice of those who apply and also by the selection process of the school. If there is any one recommendation that led to

a new direction for medical school selection it is that of the Karmel Committee, 1973, which stated:

"The case was repeatedly put to the Committee that there was a need in Australia for a different kind of medical graduate; one more versed in the ways of people as psychological and sociological beings and not simply as physically malfunctioning organisms. It was argued that a new school could be more innovatory than an existing one. The Committee agrees that both the present methods of selecting students for medical school and the nature of the medical course inhibit the production of doctors who have a holistic approach to humans as social beings".

The Karmel Report was important because it articulated the need for a review of medical student selection and curriculum and also because it was the basis of the decision to establish a new medical school, at Newcastle, as the means of introducing such new approaches. In the course of time other schools, taking note of local and international experience, have introduced changes in their own policies. The Australian Medical Council has added its support to innovation in medical school selection and evaluation of its impact and there is now across the country a much more diverse system of selection encompassing assessments of both academic and personal qualities of applicants.

Medical student characteristics

Medical student characteristics of interest are:

- age
- gender
- admission status (school leaver, mature age, graduate)
- home location (urban/rural)
- country of birth
- Indigenous/non-Indigenous
- socio-economic status

Definitions

Aboriginal and Torres Strait Islander medical student - a person enrolled as a medical student who self reported he/she was an Aboriginal and Torres Strait Islander.

Commencing medical student - a person enrolled at the reference data (March 31) and has enrolled for the first time in an accredited undergraduate or graduate entry degree in medicine since the last reference date.

Completing medical student - a person who completed all academic requirements for admission to an award marking the completion of undergraduate medical education from the university during the year ended 31 December.

State/Territory and region (rural urban) of origin - the DEETYA data show a student's State and region of origin (ie., capital city, other metropolitan centre, large rural centre, other rural area, remote) based on the postcode of home address reported at time of initial enrolment in the

course. There is some evidence that this may not be an entirely accurate measure of a student's State and region of origin. Students who do not enter higher education direct from school or transfer to medicine from another course may be expected to report a home address close to the institution of study. This will be particularly evident for students in graduate entry courses.

Socio-economic status - is based on the postcode of home address reported at time of initial enrolment in the course. As with State/Territory of origin, this may not be an accurate measure of a student's socio-economic status.

Undergraduate medical student- a person enrolled in a medical course classified as undergraduate entry or graduate entry bachelor.

A graduate entry bachelor course is at bachelor level with an entry requirement of a previous relevant bachelor degree. Three medical schools offer graduate entry bachelor courses; the Flinders University of South Australia, Sydney University and the University of Queensland.

Methodology

The approach has been to review the literature, analyse existing data sources, particularly the data held by DEETYA, with the assistance of the AIHW and to survey medical schools. The response rate to the survey of medical schools was 100%.

Structure of the Report

Chapter 2 examines the impact of doctor characteristics on the structure of the workforce and Chapter 3 describes trends in the characteristics of the Australian medical workforce. Chapters 4 and 5 use data from an AMWAC survey of medical schools and from DEETYA and the AIHW to explore trends in the characteristics of students entering Australian medical schools and to report current university admission policies and expected policy changes. The final Chapter offers a short discussion on the possible impact of changes in student characteristics on Australian medical workforce participation and distribution. More detailed work in this area will be presented in the review of Australian medical workforce benchmarks currently being undertaken by AMWAC and the AIHW.

The appendix provides a statistical profile of Australian resident undergraduate medical students using data provided by DEETYA. Review of this data by Medical School Deans revealed some discrepancies between data provided by universities to DEETYA and Medical School records. Where appropriate, changes have been made.

2 THE IMPACT OF DOCTOR CHARACTERISTICS ON MEDICAL WORKFORCE STRUCTURE

Among doctor characteristics known to influence the structure of a medical workforce are age, gender, home-background, socio-economic status and ethnicity as defined by country of birth.

Age

The AMWAC/AIHW (1996a) report *Australian Medical Workforce Benchmarks* found that age has a substantial influence on workforce participation. Table 1 shows that doctors over the age of 60 years, work, on average, less hours per week than younger doctors. Doctors working the longest hours are those aged under 25 years as hospital non specialists, with little difference in the average hours worked by males and females.

Table 1: Average hours worked per week by clinicians on the direct care of patients: job type, by age and sex, 1995

age and sex, 1995												
	Age (years)											
Job type	<25	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70 +	Total
Males												
Primary care practitioner	0.0	42.8	45.1	46.8	47.4	48.4	48.5	45.8	43.3	37.7	31.7	45.4
Hospital non-specialist	54.6	52.4	51.1	45.7	43.6	42.7	44.8	42.2	36.3	37.6	50.0	50.2
Specialist	0.0	80.0	43.0	45.9	47.4	47.8	45.6	44.7	40.6	32.6	24.5	44.2
Specialist-in-training	0.0	53.3	49.6	49.6	47.4	48.2	57.1	0.0	0.0	0.0	0.0	50.7
Total	54.2	50.9	47.1	46.4	47.2	48.0	46.8	45.1	41.6	35.5	28.8	45.7
Females												
Primary care practitioner	0.0	36.1	28.7	28.2	31.5	35.2	34.6	34.6	31.0	26.3	27.9	31.2
Hospital non-specialist	52.4	51.8	43.1	40.6	36.3	37.4	35.8	31.5	30.0	32.5	19.3	47.5
Specialist	0.0	50.0	32.3	33.4	36.5	36.4	38.3	37.3	30.0	23.5	14.8	35.0
Specialist-in-training	0.0	51.5	46.6	43.0	42.4	42.2	35.3	0.0	0.0	0.0	0.0	47.4
Total	52.5	47.4	34.6	31.1	33.3	35.8	36.1	35.7	30.7	25.6	24.0	36.1

Source: AIHW (1997) Medical Labour Force Survey, 1995.

Monk (1973) found that older medical graduates were more likely to enter general practice, suggesting that age has an influence on choice of specialty.

Gender

The AMWAC/AIHW (1996b) report on *Female Participation in the Australian Medical Workforce* observed that women participate in the workforce at a lower rate than men. This report concluded that on average, the female medical practitioner makes a significantly smaller lifetime hours worked contribution when compared with the average male medical practitioner. The average female hours worked contribution is estimated to be 68% of the average male contribution. For vocationally registered general practitioners (GPs), this proportion is estimated to be 63%, and for specialists is 75%. However, this latter figure varies among specialties (AMWAC/AIHW, 1996b).

The average hours worked by full time female clinicians is very similar to that of full time male clinicians, as are the average hours worked by male and female registered medical officers (RMOs) and interns, and male and female specialists in training. The difference that occurs between male and female clinicians in total hours worked is largely due to the number of female clinicians who prefer to work part time (ie., less than 40 hours per week) and to the fact that female doctors retire, on average, at least five years earlier than male doctors. In 1995, 53% of female vocationally registered primary care practitioners were working part time compared with 11% of males. Among other workforce subgroups, 31.4% of female specialists were working part time compared with 11.9% of males, 39% of female career medical officers were working part time (8.9% of males) and 5% of female interns and RMOs were working part time (3.1% of males) (AIHW, 1997).

There is evidence that male practitioners are choosing to work fewer hours than in the past. This is consistent with general social trends. For example, Conn (AIHW, 1995) observed that population census data from 1981, 1986 and 1991 indicate that average hours worked by males has fallen, with a small increase in the proportion of males working part time. Furthermore, Conn noted that "fall in average hours worked and earlier retirement need to be considered in supply modelling of medical workforce over the next 20 years", with attention to such possibilities as job sharing and permanent part time work.

Gender also appears to influence type of practice. For example, AMWAC/AIHW (1996b) found that 54.4% of female medical graduates were working as general practitioners compared with 41.9% of males, while 14.4% of all specialists were female. Surgery had the lowest representation of women (3%) and psychiatry and dermatology had the highest, with approximately one fifth of specialists being female. A higher proportion of young specialists were women, namely, 28.4% of all specialists aged 30 to 34 years and 21.2% of those aged 35 to 39 years. This change reflects the changing profile of graduating classes over the past decade.

Similarly, the recently completed first report of the Medical Training Review Panel found that in terms of vocational training, 42% of trainees are female, ranging from 62% of paediatric medicine trainees to 17.2% of surgery trainees. In addition to paediatric medicine, other specialist training programs which currently have a high level of female participation are general practice (56.6%), public health medicine (50.7%), obstetrics and gynaecology (48.9%), pathology (46%), psychiatry (44.6%) and dermatology (38%) (MTRP, 1997).

The AMWAC/AIHW report (1996b) also found that 17% of female GPs were located in rural or remote areas compared with 22.5% of male GPs. Similarly, 7% of female specialists were located in rural and remote areas compared with 12.7% of male specialists.

Britt et al., (1996) found that gender influences the type of problems managed by doctors. For example, 70% of encounters with female general practitioners were with female patients compared with 55.8% for male GPs. Furthermore, female practitioners reported more problems on average per encounter and consultations with them were almost twice as frequently billed as long consultations (AMWAC/AIHW, 1996b). These researchers concluded that male and female GPs manage very different types of morbidity, and that, in the future, female GPs and male GPs may become semi-specialised in respect of the sub-populations each serve.

Home background

Australian and overseas research has suggested that growing up in a rural area has an influence on doctors choosing to practise in a rural area (Collinson, Reid and Colwill, 1976; Carter, 1987; McDonald, 1990; Rourke, 1993; Rabinowitz, 1993; Rolfe, Pearson, et al., 1995). Recently, the Rural Doctors Resource Network of New South Wales found that 35.5% of participants in their survey of rural New South Wales specialists grew up in rural areas (RDRN, 1997). Similarly, AMWAC found that 32% of rural general surgeons grew up in the country (AMWAC, 1997). This issue requires further research in Australia.

In the United States (US), researchers have found a strong relationship between medical school orientation and location and propensity for graduates to work in a rural area (Rosenblatt, Whitcomb et al., 1992). Notably, universities located in rural states, publicly funded to produce doctors to work locally and with a strong orientation towards family medicine, succeeded in producing more graduates who were working in rural areas ten years post-graduation. Conversely, universities with large research subsidies from the National Institute of Health and with an orientation toward hospital-based specialist practice produced significantly fewer graduates who chose to work in rural areas. Similarly in Norway, Magnus and Tollan (1993) found a strong association between student background, location of training and propensity to work in a rural area.

In Australia, Rolfe, Pearson et al. (1995) concluded that location of medical training (in a rural area) and medical school strategies (such as emphasis on rural medicine) had a positive influence on location decisions of graduates. Consistent with these findings, the New South Wales Central West Division of General Practice (1997) proposes the preferential selection into specialist training positions for students who do rural undergraduate terms, internships and RMO years. The influence of university location and curriculum on practice location requires further research in Australia.

Socio-economic status

At the University of Auckland, Collins and White (1993) found that level of affluence influenced the academic course which students entered, with 69% of medical students being from high socio-economic backgrounds, compared with 55% of non-medical students and 18.5% of the New Zealand male workforce. Similar findings have been reported among students in the United

Kingdom (UK) and North America (McManus and Richards, 1984; Gough and Ducker, 1977). There is some evidence that socio-economic background influences choice of specialty with graduates from less affluent backgrounds more likely to enter general practice (Gough and Ducker, 1977; Ernest and Yett, 1984).

In the US, Colquitt, Zeh et al., (1996) found that debt accrued during medical training influences choice of specialty and that student decision-making varies significantly by level of expected income, type of loan and region of anticipated practice.

Country of birth

Of Australian undergraduate medical students with permanent resident status, 40% are born overseas (Dobson, 1997). The AMWAC/AIHW (1996b) *Female Participation in the Medical Workforce* working party concluded that further research was required to determine the effects of country of origin or culture on career choice.

Personal preferences

In the US, Martini et al., (1994) found that the most influential factors under the control of medical schools were the criteria used to admit students, the design of the curriculum and faculty role models. Personal social values were the characteristics of the individual student most influential in graduates' career choice. Medical schools which gave preference to applicants who had decided to be generalists before entering medical school produced significantly greater numbers of generalists.

3 CHARACTERISTICS OF THE AUSTRALIAN MEDICAL WORKFORCE

The following text briefly outlines the profile of Australia's medical workforce by age, gender, home background (ie., rural/non-rural), Aboriginal and Torres Strait Islander/non-Aboriginal, and country of birth. It should be noted that in order to make the comparisons it has been necessary to compare different data collections. Furthermore, comparisons are only possible on broad indicators as it is only in recent years that detailed medical workforce data have been collected.

Number of medical practitioners

Between 1984-85 and 1995-96 the number of medical practitioners providing Medicare services increased by 47.7% from 27,327 to 40,428 (AIHW 1997). Per 100,000 population there were 174 Medicare providers in 1984-85 and 224 in 1995-96. Groups in which below average increases occurred were pathologists, obstetricians/gynaecologists, dermatologists and primary care practitioners (Table 2).

Table 2: Medicare providers, by peer group and specialty, 1984-85 to 1995-96

Peer group/specialty ^a	1984-85	1989-90	1991-92	1993-94	1995-96	% change 1984-85 to 1995-96
Primary care practitioner	16,951	21,647	22,746	23,587	24,376	43.8
Anaesthetist	1,264	1,618	1,764	1,892	2,022	60.0
Dermatologist	204	237	242	260	275	34.8
Diagnostic imagist	853	1,040	1,159	1,247	1,436	68.3
Obstetrician/gynaecologist ^b	833	899	923	930	968	16.2
Pathologist	545	644	670	616	586	7.5
Physician	2,233	2,854	3,143	3,477	3,868	73.2
Psychiatrist	1,028	1,331	1,437	1,555	1,615	57.1
Radiation oncologist	57	102	106	113	130	128.1
Surgeon	3,188	3,884	4,140	4,418	4,714	47.9
Other medical	216	246	271	356	438	102.7
Total	27,372	34,502	36,601	38,451	40,428	47.7

a - the figures for each specialty group include specialists and non-specialists whose Medicare activity is predominantly provision of specialist services

b - figures for this specialty include in-vitro fertilisation specialists

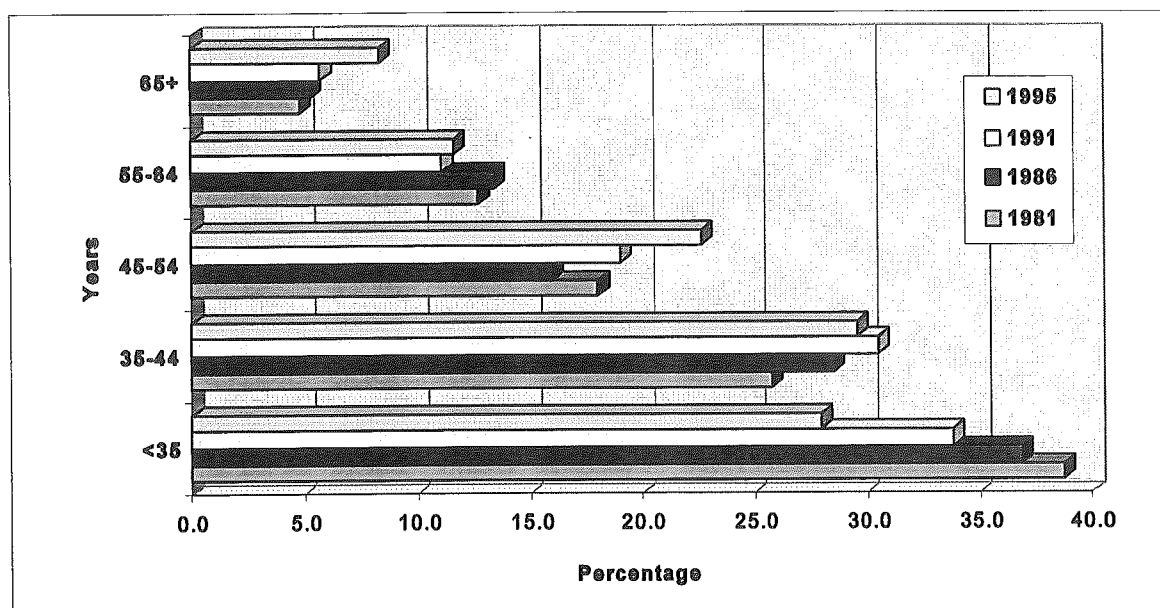
Source: Medical Labour Force, 1995, AIHW (1997)

Age

Figure 1 indicates that between 1981 and 1995 the medical workforce in Australia has aged. In 1981, 35.5% of the clinical workforce was aged over 45 years while in 1995, 42.5% was in this

age group and 20% were aged 55 years or over (Wong and King 1994; AMWAC/AIHW, 1996a; AIHW, 1997).

Figure 1: Trends in the age profile of the Australian medical workforce, 1981 to 1995



Sources: Wong, S. and King, B. (1994), Medical Workforce Australia, 1991 Census, AIHW and Medical Labour Force, 1995, AIHW (1997)

Gender

In 1981, 19% of the workforce was female. By 1986, female doctors had increased to 22.7% and in 1995 to 27%. This trend is expected to increase due to the increasing number of female medical students and the comparatively large number of male clinicians aged 55 years and over (24% in 1995 compared with 8.0% of female clinicians) (AIHW, 1997).

There is substantial variation in the representation of female doctors according to type of practice (Table 3). For example, in 1995, 31.6% of primary care doctors were women, while 14% of specialists and 31.6% of specialists-in-training were women (AIHW, 1997).

Table 3: Trends in the gender profile of the Australian medical workforce, 1981 to 1995

Type of practitioner	1981 ^a		1986 ^a		1995 ^b	
	Male	Female	Male	Female	Male	Female
Primary care practitioner					14,379	6,658
Hospital non specialist					3,067	2,221
Specialist					13,175	2,143
Specialists in training					3,056	1,412
Total	21,976	5,141	25,335	7,448	33,678	12,433
%	81.0	19.0	77.3	22.7	73.0	27.0

a - ABS Census data

b - Medical Labour Force, 1995, AIHW (1997)

Between 1981 and 1991, the percentage of females with medical qualifications under 30 years of age who were not practising declined from 29.5% to 16.8%, a percentage similar to that of males. Female non-participation in the workforce was at its highest in the 30 to 34 year age group at around 25-28% declining to 16-18% in the 45 to 49 year age group (AMWAC/AIHW, 1996b).

Home background: rural

In Australia, the need exists for recent graduates in medicine to locate and practise in rural areas, including remote Aboriginal and Torres Strait Islander communities. Approximately, 29% of Australians live in rural and remote areas (DHFS, 1997).

In 1995, 16.3% of employed medical practitioners practised in a rural area. Of these doctors, 94.6% worked in a rural or remote area in their main job and 5.4% (428) worked in a metropolitan area in their main job and a rural or remote area in their second or third job. Per 100,000 people there were 87.5 primary care practitioners in rural and remote areas, compared with 128.6 per 100,000 in metropolitan areas (AIHW, 1997).

In 1995, 22% of primary care practitioners and 14% of specialists were located in a rural or remote area (AIHW 1997). There is a comparatively high annual turnover (30%) of doctors in remote areas and a heavy reliance on temporary resident doctors in rural and remote areas of Queensland and Western Australia (AMWAC, 1996).

Home background: Aboriginal and Torres Strait Islander

Aboriginal and Torres Strait Islander people constitute 2% of the total Australian population, namely 352,970 people in 1996 (ABS, 1997). In 1996, there were 26 Aboriginal and Torres Strait Islander medical graduates, representing 0.05% of the medical workforce based on practitioners employed in medicine (Garvey, 1997; ABS/AIHW, 1997; AIHW, 1997).

The representation of Aboriginal and Torres Strait Islander people varies substantially by State/Territory, with over half of Indigenous people in two States; New South Wales (28.8%) and Queensland (27%). A further 14.4% reside in Western Australia (50,793) and 13.1% in the Northern Territory (46,277). In each of these States/Territories Aboriginal and Torres Strait Islander people represent 3% or less of the total population, except in the Northern Territory where they constitute 23.7% of the population (ABS, 1997).

There were 512 medical practitioners who worked in an Aboriginal health service in 1995, with 148 clinicians per 100,000 persons of the Aboriginal and Torres Strait Islander population. Of these medical practitioners, 57.5% were employed in a metropolitan area (AIHW, 1997).

Country of birth

In 1991, 39% of employed persons in Australia with a highest qualification in medicine were born overseas. Of these medically qualified people who were born in the UK, Ireland and Europe, 90% were employed as a medical practitioner, while 73% of medically qualified people from North America and 78% of doctors from Asian countries were so employed (Wong and King, 1994).

Table 4 indicates that in 1991, the largest group of overseas born medical practitioners was from Asia and the next largest from the UK and Ireland. The 1994 data indicate an increase in the number of doctors from the UK/Ireland (from 11% in 1991, to 14% in 1994), a decrease in the number of doctors from other countries (eg., North America), while there has been little change in the number of Asian-born doctors. The increase in the number of doctors in the workforce from the UK and Ireland was caused by a rapid increase during the 1990s in the employment of TRDs, most of whom were recruited from the UK and Ireland. In 1994-95, 882 TRDs from the UK and Ireland entered Australia for employment, out of the total TRD intake of 1,171 (AIHW, 1997).

Table 4: Australian medical practitioners, by country of birth, 1991 and 1994

Country of birth	1991 census		1994 AIHW survey	
		%		%
Australia	24,340	58.2	26,312	61.1
New Zealand	696	1.7	1,324	3.1
UK/Ireland	4,657	11.1	6,080	14.1
Africa	1,211	2.9	1,046	2.4
Asia	4,969	11.9	4,855	11.3
Other countries	5,948	14.2	3,394	7.9
Total	41,821	100.0	43,010	100.0

Sources: Wong, S. and King, B. (1994) Medical Workforce Australia, 1991 Census, AIHW, Canberra and Medical Labour Force, 1994, AIHW (1996)

Table 5 examines region of main job by country of birth of Australian medical practitioners and shows a higher proportion (21.7%) of doctors from the UK and Ireland located in a rural area. This may reflect TRD recruitment practices during the early 1990s. Only 13.9% of Australian born doctors and 12.5% of Asian born doctors were located in a rural area (AIHW, 1996). Further evidence involving longitudinal observations is required before conclusions can be drawn about medical practitioner country of birth and location of practice.

Table 5: Australian medical practitioners country of birth, by medical practitioner region of main job, 1994

Country of birth	Capital city	Other major urban	Major rural	Rural other	Remote major	Remote other	Total
<i>Per Cent</i>							
Australia	75.8	10.3	8.7	4.2	0.5	0.4	26,313
New Zealand	69.0	17.8	9.4	2.6	0.4	0.7	1,324
UK/Ireland	63.1	15.6	14.6	5.3	0.4	0.9	6,080
South Africa	73.7	9.6	13.2	3.2	0.4	0.0	1,045
Asia	82.4	5.1	8.5	3.0	0.9	0.0	4,856
Other countries	78.5	8.0	8.1	4.1	0.9	0.4	3,392
<i>Number</i>							
Total	32,147	4,511	4,135	1,788	250	179	43,010
%	74.7	10.5	9.6	4.2	0.6	0.4	100.0

Source: Medical Labour Force, 1994, AIHW 1996

Summary of the characteristics of the Australian medical workforce

The current medical workforce is characterised by an oversupply of general practitioners in urban areas, a shortage in some specialties and an undersupply of doctors in many rural and remote areas.

The medical workforce is ageing, with 35% of the workforce aged 45 years and over in 1981 and 42.5% in 1995. Furthermore, 20% of clinicians in 1995 were aged 55 years or over.

In 1981, women represented 19% of the medical workforce. In 1995, 27.2% of employed medical practitioners were female. This trend is expected to increase because of the comparatively large number of male clinicians aged 55 years; 24.0% in 1995 compared with 8.0% of female clinicians.

There is substantial variation in the representation of female doctors according to type of practice (Table 3). In 1995, 31.6% of primary care doctors were women, while 14% of specialists and 31.6% of specialists-in-training were women (AIHW, 1997).

The workforce is more urbanised than the Australian population. In 1995, 22% of primary care practitioners and 14% of specialists were located in a rural area compared with 29% of the population. Furthermore, there is a high turnover of doctors working in remote areas.

In 1996, Aboriginal and Torres Strait Islander people accounted for 2% of the Australian population and 0.05% of the medical workforce.

Between 1991 and 1994, little change occurred in the ethnic profile of the workforce as defined by country of birth. In 1994, Australian born doctors accounted for 61% of the workforce while UK/Ireland born doctors and Asian-born doctors represented 14% and 11.3% of the workforce respectively.

4 MEDICAL STUDENT CHARACTERISTICS: 1989 to 1997

This chapter draws on data from a 1997 AMWAC survey of medical schools, the AIHW analysis of DEETYA data (see Appendix), and the literature to describe changes in the characteristics of DEETYA funded initial degree medical students between 1988 and 1997. During this period, three universities were in transition from a six year undergraduate degree to a four year graduate-entry degree. Each university had a two year transition period, during which only a small number of students were admitted. The first intake to the course at the Flinders University of South Australia was in 1996 and the first intakes to the courses at the University of Queensland and the University of Sydney occurred in 1997.

Course commencements and completions

Between 1989 and 1996, there were 9,765 initial degree students who commenced the medical course and between 1988 and 1995, 9,441 students completed the course (Table 6 and Appendix).

In 1989, there were 1,371 students who commenced the undergraduate medical degree, and six years later 1,235 completed the degree. Although this suggests an attrition rate of 10%, the true attrition rate is much higher and cannot be accurately determined, as losses are offset to some extent by transfers in by students and graduates from other courses, and some students extend the training period after taking leave of absence for illness, child birth and other reasons.

Table 6: Commencing and completing initial medical degree students, 1988 to 1997

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Commencing students	-	1,371	1,405	1,384	1,323	1,293	1,205	856	928	1,211
Completing students	1,305	1,187	1,014	1,144	1,081	1,234	1,235	1,241	-	-

Source: For the years 1988 to 1996, Appendix: Tables 1 and 5, and for 1997, AMWAC 1997 Survey of Medical Schools.

Table 7 examines course commencements by State/Territory. Between 1989 and 1997 the number of students enrolling in the first year of a medical course declined by 11.7% with the largest decrease in New South Wales (29.9%) and smaller decreases in South Australia (9.8%), Tasmania (4.1%) and Victoria (3.0%). It should be noted that the observed decrease in New South Wales is associated with the University of Sydney being in transition from an undergraduate entry program to a graduate entry program.

Table 7: Commencing initial medical degree students, by State/Territory, 1989 to 1997

State	1989	1990	1991	1992	1993	1994 ^a	1995 ^a	1996 ^a	1997	% change 1989-1997
<i>Number</i>										
NSW	481	467	454	444	423	375	243	259	337	-29.9
Vic	335	348	346	322	318	328	329	337	325	-3.0
Qld	223	238	229	223	215	222	6	2	230	3.1
SA	164	183	181	168	162	109	103	154	148	-9.8
WA	119	121	125	118	125	122	122	123	120	0.8
Tas	49	48	49	48	50	49	53	54	51	-4.1
Total	1,371	1,405	1,384	1,323	1,293	1,205	856	929	1,211	-11.7
<i>Percent</i>										
										% of 1997 pop.
NSW	35.1	33.2	32.8	33.6	32.7	31.1	28.4	27.9	27.8	35.6
Vic	24.4	24.8	25.0	24.3	24.6	27.2	38.4	36.3	26.8	24.8
Qld	16.3	16.9	16.5	16.9	16.6	18.4	0.7	0.2	19.0	18.3
SA	11.9	13.0	13.1	12.7	12.5	9.1	12.0	16.6	12.2	9.1
WA	8.7	8.6	9.0	8.9	9.7	10.1	14.3	13.2	9.9	9.7
Tas	3.6	3.4	3.5	3.6	3.9	4.1	6.2	5.8	4.2	2.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

a - These data are biased for South Australia in 1994 and 1995, and for New South Wales and Queensland in 1995 and 1996 due to the transition from a six year undergraduate entry course to a four year graduate entry course at the Flinders University, the University of Sydney and the University of Queensland.

Source: For the years 1989 to 1996, Appendix: Section 4.2, and for 1997, AMWAC 1997 Survey of Medical Schools.

Table 8 outlines trends in the number of people completing the initial medical degree by State/Territory in which they studied medicine and compares the proportion completing in each State/Territory in 1995 with the distribution of the Australian population. States/Territories with student outputs below their State/Territory share of the population are Queensland, Western Australia and New South Wales. States/Territories with outputs above their share of the population are South Australia/Northern Territory and Tasmania.

Table 8: Completing initial medical degree students, by State/Territory, 1989 to 1995

State/Terr.	1989	1990	1991	1992	1993	1994	1995	% change 1989-1995
<i>Number</i>								
NSW/ACT	433	264	379	263	407	427	429	- 0.9
Vic	309	280	285	290	330	294	308	-0.3
Qld	166	191	183	196	203	197	216	30.1
SA/NT	143	137	162	182	144	159	148	3.5
WA	86	103	102	109	104	109	97	12.8
Tas	50	39	33	41	46	49	43	-12.0
Total	1,187	1,014	1,144	1,081	1,234	1,235	1,241	4.5
<i>Percent</i>								<i>% 1995 pop.</i>
NSW/ACT	36.5	26.1	33.1	24.3	33.0	34.6	34.6	35.6
Vic	26.0	27.6	24.9	26.8	26.7	23.8	24.8	24.8
Qld	14.0	18.8	16.0	18.1	16.5	16.0	17.4	18.3
SA/NT	12.0	13.5	14.2	16.8	11.7	12.9	11.9	9.1
WA	7.2	10.2	8.9	10.1	8.4	8.8	7.8	9.7
Tas	4.2	3.8	2.9	3.8	3.7	3.9	3.5	2.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Appendix: Section 4.2

Table 9 and Appendix (Tables 9 and 10) indicate that the majority of medical students choose to study in their home State. However, some universities attract a substantial and growing number of interstate students. Universities attracting the highest proportion of interstate students in 1996 were the Flinders University of South Australia (75.4% of commencing students), University of Newcastle (30%), University of Tasmania (26%) and the University of New South Wales (12%).

The movement of medical students across State/Territory boundaries has increased since the legal ruling that there be no State/Territory boundaries to restrict professional opportunity, including access to training. Furthermore, there is some evidence that the postcode of home residence may not be an entirely accurate measure of a student's State/Territory of origin. For example, students who do not enter higher education direct from school or transfer to medicine from another course may be expected to report a home address close to the institution of study. Hence, the appraisal of ratios of student places to State/Territory population may be less relevant as a guide to determining an appropriate number of medical students for each State/Territory.

Table 9: Commencing students, by university and State/Territory of home residence, 1996

University	NSW ^a	Vic	Qld ^a	SA	WA	Tas	ACT	NT	% interstate
NSW/ACT									
- UNSW	148	1	16	0	2	0	6	0	12.0
- USyd	20	0	0	0	0	0	0	0	0.0
- UNC	44	4	5	1	1	0	7	1	30.1
Vic									
- Monash	0	134	5	0	0	0	0	0	3.6
- UMelb	1	183	9	1	0	0	3	0	7.1
Qld									
- UQld	0	0	2	0	0	0	0	0	0.0
SA/NT									
- UAd	3	0	0	86	2	0	1	0	6.5
- FUSA ^b	8	15	5	15	10	1	5	2	75.4
WA									
- UWA	2	1	1	0	119	0	0	0	3.2
Tas									
- UTas	3	7	3	0	0	40	0	1	25.9
Total	226	337	45	121	129	41	20	3	928^c

a - the data are biased for New South Wales and Queensland due to the University of Sydney and the University of Queensland being in transition from a six-year undergraduate medicine course to a four-year graduate entry course.

b - this data differ from that provided in Appendix: Table 10, following revision by the School of Medicine, Flinders University of South Australia.

c - this figure includes six students whose State of home residence was unknown.

Source: Appendix: Table 10

Admission status, 1997

In 1997, 57.6% of commencing medical students were school leavers, 37.9% had a university degree and 4.5% had undertaken prior university studies but had not completed a degree (Table 10).

States with above average numbers of students with prior university experience are New South Wales, Queensland and South Australia, namely, states in which universities are employing graduate-entry admission policies. Queensland, whose only school is graduate entry, has the highest proportion of students with prior university experience and Victoria, with no graduate entry program, has the lowest proportion.

Table 10: Academic admission status of commencing medical students, 1997

State/University	School leavers	Completed degrees	Partially completed degrees	Total
NSW				
- University of NSW	135	1	9	145
- University of Newcastle	24	26	17	67
- University of Sydney	0	125	0	125
<i>Total</i>	<i>159</i>	<i>152</i>	<i>26</i>	<i>337</i>
Victoria				
- Monash University	135	1	9	145
- University of Melbourne	174	0	6	180
<i>Total</i>	<i>309</i>	<i>1</i>	<i>15</i>	<i>325</i>
Queensland				
- University of Queensland	0	230	-	230
South Australia				
- University of Adelaide	89	0	1	90
- Flinders University	0	58	0	58
<i>Total</i>	<i>89</i>	<i>58</i>	<i>1</i>	<i>148</i>
Western Australia				
- University of WA	101	11	8	120
Tasmania				
- University of Tasmania	40	7	4	51
Total	697	459	54	1,211

Source: AMWAC 1997 Survey of Medical Schools.

Age

There was little change in the age distribution of commencing medical students between 1989 and 1994, with 6.9% of students 25 years of age and over in 1989 and 6.6% in 1994 (Table 11). However, there was a substantial change in the age distribution of commencing students between 1994 and 1997, with 18.5% of commencing students in 1997 being 25 years of age and over, representing an average annual increase of 4%. This finding reflects the influence of the intake of the three graduate entry universities, two of which had a full intake of students in 1997, while the University of Sydney expects to be enrolling an additional 61 commencing students by 1999. States/Territories most affected by the transition to graduate entry are New South Wales, Queensland and South Australia. This trend is likely to stabilise by 1999 unless other medical schools adopt a graduate entry policy. However, it may have implications for the lifetime workforce contribution of students from graduate entry schools.

Table 11: Age distribution of commencing medical students, 1989 to 1997

Age	1989	1990	1991	1992	1993	1994	1995	1996	1997	% change 1989-97
<20 years	1,121	1,154	1,119	1,083	1,080	1,004	717	741	704	-37.2
20-24 years	156	137	165	155	133	122	77	109	283	81.4
25+ years	94	115	100	85	80	79	62	77	224	138.2
Total	1,371	1,406	1,384	1,323	1,293	1,205	856	927	1,211	-11.7
% 25+ years	6.9	8.2	7.2	6.4	6.2	6.6	7.2	8.3	18.5	-

Source: For the years 1989 to 1996, Appendix: Table 5, and for 1997, AMWAC 1997 Survey of Medical Schools.

There was little change in the percentage of completing students aged under 23 years between 1988 and 1995 (36.7% in 1988 and 36.3% in 1995). In 1989, 29.3% of completing students were aged between 23 and 24 years and in 1995 this group accounted for 46.2% of completing students (an increase of 17%). This change corresponded with a reduction in the number of students aged 25 years and over (34% in 1988; 17.5% in 1995) (Table 12 and Appendix: Table 3). States with higher numbers of completing students 23 years of age and over in 1995 were New South Wales (78.3% of students) and Victoria (70.2% of students) (Appendix: Section 4.2).

Table 12: Age distribution of completing medical students, 1988 to 1995

Years	1988	1989	1990	1991	1992	1993	1994	1995	% of students 1988 1995	
<23 years	655	535	307	251	448	560	457	452	36.7	36.3
23-24 years	524	422	245	218	468	493	550	576	29.3	46.2
25-29 years	300	270	84	68	111	124	144	155	16.8	12.4
30+ years	308	323	75	65	54	67	84	63	17.2	5.1
%>22 years	63.3	65.5	56.8	58.3	58.6	55.0	63.0	63.7	-	-

Source: Appendix: Table 3

Gender

Of people commencing the medical degree in 1989, 43.4% were female entrants and of people completing the degree six years later in 1994, 46.6% were female graduates. Although this, superficially, may suggest a difference in attrition rates among male and female students there is insufficient reliable evidence to draw this conclusion (Table 13).

In 1990, 44.9% of students were female entrants and 55.1% were male entrants. The data suggest an attrition rate for this cohort of students of 12% for both male and female students (Table 13). However, as previously indicated, it is impossible to gain an accurate estimate of student attrition using DEETYA data.

Table 13: Medical course commencements and completions, by gender, 1988 to 1997^a

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Commencing students										
- Males		776	774	715	732	682	623	450	491	651
- Females		596	631	669	591	611	582	406	437	560
% female		43.4	44.9	48.3	44.7	47.3	48.3	47.4	47.1	46.2
Completing students										
- Males	786	700	572	677	628	723	659	683		
- Females	519	487	442	467	453	513	576	558		
% female	39.8	41.0	43.6	40.8	41.9	41.5	46.6	45.0		

a - data was not available for all years

Source: For the years 1988 to 1996, Appendix: Tables 3 and 5, and for 1997, AMWAC 1997 Survey of Medical Schools.

In 1989, the overall representation of female commencing students was 43.4%. By 1990, this figure had increased to 44.9% and by 1997 to 46.2%. Universities with below average representation of female students in 1997 are University of Queensland (34.3%), University of Melbourne (41%), the Flinders University of South Australia (41.4%), University of Sydney (43.2%) and University of Western Australia (43.3%) (Table 16). Universities with above average representation of female students are Monash University, University of Newcastle, University of Adelaide, University of Tasmania and University of New South Wales.

Of people completing the medical degree, 39% in 1988 were female. In 1995, this had increased to 45%, an average annual increase of 0.8% (Table 13).

Universities in 1995 with proportions of female completing students below the average were University of Sydney (36%), University of Adelaide (40.2%), University of Queensland (42.2%), University of New South Wales (42.1%) and Monash University (42.5%). Universities with above average proportions of female completing students were the Flinders University of South Australia, The University of Newcastle, the University of Tasmania and the University of Western Australia (Table 14 and Appendix: Section 4.2).

Table 14 profiles the gender distribution of 1997 commencing students by State. States with below average representation of female commencing students in 1997 are Queensland and Western Australia. All other States have a gender distribution close to 50% males, 50% females.

Table 14: Commencing and completing students, by gender and university, for selected years, 1989 to 1997

State/University	Commencing							Completing				
							% female 1997					% female 1995
	1989		1990		1997			1994		1995		
	M	F	M	F	M	F		M	F	M	F	
NSW/ACT												
- University of NSW	88	64	81	60	73	72	49.7	72	60	77	59	43.4
- University of Newcastle	22	43	20	55	28	39	58.2	34	19	21	40	65.6
- University of Sydney	169	95	162	89	71	54	43.2	134	90	142	90	38.8
<i>State Total</i>	279	202	126	204	172	165	49.0	240	169	240	189	44.1
Victoria												
- Monash University	88	65	90	61	54	91	62.8	67	56	79	58	42.3
- University of Melbourne	101	81	112	85	106	74	41.1	88	83	96	75	43.9
<i>State Total</i>	189	146	202	146	160	165	50.8	155	139	175	133	43.2
Queensland												
- University of Queensland	129	94	122	116	151	79	34.3	106	91	121	95	44.0
SA/NT												
- University of Adelaide	64	43	55	52	41	49	54.4	52	41	53	41	43.6
- Flinders University	33	24	43	33	34	24	41.4	40	26	26	28	51.9
<i>State Total</i>	97	67	98	85	75	73	49.3	92	67	79	69	46.6
Western Australia												
- University of WA	62	57	70	51	68	52	43.3	56	53	53	44	45.4
Tasmania												
- University of Tasmania*	20	29	19	20	25	26	51.0	25	24	15	28	65.1
Total	776	595	774	631	653	560	46.2	659	657	683	558	45.0

Sources: For the years 1989 to 1995, Appendix: Section 4.2, and for 1997, AMWAC 1997 Survey of Medical Schools.

Gender and country of birth

Using DEETYA data, Dobson (1997) observed variation in the number of female students undertaking medical studies based on country of birth. Among Australian born students, 49% were female while among European born students, 52% were female and among Asian born students, 40% were female (Table 15).

Table 15: Medical course enrolments, by gender and country of birth (Australian citizens and permanent residents), 1996

Country of birth	Female	Male	Total	% female
Australia	1,980	2,055	4,035 (60.0%)	49.1
Asia	746	1,100	1,846 (27.5%)	40.4
UK and Europe	223	208	431 (6.4%)	51.7
Other	200	209	409 (6.1%)	48.9
Total	3,149	3,572	6,721 (100%)	46.8

Source: Dobson, IR. (1997) Women's Access to Medical Training in Australia-An Equity Issue? Internet.

Dobson pointed to country of birth as a possible influence upon the gender mix of students at each university. For example, he observed that medical schools such as New South Wales, Sydney and Melbourne, with comparatively high numbers of Asian born students had fewer women students, while overseas born students at the University of Western Australia were largely drawn from Europe and South Africa and the representation of women was higher (Table 16). Currently, there is little evidence to support predictions based on these fields of relationships and further studies of a longitudinal nature are clearly required.

Table 16: Medical course enrolments, by gender and university, 1996

State/University	Female	Male	Total	% Female	% Aust. born
NSW					
- University of NSW	374	520	894	42	42
- University of Newcastle	200	134	334	60	82
- University of Sydney	363	497	860	42	42
Victoria					
- Monash University	445	397	842	53	70
- University of Melbourne	455	638	1,093	42	58
Queensland					
- University of Queensland	422	438	860	49	72
South Australia					
- University of Adelaide	264	342	606	44	57
- Flinders University	127	121	248	51	71
Western Australia					
- University of WA	341	352	693	49	51
Tasmania					
- University of Tasmania	158	133	291	54	79
Total	3,149	3,572	6,721	47	60

Source: Dobson, IR. (1997) Women's Access to Medical Training in Australia-An Equity Issue? Internet

Rural background

In 1989, 10.7% of commencing medical students were from a rural area. In 1993, the comparative figure was 13.2%, in 1995 it was 10.9%, in 1996 it was 11.9% and in 1997 it was 17.3% (Table 17). These numbers highlight a fluctuating trend, albeit in an upwards direction. The 1997 total number of 210 students represents a dramatic increase on earlier years where the figures fluctuated from 132 (in 1989) to 153 (in 1992).

Table 17: Medical course commencements; by region of home residence, 1989 to 1997

Region	1989	1990	1991	1992	1993	1994	1995	1996	1997
Capital city	1,166	1,172	1,169	1,094	1,082	1,010	729	785	na
Other metropolitan	62	65	69	62	51	58	40	39	na
Large rural centre	32	42	38	48	49	36	26	26	na
Other rural area	100	105	97	105	100	100	58	72	na
Total rural	132	147	135	153	149	136	84	98	180
% rural	10.7	11.9	10.9	13.2	13.2	12.7	10.9	11.9	17.3
Not known	11	21	11	14	11	1	3	6	-
Total commencements	1,371	1,405	1,384	1,323	1,293	1,205^a	856^a	928^a	1,211

na - information not available

a - Flinders University, University of Queensland and University of Sydney have introduced a four-year graduate entry degree medical course in place of the previous six year undergraduate entry course. Each university had a two year transition period during which only a small number of students with the necessary qualifications were admitted. The first intake to the new course at Flinders University was in 1996 and the first intakes to the new courses at the University of Queensland and the University of Sydney were in 1997.

Source: For the years 1989 to 1996, Appendix: Table 7, and for 1997, AMWAC (1997) Survey of Medical Schools.

The appendix (Table 7) indicates that there is wide variation among States in the representation of rural background students commencing a medical course. Over the 1989 to 1996 period, 89.4% of all commencing students originated from a capital city or other metropolitan area, 10.1% from a rural area and 0.5% from a remote area. In 1996, approximately 71% of the population were living in metropolitan areas, 26% in rural areas and 3% in remote areas. Universities with the highest representation of rural students in commencing medical classes between 1989-96 were the University of Queensland and the University of Tasmania, although the Tasmanian numbers are affected by the classification of Launceston as rural.

Table 18 outlines the representation of rural students commencing a medical course in 1997 by university and State/Territory in which they are enrolled. States/Territories with a particularly low representation of first year medical students with a rural background when compared with the relevant regional population are New South Wales (7.4%) and Western Australia (7.5%).

Table 18: Rural background students commencing a medical course in 1997, by university and State

State	Rural students	All students	% rural students	% population rural^a
NSW/ACT				
- University of NSW	6	145	4.1	
- University of Newcastle	9	67	13.4	
- University of Sydney	10	125	8.0	
<i>State/Territory Total</i>	<i>25</i>	<i>337</i>	<i>7.4</i>	<i>24.8</i>
Victoria				
- Monash University	27	145	18.6	
- University of Melbourne	24	180	13.3	
<i>State Total</i>	<i>51</i>	<i>325</i>	<i>15.7</i>	<i>24.7</i>
Queensland				
- University of Queensland	69	230	30.0	41.4
S/NT				
- University of Adelaide	19	90	21.1	
- Flinders University	17	58	29.3	
<i>State/Territory Total</i>	<i>36</i>	<i>148</i>	<i>24.3</i>	<i>29.9</i>
Western Australia				
- University of WA	9	120	7.5	26.7
Tasmania				
- University of Tasmania	20	51	39.2	58.8
Total	210	1,211	17.3	28.9

a - DHFS (1997)

Source: AMWAC 1997 Survey of Medical Schools.

Aboriginal and Torres Strait Islander background

The number of Aboriginal and Torres Strait Islander students commencing a medical course increased by three, from six in 1989 to nine in 1997. In 1997, five of the nine commencing students were enrolled at the University of Newcastle (Table 19).

Aboriginal and Torres Strait Islander students comprised 0.5% of completing students in 1995 and 0.7% of commencing students in 1997.

Between 1989 and 1995, 26 Indigenous students completed a medical degree and of these 11 graduated from the University of Newcastle (Appendix: Section 4.2).

Table 19: Medical course commencements and completions, by Aboriginal and Torres Strait Islander background, 1989 to 1997

	1989	1990	1991	1992	1993	1994	1995	1996	1997
Commencing students									
- Males	3	4	4	4	2	5	1	2	-
- Females	3	4	6	7	5	3	5	6	-
<i>Total</i>	6	8	10	11	7	8	6	8	9
% Indigenous	0.4	0.6	0.7	0.8	0.5	0.7	0.7	0.8	0.7
Completing students									
- Males	2	3	0	1	3	2	4	-	-
- Females	4	2	2	0	0	1	2	-	-
<i>Total</i>	6	5	2	1	3	3	6	-	-
% Indigenous	0.5	0.5	0.2	0.1	0.2	0.2	0.5		

Source: For the years 1989 to 1996, Appendix: Table 4, and for 1997, AMWAC 1997 Survey of Medical Schools.

Table 20 displays Aboriginal and Torres Strait Islander students commencing a medical degree in 1997 by State/Territory. States/Territories with a low representation of Aboriginal students when compared with the relevant regional population are Victoria, Queensland, South Australia/Northern Territory and Western Australia (Table 20).

Table 20: Aboriginal and Torres Strait Islander students commencing a medical course in 1997, by State/Territory

State/Terr.	Aboriginal ^a	All students ^a	Aboriginal students %	% Australian population Aboriginal ^b
NSW/ACT ^c	6	337	1.8	1.3
Victoria	0	325	0.0	0.4
Queensland	0	230	0.0	2.4
SA/NT	1	148	0.7	3.8
West. Aust.	1	120	0.8	2.7
Tasmania	1	51	2.0	2.1
Total	9	1,211	0.7	1.7

a - AMWAC 1997 Survey of Medical Schools.

b - Population estimates are based on ABS/ AIHW (1997) The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples, Canberra and ABS (1994), Projections of the Populations of Australia, States and Territories: 1993 to 2041, 3222.0, Canberra.

c - The University of Newcastle in New South Wales accepts Aboriginal and Torres Strait Islander students from all States/Territories.

Socio-economic background

Dobson examined commencing medical student enrolments by socio-economic status (SES) based on postcodes. In 1996, 57% of students were from high SES postcodes, 10% were from low SES postcodes with the remaining 28% from middle SES postcodes (Table 21). Among all higher education enrolments, 34% of students were from high SES postcodes, while the representation of students from low SES areas was 14%. In 1996, the ABS indicated that 25% of the Australian population lived in low SES areas and 25% lived in high SES areas.

Table 21: Commencing medical students, by socio-economic status and State/Territory, 1996*

State/Terr.	High	Middle	Low	Not known	Total	% low
NSW/ACT	120	82	34	18	254	13.4
Vic	210	91	32	4	337	9.5
SA/NT	80	42	16	7	153	10.5
WA	80	29	10	4	123	8.1
Tas	27	4	13	10	54	7.4
Total	527	257	96	43	923	10.4
%	57.1	27.8	10.4	4.7	100.0	-

* The Universities of Sydney and Queensland did not have a full intake of students in 1996.

Source: Dobson, (1997) Unpublished data from DEETYA.

Country of birth

Because there was a large group of students for the years 1989 through 1992 of unknown birthplace, changes in the percentage of students from various countries completing the medical degree have been calculated based on 1993 to 1996 data (Table 22 and Appendix: Tables 2 and 6). In 1993, 52.3% of commencing medical students were born in Australia and 26.5% were born in an Asian country. In 1996, the percentage of commencing students born in Australia had increased to 61% and the percentage of Asian students had declined marginally to 25.7%. However, it should be noted that these figures are biased due to the Flinders University having no intake in 1994 and 1995 and the universities of Sydney and Queensland not having a full intake of students in 1995 and 1996.

Between 1993 and 1995, there was little change in the total number of completing students. During this same time period, the percentage of completing students who were born in Australia decreased by 5.6% (from 822 students to 776), the percentage who were born in Asia increased by 25.5% (from 239 students to 300), there was very little change in the percentage of completing students who were born in the UK/Ireland and Europe, or the number of students from other countries. These two latter groups represented 13.3% of completing medical students in 1995 (Table 22).

Table 22: Medical course commencements and completions, by country of birth, 1988 to 1996

	Year								% of students:	
	1989	1990	1991	1992	1993	1994 ^b	1995 ^b	1996 ^b	1989	1996
Commencing students										
- Australia	902	793	791	757	677	752	525	566	65.8	61.0
- Asia	247	304	349	319	343	276	189	239	18.0	25.7
- UK & Europe	114	110	107	77	81	81	57	58	8.3	6.3
- Other	108	198	137	170	192	96	85	65	7.9	7.0
Total	1,371	1,405	1,384	1,323	1,293	1,205	856	928	100.0	100.0
Completing students										
									% students 1993 1995	
- Australia	565	517	550	551	822	775	776	-	66.6	62.5
- Asia	58	127	132	157	239	260	300	-	19.4	24.2
- UK & Europe	61	66	72	86	89	112	84	-	7.2	6.8
- Other ^a	503	304	390	287	84	88	81	-	6.8	6.5
Total	1,187	1,014	1,144	1,081	1,234	1,235	1,241	-	100.0	100.0

a - for the years 1989 through 1992 there was a large number of students whose country of birth was not known.

b - these figures are biased due to the Flinders University having no intake in 1994 and 1995 and the universities of Sydney and Queensland not having a full intake of students in 1995 and 1996.

Source: Appendix: Tables 2 and 6

Summary of medical student characteristics and trends

Between 1989 and 1995, a total of 9,441 Australian citizen or permanent resident students completed undergraduate medical degrees. The attrition rate of commencing students cannot be determined.

There were 1,305 completions in 1988 and 1,241 in 1995, a decrease of 4.9%. States/Territories with medical student outputs in 1995 below their regional population share were Queensland, Western Australia and New South Wales/Australian Capital Territory while South Australia/Northern Territory and Tasmania had outputs above their regional population share. However, the appraisal of ratios of student outputs by State/Territory population may have little relevance as a guide to determining the appropriateness of medical school quotas given the considerable movement of students across State/Territory boundaries.

Between 1989 and 1997, there has been a 11.7% decrease in the number of students enrolling in DEETYA funded initial degree medical courses. Most of this decrease is associated with the University of Sydney which did not have a full intake of students in 1997 while it is in transition from an undergraduate entry course to a graduate entry course. As with the University of Queensland and the Flinders University of South Australia, during the time of transition the University of Sydney had a two year period during which only a small number of students with the necessary qualifications were admitted. This reduction in admissions ensured that there would be no doubling up in student outputs as a result of the change. In South Australia, student

commencements were reduced in 1994 and 1995, and in Queensland in 1995 and 1996, and in New South Wales in 1996 and 1997. Once all universities have a full intake of students it is expected that there will be little change in overall medical student numbers.

The age at which students commence their medical studies is increasing, with almost 20% of commencing students in 1997 aged 25 years and over compared with 6.9% in 1989 and 6.6% in 1994. This trend will influence the age at which students commence general practice training and specialist training and the lifetime hours worked contribution they make to the workforce.

During the last decade the representation of female students increased from 43% of commencing students in 1987 to 46% of commencing students in 1997. The trend is towards a gender mix among medical students close to that of the Australian community. However, there is wide variation among medical schools in the representation of women and some of this variation appears to be influenced by the ethnic mix of the student population as defined by country of birth.

Aboriginal and Torres Strait Islander people represented 2.0% of the Australian population at the 1996 population census. Compared with this proportion, they are under-represented among medical students, although the percentage of Aboriginal and Torres Strait Islander medical students is rising. They represented 0.4% of commencing medical students in 1989 and 0.7% in 1997.

Some progress appears to have been made in increasing the representation of rural background students, with 10.7% of commencing students from rural backgrounds in 1989, 10.9% in 1995 and 17.3% in 1997.

There is increasing diversity in the student body with regard to culture, country of birth and life experience. This presents medical schools with both a challenge and an opportunity to provide an appropriate cultural and practical medical education experience which respects the diverse needs of students and at the same time prepares graduates to serve an increasingly diverse Australian population.

5 UNIVERSITY MEDICAL SCHOOL POLICIES AND STRATEGIES: 1997 AND BEYOND

This chapter reports data from the 1997 AMWAC survey of medical schools about university admission policies, including expected policy changes and strategies, including strategies to increase the number of rural and Aboriginal and Torres Strait Islander students graduating from medical courses.

These qualitative data are presented within tables with graduate entry medical schools grouped together and undergraduate entry medical schools grouped together.

Admission policies and criteria - graduate entry medical schools

Table 23 displays the admission policy statements for the three graduate entry medical schools and summarises the criteria used to assess suitability for admission to a graduate program. All graduate entry programs employ three criteria in assessing a candidates suitability, namely:

- 1) achievement in the Graduate Australian Medical School Admissions Test (GAMSAT);
- 2) performance in structured interview; and
- 3) achievement in prior university studies.

As indicated by the University of Sydney, the "purpose of the criteria is to ensure that applicants have demonstrated a capacity for tertiary studies, sustained for the duration of an undergraduate degree program; that they have the understanding and skills necessary for entering the program, and that they have personal qualities appropriate for success in the medicine program and in subsequent medical practice".

According to the Australian Council for Educational Research (1996-97), the purpose of the GAMSAT is to assess the candidate's ability to understand and analyse material, to think critically about issues and, to organise and express their thoughts in written communications in a logical and effective way. A major focus of the GAMSAT is assessment of problem solving abilities and it is composed of three main subject areas, namely, reasoning in humanities and social sciences, written communication, and reasoning in biological and physical sciences.

Table 23: Admission policies for the three graduate entry medical schools

1. University of Sydney

The Graduate Medical Program (GMP) aims to produce medical graduates who are committed to rational, compassionate health care and medical research of the highest quality. The program encourages the enrolment of students from diverse backgrounds and aims to help them to become graduates responsive to health needs of individuals, families and communities and committed to improving the health care system at all levels.

As in the past, the Faculty aims always to attract students of the highest academic calibre. Applicants are sought who have the following additional qualities:

- a concern for the welfare of others in the community;
- an enthusiasm and capacity for the study of medicine;
- the capacity to develop excellent skills in communication, self-management and understanding of ethical and legal issues in medicine;
- the ability to reason scientifically;
- the potential to benefit from self-directed and interactive learning.

In selecting applicants, the Faculty hopes to include students having a variety of different interests and backgrounds which will enable them to achieve outstandingly well in their medical careers.

2. University of Queensland

To ensure that the admissions process results in students entering the Graduate Medical Course (GMC) having the qualities identified as necessary by the Faculty, specifically students are mature with a broad educational background, appropriate communication skills and suited to a medical career; and that the selection criteria are fair and equitable, objective, easily understood by students, the University and the public, and administratively efficient. In 1997, the major subject area in their first degree for 48.7% of entrants was in biological/health sciences. Other subject areas included physical sciences, pharmacy, engineering, arts, nursing and mathematics.

3. Flinders University of South Australia

The aims of the graduate entry medical program at Flinders are to attract talented individuals from diverse backgrounds and to graduate doctors who are caring, competent and informed. Throughout the course the students will be encouraged in their lifelong professional development.

Those students selected for the course at Flinders have the pre-requisite knowledge necessary to commence the course, the intellectual abilities to complete the course, and the personal characteristics associated with an effective professional career. These criteria are assessed by GAMSAT, Grade Point Average (GPA) and interview respectively.

Applicants are ranked according to an "entry score" which is calculated by the addition of:

- GPA score;
- Tertiary Performance Score (TPS)/GPA (weighted, calculated from undergraduate degree);
- score from structured interview (candidates are selected for interview on the basis of their overall GAMSAT score).

Table 24: Criteria used by graduate entry medical schools to assess applicants

Criteria used to assess applicants	Graduate entry	
	Yes	No
Achievement in high school certificate	0	3
Achievement in prior university studies	3	0
Achievement in the GAMSAT	3	0
Achievement in other psychometric tests	0	3
Performance in structured interview	3	0
Prior occupation/work experience	0	3
Other criteria	0	3

Admission policies and criteria - undergraduate entry medical schools

In the main, undergraduate entry medical schools are using three criteria to assess the suitability of applicants, namely:

- 1) achievement in the Higher School Certificate (HSC) or State equivalents like the South Australian Certificate of Education (SACE);
- 2) performance in structured interview; and
- 3) achievement in prior university studies (Tables 25 and 26).

Four undergraduate entry medical schools take into account prior occupation/work experience. Two schools employ a written assessment which involves psychometric tests.

As indicated by the University of Newcastle, the objective of these admission policies is "to select as medical students those individuals who besides being qualified academically also possess a range of (cognitive and non-cognitive) personal qualities that are desirable and necessary in a potential doctor".

Table 25: Admission policies for the seven undergraduate entry medical schools**1. University of New South Wales**

With the exception of rural, refugee doctor or Aboriginal and Torres Strait Islander applicants, all students are admitted solely on the basis of academic merit. 90% of students gain entry on the basis of their HSC Tertiary Entrance Rank (TER) or equivalent. 10% gain entry on the basis of results in tertiary studies together with their HSC TER or equivalent. Students are ranked and selected in strict academic order. All students are required to meet pre-requisites in english, mathematics and chemistry.

2. University of Newcastle

The objective of the UNC admission policy is to select as medical students those individuals who besides being appropriately qualified academically also possess a range of (cognitive and non-cognitive) personal qualities that are desirable and necessary in a potential doctor.

Approximately equal numbers of students have been selected on the basis of 'marks alone' (eg., top 1% of HSC achievers or a 'distinction' average in a completed tertiary degree or diploma) or on a 'composite entry' basis which involves assessment of academic ability (eg., top 10% of achievers) followed by assessment on the basis of performance in a series of psychometric tests (UMAT)* and from scores obtained at interview with both instruments designed to assess and quantify certain desirable personal qualities.

3. University of Melbourne

In 1997, there was a target of 169 places, for Australian citizens/residents and up to 20 places under the Targeted Access Program (TAP). The TER required for entry in 1997 to the MBBS was 99.65. The TER is not set in advance, but is a result of the selection process and may go up or down each year. Prerequisites include satisfactory completion of the Victorian Certificate of Education (or equivalent from another State/Territory) and also a grade average of at least B+ in two English units (or ESL), chemistry, mathematical methods (or specialist mathematics) and in one of biology, physics, or one additional mathematics.

4. Monash University

Admission into the medical course is based primarily on Year 12 academic performance for school leaver entry (130: the majority of places). Approximately 450 school leavers are granted interview (TER 99.95 to approximately 96.50) based on academic performance with a further 70 approximately, granted an interview for equity reasons (rural, special circumstances etc. - usually with a TER above 90. Non school leavers (up to 10% of places) are short-listed for interview based on school performance, subsequent academic record and relevant work/life experiences: about 50 are called for interview of whom up to 15 will be offered places. Final places are offered on the basis of academic achievement and performance at interview.

5. University of Adelaide

The Faculty accepts Australian citizens and permanent residents who are school leavers. The course quota for 1997 was 90 places. Currently, the Faculty's intake of applicants with tertiary backgrounds is in abeyance. Selection is based upon:

- 1) performance in the UMAT;
- 2) performance in structured oral assessment for the top performers in the UMAT;
- 3) qualifying for the SACE, International Baccalaureate or Interstate and Overseas equivalent examinations with a program of studies which meets the University's prerequisite subject requirements and achieving a Year 12 performance which the University evaluates as being a top decile performance. The Faculty has a Special Entry Scheme for applicants who are aged over 21 years and who have not qualified for matriculation or the SACE in the three year period prior to their application and who do not have a tertiary background.

The Faculty also has an Aboriginal and Torres Strait Islander Access Scheme and a Fairway Scheme which provides additional points for students coming from rural schools and from metropolitan schools that are under represented at South Australian universities.

* The UMAT is a psychometric test developed by the University of Newcastle and used by other Medical Schools.

6. University of Western Australia

For Australian citizens, or persons with permanent resident status in Australia, the University admits 120 students in the first year of the MB BS course. Students are admitted by two pathways:

- 1) Standard Group (93 places) - completed Western Australian Tertiary Entrance Examination or interstate or New Zealand equivalent in previous two years with no tertiary record- selected strictly on the basis of academic merit;
- 2) Non-standard (up to 17 places) - all other applicants are selected on the basis of academic merit; taking into account other factors such as evidence of active involvement in community activities, work record, motivation to study medicine and communication skills. These attributes are assessed by written application and interview.

7. University of Tasmania

There are 65 places for students entering the undergraduate medical course (15 for overseas applicants). Prerequisites are biology, chemistry, mathematics and physics. The Faculty has two main categories of entrants:

- 1) school leavers (40 places)
- 2) alternative entry (10 places) which applies to applicants with previous post-secondary study (includes tertiary and TAFE), mature age applicants, special entry applicants or those with work experience or professional qualifications. Applicants are assessed according to five criteria, namely academic background; employment background; skills gained from employment and other relevant activities; demonstrated interest in the course; and equity or special considerations.

Table 26: Admission criteria employed by undergraduate entry medical schools

Criteria	Undergraduate entry	
	Yes	No
Achievement in high school certificate	7	0
Achievement in prior university studies	6	1
Achievement in the GAMSAT	0	7
Achievement in other psychometric tests	2	5
Performance in structured interview	6 ^a	1
Prior occupation/work experience	4	3
Other criteria	1 ^b	6

a - UNSW uses the structured interview for rural, refugee doctors and Aboriginal and Torres Strait Islander applicants only.

b - other criteria included an assessment of the adequacy of the candidate's mental and physical health to cope with the demands of medical studies.

Expected policy changes - graduate entry medical schools

Two graduate entry medical schools expect their annual intake to increase. In particular, the University of Sydney expects an increase in numbers following its transition from an undergraduate entry program to a graduate entry program. The number of commencing students at this university is expected to stabilise at 186 (Table 27).

Two graduate entry medical schools expect an increase in the number of Aboriginal and Torres Strait Islander students and in the number of rural students (Table 28).

The University of Queensland is considering offering all four years of the Graduate Medical Course at the North Queensland Clinical School, Townsville (Table 27). This may have a positive influence on rural student participation.

The Flinders University of South Australia is proposing to establish a separate quota for Aboriginal and Torres Strait Islander students and collaborating with Northern Territory Health in the training of students from the Northern Territory (Table 27).

Table 27: Expected policy changes of the three graduate entry medical schools

1. University of Sydney With the agreement of DEETYA, the quota for 1998 will increase to 136, and will then increase to 186 for 1999 and beyond. This increase in intake will produce increases in absolute numbers. The proportions in each subgroup are unlikely to change appreciably, except for female students and students with a rural background. The Admissions Committee is committed to pursuing strategies aimed at increasing the proportion of both of these subgroups.
2. University of Queensland Consideration is being given to offering all four years of the GMC at the North Queensland Clinical School.
3. Flinders University of South Australia The Faculty has established a sub-quota for Aboriginal and Torres Strait Islander students and for residents of the Northern Territory; both are expected to attract more students from these backgrounds.

Table 28: Likely effects of graduate entry medical school policy changes on the characteristics of medical students

Expected change	Increase	Decrease	No change
- Annual intake	2	0	1
- Mature-age entrant	0	0	3
- Lateral-entry students	0	0	2
- Previous degree*	1	0	2
- Female	1	0	2
- Aboriginal	2	0	1
- Rural background	2	0	1
- Overseas	1	0	2

* As graduate entry cohorts progress through their training the overall proportion of medical students with previous degrees will inevitably increase.

Expected policy changes - undergraduate entry medical schools

Substantial change is evident among undergraduate entry medical schools in their approach to assessing the suitability of applicants to study medicine. In the main, these changes are designed to:

- 1) achieve a mix of students more representative of the wider community; and
- 2) improve the communication skills and other relevant personal qualities of students entering medicine.

Broader assessment criteria to HSC (or equivalent such as the SACE) performance are to be used in the future (eg., structured interviews, UMAT and other written tests) with a degree of collaboration between medical schools in their application (Table 29).

Table 29: Expected policy changes of the seven undergraduate entry medical schools

<p>1. University of New South Wales</p> <p>It is anticipated that a recent change by the Faculty in the English pre-requisites, and a change in the HSC with the compulsory counting of one unit of english in the TER, will result in a greater number of female students entering than in previous years. It is also anticipated that these changes will result in an improvement in the communication skills of students entering the course. If the Faculty is successful in its proposal for the rural access scheme, an additional six students from genuinely rural locations will gain admission.</p>
<p>2. University of Newcastle</p> <p>The current two pathway entry procedures will not be used after entry 1998. A single Composite Entry pathway will be substituted. In addition, the Medical School may consider introducing a quota for rural background students to increase numbers entering the school.</p>

3. University of Melbourne

A new Bachelor of Medicine course to be introduced in 1999 with a two thirds school leaver intake and from July 2000 one third graduate intake. Selection mode from 1999 for school leavers to include TER and two stage process with a middle-band of the order of 20% and an undergraduate admissions aptitude test. Graduate selection to based on GPA from a completed three (or more) year degree, GAMSAT or the North American Medical College Admission Test (MCAT) and structured interview (with recognition of scores from structured interview at one of the other graduate Australian Medical Schools if interviewed elsewhere).

4. Monash University

At present there are no plans to change the admission policies or procedures. However, the results of the Newcastle aptitude test taken by students applying to Melbourne University may be taken into consideration. It is not intended to introduce a separate aptitude test for Monash entry.

5. University of Adelaide

The introduction of a new selection process for 1997 brought about a fundamental change in the nature of the intake. There has been a significant increase in the number of South Australia/Northern Territory schools represented and in the number of rural students and interstate students in this year's intake. The current restriction on students with tertiary backgrounds is being reviewed as are strategies for increasing the number of rural and Aboriginal and Torres Strait Islander students.

6. University of Western Australia

The University has approved a new policy which will allow selection based on UMAT score, structured interview and TER score above cut-off threshold (top 10%). Effective for students entering in 1999.

7. University of Tasmania

There will be no policy changes in the immediate future, but the Admissions Policy and Procedures are undergoing a review with changes likely in 1999.

The structural outcomes of the changes occurring in the assessment of medical school applicants are marginal in most respects apart for an expected increase by six medical schools in the number of rural students. However, only one undergraduate entry university indicated an expected increase in the number of Aboriginal and Torres Strait Islander students (Table 30).

Of likely greater significance are the qualitative changes that are occurring as a result of changes in admission policies. The long term impact on the quality of patient care and the career choices of graduates is unknown and requires examination. A long range cohort study is required. However, while this type of study has been used in the UK for the last 20 years to examine the effects of medical workforce policy changes, it is relatively unused in Australia.

Table 30: Likely effects of expected undergraduate entry medical school policy changes on the characteristics of medical students

Expected change	Increase	Decrease	No change
- Annual intake	0	1	6
- School leavers	1	2	3
- Mature-age entrant	1	1	5
- Lateral-entry students	0	1	4
- Previous degree	1	1	4
- Female	1	0	5
- Aboriginal	1	0	4
- Rural background	6	0	0
- Overseas	1	1	2

Strategies to improve Aboriginal and Torres Strait Islander student participation in medical courses - graduate entry medical schools

The University of Sydney has five places in its annual intake reserved for Aboriginal and Torres Strait Islander students who have achieved satisfactory performance at pass level in an undergraduate degree with wide publicity through universities with high numbers of Aboriginal and Torres Strait Islander undergraduate students (Table 31).

Flinders University has established two separate sub-quotas within its annual quota of 58 places for Australian residents. The sub-quotas are for Aboriginal and Torres Strait Islander students (five) and Northern Territory residents (Table 31).

Table 31: Strategies to improve Aboriginal and Torres Strait Islander student participation, by medical schools with graduate entry programs

1. University of Sydney

The Faculty has developed a policy for the admission of Aboriginal and Torres Strait Islander people to the GMP. This policy will be published widely through universities, particularly those with high numbers of rural undergraduate students.

- 1) In addition to those Aboriginal and Torres Strait Islander applicants who are eligible under standard admissions procedures, up to five places in the GMP will be reserved for Aboriginal and Torres Strait Islander students who have achieved satisfactory performance at Pass level in their undergraduate degree;
- 2) The Faculty will accept for interview Aboriginal and Torres Strait Islander applicants who have achieved better than a minimum score (as determined by the Admissions Committee) in the GAMSAT;
- 3) A representative from the Koori Centre (a support centre of the US) will be invited to join the interview panel as a member whenever Aboriginal and Torres Strait Islander applicants are to be interviewed;
- 4) The Admissions Committee will make offers to applicants who have achieved an acceptable level of performance at interview, ie., to applicants who have attained, as a minimum, an interview score in the category within which the last standard offer of admission is made.

In addition, the university proposes to work with the Koori Centre to assist Aboriginal and Torres Strait Islander people to apply for admission into medicine and to prepare for the interview process. Once admitted, students will be supported throughout the course by means of student role models and through a mentor system.

2. University of Queensland

The university's information booklet reaffirms the Medical School's commitment to assist graduates of Aboriginal and Torres Strait Islander descent to pursue a medical career. Such graduates are advised to contact the Graduate School of Medicine (GSM) if they believe that their circumstances require special consideration. The Faculty also provides a Bachelor of Applied Health Science (Indigenous Primary Health Care) and encourages graduates to consider medicine.

3. Flinders University of South Australia

A sub-quota of up to five places is available for Aboriginal and Torres Strait Islander students. Applicants are ranked within the quota using the same criteria as for all other Australian resident applicants. All Aboriginal and Torres Strait Islander students are interviewed by panels that contain at least one indigenous person.

The school is undertaking initiatives to recruit and retain Aboriginal and Torres Strait Islander students through collaboration with the Senior Lecturer in Aboriginal and Torres Strait Islander Health, the Yunggoendi First Nations Higher Education and Research Centre at Flinders University and the Northern Territory Clinical School. Potential applicants enrolled as undergraduate students in Australian universities are identified and advised on application and interview procedures. Provisions are also being established for support of Aboriginal and Torres Strait Islander students once they commence the course.

Strategies to improve Aboriginal and Torres Strait Islander student participation in medical courses - undergraduate entry medical schools

All undergraduate entry medical schools indicate that they offer places to Aboriginal and Torres Strait applicants with the number of places available varying from one to six (Table 32).

Of all medical schools, the University of Newcastle has the most comprehensive approach to recruiting, selecting, training and graduating Aboriginal and Torres Strait Islander students. This approach includes:

1) Course promotion activities

- promotion of courses by academic staff, Aboriginal and Torres Strait Islander students and graduates to Aboriginal communities, at schools and to Aboriginal community health organisations;
- advertising of courses nationally through relevant media, including Koori mail and radio programs;
- provision of career development days with Aboriginal and Torres Strait Islander students and graduates participating;
- documentation about admission procedures and the Aboriginal Liaison Office in Faculty promotion material and the University Admission Centre (UAC) guide;

2) Culturally appropriate admission procedures

- admission processes that are consultative to ensure students' family and community

support as well as the local Aboriginal communities' support;

- broadly defined eligibility criteria which takes into account prior disadvantage;
- rigorous application of the final selection criteria, conducted over three days and based on:
 - 1) a briefing session followed by the UMAT;
 - 2) a community based Interview; and
 - 3) a structured interview and assessment.

3) Supportive learning environment

- A learning environment which provides teaching and research about Aboriginal and Torres Strait Islander health issues.

Table 32: Strategies to improve Aboriginal and Torres Strait Islander student participation, by medical schools with undergraduate entry programs

1. University of New South Wales

The Faculty has an advertised policy of offering places to Aboriginal and Torres Strait Islander applicants. Applicants are assessed on the basis of their academic record, including either or both their HSC and tertiary studies, and on an interview. Students can gain entry with a TER below the course cut-off. Although there is no cut-off, offers have only been made to students with TERs of greater than 80.

2. University of Newcastle

In 1984 the UNC established procedures for admitting four to six students of Aboriginal and Torres Strait Islander descent in addition to the 64 places originally provided. The first intake of Aboriginal and Torres Strait Islander students was in 1985.

The Faculty encourages Aboriginal and Torres Strait Islander students to enrol through:

- staff promoting courses in Aboriginal communities;
- advertising courses nationally in a variety of formats, including the distribution of purpose specific booklets, media releases, media advertising (eg., radio programs and the Koori Mail);
- students and staff visit schools and Aboriginal community health organisations;
- attendance of Aboriginal and Torres Strait Islander students and graduates at career development days;
- the use of culturally appropriate admission procedures;
- documentation in Faculty promotion material, and inclusion in the UAC guide.

Selection processes are consultative to ensure students' family and community support as well as the local Aboriginal community's support. Criteria for eligibility are broadly defined to ensure prior disadvantage is taken into account. Final selection criteria are rigorously applied to ensure confidence in a candidate's potential. The aim of the admission process is to offer places to those applicants most likely to survive and succeed. The selection process occurs in three stages. The first stage is a briefing session followed by the UMAT. The second stage is a Community Based Interview and the third stage involves a Structured Interview and Assessment Tasks over a three day period.

3. University of Melbourne

In 1998, the Bachelor of Medicine and the Bachelor of Surgery course will have up to 25 places available for Targeted Access Program (TAP) applicants. While more than half of these places are reserved for students from a rural background, Aboriginal and Torres Strait Islanders are also among the groups targeted.

4. Monash University

The University's Monash Orientation Scheme for Aborigines (MOSA) has a program which prepares Aboriginal and Torres Strait Islander students for University courses. The Faculty works with MOSA and both through this scheme and the admissions policies for rural and "special consideration" students, the opportunity is provided for admissions of Aboriginal and Torres Strait Islander students.

5. University of Adelaide

The University has an Aboriginal and Torres Strait Islander Access Scheme with a quota of two places which is integrated into the University's Wilto Yerlo program involving the recruitment of Aboriginal and Torres Strait Islander students for direct entry to the University's courses or for initial entry into foundation studies programs. Wilto Yerlo also provides additional academic and personnel support for Aboriginal and Torres Strait Islander students who enrol in the University's courses.

6. University of Western Australia

- 1) Three places over quota for Aboriginal or Torres Strait Islander students in either the standard or non standard groups;
- 2) Pre-medicine course conducted by Faculty of the Centre for Aboriginal Medical and Dental Health. The Director acts as mentor to students in the course.

The pre-medicine course is promoted through pamphlets, posters at Aboriginal organisations, personal contacts from the Director and staff of the Centre and advertising through Koori Mail. In 1997, a significant number of enquiries were received from other States as well as from local Aboriginal people, however the number of actual enrolments was relatively small, due to the preference for students with some scientific background. Five students commenced the pre-medicine course in 1997. The course consists of three units: Introduction to Aboriginal Health; Introduction to Medical Physics; Introduction to Medical Chemistry. The Faculty has recommended that the course be held in 1998 and has applied for DEETYA funds.

7. University of Tasmania

A maximum of one place is reserved for a refugee or Aboriginal candidate able to demonstrate a disadvantaged background. These candidates may have completed bridging programs deemed suitable by the Admissions Committee provided they have fulfilled the minimum requirements.

Strategies to improve rural student participation - graduate entry medical schools

All three graduate entry medical schools plan to actively promote the admission of rural students. The University of Queensland is cooperating with Queensland Health to award 30 rural scholarships and the Flinders University of South Australia is collaborating with Northern Territory Health in the provision of a quota of ten places for Northern Territory residents. Flinder's agreement with Northern Territory Health involves Northern Territory students undertaking two years of study in Adelaide and the final two years in the Northern Territory (Table 33).

The University of Queensland requires all MBBS students to sign a statement indicating their willingness to undertake years 3 and 4 in North Queensland. It is also considering offering all four years of the course at the Northern Clinical School (Townsville) (Table 33).

Table 33: Strategies to improve rural student participation, by medical schools with graduate entry programs

<p>1. University of Sydney</p> <p>The change to graduate entry and the specific criteria for admission are designed to increase diversity within the intake in general, thus opportunities for rural students have improved. The Admissions Committee is committed to maximising these opportunities through specific publicity, information and advice targeted at students in New South Wales high schools and universities outside the major metropolitan areas of Sydney, Newcastle and Wollongong.</p>
<p>2. University of Queensland</p> <ol style="list-style-type: none"> 1) For rural applicants, the University excludes the first two full-time semesters of the degree GPA calculations to allow for possible adjustment period; 2) The University does not differentiate between universities when considering primary degree; 3) Students enrolling in the MBBS are required to sign a statement indicating willingness to undertake years 3 and 4 in North Queensland if required; 4) The Faculty is cooperating with Queensland Health to award 30 Rural Scholarships to students in Year 1 of the GMC.
<p>3. Flinders University of South Australia</p> <p>The Faculty has a special entry scheme for residents of the Northern Territory (a quota of ten places). Successful applicants undertake the first two years of the degree in Adelaide and the second two years at the Royal Darwin Hospital. These applicants have a separate interview in Darwin which includes assessment of commitment to working in the Northern Territory.</p> <p>In addition, extended rural general practice terms in rural and remote communities have been developed. A new initiative, the Parallel Rural Community Curriculum will allow eight to ten volunteer students in Year 3 to undertake their entire studies in a rural setting. Students with a special interest in rural health can follow an identified rural stream within the course. This will link with the proposed future development of postgraduate studies in rural health.</p>

Strategies to improve rural student participation - undergraduate entry medical schools

All seven undergraduate entry medical schools indicate that rural students are given special consideration. For example, the University of New South Wales has set aside up to six places for rural applicants with a minimum TER of 85.00 and appointed a part time lecturer to promote the course to rural communities. The University of Newcastle has a Rural/Remote Entry Scheme which grants special consideration to rural students with a minimum TER of 85.00. Under the TAP scheme the University of Melbourne will have approximately 12-15 places available for rural students. The University of Western Australia has up to 14 places available for rural students and the University of Tasmania is planning to increase the proportion of rural students to 30% of admissions (Table 34).

It is noteworthy that the Commonwealth Government has taken action to address needs in rural areas through the Rural Undergraduate Steering Committee, one component of which has been the Rural Incentives Program.

In 1997, 27 rural applicants gained entry to the Monash program (19% of all entrants). This medical school is cooperating with the Victoria Coordinating Unit for Rural Health Education and other universities in Victoria to increase the participation of rural students in tertiary studies with a target of 20% rural representation (Table 34).

Table 34: Strategies to improve rural student participation, by medical schools with undergraduate entry programs

1. University of New South Wales

In 1996 the Faculty appointed a part-time lecturer to promote the course to rural communities. In addition, the Faculty is supporting an entry scheme for rural students. It involves setting aside up to six places for rural applicants who attain a minimum TER of 85 and who are able to demonstrate to the Faculty that they meet other stated selection criteria.

2. University of Newcastle

The Faculty at the UNC has implemented a number of strategies aimed at increasing the number of rural students in the Bachelor of Medicine course. These strategies include:

- providing better information to potential applicants, including having medical students visit rural areas to talk with local high school students about careers in medicine and health sciences;
- applied for a grant from the NSW RDRN to develop an information kit to be used in conducting workshops for rural high school students about career options in the health professions;
- the introduction of a Rural/Remote Entry Scheme. Under this scheme applicants who attend a high school in a designated rural or remote location are eligible for consideration for admission with a lower minimum academic requirement (ie., a TER of 85.00 (the minimum academic requirement for secondary applicants from non-rural high schools is 90.00). High schools are classified by postcode according to the RRMAC.
- commenced an evaluation of the outcomes of the above strategies.

3. University of Melbourne

In 1998, the Bachelor of Medicine and the Bachelor of surgery course will have up to 25 places available for TAP applicants, with more than half of these places reserved for students from a rural background.

4. Monash University

Applicants from rural schools are given special consideration and may be elevated into the interview group. For this purpose "rural" is defined as outside metropolitan Melbourne and Geelong. By this definition approximately 25% of Victoria's population is rural. In 1997, 45 applicants were elevated into the interview group and 27 gained admission (19% of entrants).

Monash is actively seeking to encourage more rural origin students to apply for its medical course through a careers programs run in cooperation with the Coordinating Unit for Rural Health Education in Victoria, a rural students club, rural forum days for Year 11 and 12 students and health careers nights. In addition, Monash University is collaborating with the University of Melbourne, Latrobe University and Deakin University to run two separate Health Careers Residential Workshops for rural students in Year 11 and 12 in 1997. The recommended target for students with a rural background is 20%.

5. University of Adelaide

The introduction of the new selection strategy widened the window of opportunity for rural school students because the Year 12 achievement threshold was reduced from a top percentile to a top decile level with an outcome of a significant increase in rural student enrolments. The University's Fairway Scheme continued to underpin medical selection and was important for rural South Australian applicants.

6. University of Western Australia

Ten places are provided within normal quotas to rural applicants. Within the Non Standard Group of places, four may be allocated in the first year to applicants who have lived in a rural area of Western Australia (outside a radius of 75 kilometres from the Perth city centre) for a minimum period of two years and who, during that period, completed Years 11 and 12 at a secondary school in the rural area. Other such residents of the rural area who completed TEE studies through a local TAFE or Technical College and/or by distance education while residing in the rural area are also considered. Any places not filled revert to normal Non-Standard Entry.

7. University of Tasmania

A maximum of two places is reserved for rural candidates able to demonstrate disadvantaged backgrounds and who meet the necessary pre-requisites. In addition, the School of Medicine has set a target to increase the proportion of rural undergraduate students to at least 30% of admissions. It is also implementing processes for monitoring the number of students admitted with a rural background.

Summary of medical school policies and strategies: 1997 and beyond

In the main, five criteria are being employed to assess applicants to medical schools:

- performance in Higher School Certificate (or equivalent such as the South Australian Certificate of Education);
- performance in prior university studies;
- for graduate entry students - performance in the Graduate Australian Medical Schools Admissions Test which has a major focus on assessment of problem solving abilities across a wide range of subject areas;
- ability as indicated by performance in psychometric tests, such as the Undergraduate Medical Admissions Test; and
- performance in structured interview.

At both graduate and undergraduate entry levels, the aim of the new and evolving admissions procedures are to select students who are academically able and who possess other skills and personal qualities appropriate to the study and practice of medicine.

Substantial changes are expected in the future by both graduate and undergraduate medical schools. These changes are likely to alter the mix of students studying medicine to a group more representative of the wider community, increase the number of rural background students participating in medical courses and, to a lesser extent, increase the number of Aboriginal and Torres Strait Islander students entering a medical course.

There is increasing collaboration among medical schools in the selection of medical students.

There is growing awareness among medical schools of the need to implement and foster strategies which lead to the graduation of more Aboriginal and Torres Strait Islander doctors and doctors who want to work in rural areas.

6 THE LIKELY IMPACT OF TRENDS IN STUDENT CHARACTERISTICS ON THE AUSTRALIAN MEDICAL WORKFORCE

This chapter examines the likely profile of the future workforce with reference to the commencing classes of 1996 and 1997 and the data provided by the medical schools about their future plans. The chapter is intended as a short summary, which will inform the review of Australian medical workforce benchmarks currently in progress.

Table 35 compares the Australian population, the current medical workforce and the 1997 cohort of commencing students with respect to a number of socio-demographic indicators. The trend is towards a medical workforce with a gender profile close to that of the Australian population with 54% of commencing students male and 46% female. However, this trend does not hold with respect to the representation of rural background students and Aboriginal and Torres Strait Islander students. While 29% of Australians reside in a rural area, only 17% of commencing medical students in 1997 have a rural background. A similar anomaly exists in terms of Aboriginal and Torres Strait Islander people in the medical workforce and in the future workforce as defined by the 1997 cohort of commencing students. Furthermore, a greater proportion of the 1997 commencing students were born in a country other than Australia than is the case in the Australian population.

Table 35: Characteristics of the 1997 commencing cohort of medical students compared with the Australian population at large and the current medical workforce

Workforce characteristics	Australian population ^a	Current medical workforce ^b	1997 commencing cohort ^c
Gender			
- Male	49.5%	73.0%	54%
- Female	50.5%	27.0%	46%
- Total number	18,396,000	48,941	1,211
Rural residence			
- Metropolitan	71.7%	84.0%	85.0%
- Rural	29.3%	16.0%	17.0%
Indigenous	2.0%	0.05%	0.7%
Country of birth			
- Australia	75.0%	61.1%	61.0%
- UK/Ireland	6.0%	14.1%	6.3%
- Africa	0.3%	2.4%	2.0%
- Asia	4.0%	11.3%	25.7%
- Other countries	15.0%	11.1%	7.0%

a - ABS (1997)

b - Medical Labour Force, 1994, AIHW (1996) and Medical Labour Force Survey, 1995, AIHW (1997)

c - AMWAC Survey of Medical Schools (1997) and for country of birth, DEETYA data (1996)

Age and gender

Commencing medical students are older than they were a decade ago and more women are graduating. Both trends were evident prior to the change to graduate entry programs and will be accelerated by these initiatives.

Almost 20% of graduates will be over the age of 29 years from the year 2001. This fact will need to be considered in all medical workforce planning decisions. The forthcoming AMWAC/AIHW report updating the Australian Medical Workforce Benchmarks will clarify the extent to which this demographic change is likely to influence future workforce requirements.

During the last eight years the number of women among commencing medical students has increased by 3%, from 43% in 1989 to 46% in 1997. During this same period of time women in the medical workforce have increased by a similar amount, from 23% in 1986 to 27% in 1995. This workforce trend is expected to accelerate because of the comparatively large number of male clinicians who are aged 55 years and over (24% in 1995) compared with 8.5% of female clinicians. Workforce planners will need to consider the effects of this trend given the evidence that female doctors tend to work less hours per week than do male doctors (largely due to their other social and family commitments) and retire at an earlier age.

Aboriginal and Torres Strait Islander participation

The report has identified that some progress has been made in increasing the number of Aboriginal and Torres Strait Islander people undertaking a medical degree, but they are still significantly under-represented in medical training compared with their 2.0% share of the Australian population in 1996. In 1997, three universities indicated that they expect the number of Aboriginal and Torres Strait Islander students admitted to their medical degree to increase. The challenge for universities is the provision of a learning environment conducive to recruiting and retaining suitable candidates. It is recognised that strategies are generally in place to achieve this, but these important workforce initiatives will require monitoring and evaluating.

Rural background student participation

Recent gains appear to have been made in the recruitment of students from rural areas. In 1997, 17% of commencing students had a rural background. This is a substantial increase over earlier years (eg., 10.7% in 1989 and 10.9% in 1995). Furthermore, all medical schools now have policies which support an increase in the participation of rural students. The effectiveness of these initiatives will require monitoring.

Country of birth

In 1995 and 1996, 61.1% of the current medical workforce and 61% of commencing medical students were born in Australia compared with 75% of the Australian population at large. Little is known about the unique contribution made by the overseas-born segment of the workforce or about the effects of culture (as defined by country of birth) on career decisions and workforce participation and distribution. This issue requires further investigation.

Conclusions

Many of the changes in medical education and in the characteristics of medical students are to do with qualitative aspects, specifically, personal characteristics of students, tested in interview and including characteristics directly relevant to quality of care, namely, ability to communicate, tolerance and insight into other peoples' point of view, ability to analyse and solve problems and a priority of commitment to patients and their interests. Most methods currently used to analyse health services, including the medical workforce, are quantitative and variance oriented. It is likely that qualitative, longitudinal process evaluation will best describe the impact of selecting students with these characteristics. Development of reliable techniques presents a challenge.

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Statistical appendix

A profile of Australian resident undergraduate medical students



Australian Institute of Health and Welfare

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1. Overview

1.1 Introduction

This statistical profile has been prepared by the Australian Institute of Health and Welfare to support the Australian Medical Workforce Advisory Committee's analysis of the characteristics of students entering Australian medical schools.

This profile focuses on the characteristics of Australian citizens or permanent residents entering undergraduate study at Australian medical schools and provides a profile of the students commencing and completing undergraduate courses at each school.

Workforce planning issues in relation to the selection of medical students include:

- the desirability of increasing the numbers of Aboriginal and Torres Strait Islander medical practitioners as one of the strategies of improving Aboriginal health in Australia;
- the need to increase the numbers of general and specialist medical practitioners in rural and remote areas to address significant shortages across Australia. Current statistics indicate that medical practitioners most likely to practise in rural areas are Australian-born and males, while anecdotal evidence is that the probability of rural practice, especially in non-coastal areas, is also greatly increased by having rural origins;
- inequities in workforce distribution among the States and Territories, with Western Australia and Queensland having 88% and 84% respectively of the national number of employed medical practitioners per 100,000 population. Both States have relied heavily on employment of temporary resident doctors (TRDs) to fill the breach. Commonwealth policy announced in 1996 is to scale down use of TRDs; in 1995-96, 980 TRDs arrived in Australia for temporary employment. From 1 November 1997, TRDs will not be deemed as medical practitioners for Medicare purposes unless they have relevant overseas qualifications in their field. TRDs will not be deemed as medical practitioners for Medicare purposes from 1 January 2000. The distribution of medical students among the States and Territories, and the residential origin of the students at each university, is therefore of particular importance if locally trained medical practitioners are to fill the gaps currently filled by TRDs.

1.2 Overall numbers

The overall numbers reflect government policy during the 1980's and early 1990's to limit numbers of basic medical degree graduates to 1,200 per year. In 1995 government policy changed to reduce this limit to 1,000 per year, and reductions in student commencements occurred in 1996, both because of this decision and because of changes at a number of universities to a graduate entry medical degree.

- Over the period 1988-95, undergraduate medical courses were completed by 9,441 Australian residents. Of these, 4,015 (42.5%) were female. It was only in

1990 and the last two years of the period that females exceeded this long term average, with females comprising 46.6% and 45.0% in 1994 and 1995 respectively.

- Over the period, 1989–96, undergraduate medical courses were commenced by 9,765 Australian residents. Of these, 4,522 (46.3%) were female. There was considerable variation among universities in the proportion of female students accepted into medical courses. At the University of Newcastle 60.7% of commencing students over the eight year period were female, while the number of commencing students at the University of Sydney, University of New South Wales and the University of Melbourne were below 50% female for all years.

1.3 Age structure

- 82.1% of commencing students were 19 or less years of age over the period 1989–96. These students may be considered school leavers or students who deferred commencement of higher education for one-year after completing secondary school. However this proportion will decrease with the implementation of graduate entry for medical students at three universities.
- The University of Newcastle, with different entry requirements to other Universities, had an average age for commencing students of 21.7 years from 1989 to 1996. This was more than 3 years older than the average age of around 18.3 years for almost all other universities, the exception being the University of Sydney with 19.7 years.
- Over the period 1988–95, at the time of completing their course 51.0% of medical graduates were less than 23 years of age, 34.3% were 23 years of age, 13.1% were 24 years of age, 11.5% were 25–29 years of age and 6.1% were 30 or more years of age.
- In 1996, medical student training changed to a graduate entry degree course at Flinders University and 43.3% of the 60 students commencing this course were aged 25 years or more with the remainder aged 20–24 years. The average was about 25 years. Data are not yet available for other universities that made this transition in 1997. However the Flinders data suggest that in future years the average age of commencing medical students will increase by up to 7 years with a consequential increase in age at graduation significantly reducing expected years of employment in the medical workforce.

1.4 Geographic distribution by State and Territory

The Department of Employment, Education, Training and Youth Affairs (DEETYA) annual higher education student data collection is based on information contained in the student enrolment form, or a separate statistical appendix to the enrolment form. It provides the postcode of two addresses for each student: a home address and a term address that will be identical in many cases. The geographic distribution of commencing students presented here is based on the postcode of the reported home address at the time of commencement of the course. This address provides reasonably accurate information on student place of origin where it differs significantly

from the State and region of the university at which the student is enrolled. The duration of a medical course is such that the home address provided in later years of a course is more likely to be in the State and region where the university is located. Graduate entry students are likely to show a home address in the region where they have completed previous study or where their current employment is located.

- Data for 1993 and 1996 show that, at most universities, over 90% of Australian students commencing an initial medicine course originated from the State where the university was located. Universities with a significant intake from outside their home State were Flinders University (45.0% of students commencing in 1996 did not originate from South Australia), the University of Newcastle (30.2%), the University of Tasmania (25.9%), and the University of New South Wales (15.4%).
- In 1993, the distribution of medical students by State of home residence was similar to the distribution of the population of Australia by State and Territory. However it should be noted that:
 - South Australia, the State with by far the highest provision of doctors per 100,000 population (316 in 1995 compared with 269 for Australia), had the highest above-the-average share of the medical student population, 10.2% of medical students with a home residence in South Australia compared with 8.3% of national population;
 - Queensland, with a workforce provision well below the national level, had less than its share of medical students (16.2%) than would be expected from its 17.6% of population;
 - there were no students from the Northern Territory, although there were small numbers in other years.

1.5 Geographic distribution by metropolitan and non-metropolitan

- Over the period 1989–96, of all commencing students 89.4% originated from a capital city or other metropolitan area, 10.1% from a rural area and 0.5% from a remote area. In contrast, around 71% of the population were living in metropolitan areas, 26% in rural areas and 3% in remote areas.
- Over the 8 year period, the percentage of students from rural and remote areas who commenced at each university was 35.9% at the University of Tasmania (mainly because of the classification of Launceston as a large rural centre), 18.2% at the University of Queensland, 15.7% at the University of Newcastle, 11.5% at Monash University, 9.1% at the University of Melbourne, 8.5% at the University of Adelaide, 7.4% each at Flinders University and the University of Western Australia, 5.6% at the University of New South Wales and 3.6% at the University of Sydney.

1.6 Aboriginal and Torres Strait Islander students

- Of the Australian students who commenced medical courses in the period 1989–96, there were 64 students who self reported as being Aboriginal and Torres Strait Islander representing 0.7% of the commencing students. At the 1991 census, 1.6% of the Australian population identified as Aboriginal. The University of

Newcastle had 25 (39.0%) of the 64 Aboriginal commencing students, and this represented 4.6% of the total commencing medical students at the University.

- In the period 1988–95, there were 26 Aboriginal students who completed medical degrees representing 0.3% of all Australian students who completed medical courses in the period. Of these Aboriginal students, 11 (42.3%) graduated from the University of Newcastle.

1.7 Country of birth

- In 1996, of Australian citizen or permanent resident medical students 61.6% were born in Australia, compared with 77.2% of the population as a whole.
- 4.8% were born in the UK or Ireland, compared with 6.7% of the population as whole.
- 22.0% were born in Asian countries, compared with 4.8% of the population as a whole.

1.8 Conclusions

In terms of meeting current and future workforce requirements, the data suggest the following:

- There are imbalances in the numbers of medical students among the States when medical student distribution is compared with medical workforce provision per 100,000 population and population distribution among the States and Territories;
- The relative and absolute numbers of students being trained in Queensland and Western Australia will be inadequate to replace TRDs being employed in those States and other strategies will be needed to replace TRDs if the use of TRDs is phased out between 1997 and 2000;
- There are considerable differences among universities in the proportions of rural and Aboriginal medical students;
- If, on the basis of current statistics, the doctors most likely to practise in rural areas are Australian-born, male, rural residents, then these characteristics are significantly under-represented among medical students compared with the proportion of the population of Australia in rural and remote areas. This may cement current rural medical workforce shortages for some years as incentive schemes for metropolitan doctors to practise in rural areas have existed for many years and have not increased the proportion of doctors residing in rural areas. However university policies to increase numbers of rural and indigenous students in the future will help redress the imbalances in the mix of medical students.
- The transition to a graduate entry medical degree will increase the average age of commencing medical students by 5 to 7 years, from 18 to up to 25 years, based on Flinders University data for 1996. This in turn will shorten the working life of future graduates and, in particular, increase the numbers of specialists-in-training required to meet future workforce requirements.

2. Notes

Data source

All the data in this profile were obtained from the Commonwealth Department of Employment, Education, Training and Youth Affairs (DEETYA). Each year the Department collects data on all students enrolled as at 31 March in Australian universities and other higher education institutions and all students who completed courses in the previous calendar year. The compiled data become available for distribution around November in each year.

The Australian Institute of Health and Welfare has obtained selected data from DEETYA since the 1989 collection and has compiled this statistical profile from that data. Data for years before 1989 for student enrolments and 1988 for course completions may be available from DEETYA.

Definitions

Aboriginal student

In the DEETYA data, Aboriginal and Torres Strait Islander medical students comprise all medical students who self reported as Aboriginal and Torres Strait Islander.

Commencing student

A student who is enrolled at the reference date (31 March in the reference year) and has enrolled for the first time in the course at that university since the previous reference date.

Completing student

A student who completed all academic requirements for admission to an award from the university during the year ended 31 December.

Mature age student

There is no single accepted definition of a mature age higher education student. For example, while most higher education institutions have special mature age entry schemes, there is a considerable degree of variability in the parameters they set. Many institutions nominate 21 years as the minimum age but quite a few specify 20 or 23 years. Also, some other criteria (such as years since leaving secondary school and work experience) may come into consideration. The commencing student tables show students in the 20–24 years and the 25 or more years age groups.

School leaver

A student who commenced a higher education course directly after completing high school or who has a break of a year after completing high school commonly referred to as a 'one-year deferrer'.

Due to different school curriculum structures among the States the age of completing high school differs among the States. In Queensland and South Australia the age of completing high school is normally 17 years and in the other States and Territories it is 18 years. The tables for commencing students show an age classification that allows identification of school leavers and one-year deferrers.

Undergraduate student

A student in a course classified to the level of bachelor pass, bachelor honours or postgraduate bachelor. The university determines the level of a course.

In the DEETYA data a course defined as postgraduate bachelor level is at bachelor level with an entry requirement of a previous relevant bachelor degree. The new graduate entry medical course at Flinders University has been reported in the data the University supplied to DEETYA as postgraduate bachelor level.

3. Acknowledgments

Warwick Conn of the AIHW Labour Force Unit prepared this profile.

Queries in relation to these statistics may be directed to Warwick Conn on phone (02) 6244 1154 or fax (02) 6244 1045, or John Harding on phone (02) 6244 1153.

4. Statistical appendix

4.1 Total Australian citizen/resident undergraduate medical students

Table 1: Australian citizen/permanent resident^(a) medical student course completions: level of course, Australia, 1989-95

Level of course	1989	1990	1991	1992	1993	1994	1995
Bachelor:							
Postgraduate	0	0	0	2	5	0	6
Pass	1,162	997	940	1,019	1,181	1,178	1,191
Honours	25	17	204	60	48	57	44
Total	1,187	1,014	1,144	1,081	1,234	1,235	1,241
Number of females	487	442	467	453	513	576	558
% female	41.0	43.6	40.8	41.9	41.6	46.6	45.0
Postgraduate:							
Diploma/certificate	33	32	47	36	73	133	117
Masters qualifying	5	0	0	2	0	0	0
Masters	38	46	76	37	35	51	55
PhD	108	130	165	142	138	168	190
Higher doctorate	33	34	36	35	28	28	39
Total	217	242	324	252	274	380	401
Total	1,404	1,256	1,468	1,333	1,508	1,615	1,642
Number of females	569	542	610	572	624	739	770
% female	40.5	43.2	41.6	42.9	41.4	45.8	46.9
(per cent)							
Bachelor:							
Postgraduate	0.0	0.0	0.0	0.2	0.3	0.0	0.4
Pass	82.8	79.4	64.0	76.4	78.3	72.9	72.5
Honours	1.8	1.4	13.9	4.5	3.2	3.5	2.7
Total	84.5	80.7	77.9	81.1	81.8	76.5	75.6
Postgraduate:							
Diploma/certificate	2.4	2.5	3.2	2.7	4.8	8.2	7.1
Masters qualifying	0.4	0.0	0.0	0.2	0.0	0.0	0.0
Masters	2.7	3.7	5.2	2.8	2.3	3.2	3.3
PhD	7.7	10.4	11.2	10.7	9.2	10.4	11.6
Higher doctorate	2.4	2.7	2.5	2.6	1.9	1.7	2.4
Total	15.5	19.3	22.1	18.9	18.2	23.5	24.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Before 1993, not all universities had citizenship information for all students completing courses, therefore these data include students for whom citizenship/residency status was unknown. Consequently, in the data before 1993 there may be a small overstatement of student course completions by Australian citizens/residents.

Table 2: Australian citizen/resident students completing undergraduate medicine courses: sex and age, Australia, 1988-95

Age (years)	1988	1989	1990	1991	1992	1993	1994	1995
Males								
<23	373	349	266	280	256	321	238	232
23	214	173	162	232	192	201	218	233
24	79	69	64	70	78	84	75	97
25-29	81	73	56	59	68	74	90	92
30+	39	36	24	36	34	41	38	29
Total	786	700	572	677	628	721	659	683
Females								
<23	282	242	226	212	192	239	219	220
23	123	130	130	134	148	150	182	169
24	52	50	42	48	50	58	75	77
25-29	34	44	28	44	43	40	54	58
30+	28	21	16	29	20	26	46	34
Total	519	487	442	467	453	513	576	558
Persons								
<23	655	591	492	492	448	560	457	452
23	337	303	292	366	340	351	400	402
24	131	119	106	118	128	142	150	174
25-29	115	117	84	103	111	114	144	150
30+	67	57	40	65	54	67	84	63
Total	1,305	1,187	1,014	1,144	1,081	1,234	1,235	1,241

Table 3: Australian citizen/resident students completing undergraduate medicine courses: country of birth, Australia, 1988-95

Country of birth	1988	1989	1990	1991	1992	1993	1994	1995
Australia	26	565	517	550	551	822	775	776
New Zealand/Oceania	0	9	10	8	18	13	23	16
UK/Ireland	2	34	42	40	52	69	65	52
Other Europe/USSR	0	27	24	32	34	20	47	32
Middle East/Nth Africa	0	4	17	13	16	29	15	24
Southern Asia	4	11	19	17	22	41	39	38
Northeast Asia	0	11	31	25	41	53	61	73
Southeast Asia	11	36	77	90	94	145	160	189
North/South America	0	7	11	17	20	19	17	16
Africa	1	14	16	11	14	21	24	17
Not known	1,261	469	250	341	219	2	9	8
Total	1,305	1,187	1,014	1,144	1,081	1,234	1,235	1,241

Table 4: Aboriginal students commencing/completing undergraduate medicine courses: sex, Australia, 1988-96

	1988	1989	1990	1991	1992	1993	1994	1995	1996
Commencing students:									
Males	..	3	4	4	4	2	5	1	2
Females	..	3	4	6	7	5	3	5	6
Total	..	6	8	10	11	7	8	6	8
Completing students:									
Males	0	2	3	0	1	3	2	4	..
Females	0	4	2	2	0	0	1	2	..
Total	0	6	5	2	1	3	3	6	..

Table 5: Australian citizen/resident students commencing undergraduate medicine courses: sex and age, Australia, 1989-96

Age (years)	Year							
	1989	1990	1991	1992	1993	1994	1995	1996
Males								
<18	336	309	272	311	287	286	188	200
18	237	255	267	230	241	190	157	161
19	57	70	58	52	49	45	36	36
20-24	95	78	76	95	66	66	39	54
25-29	29	37	28	23	16	21	18	17
30+	22	25	14	21	23	15	12	23
Total	776	774	715	732	682	623	450	491
Females								
<18	261	275	271	250	255	257	158	169
18	192	194	207	196	196	187	145	148
19	38	51	44	44	52	39	33	27
20-24	61	59	89	60	67	56	38	60
25-29	29	35	30	23	20	22	20	20
30+	14	17	28	18	21	21	12	13
Total	595	631	669	591	611	582	406	437
Persons								
<18	597	584	543	561	542	543	346	369
18	429	449	474	426	437	377	302	309
19	95	121	102	96	101	84	69	63
20-24	156	137	165	155	133	122	77	114
25-29	58	72	58	46	36	43	38	37
30+	36	42	42	39	44	36	24	36
Total	1,371	1,405	1,384	1,323	1,293	1,205	856	928

Table 6: Australian citizen/resident students commencing undergraduate medicine courses: country of birth, Australia, 1989-96

Country of birth	1989	1990	1991	1992	1993	1994	1995	1996
Australia	902	793	791	757	677	752	525	566
New Zealand/Oceania	16	14	25	17	15	12	8	13
UK/Ireland	64	60	67	60	52	48	35	31
Other Europe/USSR	50	50	40	17	29	33	22	27
Middle East/Nth Africa	23	34	30	21	39	35	41	19
Southern Asia	34	37	47	28	30	26	21	31
Northeast Asia	55	78	95	90	111	94	66	103
Southeast Asia	158	189	207	201	202	156	102	105
North/South America	22	17	23	18	19	18	14	14
Africa	25	17	17	20	17	22	22	18
Not known	22	116	42	94	102	9	0	1
Total	1,371	1,405	1,384	1,323	1,293	1,205	856	928

Table 7: Australian citizen/permanent residents commencing undergraduate^(a) medicine courses: State and region of home residence, 1989-96

State / region of home residence	1989	1990	1991	1992	1993	1994	1995	1996	Total 1989-96	%
New South Wales										
Capital city	360	354	368	345	336	280	168	184	2,395	82.6
Other metropolitan centre	51	39	43	34	30	38	27	29	291	10.0
Large rural centre	8	3	2	8	8	8	4	4	45	1.6
Small rural centre	16	11	15	10	10	10	5	3	80	2.8
Other rural area	13	16	5	13	12	16	3	5	83	2.9
Other remote area	0	2	0	1	0	1	0	1	5	0.2
<i>Total</i>	<i>448</i>	<i>425</i>	<i>433</i>	<i>411</i>	<i>396</i>	<i>353</i>	<i>207(b)</i>	<i>226(b)</i>	<i>2,899</i>	<i>100.0</i>
Victoria										
Capital city	297	326	315	302	299	313	273	290	2,415	88.3
Other metropolitan centre	3	8	9	8	5	5	6	5	49	1.8
Large rural centre	6	5	7	6	10	3	11	10	58	2.1
Small rural centre	5	9	6	5	6	13	5	9	58	2.1
Other rural area	26	8	18	14	23	20	22	23	154	5.6
Other remote area	0	1	0	1	0	0	0	0	2	0.1
<i>Total</i>	<i>337</i>	<i>357</i>	<i>355</i>	<i>336</i>	<i>343</i>	<i>354</i>	<i>317</i>	<i>337</i>	<i>2,736</i>	<i>100.0</i>
Queensland										
Capital city	196	163	160	151	155	173	29	34	1,061	74.8
Other metropolitan centre	8	18	17	20	16	15	7	5	106	7.5
Large rural centre	10	24	21	24	22	15	2	5	123	8.7
Small rural centre	4	4	2	10	3	1	1	0	25	1.8
Other rural area	8	17	18	20	12	12	1	1	89	6.3
Remote centre	1	7	0	0	1	1	0	0	10	0.7
Other remote area	2	0	1	0	1	0	0	0	4	0.3
<i>Total</i>	<i>229</i>	<i>233</i>	<i>219</i>	<i>225</i>	<i>210</i>	<i>217</i>	<i>40(b)</i>	<i>45(b)</i>	<i>1,418</i>	<i>100.0</i>
Western Australia										
Capital city	113	116	119	114	117	112	111	119	921	92.7
Small rural centre	2	2	3	1	2	3	6	6	25	2.5
Other rural area	6	3	5	5	5	4	3	3	34	3.4
Remote centre	0	0	1	0	2	3	1	1	8	0.8
Other remote area	0	1	1	0	2	0	1	0	5	0.5
<i>Total</i>	<i>121</i>	<i>122</i>	<i>129</i>	<i>120</i>	<i>128</i>	<i>122</i>	<i>122</i>	<i>129</i>	<i>993</i>	<i>100.0</i>
South Australia										
Capital city	140	145	146	128	122	82	91	108	962	92.7
Large rural centre	2	3	0	0	0	1	1	0	7	0.7
Small rural centre	4	1	2	2	1	4	0	3	17	1.6
Other rural area	4	8	5	6	8	6	2	9	48	4.6
Other remote area	0	0	0	1	1	0	1	1	4	0.4
<i>Total</i>	<i>150</i>	<i>157</i>	<i>153</i>	<i>137</i>	<i>132</i>	<i>93(b)</i>	<i>95(b)</i>	<i>121</i>	<i>1,038</i>	<i>100.0</i>
Tasmania										
Capital city	29	26	28	25	28	33	30	27	226	61.2
Large rural centre	6	7	8	10	9	9	8	7	64	17.3
Small rural centre	2	7	3	7	4	1	4	1	29	7.9
Other rural area	4	7	10	8	7	4	3	6	49	13.3
Other remote area	1	0	0	0	0	0	0	0	1	0.3
<i>Total</i>	<i>42</i>	<i>47</i>	<i>49</i>	<i>50</i>	<i>48</i>	<i>47</i>	<i>45</i>	<i>41</i>	<i>369</i>	<i>100.0</i>
Australian Capital Territory										
Capital city	27	36	29	24	25	15	22	20	198	100.0

(continued)

Table 7(continued): Australian citizen/permanent residents commencing undergraduate^(a) medicine courses: State and region of home residence, 1989-96

State / region of home residence	1989	1990	1991	1992	1993	1994	1995	1996	Total 1989-96	%
Northern Territory										
Capital city	4	6	4	5	0	2	5	3	29	80.6
Remote centre	0	1	0	1	0	1	0	0	3	8.3
Other remote area	2	0	2	0	0	0	0	0	4	11.1
Total	6	7	6	6	0	3	5	3	36	100.0
Total										
Capital city	1,166	1,172	1,169	1,094	1,082	1,010	729	785	8,207	84.0
Other metropolitan centre	62	65	69	62	51	58	40	39	446	4.6
Large rural centre	32	42	38	48	49	36	26	26	297	3.0
Small rural centre	33	34	31	35	26	32	21	22	234	2.4
Other rural area	61	59	61	66	67	62	34	47	457	4.7
Remote centre	1	8	1	1	3	5	1	1	21	0.2
Other remote area	5	4	4	3	4	1	2	2	25	0.3
Not known	11	21	11	14	11	1	3	6	78	0.8
Total	1,371	1,405	1,384	1,323	1,293	1,205^(b)	856^(b)	928^(b)	9,765	100.0

(a) Includes bachelor pass, bachelor honours and postgraduate bachelor.

(b) Flinders University, University of Queensland and University of Sydney are introducing a four-year graduate entry medical course in place of the previous six-year undergraduate course. Each university has a two-year transition period during which only a small number of students with the necessary qualifications are admitted. The first intake to the new course at Flinders University was in 1996 and the first intakes to the new courses at the University of Queensland and the University of Sydney were in 1997.

Table 8: Australian citizen/permanent residents commencing undergraduate^(a) medicine courses: sex and university, 1989-96

University	1989	1990	1991	1992	1993	1994	1995	1996
Flinders University(b)	57	76	69	63	64	8	0	60
Monash University	153	151	161	140	136	136	130	139
University of Adelaide	107	107	112	105	98	101	103	93
University of Melbourne	182	197	185	182	182	192	199	198
University of Newcastle	65	75	72	69	66	66	69	63
University of New South Wales	152	141	144	156	139	145	160	175
University of Queensland(b)	223	238	229	223	215	222	6	2
University of Sydney(b)	264	251	238	219	218	164	14	21
University of Tasmania	49	48	49	48	50	49	53	54
University of Western Australia	119	121	125	118	125	122	122	123
Total	1,371	1,405	1,384	1,323	1,293	1,205	856	928
(per cent who are female)								
Flinders University	42.1	43.4	53.6	57.1	51.6	25.0	..	55.0
Monash University	42.5	40.4	50.9	47.9	49.3	52.2	61.5	56.1
University of Adelaide	40.2	48.6	42.9	49.5	39.8	39.6	53.4	43.0
University of Melbourne	44.5	43.1	43.2	45.1	42.9	47.9	40.2	38.9
University of Newcastle	66.2	73.3	66.7	65.2	57.6	57.6	56.5	60.3
University of New South Wales	42.1	42.6	40.3	36.5	41.0	42.1	40.0	47.4
University of Queensland	42.2	48.7	49.8	41.3	55.3	50.0	50.0	0.0
University of Sydney	36.0	35.5	43.7	35.2	43.6	46.3	35.7	38.1
University of Tasmania	59.2	60.4	61.2	58.3	54.0	61.2	43.4	53.7
University of Western Australia	47.9	42.1	54.4	46.6	46.4	50.0	46.7	52.0
Total	43.4	44.9	48.3	44.7	47.3	48.3	47.4	48.5

For footnotes see table above.

Table 9: Australian citizen/permanent residents commencing undergraduate^(a) medicine courses: university and State of home residence, 1993^(b)

	Student's State of home residence									Total
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Not known	
University of Sydney	199	7	3	4	0	0	5	0	0	218
University of New South Wales	124	4	0	1	1	0	8	0	1	139
University of Newcastle	57	2	3	0	0	0	4	0	0	66
University of Melbourne	1	171	1	0	0	0	3	0	6	182
Monash University	1	135	0	0	0	0	0	0	0	136
University of Queensland	7	5	201	0	0	0	1	0	1	215
University of Western Australia	1	0	0	123	0	0	0	0	1	125
University of Adelaide	0	4	0	0	91	0	1	0	2	98
Flinders University	6	15	2	0	40	0	1	0	0	64
University of Tasmania	0	0	0	0	0	48	2	0	0	50
Total	396	343	210	128	132	48	25	0	11	1,293
(per cent)										
University of Sydney	50.3	2.0	1.4	3.1	0.0	0.0	20.0	..	0.0	16.9
University of New South Wales	31.3	1.2	0.0	0.8	0.8	0.0	32.0	..	9.1	10.8
University of Newcastle	14.4	0.6	1.4	0.0	0.0	0.0	16.0	..	0.0	5.1
University of Melbourne	0.3	49.9	0.5	0.0	0.0	0.0	12.0	..	54.5	14.1
Monash University	0.3	39.4	0.0	0.0	0.0	0.0	0.0	..	0.0	10.5
University of Queensland	1.8	1.5	95.7	0.0	0.0	0.0	4.0	..	9.1	16.6
University of Western Australia	0.3	0.0	0.0	96.1	0.0	0.0	0.0	..	9.1	9.7
University of Adelaide	0.0	1.2	0.0	0.0	68.9	0.0	4.0	..	18.2	7.6
Flinders University	1.5	4.4	1.0	0.0	30.3	0.0	4.0	..	0.0	4.9
University of Tasmania	0.0	0.0	0.0	0.0	0.0	100.0	8.0	..	0.0	3.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	..	100.0	100.0
University of Sydney	91.3	3.2	1.4	1.8	0.0	0.0	2.3	..	0.0	100.0
University of New South Wales	89.2	2.9	0.0	0.7	0.7	0.0	5.8	..	0.7	100.0
University of Newcastle	86.4	3.0	4.5	0.0	0.0	0.0	6.1	..	0.0	100.0
University of Melbourne	0.5	94.0	0.5	0.0	0.0	0.0	1.6	..	3.3	100.0
Monash University	0.7	99.3	0.0	0.0	0.0	0.0	0.0	..	0.0	100.0
University of Queensland	3.3	2.3	93.5	0.0	0.0	0.0	0.5	..	0.5	100.0
University of Western Australia	0.8	0.0	0.0	98.4	0.0	0.0	0.0	..	0.8	100.0
University of Adelaide	0.0	4.1	0.0	0.0	92.9	0.0	1.0	..	2.0	100.0
Flinders University	9.4	23.4	3.1	0.0	62.5	0.0	1.6	..	0.0	100.0
University of Tasmania	0.0	0.0	0.0	0.0	0.0	96.0	4.0	..	0.0	100.0
Total	30.6	26.5	16.2	9.9	10.2	3.7	1.9	..	0.9	100.0
Estimated population at 30 June, 1993	5,997.4	4,464.2	3,116.0	1,676.3	1,462.9	471.4	298.9	169.3	..	17,656.4
Per cent	34.0	25.3	17.6	9.5	8.3	2.7	1.7	1.0	..	100.0

(a) Includes bachelor pass, bachelor honours and postgraduate bachelor.

(b) 1993 is the most recent year for which data are available in which all medical schools had a full intake to the initial medicine degree course. The data for 1994, 1995 and 1996 are biased due to the transition from a six-year undergraduate medicine course to a four-year graduate entry course at Flinders University, the University of Sydney and the University of Queensland. All medical schools had a full intake to an initial medicine degree course in 1997, but these data are not yet available.

Table 10: Australian citizen/permanent residents commencing undergraduate^(a) medicine courses: university and State of home residence, 1996

	Student's State of home residence									Total
	NSW ^(b)	Vic	Qld ^(b)	WA	SA	Tas	ACT	NT	Not known	
University of Sydney	20	0	0	0	0	0	0	0	1	21
University of New South Wales	148	1	16	2	0	0	6	0	2	175
University of Newcastle	44	4	5	1	1	0	7	1	0	63
University of Melbourne	1	183	9	0	1	0	3	0	1	198
Monash University	0	134	5	0	0	0	0	0	0	139
University of Queensland	0	0	2	0	0	0	0	0	0	2
University of Western Australia	2	1	1	119	0	0	0	0	0	123
University of Adelaide	3	0	0	2	86	0	1	0	1	93
Flinders University	5	7	4	5	33	1	3	1	1	60
University of Tasmania	3	7	3	0	0	40	0	1	0	54
Total	226	337	45	129	121	41	20	3	6	928
(per cent)										
University of Sydney	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.7	2.3
University of New South Wales	65.5	0.3	35.6	1.6	0.0	0.0	30.0	0.0	33.3	18.9
University of Newcastle	19.5	1.2	11.1	0.8	0.8	0.0	35.0	33.3	0.0	6.8
University of Melbourne	0.4	54.3	20.0	0.0	0.8	0.0	15.0	0.0	16.7	21.3
Monash University	0.0	39.8	11.1	0.0	0.0	0.0	0.0	0.0	0.0	15.0
University of Queensland	0.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.2
University of Western Australia	0.9	0.3	2.2	92.2	0.0	0.0	0.0	0.0	0.0	13.3
University of Adelaide	1.3	0.0	0.0	1.6	71.1	0.0	5.0	0.0	16.7	10.0
Flinders University	2.2	2.1	8.9	3.9	27.3	2.4	15.0	33.3	16.7	6.5
University of Tasmania	1.3	2.1	6.7	0.0	0.0	97.6	0.0	33.3	0.0	5.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
University of Sydney	95.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	100.0
University of New South Wales	84.6	0.6	9.1	1.1	0.0	0.0	3.4	0.0	1.1	100.0
University of Newcastle	69.8	6.3	7.9	1.6	1.6	0.0	11.1	1.6	0.0	100.0
University of Melbourne	0.5	92.4	4.5	0.0	0.5	0.0	1.5	0.0	0.5	100.0
Monash University	0.0	96.4	3.6	0.0	0.0	0.0	0.0	0.0	0.0	100.0
University of Queensland	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
University of Western Australia	1.6	0.8	0.8	96.7	0.0	0.0	0.0	0.0	0.0	100.0
University of Adelaide	3.2	0.0	0.0	2.2	92.5	0.0	1.1	0.0	1.1	100.0
Flinders University	8.3	11.7	6.7	8.3	55.0	1.7	5.0	1.7	1.7	100.0
University of Tasmania	5.6	13.0	5.6	0.0	0.0	74.1	0.0	1.9	0.0	100.0
Total	24.4	36.3	4.8	13.9	13.0	4.4	2.2	0.3	0.6	100.0
Estimated population at										
30 June, 1996 (preliminary)	6,190.2	4,541.0	3,354.7	1,762.7	1,479.2	473.4	307.5	177.7	..	18,289.1
Per cent	33.8	24.8	18.3	9.6	8.1	2.6	1.7	1.0	..	100.0

(a) Includes bachelor pass, bachelor honours and postgraduate bachelor.

(b) The data are biased for New South Wales and Queensland due to the transition from a six-year undergraduate medicine course to a four-year graduate entry course at the University of Sydney and the University of Queensland. All medical schools had a full intake to an initial medicine degree course in 1997, but these data are not yet available.

Table 11: Australian citizen/permanent resident medicine students: level of course and sex, 1989-96

Level of course	1989	1990	1991	1992	1993	1994	1995	1996
Bachelor	7,111	7,128	7,434	7,608	7,661	7,560	7,093	6,661
Postgraduate:								
Bachelor	0	0	0	5	5	6	13	68
Diploma/certificate	40	40	63	107	158	205	231	161
Masters qualifying	5	9	7	18	4	3	0	1
Masters	456	493	517	638	326	373	388	398
PhD	771	877	971	1,161	1,367	1,254	1,424	1,532
Higher doctorate	123	142	123	134	116	75	81	86
<i>Total</i>	<i>1,395</i>	<i>1,561</i>	<i>1,681</i>	<i>2,063</i>	<i>1,976</i>	<i>1,916</i>	<i>2,137</i>	<i>2,246</i>
Total	8,506	8,689	9,115	9,671	9,637	9,476	9,230	8,907
(per cent who are female)								
Bachelor	41.8	42.5	43.5	44.3	45.3	46.1	46.0	46.7
Postgraduate:								
Bachelor	20.0	60.0	66.7	15.4	55.9
Diploma/certificate	75.0	77.5	71.4	42.1	38.6	43.4	56.7	67.1
Masters qualifying	80.0	55.6	57.1	55.6	50.0	100.0	..	100.0
Masters	47.1	51.9	54.5	52.4	43.6	40.8	40.5	40.7
PhD	42.5	44.8	48.4	49.6	50.0	49.2	51.8	53.3
Higher doctorate	26.0	19.7	18.7	26.1	29.3	25.3	23.5	25.6
<i>Total</i>	<i>43.7</i>	<i>45.7</i>	<i>49.0</i>	<i>48.5</i>	<i>46.8</i>	<i>46.1</i>	<i>49.0</i>	<i>51.1</i>
Total	42.1	43.0	44.5	45.2	45.6	46.1	46.7	47.8

Table 12: Australian citizen/permanent resident medicine students: country of birth and sex, 1994-96

Country of birth	1994			1995			1996		
	Person	% female	% total	Person	% female	% total	Person	% female	% total
Australia	5,943	48.0	62.7	5,768	48.6	62.5	5,485	49.8	61.6
New Zealand	67	55.2	0.7	58	55.2	0.6	119	54.6	1.3
Other Oceania	56	37.5	0.6	52	40.4	0.6	51	45.1	0.6
Malaysia	560	38.8	5.9	565	39.3	6.1	526	40.5	5.9
Vietnam	403	36.5	4.3	376	37.2	4.1	349	37.0	3.9
Hong Kong	363	35.5	3.8	354	39.5	3.8	345	38.3	3.9
China (incl. Taiwan)	181	48.1	1.9	244	48.8	2.6	298	47.7	3.3
Singapore	173	49.7	1.8	162	47.5	1.8	148	48.0	1.7
India	121	38.0	1.3	115	42.6	1.2	116	39.7	1.3
Sri Lanka	110	51.8	1.2	107	49.5	1.2	107	52.3	1.2
South Korea	73	30.1	0.8	69	27.5	0.7	70	30.0	0.8
Other Asia	122	46.7	1.3	115	45.2	1.2	115	52.2	1.3
United Kingdom/Ireland	467	51.4	4.9	438	50.5	4.7	430	51.2	4.8
Other Europe/Russia	301	46.2	3.2	276	46.7	3.0	265	47.5	3.0
Middle East/North Africa	155	40.0	1.6	163	41.7	1.8	155	40.0	1.7
South Africa	98	48.0	1.0	94	50.0	1.0	98	52.0	1.1
Other Africa	58	43.1	0.6	58	36.2	0.6	63	42.9	0.7
North America	111	52.3	1.2	106	49.1	1.1	109	51.4	1.2
Central and South America	36	47.2	0.4	34	47.1	0.4	40	47.5	0.4
Not known	78	30.8	0.8	76	36.8	0.8	18	44.4	0.2
Total	9,476	46.1	100.0	9,230	46.7	100.0	8,907	47.8	100.0

Table 13: Employed medical practitioners: occupation, sex and States and Territories, 1995

Occupation	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Males									
<i>Clinician:</i>	12,134	8,143	5,452	2,789	3,296	879	669	317	33,678
Primary care practitioner	5,220	3,313	2,415	1,207	1,398	433	268	126	14,379
Hospital non-specialist	1,301	638	532	157	262	68	66	44	3,067
Specialist	4,581	3,273	2,040	1,214	1,331	319	298	119	13,175
Specialist-in-training	1,031	920	466	211	305	59	37	28	3,056
<i>Non-clinician:</i>	663	677	258	85	131	39	66	22	1,941
Administrator	154	187	66	25	46	9	23	11	520
Teacher/educator	50	30	21	8	11	4	2	0	127
Researcher	71	57	17	12	21	3	9	7	197
Public health physician	95	95	47	19	16	6	6	3	288
Occupational health physician	78	61	22	15	9	10	9	0	205
Other	214	246	84	6	28	8	16	2	604
Total	12,797	8,820	5,710	2,874	3,427	918	735	339	35,619
Females									
<i>Clinician:</i>	4,397	2,999	2,026	1,049	1,183	336	311	133	12,433
Primary care practitioner	2,230	1,560	1,153	597	627	216	192	83	6,658
Hospital non-specialist	924	452	370	153	196	51	50	25	2,221
Specialist	755	597	294	181	217	41	44	14	2,143
Specialist-in-training	487	391	209	118	142	28	26	11	1,412
<i>Non-clinician:</i>	324	288	121	46	57	15	25	13	889
Administrator	76	85	33	17	11	1	8	3	235
Teacher/educator	22	19	9	2	0	0	0	0	52
Researcher	37	27	11	10	6	2	5	2	99
Public health physician	65	56	30	11	12	4	5	5	188
Occupational health physician	19	10	1	2	4	3	0	0	39
Other	105	92	37	4	23	5	8	3	277
Total	4,721	3,287	2,147	1,094	1,240	351	336	146	13,322
Persons									
<i>Clinician:</i>	16,531	11,142	7,478	3,838	4,479	1,215	980	450	46,111
Primary care practitioner	7,450	4,873	3,567	1,804	2,025	649	460	209	21,037
Hospital non-specialist	2,226	1,089	902	310	458	119	115	69	5,288
Specialist	5,336	3,870	2,334	1,395	1,548	360	342	133	15,318
Specialist-in-training	1,518	1,310	674	329	447	87	62	39	4,468
<i>Non-clinician:</i>	987	965	379	131	188	54	91	35	2,831
Administrator	230	272	100	42	56	10	31	14	756
Teacher/educator	72	49	30	10	11	4	2	0	178
Researcher	108	84	27	21	27	5	14	8	296
Public health physician	160	151	77	31	28	9	11	8	476
Occupational health physician	97	71	23	17	13	13	9	0	244
Other	319	338	122	10	51	13	24	5	881
Total	17,517	12,107	7,857	3,968	4,666	1,269	1,071	485	48,941
(per cent—persons)									
<i>Clinician:</i>	35.8	24.2	16.2	8.3	9.7	2.6	2.1	1.0	100.0
Primary care practitioner	35.4	23.2	17.0	8.6	9.6	3.1	2.2	1.0	100.0
Hospital non-specialist	42.1	20.6	17.1	5.9	8.7	2.2	2.2	1.3	100.0
Specialist	34.8	25.3	15.2	9.1	10.1	2.4	2.2	0.9	100.0
Specialist-in-training	34.0	29.3	15.1	7.4	10.0	1.9	1.4	0.9	100.0
<i>Non-clinician:</i>	34.9	34.1	13.4	4.6	6.6	1.9	3.2	1.3	100.0
Administrator	30.5	36.0	13.2	5.6	7.5	1.3	4.2	1.8	100.0
Teacher/educator	40.5	27.6	16.8	5.4	6.4	2.2	1.0	0.0	100.0
Researcher	36.5	28.5	9.2	7.1	9.3	1.8	4.7	2.9	100.0
Public health physician	33.7	31.8	16.2	6.5	5.9	1.9	2.3	1.7	100.0
Occupational health physician	39.7	29.2	9.6	7.1	5.3	5.3	3.8	0.0	100.0
Other	36.2	38.3	13.8	1.1	5.8	1.5	2.7	0.6	100.0
Total	35.8	24.7	16.1	8.1	9.5	2.6	2.2	1.0	100.0

Source: AIHW, Medical labour force, 1995

Table 14: Employed medical practitioners per 100,000 population: occupation and States and Territories, 1995

Occupation	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
<i>Clinician:</i>	268.7	246.5	225.5	219.7	303.5	256.7	321.3	254.2	253.8
Primary care practitioner	121.1	107.8	107.6	103.3	137.2	137.1	151.0	117.9	115.8
Hospital non-specialist	36.2	24.1	27.2	17.7	31.0	25.1	37.8	38.7	29.1
Specialist	86.7	85.6	70.4	79.9	104.9	76.2	112.0	75.3	84.3
Specialist-in-training	24.7	29.0	20.3	18.8	30.3	18.3	20.5	22.3	24.6
<i>Non-clinician:</i>	16.0	21.4	11.4	7.5	12.7	11.5	30.0	20.0	15.6
Administrator	3.7	6.0	3.0	2.4	3.8	2.1	10.3	7.9	4.2
Teacher/educator	1.2	1.1	0.9	0.6	0.8	0.8	0.6	0.0	1.0
Researcher	1.8	1.9	0.8	1.2	1.9	1.1	4.6	4.8	1.6
Public health physician	2.6	3.3	2.3	1.8	1.9	1.9	3.6	4.6	2.6
Occupational health physician	1.6	1.6	0.7	1.0	0.9	2.7	3.1	0.0	1.3
Other	5.2	7.5	3.7	0.6	3.5	2.8	7.9	2.8	4.9
Total	284.7	267.8	236.9	227.2	316.3	268.2	351.3	274.2	269.4

(per cent—relative to total)

<i>Clinician:</i>	105.9	97.1	88.8	86.6	119.6	101.2	126.6	100.2	100.0
Primary care practitioner	104.6	93.1	92.9	89.2	118.5	118.4	130.4	101.8	100.0
Hospital non-specialist	124.3	82.8	93.5	60.9	106.7	86.3	129.9	133.1	100.0
Specialist	102.9	101.5	83.5	94.7	124.5	90.3	132.9	89.3	100.0
Specialist-in-training	100.4	117.9	82.7	76.6	123.3	74.5	83.2	90.5	100.0
<i>Non-clinician:</i>	102.9	137.1	73.4	48.0	81.6	73.5	192.5	128.5	100.0
Administrator	90.1	144.5	72.3	58.0	92.0	49.4	247.9	189.1	100.0
Teacher/educator	119.6	111.1	92.2	56.5	78.4	83.4	62.1	0.0	100.0
Researcher	107.9	114.5	50.6	74.1	114.2	67.9	281.0	294.4	100.0
Public health physician	99.5	127.6	88.9	67.2	73.3	74.3	135.6	175.3	100.0
Occupational health physician	117.3	117.4	52.8	73.6	65.0	201.8	229.1	0.0	100.0
Other	106.9	154.0	75.5	11.5	71.4	58.2	162.4	57.0	100.0
Total	105.7	99.4	88.0	84.4	117.4	99.6	130.4	101.8	100.0

Source: AIHW, Medical labour force, 1995

Note: Population data refer to estimated population at 31 December 1995. Source: ABS: Cat. No. 3101.0, June quarter, 1996.

Table 15: Distribution of the population by country of birth, Australia, 30 June 1985 to 1995

Country of birth	1985	1990	1991	1992	1993	1994	1995
(per cent)							
Australia	78.9	77.2	77.1	77.0	77.2	77.2	77.2
Indigenous	n.a.	n.a.	1.6	1.7	1.7	1.7	1.7
Non-indigenous	n.a.	n.a.	75.4	75.4	75.5	75.5	75.4
New Zealand/Oceania	1.6	2.1	2.1	2.1	2.1	2.1	2.1
UK/Ireland	7.5	7.3	7.2	7.1	6.9	6.8	6.7
Other Europe/USSR	7.5	7.0	6.8	6.7	6.5	6.5	6.4
Middle East/Nth Africa	0.9	1.1	1.1	1.1	1.2	1.2	1.2
Southern Asia	0.5	0.6	0.7	0.7	0.7	0.8	0.8
Northeast Asia	0.5	1.0	1.2	1.3	1.3	1.4	1.4
Southeast Asia	1.5	2.2	2.3	2.4	2.4	2.5	2.6
North America	0.4	0.4	0.4	0.4	0.5	0.5	0.5
South America	0.3	0.4	0.5	0.5	0.5	0.5	0.5
Africa	0.5	0.6	0.6	0.6	0.6	0.6	0.6
Total	100.0	100.0	100.0	100.0	99.9	100.0	100.0

Source: ABS, Migration, 3412.0, 1994-95; ABS, Experimental Projections of the Aboriginal and Torres Strait Islander Population, 3231.0, 1991-2001

4.2 University profiles

Table 16: Australian citizens/residents completing undergraduate medicine courses: sex and age, 1988–95, Flinders University

Age (years)	1988	1989	1990	1991	1992	1993	1994	1995
Males								
<23	10	14	12	10	18	13	10	8
23	10	7	4	12	6	0	9	7
24	2	2	0	4	4	5	5	3
25–29	9	5	6	4	10	6	8	4
30+	4	3	2	3	5	3	8	4
Total	35	31	24	33	43	27	40	26
Females								
<23	12	6	16	12	10	12	11	9
23	3	8	7	6	4	8	4	4
24	3	5	2	5	3	3	3	4
25–29	5	4	3	5	6	2	2	8
30+	4	3	3	9	3	4	6	3
Total	27	26	31	37	26	29	26	28
Persons								
<23	22	20	28	22	28	25	21	17
23	13	15	11	18	10	8	13	11
24	5	7	2	9	7	8	8	7
25–29	14	9	9	9	16	8	10	12
30+	8	6	5	12	8	7	14	7
Total	62	57	55	70	69	56	66	54

Table 17: Australian citizens/residents completing undergraduate medicine courses: country of birth, 1988–95, Flinders University

Country of birth	1988	1989	1990	1991	1992	1993	1994	1995
Australia	0	37	42	52	48	41	47	40
New Zealand/Oceania	0	0	0	2	0	0	2	1
UK/Ireland	0	5	4	5	6	5	0	1
Other Europe/USSR	0	6	3	3	2	1	5	2
Middle East/Nth Africa	0	0	0	0	3	1	1	3
Southern Asia	0	3	0	1	3	2	2	1
Northeast Asia	0	1	1	0	0	1	0	0
Southeast Asia	0	2	5	6	4	3	8	3
North/South America	0	0	0	1	3	1	1	2
Africa	0	1	0	0	0	1	0	1
Not known	62	2	0	0	0	0	0	0
Total	62	57	55	70	69	56	66	54

Table 18: Aboriginal students completing/commencing undergraduate medicine courses, 1988–96, Flinders University

	1989	1990	1991	1992	1993	1994	1995	1996
Completing students	0	0	0	0	0	0	0	n.a.
Commencing students	0	0	0	0	0	0	0	0

Table 19: Australian citizens/residents commencing undergraduate medicine courses: sex and age, 1989-96, Flinders University

Age (years)	1989	1990	1991	1992	1993	1994	1995	1996
Males								
<18	16	14	9	5	8	0	0	0
18	5	9	7	5	9	0	0	0
19	2	4	4	1	7	0	0	0
20-24	7	3	6	12	2	1	0	10
25+	3	13	6	4	5	5	0	17
Total	33	43	32	27	31	6	0	27
Females								
<18	13	11	8	11	4	0	0	0
18	3	3	9	14	12	0	0	0
19	0	2	4	4	5	0	0	0
20-24	3	11	11	4	9	1	0	24
25+	5	6	5	3	3	1	0	9
Total	24	33	37	36	33	2	0	33
Persons								
<18	29	25	17	16	12	0	0	0
18	8	12	16	19	21	0	0	0
19	2	6	8	5	12	0	0	0
20-24	10	14	17	16	11	2	0	34
25+	8	19	11	7	8	6	0	26
Total	57	76	69	63	64	8	0	60

Note: There was no intake in 1994 and 1995 due to the transition from a 6-year undergraduate entry course to a 4-year graduate entry course.

Table 20: Australian citizens/residents commencing undergraduate medicine courses: country of birth, 1989-96, Flinders University

Country of birth	1989	1990	1991	1992	1993	1994	1995	1996
Australia	43	54	45	42	45	5	0	48
New Zealand/Oceania	1	2	1	1	0	0	0	0
UK/Ireland	1	2	3	6	2	0	0	4
Other Europe/USSR	6	3	2	0	5	1	0	2
Middle East/Nth Africa	0	4	3	2	1	0	0	0
Southern Asia	2	3	2	2	1	1	0	2
Northeast Asia	0	0	3	0	0	0	0	1
Southeast Asia	4	5	5	8	9	0	0	1
North/South America	0	3	2	1	1	0	0	1
Africa	0	0	3	0	0	1	0	1
Not known	0	0	0	1	0	0	0	0
Total	57	76	69	63	64	8	0	60

Table 21: Australian citizens/residents commencing undergraduate medicine courses: region of home location, Flinders University, 1989-96

Region of home location	1989	1990	1991	1992	1993	1994	1995	1996
Capital city	52	68	65	59	52	7	0	54
Other metropolitan centre	1	1	0	1	0	0	0	2
Large rural centre	3	0	0	1	2	0	0	0
Small rural centre	1	3	0	1	3	0	0	0
Other rural area	0	3	2	0	7	0	0	2
Remote	0	0	0	0	0	1	0	0
Not known	0	1	2	1	0	0	0	2
Total	57	76	69	63	64	8	0	60

Table 22: Australian citizens/residents completing undergraduate medicine courses: sex and age, 1988-95
Monash University

Age (years)	1988	1989	1990	1991	1992	1993	1994	1995
Males								
<23	21	25	26	25	13	22	14	16
23	36	30	24	37	30	33	32	37
24	11	14	9	10	16	11	9	15
25-29	6	6	3	8	8	13	11	9
30+	1	3	1	0	1	2	1	2
Total	75	78	63	80	68	81	67	79
Females								
<23	25	20	24	9	23	12	16	16
23	22	22	25	18	30	23	23	23
24	11	17	5	5	8	10	11	12
25-29	2	3	4	4	3	7	6	5
30+	0	2	4	1	3	0	0	2
Total	60	64	62	37	67	52	56	58
Persons								
<23	46	45	50	34	36	34	30	32
23	58	52	49	55	60	56	55	60
24	22	31	14	15	24	21	20	27
25-29	8	9	7	12	11	20	17	14
30+	1	5	5	1	4	2	1	4
Total	135	142	125	117	135	133	123	137

Table 23: Australian citizens/residents completing undergraduate medicine courses: country of birth, 1988-95
Monash University

Country of birth	1988	1989	1990	1991	1992	1993	1994	1995
Australia	0	114	95	91	106	99	76	92
New Zealand/Oceania	0	2	1	0	2	0	1	2
UK/Ireland	0	4	6	4	6	7	7	2
Other Europe/USSR	0	7	3	6	5	2	7	6
Middle East/Nth Africa	0	0	4	2	0	1	0	4
Southern Asia	0	3	3	0	3	6	4	1
Northeast Asia	0	1	3	1	5	2	5	5
Southeast Asia	0	6	6	8	4	11	18	21
North/South America	0	1	1	2	3	3	2	3
Africa	0	4	3	3	1	2	3	1
Not known	135	0	0	0	0	0	0	0
Total	135	142	125	117	135	133	123	137

Table 24: Aboriginal students completing/commencing undergraduate medicine courses, 1988-96
Monash University

	1989	1990	1991	1992	1993	1994	1995	1996
Completing students	0	1	0	0	0	0	0	n.a.
Commencing students	0	2	1	0	0	0	0	0

**Table 25: Australian citizens/residents commencing undergraduate medicine courses: sex and age, 1989-96
Monash University**

Age (years)	1989	1990	1991	1992	1993	1994	1995	1996
Males								
<18	34	27	21	30	29	25	19	24
18	38	34	38	28	33	32	26	29
19	2	11	12	6	4	5	4	4
20-24	13	11	4	9	3	1	1	3
25+	1	7	4	0	0	2	0	1
Total	88	90	79	73	69	65	50	61
Females								
<18	23	20	35	33	30	31	33	31
18	32	26	30	30	30	32	40	40
19	4	5	6	3	3	4	6	7
20-24	6	8	7	1	2	2	0	0
25+	0	2	4	0	2	2	1	0
Total	65	61	82	67	67	71	80	78
Persons								
<18	57	47	56	63	59	56	52	55
18	70	60	68	58	63	64	66	69
19	6	16	18	9	7	9	10	11
20-24	19	19	11	10	5	3	1	3
25+	1	9	8	0	2	4	1	1
Total	153	151	161	140	136	136	130	139

**Table 26: Australian citizens/residents commencing undergraduate medicine courses: country of birth, 1989-96,
Monash University**

Country of birth	1989	1990	1991	1992	1993	1994	1995	1996
Australia	104	106	107	101	95	88	91	113
New Zealand/Oceania	1	1	3	2	0	1	3	1
UK/Ireland	6	6	9	1	5	2	3	3
Other Europe/USSR	7	8	5	2	5	10	4	4
Middle East/Nth Africa	1	3	3	3	4	4	4	3
Southern Asia	5	2	4	4	3	3	2	3
Northeast Asia	5	6	4	5	6	2	4	3
Southeast Asia	18	17	21	18	11	15	12	6
North/South America	4	1	2	2	1	3	2	3
Africa	2	1	2	1	3	3	5	0
Not known	0	0	1	1	3	5	0	0
Total	153	151	161	140	136	136	130	139

**Table 27: Australian citizens/residents commencing undergraduate medicine courses: region of home location,
Monash University, 1989-96**

Region of home location	1989	1990	1991	1992	1993	1994	1995	1996
Capital city	136	138	143	119	118	119	109	108
Other metropolitan centre	1	2	5	3	1	0	5	3
Large rural centre	3	1	4	6	3	0	6	10
Small rural centre	3	4	3	3	3	8	2	2
Other rural area	9	3	6	8	11	9	8	16
Remote	0	1	0	0	0	0	0	0
Not known	1	2	0	1	0	0	0	0
Total	153	151	161	140	136	136	130	139

Table 28: Australian citizens/residents completing undergraduate medicine courses: sex and age, 1988-95, University of Adelaide

Age (years)	1988	1989	1990	1991	1992	1993	1994	1995
Males								
<23	28	29	30	28	32	36	24	23
23	13	12	11	20	14	10	16	15
24	7	6	4	4	13	4	5	6
25-29	7	9	5	2	8	2	5	7
30+	2	2	0	2	4	1	2	2
Total	57	58	50	56	71	53	52	53
Females								
<23	29	19	22	17	25	18	21	25
23	9	7	6	11	9	9	10	9
24	2	1	4	6	3	4	2	5
25-29	2	1	0	2	4	4	6	1
30+	4	0	0	0	1	0	2	1
Total	46	28	32	36	42	35	41	41
Persons								
<23	57	48	52	45	57	54	45	48
23	22	19	17	31	23	19	26	24
24	9	7	8	10	16	8	7	11
25-29	9	10	5	4	12	6	11	8
30+	6	2	0	2	5	1	4	3
Total	103	86	82	92	113	88	93	94

Table 29: Australian citizens/residents completing undergraduate medicine courses: country of birth, 1988-95, University of Adelaide

Country of birth	1988	1989	1990	1991	1992	1993	1994	1995
Australia	0	0	0	0	0	57	57	48
New Zealand/Oceania	0	0	0	0	0	1	2	3
UK/Ireland	0	0	0	0	0	9	4	10
Other Europe/USSR	0	0	0	0	0	1	2	1
Middle East/Nth Africa	0	0	0	0	0	1	1	1
Southern Asia	0	0	0	0	0	3	4	3
Northeast Asia	0	0	0	0	0	2	1	5
Southeast Asia	0	0	0	0	0	12	21	22
North/South America	0	0	0	0	0	2	0	1
Africa	0	0	0	0	0	0	1	0
Not known	103	86	82	92	113	0	0	0
Total	103	86	82	92	113	88	93	94

Table 30: Aboriginal students completing/commencing undergraduate medicine courses, 1988-96, University of Adelaide

	1989	1990	1991	1992	1993	1994	1995	1996
Completing students	0	1	0	0	0	0	0	n.a.
Commencing students	0	0	0	2	1	0	1	0

Table 31: Australian citizens/residents commencing undergraduate medicine courses: sex and age, 1989-96, University of Adelaide

Age (years)	1989	1990	1991	1992	1993	1994	1995	1996
Males								
<18	35	32	30	22	33	36	32	24
18	18	14	25	15	17	16	11	20
19	3	4	2	5	1	4	3	0
20-24	3	2	5	6	2	4	1	7
25+	5	3	2	5	6	1	1	2
Total	64	55	64	53	59	61	48	53
Females								
<18	25	32	25	26	25	21	26	23
18	9	13	11	15	6	10	20	13
19	2	5	4	4	3	3	3	0
20-24	4	1	5	4	2	4	3	2
25+	3	1	3	3	3	2	3	2
Total	43	52	48	52	39	40	55	40
Persons								
<18	60	64	55	48	58	57	58	47
18	27	27	36	30	23	26	31	33
19	5	9	6	9	4	7	6	0
20-24	7	3	10	10	4	8	4	9
25+	8	4	5	8	9	3	4	4
Total	107	107	112	105	98	101	103	93

Table 32: Australian citizens/residents commencing undergraduate medicine courses: country of birth, 1989-96, University of Adelaide

Country of birth	1989	1990	1991	1992	1993	1994	1995	1996
Australia	71	55	60	56	62	62	61	50
New Zealand/Oceania	1	3	3	1	1	1	1	0
UK/Ireland	8	12	5	2	3	2	1	3
Other Europe/USSR	2	3	3	0	1	2	7	5
Middle East/Nth Africa	1	3	1	2	1	8	9	4
Southern Asia	5	5	6	4	4	5	3	2
Northeast Asia	2	4	6	7	10	3	2	12
Southeast Asia	16	21	25	32	15	17	17	11
North/South America	0	1	3	1	1	0	1	2
Africa	1	0	0	0	0	1	1	4
Not known	0	0	0	0	0	0	0	0
Total	107	107	112	105	98	101	103	93

Table 33: Australian citizens/residents commencing undergraduate medicine courses: region of home location, University of Adelaide, 1989-96

Region of home location	1989	1990	1991	1992	1993	1994	1995	1996
Capital city	96	97	102	95	89	89	96	81
Other metropolitan centre	0	0	0	0	0	0	3	0
Large rural centre	1	3	0	0	0	1	1	0
Small rural centre	4	1	2	1	1	4	0	3
Other rural area	4	5	4	6	5	6	3	8
Remote	1	0	2	2	1	1	0	0
Not known	1	1	2	1	2	0	0	1
Total	107	107	112	105	98	101	103	93

Table 34: Australian citizens/residents completing undergraduate medicine courses: sex and age, 1988-95, University of Melbourne

Age (years)	1988	1989	1990	1991	1992	1993	1994	1995
Males								
<23	36	32	28	26	33	81	27	31
23	43	35	34	46	38	23	32	41
24	16	17	18	22	9	7	17	19
25-29	9	4	6	4	7	2	8	4
30+	3	6	1	2	2	0	4	1
Total	107	94	87	100	89	113	88	96
Females								
<23	25	21	25	24	16	56	27	28
23	30	38	23	28	33	19	34	26
24	11	3	13	7	11	9	14	12
25-29	3	8	7	7	5	0	5	8
30+	3	3	0	2	1	0	3	1
Total	72	73	68	68	66	84	83	75
Persons								
<23	61	53	53	50	49	137	54	59
23	73	73	57	74	71	42	66	67
24	27	20	31	29	20	16	31	31
25-29	12	12	13	11	12	2	13	12
30+	6	9	1	4	3	0	7	2
Total	179	167	155	168	155	197	171	171

Table 35: Australian citizens/residents completing undergraduate medicine courses: country of birth, 1988-95, University of Melbourne

Country of birth	1988	1989	1990	1991	1992	1993	1994	1995
Australia	0	0	0	0	0	134	112	108
New Zealand/Oceania	0	1	1	1	2	1	2	1
UK/Ireland	0	0	7	7	11	11	6	5
Other Europe/USSR	0	6	2	2	7	3	6	4
Middle East/Nth Africa	0	1	1	0	3	2	3	3
Southern Asia	0	0	0	1	3	6	0	7
Northeast Asia	0	3	6	8	7	11	12	11
Southeast Asia	0	7	18	20	14	25	26	31
North/South America	0	1	2	5	3	3	1	0
Africa	0	1	1	2	0	1	3	1
Not known	179	147	117	122	105	0	0	0
Total	179	167	155	168	155	197	171	171

Table 36: Aboriginal students completing/commencing undergraduate medicine courses, 1988-96, University of Melbourne

	1989	1990	1991	1992	1993	1994	1995	1996
Completing students	0	0	0	1	0	0	1	n.a.
Commencing students	0	0	0	1	0	0	0	0

Table 37: Australian citizens/residents commencing undergraduate medicine courses: sex and age, 1989-96, University of Melbourne

Age (years)	1989	1990	1991	1992	1993	1994	1995	1996
Males								
<18	41	44	39	36	37	38	36	48
18	36	45	47	41	45	40	55	54
19	11	11	9	9	8	7	11	10
20-24	11	7	9	13	12	12	14	7
25+	2	5	1	1	2	3	3	2
Total	101	112	105	100	104	100	119	121
Females								
<18	33	39	34	31	24	40	29	34
18	30	30	27	36	33	35	28	30
19	8	7	5	3	11	4	9	2
20-24	7	8	11	11	6	10	10	10
25+	3	1	3	1	4	3	4	1
Total	81	85	80	82	78	92	80	77
Persons								
<18	74	83	73	67	61	78	65	82
18	66	75	74	77	78	75	83	84
19	19	18	14	12	19	11	20	12
20-24	18	15	20	24	18	22	24	17
25+	5	6	4	2	6	6	7	3
Total	182	197	185	182	182	192	199	198

Table 38: Australian citizens/residents commencing undergraduate medicine courses: country of birth, 1989-96, University of Melbourne

Country of birth	1989	1990	1991	1992	1993	1994	1995	1996
Australia	130	30	116	28	17	120	119	99
New Zealand/Oceania	2	1	4	1	2	1	1	4
UK/Ireland	7	5	5	7	4	9	9	8
Other Europe/USSR	7	4	4	6	2	3	6	6
Middle East/Nth Africa	4	3	5	2	12	10	18	0
Southern Asia	0	5	8	2	3	2	6	8
Northeast Asia	10	12	9	14	13	10	10	36
Southeast Asia	16	34	29	33	27	30	25	31
North/South America	2	2	3	2	2	2	4	3
Africa	4	0	0	1	2	2	1	2
Not known	0	101	2	86	98	3	0	1
Total	182	197	185	182	182	192	199	198

Table 39: Australian citizens/residents commencing undergraduate medicine courses: region of home location, University of Melbourne, 1989-96

Region of home location	1989	1990	1991	1992	1993	1994	1995	1996
Capital city	152	170	161	159	156	170	174	177
Other metropolitan centre	2	4	4	5	4	4	3	3
Large rural centre	5	4	4	1	6	1	3	3
Small rural centre	3	5	3	2	1	4	5	7
Other rural area	16	5	9	7	9	12	13	5
Remote	0	1	0	1	0	0	0	1
Not known	4	8	4	7	6	1	1	2
Total	182	197	185	182	182	192	199	198

Table 40: Australian citizens/residents completing undergraduate medicine courses: sex and age, 1988-95, University of Newcastle

Age (years)	1988	1989	1990	1991	1992	1993	1994	1995
Males								
<23	7	14	8	11	9	6	2	6
23	7	1	3	1	2	2	3	1
24	2	1	2	2	1	1	3	3
25-29	4	10	2	3	4	7	4	5
30+	5	6	6	8	5	4	7	6
Total	25	32	21	25	21	20	19	21
Females								
<23	14	6	12	11	13	17	18	15
23	2	2	5	8	11	3	13	6
24	5	1	4	4	3	2	2	5
25-29	6	4	1	2	1	6	8	6
30+	3	3	3	3	3	6	11	8
Total	30	16	25	28	31	34	52	40
Persons								
<23	21	20	20	22	22	23	20	21
23	9	3	8	9	13	5	16	7
24	7	2	6	6	4	3	5	8
25-29	10	14	3	5	5	13	12	11
30+	8	9	9	11	8	10	18	14
Total	55	48	46	53	52	54	71	61

Table 41: Australian citizens/residents completing undergraduate medicine courses: country of birth, 1988-95, University of Newcastle

Country of birth	1988	1989	1990	1991	1992	1993	1994	1995
Australia	0	42	0	0	42	43	54	51
New Zealand/Oceania	0	0	0	0	2	0	1	0
UK/Ireland	0	0	0	0	2	3	4	4
Other Europe/USSR	0	0	0	1	1	3	2	1
Middle East/Nth Africa	0	0	0	0	0	2	0	1
Southern Asia	0	1	0	0	2	1	2	1
Northeast Asia	0	0	0	0	1	0	1	0
Southeast Asia	0	2	0	0	1	1	1	1
North/South America	0	1	0	0	0	0	3	2
Africa	0	0	0	0	1	1	2	0
Not known	55	2	46	52	0	0	1	0
Total	55	48	46	53	52	54	71	61

Table 42: Aboriginal students completing/commencing undergraduate medicine courses, 1988-96, University of Newcastle

	1989	1990	1991	1992	1993	1994	1995	1996
Completing students	2	0	1	0	1	2	5	n.a.
Commencing students	4	5	3	3	3	2	3	2

Table 43: Australian citizens/residents commencing undergraduate medicine courses: sex and age, 1989-96, University of Newcastle

Age (years)	1989	1990	1991	1992	1993	1994	1995	1996
Males								
<18	2	2	4	2	4	4	4	9
18	6	2	6	8	11	6	5	4
19	3	3	1	1	2	1	3	8
20-24	4	6	10	5	2	8	8	12
25+	7	7	3	8	9	9	10	5
Total	22	20	24	24	28	28	30	38
Females								
<18	8	10	5	13	6	9	3	3
18	14	15	12	12	17	7	15	4
19	2	11	3	6	5	2	2	3
20-24	9	8	13	7	7	8	11	6
25+	10	11	15	7	3	12	8	9
Total	43	55	48	45	38	38	39	25
Persons								
<18	10	12	9	15	10	13	7	12
18	20	17	18	20	28	13	20	8
19	5	14	4	7	7	3	5	11
20-24	13	14	23	12	9	16	19	18
25+	17	18	18	15	12	21	18	14
Total	65	75	72	69	66	66	69	63

Table 44: Australian citizens/residents commencing undergraduate medicine courses: country of birth, 1989-96, University of Newcastle

Country of birth	1989	1990	1991	1992	1993	1994	1995	1996
Australia	53	59	63	57	54	55	53	55
New Zealand/Oceania	0	1	0	0	1	1	1	0
UK/Ireland	4	4	4	7	2	5	4	1
Other Europe/USSR	2	3	1	1	0	0	0	2
Middle East/Nth Africa	1	0	1	0	0	0	1	0
Southern Asia	1	2	0	0	0	0	1	0
Northeast Asia	0	1	0	1	2	0	1	0
Southeast Asia	0	1	1	2	3	1	5	3
North/South America	1	3	2	0	2	3	1	1
Africa	2	0	0	1	1	1	2	1
Not known	1	1	0	0	1	0	0	0
Total	65	75	72	69	66	66	69	63

Table 45: Australian citizens/residents commencing undergraduate medicine courses: region of home location, University of Newcastle, 1989-96

Region of home location	1989	1990	1991	1992	1993	1994	1995	1996
Capital city	27	36	38	34	36	29	34	33
Other metropolitan centre	26	27	27	20	19	24	23	20
Large rural centre	0	3	1	2	3	3	7	1
Small rural centre	4	3	2	6	4	2	3	2
Other rural area	6	6	3	5	3	7	1	3
Remote	1	0	0	1	1	0	0	1
Not known	1	0	1	1	0	1	1	3
Total	65	75	72	69	66	66	69	63

Table 46: Australian citizens/residents completing undergraduate medicine courses: sex and age, 1988-95, University of New South Wales

Age (years)	1988	1989	1990	1991	1992	1993	1994	1995
Males								
<23	45	46	45	51	2	25	18	19
23	14	22	27	29	2	30	29	34
24	14	10	14	6	0	15	9	6
25-29	8	13	11	16	1	8	14	14
30+	7	9	7	6	1	5	2	4
Total	88	100	104	108	6	83	72	77
Females								
<23	33	26	32	38	1	19	12	11
23	12	10	24	13	0	22	30	28
24	5	8	7	7	0	11	9	10
25-29	4	6	8	3	1	2	8	7
30+	2	0	0	3	0	2	1	3
Total	56	50	71	64	2	56	60	59
Persons								
<23	78	72	77	89	3	44	30	30
23	26	32	51	42	2	52	59	62
24	19	18	21	13	0	26	18	16
25-29	12	19	19	19	2	10	22	21
30+	9	9	7	9	1	7	3	7
Total	144	150	175	172	8	139	132	136

Table 47: Australian citizens/residents completing undergraduate medicine courses: country of birth, 1988-95, University of New South Wales

Country of birth	1988	1989	1990	1991	1992	1993	1994	1995
Australia	0	0	107	104	4	83	73	71
New Zealand/Oceania	0	0	0	1	0	2	3	0
UK/Ireland	0	0	4	6	1	2	6	5
Other Europe/USSR	0	0	7	7	0	2	6	3
Middle East/Nth Africa	0	0	8	7	0	9	2	4
Southern Asia	0	0	8	8	1	3	7	8
Northeast Asia	0	0	10	11	0	9	15	15
Southeast Asia	0	0	24	23	2	24	14	28
North/South America	0	0	3	4	0	1	1	2
Africa	0	0	4	0	0	3	5	0
Not known	144	150	0	1	0	1	0	0
Total	144	150	175	172	8	139	132	136

Table 48: Aboriginal students completing/commencing undergraduate medicine courses, 1988-96, University of New South Wales

	1989	1990	1991	1992	1993	1994	1995	1996
Completing students	0	0	1	0	2	1	0	n.a.
Commencing students	1	0	0	2	0	0	1	5

Table 49: Australian citizens/residents commencing undergraduate medicine courses: sex and age, 1989-96, University of New South Wales

Age (years)	1989	1990	1991	1992	1993	1994	1995	1996
Males								
<18	27	25	34	46	28	29	36	37
18	33	43	38	36	35	39	40	40
19	9	7	6	11	10	10	13	8
20-24	15	3	4	3	7	3	5	2
25+	4	3	4	3	2	3	2	5
Total	88	81	86	99	82	84	96	92
Females								
<18	17	19	12	17	20	24	20	28
18	34	31	39	27	29	22	25	42
19	3	7	3	9	5	8	11	8
20-24	8	2	3	2	2	4	4	3
25+	2	1	1	2	1	3	4	2
Total	64	60	58	57	57	61	64	83
Persons								
<18	44	44	46	63	48	53	56	65
18	67	74	77	63	64	61	65	82
19	12	14	9	20	15	18	24	16
20-24	23	5	7	5	9	7	9	5
25+	6	4	5	5	3	6	6	7
Total	152	141	144	156	139	145	160	175

Table 50: Australian citizens/residents commencing undergraduate medicine courses: country of birth, 1989-96, University of New South Wales

Country of birth	1989	1990	1991	1992	1993	1994	1995	1996
Australia	85	79	78	103	74	79	75	75
New Zealand/Oceania	1	1	2	0	2	3	1	5
UK/Ireland	6	7	4	5	6	4	4	4
Other Europe/USSR	5	3	5	1	5	5	2	2
Middle East/Nth Africa	3	6	6	1	5	8	5	7
Southern Asia	7	7	5	1	6	1	6	12
Northeast Asia	13	8	22	20	16	20	42	37
Southeast Asia	18	28	17	21	20	18	21	27
North/South America	4	2	2	0	2	2	0	2
Africa	4	0	3	4	3	5	4	4
Not known	6	0	0	0	0	0	0	0
Total	152	141	144	156	139	145	160	175

Table 51: Australian citizens/residents commencing undergraduate medicine courses: region of home location, University of New South Wales, 1989-96

Region of home location	1989	1990	1991	1992	1993	1994	1995	1996
Capital city	132	124	133	134	129	122	150	160
Other metropolitan centre	11	8	4	7	3	7	4	5
Large rural centre	1	2	0	3	1	4	1	4
Small rural centre	5	2	5	6	3	6	2	2
Other rural area	2	3	2	4	2	6	2	2
Remote	0	1	0	0	0	0	0	0
Not known	1	1	0	2	1	0	1	2
Total	152	141	144	156	139	145	160	175

Table 52: Australian citizens/residents completing undergraduate medicine courses: sex and age, 1988-95, University of Queensland

Age (years)	1988	1989	1990	1991	1992	1993	1994	1995
Males								
<23	57	51	65	56	60	59	53	65
23	28	25	26	24	30	33	29	28
24	6	7	7	8	11	9	8	11
25-29	11	6	12	10	7	11	12	11
30+	7	1	4	4	3	3	4	6
Total	109	90	114	102	111	115	106	121
Females								
<23	45	43	53	49	50	45	43	56
23	15	18	16	14	18	28	24	18
24	4	6	0	7	6	5	11	7
25-29	4	4	4	6	7	5	9	9
30+	4	5	4	5	4	5	4	5
Total	72	76	77	81	85	88	91	95
Persons								
<23	102	94	118	105	110	104	96	121
23	43	43	42	38	48	61	53	46
24	10	13	7	15	17	14	19	18
25-29	15	10	16	16	14	16	21	20
30+	11	6	8	9	7	8	8	11
Total	181	166	191	183	196	203	197	216

Table 53: Australian citizens/residents completing undergraduate medicine courses: country of birth, 1988-95, University of Queensland

Country of birth	1988	1989	1990	1991	1992	1993	1994	1995
Australia	0	136	157	148	154	162	151	160
New Zealand/Oceania	0	4	3	2	9	6	5	7
UK/Ireland	0	7	6	6	5	8	8	8
Other Europe/USSR	0	4	4	5	5	3	7	8
Middle East/Nth Africa	0	1	2	2	2	2	0	1
Southern Asia	0	2	4	2	1	2	5	1
Northeast Asia	0	1	4	3	5	3	4	8
Southeast Asia	0	4	6	11	7	13	13	15
North/South America	0	2	3	2	4	0	3	2
Africa	0	5	2	2	4	4	1	6
Not known	181	0	0	0	0	0	0	0
Total	181	166	191	183	196	203	197	216

Table 54: Aboriginal students completing/commencing undergraduate medicine courses, 1988-96, University of Queensland

	1989	1990	1991	1992	1993	1994	1995	1996
Completing students	0	2	0	0	0	0	0	n.a.
Commencing students	1	1	1	0	1	0	0	0

Table 55: Australian citizens/residents commencing undergraduate medicine courses: sex and age, 1989-96, University of Queensland

Age (years)	1989	1990	1991	1992	1993	1994	1995	1996
Males								
<18	79	80	64	81	59	68	0	0
18	24	22	28	21	25	18	0	0
19	7	5	7	8	2	10	0	0
20-24	9	5	9	11	6	8	0	0
25+	10	10	7	10	4	7	3	2
Total	129	122	115	131	96	111	3	2
Females								
<18	55	69	64	57	74	55	0	0
18	20	23	25	17	25	29	0	0
19	5	4	6	7	9	11	0	0
20-24	10	9	11	5	5	10	1	0
25+	4	11	8	6	6	6	2	0
Total	94	116	114	92	119	111	3	0
Persons								
<18	134	149	128	138	133	123	0	0
18	44	45	53	38	50	47	0	0
19	12	9	13	15	11	21	0	0
20-24	19	14	20	16	11	18	1	0
25+	14	21	15	16	10	13	5	2
Total	223	238	229	223	215	222	6	2

Note: There was no intake in 1995 and 1996 due to the transition from a 6-year undergraduate entry course to a 4-year graduate entry course.

Table 56: Australian citizens/residents commencing undergraduate medicine courses: country of birth, 1989-96, University of Queensland

Country of birth	1989	1990	1991	1992	1993	1994	1995	1996
Australia	178	192	174	171	147	157	4	2
New Zealand/Oceania	4	3	7	2	5	2	0	0
UK/Ireland	7	6	6	12	11	7	1	0
Other Europe/USSR	9	7	6	1	2	3	0	0
Middle East/Nth Africa	2	2	1	0	0	1	0	0
Southern Asia	3	0	4	3	1	5	0	0
Northeast Asia	3	10	11	10	18	18	0	0
Southeast Asia	12	13	13	16	26	20	0	0
North/South America	3	2	4	4	3	6	1	0
Africa	2	3	3	4	2	3	0	0
Not known	0	0	0	0	0	0	0	0
Total	223	238	229	223	215	222	6	2

Table 57: Australian citizens/residents commencing undergraduate medicine courses: region of home location, University of Queensland, 1989-96

Region of home location	1989	1990	1991	1992	1993	1994	1995	1996
Capital city	193	167	165	152	157	175	4	2
Other metropolitan centre	7	17	20	19	15	15	1	0
Large rural centre	9	22	21	25	22	15	0	0
Small rural centre	3	4	4	7	5	3	0	0
Other rural area	9	21	16	20	15	13	0	0
Remote	2	7	1	0	1	1	1	0
Not known	0	0	2	0	0	0	0	0
Total	223	238	229	223	215	222	6	2

Table 58: Australian citizens/residents completing undergraduate medicine courses: sex and age, 1988-95, University of Sydney

Age (years)	1988	1989	1990	1991	1992	1993	1994	1995
Males								
<23	103	100	15	31	38	35	44	27
23	36	20	8	39	52	48	47	50
24	14	9	2	12	20	24	16	27
25-29	16	17	4	8	15	18	21	34
30+	7	6	1	6	6	18	6	4
Total	176	152	30	96	131	143	134	142
Females								
<23	44	58	7	16	21	23	31	16
23	14	8	2	24	27	26	23	38
24	5	5	3	4	10	9	17	17
25-29	5	8	1	11	11	8	7	11
30+	5	4	0	3	3	5	12	8
Total	73	83	13	58	72	71	90	90
Persons								
<23	147	158	22	47	59	58	75	43
23	50	28	10	63	79	74	70	88
24	19	14	5	16	30	33	33	44
25-29	21	25	5	19	26	26	28	45
30+	12	10	1	9	9	23	18	12
Total	249	235	43	154	203	214	224	232

Table 59: Australian citizens/residents completing undergraduate medicine courses: country of birth, 1988-95, University of Sydney

Country of birth	1988	1989	1990	1991	1992	1993	1994	1995
Australia	0	150	29	78	115	117	115	126
New Zealand/Oceania	0	1	1	0	2	2	5	2
UK/Ireland	0	0	2	0	6	9	13	6
Other Europe/USSR	0	0	1	2	10	3	8	5
Middle East/Nth Africa	0	0	1	0	8	8	7	6
Southern Asia	1	0	0	0	4	10	9	12
Northeast Asia	0	0	2	0	19	19	19	24
Southeast Asia	8	2	4	0	30	34	40	36
North/South America	0	0	0	0	5	6	2	1
Africa	0	0	1	0	3	5	2	6
Not known	240	82	2	74	1	1	4	8
Total	249	235	43	154	203	214	224	232

Table 60: Aboriginal students completing/commencing undergraduate medicine courses, 1988-96, University of Sydney

	1989	1990	1991	1992	1993	1994	1995	1996
Completing students	4	0	0	0	0	0	0	n.a.
Commencing students	0	0	2	1	1	3	0	0

Table 61: Australian citizens/residents commencing undergraduate medicine courses: sex and age, 1989-96, University of Sydney

Age (years)	1989	1990	1991	1992	1993	1994	1995	1996
Males								
<18	49	37	32	41	32	29	0	0
18	60	65	53	54	44	28	0	0
19	16	16	14	9	12	6	0	2
20-24	29	33	26	29	29	22	6	9
25+	15	11	9	9	6	3	3	2
Total	169	162	134	142	123	88	9	13
Females								
<18	33	21	24	16	17	27	0	0
18	28	38	33	22	26	28	0	0
19	12	8	10	5	8	5	0	2
20-24	12	11	21	19	27	12	3	2
25+	10	11	16	15	17	4	2	4
Total	95	89	104	77	95	76	5	8
Persons								
<18	82	58	56	57	49	56	0	0
18	88	103	86	76	70	56	0	0
19	28	24	24	14	20	11	0	4
20-24	41	44	47	48	56	34	9	11
25+	25	22	25	24	23	7	5	6
Total	264	251	238	219	218	164	14	21

Note: There was no intake in 1995 and 1996 due to the transition from a 6-year undergraduate entry course to a 4-year graduate entry course.

Table 62: Australian citizens/residents commencing undergraduate medicine courses: country of birth, 1989-96, University of Sydney

Country of birth	1989	1990	1991	1992	1993	1994	1995	1996
Australia	152	125	92	106	86	73	9	16
New Zealand/Oceania	4	1	3	4	2	2	0	0
UK/Ireland	10	4	15	6	10	9	2	1
Other Europe/USSR	8	10	6	4	6	3	0	0
Middle East/Nth Africa	10	10	8	10	11	3	0	1
Southern Asia	8	11	17	8	6	6	0	0
Northeast Asia	17	31	34	28	39	34	1	1
Southeast Asia	46	38	56	45	53	30	1	2
North/South America	4	0	3	4	4	1	1	0
Africa	3	7	3	3	1	2	0	0
Not known	2	14	1	1	0	1	0	0
Total	264	251	238	219	218	164	14	21

Table 63: Australian citizens/residents commencing undergraduate medicine courses: region of home location, University of Sydney, 1989-96

Region of home location	1989	1990	1991	1992	1993	1994	1995	1996
Capital city	230	226	215	200	201	153	13	18
Other metropolitan centre	13	6	9	6	9	7	0	1
Large rural centre	4	1	1	1	3	1	0	0
Small rural centre	6	4	6	1	0	1	0	0
Other rural area	4	3	4	2	3	2	0	1
Remote	1	1	0	0	0	0	0	0
Not known	6	10	3	9	2	0	1	1
Total	264	251	238	219	218	164	14	21

Table 64: Australian citizens/residents completing undergraduate medicine courses: sex and age, 1988–95, University of Tasmania

Age (years)	1988	1989	1990	1991	1992	1993	1994	1995
Males								
<23	21	5	5	5	4	6	11	4
23	9	15	7	7	8	13	8	7
24	4	2	2	0	3	4	1	2
25–29	8	1	2	3	1	2	4	2
30+	0	0	2	0	1	0	1	0
Total	42	23	18	15	17	25	25	15
Females								
<23	25	12	10	10	10	10	10	14
23	6	9	8	3	8	6	11	9
24	3	2	2	2	3	3	2	2
25–29	3	3	0	2	3	1	1	2
30+	2	1	1	1	0	1	0	1
Total	39	27	21	18	24	21	24	28
Persons								
<23	46	17	15	15	14	16	21	18
23	15	24	15	10	16	19	19	16
24	7	4	4	2	6	7	3	4
25–29	11	4	2	5	4	3	5	4
30+	2	1	3	1	1	1	1	1
Total	81	50	39	33	41	46	49	43

Table 65: Australian citizens/residents completing undergraduate medicine courses: country of birth, 1988–95, University of Tasmania

Country of birth	1988	1989	1990	1991	1992	1993	1994	1995
Australia	26	40	28	23	29	39	33	32
New Zealand/Oceania	0	1	2	0	1	1	2	0
UK/Ireland	2	3	2	4	5	2	1	2
Other Europe/USSR	0	2	0	0	2	2	2	0
Middle East/Nth Africa	0	0	0	0	0	0	0	1
Southern Asia	3	1	1	2	0	1	4	2
Northeast Asia	0	1	1	0	0	0	1	0
Southeast Asia	3	0	1	3	2	0	1	2
North/South America	0	1	0	0	1	1	1	3
Africa	1	1	3	1	1	0	0	1
Not known	46	0	1	0	0	0	4	0
Total	81	50	39	33	41	46	49	43

Table 66: Aboriginal students completing/commencing undergraduate medicine courses, 1988–96, University of Tasmania

	1989	1990	1991	1992	1993	1994	1995	1996
Completing students	0	0	0	0	0	0	0	n.a.
Commencing students	0	0	1	0	0	1	0	0

Table 67: Australian citizens/residents commencing undergraduate medicine courses: sex and age, 1989-96, University of Tasmania

Age (years)	1989	1990	1991	1992	1993	1994	1995	1996
Males								
<18	9	6	4	9	11	10	13	9
18	7	8	14	9	12	6	9	8
19	1	1	0	1	0	0	2	3
20-24	2	3	0	1	0	2	1	3
25+	1	1	1	0	0	1	5	2
Total	20	19	19	20	23	19	30	25
Females								
<18	13	15	14	8	14	13	11	8
18	15	12	12	16	13	13	7	13
19	1	1	1	1	0	0	0	1
20-24	0	0	3	1	0	0	2	5
25+	0	1	0	2	0	4	3	2
Total	29	29	30	28	27	30	23	29
Persons								
<18	22	21	18	17	25	23	24	17
18	22	20	26	25	25	19	16	21
19	2	2	1	2	0	0	2	4
20-24	2	3	3	2	0	2	3	8
25+	1	2	1	2	0	5	8	4
Total	49	48	49	48	50	49	53	54

Table 68: Australian citizens/residents commencing undergraduate medicine courses: country of birth, 1989-96, University of Tasmania

Country of birth	1989	1990	1991	1992	1993	1994	1995	1996
Australia	27	36	0	33	40	38	45	40
New Zealand/Oceania	2	1	0	3	0	0	0	1
UK/Ireland	2	1	5	3	2	4	4	3
Other Europe/USSR	2	3	3	0	0	0	0	0
Middle East/Nth Africa	0	1	0	0	0	1	0	1
Southern Asia	1	0	0	0	1	2	1	0
Northeast Asia	0	0	1	1	1	0	0	4
Southeast Asia	1	2	2	1	4	3	1	3
North/South America	2	1	0	1	1	0	2	2
Africa	0	3	0	1	1	1	0	0
Not known	12	0	38	5	0	0	0	0
Total	49	48	49	48	50	49	53	54

Table 69: Australian citizens/residents commencing undergraduate medicine courses: region of home location, University of Tasmania, 1989-96

Region of home location	1989	1990	1991	1992	1993	1994	1995	1996
Capital city	35	28	29	24	30	35	36	36
Other metropolitan centre	0	0	0	0	0	0	1	2
Large rural centre	6	6	7	9	9	10	8	8
Small rural centre	2	6	3	7	4	1	3	1
Other rural area	3	7	10	7	7	3	4	7
Remote	1	0	0	0	0	0	0	0
Not known	2	1	0	1	0	0	1	0
Total	49	48	49	48	50	49	53	54

Table 70: Australian citizens/residents completing undergraduate medicine courses: sex and age, 1988-95, University of Western Australia

Age (years)	1988	1989	1990	1991	1992	1993	1994	1995
Males								
<23	45	33	32	37	47	38	35	33
23	18	6	18	17	10	9	13	13
24	3	1	6	2	1	4	2	5
25-29	3	2	5	1	7	5	3	2
30+	3	0	0	5	6	5	3	0
Total	72	42	61	62	71	61	56	53
Females								
<23	30	31	25	26	23	27	30	30
23	10	8	14	9	8	6	10	8
24	3	2	2	1	3	2	4	3
25-29	0	3	0	2	2	5	2	1
30+	1	0	1	2	2	3	7	2
Total	44	44	42	40	38	43	53	44
Persons								
<23	75	64	57	63	70	65	65	63
23	28	14	32	26	18	15	23	21
24	6	3	8	3	4	6	6	8
25-29	3	5	5	3	9	10	5	3
30+	4	0	1	7	8	8	10	2
Total	116	86	103	102	109	104	109	97

Table 71: Australian citizens/residents completing undergraduate medicine courses: country of birth, 1988-95, University of Western Australia

Country of birth	1988	1989	1990	1991	1992	1993	1994	1995
Australia	0	46	59	54	53	47	57	48
New Zealand/Oceania	0	0	2	2	0	0	0	0
UK/Ireland	0	15	11	8	10	13	16	9
Other Europe/USSR	0	2	4	6	2	0	2	2
Middle East/Nth Africa	0	2	1	2	0	3	1	0
Southern Asia	0	1	3	3	5	7	2	2
Northeast Asia	0	4	4	2	4	6	3	5
Southeast Asia	0	13	13	19	30	22	18	30
North/South America	0	1	2	3	1	2	3	0
Africa	0	2	2	3	4	4	7	1
Not known	116	0	2	0	0	0	0	0
Total	116	86	103	102	109	104	109	97

Table 72: Aboriginal students completing/commencing undergraduate medicine courses, 1988-96, University of Western Australia

	1989	1990	1991	1992	1993	1994	1995	1996
Completing students	0	0	0	0	0	0	0	n.a.
Commencing students	0	0	2	2	1	2	1	1

Table 73: Australian citizens/residents commencing undergraduate medicine courses: sex and age, 1989-96, University of Western Australia

Age (years)	1989	1990	1991	1992	1993	1994	1995	1996
Males								
<18	44	42	35	39	46	47	48	49
18	10	13	11	13	10	5	11	6
19	3	8	3	1	3	2	0	1
20-24	2	5	3	6	3	5	3	1
25+	3	2	5	4	5	2	3	2
Total	62	70	57	63	67	61	65	59
Females								
<18	41	39	50	38	41	37	36	42
18	7	3	9	7	5	11	10	6
19	1	1	2	2	3	2	2	4
20-24	2	1	4	6	7	5	4	8
25+	6	7	3	2	2	6	5	4
Total	57	51	68	55	58	61	57	64
Persons								
<18	85	81	85	77	87	84	84	91
18	17	16	20	20	15	16	21	12
19	4	9	5	3	6	4	2	5
20-24	4	6	7	12	10	10	7	9
25+	9	9	8	6	7	8	8	6
Total	119	121	125	118	125	122	122	123

Table 74: Australian citizens/residents commencing undergraduate medicine courses: country of birth, 1989-96, University of Western Australia

Country of birth	1989	1990	1991	1992	1993	1994	1995	1996
Australia	59	57	56	60	57	75	68	68
New Zealand/Oceania	0	0	2	3	2	1	1	2
UK/Ireland	13	13	11	11	7	6	7	4
Other Europe/USSR	2	6	5	2	3	6	3	6
Middle East/Nth Africa	1	2	2	1	5	0	4	3
Southern Asia	2	2	1	4	5	1	2	4
Northeast Asia	5	6	5	4	6	7	6	9
Southeast Asia	27	30	38	25	34	22	20	21
North/South America	2	2	2	3	2	1	2	0
Africa	7	3	3	5	4	3	9	6
Not known	1	0	0	0	0	0	0	0
Total	119	121	125	118	125	122	122	123

Table 75: Australian citizens/residents commencing undergraduate medicine courses: region of home location, University of Western Australia, 1989-96

Region of home location	1989	1990	1991	1992	1993	1994	1995	1996
Capital city	111	115	113	106	109	110	111	113
Other metropolitan centre	0	0	0	0	0	0	0	0
Large rural centre	0	0	0	0	0	1	0	0
Small rural centre	2	2	3	1	2	3	6	5
Other rural area	6	3	5	6	5	4	2	3
Remote	0	1	2	0	4	3	2	1
Not known	0	0	2	5	5	1	1	1
Total	119	121	125	118	125	122	122	123

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The report describes the characteristics of medical students entering Australian medical schools between 1989 and 1997, examines medical school admission policies and the likely impact of these policies on the future Australian medical workforce.