

# Planning Australia's hospital workforce

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## Abstract

*Growing government support has been evident during the past decade for macro-level workforce planning to ensure that future populations have access to appropriate health care services. Population ageing is impacting on workforce requirements and on workforce supply within Australia and internationally. Changes in financing and the organisation of health services are impacting on the availability of training and on the quality of working life. The age and gender profile and career expectations of young Australians are changing. These factors are all adding to the importance and complexity of workforce planning. This paper draws on data from various sources to describe Australia's hospital workforce, to explore supply-side workforce trends and to discuss some contemporary issues of concern to policy makers and workforce planners. The paper finds that in recent years there has been a 3 per cent decline in the number of full time equivalent staff in public hospitals, while the number in the private hospital workforce has increased by 28 per cent. The paper concludes that, nationally, there are serious limitations in the data available to describe and monitor the hospital workforce and that there is a need to remedy this situation.*

## Introduction

The hospital has traditionally been one of the key settings for the provision of health care with all hospitals requiring an adequate supply of appropriately trained health professionals. It follows that change and evolution in the delivery of hospital services requires change in the skill mix of its workforce. Among the forces for change are advances in health technology and practice, competition for limited resources, and workplace reforms to improve the quality, safety and effectiveness of hospital services. At the same time change in the nation's health workforce has important implications for hospital management.

Like the general population the health workforce is becoming older and more culturally diverse. Other broad health workforce changes can be anticipated as a result of changes in education and training policies and other considerations associated with pursuing a career in the health industry. For example, in recent years many postgraduate nursing courses have become fee-paying and new career opportunities have become available within Australia and overseas. Universities have changed their admissions procedures and curricula to improve the skills of graduate doctors and nurses to meet patient expectations. The cost of professional indemnity insurance is increasing at unprecedented rates and this is occurring unevenly across disciplines, affecting both medical workforces, such as neurosurgery, and non-medical workforces, such as midwifery. In recent years the Commonwealth Government has funded a range of initiatives to encourage more doctors to practise in a rural area.

Traditionally, public hospitals have been the main providers of vocational training and work experience with state/territory governments being the main source of funding. There has been an expectation that dedicated young health professionals will work long hours. Hospital work rosters have frequently lacked flexibility with few opportunities to work and train part-time. These expectations are being challenged, particularly with respect to the medical workforce, in the interest of patient safety and trainee health and wellbeing (Australian Medical Association [AMA], 2001a and AMA 2001b). In recent times, public hospitals have undergone significant

change due to increased demand for services, limited resources to meet these demands and management initiatives to contain costs and increase productivity. The number of days that patients remain in public hospitals has declined and some services once provided in public hospitals are now being provided in the private sector. These changes are affecting the vocational training opportunities available to health professionals within public hospitals.

The changes that are occurring within many of the professional health workforces and in the wider health environment have increased the importance of national health workforce planning. Nationally, the medical workforce has been comparatively well catered for through the work of the Australian Medical Workforce Advisory Committee (AMWAC), which was established in 1995 (AMWAC Review Team 2002). Nursing workforce planning has had less of a national focus and most planning has been ad hoc and focussed more at the state/territory level. This lack of national focus for nursing workforce planning is well recognised and national efforts are now co-ordinated through the Australian Health Workforce Advisory Committee (AHWAC). In a government sense, the allied health professions have been largely neglected from a planning perspective. The inconsistency of these approaches has manifested in a lack of planning for the hospital workforce per se. This may be due to the combined factors of poorly developed hospital workforce data collections, and that hospital workforce planning is perceived as more the domain of state/territory governments and individual hospitals.

This paper examines Australia's approach to planning the health workforce and describes the composition and distribution of this large, diverse workforce. This is the context for an examination of the professional hospital workforce, including some supply-side trends. The latter are used to highlight areas of current and future workforce concern.

## **Sources of data and their limitations**

Data from various sources are used to describe the composition and distribution of the workforce, including, hospital workforce data from the ABS Census of Population and Housing and relevant data collections of the Australian Institute of Health and Welfare (AIHW). The latter include the annual hospital data collections from private and public hospitals and the labour force collections from various health occupation workforces. Each of these data sources has strengths and weaknesses but all are in broad agreement as to the size of the hospital workforce. The ABS Census is the most comprehensive source of all the occupations in the hospital workforce with the disadvantage that it reports at five-yearly intervals, the most recent available data being the 1996 Census. (It should be noted that 2001 Census data was not available for use in drafting this article.) The ABS data may also understate (by approximately 5%) the number of persons employed in hospitals due to non-response to the occupation or industry questions. The annual hospital statistics data compiled by the ABS and AIHW generally report equivalent full-time (FTE) employment data in broad occupation groups. The occupation group data in some States or Territories may be suppressed because of the small number of hospitals in the jurisdiction with consequential effect on the comprehensiveness of the national data. The AIHW health labour force data is only for the registered professions and is unable to present a complete overview of hospital employment. None of the sources is able to provide accurate data on the workforce contribution of visiting medical officers in hospitals.

## **Australia's approach to planning the health workforce**

In Australia, Commonwealth and State/Territory governments have supported national workforce planning initiatives in the interest of gaining accurate and timely information about workforce supply, distribution and future requirements with a view of informing workforce, and broader health system, policies. The preferred planning approach has been data-driven workforce change with key stakeholders involved in the process – governments, service providers, professions, consumers and educators and trainers.

Despite growing experience with national workforce planning, predicting workforce requirements remains a challenge. For example, while there is growing consensus over demand-side and supply-side measures, opinions are varied as to whether workforce planning should focus on a single discipline (eg general practice) or be multidisciplinary. A multidisciplinary approach increases the complexities associated with planning because it requires consensus among the key stakeholders as to: 1) the appropriate mix and number of service providers required for any given stream of care (eg the cancer care workforce or the mental health workforce); and 2) the workload appropriate for each discipline to provide optimal care of patients with particular conditions and in different health care settings (eg acute care, rehabilitative care, palliative care).

These qualitative workforce issues are becoming increasingly important given mounting evidence of the link between staffing levels and quality of patient care. For example, in a study involving 799 US hospitals, Needleman et al., (2002) observed that lower levels of staffing by nurses were associated with an increased risk that patients will have complications or die. Theoretically it should be possible to link workforce numbers and organisation to an optimal model of care, which is based on providing the best quality and outcomes. However at present there is not a sufficiently developed evidence base to inform this process. This approach is likely to be usefully applied in the hospital setting.

In supply terms, Australia's health workforce policy has been national self-sufficiency. However, maldistribution of the workforce has been a constant challenge to policy makers, and has necessitated the development of a range of incentive based initiatives coupled with the supplementation of the Australian trained workforce with overseas trained doctors and nurses. The overseas workers have been employed in particular areas of need – mostly rural general practice and the public hospital system, both urban and rural.

Policies arising from most medical macro workforce planning initiatives have typically attempted to influence supply-side initiatives, such as intake into medical schools and specialist vocational training programs (AMWAC 2000a; Duckett 2000). For example, since 1995, AMWAC has recommended increases in specialist training program intakes across 22 of the 24 medical workforces that it has reviewed, with first year vocational training places increasing by 111 between 1998 and 2002 (viz., from 1,369 to 1,483). At the same time, medical school commencements have increased by 105 (from 1,221 to 1,326), while the number of medical school completions has declined slightly, from 1,206 to 1,195 (AMWAC 2000b; Committee of Deans of Australian Medical Schools 2002).

## Australia's health workforce

Drawing on ABS Labour Force Survey data, the AIHW (2002a) estimated that in 2000, the health workforce accounted for 643,500 persons (Table 1). This represented 7.1% of employed Australians. In total, 63.5% of the health workforce were employed within hospitals and nursing homes, 20% within medical and dental services, and the remaining 16.5% in a range of other health settings, excluding veterinary services. Data from the 1996 ABS Census suggests that of people employed in hospitals and nursing homes, approximately 26% are associated with the latter.

Compared with the total civilian workforce in which 44% were female and 26% were part-time, the health workforce was predominantly female (78%), and a greater proportion were part-time (viz., 40%). Of the people working part-time in the health industry, 92% were women. The trend toward part-time work can be expected to continue given that between 1995 and 2000, there was an increase in part-time employment in the health industry of 19%, compared with an increase of 7.5% in full-time employment. During this same period, the health workforce increased by 12%, while the total civilian workforce increased by 9.6% (AIHW 2002a).

**Table 1. Health industry employees, 2000**

Industry	Total persons	Percent of total health employees	Percent part-time	Percent female
Hospitals and nursing homes	408,500	63.5	38.8	81.4
Medical and dental services	129,500	20.1	43.6	73.4
Other health services	105,500	16.4	39.3	71.1
<b>Total health service</b>	<b>643,500</b>	<b>100.0</b>	<b>39.9</b>	<b>78.1</b>
Total Australian civilian workforce	9,009,300	-	26.3	43.8

Note: Annual figures are the average for the four quarters.

Source: ABS Labour Force Survey data, from AUSTATS reported in Australian Institute of Health and Welfare (AIHW) (2002), *Australia's Health 2002: The Eighth Biennial Health Report of the Australian Institute of Health and Welfare*, Canberra

Table 2 indicates that Australia is making greater use of overseas-trained health professionals across a range of health disciplines. For example, between 1993-94 and 1998-99 the use of temporary resident overseas-trained health professionals increased by 165%, with doctors accounting for 66% and nurses 23%, with the remaining 11% made up of other health professional groups. This table also shows that there has been a marked increase in the number of permanent resident overseas-trained nurses arriving in Australia (AIHW 2000b). The use of overseas-trained health professionals highlights areas of current workforce shortage. For example, with respect to the medical workforce, the greatest contributions of temporary resident doctors are to the rural general practice workforce and the public hospital and locum workforces, both urban and rural (AMWAC 1999).

**Table 2. The increasing use of overseas trained health professionals, 1993-94 and 1998-99**

Discipline	1993-94	1998-99	% change
<i>Temporary residents</i>			
Medical practitioners	893	2,224	149.0
Nurses & midwives	261	772	195.8
Optometrists	23	101	339.1
Pharmacists	27	89	229.6
Medical imaging professionals	18	68	277.8
Physiotherapists	10	32	220.0
Other	50	109	118.0
<b>Total</b>	<b>1,282</b>	<b>3,395</b>	<b>164.8</b>
<i>Permanent residents</i>			
Nurses & midwives	870	1,080	24.1
Medical practitioners	445	408	-8.3
Pharmacists	72	120	66.7
Optometrists	15	98	553.3
Physiotherapists	77	90	16.9
Medical imaging professionals	44	53	20.5
Other	192	181	-5.7
<b>Total</b>	<b>1,715</b>	<b>2,030</b>	<b>18.4</b>

Source: Australian Institute of Health and Welfare (2000), *Australia's Health 2000*, AIHW, Canberra (p 265).

## Australia's hospital workforce

As indicated in Table 3, the largest single occupational category in the hospital workforce in 1996, was registered and enrolled nurses (41%), a further 4% were nurse assistants and therapy aides. In total, 7% of the hospital workforce were medical practitioners, 4% allied health professionals, 0.6% pharmacists, 0.1% dentists, while 43% were made up of a range of other health related occupational categories (AIHW 2001a).

In 1999-00, expenditure on salaries and wages for the workforce employed in all hospitals (viz., public, private and day hospitals) amounted to \$12,464 million (AIHW 2002b). This represented 68% of total hospital expenditure, which was \$18,806 million (Table 4). In the public sector, salaries and wages accounted for 71% of total expenditure, while in the private sector it accounted for 57% and in free-standing day hospitals it represented 41%. In 2000-01, salaries and wages accounted for 62.5% of total public hospital recurrent expenditure, which amounted to \$15,545 million (see Hargreaves et al., in this issue of the journal) (AIHW 2002b).

In 2000-01, expenditure on salaries and wages in public acute and psychiatric hospitals amounted to \$9,722 million. Table 5 indicates the distribution of this expenditure by broad workforce category. The table shows that nurses accounted for 45% of expenditure, salaried medical officers 18%, diagnostic and health professionals 13%, administrative and clerical staff 12%, domestic and other staff 10%, and personal care staff and other categories of staff accounted for the remaining one per cent. In addition, payments to visiting medical officers amounted to \$599 million and superannuation payments \$814 million (AIHW 2002b).

**Table 3. Representation of persons employed in health related occupations, by occupational category and industry, (ABS 1996 Census)**

Industry	Doctors	Dentists	Pharmacists	Allied health	Nurses	Nurse assistant	Therapy aide <sup>1</sup>	Other occupations	Total
Hospitals	6.7	0.1	0.6	3.7	41.2	1.3	3.3	43.1	100.0
Nursing homes	0.1	0.0	0.0	1.0	30.7	18.5	3.5	46.2	100.0
General practice	69.3	0.1	0.1	2.3	13.4	0.2	0.3	14.3	100.0
Specialist med. services	53.9	0.1	0.0	14.5	14.6	0.3	0.3	16.4	100.0
Dental services	1.0	70.0	0.0	0.9	4.0	0.2	0.2	23.6	100.0
Pathology services	20.4	0.0	0.1	1.6	38.1	0.2	1.0	38.5	100.0
Community Health	2.8	0.3	0.2	10.2	28.3	1.1	1.2	55.8	100.0
Other health industry	3.8	0.1	0.1	35.2	25.7	1.9	1.2	31.9	100.0
Child care services	0.0	0.0	0.0	0.1	2.5	0.0	0.0	97.3	100.0
Accom.for the aged	0.0	0.0	0.0	0.7	16.8	9.5	9.0	63.9	100.0
Residential & non-resid.	0.3	0.0	0.0	3.4	6.1	1.5	2.4	86.3	100.0
Government admin.	3.1	0.1	0.5	6.8	11.8	0.3	0.8	76.6	100.0
Education	1.4	0.1	0.1	3.8	4.6	0.1	0.3	89.4	100.0
Defence	19.2	5.5	1.7	11.5	19.5	5.5	8.9	28.1	100.0
Other	2.7	0.3	13.7	6.7	10.4	1.5	2.0	62.8	100.0
<b>Total</b>	<b>7.4</b>	<b>0.9</b>	<b>1.5</b>	<b>6.3</b>	<b>24.6</b>	<b>3.3</b>	<b>2.3</b>	<b>53.7</b>	<b>100.0</b>

1. Includes Therapy Aides and Personal Care Assistants

Source: Australian Institute of Health and Welfare (2001) Health and Community Services Labour Force, 1996, AIHW, Canberra.

**Table 4. Hospital expenditure (\$'000), by public/private sector and free-standing day, 1999-00**

Expenditure category	Public acute & psychiatric hospitals	Private acute & psychiatric hospitals	Free-standing day hospitals	All hospitals
Wages and salaries including on-costs <sup>1</sup>	10,226,596	2,170,827	67,102	12,464,525
Drugs, medical and surgical supplies	1,820,653	630,788	35,912	2,487,353
Food supplies	165,373	78,807	-	244,180
Other domestics services	520,106	77,109	-	597,215
Administrative expenses	897,721	291,741	29,454	1,218,916
Repairs and maintenance	348,611	73,522	-	422,133
Other <sup>2</sup>	461,352	471,240	30,241	962,833
<b>Total</b>	<b>14,350,411</b>	<b>3,794,034</b>	<b>162,710</b>	<b>18,307,155</b>
% wages and salaries	71.3	57.2	41.2	68.1

Notes: 1. Includes payments to visiting medical officers and superannuation for public hospitals

2. Domestic services for day-hospitals, repairs and maintenance, interest, depreciation, patient transport, contract services and other

Sources: Australian Institute of Health and Welfare (2001) Australian Hospital Statistics 1999-2000, AIHW, Canberra; Australian Bureau of Statistics, Private Hospital Statistics, ABS Catalogue 4390.0.

**Table 5. Recurrent public acute and psychiatric hospital wages and salaries expenditure (\$'000), by category of staff, 2000-01**

Recurrent expenditure category of staff	\$('000)	Percent of total salaries and wages expenditure
Nurses (RNs, ENs, students, trainees/pupils)	4,338,403	44.6
Salaried medical officers	1,791,450	18.4
Diagnostic and health professionals	1,298,687	13.4
Administrative and clerical	1,167,750	12.0
Domestic and other staff	1,019,239	10.5
Other personal care staff	48,006	0.5
Not allocable to a salary expenditure category	58,516	0.6
<b>Total</b>	<b>9,722,051</b>	<b>100.0</b>

Source: Australian Institute of Health and Welfare (2002) Australian Hospital Statistics 2000-2001, AIHW, Canberra.

The average annual salary for all full time equivalent public hospital staff in 1998-99 was \$48,670 and in 2000-01 was \$53,118, with wide variation by State/Territory and between broad occupational categories (Table 6). For example, for 'other personal care staff' the average annual salary in 2000-01 was \$31,298, for salaried medical officers it was \$103,487, for nurses \$52,602, for diagnostic and health professionals it was \$54,565, for administrative and clerical staff it was \$41,867 and for domestic and other staff it was \$35,558 (AIHW 2002b).

**Table 6. Average salary (\$) of full time equivalent staff, public acute and psychiatric hospitals, by occupational category and State/Territory, 2000-01**

Occupational category	NSW <sup>a</sup>	Vic <sup>c</sup>	Qld	WA	SA <sup>b</sup>	Tas <sup>d</sup>	ACT	NT	Total <sup>e</sup>
Salaried medical officers	98,152	125,505	95,858	104,031	81,656	104,610	106,667	123,628	103,487
Nurses	50,548	58,589	52,061	51,517	47,652	50,792	49,851	57,868	52,602
Other personal care staff	n.a.	27,085	35,647	31,342	n.a.	n.a.	34,998	37,727	31,298
Diagnostic & health professionals	49,626	64,576	53,146	48,665	47,891	54,185	55,498	68,288	54,565
Administrative & clerical staff	43,106	45,279	38,764	39,182	36,428	37,489	45,847	43,382	41,867
Domestic & other staff	34,956	37,866	34,406	35,712	30,318	44,536	33,922	44,231	35,558
Total staff	50,961	60,916	50,780	50,965	47,180	52,247	54,271	58,804	53,118

(a) Where average full-time equivalent (FTE) staff numbers were not available, staff numbers at 30 June were used.

(b) Other personal care staff are included in Diagnostic & allied health professionals and Domestic & other staff.

(c) FTEs may be slightly under-enumerated with a corresponding overstatement of average salaries.

(d) Data for three small hospitals not supplied. Other personal care staff are included in domestic & other staff.

(e) The totals for Other personal care staff, diagnostic & health professionals and domestic & other staff are affected by reporting arrangements noted above.

(f) n.a. not available

Source: Australian Institute of Health and Welfare (2002) Australian Hospital Statistics 2000-01, AIHW, Canberra.

Based on the 1996 Census data, Table 7 shows that 72% of the hospital workforce was employed within public hospitals and 28% within private hospitals. The table also indicates that across State/Territories there was variation in the proportion of the workforce employed within the public and private sectors. For example, in Victoria, 36% of the hospital workforce was employed in the private sector, while the comparative figures for New South Wales and the Northern Territory were 21% and 12%, respectively (AIHW 2001a).

**Table 7. Industry sector distribution of the hospital workforce, by State/Territory, 1996**

Industry sector	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
Government	79.0	63.8	63.4	74.4	75.7	70.6	88.2	76.6	71.5
Private	20.7	35.8	36.2	25.4	23.9	28.9	11.7	23.1	28.1
Not stated	0.3	0.4	0.4	0.3	0.3	0.4	0.2	0.3	0.4
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: Australian Institute of Health and Welfare (2001) Health and Community Services Labour Force, 1996, AIHW, Canberra.

Table 8 indicates that in 1996, 67% of the hospital workforce resided in a capital city, 7% in an 'other metropolitan centre' (viz., Gosford Wyong, Newcastle, Wollongong, Queanbeyan, Blue Mountains, Geelong, Gold Coast, Tweed Heads, or Townsville), while the remaining 26% resided in a rural or remote region of Australia. Rural and remote regions are all locations outside of a capital city or other major urban centre. This distributional pattern is similar to the distribution of the Australian population in which 64% reside in capital cities, 8% in 'other metropolitan centres', while the remaining 28% reside in a rural or remote region (ABS 1996 Census). This workforce distribution pattern is likely to have been largely influenced by the distribution of the nursing workforce. The AIHW (2002a) observed that in 1997, 63% of employed registered and enrolled nurses had their main job in a capital city, 7% in an 'other metropolitan centre', while the remaining 30% were located in a rural or remote area.

Table 8 also shows wide variation in the geographic distribution of the hospital workforce by State/Territory. Obviously, these variations were linked to the distribution of hospitals within each State/Territory in 1996. States with an above average concentration of the hospital workforce in urban regions were Western Australia, South Australia and New South Wales, while in Queensland, Tasmania and the Northern Territory more than 30% of the workforce was located in a rural or remote region (AIHW 2001a). (For information about the geographic distribution of hospitals and hospital beds see Wilkinson in this issue of the journal.)

**Table 8. Geographic distribution of the hospital workforce, by State/Territory, 1996**

Region of usual residence	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
Capital city	65.3	70.6	54.1	78.2	79.1	45.9	56.0	99.9	67.0
Other metropolitan centre	12.5	3.0	12.0	-	-	-	-	-	7.0
Large rural centres	5.9	6.0	14.8	2.0	-	27.5	-	-	7.0
Small rural centres	6.2	5.4	3.8	3.8	4.0	7.7	-	-	5.1
Other rural areas	9.3	14.8	10.6	14.7	8.5	18.1	4.7	0.1	11.4
Remote zone	0.8	0.2	4.7	1.3	8.4	0.7	39.3	-	2.4
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Australian Institute of Health and Welfare (2001) Health and Community Services Labour Force, 1996, AIHW, Canberra.

## Changes in the staffing and utilisation of Australian hospitals

Between 1993-94 and 1999-00, the number of full time equivalent staff in public hospitals decreased by 3% (from 180,513 to 175,291), while in private hospitals the number of FTE staff increased by 28% (from 33,758 to 43,120) and in free-standing day hospitals there was a 135% increase (from 653 to 1,537) (Table 9) (AIHW 2001b).

Table 10 shows that during this same period, the average length of stay declined from 4.7 days to 3.8 days. However, this decrease was largely attributable to the increase in same day patients (see Hargreaves et al., in this issue of the journal). Hargreaves et al., also observe that between 1995-96 and 1999-00 there was a slight shift from the use of public acute hospitals to private hospitals with 70% of patient days in public hospitals in 1995-96 compared with 67% in 1999-00.

**Table 9. Full time equivalent staff, by hospital sector, 1993-94 to 1999-00**

Industry sector	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	% change
Public and repat. hospitals	180,513	179,355	184,494	174,695	175,024	175,535	175,291	-2.9
Private hospitals	33,758	36,589	39,100	40,908	41,566	43,053	43,120	27.7
Free-standing day hospitals	653	755	890	1,011	1,220	1,319	1,537	135.3
<b>Total hospital FTE staff</b>	<b>214,924</b>	<b>216,699</b>	<b>224,484</b>	<b>216,613</b>	<b>217,809</b>	<b>219,907</b>	<b>219,948</b>	<b>2.3</b>
% staff in public and repat. hospitals	84.0	82.8	82.2	80.6	80.4	79.8	79.7	

Sources: Australian Institute of Health and Welfare (2001) Australian Hospital Statistics (various years), AIHW, Canberra; Australian Bureau of Statistics (2001), Private Hospital Statistics, ABS Catalogue 4390.0.

**Table 10. Patient separations and average stay (days), all hospitals, 1993-94 to 1999-00**

	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	% change
Separations ('000s)	4,734	4,980	5,254	5,408	5,627	5,846	6,020	27.2
- Same-day	1,691	1,945	2,226	2,423	2,610	2,813	2,973	75.8
- Overnight stay	3,043	3,035	3,028	2,985	3,017	3,033	3,047	0.1
Average stay (days)	4.7	4.4	4.3	4.2	4.0	3.9	3.8	
- Same-day	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
- Overnight stay	6.8	6.6	6.7	6.8	6.7	6.5	6.5	

Sources: Australian Institute of Health and Welfare (2001) Australian Hospital Statistics (various years), AIHW, Canberra; Australian Bureau of Statistics (2001), Private Hospital Statistics, ABS Catalogue 4390.0.



## The professional hospital workforce

Using data from the 1996 Census, Duckett (2000) observed that of the people employed in the health industry, approximately one third were health professionals. In this section the focus is the professional hospital workforce and the aim is to analyse changes in the supply of this workforce during the past decade. Four broad health professional groups have been selected for analysis, viz., medical practitioners, registered nurses, allied health professionals and managers.

Data from the AIHW (2001b), indicate that in 1998-99, nursing staff represented 48% of the hospital workforce, salaried medical officers and other diagnostic and health professionals accounted for 19%, administrative and clerical staff 14% and domestic and other staff 19% (Table 11). Table 11 also shows variation by hospital sector in the representation of workforce categories. For example, medical officers and other diagnostic professionals accounted for 22% of the public hospital workforce, and only 5% of the private hospital workforce, while nursing staff accounted for 60% of the private hospital workforce and 45% of the public hospital workforce.

### Medical practitioners

In 1998, there were 41,605 doctors practising as clinicians in Australia (this figure does not include 4,473 specialists-in-training). This represented 223.8 clinicians per 100,000 persons and was somewhat less than the average for the 29 OECD countries in 1997 (viz., 253.4 clinicians per 100,000 population) (AIHW 2000a; AMWAC 2001).

**Table 11. Full time equivalent hospital staff, by occupational category and hospital sector, 1999-00**

Occupational category	Public hospitals (including psych.)	Private acute & psych. hospitals	Free-standing day hospitals	All hospitals
Salaried medical officers and other diagnostic and health professionals	39,144	2,125	-	41,269
Nursing staff	78,319	25,670	746	104,735
Administrative and clerical staff	26,410	5,687	443	32,540
Domestic and other staff	31,662	9,571	130	41,363
<b>Total staff</b>	<b>175,535</b>	<b>43,053</b>	<b>1,319</b>	<b>219,907</b>
% medical officers and other diagnostic and health professionals	22.3	4.9	-	18.8
% nursing staff	44.6	59.6	56.5	47.6
% administrative and clerical staff	15.0	13.2	33.6	14.8
% domestic and other staff	18.0	22.2	9.8	18.8

Sources: Australian Institute of Health and Welfare (2001) Australian Hospital Statistics 1999-2000, AIHW, Canberra; Australian Bureau of Statistics (2001), Private Hospital Statistics, ABS Catalogue 4390.0.

### The hospital medical workforce

Acute care hospitals were the main work setting for 31% (15,313) of medical practitioners, for 58% the main work setting was their private rooms, while for the remaining 11% a variety of settings were nominated (eg residential services, Aboriginal health services and educational institutions) (AIHW 2000a). However, many practitioners with private rooms also work in hospitals. Table 12 shows that in 1998, 21,793 medical practitioners spent some of their work time in a public hospital and 6,459 spent some work time in a private hospital. Of doctors working in public hospitals, 52% were specialists, a further 18.5% were specialists-in-training, while 13% were primary care practitioners, 12.5% were hospital-non-specialists and 4% were non-clinicians (eg administrators, educators and researchers) (AIHW 2000a). Table 12 also shows that, of doctors working in private hospitals, 61% were specialists, only 7% were specialists-in-training, 24.5% were primary care practitioners and 5% were hospital-non-specialists. Clinicians represented 97% of doctors working in private hospitals, while non-clinicians accounted for 3% (AIHW 2000a).

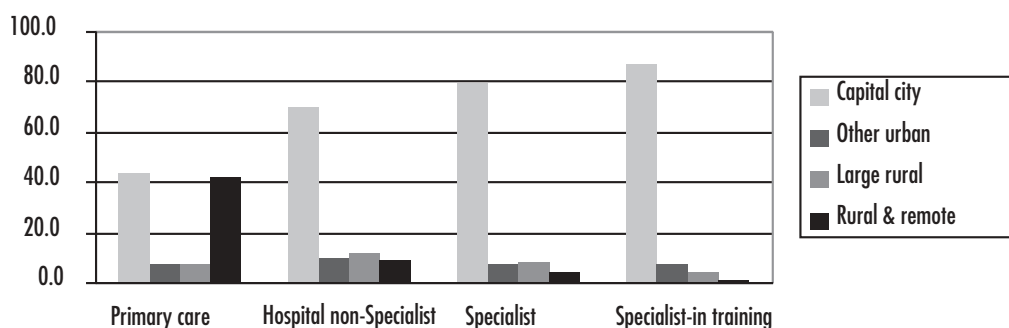
**Table 12. Medical practitioners who spend some of their time working in public and private hospitals, by occupation of main job, 1998**

Occupation of main job	Public hospitals	Percent	Private hospitals	Percent
Primary care	2,843	13.0	1,580	24.5
Hospital non-specialist	2,719	12.5	319	4.9
Specialist	11,252	51.6	3,922	60.7
Specialist-in-training	4,039	18.5	429	6.6
<b>Total clinicians</b>	<b>20,853</b>	<b>95.7</b>	<b>6,250</b>	<b>96.8</b>
Non-clinicians <sup>1</sup>	940	4.4	209	3.3
<b>Total medical practitioners</b>	<b>21,793</b>	<b>100.0</b>	<b>6,459</b>	<b>100.0</b>

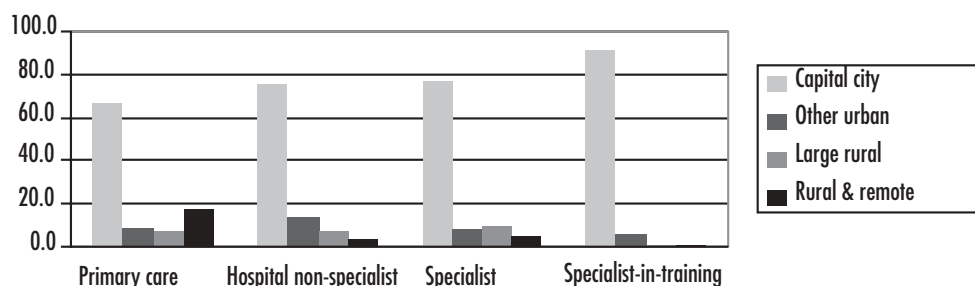
1. Non-clinicians include administrators, teacher/educators, researchers, public health physicians and occupational health physicians.

Source: Australian Institute of Health and Welfare (2000) *Medical Labour Force Report, 1998*, AIHW, Canberra.

Figure 1 indicates that, except for primary care practitioners, the public hospital medical workforce is predominantly located in capital cities. The capital city bias is even more evident with respect to the private hospital medical workforce (Figure 2) (AIHW 2000a).

**Figure 1. Geographic location of medical clinicians working in public hospitals, by main job, 1998**

Source: Australian Institute of Health and Welfare (2000), *Medical Labour Force Report, 1998*, Canberra.

**Figure 2. Geographic location of medical clinicians working in private hospitals, by main job, 1998**

Source: Australian Institute of Health and Welfare (2000), *Medical Labour Force Report, 1998*, Canberra.

## Medical workforce trends and the staffing of hospitals

Between 1993 and 1998, the number of commencing and completing medical students (Australian citizens and permanent residents) increased by 2% (AMWAC 2000a), the total clinician workforce increased by 9%, while the Australian population increased by 6% (AIHW 2000a). During this same period, the public hospital FTE salaried medical officer workforce increased by 26% (Table 13). Comparative data were not available for private hospitals. As indicated in Table 13, the private hospital data include both salaried medical officers and other diagnostic and health professionals. This workforce increased by 62% between 1993-94 and 1998-99 (AIHW 2001b).

**Table 13. Full time equivalent salaried medical officers, by hospital sector, 1993-94 to 1998-99**

	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	% change
Public <sup>1</sup> and repatriation hospitals	13,082	13,094	13,361	14,210	15,387	16,458	25.8
Private acute and psychiatric hospitals <sup>2</sup>	1,310	1,609	1,653	1,765	2,055	2,125	62.2

1. Public psychiatric hospitals are included from 1995-96. 2. Includes salaried medical officers and other diagnostic and health professionals.

Source: Australian Institute of Health and Welfare (2000) *Medical Labour Force Report, 1998*, AIHW, Canberra.

During the past decade, important changes have occurred in the demographic profile of medical students and the medical workforce. In brief, medical students are older when they commence their studies, the workforce has grown older and more women have undertaken medical studies and entered the workforce. In 1999, 20.3% of commencing medical students were aged 25 years and over compared with 6.2% in 1993, while for the same years, the representation of women among this group of students increased from 47% to 53% (AMWAC 2000b). These changes are affecting the type of work that doctors do, where they choose to locate their practice, the hours they work, and their choice of discipline within medicine (AMWAC 2000b and 2000c; Tolhurst 2002). For example, in 2000, 65% of paediatric vocational trainees and 60% of general practice trainees were women, compared with 13% of trainee surgeons and 23% of trainee pathologists (AMWAC 2000b). Disciplines favoured by female doctors tend to be those with more flexible training and work environments and predictable work hours (AMWAC 1998). This is reflected in the different work patterns of male and female vocationally registered general practitioners. The AIHW reported that in 1998, 53% of female GPs worked less than 35 hours per week compared with 11.5% of male GPs (AIHW 2000a). However, among specialists-in-training no gender-based differences were observed in the hours worked. On average, male and female trainees worked 50.2 hours per week and 21% of trainees worked more than 65 hours per week (AIHW 2000a).

Typically, teaching hospitals have been the places where most postgraduate doctors, nurses and allied health professionals have gained their vocational training. In the process, these graduates have made a significant contribution to the hospital workforce. However, changes in the nature of the work being undertaken in these hospitals means that alternative avenues of clinical training experience may be required in some disciplines. These changes include the focus on acute and super-acute services and the virtual elimination of specialist outpatient services. Furthermore, the workforce shift from public to private hospitals has obvious vocational training implications. The interface between training and service delivery has of course always been complex and while in the past these arrangements have worked well, the benefit to trainees, and ultimately the future of the professions, may be starting to blur, especially in medicine. Horvath (2002) proposes that medical training arrangements may need to change and that in the future we may need to consider adopting the principle of ensuring that trainees follow the work and that the funding for training and education follows the trainees. The impact on the hospital workforce may be quite profound but it should not be considered insurmountable and there may in fact be better ways of achieving the necessary hospital workforce supply and organising service provision.

## Registered nurses

To present a reasonably comprehensive profile of the nursing workforce, this section contains information about registered and enrolled nurses.

Data from the AIHW (2002c), indicated that in 1999, there were 179,948 employed registered nurses, representing 149,995 FTEs. At the same time there were 45,447 enrolled nurses representing 35,700 FTEs. There were 800 FTE registered nurses and 190 FTE enrolled nurses per 100,000 persons. The figures presented in the following tables are based on FTEs. They have been calculated by multiplying the number of employed registered or enrolled nurses by the average hours worked in each work setting and dividing by 38, the standard weekly hours in most nursing awards.

Table 14 indicates that in 1999, 69% of registered nurses and 56% of enrolled nurses were employed in hospitals. This table also shows that by broad category of work setting, registered nurses accounted for 84% of the hospital nursing workforce, 62% of the aged accommodation nursing workforce, 87% of the community health nursing workforce and 81% of the nursing workforce in other work settings. The majority of FTE registered nurses (72%) were employed in the public sector with the remaining 28% employed in the private sector (AIHW 2002c).

### *Nursing workforce trends and the staffing of hospitals*

In common with the Australian labour force in general (ABS 1998), more nurses are choosing to work part-time and the workforce is ageing (AIHW 1998). For example, between 1994 and 1997, the average age of the nurse workforce increased from 39.1 years to 40.4 years and the average age of students commencing undergraduate nursing courses increased from 22 to 25 years (AIHW 1998).

**Table 14. Full time equivalent<sup>1</sup> employed registered and enrolled nurses, by work setting, Australia, 1999**

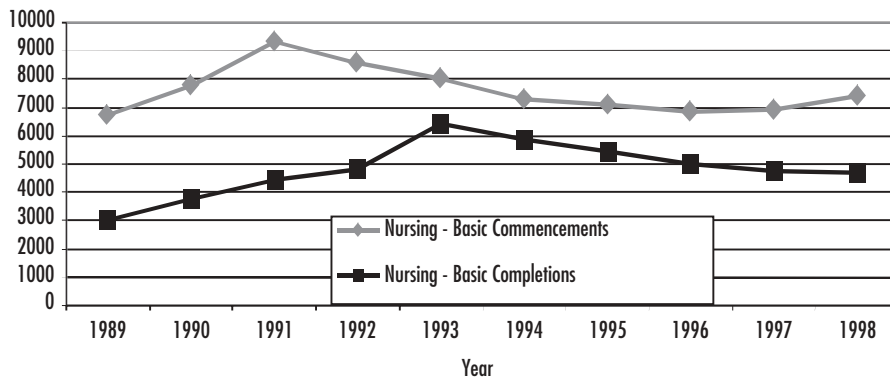
	Hospitals	Aged accommodation	Community health	Other	Total	% Employed in hospitals
Registered nurses	104,108	16,785	16,227	12,825	149,995	69.4
Enrolled nurses	19,847	10,378	2,315	3,159	35,700	55.6
<b>Total</b>	<b>123,956</b>	<b>27,164</b>	<b>18,593</b>	<b>15,984</b>	<b>185,695</b>	<b>66.8</b>
% Registered nurses		84.0	61.8	87.3	80.2	80.8

1. Full time equivalents have been calculated by multiplying the number of employed nurses, by the average hours worked in each work setting and dividing it by 38 (the standard hours in most nursing awards).

Source: Australian Institute of Health and Welfare (2002) *Nursing Labour Force Report 1999*, AIHW, Canberra.

Figure 3 indicates a strong correlation between course commencements and course completions in undergraduate nursing courses once account is taken of the three years that it takes to complete a basic nursing degree. This data suggests that the attrition rate from basic nursing courses is about 30%. It also shows that course commencements peaked in 1991 at a little over 9000, and that since then have declined to just over 7,000 (AIHW 2001c). Between 1993 and 1999, the AIHW (2002c) observed a decrease of 5.6% in the number of nursing registrations (viz., from 270,720 to 257,662).

**Figure 3. Course commencements and completions in undergraduate nursing courses, 1989-1998**



Source: Derived from data supplied by AIHW (2001) from the Department of Education, Training and Youth Affairs data.

Table 15 shows that between 1993 and 1999, there was an increase of 6.5% in the FTE registered nurse workforce and a decrease of 16% in the FTE enrolled nurse workforce. Table 15 also shows variation by work setting in the growth of the FTE registered nurse workforce during the past 5 years, with the largest increase (63%) in community health. During this period, the hospital RN workforce grew by 11%, while decreases occurred in aged accommodation (-5.5%) and 'other' work settings (-34.5%). During this same period the number of FTE enrolled nurses employed in 'aged accommodation' decreased by 29.5% (AIHW 2002c). The reason for this decline in the employment of nursing staff in this sector is not known and comparative data about people working as assistants-in-nursing or as personal care assistants in 'aged accommodation' were not available.

Palmer and Short (2000) note that between 1992 and 1996, there was a significant rise in vacancies for registered nurses due to many nurses moving out of the workforce, either permanently or temporarily. High levels of stress associated with technological developments in hospitals, overwork, inflexible rosters, plus a lack of recognition for the work that nurses do have been found to be among the factors 'pushing' trained nurses out of the workforce. This workforce remains predominantly female (AIHW 2002c). It follows that, as with women in the medical workforce, female nurses may have a preference for flexible work hours and family friendly working conditions.

**Table 15. Full time equivalent employed registered and enrolled nurses, by work setting, Australia, 1993-99**

Work setting	1993	1994	1995	1996	1997	1999	% change
<i>Registered nurses</i>							
Hospitals	93,504	97,819	99,153	101,639	100,190	104,108	11.3
Aged accommodation	17,770	17,553	17,008	17,159	17,267	16,785	-5.5
Community health	10,014	11,455	12,536	12,789	13,664	16,277	62.6
Other	19,568	20,543	18,747	18,485	15,968	12,825	-34.5
<b>Total registered nurses</b>	<b>140,856</b>	<b>147,370</b>	<b>147,444</b>	<b>150,072</b>	<b>147,089</b>	<b>149,996</b>	<b>6.5</b>
<i>Enrolled nurses</i>							
Hospitals	19,981	20,468	20,250	20,367	19,875	19,847	-0.7
Aged accommodation	14,714	13,995	12,503	11,899	10,820	10,376	-29.5
Community health	1,717	1,694	1,695	1,571	1,889	2,315	34.9
Other	6,255	6,516	5,601	4,860	3,819	3,159	-49.5
<b>Total enrolled nurses</b>	<b>42,667</b>	<b>42,673</b>	<b>40,048</b>	<b>38,697</b>	<b>36,403</b>	<b>35,700</b>	<b>-16.3</b>

1. Full time equivalents have been calculated by multiplying the number of employed nurses, by the average hours worked in each work setting and dividing it by 38 (the standard hours in most nursing awards).

Source: Australian Institute of Health and Welfare (2002) *Nursing Labour Force Report 1999*, AIHW, Canberra.

**Table 16. Allied health professionals employed in hospitals, 1996**

Professional discipline	All hospitals except psychiatric	Psychiatric hospitals	Total	%
Medical Imaging Professionals	2745	3	2748	20.4
Physiotherapist	2528	22	2550	19.0
Occupational Therapist	1479	142	1621	12.1
Social Worker	1476	143	1619	12.0
Hospital Pharmacist	1276	34	1310	9.7
Dietitian	905	4	909	6.8
Clinical Psychologist	568	184	752	5.6
Speech Pathologist	576	10	586	4.4
Community Worker	488	42	530	3.9
Welfare worker/welfare centre manager	225	54	279	2.1
Retail Pharmacist	228	9	237	1.8
Podiatrist	121	0	121	0.9
Drug & Alcohol Counsellor	83	5	88	0.7
Rehabilitation Counsellor	38	6	44	0.3
Family Counsellor	30	3	33	0.2
Natural Therapy Professionals	13	0	13	0.1
Optometrist	6	0	6	0.0
<b>Total</b>	<b>12,785</b>	<b>661</b>	<b>13,446</b>	<b>100.0</b>

Source: Australian Institute of Health and Welfare (2001) *Health and Community Services Labour Force-1996*, AIHW, Canberra.

### The allied health professions

Limited data were available to describe the workforce of allied health professions employed in Australian hospitals. Data from the ABS Census indicated that in 1996, there were approximately 13,446 allied health professionals employed in all hospitals, including psychiatric hospitals (Table 16) (AIHW 2001a). As indicated in Table 16, four disciplines accounted for 63.5% of this workforce, these were medical imaging professionals (20%), physiotherapists (19%), occupational therapists (12%) and social workers (12%), while at least 13 other disciplines were represented among the remaining 36.5%.

Table 17 shows that the distribution, by State/Territory, of the allied health professional hospital workforce was consistent with the distribution of the Australian population (AIHW 2001a).

**Table 17. Employed allied health professionals in hospitals (including psychiatric hospitals), by State of usual residence, 1996**

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
Allied health professionals	33.8	26.6	17.4	8.6	8.5	2.8	0.9	1.6	100.0
% Australian population	33.9	24.8	18.4	8.0	9.7	2.6	1.0	1.7	100.0

Source: Australian Institute of Health and Welfare (2001) *Health and Community Services Labour Force-1996*, AIHW, Canberra.

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Palmer and Short (2000) note that demand for the services provided by the allied health professions has increased during the past decade. They also observe that these workforces tend to be female dominated and that typically many women, in common with women in other labour forces, plan and modify their professional careers to accommodate their family/social roles. For many of these professionals, private practice tends to provide a more flexible, and perhaps lucrative, option than does employment in the public sector.

**Health services managers**

To practice as a health services manager does not require registration or completion of a clearly defined educational program (Palmer and Short 2000). For this reason there are no reliable or comprehensive statistics on this workforce. The ABS 1996 Census contained limited data about people employed in hospitals who classified themselves as 'Managers and administrators', 'Generalist managers' and 'Specialist managers'. Based on these occupational groupings, Table 18 indicates that there were 5,993 managers employed in Australian hospitals (AIHW 2001a).

**Table 18. Employed managers in hospitals (including psychiatric hospitals), by State of usual residence, 1996**

	NSW	Vic	Qld	SA	WA	Tas	NT	ACT	Total
Managers	2,023	1,643	958	575	463	160	88	83	5,993
State/Territory %	33.8	27.4	16.0	9.6	7.7	2.7	1.5	1.4	100.0

Source: Australian Institute of Health and Welfare (2001) *Health and Community Services Labour Force-1996*, AIHW, Canberra.

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As with the medical workforce, evidence from the membership database of the Australian College of Health Service Executives (ACHSE) (2002) indicates that during the past decade the representation of women in this workforce may have increased. Today, 47% of ACHSE members are women, compared with only 20% ten years ago. This database also indicates that this is a highly qualified workforce with many managers holding clinical and managerial qualifications. As with the nursing workforce, members of the health service management workforce (male and female) are experiencing stress associated with job insecurity, working long hours and working more intensively (Harris et al., 1998).

**Conclusions**

Australian hospitals will have a continuing need for a well trained, skilled health professional workforce of sufficient size and discipline mix to meet future population requirements. It is possible that such a workforce will emerge as a result of existing education, vocational and employment opportunities, but it is not likely. Urban drift, an increasingly market oriented and growing private sector, an ageing community, a preponderance of chronic, degenerative conditions requiring complex, multidisciplinary and extended care all suggest that the health workplace of the future will be different in important respects. The only way to ensure that the nation has a workforce equipped to deal with emerging health care needs is to plan carefully, comprehensively and continually. As this article illustrates some of the next efforts in this area will need to be directed at a better and more comprehensive understanding of the hospital workforce. Only when this is available will Australia have sufficient data and information that can be used as an evidence base to inform thinking about the future of the hospital workforce and its role within the broader health system.

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