

Supply of nurses

Hours worked

As with any workforce, supply is a product of the number of nurses and the hours they work. An important factor affecting the supply of nursing, identified by the Senate inquiry into nursing, was the high proportion of part-time nurses. This is because with an increasing proportion of nurses working part time, more nurses are needed to provide the same level of service (SCAC 2002).

This chapter reports, in particular, on the impact of part-time employment on the supply of nurses, and hours worked per week by employed registered and enrolled nurses.

Longer term national trends in employment

According to the Australian Bureau of Statistics (ABS), in the decade to 1998 there has been a general decrease in the proportion of persons working a 'standard' working week of 35–44 hours with corresponding increases in the proportions of persons working at least 45 hours per week and of persons working part time (ABS 1999b). This is partly because of increasing numbers of women entering the workforce: females are more likely than males to work part time. In 1998, 53.0% of employed females worked part time compared with 24.4% of employed males.

In nursing, already a female-dominated profession, increases in the proportion working part time are driven by increases in the propensity of females to work fewer hours. Between 1988 and 1998, the proportion of female nurses working part time increased from 40.0% to 45.8% (Table 16). This trend towards working shorter hours contributed to a decrease in the supply of nursing services between 1993 and 1999 even though the actual number of nurses increased during this period (see the subsection 'Full-time Equivalent Nurses').

The increasing tendency to work part time is not confined to nursing. Females working in allied health (including areas such as physiotherapy, medical imaging and occupational therapy) also tended towards part-time work, with the proportion increasing from 39.0% in 1988 to 44.7% in 1998 (Table 16).

Table 16: Proportion of workers in selected occupations working part time^(a), 1988 to 1998

Occupation	1988			1998			Change, 1988 to 1998		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
	Per cent						Percentage points		
Total nurses	9.2	40.0	37.4	12.5	45.8	42.8	3.3	5.8	5.4
Allied health	7.9	39.0	24.7	8.3	44.7	30.0	0.5	5.6	5.2
<i>Total employed</i>	<i>21.0</i>	<i>50.2</i>	<i>32.8</i>	<i>24.4</i>	<i>53.0</i>	<i>36.9</i>	<i>3.4</i>	<i>2.8</i>	<i>4.1</i>

(a) Less than 35 hours per week.

Source: ABS labour force quarterly estimates (ABS Cat. No. 6291.0.40.001); ABS 1999b.

Recent changes in hours worked

Figures from the AIHW Nursing Labour Force Survey confirm the trends from the ABS Labour Force Survey. Between 1993 and 1999 there was an increase in the proportion of employed nurses working part time, from 46.8% to 53.8%. This increasing tendency to work part time occurred for both registered nurses, from 45.0% in 1993 to 51.7% in 1999, and enrolled nurses, from 53.8% to 61.9% (Table 17).

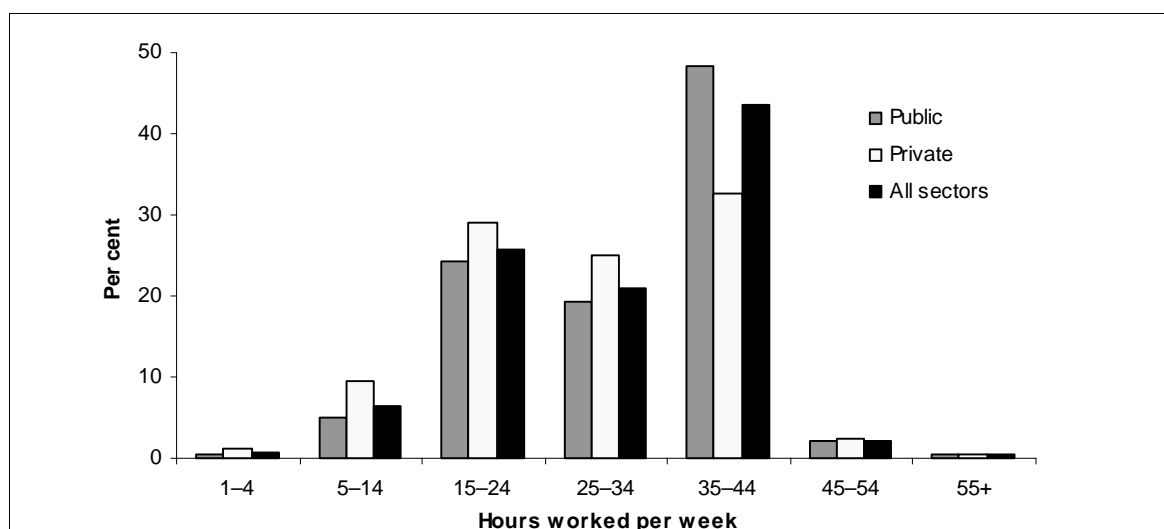
Table 17: Proportion of nurses working part-time^(a) and average hours worked per week, 1993 to 1999

	1993	1994	1995	1996	1997	1999
Registered nurses						
% part time	45.0	46.3	46.8	47.0	49.7	51.7
Average hours	32.6	32.5	32.7	33.2	31.8	30.6
Enrolled nurses						
% part time	53.8	56.1	55.9	57.0	60.0	61.9
Average hours	31.1	30.9	31.1	31.6	29.9	28.9
Total nurses						
% part time	46.8	48.6	48.8	49.1	51.8	53.8
Average hours	32.2	32.1	32.3	32.9	31.4	30.3

(a) Less than 35 hours per week. Source: AIHW.

The distribution of hours worked by employed nurses in 1999 is represented by the 'All sectors' bar in Figure 10. The largest proportion of nurses (43.7%) worked between 35 and 44 hours per week. Additionally, 20.9% worked between 25 and 34 hours, 25.8% worked between 15 and 24 hours, with the remaining 7.1% working less than 14 hours (Table C.24).

As nursing is a broad field, there is some variation in the hours worked due to a number of factors. Some of these include the sector of employment (i.e. public vs. private), the role nurses are employed in (e.g. clinicians, administrators etc.), the work setting (e.g. hospitals, aged accommodation etc.), and the clinical area of nursing.



Source: AIHW.

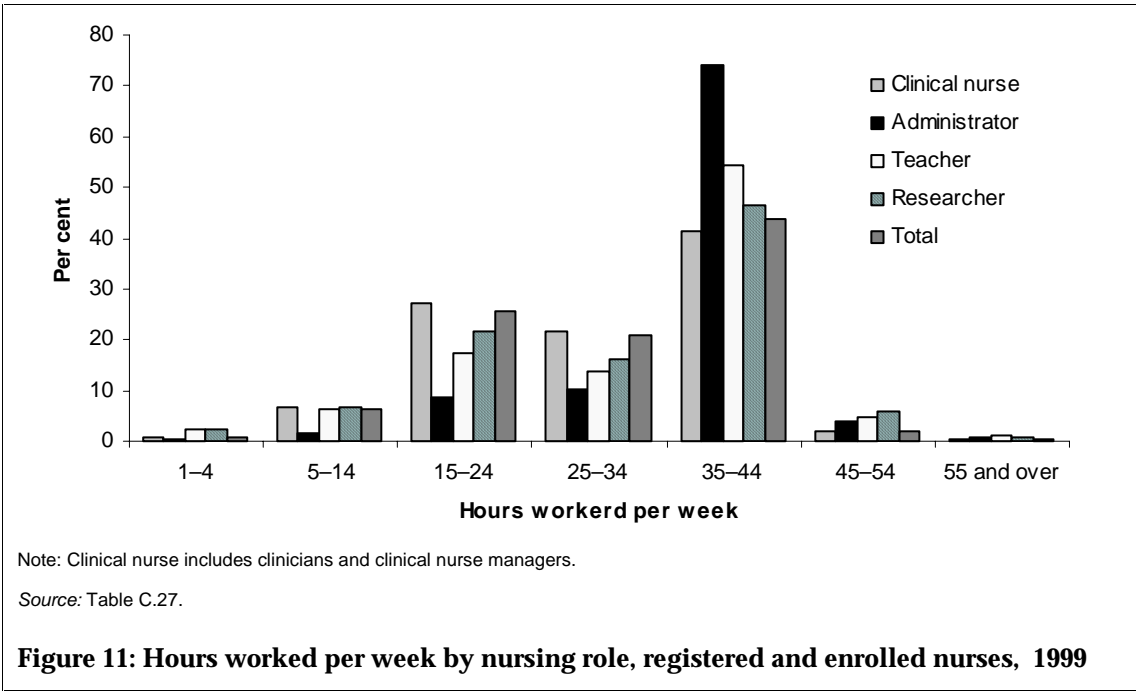
Figure 10: Hours worked per week by registered and enrolled nurses, by sector of employment, 1999

Public/private sector

Nurses working in the public sector were more likely to work 'standard' hours (between 35 and 44 hours per week) than nurses working in the private sector. Figure 10 highlights the greater tendency for nurses in the private sector to work part time, with a smaller proportion working 35–44 hours, and a greater proportion working less than 35 hours per week compared with the public sector. The average number of hours worked was 31.2 for the public sector and 28.1 hours for the private sector (Table C.28).

Nursing roles

Clinical nurses (nurse clinicians and clinician nurse managers) worked an average of 29.9 hours per week. Administrators, teachers/educators and researchers worked an average of 36.0, 32.5 and 31.3 hours per week respectively. Figure 11 shows that nurse administrators were most likely to work more than 35 hours per week (79.5%) possibly because of the need to conform to normal office-hours. In contrast, the variability in the work pattern for clinical nurses may reflect the difference in the number and length of shifts worked. For example, a clinical nurse working penalty shifts may work fewer shifts. Another clinical nurse may work short shifts due to family obligations. Clinical nurses were the most likely to work part time (56.4%) (Table C.27).



Work setting

Part-time nurses made up the majority of nurses working in day procedure centres (63.6%), aged accommodation (63.9%), nursing homes (69.0%), hospices (66.4%), doctors' rooms/private medical practices (74.6%) and private practice (66.4%).

In acute care/psychiatric hospitals (where almost two-thirds of all nurses worked in 1999), over half (51.2%) worked part time (Table C.26). According to the Senate inquiry into nursing, the shortage of nurses has increased the reliance of hospitals on agency nurses. These nurses are able to demand higher pay, especially in specialist areas such as critical care. The higher pay and greater flexibility of working hours allow agency nurses to more

easily balance work, family and other commitments (SCAC 2002). In 1999, 77.2% of nurses employed by an employment agency worked part time.

Clinical area

Clinical areas in which part-time work was more prevalent include: geriatrics and gerontology (72.6%), midwifery (65.9%) and medical and surgical nursing (57.5%).

Nurses in the clinical areas of Aboriginal health and mental health/psychiatric nursing were less likely to work part time (29.8% and 30.9% respectively) (Table C.34). This may be due to the shortage of nurses working in these areas, as identified by the Senate inquiry into nursing (SCAC 2002). Due to the lack of available staff, nurses in these areas may be required to work longer hours in order to maintain an acceptable level of service.

See the chapter 'Patterns of Employment' for a fuller description of nurses in each nursing role, work setting and the larger areas of practice.

Geographic location

Nationally, employed nurses worked an average of 30.3 hours per week in 1999, compared with 32.3 hours per week in 1993. The reduction in the average hours worked was influenced by an increase in the proportion of nurses working part time (from 46.8% in 1993 to 53.8% in 1999). A reduction in the average weekly hours worked occurred across all geographic regions (Table 18).

In 1999 nurses working in remote centres and other remote areas worked, on average, the longest hours (32.1 hours and 31.2 hours per week, respectively). This may be partly due to the extra time nurses spend travelling to patients in these regions, especially for community nurses. Another reason may be the lower provision of other health professionals in remote areas (DEST 2002), hence increasing the range of services provided by nurses and, potentially, increasing their workload. Nurses working in other rural areas and small rural centres worked the least hours per week on average (28.1 hours per week and 29.4 hours per week respectively).

Table 18: Average weekly hours worked and proportion who work part time^(a) by all employed nurses: geographic location of main job, 1993 and 1999

Year	Capital city	Other metropolitan centre	Large rural centre	Small rural centre	Other rural area	Remote centre	Other remote area	Australia
Average weekly hours worked								
1993	32.7	32.4	32.3	31.2	30.1	33.7	33.3	32.3
1999	30.6	30.7	30.5	29.4	28.1	32.1	31.2	30.3
Per cent part time								
1993	44.4	44.8	45.9	51.4	57.1	42.2	43.0	46.8
1999	51.7	52.0	54.3	59.9	65.8	40.1	45.7	53.8

(a) Less than 35 hours per week.

Source: AIHW.

Both in 1993 and 1999, nurses were more likely to work between 35 and 44 hours per week, but the proportion doing so decreased from 48.0% to 43.7% over the period. The proportion of nurses working between 35 and 44 hours per week decreased in all geographic areas except remote centres (increasing from 50.5% to 56.9%) and other remote areas (increasing

from 48.8% to 51.4%) during this period (Table C.24). The increase in these areas was associated with issues including the restructuring of services in remote areas from acute medical services to primary care, expansion of midwifery and surgical services and the development of multipurpose services and centres (DEST 2002).

There was a corresponding increase in the proportion of nurses working between 25 and 34 hours per week overall (from 14.4% to 20.9%) and across all areas. This reflected an increase in the proportion of nurses who worked part time (less than 35 hours per week) in all areas except in remote centres (where the proportion of nurses working part time decreased from 42.2% in 1993 to 40.1% in 1999). In 1999, the proportion of nurses working part time ranged from 40.1% in remote centres to 65.8% in other rural areas (Table C.24).

State and territory comparison

The proportion of nurses working part time increased across all jurisdictions with the greatest increase occurring in South Australia, from 52.3% in 1993 to 67.8% in 1999, and the smallest increase in Tasmania, from 57.5% to 60.9% (Table 19).

The tendency to work part time contributed to a reduction in the average weekly hours worked, decreasing from 32.2 hours per week in 1993 to 30.2 in 1999. On average, nurses in South Australia worked the shortest hours in 1999 (26.4 hours per week) and those in the Northern Territory worked the longest (34.4 hours per weeks) (Table 19).

Table 19: Average weekly hours worked and proportion who work part time^(a) by employed registered and enrolled nurses: states and territories, 1993 and 1999

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
	Average weekly hours worked								
1993	33.0	31.2	33.0	32.4	30.7	30.2	33.5	36.5	32.2
1999	31.5	29.3	31.1	30.3	26.4	29.6	30.8	34.4	30.2
	Per cent part time								
1993	41.1	53.6	43.5	49.5	52.3	57.5	50.1	26.8	46.8
1999	45.6	61.2	50.0	53.2	67.8	60.9	57.3	30.9	53.8

(a) Working less than 35 hours per week.

Source: Table C.26.

Current supply

In estimating the supply of nurses the use of raw counts of the number of people employed in nursing do not, by themselves, give an accurate indication of the supply of nurses in the labour force. Comparing the number of nurses in New South Wales with the number of nurses in Tasmania, for example, is not a valid comparison given the fact that Tasmania has a much smaller population than New South Wales.

A population-standardised head-count, such as the number of nurses per 100,000 population may be more valid than raw counts, as it provides the rate of nurses based on the size of the population. This measure shows that there was a decrease in nurses from 1,227 nurses per 100,000 population in 1993 to 1,179 in 1999 (Figure 12). This rate varied from 1,062 nurses per 100,000 population in Queensland to 1,389 nurses per 100,000 population in South Australia in 1999 (Table C.5).

Full-time equivalent nurses

The use of the population-standardised head-count is limited to a comparison of the distribution of nurses across different jurisdictions and geographic areas, rather than an indicator of nurse supply. The reason for this is that, as indicated in the previous section, a high proportion of nurses work part time. For this reason, it is more appropriate to assess the supply of labour through numbers of full-time equivalent (FTE) nurses, which have been adjusted for the number of hours worked.

The concept of a full-time equivalent depends on what may reasonably be regarded as a full-time job, and this may vary depending on the time period under consideration. For example, in the early 1900s, the agreed working hours for full-time employees was about 49 hours per week. By 1948 all the state industrial tribunals and the Commonwealth Court of Conciliation and Arbitration had adopted a 40-hour week. Since the early 1980s a 35 or 38-hour week has been the standard in many industries (ABS 1995). The ABS defines full-time work as being at least 35 hours per week, and many FTE calculations are based on this (AIHW 2003).

In this report, two methods are used to calculate FTE. The first, FTE(resources), counts any nurse working 35 hours or more as one FTE, with anything less than this being counted as a proportion of an FTE. For example, a nurse working 45 hours represents 1 FTE and a nurse working 28 hours represents 0.8 FTE. This method converts the number of part-time nurses into an equivalent number of full-time nurses, providing the estimated equivalent number of nurses working at least 35 hours per week, a conversion that is useful in resource planning.

The alternative method, FTE(supply) is based on the total hours worked, divided by 35 hours for all nurses. For example, a nurse working 70 hours per week represents 2 FTE and one working 21 hours represents 0.6 FTE. This method provides a measure of the actual supply of nursing because it takes into account nurses working more than 35 hours per week. It therefore takes into account nurses who, due to difficulties filling rosters, work additional shifts to maintain the same level of service. Consequently, FTE(supply) measures how many 35-hour week workloads are being worked by nurses.

The ratio of the two—FTE(supply)/FTE(resources)—provides an indication of hours worked in excess of 35 hours per week. Table 20 shows that this ratio increased from 1.12 in 1993 to 1.14 in 1996, followed by a decrease to 1.07 in 1999.

Table 20: The number and full-time equivalent number of nurses employed in Australia, 1993 to 1999

	1993	1994	1995	1996	1997	1999
Total number of employed nurses	216,696	225,110	220,666	218,172	222,211	224,595
FTE ^(a)	169,137	177,989	172,817	170,479	182,020	181,808
FTE ^(b)	189,555	199,362	194,823	194,776	199,355	193,794
FTE ^(b) /FTE ^(a)	1.12	1.12	1.13	1.14	1.10	1.07

(a) FTE(resources): calculated on the basis that all nurses working 35 or more hours per week are counted as one full-time equivalent (FTE) and all working less than 35 hours per week are a portion of an FTE.

(b) FTE(supply): calculated on the basis that hours worked are divided by 35 for all nurses, e.g. a nurse working 70 hours per week equals 2 FTE, one working 21 hours equals 0.6 FTE.

Source: AIHW.

Between 1996 and 1997, both the level of staffing, FTE(resources), and the actual level of supply, FTE(supply), increased, but the increase in actual level of supply did not match the increase in staffing levels. Between 1997 and 1999 both the staffing levels and actual level of supply decreased. The decline in the ratio, particularly between 1996 and 1999, shows an increasing tendency for full-time nurses to work shorter hours (i.e. closer to 35 hours per week). This reinforces the issue raised by the Senate inquiry that with an increasing

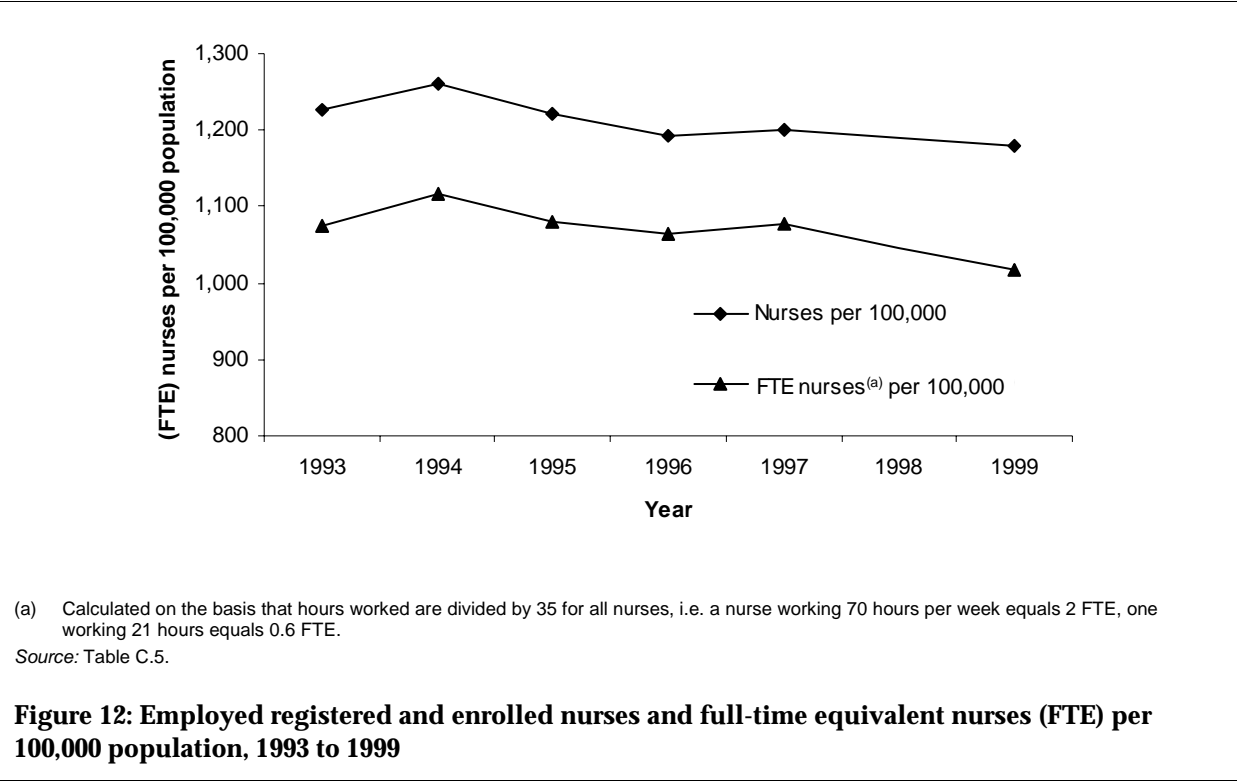
proportion of nurses working part time, more nurses are required to maintain the same level of service (SCAC 2002).

The remainder of this chapter focuses on the actual supply of nursing and, therefore, relates only to FTE(supply).

Full-time equivalent nurses per 100,000 population

As discussed previously, to allow for meaningful comparisons to be made across jurisdictions and geographical regions, the measures of full-time equivalent (FTE) nurses need to be population standardised.

Standardising for the population, the actual level of nursing supplied during the 1993–99 period ranged from a high of 1,118 FTE nurses per 100,000 population in 1994 to a low of 1,018 in 1999.



Regional distribution

Across geographic regions in 1999, the level of supply of registered and enrolled nurses in 1999 ranged from 731 FTE nurses per 100,000 population in other rural areas to 1,553 in large rural centres. Between 1993 and 1999, the only geographic locations that experienced an increase were remote centres (5.9%) and other remote centres (3.2%). Of the remaining locations, the largest decrease occurred in large rural centres (10.4%) and other metropolitan centres (9.2%) (Table 21).

In 1999 the supply of registered nurses ranged from 482 FTE nurses per 100,000 population in other rural areas to 1,247 in large rural centres. Between 1993 and 1999, both remote centres (11.8%) and other remote areas (9.3%) experienced an increase, with declines in the remaining locations. The greatest decrease occurred in large rural centres (10.2%), other metropolitan centres (9.0%) and other rural areas (7.4%) (Table 21).

For enrolled nurses, in 1999 the level of supply ranged from 162 FTE nurses per 100,000 population in capital cities to 307 in large rural centres. Between 1993 and 1999, a decrease occurred across all geographic regions, ranging from a 4.2% in capital cities to 11.4% in other remote areas (Table 21).

Table 21: Employed registered and enrolled nurses: FTE^(a) per 100,000 population, geographic location of main job, 1999

	Capital city	Other metropolitan centre	Large rural centre	Small rural centre	Other rural area	Remote centre	Other remote area	Australia
FTE nurses per 100,000 population								
1999								
Enrolled nurses	162	216	307	297	249	243	242	197
Registered nurses	852	865	1,247	815	482	791	706	822
Total nurses	1,013	1,081	1,553	1,112	731	1,034	949	1,019
Per cent change 1993–99								
Enrolled nurses	-4.2	-10.4	-11.2	-6.2	-7.8	-9.6	-11.4	-6.7
Registered nurses	-3.8	-9.0	-10.2	-3.9	-7.4	11.8	9.3	-4.6
Total nurses	-3.9	-9.2	-10.4	-4.5	-7.6	5.9	3.2	-5.0

(a) Calculated on the basis that hours worked are divided by 35 for all nurses, e.g. a nurse working 70 hours per week equals 2 FTE, one working 21 hours equals 0.6 FTE.

Source: Table C.22.

State/territory comparisons

In 1999 the supply of registered and enrolled nurses ranged from 944 FTE nurses per 100,000 population in Queensland to 1,086 in Victoria. The Australian Capital Territory was the only jurisdiction to experience an increase in supply, increasing by 2.8% between 1993 and 1999. Of the remaining states, decreases ranged from 0.8% in New South Wales to 16.3% in South Australia (Table 22).

Table 22: Employed registered and enrolled nurses: FTE^(a) per 100,000 population, states and territories, 1999

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT ^(b)	Australia
FTE nurses per 100,000 population									
1999									
Enrolled nurses	172	252	153	210	225	138	191	174	196
Registered nurses	808	832	791	846	819	841	808	1,234	823
Total nurses	980	1,086	944	1,054	1,047	980	1,002	1,408	1,018
Per cent change 1993–99									
Enrolled nurses	1.7	-10.7	-25.5	-11.4	-19.4	-24.6	30.1	n.p.	-9.2
Registered nurses	-1.3	-3.1	-4.7	1.0	-15.9	-8.4	-2.5	32.7	-3.4
Total nurses	-0.8	-4.8	-8.9	-2.0	-16.3	-10.9	2.8	n.p.	-4.7

(a) Calculated on the basis that hours worked are divided by 35 for all nurses, e.g. a nurse working 70 hours per week equals 2 FTE, one working 21 hours equals 0.6 FTE.

(b) Estimates for enrolled and all nurses in the Northern Territory are considered less reliable than those of the other jurisdictions (see explanatory notes). Consequently, the percentage change between 1993 and 1999 for enrolled nurses and all nurses in the Northern Territory has not been published.

Source: AIHW.

The supply of registered nurses ranged from 791 in Queensland to 1,234 in the Northern Territory. In Western Australia and the Northern Territory there was an increase in supply of 1.0% and 32.7% respectively. The large increase in supply in the Northern Territory may reflect the transient nature of the nursing labour force in this jurisdiction. The remaining jurisdictions experienced a decrease in supply, ranging from 1.3% in New South Wales to 15.9% in South Australia (Table 22).

The supply of enrolled nurses ranged from 138 in Tasmania to 252 in Victoria. Between 1993 and 1999, there was a 9.2% decrease in the supply of nursing provided by enrolled nurses, decreasing the most in Queensland (25.5%) and Tasmania (24.6%). New South Wales and Australian Capital Territory were the only jurisdictions that experienced an increase in supply (Table 22).

Nursing supply in hospitals

Hospitals are the largest single component of the healthcare system. There were 1,257 hospitals in Australia in 1998–99, providing a total of 77,631 beds for admitted patients. With a total expenditure of about \$17.4 billion, these hospitals discharged over 5.7 million patients, managed another 36 million occasions of service for non-admitted patients and employed over 219,900 full-time equivalent (FTE) staff during that year. Nurses are much more likely to work in hospitals than in any other establishment (64% of all employed nurses in 1999), and they are the largest group of hospital employees, making up almost 48% of full-time equivalent hospital staff in 1998–99 (AIHW 2001a).

For these reasons, changes in the number, mix and level of skills, work profile and personal characteristics of hospital nurses may have a profound effect on the way hospitals are managed and on the quality of care for patients, and indeed on the healthcare system itself.

To establish whether changes in the numbers of FTE staff result in a relative shortfall or oversupply against demand, they should be considered against changes in the workload of nurses. In hospitals, their workload is a function of the number of occupied beds, patient throughput (the number of patients treated, counted as they separate from hospital) and the average length of time spent in hospital. Some of the indicators include separations per FTE staffing, and patient-days per FTE staffing. However, these do not allow for variations in the types of conditions treated, nor inpatient demographics.

The annual Australian public hospitals data collection by the Australian Institute of Health and Welfare includes FTE staffing numbers in nursing and various other categories (AIHW 1999b, 2001b). Data relating to private hospitals are from the ABS publication *Private Hospitals, Australia, 1999–2000* (ABS Cat. No. 4390.0).

Public hospitals

During the period from 1995–96 to 1999–00, there was a decline in FTE nursing staff in public hospitals of 1.9% from 80,570 to 79,006. Some variations were observed between states and territories, with New South Wales and Tasmania having the largest decreases (8.7% and 8.8% respectively) (Table D.1).

The number of separations increased by 7.8% between 1995–96 and 1999–00, resulting in an increase in the number of separations per FTE nurse from 45 to 49. There was a slight decrease (2%) in the number of patient bed-days, but this did not affect the rate of patient bed-days per FTE nurse, which remained constant at 205. There was also a slight decrease in the average length of stay in hospital from 4.6 days in 1995–96 to 4.2 days in 1999–00 (Table D.3). The combination of a decrease in FTE staff, an increase in the number of separations per

FTE, and a decrease in the average length of stay in hospital tends to suggest that the workload of nurses in public hospitals has increased between 1995–96 and 1999–00.

Private hospitals

The number of FTE nurses working in private hospitals increased from 23,136 in 1995–96 to 25,670 in 1999–00, an increase of 11.0%. Along with this, there was a 23.9% increase in the number of separations, an increase in the rate of separations per nurse from 63 to 70, and a 6.6% increase in the number of patient bed-days. The average length of stay in hospital was 3.5 days in 1999–00, compared with 4.0 days in 1995–96. The rate of patient bed-days per FTE nurse decreased from 253 to 243 per year, a reduction of 4.0%, owing mainly to the increase in staffing levels (Table E.1).

Although staffing levels increased, so too did the number of separations and the number of separations per FTE nurse. This, along with a shortening in the time patients spend in hospital suggests that the workload of nurses in private hospitals also increased between 1995–96 and 1999–00.

Private free-standing day hospitals

Free-standing day hospitals are those that provide facilities for investigations and treatment of acute conditions on a day-only basis and are approved by the Commonwealth for the purposes of basic table health insurance benefits. Compared with public hospitals and other private hospitals, private free-standing day hospitals are small, and few statistics are available. The number of full-time equivalent nursing staff working in day hospitals was 838 in 1999–00, an increase of 68.6% from 1995–1996. The number of separations increased by 67.1% during the same period, translating to a slight decrease in separations per FTE nurse from 420 in 1995–96 to 417 in 1999–00 (Table E.2).

Current skill shortages

Information on shortages of registered nurses in various occupations was obtained from the Department of Employment and Workplace Relations (DEWR), which monitors occupational labour markets in Australia and assesses whether skill shortages exist.

The department defines skills shortages as follows:

Skill shortages exist when employers are unable to fill, or have considerable difficulty in filling vacancies for an occupation, or specialised skill needs within that occupation, at current levels of remuneration and conditions of employment, and reasonably accessible location. Shortages are typically for specialised and experienced workers, and can coexist with relatively high unemployment overall or in the occupation. An occupation may be assessed in shortage even though not all specialisations may be in shortage. Occupations may be in shortage in particular geographical areas and not in others. (<http://www.workplace.gov.au/Workplace>)

The department does not quantify the skill shortage of the occupations that it identifies are in shortage at a particular point in time.

In January 2000 there was a general shortage across most nurse occupations identified in Table 23, with the exception of community health, Indigenous health, oncology, perioperative, and renal/dialysis.

Table 23: Shortages in nursing occupations, states and territories, January 2000

Nursing occupation in demand	Australia	NSW/ACT	Vic	Qld	WA	SA	Tas	NT
Registered nurse (general)	N	S	S	S	S	..	S	S
Accident/emergency	N	S	S	S	S	..	S	S
Aged care	N	S	..	S	S	S	S	S
Cardiothoracic	N	S	S	S		..	S	S
Community	..	..	..	S	R	..	..	..
Critical/intensive care	N	S	S	S	S	S	S	S
Indigenous health	..	..	..	S	..	..	..	..
Neo-natal intensive care	N	S	..	S	..	..	S	S
Neurology	N	S	S	..	..	..	..	S
Oncology	..	S	..	S	..	..	..	S
Operating theatre	N	S	S	S	S	S	S	S
Paediatric	N	S	..	S	..	..	..	S
Perioperative	..	..	S	S	R	..	..	..
Renal/dialysis	..	S	..	S	..	..	..	S
Registered midwife	N	M	S	S	S	..	S	S
Registered mental health	N	S	S	S	S	..	S	S

Note: N = National shortage, S = State-wide shortage, M = Shortage in metropolitan, R = Shortage in regional areas.

Source: DEWR national and state skills shortage lists.

Future supply

Potentially, the supply of nurses could be increased by tapping into the pool of nurses who have maintained their registration/enrolment but who are not employed in nursing. In 1999, the Nursing Labour Force Survey identified 32,343 nurses who were not actively employed in nursing (Figure 1).

Another potential source of supply is the pool of inactive nurses who have allowed their registration/enrolments to lapse. Recent research in New South Wales has indicated that there is a sizeable pool of trained nurses who would consider returning to nursing (Nursing and Health Services Research Consortium 2000). Many jurisdictions have implemented recruitment strategies aimed at attracting these nurses back into nursing. For example, NSW Health has introduced the Re-Connect program, offering clinically focused and individually tailored re-entry plans whereby nurses are employed and paid while undertaking their refresher training (see SCAC 2002).

The main source of supply of nurses is via the training of new graduates, but the length of time required for students to enter the workforce means that any acute change in the demand for nurses cannot be met by this group. An alternative short-term solution is to recruit nurses from overseas.

The following sections discuss the components of education and migration as the main sources of supply.

Nurse education

The main supply of new nurses is graduates from universities and vocational education and training (VET) institutions. These graduates form a general pool from which the different specialties can draw upon. Therefore, an undersupply of graduates, either from decreasing

enrolment numbers or a reduction in the number of places in educational institutions, affects not only the general number of nurses, but also the number that are potentially available to meet the shortfalls in the specialty areas of nursing.

Registered nurses

In Australia prior to 1984, registered nurses gained their initial qualifications through hospital-based training in apprenticeship-type training programs. As a result of recommendations from the Committee of Inquiry into Nursing Education and Training, general nursing education was transferred into the higher education system between 1984 and 1993. This transfer was a staged process that varied in timing between states and territories (DEST 2001).

A number of reasons were given for this recommendation, including nurses requiring knowledge of new technologies in health, a perceived inadequacy of traditional training programs to meet the healthcare needs of the community and the educational needs of students, and a need to develop a more professional approach to nursing (e.g. by teaching nurses behavioural sciences because of their involvement with people who are in crisis) (DEST 2001).

Some of the implications of higher education-based training include an increase in the cost of education for students, a change in the type and number of students attracted to nursing, and a change in the pattern of labour used in hospitals, with student nurses no longer employed as part of their training (DEST 2002). Currently, registered nurses gain their initial qualification through a minimum 3-year university degree throughout Australia.

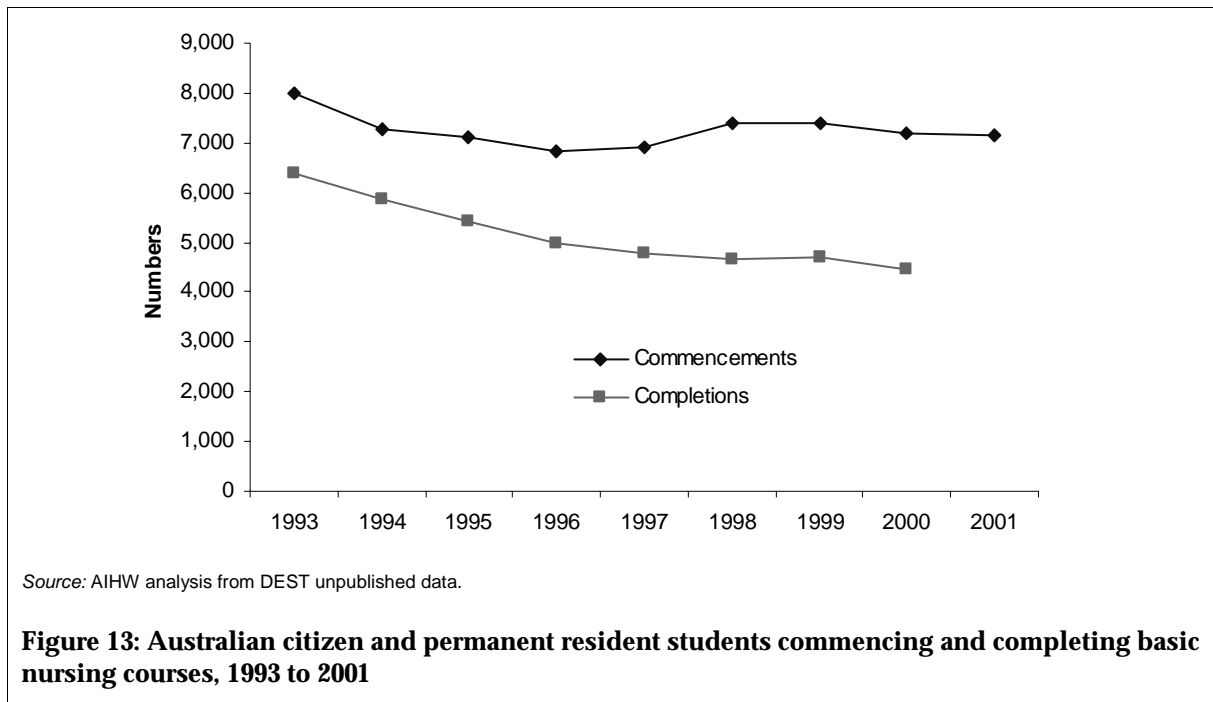
Information on nursing student commencements, enrolments or completions of higher education courses are derived from information provided by the Department of Education, Science and Training. Due to inconsistencies in classifying courses between universities, two main categories are used: basic nursing and post-basic nursing.

Basic nursing courses are defined as preliminary, pre-registration or initial courses in health care, and are undertaken in higher education institutions. Post-basic courses relate to post-registration courses conducted in higher education institutions, including upgrading of skills or qualifications and postgraduate specialisation in specific areas of nursing.

Enrolled nurse training is undertaken through technical and further education institutions in each state, and therefore is not included in this data.

In 2001, there were 13,427 students (including Australian citizens/residents and overseas students) who commenced nursing studies, making up 43.0% of all nursing course enrolments. Of those who commenced nursing studies, 8,630 (64.3%) commenced basic nursing courses, and 4,797 (35.7%) commenced post-basic courses. Of those commencing nursing studies, 88.7% were female (Table F.2).

The number of Australian citizen or permanent resident students who commenced basic nursing courses dropped from 8,010 in 1993 to 6,821 in 1996 and then increased slightly to 7,152 in 2001 (Figure 13). The number of Australian students completing basic nursing courses decreased from 6,397 in 1993 to 4,465 in 2000.

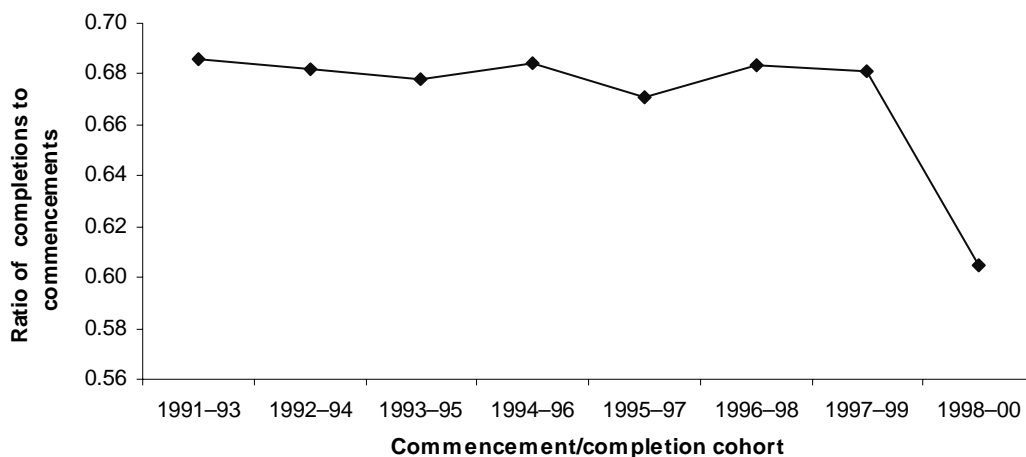


In 2000, 9,464 students completed nursing courses at Australian universities, of whom 4,585 (48.4%) completed basic nursing studies, and 4,879 (51.6%) completed post-basic nursing studies.

In terms of workforce planning, the attrition rate of nursing students needs to be taken into account as this can have a significant impact on registered nurse numbers in the future. According to a submission to the Senate inquiry, attrition rates in the first year of nursing studies ranged from 15% to 20%, with a reduction in rates in subsequent years. Despite these apparently high rates, the report indicated that the overall retention rate in university nursing courses was 78%, the third highest of all courses (SCAC 2002).

As indicated in Figure 13, there is a marked discrepancy between the number of nurse commencements and completions. This discrepancy may be associated with the attrition of students from nursing courses. Unfortunately, information about attrition/retention rates for nursing students over time is scarce due to the difficulties in obtaining accurate estimates. Therefore, a crude method of achieving this is to examine the ratio of the number of course completions to the number of course commencements, allowing for a 3-year lag between commencement of nursing studies and subsequent completion. This method is based on the assumption that an average nursing course takes 3 years to complete and the proportion of students studying part time and the number of students transferring into and out of nursing courses are consistent across time.

Using this estimate, the ratio for the cohort commencing in 1991 and completing in 1993 (1991–93 cohort) was 0.69, remaining relatively constant until the 1997–99 cohort (between 0.67 and 0.69), after which there was a decline to 0.60 for the 1998–00 cohort (Figure 14). This decline may indicate a lower retention than usual in the 1998–00 cohort, verifying the need to take student attrition rates into account when planning workforce needs.

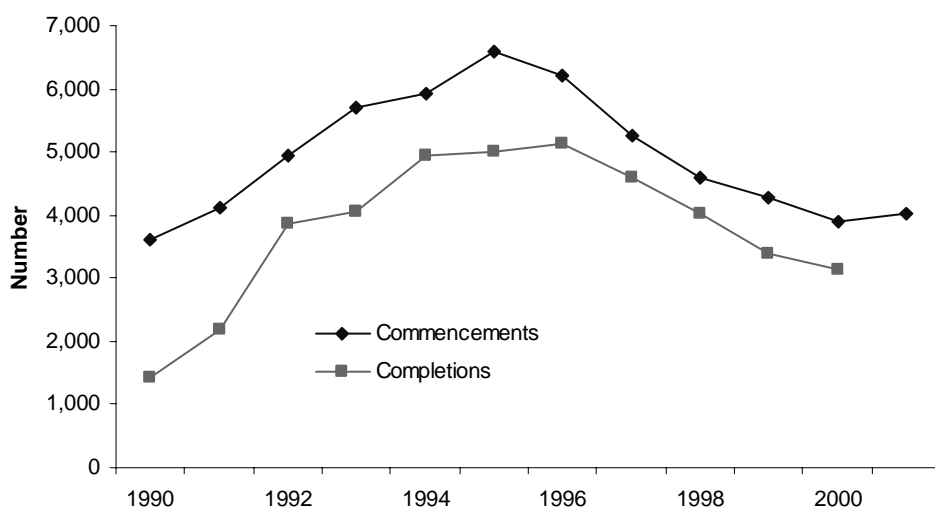


Note: Values contain students undertaking their studies part time and therefore are not a true representation of retention rates.

Source: AIHW analysis from DEST unpublished data.

Figure 14: Ratio of student nurse commencements to completions

Between 1990 and 1996, the number of Australian permanent resident students who completed post-basic courses in nursing increased from 1,437 to 5,133, after which there was a steady decrease to 3,147 in 2000. The number of students commencing post-basic nursing courses increased between 1990 and 1996 from 3,605 to 6,203 followed by a decline to 4,012 in 2001 (Figure 15). The decline in commencements could be partly due to the financial disincentives to undertake post-basic nursing courses. There has also been concern from some state health authorities that shortages in specialist fields of nursing practice are being exacerbated by the costs of course fees and time out of the workforce to undertake post-basic training (SCAC 2002).



Source: AIHW analysis from DEST unpublished data.

Figure 15: Australian citizen and permanent resident students commencing and completing post-basic nursing courses, 1990 to 2001

Enrolled nurses

Prior to the 1990s, enrolled nurses were trained by hospitals offering training courses accredited by the relevant nursing authorities. In parallel with the transfer of registered nurse training to the higher education sector during the 1990s, training for enrolled nurses gradually moved into the vocational education and training (VET) sector. This sector consists of state government-funded technical and further education (TAFE) institutions and some organisations registered as training providers (McKenna et al. 2001).

Enrolled nurse training varies considerably across jurisdictions in terms of curriculum, the length and level of the training and the flexibility of the programs. For example, New South Wales and Western Australia offer only full-time programs. Other jurisdictions offer more flexible programs. Additionally, the length of the program varies from 12 to 18 months, with the level of the course varying from a Certificate IV to a Diploma in Enrolled Nursing (DEST 2002; McKenna et al. 2001).

According to the National Centre for Vocational Education Research (NCVER, cited in McKenna et al. 2001), there has been a 26.1% increase in the number of enrolled nurse program commencements between 1997 and 2000, with a 63.5% increase in the number of course completions (Table 24).

Table 24: Enrolled nurse enrolments, commencements and completions, 1997 to 2000

	1997	1998	1999	2000
Course enrolments	4,540	4,646	5,751	5,834
Course commencements	3,688	3,789	4,641	4,650
Course completions	n.a.	1,187	1,398	1,941
Completion rates	n.a.	32.2	36.9	41.8

Source: McKenna et al. 2001.

One of the contributing factors to the increase in the average age of employed enrolled nurses (from 37.6 years in 1993 to 41.3 years in 1999) is the age of student enrolled nurses. In 2000, the proportion of student enrolled nurses under the age of 25 years was 26.3% compared with 62.9% for student registered nurses undertaking a basic nursing course. In contrast, the proportion of students studying enrolled nursing aged over 40 years was 33.6%, compared with 10.3% for student registered nurses (Table 25).

Table 25: Nurse enrolments: age distribution, 2000

Type of nursing study	Age							Total
	15–19	20–24	25–29	30–39	40–49	50+	Unknown	
	Per cent							
Enrolled nursing	10.8	15.5	13.3	26.0	25.4	8.2	0.7	100.0
Registered nursing	34.3	28.6	11.0	15.8	9.1	1.2	—	100.0

Source: McKenna et al. 2001; AIHW analysis of DEST unpublished data.

Nurse migration

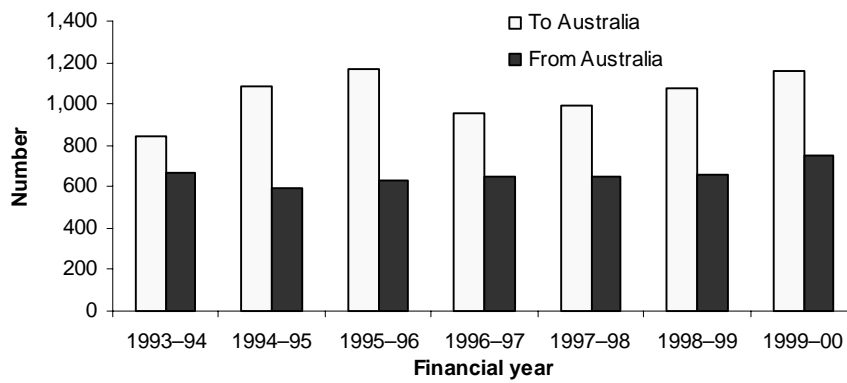
Nursing is listed on Migration of Occupations in Demand List by the Department of Immigration and Multicultural and Indigenous Affairs (DIMIA). As of July 1999, DIMIA introduced a pre-application skills assessment (PASA) for persons intending to migrate to Australia. Nurse qualifications are assessed by the Australian Nursing Council Incorporated (ANCI) against the national nursing competency standards. Once an applicant's qualifications are assessed as being suitable, extra points are awarded towards their application. According to the 1999–2000 ANCI annual report, the introduction of the PASA has resulted in an increase in the number of applications for assessment received by ANCI, from 826 in 1998 to 920 in 1999 (ANCI 1998, 2000).

In the financial year 1999–00, 854 nurses entered Australia on temporary work visas, compared with 772 in 1998–99 and 248 in 1993–94. Of those entering in 1999–00, 489 (57.3%) were from United Kingdom/Ireland, and 251 (29.4%) were from New Zealand. In addition, 1,866 nurses returned from long-term stays overseas. Of these, 1,164 (62.4%) returned from United Kingdom/Ireland, 231 (12.4%) from United States/Canada, 192 (10.3%) from Asia and 129 (6.9%) from the Middle East.

Offsetting these increases in nurse numbers, 834 nurses with temporary visas left from Australia in 1999–00. Of these, 323 (38.7%) went to United Kingdom/Ireland, 216 (25.9%) to Asia and 113 (13.5%) to New Zealand. In addition, 932 Australian nurses departed on long-term overseas trips. Of these, 455 (48.8%) went to United Kingdom/Ireland (Table H.1).

In terms of permanent migration flows, in 1999–00 there were 1,158 nurses from other countries who permanently migrated to Australia. Just over a third of these were from New Zealand (37.3%), 23.5% from United Kingdom/Ireland and 18.5% from Asia. In comparison, 752 nurses permanently migrated overseas, of whom 34.3% migrated to United Kingdom/Ireland, 28.1% to New Zealand and 18.8% to United States/Canada. Overall, there was a net gain of 406 nurses as a result of permanent migration (Table H.2). Figure 16 shows that the net gain has increased since the 1996–97 financial year, indicating an increase in recruitment from overseas countries.

In terms of migration for education purposes, in 1999–00 there were 181 nurses entering on temporary visas to study in Australia, compared with 35 Australians leaving for long-term overseas stays to study in another country (Table H.3).



Source: Table H.2.

Figure 16: Permanent migration of Australian nurses from Australia and non-Australian nurses to Australia for the purpose of employment, 1993-94 to 1999-00