

# Explanatory notes

## Background

In 1990, the Australian Health Ministers' Advisory Council (AHMAC) commissioned the Australian Institute of Health and Welfare to develop national health labour force statistics about the major registrable health professions. Data collections based on a national minimum data set were developed addressing the labour force planning needs of the health professions, government, service providers and educational institutions. In addition to nursing, published data from the collection are available for medicine, dentistry, pharmacy, podiatry, optometry, physiotherapy and occupational therapy.

In 1997, the National Health Information Management Group of AHMAC reviewed national health labour information requirements. A decision was made that future national collections would be conducted annually for medicine, biennially for nursing, and on a rolling three-year cycle for dentistry and several allied health occupations. The first biennial collection for nursing was conducted in 1997 and the second in 1999.

This report on the nursing labour force draws information from a range of sources, including the 1997 Nursing Labour Force Survey; State and Territory nursing registration boards; the Australian Institute of Health and Welfare; the Australian Bureau of Statistics; and the Commonwealth Departments of Education, Training and Youth Affairs; Immigration and Multicultural Affairs; and Employment, Workplace Relations and Small Business.

Although the 1997 Nursing Labour Force Survey has been used extensively throughout the publication, breakdowns for 1998 and 1999 have been estimated by extrapolating 1996 and 1997 survey data to 1998 and 1999 actual registrations and enrolments.

## Scope and coverage

The scope of the national nursing labour force survey, which is conducted in association with renewal of registration and enrolment, is all nurses *registered* or enrolled with the nurses' registration board or nursing council in each State and Territory, and eligible to practise.

The coverage may exclude nurses who *registered* for the first time during the current year. These nurses may not be required to renew their registration at the standard renewal date if the initial registration in that State or Territory had occurred during the preceding 12 months.

## Method

The labour force data in this publication were obtained from a nursing labour force survey conducted by each State and Territory nurses' registration board. Each State and Territory nurses' board conducts an annual renewal of registrations, and a survey questionnaire was sent to all nurses as part of this process. Each State and Territory health authority forwarded a computer file of the survey data to the Institute for aggregation into a national data set.

## **Nurse labour force survey response rate**

Based on the total number of registrations in each State and Territory, the response rate to the survey was 78.7%. The response rate was 83% in New South Wales, 77% in Victoria, 92% in Queensland, 73% in Western Australia, 59% in South Australia, 72% in Tasmania, 36% in the Australian Capital Territory and 70% in the Northern Territory. However, complete data were not available for all responding nurses because not all survey questions were completed or because nurses' board initial registration data were incomplete or not provided.

The overall response rate can only be estimated, and not determined with complete accuracy. It is known that at least some nurses who were registered in more than one State or Territory completed a questionnaire in just one State or Territory. The incidence of this occurrence cannot be ascertained because matching survey records among States and Territories is not possible.

## **Labour force estimates**

Nurses may register in more than one State or Territory. In estimating the nursing labour force, it is therefore important to reduce as much as possible the consequent duplication in statistics.

The estimation of the number and characteristics of currently employed nurses in each State and Territory was based on the responses of those nurses employed solely or mainly in the State or Territory of registration. Nurses who were on leave for three months or more, although employed, were excluded from most tables of employed nurses because not all States and Territories collected data from nurses who were on leave.

It is assumed, for all estimates, that non-respondents to the survey had the same labour force characteristics as had respondents. The survey data were scaled up to the registrations in each State and Territory by distributing the non-response numbers on the basis of this assumption. This process may overestimate the numbers of nurses in the labour force in each State and Territory if non-respondents are more likely to be those with multiple registration or those not in the nurse labour force. This survey error will be greater in the two Territories, which have a higher proportion of nurses registered in other jurisdictions, and lower proportions of nurses practising solely in the Territories.

## **Collection timing**

The labour force survey is conducted by the nurses' registration board in each State and Territory in conjunction with the annual renewal of practice licences. Therefore, the timing of the survey depends on the licence renewal procedure that operates in each State and Territory. Nurses registering for the first time are not included in the survey at initial registration because they would generally have had no previous nursing job for which details could be provided.

As the renewal of registration in New South Wales is due on the anniversary of initial registration, the survey is conducted throughout the calendar year.

South Australia has four renewal periods each year with about one quarter of nurses registered in each period. The survey returns from each quarterly renewal period are accumulated for a calendar year.

The remaining States and Territories have annual renewals due by a fixed date. Registration renewal is due for Victoria and Western Australia by 31 December; for Queensland and the Northern Territory by 30 June; for Tasmania by 31 August and for the Australian Capital

Territory by 1 April. The collection period in each State and Territory is shown schematically in the following table.

**Table 1: Nurse Labour Force Survey: data collection period, States and Territories, 1997**

State/Territory	Nov 96	Dec 96	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
New South Wales														
Victoria														
Queensland														
Western Australia														
South Australia														
Tasmania														
Australian Capital Territory														
Northern Territory														

In this publication, survey data collected during 1997 were used, except for the Australian Capital Territory. As the survey was not conducted in the Australian Capital Territory in 1997, the 1998 survey data have been scaled to 1997 registration numbers.

## Identification of registered and enrolled nurses

The 1997 survey questionnaire did not have a question that identified whether a nurse was on the register or the roll in each State and Territory because it was assumed that this would be readily available from the registering authority.

A means of positively identifying whether a respondent to the survey was on the register or the roll was provided for New South Wales, Queensland, Western Australia, Tasmania and the Northern Territory. For all other States and Territories, nurses were identified as *registered* or *enrolled* by the division in which they were registered (see table below). Nurses identified as being both *registered* and *enrolled* were defined as registered for the purpose of the survey.

**Table 2: Nurse Labour Force Survey: method of classifying nurses as registered or enrolled, selected States and Territories, 1997**

Classification	Victoria	South Australia	Australian Capital Territory (1998)
<b>Enrolled</b>	Supervised (Div. 2) Mothercraft (Div. 5)	Enrolled Mothercraft	Enrolled Mothercraft
<b>Registered</b>	Comprehensive (Div. 1) Psychiatric (Div. 3) Mental retardation (Div.4)	General Midwifery Infant Mental health Mental deficiency Other	General Midwifery Mental health

# Main features

This publication presents statistics on the numbers of *registered* and *enrolled* nurses from 1993 to 1999, and results from the 1997 Nursing Labour Force Survey. It includes data on the labour force status and occupation of *registered* and *enrolled* nurses in 1997, on nurses employed in private and public hospitals from 1994–95 to 1998–99, key statistics on nurse education and migration, and information on nurse occupations identified as being in shortage by the Department of Employment, Workplace Relations and Small Business (DEWRSB). Finally, some international comparisons are provided, and a comprehensive set of tables makes up the remainder of the publication.

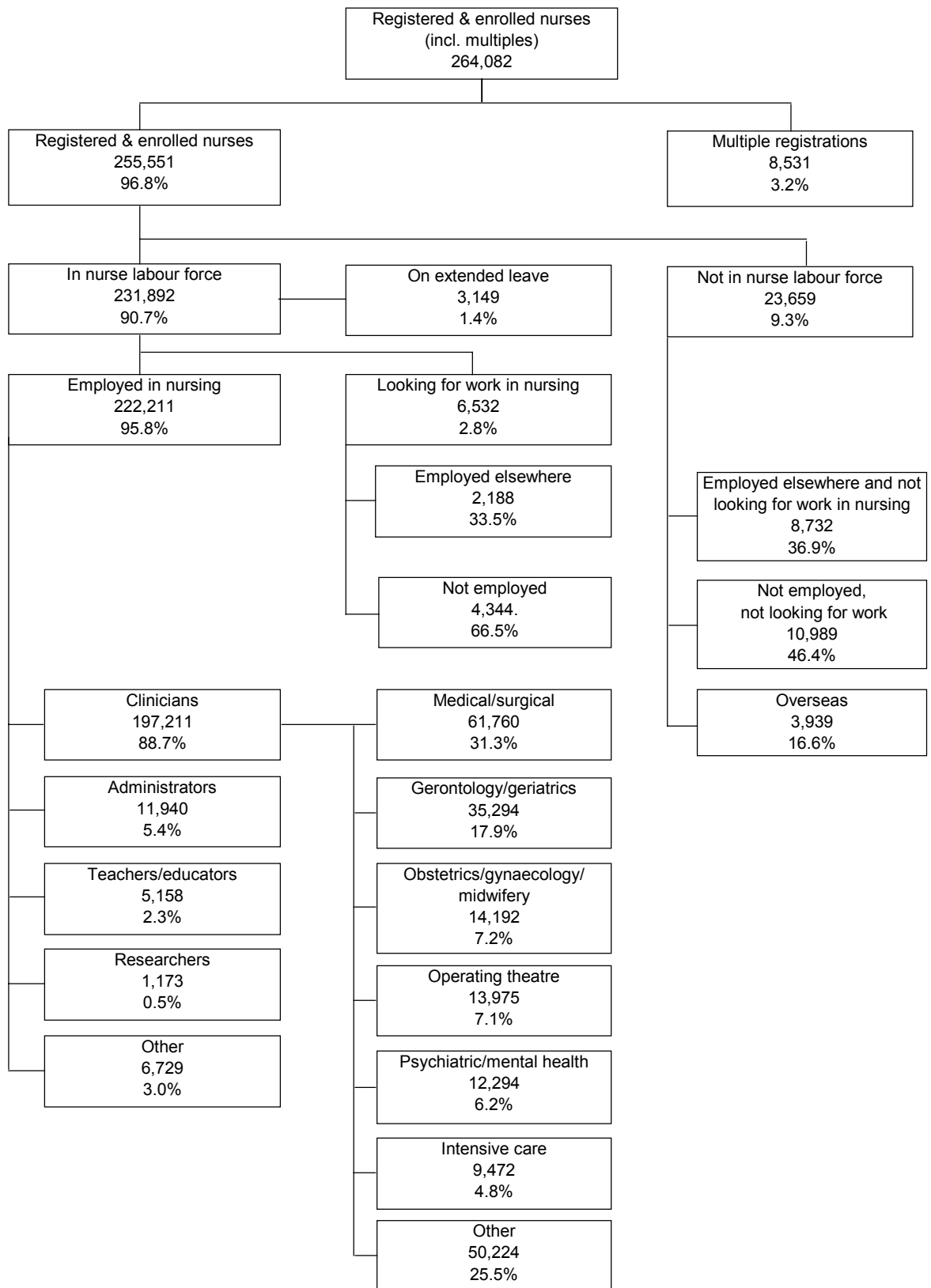
Most of the detailed time-series comparisons in this publication are for the years 1994 (prior to this, detailed data are not available) to 1997 (the reference period for the survey), although some broad comparisons have been made for the longer time period, from 1993 to 1999.

Some of the main trends emerging from this nursing labour force report include:

- After allowing for multiple registrations, between 1993 and 1999 the number of nursing registrations and enrolments dropped from 270,720 to 257,662. For the shorter period for which detailed data are available, from 1994 to 1997:
  - the number of registrations fell from 268,970 to 255,551, a decrease of 5.6%;
  - the number of nurses in the nursing workforce fell from 242,225 to 231,892; and
  - the number of nurses in the labour force who were actually employed as nurses decreased from 225,110 to 222,211 (Table 11).
- The decrease in the number of employed nurses was accompanied by an increase in the proportion who were working part-time, from 48.6% to 51.8% between 1994 and 1997. (Tables 37 and 38) This has resulted in a fall in the total number of full-time equivalent (FTE) nurses. For the period 1995–96 to 1996–97, Australian hospital statistics show that FTE nurses in Australia fell from 104,203 to 102,154, although by 1998–99 the number had increased to 104,735 (Tables 49–51).
- Along with decreasing numbers of nurses, there was an increase in their overall workload (as measured by the number of hospital separations, which increased from 5.3 million in 1995–96 to 5.8 million in 1998–99). In Australia’s public and private acute and psychiatric hospitals, the number of separations per FTE nurse increased from 50.1 to 53.3 between 1995–96 and 1998–99. In private free-standing day hospitals, the number of separations per FTE nurse decreased from 420 to 405 over that period (Tables 49–51).
- The nursing workforce is ageing, and the number of new entrants is likely to decline over the next few years:
  - between 1994 and 1997 the average age of nurses rose from 39.1 years to 40.4 years;
  - the number of Australian students completing basic nurse courses fell from 5,850 in 1994 to 4,661 in 1998; and
  - the number commencing basic nurse courses fell from 7,277 in 1994 to 6,899 in 1997, although there was a rise to 7,388 in 1999 (Tables 65 and 67).

Other findings from the survey are outlined below:

- There was very little change in the proportions of *registered* and of *enrolled* nurses who were male, with increases from 7.6% to 8.0%, and from 6.2% to 6.3%, respectively between 1994 and 1997 (Tables 37 and 38).
- *Registered* nurses worked an average of 31.8 hours per week, while *enrolled* nurses worked an average of 29.9 hours per week in 1997 (Tables 26 and 34).
- In 1997, 62.0% of nurses were employed in acute care hospitals, 16.1% in nursing homes and 8.5% in community health centres (Table 3).
- *Registered* and *enrolled* nurses employed as clinicians in 1997 most commonly worked in the medical and surgical (31.3%), gerontology/geriatric nursing(17.9%) and obstetrics, gynaecology and midwifery(7.2%) areas of clinical nursing (Table 15).
- 69.8% of employed nurses had a salary range of between \$28,730 and \$41,992 in 1997 (Table 42).
- Two thirds of *registered* nurses (66.0%) and one half of *enrolled* nurses (50.0%) worked in the capital cities (Table 5) .
- Similar proportions (around 69%) of *registered* and *enrolled* nurses were employed in the public sector (Tables 27 and 35).
- In 1998-99, 1,080 nurses migrated permanently to Australia and 661 Australian nurses migrated permanently to other countries (Table 70). During the same period, 450 overseas nurses arrived in Australia for temporary employment, a sharp increase on 276 in 1997-98 (Table 72).



Source: AIHW.

**Figure 1: Registered and enrolled nurses, Australia, 1997**

# Overview

## Overall numbers in 1997

The National Nursing Labour Force Survey, conducted in conjunction with renewal of registration in 1997, enumerated a total of 255,551 nurses, comprising 202,183 *registered* nurses and 53,369 *enrolled* nurses.

The large majority (90%, or 231,892) of these were in the nursing labour force, of whom 222,211 were actually employed in nursing. The remaining 9,681 were either on extended leave or looking for work in nursing. Of those working in nursing (88.7%) were clinicians, (5.4%) were administrators, (2.3%) were teacher/educators and (0.5%) were researchers.

Of the 23,659 who were not in the nursing labour force, 36.9% were employed elsewhere and not looking for work in nursing, 46.4% were not employed and not looking for work and 16.6% were overseas (Figure 1).

There was an increase in nurses employed as administrators between 1994 and 1997, from 3.8% to 5.4% of the total employed nursing workforce.

## Registrations and enrolments of nurses to 1999

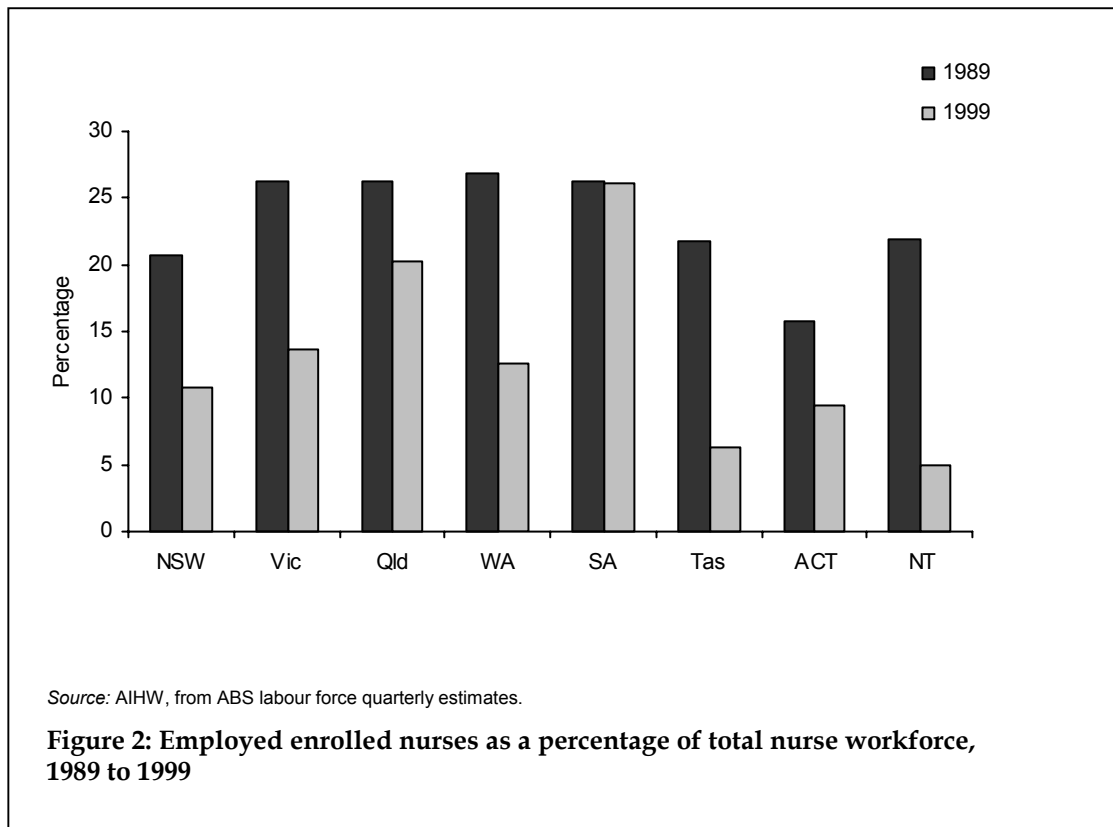
In 1999, there were 265,983 registrations and enrolments of nurses. Between 1993 and 1996 the numbers dropped from 281,455 to 263,448, after which there were small yearly increases up to 1999 (Table 9).

Allowing for multiple registrations, the figure for *registered* and *enrolled* nurses in 1999 was estimated to reduce to 257,662, with 233,096 in the nursing labour force and 221,988 employed mainly in nursing (Table 13). Changes to legislation requiring nurses to have practised at some time in the previous five years to maintain registration, as well as increases in fees, may have contributed to the change in registration and enrolment numbers.

The largest variations in total registrations and enrolments between 1993 and 1999 occurred in Northern Territory (+46.0%), Tasmania (-25.1%), Victoria (-14.4%) and Queensland (-12.5%). The changes in the Northern Territory and Tasmania were mainly for registrations, while the decreases in Victoria and Queensland were mainly for enrolments.

Based on ABS labour force quarterly estimates, a longer time series comparison can be made of changes in nursing numbers across the States and Territories. These figures reveal that over the 1990s, increases occurred only in New South Wales, Queensland, Western Australia, the ACT and the Northern Territory (Table 10).

Although total nurse numbers have been relatively constant over the last decade, major changes have occurred in the composition of the nursing workforce. The percentage of *enrolled* nurses in the nursing workforce fell from 24.0% in 1989 to 14.5% in 1999. This percentage varied between States and Territories; South Australia was the only State that did not experience a substantial decline during this period (Figure 2).



## Composition of the workforce, 1997

In terms of skill levels and areas of responsibility, the nursing workforce is not homogeneous, but varies widely according to the type of care being provided, and between work settings from operating theatres to community care. Nurses are classified into two broad categories: *registered* nurses (usually those with a degree), who make up the majority of all nurses, and *enrolled* nurses (usually those with a TAFE qualification). Although the level of expertise varies within these two groups, in general, *registered* nurses perform more complex medical processes and hold more responsibility than do *enrolled* nurses. For example, in most jurisdictions only *registered* nurses have the authority to administer medication. There are other differences between *registered* and *enrolled* nurses. In general, *registered* nurses are more likely to be employed in critical or intensive care and less likely in geriatrics/gerontology; more likely to be employed in acute care hospitals and less likely in nursing homes; less likely to be working part-time; and more likely to work in capital cities, than *enrolled* nurses.

The Nursing Labour Force Survey is one vehicle for monitoring the balance between *registered* and *enrolled* nurses, as well as patterns and trends in the supply of nurses in hospitals, nursing homes and community health centres throughout Australia.

After allowing for registrations in more than one State, there were 202,183 *registered* and 53,369 *enrolled* nurses in 1997. Their profiles are described in more detail below. The remainder of this chapter then describes other aspects of the nursing workforce in 1997 and how these have been changing over recent years. In much of the discussion, separate figures are given for *registered* and *enrolled* nurses.

### *Registered nurses*

Of the 202,183 *registered* nurses, 183,060 were in the nurse labour force. That is, they were employed in nursing (96.1%), were looking for work in nursing (2.5%) or were on extended leave for three months or more (1.4%). Of the remaining 19,123 *registered* nurses who were not



in the nurse labour force, 34.8% were employed in jobs other than nursing, 45.3% were not employed and 19.9% were overseas (Figure 3).

Of the 175,937 *registered* nurses employed in nursing in 1997, 87.8% were working as clinicians, 6.5% as administrators, 2.7% as teachers or educators, 0.6% as researchers and the remaining 2.4% in other nursing occupations.

Between 1994 and 1997 the percentage of *registered* nurses employed in capital cities increased from 63.9% to 66.0%, while the percentages employed in other metropolitan centres decreased from 8.1% to 6.8% and in large rural centres from 9.8% to 8.5%. The percentages in other geographic areas changed only marginally over the period. Over the same period, the proportion of the total population living in capital cities also increased (from 63.2% in 1994 to 63.7% in 1997).

While this increase was not even across Australia, it was also distributed unevenly between the public and private sectors. From 1994 to 1997, the number of employed *registered* nurses increased by 2.0% from 172,434 to 175,937, while the proportion employed in the public sector decreased from 71.1% to 69.2%.

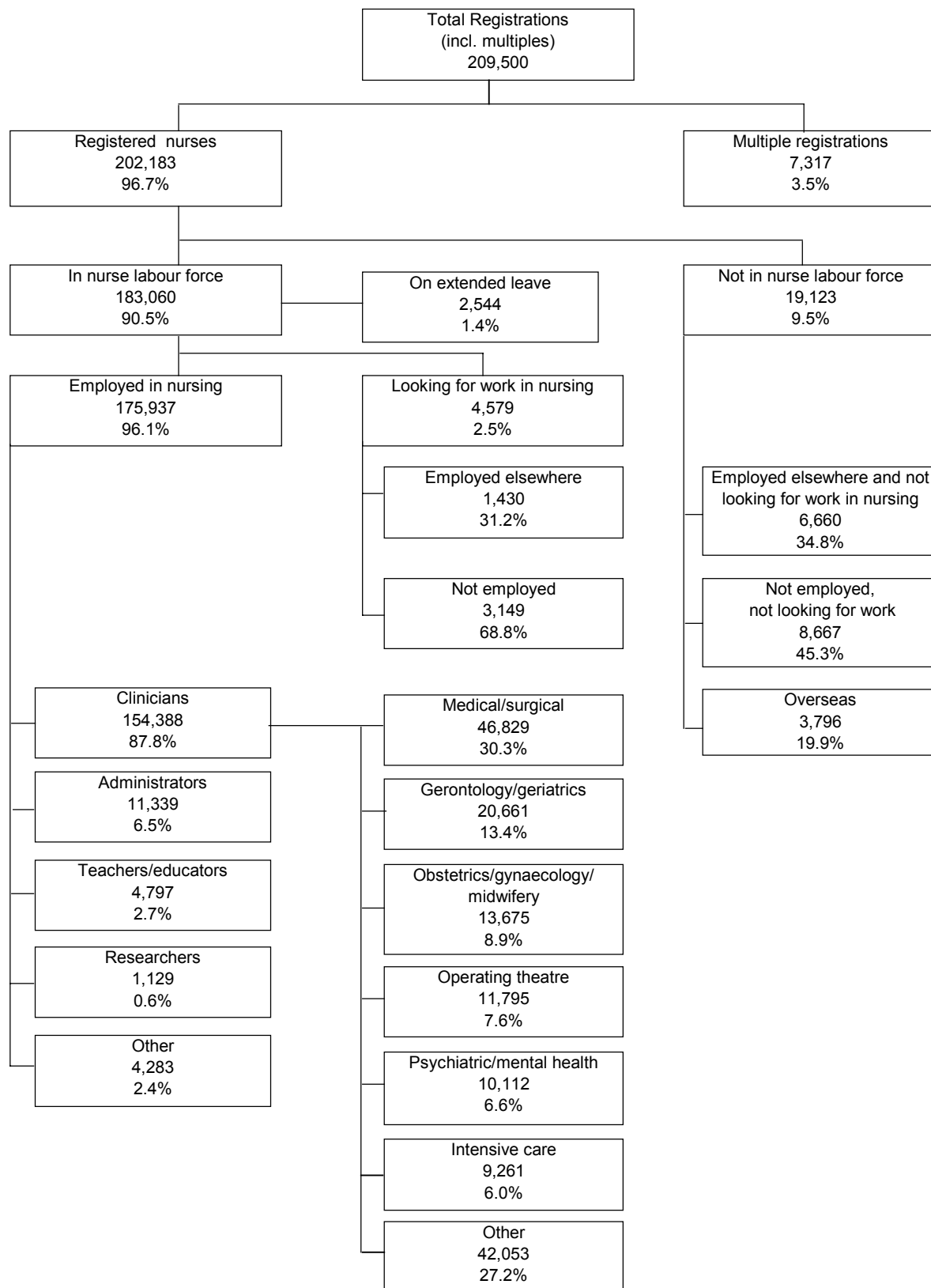
#### *Enrolled Nurses*

Although smaller in number, the employment status of *enrolled* nurses was similar to that of *registered* nurses. Of the 53,369 *enrolled* nurses, 48,832 were in the nurse labour force – 86.7% of these were employed in nursing, 3.7% were looking for work in nursing and 1.1% were on leave for three months or more. Of the remaining 4,537 *enrolled* nurses who were not in the nurse labour force, larger proportions were employed in jobs other than nursing (45.7%), or were not employed (51.2%) and a smaller proportion were overseas (3.1%) (Figure 4).

Of the *enrolled* nurses employed in nursing in 1997, 92.5% were working as clinicians, 1.3% as administrators, 0.8% as teachers or educators, 0.1% as researchers and the remaining 5.3% in other nursing occupations.

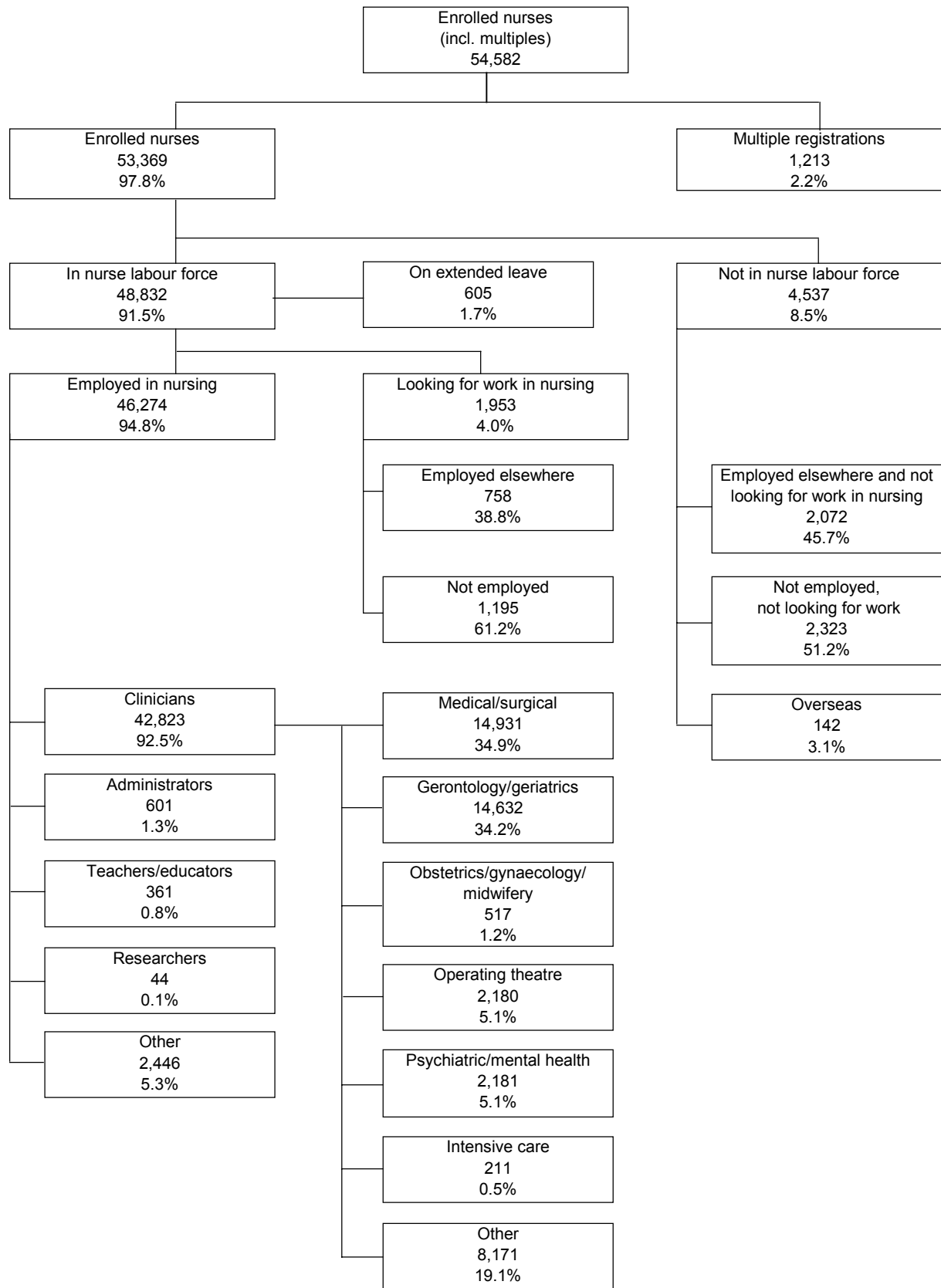
From 1994 to 1997, the number of employed *enrolled* nurses decreased by 12.2% from 52,676 to 46,274, mainly on account of a 22.0% decrease in those employed in nursing homes. (Table 38) This is consistent with government policy to encourage elderly people to be cared for in their own homes rather than in institutions, largely through the Home and Community Care (HACC) program, which was initiated in 1992 and the introduction of community aged care packages in 1993.

Both in 1994 and 1997 half of all *enrolled* nurses were employed in capital cities, (although substantially lower proportions than for *registered* nurses). Over that period there were small decreases in the proportion in other metropolitan areas and large rural centres (from 18.9% to 16.7% in total) and corresponding small increases in the proportions working in other geographic areas (from 31.2% to 32.9% in total) (Table 5). Using ABS data, decreases occurred in all States and Territories except Queensland and the ACT, where there were small increases. By far the largest decrease occurred in Victoria (9,700, or 58.8%).



Source: AIHW.

Figure 3: Registered Nurses, Australia, 1997



Source: AIHW.

**Figure 4: Enrolled nurses, Australia, 1997**

## Demographics

### *Age*

Since the mid 1980s, the age structure of the nurse workforce has undergone a major change. At the 1986 census, 23.3% of nurses were aged under 25 years and 17.5% were aged 45 years or more. At the 1996 census, the proportion aged under 25 years had fallen to 7.7% while the proportion aged 45 years or more had increased to 30.3%, and their average age increased from 39.1 years in 1994 to 40.4 years in 1997.

The ageing of the nurse workforce would, in part, be due to the change in training methods for *registered nurses* away from the hospital-based training to university-based training (delaying the age at which they start work), together with declining numbers of students undertaking nursing education.

In 1997, the average age of all employed female nurses (40.4 years) was slightly higher than for males (38.8 years). The average age of employed *registered nurses* was 40.5 years, which was slightly higher than in previous years, again female nurses being older than males (40.6 years and 38.9 years, respectively). Employed *enrolled nurses* were slightly younger than *registered nurses* (with an average age of 39.6 years overall – 39.6 years for females and 38.3 years for males) (Tables 16 and 32).

Nurses employed as clinicians in intensive care were much younger on average (34.9 years) than those employed in geriatrics/gerontology (43.5 years) in 1997. This is consistent with the higher proportion of *registered nurses* in intensive care than in other areas of work. Similarly, those in public or private hospitals were younger (38.1 years and 39.1 years, respectively) than those in public or private nursing homes (44.6 and 44.3 years, respectively), again reflecting relatively high proportions of *registered nurses* in hospital work settings (Tables 52–64).

### *Male participation*

Between 1994 and 1997 employed male nurses increased from 16,166 to 17,003 (5.2%) while employed female nurses decreased from 207,112 to 205,208 (0.9%). This represented an increase from 7.2% to 7.7% of males in the nurse work force over that period. At the same time, the number of employed *registered male nurses* increased by 9.0, while the corresponding number of females increased by 2.4%. Because male nurses are, on average, younger than female nurses, and because the proportion of those commencing basic nursing courses who were male has been maintained at around 13–15% over the 1990s, this trend looks set to continue over the next few years (Tables 37 and 65).

In 1997, males made up one third (33.9%) of those employed as psychiatry/mental health clinicians, by far the largest proportion in all major areas of nursing. In contrast, males made up very low proportions of nurses employed in private medical rooms (0.8%) and in midwifery (1.0%). There has been a small increase both in the number and the percentage of male nurses employed in private nursing homes from 3.3% in 1994 to 3.8% in 1997.

### *Country of birth and citizenship*

Country of birth data was available from Victoria, Queensland, Western Australia, Tasmania and the Australian Capital Territory. In these States and Territory 78.3% of nurses employed in 1997 were born in Australia. A further 10.8% were born in the United Kingdom or Ireland, 4.6% in Asian countries, 2.8% in New Zealand, 2.6% in other European countries and 0.9% in other countries (Table 19).

Data from all of the States and Territories for which citizenship data was available showed that most employed nurses (93.4%) were Australian citizens, ranging from 95.1% in the Australian Capital Territory to 90.1% in Western Australia (Table 20).

## Hours worked

The proportion of nurses working part-time (that is, less than 35 hours per week) increased from 41.2% in 1990 to 44.1% in 1999, and in 1999 *enrolled* nurses were much more likely to work part-time (60.0%) than *registered* nurses (52.5%) (Table 10). This may be because younger, more highly qualified *registered* nurses are establishing their careers in those areas where longer working hours are the norm – there is considerable variation among work settings and nursing disciplines in the proportion employed part-time. For example, 44.4% of nurses in public hospitals were working part-time in 1997. This compared with 60.3% of those in private hospitals and 71.2% in private medical rooms.

*Registered* nurses worked an average of 31.8 hours per week (31.1 for females and 38.1 for males). Just over half (52.5%) of female *registered* nurses worked less than 35 hours per week compared with 17.7% of males (Table 26).

Across the States and Territories, the average hours worked per week by female *registered nurses* ranged from 29.8 hours in Tasmania up to 38.2 hours per week in the Northern Territory. For male *registered* nurses, their average hours worked varied from 37.2 hours in the Australian Capital Territory to 42.6 hours in the Northern Territory.

*Enrolled* nurses worked an average of 29.9 hours per week (29.5 hours for females and 35.8 hours for males). The average number of hours per week worked by *enrolled* nurses ranged from 28.1 in South Australia to 34.6 in the Northern Territory (Table 34).

## Job Classification

The method of reporting the job classification levels of nurses was changed in 1997. Each State or Territory has its own classification system for nurses, and in order to consolidate these different systems annual salary ranges are used as a proxy classification system in this publication. Six categories of annual salary are used viz:

- less than \$28,729,
- from \$28,730 to \$41,992,
- from \$41,993 to \$50,471,
- from \$50,472 to \$58,710,
- from \$58,711 to \$70,038 and
- \$70,039 or more.

Over two thirds (69.8%) of employed nurses fall into the salary range \$28,730-\$41,992 in 1997, and the next largest proportion (16.4%) was in the range \$41,993-\$50,471 (Table 22).

Of *registered nurses* who were employed under a nursing award on a salary of less than \$28,729 a year (the lowest classification) 75.9% were females and 24.1% were males – out of proportion to their distribution in the total *registered nurse* workforce (92.0% females and 8.0% males). Of those with a salary over \$70,039 per year, 91.8% were females and 8.1% were males – almost the same as their distribution.