

The nurse workforce: aligning policy with reality

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Summary

This paper provides background to my contribution to the panel session on the health workforce. It sets out some of the data and concepts necessary for understanding the nurse and midwifery workforces and for developing policies and plans that are aligned with reality and can best assure the quality and sufficiency of those professional workforces in the future. The focus here is on the quantitative and the macro, rather than the qualitative and the micro. It is an attempt to illuminate the shadow between the 'idea and reality'¹ – to illuminate the myths and clarify data to help ensure that policy is consistent with reality –, and to illuminate the shadow between the 'motion and the act' – to help ensure that good policy becomes reality, that it is successfully implemented in the real world and that there are not negative unintended consequences.

The size, composition and age profile of the nurse workforce are set out first, and the well-recognised peak in the age profile in the late 40s age range noted. This is followed by an outline of the notions of 'attachment' to and 'separation' from a profession. Data on the population with professional nurse qualifications, whether working in the profession, in another occupation, or not working illustrated the patterns of attachment and separation over the working age range. It is clear that a relatively high percentage, around 70% of those with professional nurse qualifications, are in the employed nursing workforce – there is strong 'attachment' to the profession. An apparent anomaly is noted in the combined data on the age profile of the workforce, on attachment to the profession by age, and on pre-registration course completion numbers (thus additions to the population with professional nurse qualification) – there appears to be a 'disappeared' group of younger nurses. This is investigated, and the anomaly can be explained by the movement overseas for several years of many recently graduated nurses. If they had remained in Australia, and entered the nurse workforce at much the same rate as those who had actually remained, then the age profile of Australian employed nurses would look very

¹ Between the idea
And the reality
Between the motion
And the act
Falls the Shadow
TS Eliot, *The Hollow Men* (*Selected Poems*, Faber, 1967, p. 80)

different – it would be a bimodal profile, with the second peak in the late 20s to early 30s. This peak is likely to become manifest over the next few years.

Having outlined the current situation, historical developments since the 1960s are considered. This covers the size and age profile of the workforce, the labour market for professional nurses, pre-registration course completions, and movement in and out of Australia of nursing professionals. The nature and impact of the ‘oversupply’ of nurses in the early to mid 1990s is investigated.

We then return to the present and consider possibilities for the future. Five matters are outlined that need to be taken into account when estimating future requirements. A discussion of the potential for quantitative impact on the overall nurse labour market from work redesign and role extension concludes that there is no easy solution here for macro-level nurse workforce shortages, and that some otherwise very positive initiatives may in fact exacerbate shortages. It is clear that further increases in pre-registration (and pre-enrolment) intakes and completions will be necessary, as least for a further eight to twelve years. Some of the barriers to such increases are noted and suggestions for the future made.

The current nursing and midwifery workforce

In 2005 there were 285,619 nurses and midwives registered or enrolled in Australia. This was a small increase from 282,702 in 2004. Of those registered, 244,360 were employed as nurses or midwives – Table 1 provides details. For comparison, there were around 60,000 registered medical practitioners in 2005.

Table 1 Enrolled and registered nurses, registered midwives, 2005

	Number employed in the occupation	Number registered but not employed in the occupation	Number employed per 1,000 population
Enrolled nurses	46 044	8 998	227
Registered nurses	198 315	32 263	976
Registered or authorised midwives*	55 992	-	-

* Most midwives are also registered as a general nurse.

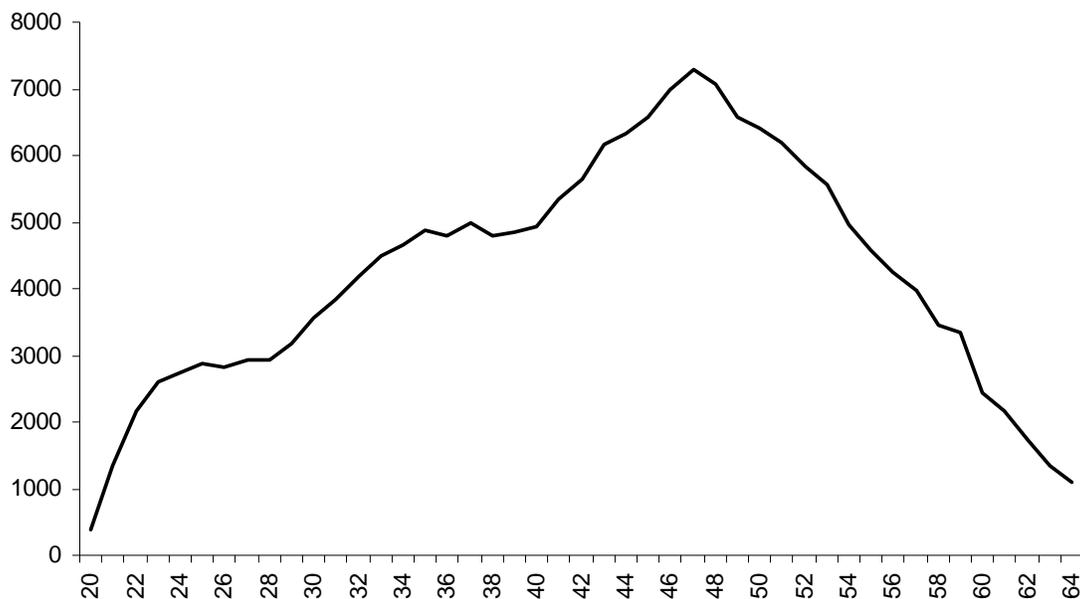
Source: AIHW Nursing and Midwifery Labour Force Census, 2005

The age profile of employed registered nurses and midwives in 2006 is illustrated in Figure 1. The age profile has a clear peak around age 47 (which by this year would have moved to about age 49), at which age there were around 7,000 individuals. This peak reflects the peak period of recruitment of currently employed nurses around the early 1980s. The dip in numbers around age 37 to 40 may indicate the dip in recruitment in the early to mid 1990s.

The illumination of more recent recruitment by such data is complicated by movements in and out of Australia of nursing professionals (discussed further below), and, to a lesser extent, by the

greater variation in age of completing students (around 37% of completing students in 2005 were aged 30 or older² – see CDNM 2008, p. 18).

Figure 1 Number of nursing professionals in each single year age range between 20 and 64, Australia, 2006



Source: ABS 2006 Census custom tables

'Nursing professionals' are those in the ANZSCO classification 254, 'Midwifery and Nursing Professionals' – professional nurses and midwives employed in that capacity. This classification includes 'nurse managers', and does not include 'Enrolled and Mothercraft Nurses' who are covered by 4114. It is possible that some ENs are actually in the 254 classification because they are under-enumerated in the 4114 classification. On the other hand, it is possible that some registered nurses who are managers may be included under 'Education, Health and Welfare Services Managers' (134). On balance, this graph should provide a good estimate of actual numbers.

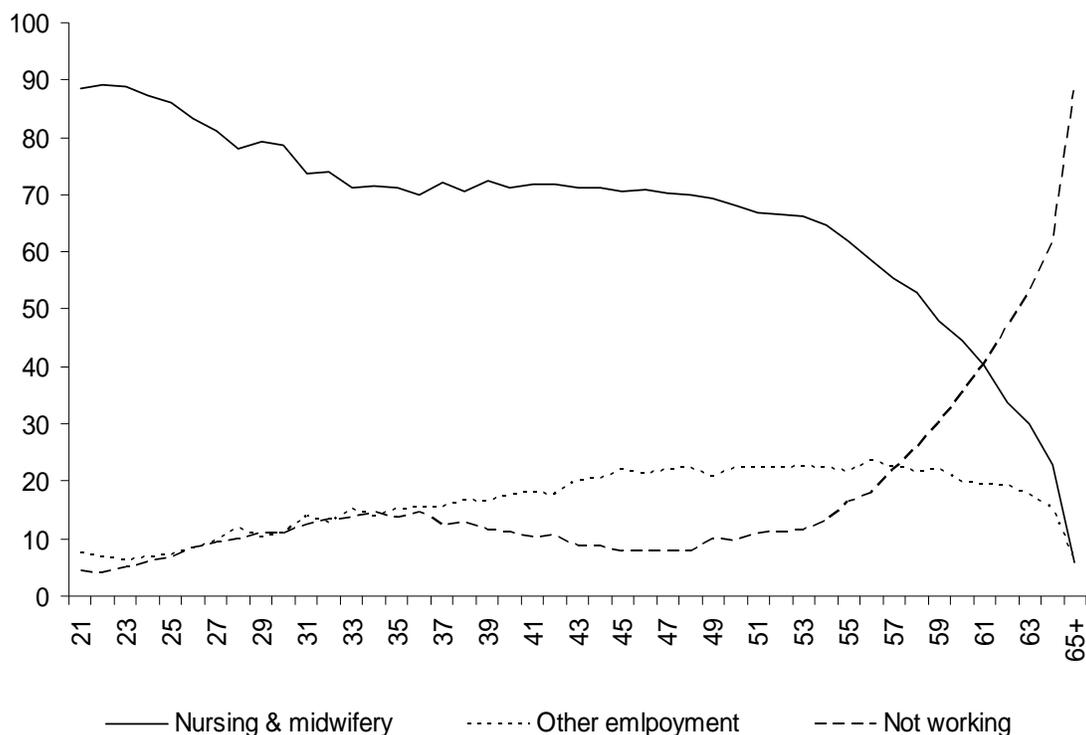
The concepts of 'attachment' to the profession, and 'separation'

'Attachment' to a profession refers to the level or rate at which those with relevant qualifications are working in the field for which they are qualified ('home occupation'). It appears that around 70% of those aged 20 to 64 who have professional nursing qualifications are working as professional nurses. Of those not working as nurses, between a third and half are not in the workforce. Figure 2, based on ABS 2006 Census data, provides details. This is a much higher rate of attachment than is commonly assumed, but it is consistent with data from other sources³.

² The age of completing students in the DEEWR higher education statistics collection is that on 30 December the year before completion.

³ Data on the number of completions of pre-registration courses and number working as professional nurses about five to eight years later can give a good indication of 'attachment'. The five to eight year period between completion and when employed professionals are counted is necessary because of the high rate of movement overseas for several years of recently graduating Australian residents (this is discussed further below), as well as the range of ages of those completing. In addition, any analysis should not be confounded by the very large 'oversupply' of from 1992 to 1995 when many thousands of graduates who hoped to enter the nurse workforce were unable to obtain

Figure 2 Percentage of all persons with a professional nursing qualification* as their highest qualification at each year age 21 to 65 and over, who are working as professional (registered) nurses or midwives, working in other occupations or not working, 2006



* Nursing qualification (ASCED Field of Education 0603) at bachelor degree (or equivalent) or higher (ACED Level of Education Classification). This includes the qualifications of registered nurses and midwives obtained in earlier years through hospital training or three year higher education diplomas.

Source: ABS 2006 Census custom tables

Around a decade ago there certainly was a large ‘pool’ of individuals with professional nursing qualifications who were not working as professional nurses and were available for positions – this

positions, and a good number of whom remained potentially available for attracting back into the workforce for some years afterwards. Therefore data on completions over the period 1995 to 1997 (available for positions from 1996) are compared with data for employed registered nurses aged 30 to 34 in 2003 (adjusted for net movement into Australia of nurse professionals). An annual average of 5,908 students completed pre-registration courses over the period 1995 to 1997, most of whom would have been aged around their mid 20s. In 2003 there were 22,514 employed registered nurses aged 30-34. Over the previous four years there had been net 4,614 long term and permanent overseas arrivals (data from Figure 7 below) in the professional nurse occupation, of whom I assume around one quarter (1,154) were aged 30-34 aged 2003. The total 30-34 workforce is then discounted by the net arrivals, leaving 21,360 – an average in each year of 4,272. 4,272 is 72% of 5,908. Thus, using this quite different set of data and method, the Census data (Figure 2) is closely corroborated.

was the accumulated, but diminishing, consequence of the large oversupply of the early to mid 1990s (discussed further below).

‘Separation’ from a profession refers to those who are leaving the occupation for which they are qualified (rate), or the total number who are qualified but not working in the occupation for which they are qualified. ‘Net separation’ rates include many (if not all) of those who are re-entering after a period not working in the home occupation, as well as those leaving. The nature and quality of data sources in particular cases would determine which categories of re-entrants (and some new entrants) are included as a component of ‘net separation’, and which are treated separately as measurable re-entrants or new entrants. In this discussion ‘net separations’ is a wide definition, covering re-entrants and new entrants who are not covered by recent graduates, and, to some extent, by net overseas arrivals.

Separation rates are among the most important variables necessary for estimating future requirements for new recruits to any workforce, including nursing and midwifery. Separation rates are difficult to measure, and more so to estimate for the future, and all methods for doing so are controversial.

It is clear, though, that the pattern of net separation rates varies according to age. This is illustrated for the nursing profession by Figure 2. It provides data from the 2006 ABS Census, but the pattern has been similar for earlier Censuses (see, for example, Preston 2006 p. 94, and Preston 2002, p. 16), though the actual quantities have been a little different, reflecting, for example, varying patterns of women’s work and family commitments, a varying labour market conditions in nursing and alternative occupations, as well as some variations in Census data collection and definitions.

The graph indicates that a high proportion of those who gain professional nursing qualifications (and remain in Australia) enter the registered nurse workforce, but that by the early 30s age range around 30% are not working as registered nurses, with those equally divided among those in other occupations and those not working. By the late thirties the proportion not working declines, and those in other occupations steadily increases.

The net separation rate from registered nursing over the 20s age range is relatively high (around 4% to 5% per year), and then is quite low (around zero) until the late 40s age range when it begins to gradually increase, and it then sharply increases from the mid 50s age range. (It is notable that those with professional nursing qualifications who are in other occupations appear to remain in the workforce longer, and/or that over the decade from the early fifties a higher proportion of registered nurses move to other occupations).

There is an apparent anomaly between Figures 1 and 2 for those aged under around 35, in the context of increasing completions of pre-registration courses since 1999, and the continuing pattern of the majority of those completing doing so aged around their mid 20s.

However, this anomaly can be explained by the movement out of Australia of recent pre-registration graduates for several years, before returning to Australia and entering the professional nurse workforce as employed registered nurses and midwives. Around 1,800 Australian resident nursing professionals leave Australia every year, and about the same number

return (Table 5), and it appears that the majority of those leaving have registered as nurses in the UK ⁴, though many work as nurses elsewhere or are not employed as nurses while overseas.

While exact data has not been accessed, it is likely that the bulk of these internationally mobile Australian nurses are recent graduates in their mid to late 20s who return to Australia on average around two years after they depart. It is thus reasonable to assume that, each year, on average around 1,500 qualified professional nurses under age thirty leave Australia for an average of two years. If they had remained in Australia and entered the employed nurse workforce, then the low ‘plateau’ in the age profile between around ages 24 and 30, apparent in Figure 1, would be rising to a second peak (or high plateau) in the profile in the late 20s and early 30s, at between 5,000 and 6,000, with an additional 10,000 to 15,000 in the Australian nurse workforce. This second peak is likely to become manifest over the next five years, and to continue growing as the increasing number of those who have completed or will complete this decade enter the Australian nurse workforce up to around eight years after completion. The age profile of the Australian nursing workforce would then be bimodal, with a rapidly diminishing peak around the early to mid 50s age range, and the second peak around the early to mid 30s, probably increasing in width and height as more RNs enter the workforce. (Variations in overseas movements and in the ages of completing students would affect this.)

Development since the 1960s in the nurse workforce

The size of the registered nurse⁵ workforce increased rapidly through the 1960s and, especially, the 1970s and through the 1980s. Then there was a sharp slow down in the early to mid 1990s with the recession and major cutbacks in state government expenditure. There has only been gradual expansion since.

Table 2 **Employed registered nurses, selected years 1961 to 2005**

	Number of registered nurses	Number per 1,000 population	Average change per annum in number from previous period
1961	63 821	5.9	-
1981	106 565	7.1	3.3%
1991	164 500	9.9*	5.4%
1994	172 434	9.7	1.6%
1996	174 770	9.5	0.7%
2005	198 315	9.8	1.5%

Source: 1961, 1981 and 1996 data, AIHW (1994), Table 5.16 (original source is cited there as OECD, but data in the table is consistent with AIHW’s own data for the later years); 1991 data: AIHW 2001, p. 31; 1994 & 2005: Table 3 below.

* estimated from ABS population data, 1991 Census.

⁴ The Nursing and Midwifery Council of the UK reports on ‘Initial Admissions to the register by overseas country’ as part of its annual statistical analysis of the register. The number from Australia was between 920 and 1342 every year from 1989-99 to 2005-06. It has since reduced sharply to 299 in 2007 (see various reports at <http://www.nmc-uk.org/aArticle.aspx?ArticleID=36>), reflecting the reduced availability of positions in the UK for overseas nurses (in 2004 there were 14,122 initial admissions from overseas, in 2007 only 4,830).

⁵ Midwives are included with registered nurses in most datasets used in this paper.

Over the period to around the early to mid 1980s there was a very high level of recruitment into the Australian nurse workforce and an associated high level of training. The high level of recruitment was necessary to cover both the *expansion* of the workforce outlined above, and the need for *replacements* for the large numbers leaving while a high proportion of the predominantly female workforce was younger than around 30. There is a high rate of net separation among those under 30 as some beginning nurses realise that the profession is not for them and move into other occupations, and as others leave for some years to have a family. Net separation rates then reduce sharply through the 30s age range as those for whom nursing is unsuitable have mostly left and those leaving for family responsibilities are progressively replaced by those returning.

From the mid 1980s, as those nurses recruited over the period to the early 1980s who stayed in the profession became a large cohort moving into their 30s (with low net separation rates), the requirement for replacement for those leaving the profession was reduced while the need for additional nurses because of the expansion of the total size of the workforce continued. The net result was a reducing need for new recruits (not including re-entrants).

The enrolled nurse workforce declined from the mid 1990s to around 2001, and has generally increased since then. Table 3 provides details.

Table 3 **Employed registered and enrolled nurses, Australia, selected years, 1994 to 2005**

	1994	1997	1999	2001	2003	2005
Registered nurses	172 434	175 937	179 389	183 224	189 071	198 315
Enrolled nurses	52 676	46 274	45 424	45 006	47 574	46 044
Total nurses	225 110	222 211	224 813	228 230	236 645	244 359

Source: AIHW Nurse labour force surveys, various years

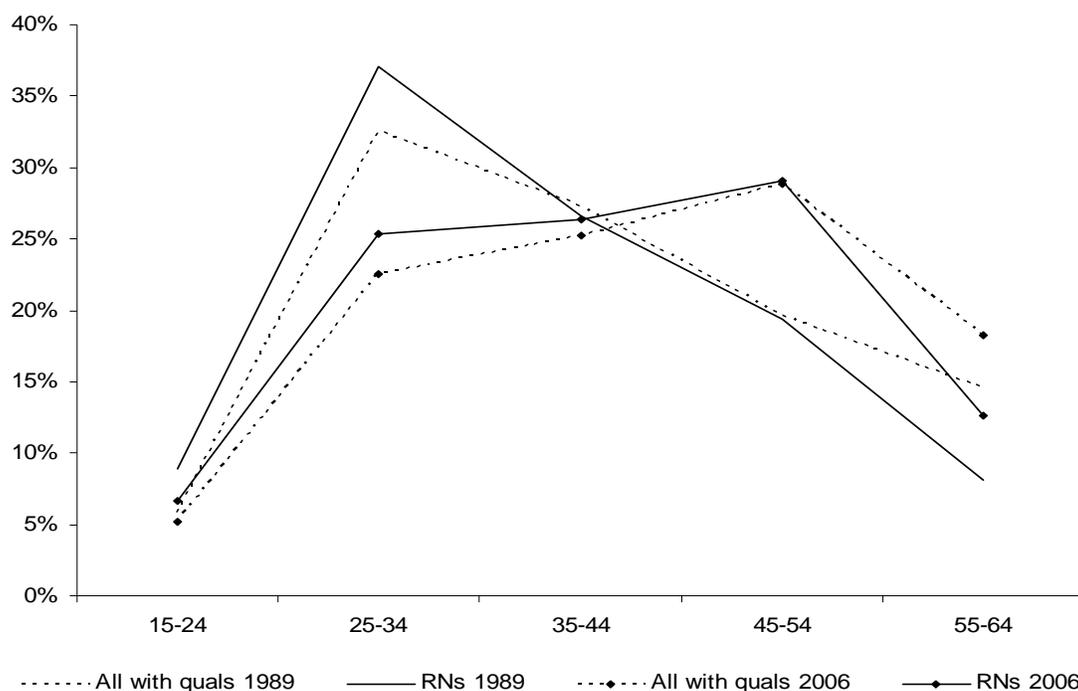
Age profiles over the decades

The pattern of age profiles and associated net separation rates for the nursing profession can be tracked over the decades.

The peak number of new recruits around the decade to the mid 1980s is reflected in the age profiles since then of the registered nurse workforce, and of all those in the population with professional nursing qualifications. In 1989 the peaks for both were in the 25 to 34 age range, while in 2006 they were in the 45 to 54 age range. This is illustrated in Figure 3.

The peak will move through retirement age over the coming decade and dissipate. In comparison with the situation in 1989, it is currently a diminished peak as a proportion of the total workforce, because the proportion who are in the younger age ranges (especially 25 to 34) is much larger than the proportion who were in the older age ranges (especially 45 to 54) in the late 1980s, as well as a proportion of those aged 25-34 who were working as nurses in 1989 are no longer working as nurses.

Figure 3 Percentages of all persons with professional nursing qualifications and of all employed registered nurses aged 15 to 64 in each ten year age range, 1989 and 2006



Note: Figures should be taken as indicative only as the data was collected on a different basis in the two datasets.

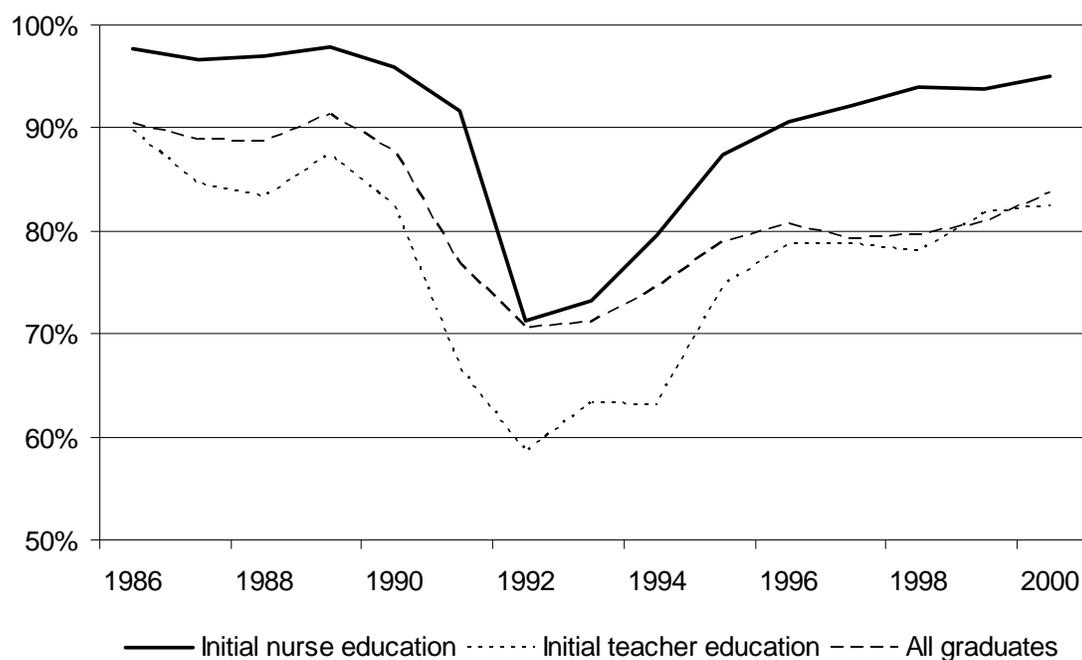
Source: 1989 data: ABS 1990, *March to July 1989 Career paths of qualified nurses in Australia*, Cat. No. 6277.0, p. 8.; 2006 data: ABS 2006 Census custom tables

The developments of the early to mid 1990s

In the early 1990s the recession and state government cutbacks and other factors (such as relative slowing of population growth rate) sharply slowed expansion in the total number of employed registered nurses (even reversed it in some jurisdictions). The recession further reduced net separation rates, as alternative employment opportunities became scarcer. Very few new nurses were recruited, and as the requirement for new nurses picked up later in the 1990s, graduates of earlier years competed with recent graduates for available positions, and thus the 'surplus' continued from one year to the next even when the number of graduates available was in broad balance with requirements for new recruits.

Figure 4 illustrates the impact of the recession on all graduates, but shows that it was much more severe for those entering nursing and teaching - two occupations with staffing levels largely reliant on state government funding, and with age profiles in the early 1990s with high peaks in the early 30s age range where net separations are especially low.

Figure 4 Bachelor degree graduates working full time as a percentage of those available for full time employment, pre-registration nurse education, initial teacher education, and all fields of study, 1986 to 2000

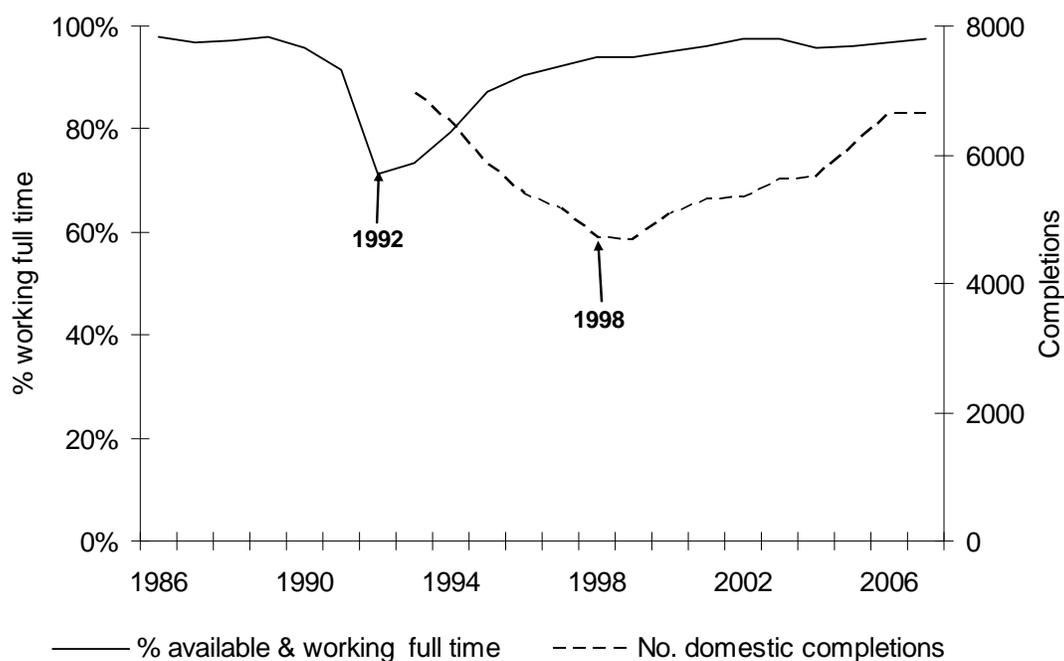


Source: Graduate Careers Australia [details]

The lack of employment opportunities for so many nursing graduates over the three years 1992 to 1994 had a great impact on many involved in pre-registration nurse education, including potential students. That was also the time of major rationalisations and re-organisations in higher education. Many former Colleges of Advanced Education were amalgamating with universities or sought to become universities with broad and 'balanced' course provision. In general, the very

large initial teacher education and pre-registration nurse education programs of many former CAES were considered undesirable in the new institutional structures. The ‘oversupply’ of nursing and teaching graduates thus fitted seamlessly into the rationales for reducing very substantially the size of teacher and nurse education programs in some major institutions. There was no serious attempt to understand the particular causes of the oversupplies – it was assumed to be a continuing, structural result of uncontrolled expansion of CAES from the mid 1970s until the discipline of the Dawkins reforms (though the 1981 Fraser Government ‘Review of Commonwealth Functions’ sought some substantial rationalisation, especially in teacher education, in the period before most nurse education had largely moved into higher education).

Figure 5 Pre-registration nurse education: undergraduate degree graduates available for full time work who were working full time, 1986 to 2006, and domestic completions, 1993 to 2006



Source: Graduate Careers Australia, and Department of Education, Employment and Workplace Relations

Figure 5 indicates the effect of the reaction to the oversupply of nurse education graduates. There was not only a sharp reduction in provision of places, but also low demand by potential students and high attrition. The low point in the number of completions occurred in 1998, *six years* after the low point in employment opportunities for nursing graduates.

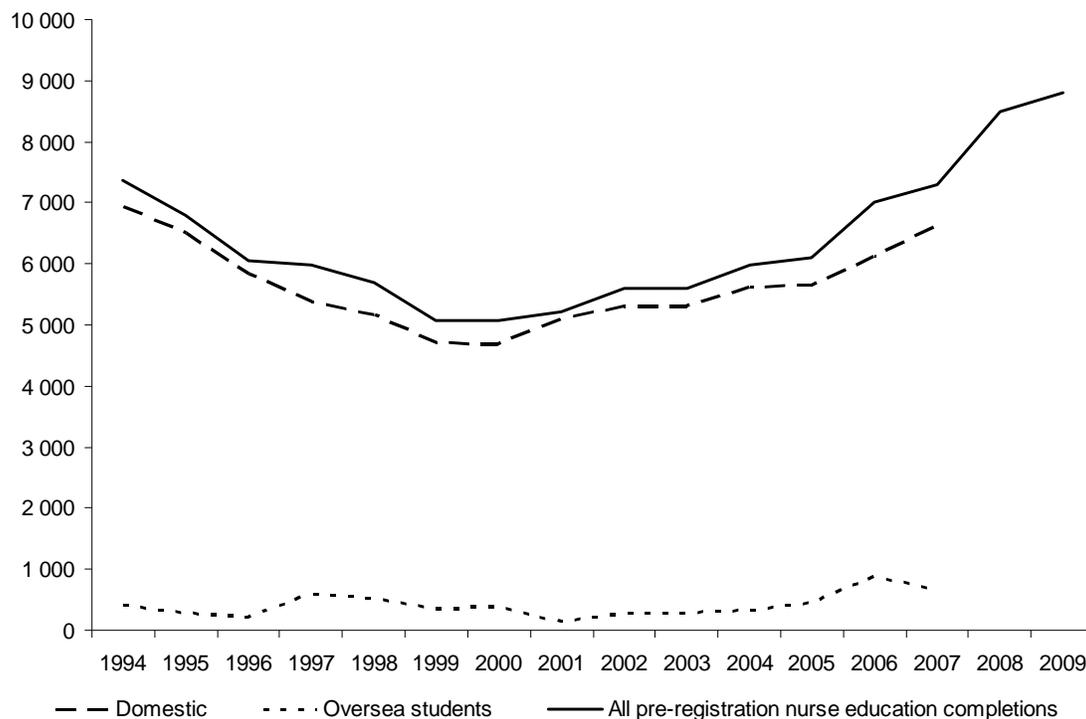
The reduction in places occurred as the peak in the age profile of registered nurses began to move into the 40s age range, and consequently net separation rates and requirements for replacements began to increase. In addition, in the late 1990s staffing levels began to improve. Thus the declining supply of graduates became insufficient for increasing demand, and, as the

accumulated surpluses dissipated, the shortages developed that have continued into the current period.

Pre-registration course completions and net migration

Figure 6 shows the pattern of actual and projected completions from 1994 to 2009. International students have played a small, but increasing part, and it appears that most international students who complete pre-registration courses go on to work in Australia (CDNM 2008, p. 3). In 2007 completion numbers had still not returned to the level they were in 1994, and it has only been the recent increase in international student completions that has taken the total above the 1995 level. (Indigenous completing students have increased from 1.2% of all completions in 2000 to 1.8% in 2006 – CDNM 2008, p. 19.)

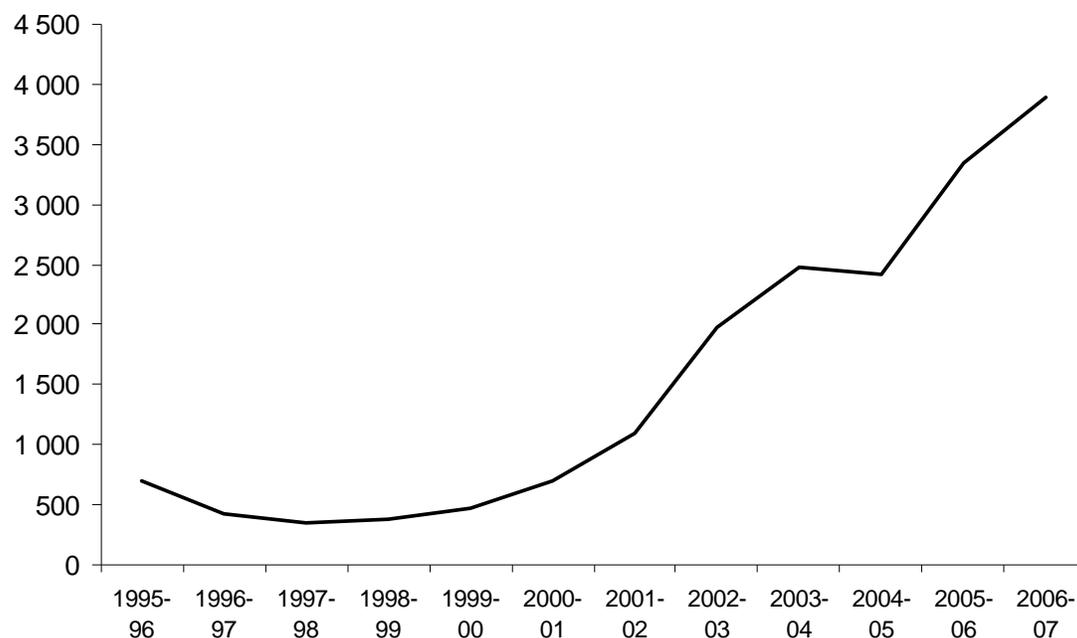
Figure 6 Actual 1994 to 2007, and projected 2007 to 2009, pre-registration nurse education completions, domestic, overseas and all students, Australia



Source: Actual completions from DEEWR and projections from Preston 2006, p. 110

It has been increasing levels of net migration into Australia of nursing professionals that has prevented more serious shortages occurring. Figure 7 shows this net movement, and Table 4 its components. There is a high level of movement both in and out, by Australian residents and long term visitors, as well as settlers.

Figure 7 Net movement in and out of Australia of nursing professionals, 1995-96 to 2006-07



Source: Department of Immigration and Citizenship

Table 4 Permanent and long term arrivals and departures of professional nurses and midwives, financial years, 2005-05 and 2006-07

	Permanent arrivals	Long term resident return	Long term visitor arrival	Total arrivals	Permanent departures	Long term resident departures	Long term visitor departures	Total departures	Net arrivals
2004-05	1 677	1 831	2 811	6 319	944	1 806	1 309	4 059	2 260
2006-07	2 082	1 832	4 616	8 530	1 103	1 756	1 780	4 639	3 891

Source: Department of Immigration and Citizenship unpublished data

'Professional nurses and midwives' are those who stated they were in the workforce as professional (registered) nurses or midwives. 'Long term visitors' and 'long term residents' are those planning to be or who have been in Australia or overseas for at least one year.

The significance of net migration is shown by combining the data in Figures 6 and 7 on the same scale in Figure 8. The annual net additions to those in Australia with professional nursing and midwifery qualifications through completions plus net migration from 1995 to 2006 is also shown in Figure 8. Table 5 provides the data for selected years.

Figure 8 Net migration, pre-registration course completions, and total net additions to those in Australia with professional nursing and midwifery qualifications, 1995 to 2007

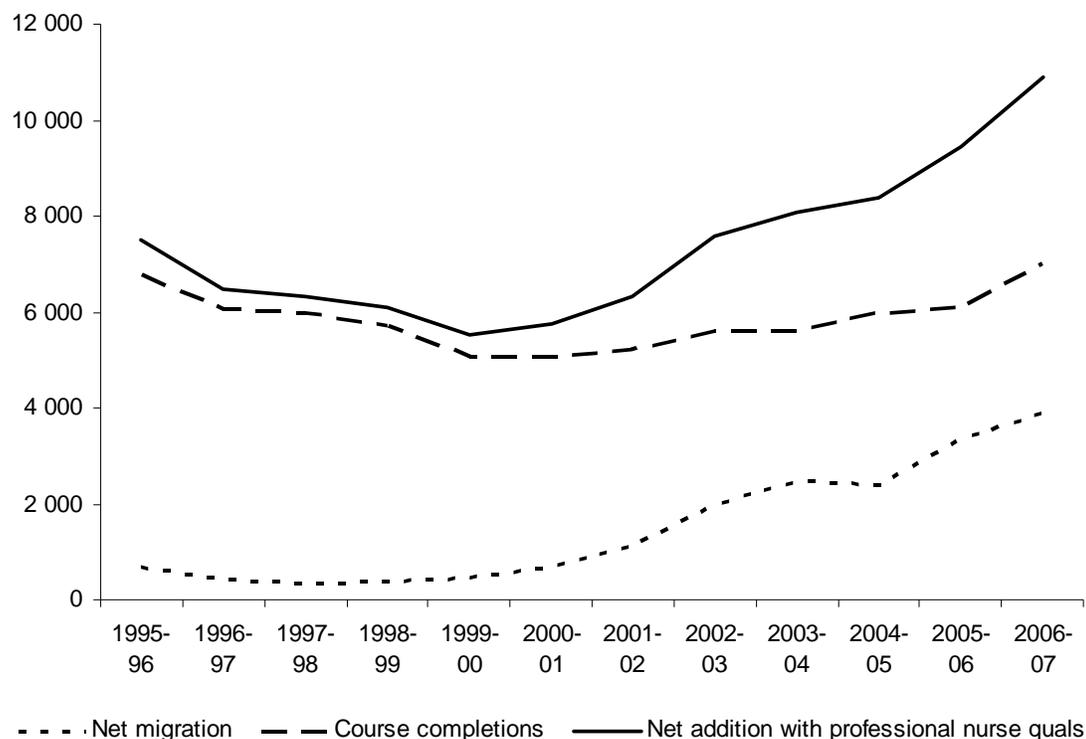
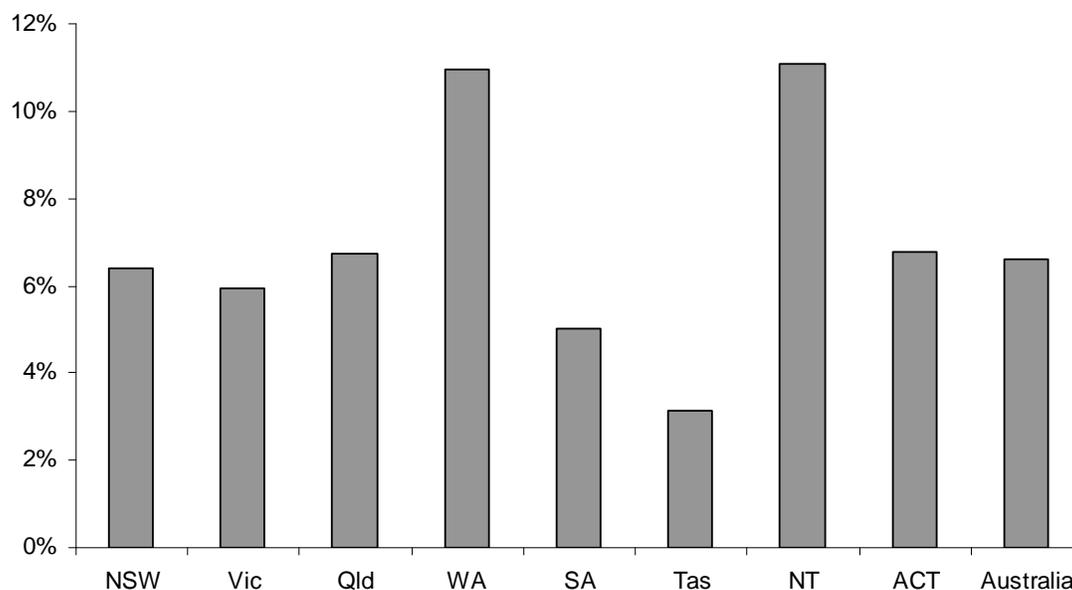


Table 5 Net migration, pre-registration course completions, and total net additions to those in Australia with professional nursing and midwifery qualifications, selected years, 1995 to 2007

	1995-96	1998-99	2001-02	2004-05	2005-06	2006-07
Net migration	703	379	1 094	2 418	3 338	3 891
Course completions	6 796	5 698	5 222	5 976	6 103	7 011
Total net additions	7 499	6 077	6 316	8 394	9 441	10 902

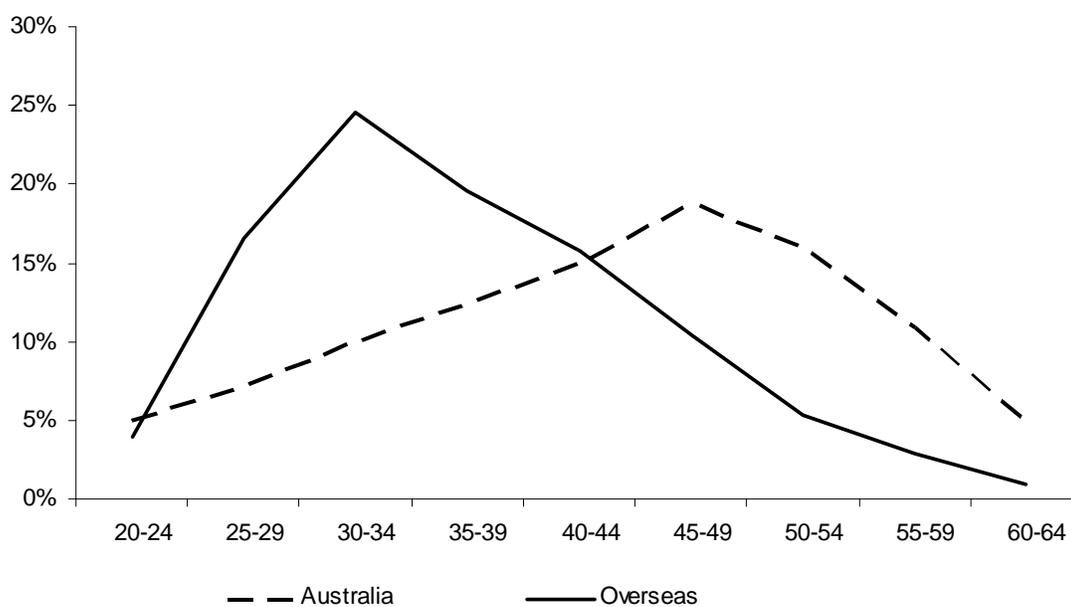
Migration does not affect all jurisdictions equally. 2006 Census data on location of residence five years earlier indicates that 11% of nursing professionals in Western Australia and the Northern Territory were overseas five years earlier, while only 5% and 3% respectively of South Australian and Tasmanian nursing professionals were overseas five years earlier (see Figure 9).

Figure 9 Percentage of employed nursing professionals who were overseas five years earlier, states and territories, 2006



Source: ABS 2006 Census custom tables

Figure 10 Age profile of employed nursing professionals who were in Australia or overseas five years earlier, Australia, 2006



Source: ABS 2006 Census custom tables

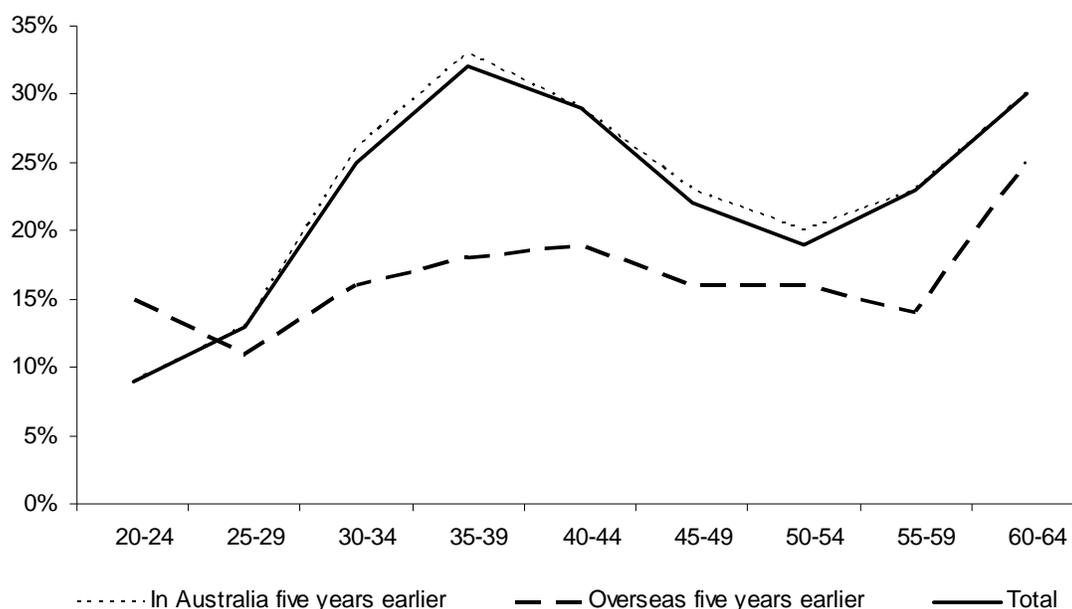
Nationally, 7% of nursing professionals, or around 14,000 individuals, were overseas five years earlier. This is roughly consistent with the DIAC data for net migration over the period (see Figure 7 and Table 4).

Those who were overseas five years earlier tend to be substantially younger – more than 60% are aged 25 to 39, while only 30% of those who were in Australia five years earlier are in that age range (see Figure 10). This may reflect the mobility of young Australian residents as well as the age profile of immigrants and international visitors working in Australia – though it is the long term visitors that are the largest arrivals category (see Table 4).

In addition, those who were overseas five years earlier are much less likely to be working part time in every age range except the 20-24 year olds (not a large absolute number). Among those who were overseas, there was little variation by age in the percentage who were working between one and 24 hours a week. In contrast, a third of those aged 35 to 39 who were in Australia worked one to 24 hours a week, while only 13% of those aged 25 to 29, and 20% of those aged 50 to 54 worked those short hours. These differences between those who were in Australia or overseas five years earlier are interesting, but their significance for workforce planning will not be further investigated here.

What is important is the marked difference in hours worked by age for the total professional nursing workforce. This is further discussed in the following section.

Figure 11 Percentage working one to 24 hours a week, nursing professionals, living in Australia or overseas five years earlier, by five year age range



Source: ABS 2006 Census custom tables

Estimating future requirements

Adequate and comprehensive projections and analyses of future requirements for new nurses and midwives are beyond the scope of this paper. However, a number of significant matters will be briefly considered. These are in addition to projected population growth over the next couple of decades of around one per cent a year⁶, indicating a growth in the nurse workforce of around 2,500 a year to maintain current staffing levels.

First, requirements for new recruits are likely to increase substantially over about five to ten years as a consequence of the peak in the age profile around age 47 in 2006 passing through retirement age. The separation rate from retirements alone is likely to be more than 3.25% of the total workforce for more than a decade, perhaps peaking at around 3.5%, which is almost 9,000 individual RNs and ENs. Then requirements will reduce (other things being equal) as retirements drop back to around 2% again (around 5,000 individuals). The peak in requirements to replace those retiring can be delayed or spread out by a few years through strategies to delay retirement or recruit back retirees. But it cannot be put off for long. Of course to these separations need to be added those of employed RNs and ENs leaving at other ages, especially their 20s, to move into other occupations, out of the workforce or overseas - either permanently or for some years.

Second, the ageing of the Australian population will require increasing staffing levels of professional nurses per 100,000 of the population if current levels of care for older Australians are not to be diminished. There may not be much room for adjustment in broad requirements through changed professional roles and practices or changed settings for care and support after the very substantial changes over the past two decades (though the quality of care and support at a local level could be enhanced by changes in roles, practices and settings). The very different age profiles of the general population in different states and territories indicates that higher levels of staffing are *currently* appropriate in some states relative to others. It is a separate, but related point, that the projected rate of increase in the proportion of older people (especially those over 85) is greater in some states than others, and in some cases is greater in states that currently have lower proportions of their population in the older age ranges. The greater rate of increase leads to a greater *annual increase* in the number of new nurses required, and thus greater annual increases in the necessary number of completions of pre-registration courses and/or net migration of qualified nurses into the state. (These matters are discussed in detail in Preston 2006, pp. 77-92.)

Third, as the age peak currently around 49 moves into retirement a higher proportion of the total workforce will be in those age ranges in which fewer hours are worked on average, especially the over 55 and the 30 to 44 age ranges. This is likely to substantially reduce average hours worked across the workforce, and thus a greater number of individual nurses will be required to meet the same level of full time equivalent staffing.

Fourth, the substantial net international movement of nursing professionals into Australia cannot be relied on as a continuing solution to shortages. The Australian National Health Workforce Strategic Framework, endorsed by the Council of Australian Governments (COAG) in February

⁶ The ABS population projections to 2026 average annual growth of 1.40% (series A), 1.07% (series B) and 0.79% (series c). See Population Projections Australia, Cat. No. 3222.0, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3222.02004%20to%202101?OpenDocument>

2006, calls for ‘national self-sufficiency in health workforce supply, while acknowledging that Australia is part of a global market’. This indicates that continuing movement in and out of Australia by health professionals is acceptable (even desirable), but that net movements should be close to zero. This is very different from the current situation, where net migration contributes around one third of new nursing professionals each year. To make up the shortfall if the net level is to be reduced to zero would require an increase in completions of pre-registration courses of more than 50%. Completions are projected to increase by around 75% over the current decade, so a further increase of around 50% to compensate for ‘national self-sufficiency’ is not beyond the realms of possibility, but will still be difficult without very substantial policy changes and initiatives.

Fifth, those with nursing qualifications who are currently not working as nurses cannot be relied on to make any substantial new contribution to the future workforce. There will continue to be movement out of and back into the workforce, but a substantial change from the current underlying level cannot be expected. A wide range of initiatives in recent years have sought to attract back to nursing (or into nursing) those with qualifications who were in other occupations or not working – especially those who had been unable to find the nursing positions they wanted during the years of ‘oversupply’ from the mid 1990s. Some of these initiatives were successful, and the pools of potential re-entrants have diminished. Net separation rates for early and mid career nurses, and consequently of the numbers of former nurses of working age, have often been over-estimated. While retention in particular settings and locations can be very poor (and a serious problem for quality of care and quality of the work-lives of nurses), it is not so for the profession as a whole. Census data referred to earlier (Figure 2) indicates that up to age 50, around 70% or more of those in Australia with professional nursing qualifications (as their highest qualification) are working in the profession, and only around 15% are working in other occupations. Thus retention strategies should be based on the issues for particular settings and locations, with a focus on improving quality of care and work-lives, and thus easing the disruption of high turnover and shortages for those settings and locations.

Once these five matters are taken into account, we must conclude that there almost certainly will be substantial increases in the requirements for new nurses if current levels of care (staffing levels per population age cohort) are to be maintained - the calculation of the likely magnitudes of which is beyond the scope of this paper. There are two major sets of strategies in response to expected increases in requirements (following a baseline of current shortages). The first is to reduce future requirements through a range of measures associated with job redesign and role extension. The second is to increase pre-registration and pre-enrolment course intakes and completions. (Improvements in the attractiveness of a career in nursing – in the working conditions, salaries and status of nurses – may improve retention and re-entry, but the magnitude is unlikely to be great, though such improvements can have a very positive impact on quality. However, such improvements in the attractiveness of nursing may substantially improve the number and quality of potential recruits to nurse education programs – discussed further below.)

Redesigning work and extending roles

Flexible work, more effective team work, and role extension have been discussed as beneficial to care and as possible responses to particular local and more widespread shortages in some professions.

There is a need to be clear about, and to differentiate, the *qualitative* improvements sought (better health promotion and prevention of illness, better care, better job satisfaction and career paths, and greater cost-effectiveness) from the *quantitative* effects on alleviating or exacerbating particular shortages in particular professions. An initiative judged beneficial in qualitative terms may be more or less feasible given quantitative workforce circumstances, and implementation may need to be adjusted or delayed given those circumstances. Any necessary changes in future numbers of new recruits to the respective professional workforces then need to be planned for. A change may be judged undesirable in qualitative terms, but may be seen as the best (or only) short term option in circumstances of shortage. Then sunset clauses might be appropriate.

Three sets of initiatives that have implications for macro level nurse workforce planning are discussed here.

First, and often commented on, is the extension of the roles or work settings of RNs so that they undertake some current duties of medical practitioners. This includes practice nurses working with general medical practitioners, and nurse practitioners. In 2005 there were around 60,000 medical practitioners (56,000 clinicians) (AIHW 2008b) and just under 200,000 employed registered nurses. While such extensions of roles and work locations may well be effective and efficient ways of providing quality health care, any significant substitution of RNs to alleviate shortages of medical practitioners are most likely to exacerbate shortages of RNs.

The second strategy is to extend the roles of enrolled nurses so that they may undertake duties currently undertaken by RNs. Again, there appear to be qualitative benefits. However, there has not been a sufficient increase in enrolled nurse numbers so that they can take on such expanded roles without exacerbating the existing shortages of enrolled nurses. Between 1994 and 2005 the number of enrolled nurses fell from 52,676 to 46,044 – from more than 23% to less than 19% of all employed nurses (see Table 3). The number of enrolled nurses becoming qualified has been almost doubled - from 3110 in 2003 to 5,950 in 2005 (NCVER unpublished data). However, around 10% (1,500 individuals) of commencing students in pre-registration nurse education courses in universities have enrolled nurse qualifications (CDNM 2008, p.7). That is, a number equivalent to around a quarter of enrolled nurse graduates are entering courses to prepare them to become registered nurses, and, if successful, will be lost to the enrolled nurse workforce. Thus, while role extensions for enrolled nurses and career paths into the registered nursing profession may be very beneficial on a number of grounds, they are not positive responses to overall nurse workforce shortages unless there are further significant expansions in intakes into VET programs for the preparation of enrolled nurses. Currently enrolled nurse training is between one and two years (full time equivalent), with a certificate IV, diploma or advanced diploma level qualification. Requirements and practice varies around the country, but there is current progress towards greater national uniformity, with movement from certificate IV programs where they operate to longer diploma programs. Any course lengthening will result in a reduced number of completions over a period unless intakes are substantially increased to compensate, thus further exacerbating shortages.

A third strategy for greater flexibility and role extension is increasing the number of individuals with multiple capabilities, and, in many cases, multiple professional qualifications, through completion of double degree programs. While not all students commencing double degree programs will take out both awards, we can assume that many will. More than one third (632 out of 14,989) students commencing pre-registration nursing and/or midwifery courses in 2007 were undertaking double degree programs. These double degree programs are in a wide range of fields

– of the students commencing double degree programs, around a sixth (117) are taking nursing and midwifery, and nearly as many in each of paramedic/emergency and nursing; psychology and nursing; and health management and nursing. There is also public health, rural health, human movement, arts, science, early childhood education, and commerce with nursing (or midwifery) (CDNM 2008, p. 2). While someone qualified to be both a nurse and an early childhood teacher, or a nurse and a psychologist, may be a more flexible and effective professional, especially in rural and remote locations and some other particular settings, they remain one individual, with only so many hours available for work in a day. They may become a full-time member of the non-nursing professional workforce for which they are also qualified, and thus be lost to the nursing workforce. Projections for future availability of graduates of such double degree programs will need to discount for the possibility of their entering those other professions, as well as qualitative workforce planning take account of their potential multiple capabilities.

In summary, redesigning work and extending roles may be valuable initiatives for improving the quality of care, efficiency of practice, and professional satisfaction and career development, but they appear to be no panacea for overcoming shortages in the short term.

Increasing pre-registration course intakes and completions

There are a number of potential limitations on the substantial expansion of pre-registration and pre-enrolment course intakes and completions. These vary among institutions and states and territories, and some will only become serious issues if there is substantial expansion in particular institutions or jurisdictions.

The potential limitations cover difficulties in the provision of a sufficient number of good quality new places, and the recruitment of a sufficient number of students with potential to become highly competent nurses and midwives.

The most significant difficulty in the provision a sufficient number of places is the difficulty in obtaining clinical places – for student ENs as well as student RNs and RMs. There are also current and possible future academic staff shortages in nurse education, and other limitations. Substantial increases in funding per student will be necessary for any substantial increase in the provision of quality clinical places across all settings and geographic locations. In addition, the quality as well as adequacy of places may be enhanced by changes in course structures, curriculum and pedagogy, greater collaboration between institutions and sectors, and other innovations. Nurse education is at a lower funding band than comparable higher education fields (such as science), and a reasonable increase in funding would make a great difference to the number and quality of places that can be provided in the future.

If sufficient places in high quality courses can be assured, it will still be necessary to fill those places with students with strong potential to become safe and effective professionals, performing to the highest standards. There has been concern for decades about the purported low academic achievement of some commencing students, and that too many students had a first preference for an unrelated course (and career). These matters can be dealt with in part within broader strategies to promote the conditions, attractiveness and status of the profession and its training. It is also important that debate on these matters does not become self-fulfilling by highlighting purported negatives in student nurses, nurse education and the nursing profession. The evidence is complex, and there are some positive indications of high demand from potential students of quality. Universities Australia (formerly the AVCC) has been carrying out analysis of data on

undergraduate applications, offers and acceptances for some years. DEEWR has recently taken over and expanded the work (DEEWR 2008). Undergraduate pre-registration nursing courses have for some years experienced higher levels of unmet demand than the average for all undergraduates – in 2008 nursing had an offer rate of 81.7%, while the rate for the Australian total was 84.7% (p. 57). This indicates there remains untapped potential even in such a large and expanding field as nurse education. However, not all offers are accepted. Data on qualified applicants, offers and acceptances indicates substantial variability between the states and territories, which can inform decisions about where strategies to improve demand from potential students should be directed.

Conclusion

The most important strategy for responding to current nurse workforce shortages and avoiding future shortages will continue to be to increase intakes and completions in university and VET pre-registration and pre-enrolment courses, at least for around eight to twelve years. This cannot be done effectively without adequate levels of funding, especially for clinical placements.

Appropriate, policy-directed, high quality research, which is updated periodically, is necessary to determine the magnitude of necessary increases, and how they should vary among jurisdictions, institutions and types of courses. Actual policy and practice then needs to be evidence-based, and take such work into account.

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