

## Nurse workforce futures

Development and application of a model of demand for and supply of graduates of Australian and New Zealand pre-registration nursing and midwifery courses to 2010

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## Summary

the full 144 page report can be found online at  
<http://www.cdnm.edu.au>

*Nurse workforce futures* has been prepared for the Council of Deans of Nursing and Midwifery (Australia and New Zealand) primarily to inform decisions about future numbers of graduates of pre-registration nursing and midwifery courses. The model developed in the report therefore presents in comparable form (a) projections of the number of graduates necessary to meet requirements according to specified assumptions about staffing levels, separation rates, migration and so on, which is DEMAND, and (b) projections of graduate numbers, derived from information from schools of nursing and others, which is SUPPLY.

There are separate 'standard' projections for Australia, New Zealand, and Australian states and territories. There are additional projections according to different scenarios. Some scenarios assume policy interventions such as improved staffing levels in those jurisdictions that have had low staffing levels and more severe shortages, or the successful implementation of strategies to increase retention of registered nurses and midwives at particular career stages. Other scenarios assume alternative external developments such as increases or decreases in migration of RNs<sup>1</sup>.

All important factors are taken into account in the model. This includes the ageing of the general population, for which a 'population age profile factor' is applied to each separate jurisdiction for each year to 2010. The estimations of net separation rates from the RN employed workforce are based on projected age profiles for the workforce in each jurisdiction in each year. The model also takes account of the reality that shortages accumulate from one year to the next to some extent. Net overseas migration of RNs is also incorporated in the model.

### **Australia - findings**

For Australia as a whole, an annual shortfall of 3,243 (1.6 per cent of the workforce) is projected to reduce to 470 by 2010. While the 2010 projected shortfall appears small, it is effectively more significant because the initial situation of shortage indicates that staffing levels would need improvement to ensure that RNs were not working excessive hours and vacancies were not left unfilled, and because a surplus of some magnitude is necessary for the matching and placement of RNs in particular positions. Improvements in staffing levels will increase projected shortages. For example, if the Australia-wide staffing level was progressively improved to that prevailing in South Australia in 2003, then the 2010 shortage number is projected to be around 7,900 (3.6 per cent of the RN workforce).

Some Australian jurisdictions are projected to have substantial shortages. In particular, Queensland is projected to have a 2010 shortfall of 1,461 (3.8 per cent of the workforce). Tasmania and Victoria are also projected to have substantial shortfalls.

If those states with initially low staffing levels are progressively improved to a level equivalent to that of Australia as a whole, then the Queensland projected shortage almost doubles (to 2,849, or seven per cent of the workforce), WA develops a significant shortfall, and NSW/ACT changes from a small projected surplus to projected shortfall.

The reductions in projected shortages across Australia are largely a consequence of significant projected increases in the number of graduates through the period, including graduates from the new places announced by the Australian government in 2006. The relative increase in graduate numbers is indicated by the increase in the 'training rate' (graduate numbers as a percentage of the workforce), which is projected to increase from 3.3 per cent in 2006 to 4.6 per cent in 2010.

Australia-wide, the 'underlying' DEMAND for graduates (that is, not accounting for the accumulating effect of shortages) is projected to increase by about four per cent a year to 2010.

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<sup>1</sup> In this report 'RN' includes midwives and others in the nursing profession (such as registered psychiatric nurses and mental health nurses) for whom the equivalent of a bachelors university degree is required for registration.

This is expected to continue through the subsequent decade because RN net separation rates and the effects of population ageing are expected to continue to increase each year, even though overall population growth is projected to slow.

### Projections outcomes, standard assumptions, Australian jurisdictions

	2006	2007	2008	2009	2010
<b>Australia</b>					
Surplus/shortage (number)	-3 243	-3 000	-2 316	-1 701	-470
Surplus/shortage as % of total RN workforce	-1.6%	-1.5%	-1.1%	-0.8%	-0.2%
SUPPLY as % of DEMAND	66.6%	71.0%	77.6%	83.3%	95.4%
Training rate	3.3%	3.7%	3.9%	4.1%	4.6%
<b>NSW &amp; ACT</b>					
Surplus/shortage (number)	-849	-599	-209	125	592
Surplus/shortage as % of total RN workforce	-1.3%	-0.9%	-0.3%	0.2%	0.8%
SUPPLY as % of DEMAND	69.3%	79.7%	92.6%	104.8%	122.6%
Training rate	2.8%	3.4%	3.7%	3.9%	4.5%
<b>Victoria</b>					
Surplus/shortage (number)	-1 202	-1 162	-1 100	-1 083	-938
Surplus/shortage as % of total RN workforce	-2.3%	-2.2%	-2.1%	-2.0%	-1.7%
SUPPLY as % of DEMAND	56.2%	61.4%	63.4%	64.6%	70.0%
Training rate	3.0%	3.5%	3.6%	3.7%	4.0%
<b>Queensland</b>					
Surplus/shortage (number)	-1211	-1425	-1458	-1528	-1461
Surplus/shortage as % of total RN workforce	-3.4%	-4.0%	-4.0%	-4.1%	-3.8%
SUPPLY as % of DEMAND	50.9%	49.2%	51.7%	51.2%	55.6%
Training rate	3.6%	3.8%	4.3%	4.3%	4.7%
<b>Western Australia</b>					
Surplus/shortage (number)	115	120	190	190	285
Surplus/shortage as % of total RN workforce	0.7%	0.7%	1.1%	1.1%	1.6%
SUPPLY as % of DEMAND	122.0%	122.9%	134.5%	132.4%	146.0%
Training rate	3.8%	3.7%	4.2%	4.3%	4.9%
<b>South Australia</b>					
Surplus/shortage (number)	140	212	226	261	248
Surplus/shortage as % of total RN workforce	0.8%	1.2%	1.3%	1.5%	1.4%
SUPPLY as % of DEMAND	122.1%	134.6%	135.7%	139.3%	135.4%
Training rate	4.5%	4.8%	5.0%	5.3%	5.4%
<b>Tasmania</b>					
Surplus/shortage (number)	-144	-162	-182	-208	-154
Surplus/shortage as % of total RN workforce	-2.6%	-2.9%	-3.2%	-3.6%	-2.7%
SUPPLY as % of DEMAND	60.1%	58.1%	55.3%	52.0%	66.8%
Training rate	3.9%	4.0%	4.0%	3.9%	5.3%

**Projections outcomes, staffing levels progressively increased to Australia-wide equivalent, selected Australian jurisdictions**

	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b>NSW &amp; ACT</b>					
Surplus/shortage (number)	-1 024	-928	-675	-465	-12
Surplus/shortage as % of total RN workforce	-1.5%	-1.3%	-1.0%	-0.7%	0.0%
SUPPLY as % of DEMAND	65.1%	71.7%	79.4%	85.6%	99.6%
<b>Queensland</b>					
Surplus/shortage (number)	-1 558	-2 075	-2 382	-2 696	-2 849
Surplus/shortage as % of total RN workforce	-4.4%	-5.7%	-6.3%	-6.9%	-7.0%
SUPPLY as % of DEMAND	44.6%	39.9%	39.5%	37.3%	39.1%
<b>Western Australia</b>					
Surplus/shortage (number)	-186	-329	-384	-431	-377
Surplus/shortage as % of total RN workforce	-1.1%	-1.8%	-2.1%	-2.2%	-1.9%
SUPPLY as % of DEMAND	77.4%	66.2%	65.9%	64.3%	70.6%

**New Zealand - findings**

For New Zealand, shortfalls are projected to remain fairly constant through the period at less than one per cent of the workforce, with an increase in the projected shortfall after an initial improvement. This is reflected in the training rate, which initially improves, then falls back, but changes little over the period overall.

The level of RN staffing in New Zealand is low, and if it is progressively improved to a level equivalent to the Australian average, then the shortage is projected to become very severe by 2010 – 2,296 or 5.7 per cent of the RN workforce.

New Zealand underlying DEMAND is projected to increase by just under four per cent a year to 2010, and, like that of Australia, is expected to continue at a similar annual rate through the following decade.

**Projections outcomes, New Zealand**

	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b>New Zealand, standard assumptions</b>					
Surplus/shortage (number)	-269	-187	-98	-102	-137
Surplus/shortage as % of total RN workforce	-0.8%	-0.5%	-0.3%	-0.3%	-0.4%
SUPPLY as % of DEMAND	83.2%	87.8%	93.6%	93.3%	91.3%
Training rate	3.8%	3.8%	3.9%	3.9%	3.8%
<b>New Zealand, staffing level progressively increased to Australia-wide equivalent</b>					
Surplus/shortage (number)	-816	-1 207	-1 535	-1 918	-2 296
Surplus/shortage as % of total RN workforce	-2.3%	-3.3%	-4.0%	-4.9%	-5.7%
SUPPLY as % of DEMAND	<b>62.1%</b>	<b>52.7%</b>	<b>48.2%</b>	<b>42.8%</b>	<b>38.4%</b>