

APPENDIX B

Methodology

Timing of the 2002 Survey

Information from the 2002 Annual Nursing Workforce Survey relates to the 2002 registration and enrolment renewal period. Renewal notices and surveys were forwarded to all nurses on the Register and Roll of the Nurses Registration Board of New South Wales during the 2002 calendar year, in twelve monthly instalments. The renewal fee was due by the end of the month in which the renewal notice was sent, in order for the nursing practitioner to be retained on the Register or Roll. Survey respondents completed the survey with information about their usual working situation at that time (see Appendix 1).

Information regarding the registration and enrolment status of nurses during 2002 was provided by the Nurses Registration Board of New South Wales. The data on sex and year of birth were also provided by the Board to eliminate the need to collect this information annually on the survey.

Survey coverage

Information from the nursing work force survey does not cover all registered and enrolled nurses in NSW. Only those registrants renewing their registration are forwarded a survey. This excludes:

- **New registrants:** New registrants include new local graduates, interstate graduates and overseas trained nurses registering and enrolling for the first time with the Nurses Registration Board of New South Wales. New registrants do not normally receive the survey form until they renew their registration in the following financial year.
- **Restorations:** Restorations are persons who have been restored to the register after a period in which they were not financial. These persons will not normally receive the annual survey until they renew their registration in the following financial year.

The following groups are included in the scope of the survey population as well as renewals:

- **Technical restorations:** Technical restorations are nurses who are restorations simply due to late payment, as they are removed from the Register or Roll and then reinstated on receipt of the payment of the renewal fee. These nurses have usually completed a survey form, and therefore if they have provided survey data they have been included in the data analysis for this profile.
- **Technical renewals:** There are a group of nurses who either pay their registration fee early (say in December for January renewals in the year of the survey), or who pay in advance and earn a credit as they will not be able to make their payment at the usual time. If these nurses were sent a survey form in the year of renewal and are still financial in that year they have now been included in the survey population, and their returned survey forms included as respondents. This group has now been defined as **technical renewals, even though no transaction may have been recorded for the year of the survey**. The inclusion of these nurses (3,127 registered nurses, and 369 enrolled nurses) has increased the population count and the number of respondents and they are shown in Tables 1.1a and 1.1b as "Technical renewals". This process has occurred for 2000, 2001 and 2002.

For compatibility with other profiles prepared for health workforce groups registered in NSW, the definition of response is those respondents who completed the question on workforce status. In addition, it has been identified that a number of nurses have not completed the question on workforce status, but have completed the majority of the remainder of the survey form including the provision of a New South Wales postcode for work location, as well as other data such as hours worked. It was therefore decided for data completeness, to include both of those categories in the definition of respondents, as a workforce status could be derived and it was known that they were working in New South Wales.

The adoption of these changes in the approach to survey coverage, and definition of respondents, means that the data is compatible with definitions of the workforce used by the Australian Institute of Health & Welfare in preparing national profiles. However the minor variation in the definition of the survey population and respondents means that the survey population has increased in size for 2000 and 2002. This is analysed in detail in the Sections on "Response Rate to Workforce Survey", and "Estimating Workforce Size".

This profile also adds additional data analysis by including a section on the nursing workforce, where registered nurses and enrolled nurses are added together to show characteristics of the total group of nurses formally recognised to practice nursing.

Figures have not been adjusted for non-response

Data in this publication have not been adjusted for unknown information, apart from the question on workforce status, where sufficient information was available to determine workforce status. When interpreting the individual tables, consideration should be given to the impact of unknown data:

- The absence of data due to non-response results in an under-representation of the size of the workforce in individual tables.
- The workforce characteristics of non-respondents may differ from the characteristics of survey respondents (for example, respondents may be more likely than non-respondents to be in the workforce). Weighting the survey data according to non-response alone may result in an over-estimation or under-estimation in some categories.
- Respondents who do not have a readily identifiable coding option for a particular question (eg specialty) may be less prepared to code "other".
- The characteristics of nurses who are not part of the survey target group (that is, new registrants and restorations) may differ from the characteristics of the survey population.

Calculating total unknown data for the survey

In determining the total unknown data for a particular question, consideration should be given to:

- **Unknown data for the question or questions comprising the table**, as indicated at the foot of each table. This may also include information that is unknown due to registration data (eg, year of birth) being unavailable from the Board.
- **Non-response to any filtering questions.** Data on second job will be affected by the lack of the explicit question "Do you have a 2nd job?" The number of persons with second jobs can be estimated from the highest response to any one question (*Table 4.30: n=5,403 for registered nurses, and Table 5.30: n=880 for enrolled nurses*).
- **Non-response to the survey.** Survey response rates are presented in Tables 1.2a and 1.2b.

It should be noted that limitations in the survey data prevent a distinction between non-response and alternatives such as "no", "other" or "zero". Information regarding this is noted at the foot of the relevant tables.

Conventions used in this publication

Throughout this publication, figures within the tables may not add to the total shown where it has been necessary to round numbers. Percentages printed as 0.0 may denote less than 0.05%.

Italics are used to report unknown data.

0 is used for zero

Bold is used to indicate a total or subtotal.

— denotes not applicable.

n/a denotes data is not available.

The location of home and work for registered and enrolled nurses has been analysed by Area Health Service for nurses working in both the public and private sectors. The NSW Health Department sets the boundaries of each Area Health Service by postcode, and this approach has been used in the analysis. A

map of each Area Health Service is included in Appendix 2. There is no intent to imply that nurses working in the private sector are employed by Area Health Services, and the approach is used for comparative purposes only.

Category of Nurse Registration and Enrolment

In 2002, there were 78,130 registered nurses on the Register of the Nurses Registration Board of NSW, a growth of 1,624 registrations, or 2.1% from the 76,506 registrants in 2001. Of the registered nurses, 70,849 (90.7%) were female, 7,268 (9.3%) were male and there were thirteen respondents with sex unknown. Table 1.1a provides an overview of the number of nurses in each category of registration.

Table 1.1a: Persons Registered as Nurses in NSW, 2002

Category of registration	Female		Male		Total	
	No.	%	No.	%	No.	%
New registrants	3152	88.4%	413	11.6%	3,565	100.0%
Restorations	7262	87.7%	1023	12.3%	8,285	100.0%
"True" restorations	4197	86.6%	649	13.4%	4,846	100.0%
"Technical" restorations	3065	89.1%	374	10.9%	3,439	100.0%
Renewals	57,307	91.3%	5,450	8.7%	62,757	100.0%
Technical renewals	2,777	88.9%	347	11.1%	3,124	100.0%
Deletions	4689	90.2%	508	9.8%	5,197	100.0%

Notes:

- 1 The table includes information on registered nurses who were financial with the Board during 2002.
- 2 Some nurses may be included in more than one category during the twelve month period.
- 3 There were 13 financial nurses with no sex recorded (2 new registrations, 9 renewals and technical renewals, 2 technical restorations), and these records are excluded from tables reporting sex.

The table above separates restorations into the two categories of:

- "True" restorations: those nurses who were genuinely restoring to the register after being unfinancial for a period of time (and therefore did not receive a survey form);
- "Technical" restorations: those nurses who did not renew their registration in time, and therefore were removed from the register for a short period of time until payment was received.

In addition, the category of technical renewals shown above includes the nurses who were financial but had no transaction status in 2002 as described in the Section on survey coverage on p.2.

In 2002, there were 16,076 financial enrolled nurses on the Roll of the Nurses Registration Board of NSW, a decline of 17 enrolled nurses or 0.1% from the 16,093 enrolled nurses financial in 2001. Of the enrolled nurses, 14,727 (91.6%) were female, and 1,347 (8.4%) were male. Table 1.1b below provides an overview of the number of enrolled nurses in each category of registration.

Table 1.1b: Persons Enrolled as Nurses in NSW, 2002

Category of registration	No.		%		No.		%	
	Female	Male	Female	Male	Total	Total	Total	Total
New registrants	673	125	84.3%	15.7%	798	798	100.0%	100.0%
Restorations	2,013	222	90.1%	9.9%	2,235	2,235	100.0%	100.0%
"True" restorations	1,188	154	88.5%	11.5%	1,342	1,342	100.0%	100.0%
"Technical" restorations	825	68	92.4%	7.6%	893	893	100.0%	100.0%
Renewals	11,612	950	92.4%	7.6%	12,562	12,562	100.0%	100.0%
Technical renewals	332	37	90.0%	10.0%	369	369	100.0%	100.0%
Deletions	1,475	173	89.5%	10.5%	1,648	1,648	100.0%	100.0%

Notes:

- 1 The table includes information on enrolled nurses who were financial with the Board during 2002.
- 2 Some enrolled nurses may be included in more than one category during the twelve month period.
- 3 There were two financial enrolled nurses with no sex recorded who were renewals and these records are excluded from tables in this section reporting sex

Response rate to Workforce Annual Survey

The response rate to the 2002 Nursing Workforce Annual Survey for registered nurses was 83.6%. The 2001 response rate was 82.4%. Between 2000 and 2002 the number of total renewals increased by 389 or 0.6%, principally due to an increase in technical renewals and renewals. In addition, there was a decrease in the number of unusable survey forms, while there was a large number of forms not returned, similar to 2001.

Table 1.2a: Response Rate to Registered Nurse Annual Workforce Survey, 2000 - 2002

	No.		Rate		No.		Rate	
	2000	2001	2000	2001	2002	2002	2002	
Formal response rate								
<i>Survey respondents</i> ¹	60,723	55,812			57,972			
<i>Total renewals</i> ²	68,941	67,718	88.1%	82.4%	69,331	83.6%		
<i>Unusable survey forms</i>	3,827	2,426			1,646			
<i>No form returned</i>	4,391	9,483			9,713			

Notes:

- 1 A "survey respondent" is a renewal as defined below who provides information to the question on work status, or whose work status can be derived from other data.
- 2 A renewal is defined to include a person who paid their registration fee on time, who was a renewal but was late in paying the renewal fee, and was therefore de-registered and then restored (ie technical restoration), or who was sent a survey form and returned a form or was still financial at the end of the relevant year while

The response rate to the 2002 Nursing Workforce Annual Survey for enrolled nurses was 86.3%, lower than the response rate of 86.7% in 2001. As shown below, the survey population defined as "total renewals" decreased slightly from 13,850 in 2001 to 13,826 in 2002. The number of unusable survey forms decreased between 2001 and 2002, while the number of forms not returned continued to increase, although at a much lower rate than between 2000 and 2001.

Table 1.2b: Response Rate to Enrolled Nurse Annual Workforce Survey, 2000 - 2002

	No.	Rate	No.	Rate	No.	Rate
	2000		2001		2001	
Formal response rate						
<i>Survey respondents</i> ¹	12,435		12,013		11,938	
<i>Total renewals</i> ²	13,832	89.9%	13,850	86.7%	13,826	86.3%
<i>Unusable survey form</i>	900		504		464	
<i>No form returned</i>	497		1,334		1,424	

- Notes:**
- 1 A "survey respondent" is a renewal as defined below who provides information to the question on work status, or whose work status can be derived from other data.
 - 2 A renewal is defined to include a person who paid their registration fee on time, who was a renewal but was late in paying the renewal fee, and was therefore de-registered and then restored (ie technical restoration), or who was sent a survey form and returned a form or was still financial at the end of the relevant year while having no financial status (technical renewal).

Work Status

There were 44,504 working renewal registered nurse survey respondents in 2002, an increase of 1,344 respondents or 3.1% over the figure of 43,160 in 2001. This increase is partly due to the increase in response rate, but also represents an increase in the number of working registered nurses after adjusting for non response (see Section on estimating workforce size).

Working renewals are those respondents who:

- Were financially registered or enrolled and defined as a renewal (see Tables 1.2a & 1.2b)
- Returned a labourforce survey indicating their work status or provided sufficient data for a status of working in NSW to be derived; and
- Indicated that their work status was one of the following three categories:
 - Working in nursing only in NSW
 - Working in nursing mainly in NSW, but also in other states
 - Working in nursing in NSW, but on extended leave (see Table 1.3a)

There were 9,237 working renewal enrolled nurse survey respondents in 2002 (see Table 1.3b), a decline of 168 respondents over the figure of 9,405 in 2001. This decline is partly due to the small decline in response rate, but also appears to indicate a decline in the number of working enrolled nurses (see Section on estimating workforce size).

Table 1.3a: Work status of Registered Nurse Workforce Survey respondents¹, NSW, in 2002

Work Status	No.	%	No.	%	No.	%	No.	%	%
	Unknown sex		Female		Male		Total		Female
Working in nursing									
Only in NSW	4	66.7%	39932	75.0%	3539	75.2%	43475	75.0%	91.9%
Mainly in NSW, but also in other states	0	0.0%	393	0.7%	74	1.6%	467	0.8%	84.2%
Mainly in other states, but also in NSW	0	0.0%	406	0.8%	59	1.3%	465	0.8%	87.3%
Only in states other than NSW	0	0.0%	1885	3.5%	184	3.9%	2069	3.6%	91.1%
Working overseas	2	33.3%	1382	2.6%	187	4.0%	1571	2.7%	88.1%
Working in NSW but currently on leave	0	0.0%	552	1.0%	10	0.2%	562	1.0%	98.2%
Not Working in/ practicing in nursing									
Currently not working	0	0.0%	4648	8.7%	154	3.3%	4802	8.3%	96.8%
Currently working, not in nursing	0	0.0%	4059	7.6%	502	10.7%	4561	7.9%	89.0%
Total	6	100.0%	53,257	100.0%	4,709	100.0%	57,972	100.0%	91.9%

Notes: 1. There were 59,618 forms from registered nurses renewing their registration, of whom 1,646 did not reply to the question on working status, and did not provide a NSW postcode for place of work. (see Note 1 to Table 1.2a)

Table 1.3b: Work status of Enrolled Nurse Workforce Survey respondents¹, NSW, in 2002

Work Status	No.	%	No.	%	No.	%	No.	%	%
	Unknown sex		Female		Male		Total		Female
Working in nursing									
Only in NSW	115	68.9%	8366	76.3%	616	76.9%	9,097	76.2%	93.1%
Mainly in NSW, but also in other states	1	0.6%	70	0.6%	7	0.9%	78	0.7%	90.9%
Mainly in other states, but also in NSW	1	0.6%	55	0.5%	5	0.6%	61	0.5%	91.7%
Only in states other than NSW	5	3.0%	314	2.9%	25	3.1%	344	2.9%	92.6%
Working overseas	2	1.2%	29	0.3%	6	0.7%	37	0.3%	82.9%
Working in NSW but currently on leave	0	0.0%	61	0.6%	1	0.1%	62	0.5%	98.4%
Not Working in/ practicing in nursing									
Currently not working	20	12.0%	985	9.0%	29	3.6%	1,034	8.7%	97.1%
Currently working, not in nursing	23	13.8%	1090	9.9%	112	14.0%	1,225	10.3%	90.7%
Total	167	100.0%	10,970	100.0%	801	100.0%	11,938	100.0%	93.2%

Notes: 1. There were 12,402 forms from enrolled nurses renewing their enrollment, of whom 464 did not reply to the question on working status, and did not provide a NSW postcode for place of work. (see Note 1 to Table 1.2b)

Nurses seeking work

Table 1.4a: Registered nurses seeking work in nursing in NSW, 2002

Nature of work sought	No.		%		No.		%		No.		%	
	Female		Male		Total		Female					
Not looking for work in nursing	6,659	84.2%	516	85.1%	7,175	84.3%						
Looking for work in nursing:												
- full time	111	1.4%	22	3.6%	133	1.6%					83.5%	
- part time	476	6.0%	20	3.3%	496	5.8%					96.0%	
- casual work	517	6.5%	33	5.4%	550	6.5%					94.0%	
- any type of work	147	1.9%	15	2.5%	162	1.9%					90.7%	
Total	7,910	100.0%	606	100.0%	8,516	100.0%					92.9%	
<i>non response/unknown</i>	797	9.2%	50	7.6%	847	9.0%						

Note: Table includes only those survey respondents in Table 1.3a who indicated that they were not currently working or currently working but not in nursing (n=9,363)

Table 1.4a shows that of those registered nurses currently not working, and those working but not in nursing, 15.7% were looking for work in nursing. The majority were either seeking part time or casual work. There is a larger proportion of enrolled nurses looking for work, with 21.6% in that category (see Table 1.4b).

Table 1.4b: Enrolled nurses seeking work in nursing in NSW, 2002

Nature of work sought	No.		%		No.		%		No.		%	
	Unknown sex		Female		Male		Total		Female			
Not looking for work in nursing	33	76.7%	1,473	78.8%	93	73.2%	1,599	78.4%				94.1%
Looking for work in nursing:												
- full time	0	0.0%	46	2.5%	4	3.1%	50	2.5%				92.0%
- part time	6	14.0%	127	6.8%	6	4.7%	139	6.8%				95.5%
- casual work	3	7.0%	154	8.2%	17	13.4%	174	8.5%				90.1%
- any type of work	1	2.3%	70	3.7%	7	5.5%	78	3.8%				90.9%
Total	43	100.0%	1,870	100.0%	127	100.0%	2,040	100.0%				93.6%
<i>non response/unknown</i>	0	0.0%	205	9.9%	14	9.9%	219	9.7%				

Note: Table includes only those survey respondents in Table 1.3b who indicated that they were not currently working or currently working but not in nursing (n=2,259)

Estimating Workforce Size

The 1999 Profile of the Medical Workforce in NSW (NSW Health Department, 2002) estimated the size of the medical workforce in New South Wales, using the following approach, and this is applied to the nursing data:

- Assume the proportion of survey respondents working in NSW represents the proportion of all renewals working in NSW (76.8% for registered nurses in 2002)
- Assume 90% of new registrants are working in NSW
- Assume 80% of other registrants are working in NSW (excluding deletions)

Table 1.5a: Estimating the Size of the Registered Nurse Workforce, 2000 - 2002

	<u>No.</u> <u>2000</u>	<u>No.</u> <u>2001</u>	<u>No.</u> <u>2002</u>
Size of Workforce (Unadjusted) ¹	47,301	43,160	44,504
Total respondents to work status	60,723	55,812	57,972
% working	77.9%	77.3%	76.8%
No. of renewals ²	68,941	67,718	69,331
1) estimated workforce from renewals	53,703	52,367	53,224
No. of new registrants	3,036	3,398	3,565
2) estimated workforce from new reg. (90%)	2,732	3,058	3,209
No. of restorations ³	3,605	4,840	4,846
3) estimated workforce from restorations (80%)	2,884	3,872	3,877
Total Estimated Workforce (1+2+3)	59,319	59,297	60,309

- Notes:**
- 1 The size of the workforce is based on respondents classified as renewals, technical restorations and technical renewals who answered the work status question as defined in the Section on work status
 - 2 The number of renewals includes renewals, technical restorations and technical renewals
 - 3 The number of restorations includes only true restorations as shown in Table 1.1a above
 - 4 The estimates of workforce participation for new registrants and restorations are indicative only as data on workforce status is not available until the following year

The registered nurse workforce is estimated to have grown from 59,319 in 2000 to 60,309 in 2002, a growth of 990 nurses or 1.7%. All of this growth is estimated to have occurred between 2001 and 2002, as the workforce size was virtually the same in 2000 and 2001.

Table 1.5b: Estimating the Size of the Enrolled Nurse Workforce, 2000 - 2002

	No.	No.	No.
	2000	2001	2002
Size of Workforce (Unadjusted) ¹	9,734	9,405	9,237
Total respondents to work status	12,435	12,013	11,938
% working	78.3%	78.3%	77.4%
No. of renewals ²	13,832	13,851	13,826
1) estimated workforce from renewals	10,828	10,844	10,698
No. of new registrants	707	827	798
2) estimated workforce from new reg. (90%)	636	744	718
No. of restorations ³	1,194	1,404	1,342
3) estimated workforce from restorations (80%)	955	1,123	1,074
Total Estimated Workforce (1+2+3)	12,419	12,711	12,490

- Notes:**
- 1 The size of the workforce is based on respondents classified as renewals, technical restorations and technical renewals who answered the work status question as defined in the Section on work status
 - 2 The number of renewals includes renewals, technical restorations and technical renewals
 - 3 The number of restorations includes only true restorations as shown in Table 1.1a above
 - 4 The estimates of workforce participation for new registrants and restorations are indicative only as data on workforce status is not available until the following year

The enrolled nurse workforce is estimated to have grown from 12,419 in 2000 to 12,490 in 2002, a growth of 31 enrolled nurses or 0.3%. The majority of this growth occurred between 2000 and 2001, and there was a decline in the estimated workforce between 2001 and 2002 of 221 enrolled nurses, or 1.7%.