

Summary of the Pharmacy Labourforce in NSW, 2005

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Introduction

Each year, as part of the annual registration process for pharmacists in NSW, an Annual Workforce Survey is sent to each pharmacist currently registered with the Pharmacy Board of New South Wales. This report provides an overview of information from the 2005 workforce survey.

The response rate to the survey decreased from previous years, from 85.4% in 2004 to 67.6% in 2005. The continued support of the Pharmacy Board of New South Wales, professional organisations and pharmacists participating in the survey is appreciated.

Availability of survey information

The most recent summary of the Annual Survey data was produced in 2005, entitled "Summary of the Pharmacist Workforce in NSW, 2004". Additional survey analysis data such as additional cross tabulations can be obtained by forwarding a written request to the contact address in the front of the publication. Contact should be made to clarify the information required and to determine if a fee may apply. A charging policy is available on request.

Strict procedures are followed to ensure the privacy of individual pharmacists who respond to the Survey. There is no access to identifying data, as individual names and addresses are not included by the Board on the data file. Survey information will not be made available in any format that enables the identification of individual respondents.

Category of Pharmacist Registration

In 2005, there were 7,817 pharmacists financially registered with the Pharmacy Board of NSW, an increase of 188 pharmacists from the 7,629 pharmacists registered in 2004. Of these, 4,054 (52.1%) were female and 3,721 (47.9%) were male. Table 1.1 provides an overview of the number of pharmacists in each category of registration.

Table 1.1: Persons registered as pharmacists in NSW, 2005

Category of registration ₁	No.	Row %	No.	Row %	No.	Row %	No.	Row %
	Unknown sex		Female		Male		Total	
New registrations(total)	6	1.4%	251	58.1%	175	40.5%	432	100.0%
Restorations	0	0.0%	0	0.0%	2	100.0%	2	0.0%
"True" restorations	0	0.0%	0	0.0%	2	100.0%	2	0.0%
"Technical" restorations	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Renewals ₂	30	0.4%	3,583	51.3%	3,368	48.2%	6,981	100.0%
Technical renewals	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Deletions	2	0.7%	131	45.0%	158	54.3%	291	100.0%
New registrations (total) ₂	6	1.4%	251	58.1%	175	40.5%	432	100.0%

- Notes:**
- 1 The table includes information on pharmacists who were financial with the Board during 2005
 - 2 Some pharmacists are included in more than one category during the twelve month period. There were 432 new registrations in total, but some may be renewals within the survey period. This group could not be separately identified due to the format of the Board data in 2005.
 - 3 There were no technical renewals due to the method of extraction of the Board data

Response rate to Labour Force Annual Survey

The response rate to the 2005 Pharmacist Labour Force Annual Survey was 67.6%, a lower response rate than for previous years.

Table 1.2: Response Rate to Pharmacist Annual Workforce Survey, 2002 - 2005

	No.	Rate	No.	Rate	No.	Rate	No.	Rate
	2002		2003		2004		2005	
Formal response rate								
<i>Survey respondents</i> ¹ who were <i>renewals</i> ²	5,464		5,769		6,203		4,721	
Total <i>renewals</i> ²	6,739	81.1%	7,054	81.8%	7,267	85.4%	6,981	67.6%

- Notes:**
1. A "survey respondent" is defined as a renewal who provides information to the question on working status. There were 1,084 survey forms with no data on workforce status and workforce status could not be determined. 1,176 pharmacists did not return any survey form.
 2. "Renewal" is defined as a person recorded as renewing their registration although other actions may also have been recorded (technical restoration, new registration, technical renewal).

Determining the response rate to the survey is complicated by the relationship between the survey and the renewal process. While new registrants and restorations do not generally receive the survey, some may if they also receive a renewal notice within the twelve month survey period. Additionally, some persons sent renewal notices do not renew their registration and therefore do not return surveys. All survey responses from financially registered pharmacists are presented in Tables 1.3 and 1.4.

Work Status

There were 4,721 pharmacists who provided data on workforce status, with 3,565 working renewal survey respondents in 2005. Working renewals are those respondents who:

- Were financially registered and renewed their registration in 2004
- Returned a workforce survey indicating their work status; and
- Indicated that their work status was one of the following three categories:
 - Working in pharmacy only in NSW
 - Working in pharmacy mainly in NSW, but also in other states
 - Working in pharmacy in NSW, but on currently on leave (see Table 1.3)

Table 1.3: Work status of Pharmacist Workforce Survey respondents¹, NSW, in 2005

Work Status	No.	%	No.	%	No.	%	No.	%	%
	Unknown sex		Female		Male		Total		Female
Working in pharmacy									
Only in NSW	54	73.0%	1808	75.7%	1633	72.3%	3495	74.0%	51.7%
Mainly in other states, but also in NSW	1	1.4%	21	0.9%	55	2.4%	77	1.6%	27.3%
Mainly in NSW, but also in other states	0	0.0%	15	0.6%	24	1.1%	39	0.8%	38.5%
Only in states other than NSW	7	9.5%	101	4.2%	147	6.5%	255	5.4%	39.6%
Working in NSW but currently on leave	0	0.0%	26	1.1%	5	0.2%	31	0.7%	83.9%
Working overseas	1	1.4%	72	3.0%	56	2.5%	129	2.7%	55.8%
Not Working in/ practicing in pharmacy									
Currently not working	8	10.8%	207	8.7%	218	9.6%	433	9.2%	47.8%
Currently working, not in pharmacy	3	4.1%	137	5.7%	122	5.4%	262	5.5%	52.3%
Total	74	100.0%	2,387	100.0%	2,260	100.0%	4,721	100.0%	50.6%
Working in NSW	54		1,849		1,662		3,565		

- Notes:**
1. There were 5,805 forms from pharmacists renewing their registration, of whom 1,084 did not reply to the question on work status and a work status could not be derived.
 2. There were 74 valid respondents whose survey forms could not be matched to the Board data.

The workforce participation rate was 75.5% in total, 73.5% for males and 77.5% for females (based on respondent data).

Pharmacists seeking work

Table 1.4: Seeking Work in Pharmacy in NSW, 2005

Nature of work sought	No.	%	No.	%	No.	%	No.	%	%
	Unknown sex		Female		Male		Total		Female
Not looking for work in pharmacy	9	81.8%	284	82.6%	331	97.4%	624	89.8%	45.5%
Looking for work in pharmacy:									
- either full time or part time	1	9.1%	7	2.0%	1	0.3%	9	1.3%	77.8%
- full time	0	0.0%	5	1.5%	4	1.2%	9	1.3%	55.6%
- part time	1	9.1%	36	10.5%	3	0.9%	40	5.8%	90.0%
- not specified	0	0.0%	12	3.5%	1	0.3%	13	1.9%	92.3%
Total	11	100.0%	344	100.0%	340	100.0%	695	100.0%	49.5%

Note: Table includes only those survey respondents in Table 1.3 who indicated that they were not currently working or currently working but not in pharmacy (n=695).

Only 10.2% of those not currently working or working but not in pharmacy indicated that they were seeking work in pharmacy. They were principally looking for part time work, and were much more likely to be female than male.

Estimating Workforce Size

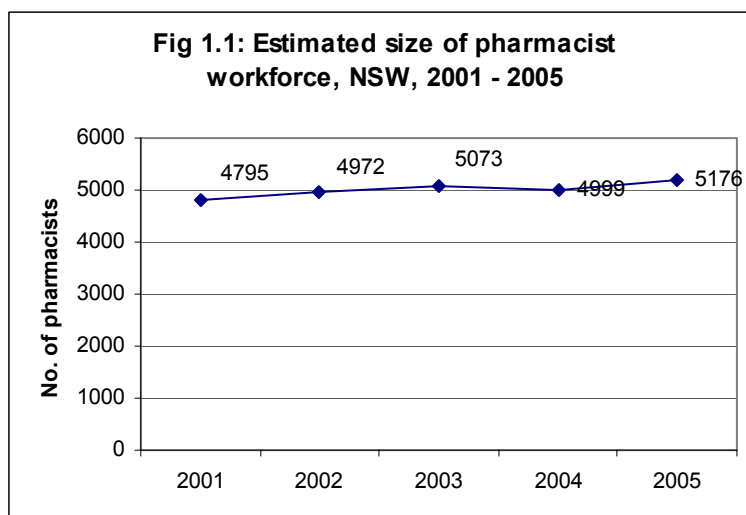
The method of estimating workforce size has been changed from the previous method as the earlier method was based on assumptions developed for estimating the size of the medical workforce. The analysis of flows data, allowing for the calculation of the entry and wastage rates by category of registration allows for a more detailed analysis of participation rates and therefore workforce estimates. The table below shows the revised method of estimation.

NOTE: The figures in Table 1.5 vary from estimates of workforce size documented in previous pharmacist workforce profiles due to a new method of calculating workforce size. The method is described in detail in the Appendix, Section on Estimating Workforce Size. The estimates have been modified in this 2005 profile after analysis of response rates, flow matrix data including work status of new registrations and restorations, and the 2005 estimate may be modified after inclusion of 2005/06 flow matrix data.

Table 1.5: Estimating the Size of the Pharmacist Workforce, 2002-2005

	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
Size of Workforce (excludes any new registrations) ¹	4,125	4,200	4,370	4,231
Adjustment for varying non response rate by year	196	186	0	124
Adjustment for non response based on Census data	418	439	414	537
Estimated working renewals	4,739	4,825	4,784	4,892
Adjusted respondents	5,950	6,211	6,411	6,294
(excludes any new registrations) ²				
Estimated % respondents working	79.6%	77.7%	74.6%	77.7%
Estimated new registrations working ³	221	244	214	283
Estimated restorations working ⁴	12	4	1	1
Total Estimated Workforce	4,972	5,073	4,999	5,176
Total number of new registrations	284	345	338	432
Estimated % new registrations working	77.8%	70.7%	63.3%	65.5%
No. of renewals (excluding new registrations)	6,583	6,871	7,063	6,830
Estimated working renewals as % of renewals excluding new registrations	72.0%	70.2%	67.7%	71.6%

- Notes:**
- 1 The unadjusted size of the workforce is based on renewals, technical restorations and technical renewals who answered the work status question as working in NSW. This is the workforce size excluding any new registrations unadjusted for non response.
 - 2 The respondent numbers have been adjusted to allow for changing non response rates and are set to 84.9% (2004 response rate). A further adjustment has been made based on using the workforce size from the 2001 Census to set the 2001 workforce size.
 - 3 Based on flow matrix analyses showing work status in two consecutive years
 - 4 Based on flow matrix analyses showing work status in two consecutive years



Using the new method of estimating workforce size, the workforce has been estimated at 4,795 pharmacists working in New South Wales in 2001, based on data from the ABS Census. The pharmacist workforce is estimated to grow between 2001 to 2003 by 5.8%, but reduces between 2003 and 2004 by an estimated 1.5%. There is then an estimated increase of 177 working pharmacists or 3.5% to 2005 levels. This is an increase of 204 or 4.1% between 2002 and 2005.

Estimating Full-Time Equivalent Workforce (FTE)

The numbers of hours worked by pharmacists on average per week for all jobs together can be converted to full-time equivalents (FTEs) which becomes a measure of the productive workforce. The total hours worked by pharmacists for those pharmacists reporting hours (n= 4,453) are divided by 35 to calculate the FTE workforce. Thirty five hours is used as the measure of full time work based on labour force definitions developed by the Australian Bureau of Statistics.

A ratio of FTEs to the total headcount workforce is then calculated, to determine the relative productivity of the workforce, and is calculated as 1.092 based on the 2005 data. This indicates that pharmacists are 9.2% more productive on average than the workforce equivalent (based on 35 hours per week). The FTE ratio of 1.092 applied to the estimated workforce size of 5,176 headcount results in an estimated FTE workforce of 5,652.2 FTE pharmacists, after adjusting for non response (based on full time being defined as 35 hours worked per week or more).

Table 1.6: Workforce dynamics for pharmacists, 2005

Professional pharmacists	Estimated workforce size, 2005	New registrations entering the workforce	Re-entry	Wastage	FTE ratio (based on 35 hours)
Workforce headcount	5,176	283	124	228	1.092
Percentage of workforce		5.5%	2.4%	4.4%	

SOURCE: flow matrix change rates from pharmacist labour force profile data, 2002 to 2005

NOTE: The actual participation rate of 2005 new registrations can only be calculated by category when the 2006 work status of new registrants is known.

The above table indicates that the net growth in the workforce should be 3.5%, based on the addition of new registrations and re-entrants entering the workforce, and the subtraction of wastage. This is the same as the estimated net change rate of 3.5% based on the new method of calculating workforce size.

Methodology

Timing of the 2005 Survey

Information from the 2005 Annual Workforce Survey relates to the 2005 registration renewal period. Renewal notices and surveys were forwarded in October 2005 to pharmacists registered with the Pharmacy Registration Board of New South Wales at that time. The renewal fee was due by the end of December in order for the pharmacist to be retained on the register, as non-financial pharmacists had their status altered by Board consent in mid January. Survey respondents completed the survey with information about their usual working situation at that time. Information regarding the registration status of pharmacists was provided by the Board which related to the period for 2005.

Labour force Survey coverage

Information from the Annual Workforce Survey does not cover all registered pharmacists in NSW. Only those registrants renewing their registration are forwarded a survey form. This normally excludes:

- **New registrants:** New registrants include new local graduates, interstate graduates and overseas trained pharmacists registering for the first time with the NSW Board who have had their qualifications recognised in NSW. These persons will normally not receive the Workforce survey, but some new registrants do receive the survey form if they also renew in the same financial year. If new registrants return a survey form, they are reclassified for the purposes of this profile as renewals (see Table 1.1).
- **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. Some pharmacists are restorations simply due to late payment and may have returned a survey form.
- **Technical restorations:** Some pharmacists are restorations simply due to late payment, as they are removed from the register and then reinstated on receipt of the payment of the renewal fee. These pharmacists 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. Prior to the 2000 profile the definition of respondents was those pharmacists **renewing** their registration who completed or part completed a survey form.
- **Technical renewals:** There are a group of pharmacists who either pay their registration fee early 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 pharmacists 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**. This process has occurred for the first time in analysing the 2004 survey data. There were no pharmacists who were technical renewals in 2004 due to the method of extraction of Board data on financial status.

Care should be taken when interpreting this data as some individual pharmacists may be included in more than one of the categories during the twelve month period.

The definition of response has been applied to those respondents who completed the question on workforce status. In addition, a number of pharmacists 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.

Figures have not been adjusted for non-response

Data in this publication have not been adjusted for unknown information (both survey non-response and registration data such as year of birth or sex). When interpreting the 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 labour force in individual tables.
- The labour force 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 labour force). Weighting the survey data according to non-response alone may result in an over-estimation or under-estimation in some categories.
- The labour force characteristics of pharmacists 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 the survey**. Survey response rates are presented in Table 1.2 in Section 1.

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.

— denotes not applicable.

Bold is used to indicate a total or subtotal.

n/a denotes data is not available.


Estimating Workforce Size

Previous profiles have used a standard approach to estimating workforce size which was first documented in the 1999 Profile of the Medical Workforce in NSW (NSW Health Department, 2004) estimated the size of the medical workforce in New South Wales, This approach involved:

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

However recent analysis of data reported in the 2001 ABS Census has indicated that the workforce estimates calculated in the previous profiles are too high and should be adjusted. The 2001 Census reported that there were 4,795 working pharmacists in 2001¹. Using the previous method of estimating workforce size, the estimate was 5,215 working pharmacists, and the Census figure is 92.0% of this estimate. As a result, the new estimates have been developed to minimise the

¹ NSW Health Department, unpublished ABS data



adjustment for non response and to improve the estimate of new registrations and restorations working.

The method is based on the following approach:

- Use the 2001 numbers of working pharmacists based on the Census data as a baseline year.
- Develop flow matrices of workforce dynamics for 2002/03, 2003/04 and 2004/05 and use the input/output calculation to determine workforce size between 2002 and 2005. This involves calculations of entry (inter-state and overseas migration and local new graduate entry patterns), re-entry (based on restorations and renewals re-entering the workforce), and wastage (including overseas entrants leaving the following year).
- Adjust the 2002, 2003 and 2005 working respondent numbers to account for lower response rates in those years, and then further adjust the estimated workforce size for the difference between the Census data and the previous workforce size estimate (4795/5215).