

2005 dentist labour force survey

Introduction

Each year, as part of the annual registration process for dentists in NSW, an Annual Labour Force Survey is sent to each dentist currently registered with the Dental Registration Board of New South Wales. This report provides an overview of information from the 2005 workforce survey.

The response rate to the survey was 89.7% in 2002, increasing to 93.7% in 2005, showing a continuing high level of response. The continued support of the Dental Registration Board of New South Wales, professional organisations and dentists participating in the survey is appreciated.

Category of Dentist Registration

In 2005, there were 4,313 dentists financially registered with the Dental Registration Board of NSW, an increase of 158 persons compared to the 4,155 registered in 2004. Of these, 1,164 (27.0%) were female and 3,147 (73.0%) were male, with two registrants with unknown sex. Table 1.1 provides an overview of the number of dentists in each category of registration. Care should be taken when interpreting this data, as some individual dentists are included in more than one of the categories during the twelve-month period.

Table 1.1: Persons registered as dentists in NSW, 2005

Category of registration ¹	No. Row %		No. Row %		No. Row %	
	Female		Male		Total	
New registrations(only status)	58	40.3%	86	59.7%	144	100.0%
Restorations	1	0.0%	0	0.0%	1	100.0%
"True" restorations	1	0.0%	0	0.0%	1	100.0%
"Technical" restorations	0	0.0%	0	0.0%	0	0.0%
Renewals ^{2&3}	1,105	26.5%	3,057	73.5%	4,162	100.0%
Technical renewals	32	33.7%	63	66.3%	95	100.0%
Deletions	27	29.3%	65	70.7%	92	100.0%
New registrations (total) ²	98		121		219	100.0%

- Notes:**
- 1 The table includes information on dentists who were financial with the Board during 2005
 - 2 Some dentists are included in more than one category during the twelve month period. There were 220 new registrations in total, with 128 financial and 92 not financial. 75 of the total new registrations were also renewals within the survey period, while 145 were financial new registrations only.
There were 2 renewals and 1 new registrant with unknown sex excluded from the table.
 - 3 There were 2 restorations in total, and of these 1 was also a renewal.

Response rate to Labour Force Annual Survey

The response rate to the 2005 Dentist Labour Force Annual Survey was very high although the response rate has been consistently high over the four-year period reported below.

Table 1.2: Response Rate to Dentist Annual Labour Force Survey, 2002 to 2005

	No.	Rate	No.	Rate	No.	Rate	No.	Rate
	2002		2003		2004		2005	
Formal response rate								
<i>Survey respondents</i> ¹ (<i>renewals</i> ²)	3,589		3,661		3,825		3,992	
<i>Total renewals</i> ²	4,003	89.7%	4,118	88.9%	4,073	93.9%	4,259	93.7%

- Notes:**
1. A "survey respondent" is defined as a renewal, technical renewal or technical restoration who provides information to the question on work status, or whose work status can be derived from other data. With these adjustments, there were 194 dentists who did not return a survey form, and 73 survey forms with work status question unanswered and no capacity to derive the work status from a NSW postcode for place of work in 2004, based on the 4,259 dentists eligible to receive a survey form.
 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 taken off the roll and then restored (ie technical restoration), or who was sent a survey form and returned a form and was still financial at the end of the relevant year while having no financial status (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.

Work Status

Approximately 81% (3,249) of survey respondents indicated that they were working only or mainly in NSW or currently on leave. There were 3,992 respondents and 3,249 working renewal survey respondents in 2005 (excluding two respondents with sex unknown). Working renewals are those respondents who:

- Were financially registered and renewed their registration in 2004 or were technical restorations or technical renewals
- Returned a labour force 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 dentistry only in NSW
 - Working in dentistry mainly in NSW, but also in other states
 - On leave 3 months or longer (see Table 1.3)

The third category was introduced for the first time in the 2002 survey, resulting in a slightly higher count of the unadjusted numbers working in NSW and therefore also of the estimated workforce size than in previous years.

Table 1.3: Work status of Dentist Labourforce Survey respondents¹, NSW, in 2005

Work Status	No.		%		No.		%		%	
	Unknown sex		Female		Male		Total		Female	
Working in dentistry										
Only in NSW	48	80.0%	834	79.7%	2269	78.6%	3151	78.9%	26.9%	
Mainly in NSW, but also in other states	1	1.7%	12	1.1%	50	1.7%	63	1.6%	19.4%	
Mainly in other states, but also in NSW	1	1.7%	10	1.0%	59	2.0%	70	1.8%	14.5%	
Only in states other than NSW	2	3.3%	28	2.7%	103	3.6%	133	3.3%	21.4%	
On leave 3 months or longer	1	1.7%	21	2.0%	13	0.5%	35	0.9%	61.8%	
Overseas	6	10.0%	58	5.5%	201	7.0%	265	6.6%	22.4%	
Not Working in dentistry										
Not working and not looking for work	0	0.0%	45	4.3%	77	2.7%	122	3.1%	36.9%	
Currently not working, but looking for work	0	0.0%	10	1.0%	14	0.5%	24	0.6%	41.7%	
Working, not in dentistry	0	0.0%	21	2.0%	22	0.8%	43	1.1%	48.8%	
Retired from regular work	1	1.7%	8	0.8%	77	2.7%	86	2.2%	9.4%	
Total	60	100.0%	1047	100.0%	2885	100.0%	3992	100.0%	26.6%	
Total, working in NSW	50		867		2332		3249		27.1%	

Note: See Table 1.2 for definition of respondents.

Dentists seeking work

Table 1.4 shows that there were 22 respondents who were looking for work in dentistry, of the total of 67 survey respondents who were either currently not working and looking for work or currently working in other than dentistry.

Table 1.4: Seeking work in Dentistry in NSW, 2005

Nature of work sought	No.		%		No.		%		%	
	Female		Male		Total		Female			
Looking for work in dentistry										
- either full time or part time	3	27.3%	3	27.3%	6	27.3%	50.0%			
- full time	1	9.1%	2	18.2%	3	13.6%	33.3%			
- part time	6	54.5%	6	54.5%	12	54.5%	50.0%			
- unknown type	1	9.1%	0	0.0%	1	4.5%	100.0%			
Total	11	100.0%	11	100.0%	22	100.0%	50.0%			
<i>Non-response</i>	20		25		45		80.4%			

Note: Table includes those survey respondents in Table 1.3 who indicated that they were not currently working but looking for work in dentistry (n=24) and others who were working but not in dentistry (n=43).

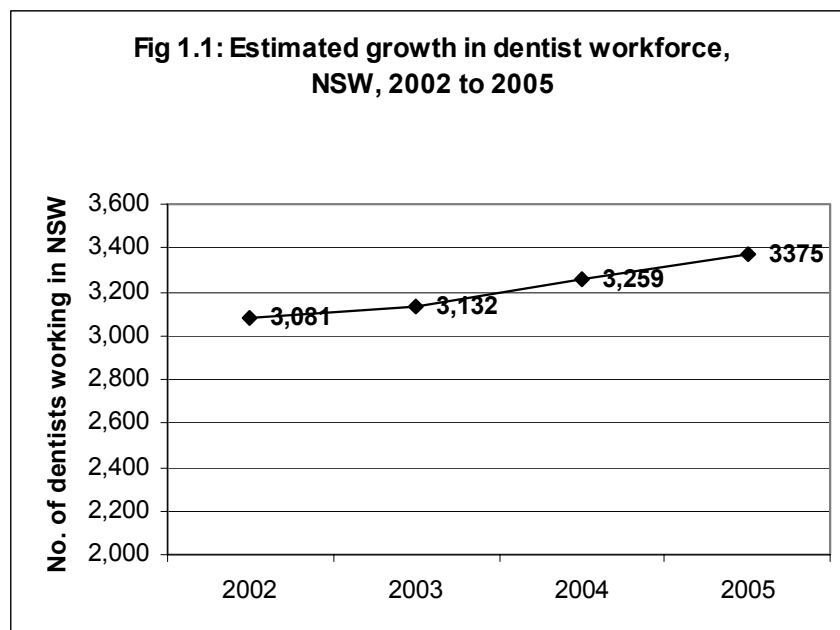
Estimating Workforce Size

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

	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
Size of Workforce (excludes any new registrations) ¹	2,870	2,915	3,065	3,203
Adjustment for varying non response	75	70	0	12
Estimated working renewals	2,945	2,985	3,065	3,215
Adjusted respondents (excludes any new registrations) ²	3,627	3,666	3,764	3,937
Estimated % respondents working	81.2%	81.4%	81.4%	81.7%
Estimated new registrations working ³	135	144	194	160
Estimated restorations working ⁴	1	3	0	0
Total Estimated Workforce	3,081	3,132	3,259	3,375
Total number of new registrations	186	224	263	220
Estimated % new registrations working	72.6%	64.3%	73.8%	72.7%
No. of renewals(excluding new registrations)	3,962	4,051	3,998	4,184
Estimated working renewals as % of renewals excluding new registrations	74.3%	73.7%	76.7%	76.8%
Notes:	<ol style="list-style-type: none"> 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 2 The respondent numbers have been adjusted to allow for changing non response rates (set to 92% for 2001 & 2002, 91% for 2003, 94% for 2005) and exclude any new registrations who were also renewals within the year. 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 			

NOTE: These figures vary from estimates of workforce size documented in previous dentist 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 2006 data.

Table 1.5 and Fig 1.1 show that the estimated dentist workforce was 3,081 in 2002, 3,132 in 2003, 3,259 in 2004 and 3,375 in 2005. This is an overall growth rate of 9.5%, with growth 1.7%, 4.1% and 3.5% between each of the consecutive years.



Estimating Full-Time Equivalent Workforce (FTE)

The numbers of hours worked by dentists on average per week for all jobs together can be converted to full-time equivalents (FTEs), which becomes a measure of the productive workforce. Thirty-five hours is used as the measure of full time work based on labourforce definitions developed by the Australian Bureau of Statistics.

A ratio of FTEs to the total headcount workforce can then be calculated, to determine the relative productivity of the workforce. The FTE ratio of 1.1437 applied to the estimated workforce size of 3,375 headcount results in an estimated FTE workforce of 3,860.0 FTE dentists (based on full time being defined as 35 hours worked per week or more). This FTE calculation is based on reported hours worked, and therefore may include overtime and unpaid hours.

Average Age by Sex

Table 1.6: Average age and average hours worked by sex, dentists working in NSW, 2003 to 2005

	Males	Females	Total
Average age 2003	46.7 years	38.5 years	44.7 years
Average hours worked per week 2003	42.2 hours	35.0 hours	40.6 hours
Average age 2004	47.2 years	38.7 years	45.0 years
Average hours worked per week 2004	42.9 hours	36.2 hours	41.4 hours
Average age 2005	47.2 years	38.8 years	44.9 years
Average hours worked per week 2005	42.0 hours	34.9 hours	40.0 hours

The average age of the dentist workforce was 44.9 years, with males at 47.2 years on average older than females, at 38.8 years. The average age of the workforce has increased from 44.7 years to 44.9 years. The average hours worked has decreased over two years from 40.6 hours to 40.0 hours.

Average hours worked by age and sex

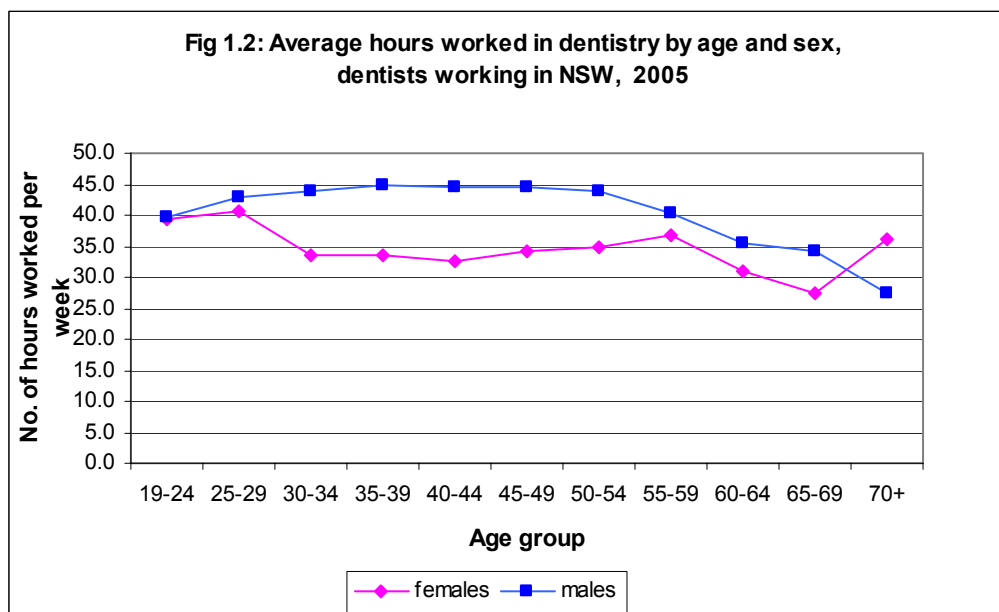


Fig 1.2 indicates the average hours worked per week by age and sex. Male dentists work on average more hours per week in every age group except for 70+ years where females work longer hours (36.0 hours compared to 27.5 hours, although numbers are small). Males work the longest hours on average between 35 and 39 years (44.7 hours) while females work the longest hours between 25 and 29 years (40.7 hours).

The hours are based on self-reporting and therefore should be interpreted taking this factor into account.

Flow Dynamics

Flow dynamics based on the estimated size of the workforce between 2001/02 and 2004/05 showed new registrations entering the workforce accounted for 4.7%; re-entry into the workforce equated to 1.6% and wastage was estimated at 4.0%.

Table 1.7: Workforce dynamics for dentists, 2005

Professional Dentists	Estimated workforce size, 2005	New registrations entering the workforce	Re-entry	Wastage	FTE ratio (Based on 35 hours)
Workforce headcount	3,375	160	54	135	1.1437
Percentage of workforce		4.7%	1.6%	4.0%	

SOURCE: flow matrix change rates from dentist labour force profile data, 2001/02 to 2004/05

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

Employment Settings

3,143 dentists responded to the employment setting question in the labourforce survey. Of these, 12.0% (379 dentists) reported working in the public sector and 83.6% (2,625 dentists) reported working in the private sector. 4.4% (139 dentists) reported working in 'Other' settings or were unknown. Of those who reported working in the public sector in 2005, 164 dentists worked their main job in the public health system (5.2% of respondents to this question).

Table 1.8: 2002-2005 Service or business employed or self-employed in - Main job

Business/Service in main job	2002	2003	2004	2005	% Change 2002-05
Private sector					
Solo	1,029	1,033	1,054	1,084	5.3
Solo principal with assistant(s)	392	409	455	469	19.6
Partnership	243	260	256	276	13.6
Associateship	326	325	361	390	19.6
Assistant	338	348	354	378	11.8
Locum	24	28	26	28	16.6
Total private sector	2,352	2,403	2,506	2,625	11.6
Public sector					
Dental hospital	113	130	150	164	45.1
Other hospital	75	79	71	75	0
School dental service	0	0	2	1	0
Health centre	90	101	101	85	-5.5
Defence forces	30	24	28	29	-3.3
Other public	26	24	23	25	-3.8
Total public sector	334	358	375	379	13.5

The overall change in the main work setting for dentists from 2002 to 2005 was an increase of 11.6% (273 dentists) in the private sector and 13.5% (45 dentists) in the public sector. Over this four year period, dentists working in public health increased by 45.1% (51 dentists).

Methodology

Timing of the 2005 Survey

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

Labour force Survey coverage

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

- **New registrants:** New registrants include new local graduates, interstate graduates and overseas trained dentists registering for the first time with the NSW Board who have had their qualifications recognised in NSW. These persons will normally not receive the labour force survey, but some new registrants may receive the survey form if they also renew in the same 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. Some dentists are restorations because of late payment of the renewal fee and may have returned a survey form.
- **Technical restorations:** Some dentists 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 dentists 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 dentists **renewing** their registration who completed or part completed a survey form.
- **Technical renewals:** There are a group of dentists 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 dentists 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 occurred for the first time in 2002.

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

The adoption of these changes in the approach to survey coverage, and definition of respondents, means that the data will now be compatible with definitions of the workforce used by the Australian Institute of Health & Welfare in preparing national profiles. However, it also means that the raw data on workforce size may show variation from years previous to 2000.

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 overestimation or under-estimation in some categories.
- The labour force characteristics of dentists 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 1.1.

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.

- is used in place of zero (0).

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 dentists has been analysed by Area Health Service for dentists 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. There is no intent to imply that dentists working in the private sector are employed by Area Health Services, and the approach is used for comparative purposes only.

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, 2005) 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 for nursing and physiotherapy that the workforce estimates calculated in the previous profiles are too high and should be adjusted.

Benchmarking for dentists to the 2001 Census indicates a high level of consistency between the two estimates, as the Census reported that there were 2,853 working dentists in 2001¹. This is lower than

¹ AIHW (2005) *Health and community services labour force 2001*. AIHW cat no. HWL 27& ABS cat. No. 8936.0. Canberra: AIHW (national Health Labour Force Series no. 27) p.

the workforce size derived from the new method of estimating workforce size (3,007), with a 5% variation. The new estimates minimise the adjustment for non response and improve the estimate of new registrations and restorations working. The variation between the Census data and the profile data would be due to working dentists using other titles which would not necessarily be coded to the dentist category in the Census data.

The revised method used to estimate workforce size in this profile is based on the following approach:

- Use the 2002 numbers of working dentists as a baseline due to the higher response rate
- Develop flow matrices of workforce dynamics for 2001/02, 2005/03, 2003/04, 2004/05 and use the input/output calculation to determine workforce size between 2001 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 2001 and 2005 working respondent numbers to account for lower response rates in those years.