

**DENTAL COUNCIL**  
*Te Kaunihera Tiaki Niho*

# **Dental Council**

## **Workforce Analysis 2009**

JM Broadbent  
Dental Researcher and  
General Dental Practitioner

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## Section 1: **Executive Summary and Commentary**

### **1.1 The Dentist Workforce**

As in previous years, there was an increase in the active dental workforce. A total of 2000 dentists were included in the current workforce analysis for dentists registered up to 1 April 2010, up from 1867 the year before. A further 98 dentists were in the register who did not have current APCs.

The proportion of female dentists in the workforce continues to rise, as does the representation of ethnic minority groups. New Zealand Europeans remain the largest ethnic group within the workforce, their number remaining static, followed by dentists of Chinese origin. The rise in the proportion of overseas graduates has continued. Over one in four dentists did not obtain their primary dental qualification in New Zealand.

#### 1.1.1 Employment

Proportionally fewer dentists (34%, Table 2-8) worked part-time (defined as less than 35 hours per week) than the previous year (37%). The proportion had been consistently rising over previous years, but this has now decreased. A marked gender difference exists between male and female dentists in the proportion undertaking part time work - 49% of female dentists worked part-time, while 28% of male dentists did so. Of those dentists working part-time approximately four in every ten attribute their reason for doing so as a personal choice.

#### 1.1.2 Postgraduate education and continuing professional development (CPD)

Some 98 dentists stated that they were engaged in some form of postgraduate study, a sizeable increase, up from 74 the previous year (Table 2-10). Of the 98 students, 28 stated that they do not intend to practice in New Zealand upon completion of their postgraduate study. There was an increase in the proportion of dentists participating in at least 20 hours of CPD during the previous 12 months (92%, up from 85.7%, Table 2-12).

### 1.1.3 Practice characteristics

Nearly three in every four dentists are self-employed in private practice (74%), with the remainder practising as employees of private practices, District Health Boards (DHBs), the School of Dentistry etc. Of those self-employed, fewer than one in three are in solo practice (29%, Table 2-16).

### 1.1.4 Cohort remainder rates

The cohort remainder rate for the most recent graduates from the Otago cohort was 82% (Table 2-2); markedly higher than the 50% remainder rate for the classes of 2003 and 2004; however the cohort remainder rate for Otago graduates appears to drop with increasing time since graduation. Some students may begin to return after working overseas or not practicing for a time, but around half do not return. Of those who graduated with an Otago BDS during the past 15 years (since 1996), only one in two is currently practicing in New Zealand (54.5% from 1996 to 2009, Table 2-19).

### 1.1.5 Distribution of dentists

Dentist:population ratios vary widely around the country. Since the previous report, there was a substantial increase in the number of dentists reporting full-time work in Counties-Manukau, and this has affected the FTE dentist:population ratio for that region. The number of dentists in Counties Manukau has only increased marginally, however Lakes DHB remains under-served, with a total of 36 dentists working at a total of 28 FTEs to serve over 150,000 people aged over 14 years (24 dentists per 100,000 people, or 18 FTE dentists per 100,000 people). This is a remarkable difference compared to Auckland city (98 dentists per 100,000 people), or the Bay of Plenty (114 dentists per 100,000 people). Otago has a high proportion of dentists per head of population due to the presence of the school of dentistry in that province (Table 2-24).



## 1.2 Other Oral Health Practitioner Groups

### 1.2.1 The Dental Therapist Workforce

New Zealand dental therapists remain predominantly a group of older, New Zealand European women, and the average age of dental therapists increased from 51 years to 52 years during the previous year. The proportion of dental therapists working full-time remains approximately 70%. Almost all dental therapists are working in the DHB sector (84%); however, an increasing proportion is employed in other sectors.

Approximately four in every five of dental therapists are now able to provide radiography, up from three in every four the previous year. There remains considerable variation across the DHBs in dental therapist scopes, as with the proportions able to provide pulpotomies and stainless-steel crowns. For example, still only two dental therapists in Hawke's Bay are able to perform pulpotomies, and only one is able to treat teeth using stainless steel crowns; however, in Otago, 15 are registered in both those scopes (approximately 50% of dental therapists in Otago). Across the country, 13 dental therapists were registered as practising in the scope of Adult Dental Care. The distribution of these is shown in Table 3-7.

There appears to be a variation in the dental therapist: population ratio by area; it is highest in the Bay of Plenty and lowest in the Greater Wellington region and Canterbury (Table 3-8). The dental therapist: population ratio in Northland has improved, to be closer to that for the rest of the country.

### 1.2.2 The Dental Hygienist Workforce

Analysis and interpretation of the hygiene workforce data is complicated by the existence of three main types of workers (dental hygienists, dental auxiliaries<sup>1</sup> and orthodontic auxiliaries). The active hygiene workforce comprised 378 individuals (up from 371 the previous year). Like the dental therapist workforce, it was made up of a predominately

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<sup>1</sup> This scope closed in September 2009, however data remain in the register and are analysed here for completeness.

female group (only 7 hygienists, 1 dental auxiliary, and 2 orthodontic auxiliary were male), but the average age in the hygienist group was younger than that of the dental therapist group (41 for dental hygienists and 52 for dental therapists). New Zealand Europeans were the dominant group among hygienists, but only 70% identified New Zealand European as their primary ethnicity (Table 4-2).

The majority of each of the three hygiene occupational categories worked as employees in private practice, but the proportion working as self-employed hygienists in private practice increased markedly over the previous year. Very few worked for DHBs or other employers. More than half of them worked full-time, with around one-quarter working for more than one employer (Table 4-3). Dental hygienists worked fewer hours on average than other dental practitioners, at a mean of 23.8 hours per week. Of the dental hygienists 36% were registered in the additional local anaesthesia scope of practice (SOP), 67% were registered for intra-oral radiography, and 27% were registered in the orthodontic procedures in hygiene SOP. Some 19 dental auxiliaries were registered in the general dental hygiene SOP (Table 4-6).

### 1.2.3 The Dental Technician Workforce

There were 346 active dental technicians (up by 1 from the previous year), of whom 43% were clinical dental technicians. The age groupings of the dental technology workforce were very similar to that of the dentists. The proportion of females was 22% for all dental technicians, and was 14% for clinical dental technicians (39.1% of dental technicians were female). Of the clinical dental technicians 59% were aged 50 and over, compared to 26% for dental technicians (Table 5-1). Some 52% of the dental technology group were New Zealanders European - 2% less than the previous year. 'Other Europeans' comprised 13% of dental technicians, and Māori comprised less than 3%.

The great majority, 87%, worked full-time, and most were self-employed. Only 6 dental technicians (1.7%) were working part-time due to there not being enough work available. Nearly all worked in only one place of employment, and 5.2% of dental technicians reported they were undertaking postgraduate training. Approximately 90% of both dental

technicians and clinical dental technicians reported they had completed their required CPD experience during the previous year, similar to the rate in 2008. This was a great improvement on 2007, when only about 80% did so.

As with the dental therapists and dental hygienists, there were considerable differences by DHB in the population:practitioner ratio for dental technicians. The Waitemata, Auckland, Bay of Plenty, and Otago had the lowest population:practitioner ratios, at roughly 6000 people per technician (Table 5-4), while Lakes, Wairarapa, and South Canterbury had the highest ratios, at closer to 30,000 people per technician. Where dentist:technician ratios were concerned, these roughly mirrored the population:technician ratios. No technicians were listed as practicing in the West Coast.

## Section 2: **The Dentist workforce**

A total of 2286 dentists appeared in the dental register as at 31 March 2010, a slight increase from 2239 dentists as at 31 March 2009. The register included dentists who first registered up until 31 March 2010 and are as follows:

Full registration ('REG')	2034
Full registration, non-practising ('REGN')	232
Other codes ('REMPEND')	1
<b>Total</b>	<b>2267</b>

### **Within New Zealand**

Full registration ('REG')	2000
Full registration, non-practising ('REGN')	97
Other codes ('REMPEND')	1
<b>Total</b>	<b>2098</b>

Figures for dentists include both dental specialists and general dentists, unless otherwise specified. Dentists who did not hold a current APC as well as those listed as residing outside New Zealand are excluded from subsequent analyses, unless otherwise specified. Some 34 dentists had current APCs, but were listed as residing outside New Zealand, so were excluded. A further 98 were on the register, resident in New Zealand on retention and did not have current APCs. In total, 2000 dentists with current APCs and listed as residing in NZ were included in this year's workforce analysis.

Comparisons of dentist:population ratios should be undertaken with a degree of caution. These are based on the 2006 Census data, and projections have not been made for the current analyses.

## 2.1 Dentist workforce data tables

Table 2-1: Number of dentists in the active workforce by year (with APC and in NZ)

Year	Total	% Male	% Female	% Overseas graduates
1983	1142	93.8	6.3	6.2
1984	1148	93.7	6.3	5.3
1985	1176	92.6	7.4	4.9
1986	1204	91.8	8.2	5.1
1987	1219	90.2	9.8	6.3
1988	1233	88.7	11.3	6.4
1989	1215	88.1	11.9	5.8
1990	1226	87.4	12.6	6.4
1991	1262	86.7	13.3	6.7
1992	1287	85.2	14.8	6.8
1993	1306	84.2	15.8	7.4
1994	1312	84.0	16.0	7.5
1995	1346	83.2	16.8	8.8
1996	1364	81.7	18.3	8.4
1997	1473	79.5	20.5	12.1
1998	1496	79.0	21.0	13.1
1999	1558	77.2	22.8	14.5
2000	1591	76.4	23.6	16.1
2001	1601	76.3	23.7	16.9
2002	1645	75.6	24.4	18.2
2003	1662	74.5	25.5	19.7
2004	1747	73.0	27.0	21.1
2005	1682	72.8	27.2	21.0
2006	1717	70.8	29.2	22.8
2007	1779	70.1	29.9	24.0
2008 <sup>a</sup>	1867	68.6	31.4	25.4
2009 <sup>b</sup>	2000	66.5	33.5	27.6

<sup>a</sup>Reporting date changed to 31 March instead of 31<sup>st</sup> December  
(Data source: Dental Register)

Table 2-2: Longitudinal analysis of the cohort remainder rate of University of Otago dental graduates (domestic students only).

Year of graduation <sup>a</sup>	Number of students (percentage cohort remainder rate)						
	2009	2008	2007	2006	2005	2004	2003
Total number of graduates who were not externally-funded <sup>b</sup>	55	57	61	62	60	56	56
March 2010	45 (81.8)	45 (78.9)	38 (62.3)	34 (54.8)	35 (58.3)	28 (50.0)	28 (50.0)
March 2009		(56.1)	(72.1)	(64.5)	(71.7)	(67.9)	(55.4)
December 2007				(50.0)	(71.7)	(60.7)	(46.4)
December 2006					(65.0)	(42.9)	(53.6)
December 2005						(48.2)	(72.4)
December 2004							(73.2)

<sup>a</sup>Not including externally-funded students.

<sup>b</sup>Note that data in this row comes from dental school data, not the register, so data in this table may differ from that in Table 2-19.

(Data sources: Dental Register and School of Dentistry records)

Figure 2-1: Number of NZ dental graduates practising in NZ as at March 2010, by graduation year



Table 2-3: Response rates to the Workforce Survey

Current registration status	Total number of dentists	Number who completed questionnaire	Response Rate
In NZ with APC	2000	1815	90.8%
In NZ but not practising (REGN or REMPEND)	98	40	40.8%
All dentists in NZ	2098	1855	88.4%

(Data sources: Dental Register and Workforce Survey)

Table 2-4: Age by current registration status

	Registered (%)	Retention (%)
Under 30 years	259 (13.0)	18 (18.4)
30-34 years	202 (10.1)	14 (14.3)
35-39 years	241 (12.1)	12 (12.2)
40-44 years	249 (12.5)	3 (3.1)
45-49 years	284 (14.2)	9 (9.2)
50-54 years	279 (14.0)	13 (13.3)
55-59 years	179 (9.0)	6 (6.1)
60-64 years	148 (7.4)	5 (5.1)
65+ years	159 (8.0)	18 (18.4)
Total	2000 (95.3)	98 (4.7)

Unless otherwise indicated, brackets contain percentages in this and all following tables.

Table 2-5: Ethnicity (primary and secondary) among those in NZ with registration and APC

Ethnicity	Primary (%)	Secondary	Total <sup>a</sup> (%)
NZ European	1069 (53.5)		1069 (53.5)
Māori	12 (0.6)	43	55 (2.8)
Other European	133 (6.7)	8	141 (7.1)
Samoan	4 (0.2)	2	6 (0.3)
Tongan	1 (0.1)	1	2 (0.1)
Niuean	0		0
Tokelauan	1 (0.1)		1 (0.1)
Fijian	7 (0.4)	1	8 (0.4)
Other Pacific Peoples	2 (0.1)		2 (0.1)
Chinese	196 (9.8)	2	198 (9.9)
Other East Asian	29 (1.5)	6	35 (1.8)
Indian	164 (8.2)	10	174 (8.7)
Other Asian	68 (3.4)	4	72 (3.6)
Other	228 (11.4)	16	244 (12.2)
No response to question	86 (4.4)		86 (4.4)
Total	2000		2000
Total selecting an 'Other' group	451 (22.6)		

<sup>a</sup>Total is greater than 2000 due to double reporting of ethnicity; however denominator used for % values is 2000 to allow accurate reporting of percentages relative to total number of dentists.



Table 2-6: Self-identification of 'other' primary ethnicity by geographic area

<b>Africa</b>		<b>Great Britain</b>		<b>Asia</b>	
African	7	Anglo Saxon	1	Bangladeshi	2
Egyptian	5	British	43	Burmese	1
South African	48	British Australian	1	Cambodian	1
South African European/White	1	English	20	Chinese	2
South African Greek	1	Northern Irish	1	Indian	1
South African Indian	2	Scottish	11	Indonesian	2
Seychellois	1	UK	13	Korean (South)	36
Sudanese	1	Welsh	1	Malaysian	16
Ugandan	1			Malaysian Chinese	11
Zimbabwean	1			Pakistani	1
		<b>Other European</b>		Punjabi	1
<b>North American</b>		Austrian	1	Singaporean	1
(North) American	4	Bulgarian	1	Singhalese	2
Canadian	5	Caucasian	1	Sri Lankan	25
Canadian German	1	Caucasian American	1	Taiwanese	19
US Caucasian/European/White	4	Croatian	3	Taiwanese British	1
		Czech	1	Taiwanese Chinese	1
<b>South America</b>		Danish	1	Thai	3
Argentinean	3	Dutch	7	Tamil	1
Brazilian	3	Finnish	1	Turkish	1
Colombian	1	German	6	Vietnamese	1
Hispanic	1	Greek	1		
Latin American	4	Hungarian	1	<b>New Zealand</b>	
South American	2	Irish	6	New Zealander	17
		Irish Malaysian	1	Kiwi	1
<b>Middle East</b>		Italian	1	New Zealand Chinese	6
Arab	13	Latvian	2	New Zealand Sri Lankan	3
Hebrew	1	Macedonian	1	New Zealand Indian	2
Israeli	1	Magyar	1		
Iranian	2	Mediterranean	1	<b>Other Oceania</b>	
Iraqi	31	Polish	2	Australian	13
Jewish	1	Polish German	1	Fijian Indian	2
Kurdish	3	Romanian	5	Filipino	4
Middle eastern	13	Russian	8	Vanuatuan	1
Persian	2	Scandinavian	2		
Phoenician	1	Serbian	4		
Yemini	1	Spanish	1		
		Swiss	1		
		Ukranian	2		
		Yugoslavian	1		

(Data source: Workforce Survey)

Table 2-7: Gender by current registration status

Gender	All dentists in NZ	Practising in NZ	In NZ but not practising
Male	1387 (66.1)	1330 (66.5)	57 (58.2)
Female	711 (33.9)	670 (33.5)	41 (41.8)
Total	2098	2000	98

(Data source: Dental Register)

Table 2-8: Reasons for part-time employment

Reason for practising part-time	Number of practising dentists <sup>a</sup> (%)
Engaged in non-dental work	26 (3.8)
Insufficient dental work	43 (6.3)
Seeking dental work	3 (0.2)
Semi-retired from dentistry	67 (9.6)
Parental responsibilities	195 (28.4)
Personal choice	277 (40.3)
Other (see below)	76 (11.1)
Total	687 (35.0)

<sup>a</sup> Otago 2009 dental graduates excluded from this table

Part-time employment (defined as fewer than 35 hours per week) was undertaken by 35.0% (N=691) of the 1964 NZ practising dentists, compared with 37.0% the year before.

Reasons offered by the 76 who selected 'other' reason:

- Studying (26)
- Teaching (8)
- Health problems – self or partner (11)
- Maternity leave/pregnancy (3)
- Ethnicity (2)
- Visa issues (3)
- Practice management/paperwork (1)
- Registration issues (1)
- Voluntary (5)
- Legal requirement – directed by the board (1)
- NZDC/NZDA work (3)
- Only recently started work (1)
- Was a student previously (1)
- Research, study, and administration (1)
- Part-time working at dental school (1)
- Part-time working as Principal Dental Officer (1)
- Part-time working with District Health Board (1)
- Part-time working at University (1)
- Reduction of hours (1)
- Recently moved city, resettling (1)
- No reason stated (3)

(Data source: Workforce Survey)

Table 2-9: Practising pattern, all dentists recorded in register as being resident in New Zealand

Employment status	Number of dentists (%)
Overseas and not practicing	6 (0.3)
Practising overseas	61 (2.9)
In NZ but not practicing	76 (3.6)
Practising in New Zealand	1838 (87.6)
Did not answer question	117 (5.5)
Total	2098
Employment status of 'In NZ but not practicing' group	
Another health profession	7
Non-health profession	4
Full-time study	19
Parental responsibilities	8
Other unpaid work	2
Seeking work	0
Retired	10
Not reported	26

(Data source: Workforce Survey)

Table 2-10: Postgraduate training

	In NZ with APC
Undertaking Postgraduate training	98 (4.9)
Expected year of completion	
2009	24
2010	26
2011	4
2012	3
2013	1
Not stated/unsure	24
Date in the past	16
Intend to practise in NZ?	
Yes	70 (71.0)
No (or not stated)	28 (29.0)
Total	98

(Data source: Workforce Survey)

Table 2-11: Branch of dentistry in which postgraduate training being undertaken (as stated in Workforce Survey)

	Number
Branch of dentistry	
General dentistry	2
Dental public health/Community dentistry	8
Endodontics	5
Oral Medicine & Pathology	2
Oral Surgery	5
Oral & maxillofacial surgery	8
Orthodontics	12
Paediatric dentistry	3
Periodontics	9
Restorative dentistry	1
Prosthodontics	8
Dental radiology	0
Special needs/Hospital dentistry	2
Other	12
Not reported (or not a dental branch)	21

(Data source: Workforce Survey)

Table 2-12: Continuing professional development among NZ dentists with an APC.

20 or more hours of CPD last year	Number <sup>a</sup> (%)
Yes	1809 (92.2)
No	154 (7.8)
Total	1963 (100.0)
No reply to question	0

<sup>a</sup> 37 Otago 2009 graduates excluded from this table

(Data source: Workforce Survey)

Table 2-13: Work type by primary employer – practitioners registered in specialist scopes<sup>a</sup>

	MoH or DHB		Private (self-employed)		Private (employed)		University Dental School	
	No.	Mean hrs (sd)	No.	Mean hrs (sd)	No.	Mean hrs (sd)	No.	Mean hrs (sd)
General Dentistry	1	25.0 (—)	7	36.4 (3.2)	0		2	8.0 (5.7)
Administration/Management	0		0		0		1	16.0 (—)
Dental Public Health	6	25.8 (11.4)	0		0		4	12.3 (16.0)
Endodontics	1	20.0 (—)	14	33.9 (9.9)	1	20.0 (—)	2	30.0 (14.1)
Spec Needs/Hospital Dentistry	8	28.5 (18.6)	1	20.0 (—)	0		0	
Oral Medicine & Pathology	4	21.8 (14.2)	2	11.0 (12.7)	0		1	40.0 (—)
Oral Surgery	2	29.5 (7.8)	7	22.4 (17.4)	0		0	
Oral & Maxillofacial Surgery	11	34.5 (9.3)	25	34.8 (14.9)	0		2	40.0 (0.0)
Orthodontics	3	33.0 (8.1)	59	34.2 (10.9)	3	42.3 (15.4)	2	23.5 (16.3)
Paediatric Dentistry	4	15.8 (10.5)	5	19.0 (13.8)	0		1	3.0 (—)
Periodontics	1	37.0 (—)	19	30.5 (13.7)	1	24.0 (—)	3	26.0 (16.4)
Research	1	5.0 (—)	1	40.0 (—)	0		9	13.3 (11.1)
Restorative Dentistry	3	12.7 (6.4)	5	17.2 (10.1)	0		2	22.5 (17.7)
Prosthodontics	2	20.0 (14.1)	6	23.5 (14.2)	2	34.0 (5.7)	1	15.0 (—)
Teaching	0		0		0		2	28.0 (17.0)
Other	1	34.0 (36.8)	2	7.0 (1.4)	0		0	
No hours recorded	1		11		1		6	
Number dentists working 1+ hours per week <sup>b</sup>	43	30.3 (12.1)	139	34.3 (11.9)	7	34.1 (13.0)	20	31.3 (12.5)
Total number of dentists <sup>c</sup>	44		150		8		26	

<sup>a</sup>This information not sought from non-specialists

<sup>b</sup>Dentists reporting not working any hours are excluded from these calculations, as were five dentists who reported they worked an average of more than 24 hours per day

<sup>c</sup>Total of the column above may sum to greater than this, as some specialists reported activity in more than one scope for their primary employer  
(Data source: Workforce Survey)



Table 2-14: Work type by secondary employer – practitioners registered in specialist scopes<sup>a</sup>

	MoH or DHB		Private (self-employed)		Private (employed)		University Dental School	
	No.	Mean hrs (sd)	No.	Mean hrs (sd)	No.	Mean hrs (sd)	No.	Mean hrs (sd)
General Dentistry								
Administration/Management								
Dental Public Health			1	3.0				
Endodontics			1	25.0				
Spec Needs/Hospital Dentistry								
Oral Medicine & Pathology								
Oral Surgery			1	20.0				
Oral & Maxillofacial Surgery	4	11.3 (6.3)	2	27.5 (17.7)	1	4.0		
Orthodontics	1	8.0	2	18.0 (2.8)			1	4.0
Paediatric Dentistry	1	9.0	1	12.0				
Periodontics			5	7.4 (2.4)				
Research								
Restorative Dentistry								
Prosthodontics			2	13.5 (2.1)				
Teaching								
Other								
No hours recorded	4		7		2		4	
Number dentists working 1+ hours per week <sup>b</sup>	6	9.5 (5.7)	15	14.3 (9.4)	1	4.0	1	4.0
Total number of dentists <sup>c</sup>	10		22		3		5	

<sup>a</sup>This information not sought from non-specialists

<sup>b</sup>Dentists reporting not working any hours are excluded from these calculations, as were five dentists who reported they worked an average of more than 24 hours per day

<sup>c</sup>Total of the column above may sum to greater than this, as some specialists reported activity in more than one scope  
(Data source: Workforce Survey)

Table 2-15: Work type by primary and secondary employer – general dentists

	General dentistry		Teaching <sup>b</sup>		Administration <sup>b</sup>		Overall	
	Number	Mean hours spent at work type (SD)	Number	Mean hours spent at work type (SD)	Number	Mean hours spent at work type (SD)	Number	Mean hours spent at work type (SD)
Primary employer								
Private practice (self-emp) <sup>a</sup>	1282	34.8 (55.9)	2	3.0 (0.0)	30	9.4 (12.5)	1282	35.0 (55.9)
Private practice (employee)	107	32.3 (16.2)			2	9.0 (9.9)	107	32.5 (16.1)
DHB or Min. of Health	84	35.0 (12.9)	2	7.5 (3.5)	10	35.5 (67.7)	89	37.2 (24.0)
University Dental School	14	28.9 (15.3)	10	16.2 (13.4)			21	27.0 (15.7)
Total number							1546	34.8 (51.5)
Secondary employer								
Private practice (self-emp) <sup>a</sup>	83	12.7 (9.2)	10	4.6 (2.1)	4	6.3 (2.6)	95	11.8 (9.1)
Private practice (employee)	6	14.5 (5.7)	2	12.0 (5.7)			8	13.9 (5.4)
DHB or Min. of Health	9	10.0 (5.2)	2	8.0 (2.8)	2	7.0 (7.1)	12	10.0 (7.4)
University Dental School	3	25.0 (11.5)	1	5.0			4	20.0 (13.7)
Total number							132 <sup>c</sup>	12.0 (9.0)

(Includes practitioners registered in the general dental scope, reduced categories. Specialists and specialist trainees excluded.)

<sup>a</sup>Solo or group practice

<sup>b</sup>Where specifically employed to do so

<sup>c</sup>Note that some dentists did not report any hours, and data are excluded for those dentists who indicated that they worked more than 24 hours per day. Furthermore, some dentists did not report their employer type, so totals are estimates only

(Data source: Workforce Survey)

Table 2-16: Type of practice – general dentists and dental specialists

	Number (%)	Overall percentage
Self-employed dentists & dental specialists <sup>a</sup>		
Solo practice	425 (29.0)	21.3
Group practice	1043 (71.0)	52.2
<b>Subtotal</b>	<b>1468</b>	<b>73.5</b>
Employee dentists & dental specialists		
Private practice	120 (36.1)	6.0
DHB	122 (36.7)	6.1
School of Dentistry	64 (19.3)	3.2
Government Department, not MOH	18 (5.4)	0.9
Iwi	8 (2.4)	0.4
Ministry of Health	0	0.0
<b>Subtotal</b>	<b>332</b>	<b>16.6</b>
Other forms of employment	20	1.0
No reply to question	180	9.0
Total number of specialist-registered dentists	249	12.5
Total number of general dentists	1751	87.5
<b>Total</b>	<b>2000</b>	<b>100.0</b>

<sup>a</sup>Note: only the information on the first employer was analysed.  
(Data source: Workforce Survey)

Table 2-17: Total number of hours worked per week

Number of hours worked	Number practicing in NZ with APC		
	All combined	General dentists	Specialist dentists
1 to 10	77 (4.3)	63 (4.0)	14 (6.3)
11 to 20	141 (7.9)	124 (7.9)	17 (7.7)
21 to 30	308 (17.1)	274 (17.4)	34 (15.4)
31 to 40	993 (55.3)	897 (57.0)	96 (43.4)
41 to 50	178 (9.9)	133 (8.4)	45 (20.4)
51 to 60	38 (2.1)	27 (1.7)	11 (5.0)
More than 60	61 (3.4)	57 (3.6)	4 (1.8)
Number giving data on hours	1796	1575	221
Mean no. of hours/week (SD)	35.1 (12.7)	35.0 (12.7)	35.7 (12.8)
Nil response or excluded	204	176 <sup>b</sup>	28
Total <sup>a</sup>	2000	1751	249

<sup>a</sup>199 dentists did not report any hours worked and were excluded from analysis.

<sup>b</sup>Data for 5 dentists who indicated they worked for longer than 120 hours were excluded from analysis (these appeared to be dentists who entered data incorrectly).

(Data source: Workforce Survey)

Table 2-18: Country of primary dental qualification

Qualification source	Specialist dentists	General dentists	All dentists in NZ
New Zealand	196 (78.7)	1252 (71.5)	1448 (72.4)
Overseas	53 (21.3)	499 (28.5)	552 (27.6)
Total	249	1751	2000
Argentina		5 (0.3)	5 (0.3)
Australia	3 (1.2)	27 (1.5)	30 (1.5)
Bangladesh		1 (0.1)	1 (0.1)
Brazil		5 (0.3)	5 (0.3)
Bulgaria		2 (0.1)	2 (0.1)
Canada		6 (0.3)	6 (0.3)
Chile		1 (0.1)	1 (0.1)
China		5 (0.3)	5 (0.3)
Colombia	1 (0.4)	2 (0.1)	3 (0.2)
Czech Republic		3 (0.2)	3 (0.2)
Egypt		4 (0.2)	4 (0.2)
Fiji		3 (0.2)	3 (0.2)
Finland		1 (0.1)	1 (0.1)
France	1 (0.4)	1 (0.1)	2 (0.1)
Germany	2 (0.8)	5 (0.3)	7 (0.4)
Holland/Netherlands	2 (0.8)	2 (0.1)	4 (0.2)
Hong Kong		1 (0.1)	1 (0.1)
India	4 (1.6)	95 (5.4)	99 (4.9)
Indonesia		1 (0.1)	1 (0.1)
Iran		1 (0.1)	1 (0.1)
Iraq	3 (1.2)	47 (2.7)	50 (2.5)
Ireland	1 (0.4)	6 (0.3)	7 (0.4)
Israel		2 (0.1)	2 (0.1)
Jordan		1 (0.1)	1 (0.1)
Korea		4 (0.2)	4 (0.2)
Latvia		1 (0.1)	1 (0.1)
Macedonia		1 (0.1)	1 (0.1)
Malaysia	2 (0.8)	1 (0.1)	3 (0.2)
Philippines		6 (0.3)	6 (0.3)
Poland		2 (0.1)	2 (0.1)
Puerto Rico		1 (0.1)	1 (0.1)
Romania		8 (0.5)	8 (0.5)
Russia		9 (0.5)	9 (0.5)
Serbia		2 (0.1)	2 (0.1)
Singapore		4 (0.2)	4 (0.2)
South Africa	7 (2.8)	64 (3.7)	71 (3.6)
Sri Lanka	2 (0.8)	9 (0.5)	11 (0.6)
Sweden		1 (0.1)	1 (0.1)
Syria		1 (0.1)	1 (0.1)
Taiwan	1 (0.4)	1 (0.1)	2 (0.1)
Thailand		1 (0.1)	1 (0.1)
Turkey		1 (0.1)	1 (0.1)
Ukraine		2 (0.1)	2 (0.1)
United Kingdom	21 (8.4)	135 (7.8)	156 (7.9)
USA	2 (0.8)	11 (0.6)	13 (0.7)
USSR		1 (0.1)	1 (0.1)
Yugoslavia	1 (0.4)	6 (0.3)	7 (0.4)

<sup>a</sup>Column percentages calculated with NZ included

(Data source: Dental Register)

Table 2-19: Cohort remainder rate for University of Otago graduates<sup>a</sup>

Graduation cohort	Years since graduation	Total number of graduates	Registered dentists	
			Number of graduates still practising	Cohort remainder rate (%)
1946-1950	59-63	128	1	0.8
1951-1955	54-58	175	3	1.7
1956-1960	49-53	176	17	9.7
1961-1965	44-48	188	51	27.1
1966-1970	39-43	239	115	48.1
1971-1975	34-38	212	119	56.1
1976-1980	29-33	272	173	63.6
1981-1985	24-28	269	203	75.5
1986-1990	19-23	224	152	67.9
1991-1995	14-18	247	166	67.2
1996	13	54	29	53.7
1997	12	52	32	61.5
1998	11	55	28	50.9
1999	10	58	25	43.1
2000	9	60	30	50.0
2001	8	60	32	53.3
2002	7	59	21	35.6
2003	6	58	28	48.3
2004	5	58	27	46.6
2005	4	66	34	51.5
2006	3	68	34	50.0
2007	2	61	38	62.3
2008	1	57	45	78.9
2009		55	45	81.8
Total		2951	1448	49.1

<sup>a</sup>Note that the data in this Table come from the Register itself; a number of each year's new Otago graduates do not register, and so the cohort remainder rate for NZ-funded graduates must be manually calculated. That figure is presented in Table 2-2, and differs from that presented here.

Figure 2-2: Trends in the proportion of female dentists and overseas graduates in the NZ dental workforce from 1983 to 2009

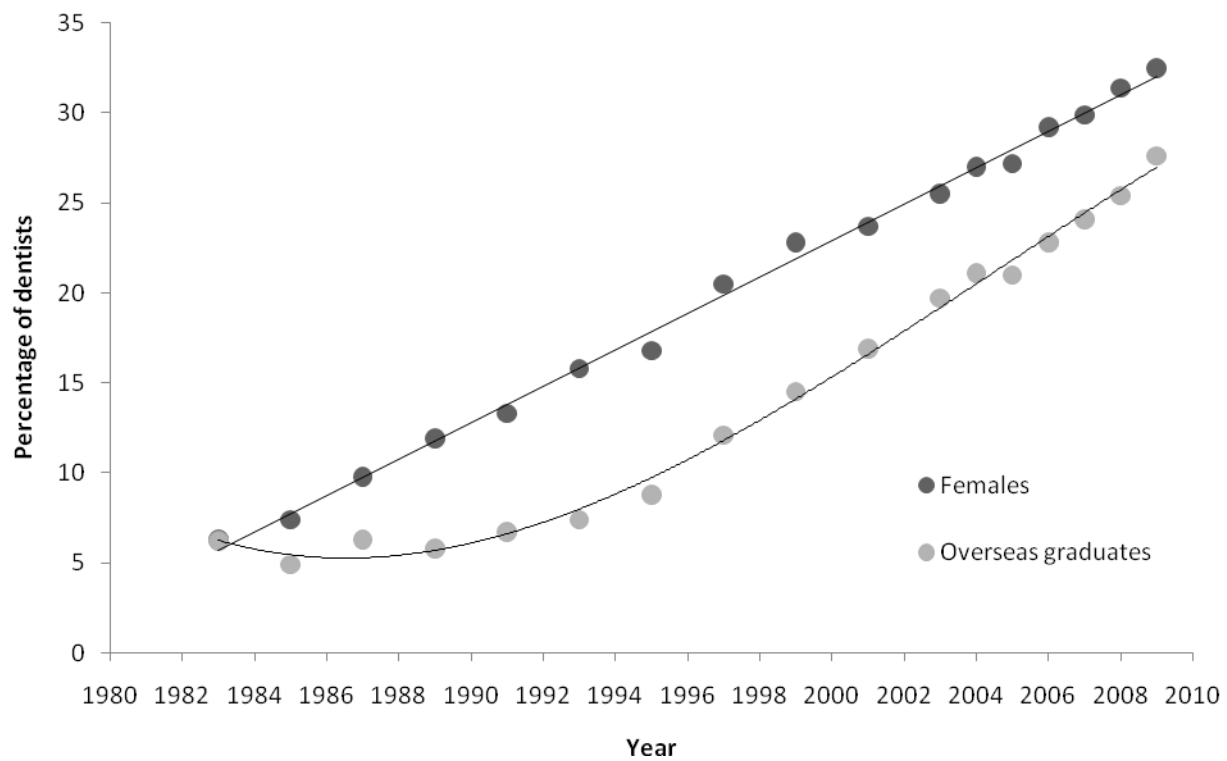


Table 2-20: Overseas dentists – NZDREX and equivalency, percentage of total dentists by year of first registration

Year of first registration in NZ	Overseas qualified dentists – NZDREX (row %)	Overseas qualified dentists – equivalency (row %)	Total number of dentists
1946-1950			1
1951-1955			3
1956-1960			16
1961-1965			41
1966-1970		1 (1.1)	93
1971-1975		9 (6.8)	133
1976-1980		6 (3.4)	176
1981-1985		5 (2.4)	206
1986-1990		24 (14.0)	171
1991-1995	13 (7.0)	20 (10.7)	187
1996	3 (6.7)	5 (11.1)	45
1997	19 (34.5)	6 (10.9)	55
1998	19 (33.3)	6 (10.5)	57
1999	19 (34.5)	4 (7.3)	55
2000	24 (30.8)	7 (9.0)	78
2001	14 (35.9)	8 (20.5)	39
2002	16 (23.5)	11 (16.2)	68
2003	12 (18.8)	19 (29.7)	64
2004	12 (31.6)	14 (36.8)	38
2005	19 (21.6)	32 (36.4)	88
2006	22 (27.8)	23 (29.1)	79
2007	32 (36.4)	22 (25.0)	88
2008	16 (18.4)	25 (28.7)	87
2009	5 (6.2)	53 (65.3)	81
Total	245	300	1949
Incomplete data		10	51

(Data source: Dental Register)



Table 2-21: Dentists &amp; Dental Specialists status by gender

Specialist status	All dentists in NZ with APC Number of dentists (Col %)	Gender differences	
		Men (Row %)	Women (Row %)
Specialists	249 (12.5)	197 (79.1)	52 (20.9)
Dentists	1751 (87.5)	1133 (64.7)	618 (35.3)
Total	2000	1314 (66.9)	649 (33.1) <sup>a</sup>
Specialty			
Endodontics	21 (1.1)	14 (66.7)	7 (33.3)
Oral & Maxillofacial Surgery	40 (2.0)	40 (100.0)	
Oral Medicine	2 (0.1)	1 (50.0)	1 (50.0)
Oral Pathology	6 (0.3)	3 (50.0)	3 (50.0)
Oral Surgery	4 (0.2)	4 (100.0)	
Orthodontics	84 (4.2)	66 (78.6)	18 (21.4)
Paediatric Dentistry	11 (0.6)	3 (27.3)	8 (72.7)
Periodontology	33 (1.7)	25 (75.8)	8 (24.2)
Prosthodontics	17 (0.9)	16 (94.1)	1 (5.9)
Public Health Dentistry	13 (0.7)	9 (69.2)	4 (30.8)
Restorative Dentistry	11 (0.6)	11 (100.0)	
Special Needs Dentistry	8 (0.4)	5 (62.5)	3 (37.5)
Total	250 <sup>a</sup>		

<sup>a</sup> Total sums to more than 249 as one dentist was registered in more than one specialist scope  
(Data source: Dental Register)

Geographic distribution of dentists by District Health Board area (Table 2-22 to Table 2-24):

The population data used in the following Tables come from the 2006 Census.

Table 2-22: Practising location by DHB area - all dentists

District Health Board	Number in register (%)	Number practising (%)	Percent practising resident in DHB areas
Northland	55 (2.6)	52 (2.6)	94.5%
Waitemata	228 (10.9)	214 (10.7)	93.9%
Auckland	337 (16.1)	322 (16.1)	95.5%
Counties-Manukau	141 (6.7)	134 (6.7)	95.0%
Waikato <sup>a</sup>	145 (6.9)	140 (7.0)	96.6%
Bay of Plenty	89 (4.2)	85 (4.3)	95.5%
Lakes	40 (1.9)	36 (1.8)	90.0%
Tairāwhiti	12 (0.6)	12 (0.6)	100.0%
Hawke's Bay	61 (2.9)	57 (2.9)	93.4%
Taranaki	35 (1.7)	33 (1.7)	94.3%
Whanganui	21 (1.0)	21 (1.1)	100.0%
MidCentral	63 (3.0)	60 (3.0)	95.2%
Capital and Coast <sup>b</sup>	172 (8.2)	166 (8.3)	96.5%
Hutt	75 (3.6)	71 (3.6)	94.7%
Wairarapa	15 (0.7)	14 (0.7)	93.3%
Nelson-Marlborough	74 (3.5)	72 (3.6)	97.3%
West Coast	8 (0.4)	8 (0.4)	100.0%
Canterbury	242 (11.5)	233 (11.7)	96.3%
South Canterbury	29 (1.4)	25 (1.3)	86.2%
Otago	195 (9.3)	188 (9.4)	96.4%
Southland <sup>c</sup>	55 (2.6)	51 (2.6)	92.7%
Missing	6	6	
Total	2098	2000	

<sup>a</sup>Includes all of the Ruapehu TLA (part of which is usually included in Whanganui DHB – affects Ohakune dentists)

<sup>b</sup>Includes all of the Kapiti Coast TLA (part of which is usually included in MidCentral DHB – affects Otaki dentists)

<sup>c</sup>Includes all of the Queenstown Lakes TLA (part of which is usually included in Otago DHB – affects Wanaka dentists)

(Data source: Dental Register)

Table 2-23: Department of Statistics 2006 census population by District Health Board (DHB) area

District Health Board	Total population <sup>a</sup>	Population >14 years <sup>a</sup>
Northland	148,440	113,667
Waitemata	481,614	377,064
Auckland	404,658	328,560
Counties-Manukau	433,083	320,973
Waikato <sup>b</sup>	330,474	255,312
Bay of Plenty	98,322	74,460
Lakes	194,910	151,290
Tairāwhiti	44,463	32,805
Hawke's Bay	148,248	114,168
Taranaki	104,274	81,558
Whanganui	70,923	54,930
MidCentral	151,296	118,893
Capital and Coast <sup>c</sup>	274,209	220,758
Hutt	136,116	105,282
Wairarapa	38,610	30,459
Nelson-Marlborough	130,065	104,301
West Coast	31,326	24,936
Canterbury	439,032	353,022
South Canterbury	81,249	65,073
Otago	172,392	141,702
Southland <sup>d</sup>	113,832	90,795
Total	4,027,536	3,160,008

<sup>a</sup>Based upon the 2006 Census (excludes 399 individuals residing outside Territory Local Authority (TLA) areas)

<sup>b</sup>Includes all of the Ruapehu TLA (part of which is usually included in Whanganui DHB – affects Ohakune dentists)

<sup>c</sup>Includes all of the Kapiti Coast TLA (part of which is usually included in MidCentral DHB – affects Otaki dentists)

<sup>d</sup>Includes all of the Queenstown Lakes TLA (part of which is usually included in Otago DHB – affects Wanaka dentists)

(Data source: Statistics New Zealand)

Table 2-24: Distribution of practising dentists and full-time equivalent (FTE) dentists by District Health Board (DHB) area

DHB area	No of dentists with APC <sup>b</sup>	Population to dentist ratio	Dentists per 100,000 population	FTE dentists <sup>b</sup>	Population-to-FTE dentist ratio <sup>b</sup>	FTE dentists per 100,000 population <sup>b</sup>
Northland	52	2186	45.7	40.5	2808	35.6
Waitemata	214	1762	56.8	166.0	2272	44.0
Auckland	322	1020	98.0	241.7	1359	73.6
Counties-Manukau	134	2395	41.7	103.9	3091	32.4
Waikato <sup>c</sup>	140	1824	54.8	107.6	2374	42.1
Bay of Plenty	85	876	114.2	64.1	1162	86.1
Lakes	36	4203	23.8	27.7	5457	18.3
Tairāwhiti	12	2734	36.6	9.1	3605	27.7
Hawke's Bay	57	2003	49.9	41.7	2739	36.5
Taranaki	33	2471	40.5	26.7	3052	32.8
Whanganui	21	2616	38.2	16.0	3433	29.1
MidCentral	60	1982	50.5	46.3	2568	38.9
Capital and Coast <sup>d</sup>	166	1330	75.2	125.5	1760	56.8
Hutt	71	1483	67.4	50.1	2101	47.6
Wairarapa	14	2176	46.0	9.4	3232	30.9
Nelson-Marlboro.	72	1449	69.0	51.6	2020	49.5
West Coast	8	3117	32.1	6.8	3694	27.1
Canterbury	233	1515	66.0	176.3	2003	49.9
South Canterbury	25	2603	38.4	18.1	3600	27.8
Otago	188	754	132.7	112.3	1262	79.3
Southland <sup>e</sup>	51	1780	56.2	37.8	2404	41.6
Unknown location	6					
Total	2000	1580	63.3	1479	2137	46.8
Number not reporting hours				205		

<sup>a</sup>Calculated using the population aged over 14 years (Table 2-23)

<sup>b</sup>Includes all dentists, regardless of employment type, where working hours were given (University dental school dentists and dentists who did not report their main employment type have been included). Dentists who reported working more than full-time were rounded down to one full-time equivalent

<sup>c</sup>Includes all of the Ruapehu TLA (part of which is usually included in Whanganui DHB – affects Ohakune dentists)

<sup>d</sup>Includes all of the Kapiti Coast TLA (part of which is usually included in MidCentral DHB – affects Otaki dentists)

<sup>e</sup>Includes all of the Queenstown Lakes TLA (part of which is usually included in Otago DHB – affects Wanaka dentists)

(Data sources: Workforce Survey and Statistics New Zealand)

Table 2-25: Geographic distribution of dentists by Territorial Local Authority (TLA) area, for all dentists

TLA area	Number in register	Percent	Number with APC	Percent
Far North	17	0.8	16	0.8
Whangarei	35	1.7	33	1.7
Kaipara	3	0.1	3	0.2
Rodney	30	1.4	30	1.5
North Shore	137	6.5	127	6.4
Waitakere	61	2.9	57	2.9
Auckland	337	16.1	322	16.1
Manukau	108	5.1	102	5.1
Papakura	22	1.0	21	1.1
Franklin	11	0.5	11	0.6
Thames-Coromandel	12	0.6	11	0.6
Hauraki	2	0.1	2	0.1
Waikato	3	0.1	3	0.2
Matamata-Piako	12	0.6	11	0.6
Hamilton	83	4.0	81	4.1
Waipa	16	0.8	15	0.8
Otorohanga	8	0.4	8	0.4
South Waikato	4	0.2	4	0.2
Waitomo	1	0	1	0.1
Taupo	12	0.6	12	0.6
Western BoP	8	0.4	7	0.4
Tauranga	69	3.3	66	3.3
Rotorua	28	1.3	24	1.2
Whakatane	10	0.5	10	0.5
Kawerau	1	0	1	0.1
Opotiki	1	0	1	0.1
Gisborne	12	0.6	12	0.6
Wairoa	2	0.1	2	0.1
Hastings	23	1.1	22	1.1
Napier	32	1.5	30	1.5
Central Hawkes Bay	4	0.2	3	0.2
New Plymouth	25	1.2	24	1.2
Stratford	2	0.1	1	0.1
South Taranaki	8	0.4	8	0.4
Ruapehu District	4	0.2	4	0.2
Wanganui	19	0.9	19	1.0
Rangitikei	2	0.1	2	0.1
Manawatu	5	0.2	5	0.3
Palmerston North	44	2.1	41	2.1
Tararua	3	0.1	3	0.2
Horowhenua	11	0.5	11	0.6
Kapiti Coast	17	0.8	17	0.9
Porirua	14	0.7	14	0.7
Upper Hutt	13	0.6	12	0.6
Lower Hutt	62	3.0	59	3.0
Wellington	141	6.7	135	6.8
Masterton	9	0.4	9	0.5
Carterton	5	0.2	5	0.3
South Wairarapa	1	0.0	0	0
Tasman	19	0.9	19	1.0
Nelson	39	1.9	37	1.9

Marlborough	16	0.8	16	0.8
Kaikoura	2	0.1	2	0.1
Buller	1	0	1	0.1
Grey	6	0.3	6	0.3
Westland	1	0	1	0.1
Hurunui	0	0	0	0
Waimakariri	8	0.4	7	0.4
Christchurch	228	10.9	220	11.0
Selwyn	4	0.2	4	0.2
Ashburton	10	0.5	9	0.5
Timaru	18	0.9	16	0.8
Mackenzie	1	0	0	0
Waimate	0	0	0	0
Chatham Islands	0	0	0	0
Waitaki	17	0.8	17	0.9
Central Otago	8	0.4	8	0.4
Queenstown Lakes	19	0.9	16	0.8
Dunedin	166	7.9	159	8.0
Clutha	4	0.2	4	0.2
Southland	2	0.1	2	0.1
Gore	4	0.2	4	0.2
Invercargill	30	1.4	29	1.5
TLA Code not available	6	0	6	0
Total	2098		2000	

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(Data source: Dental Register)

Table 2-26: Department of Statistics population<sup>a</sup>

TLA area	Total population	Population >14 years <sup>a</sup>
Far North	55,839	42,231
Whangarei	74,463	57,510
Kaipara	18,141	13,926
Rodney	89,562	69,939
North Shore	205,614	164,844
Waitakere	186,444	142,281
Auckland	408,655	328,560
Manukau	242,643	242,643
Papakura	45,174	33,876
Franklin	58,935	44,454
Thames-Coromandel	25,932	21,375
Hauraki	17,187	13,347
Waikato	43,959	32,754
Matamata-Piako	30,480	23,451
Hamilton	129,255	100,998
Waipa	42,501	32,895
Otorohanga	9,087	6,897
South Waikato	22,650	16,614
Waitomo	9,441	6,981
Taupo	35,421	25,218
Western Bay of Plenty	42,075	32,967
Tauranga	103,629	82,047
Rotorua	65,898	49,242
Whakatane	33,294	24,798
Kawerau	6,927	4,977
Opotiki	8,967	6,501
Gisborne	44,460	32,805
Wairoa	8,481	6,264
Hastings	70,845	53,742
Napier	55,365	43,650
Central Hawkes Bay	12,963	10,044
New Plymouth	68,898	54,549
Stratford	8,883	20,169
South Taranaki	29,460	10,167
Ruapehu	13,569	33,411
Whanganui	42,639	11,352
Rangitikei	14,703	21,753
Manawatu	28,254	60,213
Palmerston North	75,543	13,413
Tararua	17,634	23,514
Horowhenua	29,862	37,263
Kapiti Coast	46,206	35,802
Porirua	48,537	10,167
Upper Hutt	38,415	29,919
Lower Hutt	97,710	75,363

Wellington	179,466	147,693
Masterton	22,626	17,814
Carterton	70,950	5,604
South Wairarapa	8,886	7,041
Tasman	44,628	35,022
Nelson	42,891	34,647
Marlborough	42,555	34,632
Kaikoura	3,627	2,952
Buller	9,711	7,797
Grey	13,218	10,362
Westland	8,403	6,777
Hurunui	10,479	8,244
Waimakiriri	42,834	33,135
Christchurch	348,435	282,765
Selwyn	33,666	25,926
Ashburton	27,375	21,705
Timaru	42,873	34,617
Mackenzie	3,795	3,036
Waimate	7,206	5,715
Chatham Islands	606	468
Waitaki	20,223	16,401
Central Otago	16,653	13,593
Queenstown Lakes	22,959	19,209
Dunedin	118,686	98,712
Clutha	16,836	12,996
Southland	28,437	21,990
Gore	12,218	9,549
Invercargill	50,322	40,047
Total	3,859,827 <sup>b</sup>	3,160,371

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<sup>a</sup>2006 Census; “usually resident” population (excludes visitors)

<sup>b</sup>Excludes 336 persons residing outside any TLA

(Data source: Statistics New Zealand 2006 census. These data are the denominators for the estimates in Table 2-27)



Table 2-27: Distribution of full-time equivalent (FTE) dentists

TLA area	No. of dentists with APC	Population -to-dentist ratio <sup>b</sup>	Dentists per 100,000 population <sup>b</sup>	FTE dentists <sup>a</sup>	Population -to-FTE-dentist ratio <sup>a</sup>	FTE per 100,000 population <sup>a</sup>
Far North	16	2639	37.9	11.6	3656	27.3
Whangarei	33	1743	57.4	26.2	2197	45.5
Kaipara	3	4642	21.5	2.8	5064	19.7
Rodney	30	2331	42.9	23.9	2923	34.2
North Shore	127	1298	77.0	99.7	1654	60.5
Waitakere	57	2496	40.1	42.4	3360	29.8
Auckland	322	1020	98.0	241.7	1359	73.6
Manukau	102	2379	42.0	77.0	3151	31.7
Papakura	21	1613	62.0	16.8	2013	49.7
Franklin	11	4041	24.7	10.0	4434	22.6
Thames-Coromandel	11	1943	51.5	9.3	2305	43.4
Hauraki	2	6674	15.0	1.8	7415	13.5
Waikato	3	10918	9.2	3.0	10918	9.2
Matamata-Piako	11	2132	46.9	8.4	2784	35.9
Hamilton	81	1247	80.2	60.5	1671	59.9
Waipa	15	2193	45.6	12.2	2691	37.2
Otorohanga	8	862	116.0	5.8	1189	84.1
South Waikato	4	4154	24.1	3.5	4747	21.1
Waitomo	1	6981	14.3	1.0	6981	14.3
Taupo	12	2102	47.6	10.0	2528	39.6
Western BoP	7	4710	21.2	3.6	9158	10.9
Tauranga	66	1243	80.4	51.7	1588	63.0
Rotorua	24	2052	48.7	17.8	2774	36.0
Whakatane	10	2480	40.3	6.8	3633	27.5
Kawerau	1	4977	20.1	1.0	4977	20.1
Opotiki	1	6501	15.4	1.0	6501	15.4
Gisborne	12	2734	36.6	9.1	3605	27.7
Wairoa	2	3132	31.9	.0		0.0
Hastings	22	2443	40.9	16.4	3287	30.4
Napier	30	1455	68.7	22.8	1917	52.2
Central Hawkes Bay	3	3348	29.9	2.6	3939	25.4
New Plymouth	24	2273	44.0	19.7	2773	36.1
Stratford	1	20169	5.0	.9	22410	4.5
South Taranaki	8	1271	78.7	6.2	1653	60.5
Ruapehu District	4	8353	12.0	2.1	16102	6.2
Whanganui	19	597	167.4	14.3	797	125.5
Rangitikei	2	10877	9.2	1.8	12430	8.0
Manawatu	5	12043	8.3	4.7	12811	7.8
Palmerston North	41	327	305.7	32.0	420	238.2
Tararua	3	7838	12.8	3.0	7838	12.8
Horowhenua	11	3388	29.5	6.7	5603	17.8
Kapiti Coast	17	2106	47.5	11.6	3086	32.4
Porirua	14	726	137.7	9.4	1082	92.5
Upper Hutt	12	2493	40.1	9.4	3200	31.3
Lower Hutt	59	1277	78.3	40.8	1849	54.1
Wellington	135	1094	91.4	104.5	1414	70.7

Masterton	9	1979	50.5	6.4	2773	36.1	
Carterton	5	1121	89.2	3.0	1868	53.5	
South Wairarapa	0		0.0	.0		0.0	
Tasman	19	1843	54.3	11.6	3032	33.0	
Nelson	37	936	106.8	27.5	1260	79.4	
Marlborough	16	2165	46.2	12.6	2754	36.3	
Kaikoura	2	1476	67.8	1.6	1874	53.4	
Buller	1	7797	12.8	1.0	7797	12.8	
Grey	6	1727	57.9	5.0	2093	47.8	
Westland	1	6777	14.8	.8	8471	11.8	
Hurunui			0.0	6.4	1288	77.6	
Waimakariri	7	4734	21.1	164.4	202	496.2	
Christchurch	220	1285	77.8	3.9	72972	1.4	
Selwyn	4	6482	15.4	6.5	4004	25.0	
Ashburton	9	2412	41.5	11.6	1871	53.4	
Timaru	16	2164	46.2	11.3	3063	32.6	
Mackenzie	0		0	0		0	
Waimate	0		0	0		0	
Chatham Islands	0		0	0		0	
Waitaki	17	965	103.7	.0		0.0	
Central Otago	8	1699	58.9	6.0	2256	44.3	
Queenstown Lakes	16	1201	83.3	10.1	1897	52.7	
Dunedin	159	621	161.1	92.1	1072	93.3	
Clutha	4	3249	30.8	2.9	4481	22.3	
Southland	2	10995	9.1	1.9	11886	8.4	
Gore	4	2387	41.9	3.3	2894	34.6	
Invercargill	20.9	29	1381	72.4	22.5	1780	56.2
Missing		6					
Total		2000					

<sup>a</sup>Includes all dentists, regardless of employment type

<sup>b</sup>Calculated using the population aged over 14 years (Table 2-26)

(Data sources: Workforce Survey and Statistics New Zealand)

### Section 3: **The Dental Therapist Workforce**

#### 3.1 Description of socio-demographic characteristics of the current dental therapy workforce

A total of 679 dental therapists were listed on the Dental Council register, down from 682 for the previous reporting period. Of these, 647 held a current APC, down from 648 the previous year, and 32 dental therapists had their registrations on hold (REGN). Dental therapists' ages ranged from 22 to 71 years, with a mean age of 49.3 years (SD, 11.2) and a median of 52 years (an increase from 51 years the previous year). Data on the dental therapists' distribution across the various age groups are presented in Table 3-1. Subsequent analyses are restricted to those practitioners with current APCs.

Table 3-1: Age distribution of practising dental therapists in years

Age group	Number of males <sup>a</sup>	Number of females	Total number	Cumulative percentage
19 or younger	0	0	0	0
20 to 24	4	12	16	2.5
25 to 29	6	39	46	9.6
30 to 34	1	30	32	14.5
35 to 39	2	37	39	20.6
40 to 44	0	61	61	30.0
45 to 49	2	86	88	43.6
50 to 54	0	140	140	65.2
55 to 59	0	126	126	84.7
60 to 64	0	75	75	96.3
65+	0	24	24	100
Total	15 (2.3)	630 (97.4)	647	

<sup>a</sup> Gender data were not available for two registered dental therapists

Over half of the active dental therapists are aged 50 or over, with 41.1% in the 50-59 age band. One in five dental therapists were below 40 years of age. There were 15 male dental therapists in the dataset, the same number as in the previous year.

Data on dental therapists' ethnicity are presented in Table 3-2.

Table 3-2: Ethnicity (primary and secondary) among dental therapists

Ethnicity	Primary (%)	Secondary	Total <sup>a,b</sup>
NZ European	537 (83.0)		537 (83.0)
Māori	33 (5.1)	41	74 (11.4)
Other European	11 (1.7)	1	12 (1.9)
Samoan	3 (0.5)	1	4 (0.5)
Niuean	1 (0.2)	1	2 (0.3)
Cook Island Māori		1	1 (0.2)
Tokelauan	1 (0.2)		1 (0.2)
Fijian	3 (0.5)		3 (0.5)
Other Pacific Peoples			
Other East Asian	1 (0.2)		1 (0.2)
Chinese	19 (2.9)	2	21 (3.2)
Indian	6 (0.9)	2	8 (1.2)
Other Asian	10 (1.5)		10 (1.5)
Other	10 (1.5)	1	11 (1.7)
Total	635		
No response to question	12 (1.9)		12 (1.9)

Table 3-3: Self-identification of ethnicity among dental therapists<sup>a, b</sup>

<b>Africa</b>		<b>Other European</b>		<b>Asia</b>	
South African	2	Danish	1	Japanese	1
Zimbabwean	1	Dutch	3	Korean	3
		Georgian	1	Laos	1
<b>North American</b>		Hungarian	1	Sri Lankan	1
Latino American	1	Irish	1	Taiwanese	2
		Polish	1	Thai	1
<b>Great Britain</b>		Russian	3	Vietnamese	2
British/UK	3				
				<b>New Zealand</b>	
				New Zealander	2
				Pakeha	1
				<b>Other Oceania</b>	
				Australian	2
				Filipino	1

<sup>a</sup>An element of inaccuracy is introduced here, with the duplication of individuals belonging to two ethnic groups; however, the approach used here has been used in previous years with the dentist report and is retained for comparison purposes.

<sup>b</sup>Note that this is a self-identification.

### 3.2 Practising characteristics

#### 3.2.1 Full- or part-time practice

Full-time practice was reported by 455 dental therapists (70.3%). Of the 192 (29.7%) who reported part-time practice: 13 (6.8%) were doing non-dental work; 8 (4.2%) reported that there was not enough dental work available; 2 (1.0%) reported they were seeking dental work; 4 (2.1%) was semi-retired from practice; 51 (26.6%) cited parental responsibilities; 79 (41.1%) did so by personal choice; and 35 (18.2%) indicated other reasons, including management, teaching, or study responsibilities as well as health reasons or dual dental therapy/hygiene work.

Of the 647 dental therapists with APCs, a total of 18 reported they were not currently practising; of those, 12 (66.7%) were working in another health profession, 5 (27.8%) were full-time students, and 1 was not practising while seeking work.

#### 3.3 Type and location of practice

Data are presented on the type of therapy practice in Table 3-4. The proportion of dental therapists who reported their main form of employment as working in private practice increased by 2% over the previous year, while the proportion working for DHBs decreased by nearly 2%. Of the 14 who reported a second employment type, 6 were in private practice (3 were self-employed), 4 worked in the DHB sector, 2 were employed by an Iwi organization, and the remainder reported other forms of employment.

Table 3-4: Type of practice among dental therapists

Type of practice <sup>a</sup>	Number (%)
Private practice <sup>b</sup>	51 (7.9)
DHB	541 (83.6)
Government Dept, not MoH	1 (0.2)
University Dental School	5 (0.8)
Iwi	3 (0.5)
MoH	1 (0.2)
Other	4 (0.6)
Total	606 (93.7)
No reply to question	41 (6.3)

<sup>a</sup>Note: only the information on the first employer was analysed

<sup>b</sup>Of these dental therapists in private practice, 23 were self-employed, while 28 were employees (Data source: Workforce Survey)

Table 3-5: Work type (mean hours) by primary and secondary employer among dental therapists

Work type	General dental therapy Mean (SD) [number]	Teaching <sup>b</sup> Mean (SD) [number]	Administration <sup>b</sup> Mean (SD) [number]	Total hours Mean (SD) [number]
<b>Primary employer</b>				
Private practice (self-emp) <sup>a</sup>	24.7 (12.4) [17]	-	-	24.7 (12.4) [17]
Private practice, employee	25.7 (9.7) [23]	-	17.5 (3.5) [2]	27.2 (12.2) [23]
DHB or Min. of Health	33.2 (8.7) [502]	31.5 (6.0) [4]	24.6 (12.3) [18]	33.7 (8.7) [512]
University Dental School	22.0 (12.5) [3]	22.5 (3.5) [2]		27.8 (6.1) [4]
<b>Secondary employer</b>				
Private practice (self-emp) <sup>a</sup>	5.0 (0.0) [2]	-	-	5.0 (0.0) [2]
Private practice, employee	9.0 (4.2) [4]	-	18.0 [1]	10.8 (5.4) [5]
DHB or Min. of Health	20.1 (18.7) [19]	18.0 [1]	20.0 [1]	20.0 (17.8) [21]
University Dental School	-	-	-	-

<sup>a</sup>Solo or group practice

<sup>b</sup>Where specifically employed to do so  
(Data source: Workforce Survey)

No. of respondents providing data on primary job	598
No. of respondents providing data on secondary job	10
Total no. of practising dental therapists	647

### 3.4 Hours worked

The total hours worked by dental therapists ranged from 0 to 75 hours per week, with a mean of 33.2 (SD, 9.0) among the 576 dental therapists who reported working one or more hours per week. The categorised data are presented in Table 3-6 below.

Table 3-6: Hours worked per week by dental therapists

Number of hours worked	Number of dental therapists (%)
1 to 10	1 (1.7)
11 to 20	38 (5.9)
21 to 30	119 (18.4)
31 to 40	401 (62.0)
41 to 50	3 (0.5)
51 to 60	4 (0.6)
More than 60	10 (1.5)
Total	576 (90.6)
Nil or no response	61 (9.4)
Mean no. of hours/week (sd)	33.2 (9.0)
Range	0 to 75

### 3.5 Workforce development

#### 3.5.1 Postgraduate training

A total of 27 dental therapists with current APCs reported they were currently undertaking postgraduate training, and a further two who did not have current APCs were also undertaking postgraduate training. Overall, 21 of those expected to practise in New Zealand at the completion of that training. Of the 27 dental therapists who reported what training they were undertaking, 22 reported what they were studying. Postgraduate training courses that dental therapists reported studying were varied, and many were studying courses that are unrelated to dental therapy.

Fourteen of the dental therapists undertaking postgraduate training were expected to have completed their qualifications in 2008 or 2009.

### 3.5.2 Scopes of practice

The number of practising dental therapists registered in the various SOPs were: 647 (100.0%) in general dental therapy practice; 519 (80.2%) in diagnostic radiography in dental therapy practice (up from 70.7% in 2008 and 59.9% in 2007); 47 (7.3%) in radiography in dental therapy practice; 248 (38.3%) in pulpotomies in dental therapy practice; 140 (21.6%) in stainless steel crowns in dental therapy practice; and 13 (2.0%) in adult dental care in dental therapy practice.

The number of dental therapists registered in each of those available SOPs are presented by DHB in Table 3-7. Large differences are reported in the treatments that dental therapists from different DHBs are able to provide.

### 3.5.3 Continuing professional development

Some 92.9% of dental therapists (N=631) had completed at least 15 hours of CPD during the previous year, down from 96.1% in 2008. The average age of dental therapists who had not met the CPD requirements was 38.9 years, while the average age of those who had was 49.8 years.

## 3.6 Geographic distribution

Data on the geographic distribution of dental therapists are presented in Table 3-8. The Bay of Plenty DHB had the highest number of FTEs per 100,000 population, while the Greater Wellington area had the lowest. This was true both in 2006 and 2007. Lakes, Canterbury, and Auckland also had low numbers of FTE dental therapists for population.



Table 3-7: Dental Therapists' scopes of practice, by District Health Board

DHB area	Diagnostic radiography <sup>a</sup> (%)	Radiography <sup>a</sup> (%)	Pulpotomies (%)	Stainless steel crowns (%)	Adult dental care (%)	Total registered in General dental therapy (column %)
Northland	29 (90.6)	0	6 (18.8)	0	3 (9.4)	32 (4.9)
Waitemata	58 (66.7)	5 (5.7)	35 (40.2)	35 (40.2)	0	87 (13.4)
Auckland	38 (73.1)	4 (7.7)	24 (46.2)	22 (42.3)	1 (1.9)	52 (8.0)
Counties-Manukau	53 (84.1)	5 (7.9)	36 (57.1)	35 (55.6)	0	63 (9.7)
Waikato	57 (96.6)	2 (3.4)	49 (83.1)	8 (13.6)	0	59 (9.1)
Bay of Plenty	37 (90.2)	2 (4.9)	14 (34.1)	6 (14.6)	0	41 (6.3)
Lakes	24 (96.0)	0	5 (20.0)	3 (12.0)	0	25 (3.9)
Tairāwhiti	7 (100.0)	0	0	0	0	7 (1.1)
Hawke's Bay	17 (54.8)	1 (3.2)	2 (6.5)	1 (3.2)	1 (3.2)	31 (4.8)
Taranaki	19 (82.6)	6 (26.1)	16 (69.6)	1 (4.3)	3 (133.0)	23 (3.6)
Whanganui	14 (77.8)	4 (22.2)	10 (55.6)	1 (5.6)	2 (11.1)	18 (2.8)
MidCentral	4 (16.0)	8 (32.0)	2 (8.0)	2 (8.0)	0	25 (3.9)
Capital and Coast	11 (78.6)	1 (7.1)	1 (7.1)	1 (7.1)	0	14 (2.2)
Hutt <sup>b</sup>	27 (93.1)	1 (3.4)	6 (20.7)	6 (20.7)	0	29 (4.5)
Wairarapa	4 (50.0)	1 (12.5)	0	0	0	8 (1.2)
Nelson-Marlboro.	17 (89.5)	4 (21.1)	18 (94.7)	0	2 (10.5)	19 (2.9)
West Coast	5 (100.0)	0	0	0	0	5 (0.8)
Canterbury	47 (94.0)	1 (2.0)	5 (10.0)	3 (6.0)	0	50 (7.7)
South Canterbury	9 (90.0)	1 (10.0)	0	0	0	10 (1.5)
Otago	31 (96.9)	1 (3.1)	15 (46.9)	15 (46.9)	0	32 (4.9)
Southland	11 (64.7)	0	4 (23.5)	1 (5.9)	1 (5.9)	17 (2.6)
Total	519 (80.2)	47 (7.3)	248 (38.3)	140 (21.6)	13 (2.0)	647 (100.0)

<sup>a</sup>The distinction is made here between “diagnostic radiography”, which involves the taking and interpreting of radiographs, and “radiography”, which is the taking of radiographs.

(Data source: Dental Register)

Table 3-8: Distribution of full-time equivalent (FTE) dental therapists by population aged 14 years or less within District Health Board (DHB) areas

DHB area	Population aged 0-14	No of therapists	FTE therapists	Population-to-FTE ratio	FTE per 100,000 population
Northland	34,773	32	23.3	1492.4	67
Greater Auckland <sup>b</sup>	292,758	202	150.4	1946.5	51
Waikato	75,162	59	41.2	1824.3	55
Bay of Plenty	23,862	41	32.6	732.0	137
Lakes	43,620	25	18.9	2307.9	43
Tairāwhiti	11,658	7	6.7	1740.0	57
Hawke's Bay	34,080	31	22.0	1549.1	65
Taranaki	22,716	23	17.3	1313.1	76
Whanganui	15,993	18	12.6	1269.3	79
MidCentral	32,403	25	19.7	1644.8	61
Greater Wellington <sup>b</sup>	84,285	43	32.8	2569.7	39
Wairarapa	8,151	8	5.7	1430.0	70
Nelson-Marlborough	25,764	19	11.8	2183.4	46
West Coast	6,390	5	4.3	1486.0	67
Canterbury	86,010	50	32.2	2671.1	37
South Canterbury	16,176	10	7.1	2278.3	44
Otago	30,690	32	24.5	1252.7	80
Southland	23,037	17	13.5	1706.4	59
Total	867,528	647	476.5	1820.6	55

<sup>a</sup>Includes dental therapists in dental practice, and those employed in Ministry of Health, Hospital and Health Services, Government Departments, and other practice settings (and University dental school therapists are included in these data, as those institutions may cater for a number of schools)

<sup>b</sup>Waitemata, Greater Auckland, and Counties-Manukau were combined into Greater Auckland. Hutt and Capital & Coast DHBs were combined into Greater Wellington.

<sup>c</sup>Working hours data missing for 61 dental therapists

(Data sources: Workforce Survey and Statistics New Zealand)

## Section 4: **The Dental Hygienist Workforce**

### 4.1 Description of the current dental hygiene workforce

A degree of complication is introduced into the analysis of the hygiene workforce data in the fact that three main types of 'hygienists' exist. The role of 'dental hygienists' *per se* is in the provision of oral health education, the prevention of oral disease to promote healthy oral behaviours, and the prevention and non-surgical treatment of periodontal diseases. 'Dental auxiliaries' comprise a subset of dental hygiene practitioners who do not have a recognised qualification in dental hygiene but who were practising it prior to the inception of the HPCA and as such have a more limited scope of practice than dental hygienists (this particular scope of practice was revoked on 18 September 2009).

'Orthodontic auxiliaries' assist the dentist or orthodontist in implementing orthodontic treatment through performing some orthodontic procedures (for example; taking impressions and making study models, inserting and removing some orthodontic appliances, preparing teeth for bonding, removing bonding composite and banding cement, and providing oral health education and advice on the care and maintenance of orthodontic appliances). A more detailed description of these categories and their SOPs is to be found on the Dental Council website.

A total of 423 individuals were registered as hygienists with the Dental Council, and 378 of these held current APCs. Some 44 had their registrations on hold, and 1 was coded as being due for removal from the register. Unless otherwise indicated, all subsequent analyses pertain to the 378 individuals with current APCs. Exploration of the SOPs of these groups revealed that of the 378 in the register, 320 (84.7%) of these had a scope of general dental hygiene, 32 (8.5%) were dental auxiliaries, and 79 (20.9%) were orthodontic auxiliaries, as defined above. Some dental therapists were practising in more than one of these scopes.

### 4.2 Sociodemographic characteristics

The 320 dental hygienists' ages ranged from 23 to 68 years, with a mean age of 41.1 (sd 10.4) years and a median of 41 years. The dental hygienist workforce is dominated by women; only 7 males are registered as hygienists (gender data were unavailable for 3 dental hygienists at the time of preparing this report).

The 32 dental auxiliaries ages ranged from 30 to 62 years, with a mean age of 46.9 (sd 7.8) years and a median of 47.0 years. The dental auxiliary workforce is dominated by women; only 1 male (3.1%) was registered as a dental auxiliary.

The 79 orthodontic auxiliaries ages ranged from 25 to 68 years, with a mean age of 46.8 (sd 10.7) years and a median of 48 years. The orthodontic auxiliary workforce is dominated by women; only 2 males (2.5%) was registered as an orthodontic auxiliary (gender data were unavailable for 2 orthodontic auxiliaries at the time of preparing this report).

Table 4-1: Age distribution of practising dental hygienists and auxiliaries, by occupational category

Age group	Dental hygienists	Dental auxiliaries	Orthodontic auxiliaries	Total (%) <sup>a</sup>
Under 20	0	0	0	0
20 to 24	12 (3.8)	0	1 (1.3)	13 (3.4)
25 to 29	43 (13.4)	1 (3.1)	4 (5.1)	48 (12.7)
30 to 34	37 (11.6)	1 (3.1)	9 (11.4)	42 (11.1)
35 to 39	62 (19.4)	5 (15.6)	8 (10.1)	71 (18.8)
40 to 44	43 (13.4)	5 (15.6)	7 (5.6)	48 (12.7)
45 to 49	53 (16.6)	11 (34.4)	14 (17.7)	65 (17.2)
50 to 54	37 (11.6)	4 (12.5)	21 (26.6)	49 (13.0)
55 to 59	19 (5.9)	4 (12.5)	5 (6.3)	23 (6.1)
60 to 64	11 (3.4)	1 (3.1)	8 (10.1)	15 (4.0)
65+	3 (0.9)	0	2 (2.5)	4 (1.1)
Total	320	32	79	378

<sup>a</sup>The total will sum to greater as some practitioners were registered in more than 1 scope of practice

Table 4-2: Ethnicity (primary and secondary) among practising hygienists and auxiliaries

Ethnicity	Primary	Secondary	Total <sup>a</sup>
<b>Dental hygienists</b>			
NZ European	218 (70.3)		218
Māori	5 (1.6)	11	16
Other European	23 (7.4)	3	26
Samoan	1 (0.3)	1	2
Cook Is Māori			0
Other Pacific	1 (0.3)		1
Other East Asian	3 (1.0)		3
Chinese	9 (2.9)	2	11
Indian	4 (1.3)		4
Other Asian	9 (2.9)		9
Other	36 (11.6)	2	38
No response to question	11		11
<b>Dental auxiliaries</b>			
NZ European	19 (63.3)		19
Māori		2	2
Other European			0
Samoan			0
Cook Is Māori			0
Other Pacific			0
Other East Asian	2 (6.7)		2
Chinese			0
Indian			0
Other Asian	6 (20.0)		6
Other	3 (10.0)		3
No response to question	2		2
<b>Orthodontic auxiliaries</b>			
NZ European	60 (78.9)		60
Māori		1	1
Other European	5 (6.6)	2	7
Samoan		1	1
Cook Is Māori			0
Other Pacific			0
Other East Asian			0
Chinese	1 (1.3)		1
Indian	2 (2.6)		2
Other Asian	4 (5.3)		4
Other	4 (5.3)		4
No response to question	3		3
Total	378		

<sup>a</sup>An element of inaccuracy is introduced here, with the counting twice of those with two ethnic groups.

### 4.3 Practicing characteristics

#### 4.3.1 Full- or part-time practice

Part-time practice was reported by 203 (53.7%, an increase from 47.7% and 50.9% during the past two years); this included 53.8% of dental hygienists, 62.5% of dental auxiliaries, and 51.9% of orthodontic auxiliaries. Of the 203 (53.7%) overall who reported part-time practice: 6 were doing non-dental work; 16 reported that there was not enough dental work available; 2 reported that they were seeking dental work; 73 cited parental responsibilities; 81 did so by personal choice; and 21 (8.8%) indicated other reasons.

A total of 12 reported they were not currently practising; of those, 4 were practising overseas and 8 were in New Zealand but not practicing.

#### 4.3.2 Type and location of practice

Data are presented on the type of hygiene practice in Table 4-3. The majority of each of the three occupational categories were employees in private practice, but nearly one-third of dental hygienists and dental auxiliaries were self-employed.

#### 4.3.3 Hours worked

An analysis of hours worked by hygienists is presented in Table 4-4. Because very few orthodontic auxiliaries and dental auxiliaries completed the questionnaire section pertaining to the number of hours worked, it is not informative to include those data in Table 4-4.

Table 4-3: Type of practice, by occupational category

Type of practice	Primary employer	Secondary employer
<i>Dental hygienists</i>		
DHB/MoH	12 (4.8)	2
Private practice self-employed	84 (33.6)	24
Private practice employed	150 (60.0)	14
University Dental School	4 (1.6)	3
Total	250	
Not stated	70	
<i>Dental auxiliaries</i>		
DHB/MoH	0	
Private practice self-employed	15 (48.4)	3
Private practice employed	16 (51.6)	1
University Dental School	0	
Total	31	
Not stated	1	
<i>Orthodontic auxiliaries</i>		
DHB/MoH	2 (2.9)	
Private practice self-employed	9 (12.9)	
Private practice employed	59 (84.3)	
University Dental School	0	
Total	70	
Not stated	9	

(Data source: Workforce Survey)



Table 4-4: Work type (mean hours) by primary employer for dental hygienists

Employment status	Dental hygiene Mean (sd) [N]	Teaching <sup>b</sup> Mean (sd) [N]	Administration <sup>b</sup> Mean (sd) [N]	Total hours Mean (sd) [N]
<i>Primary employer</i>				
DHB or Min. of Health	31.3 (17.7) [6]	40.0 [1]		32.6 (16.5) [7]
Private practice (self-emp) <sup>a</sup>	25.0 (10.1) [82]	19.0 (4.2) [2]		25.5 (10.2) [82]
Private practice, employee	27.4 (9.9) [141]			27.4 (9.9) [141]
University Dental School	19.0 (1.4) [2]	18.0 (2.6) [3]		30.7 (13.7) [3]

<sup>a</sup>Solo or group practice

<sup>b</sup>Where specifically employed to do so

(Data source: Workforce Survey)

The total hours worked by hygienists ranged from 2 to 52 per week, with a mean of 29.0 (sd, 10.2). An analysis of hours worked is presented below in Table 4-5.

Table 4-5: Hours worked per week by dental hygienists

No. of hours worked	No. of hygienists (%)
1 to 10	18 (6.6)
11 to 20	39 (14.3)
21 to 30	51 (18.8)
31 to 40	116 (42.6)
41 to 50	8 (2.9)
51 to 60	1 (0.4)
Nil or no response	39
Total	272
Mean no. of hours/week (sd)	29.0 (10.2)
Range	2 - 52

#### 4.4 Workforce development

##### 4.4.1 Postgraduate training

Some form of postgraduate training was reported by 9 hygienists. Of these, 1 was studying for a master of public health, 4 were undertaking further training in local anaesthesia, 3 were undertaking other postgraduate study, and one did not report what she was studying.

##### 4.4.2 Scopes of practice

Data on scopes of practice are presented by occupational category in Table 4-6.

Table 4-6: Hygiene scopes of practice, by occupational category

Scope of practice	Hygienists	Dental auxiliaries	Orthodontic auxiliaries	All combined
General dental hygiene	291 (90.9)	19 (59.4)	3 (3.8)	313
Extra-oral radiography	61 (19.1)	0	27 (34.2)	88
Intra-oral radiography	214 (66.9)	5 (15.6)	24 (30.4)	243
Local anaesthetic	115 (35.9)	0	0	115
Orthodontic procedures in hygiene	86 (26.9)	0	0	86
Orthodontic auxiliary practice	30 (9.4)	6 (18.8)	79 (100.0)	44
Total number	320	32	79	<sup>a</sup>

<sup>a</sup>The total will sum to greater than 378 as some were registered and practising in more than 1 scope of practice

#### 4.4.3 Continuing professional development

Dental hygienists are required to complete at least 30 hours of CPD during the two years prior to the reporting period, as compared to dentists who must complete upwards of 80 hours of CPD over a 4 year period.

Of the 378 registered in the scope, 352 (93.1%) reported that they had met the CPD requirements for the previous year, while 26 (6.9%) reported that they had not done so.

## Section 5: **The Dental Technician Workforce**

### 5.1 Description of current dental technician workforce

There are two main types of dental technicians – dental technicians *per se*, and clinical dental technicians. *Dental technicians'* major role is in processes and procedures associated with the design, manufacture and repair of fixed and removable oral and extra-oral appliances and prostheses prescribed by a practising dental specialist, dentist, clinical dental technician, medical practitioner or other practising health practitioner. *Clinical dental technicians* undertake those roles, as well as the fitting of complete removable dentures and the fitting of some other types of removable dentures, oral and extra-oral appliances under specific conditions set out in their detailed SOP. Clinical dental technicians also have an additional SOP available for implant-supported overdentures. A more detailed description of these categories and their SOPs is to be found on the Dental Council website ( <http://www.dcnz.org.nz>).

Of the 387 individuals listed in the dental technology scopes on the Register, 346 (89.4%) had a current APC and were practising in New Zealand (one more technician than the previous year). Unless otherwise indicated, all subsequent analyses pertain to those 346 individuals, of whom 149 (43.1%) were registered in the clinical dental technology SOP (six less clinical dental technicians than the previous year).

### 5.2 Sociodemographic characteristics

The ages of active dental technicians ranged from 23 to 83, with a mean age of 47.0 years (sd, 12.8) and a median of 46 years. Overall, there were 265 males (76.8%) and 77 females (22.3%), while the gender of three technician were unknown. The proportion of clinical dental technicians who are female had increased by 2% from the previous year, to 14.1%.

Data on technicians' distribution (by gender) across the various age groups are presented (by occupational group) in Table 5-1.

#### 5.2.1 Ethnicity

Ethnicity data were missing for 16 dental technicians. Of the remainder, there were 181 NZ Europeans (52.3%), 9 Māori (2.6%), 46 'Other Europeans' (13.3%), 2 Samoans (0.6%), 1 Tongan (0.3%), 1 Niuean (0.3%), 2 Fijian (0.6%), 7 'Other East Asians' (2.0%), 20 Chinese (5.8%), 3 Indians (0.9%), 28 'Other Asian' (8.1%), and 44 of 'other' ethnicities (12.7%). In the latter, the dominant groups in the latter category were German, Japanese, South Africa, and British.

Table 5-1: Age group by gender<sup>a</sup> and occupational group

	Females	Males	All combined
<b>Dental technicians</b>			
20 to 24	5 (8.9)	2 (1.5)	7 (3.6)
25 to 29	8 (14.3)	12 (8.8)	20 (10.2)
30 to 34	9 (16.1)	16 (11.7)	25 (13.3) <sup>a</sup>
35 to 39	13 (23.2)	23 (16.8)	36 (18.9) <sup>a</sup>
40 to 44	8 (14.3)	17 (12.4)	25 (13.3) <sup>a</sup>
45 to 49	7 (12.5)	22 (16.1)	29 (14.8)
50 to 54	4 (7.1)	18 (13.1)	22 (11.2)
55 to 59	2 (3.6)	16 (11.7)	18 (9.2)
60 to 64	0	7 (5.1)	7 (3.6)
65+	0	4 (2.9)	4 (2.0)
<b>Total</b>	<b>56</b>	<b>137</b>	<b>193</b>
<b>Clinical dental technicians</b>			
20 to 24	0	1 (0.8)	1 (0.7)
25 to 29	1 (4.8)	1 (0.8)	2 (1.3)
30 to 34	3 (14.3)	6 (4.7)	9 (6.0)
35 to 39	4 (19.0)	9 (7.0)	13 (8.7)
40 to 44	3 (14.3)	12 (9.4)	15 (10.1)
45 to 49	3 (14.3)	18 (14.1)	21 (14.1)
50 to 54	4 (19.0)	23 (18.0)	27 (18.1)
55 to 59	2 (9.5)	13 (10.2)	15 (10.1)
60 to 64	1 (4.8)	22 (17.2)	23 (15.4)
65+	0	23 (100)	23 (15.4)
<b>Total</b>	<b>21</b>	<b>128</b>	<b>149</b>
<b>All combined</b>			
20 to 24	5 (6.5)	3 (1.1)	8 (2.3)
25 to 29	9 (11.7)	13 (4.9)	22 (6.4)
30 to 34	12 (15.6)	22 (8.3)	34 (10.1) <sup>a</sup>
35 to 39	17 (22.1)	32 (12.1)	49 (14.5) <sup>a</sup>
40 to 44	11 (14.3)	29 (10.9)	40 (11.9) <sup>a</sup>
45 to 49	10 (13.0)	40 (15.1)	50 (14.5)
50 to 54	8 (10.4)	41 (15.5)	49 (14.2)
55 to 59	4 (5.2)	29 (10.9)	33 (9.6)
60 to 64	1 (1.3)	29 (10.9)	30 (8.7)
65+	0	27 (10.2)	27 (7.8)
<b>Total</b>	<b>77</b>	<b>265</b>	<b>342</b>

<sup>a</sup>Gender of three unknown<sup>b</sup>Age of one unknown



### 5.3 Practising characteristics

#### 5.3.1 Full- or part-time practice

Full-time practice was reported by 301 respondents (87.0%); this included 89.3% of dental technicians and 83.9% of clinical dental technicians. Of the 45 (13.0%) overall who reported part-time practice: 2 (4.4%) were doing non-dental work; 6 (13.3%) reported that there was not enough dental work available; 1 (2.2%) was seeking dental work; 12 (26.7%) were semi-retired from practice; 12 (26.7%) cited parental responsibilities; 5 (11.1%) did so by personal choice; and 7 (15.6%) indicated other reasons including education, lecturing, and health problems.

A total of 8 reported they were not currently practising; of those, 2 were working in another non-health profession, 4 were full-time students, 1 was doing other unpaid work, and 1 was seeking work.

Substantially more clinical dental technicians were in self-employed private practice than in employed private practice (80.0% and 12.1%, respectively), while non-clinical dental technicians were more evenly spread across self-employed and employed private practice (53.0% and 39.6%, respectively). See Table 5-2 for more detail.

Table 5-2: Type of practice

	Dental technology	Clinical dental technology	Overall
MoH or DHB	6 (3.7)	8 (5.7)	14 (4.6)
Private self-employed	87 (53.0)	112 (80.0)	199 (65.5)
Private employed	65 (39.6)	17 (12.1)	82 (27.0)
University Dent School	6 (3.7)	3 (2.1)	9 (3.0)
Total <sup>a</sup>	164	140	304 <sup>a</sup>

<sup>a</sup>42 technicians did not provide this information

## 5.4 Workforce development

### 5.4.1 Postgraduate training

Some form of postgraduate training was reported by 18 respondents (5.2%) overall, of whom 13 were dental technicians and 5 were clinical dental technicians. All but two were studying for post-graduate diplomas in clinical dental technology (although two were already listed in the clinical dental technology SOP). Of the remainder, one was studying English and the other was studying business.

### 5.4.2 Scopes of practice

Of the clinical dental technicians, 18 (12.1%) were registered in the implant overdentures in clinical dental technology scope (5.2% of the total number of technicians).

### 5.4.3 Continuing professional development

Of the 197 dental technicians, 166 (84.3%) reported that they had completed their required CPD hours during the previous year. A slightly greater proportion of the 149 clinical dental technicians, 142 (95.3%), met the year's CPD requirements. Overall, 38 technicians (11.0%) reported that they had not achieved at least 15 hours of CPD experience during the previous year, similar to the year before.

## 5.5 Geographic distribution

Table 5-3 presents data on the geographic distribution of both dental technicians and clinical dental technicians, while Table 5-4 and Table 5-5 present the population:technician ratio by DHB. The distribution of dental technicians according to FTEs is not presented, as FTE data for dental technicians could not be calculated as no data were available on the number of hours that dental technicians worked.

Table 5-3: Distribution of technicians by District Health Board (DHB) area

DHB area	Dental technicians	Clinical dental technicians	Overall
Northland	4 (2.0)	7 (4.7)	11 (3.2)
Waitemata	46 (23.4)	18 (12.1)	64 (18.5)
Auckland	47 (23.9)	9 (6.0)	56 (16.2)
Counties-Manukau	14 (7.1)	11 (7.4)	25 (7.2)
Waikato <sup>a</sup>	7 (3.6)	9 (6.0)	16 (4.6)
Bay of Plenty	3 (1.5)	9 (6.0)	12 (3.5)
Lakes	3 (1.5)	3 (2.0)	6 (1.7)
Tairāwhiti		2 (1.3)	2 (0.6)
Hawke's Bay	7 (3.6)	5 (3.4)	12 (3.5)
Taranaki	4 (2.0)	3 (2.0)	7 (2.0)
Whanganui	1 (0.5)	2 (1.3)	3 (0.9)
MidCentral	3 (1.5)	7 (4.7)	10 (2.9)
Capital and Coast <sup>b</sup>	9 (4.6)	10 (6.7)	19 (5.5)
Hutt	7 (3.6)	6 (4.0)	13 (3.8)
Wairarapa		1 (0.7)	1 (0.3)
Nelson-Marlboro.	6 (3.0)	6 (4.0)	12 (3.5)
West Coast			
Canterbury	17 (8.6)	22 (14.8)	39 (11.3)
South Canterbury		2 (1.3)	2 (0.6)
Otago	16 (8.1)	14 (9.4)	30 (8.7)
Southland <sup>c</sup>	3 (1.5)	3 (2.0)	6 (1.7)
Total	197	149	346

<sup>a</sup>Includes all of the Ruapehu TLA (part of which is usually included in Whanganui DHB – affects Ohakune technicians)

<sup>b</sup>Includes all of the Kapiti Coast TLA (part of which is usually included in MidCentral DHB – affects Otaki technicians)

<sup>c</sup>Includes all of the Queenstown Lakes TLA (part of which is usually included in Otago DHB – affects Wanaka technicians)

Table 5-4: Distribution of all dental technicians by District Health Board (DHB) area

DHB area	No of technicians	Dentists	Population	Population: technician ratio <sup>a</sup>	Technicians per 100,000 population <sup>a</sup>	Dentist: technician ratio	Technicians per 100 dentists
Northland	11	52	113,667	10,333	9.7	4.7	21.2
Waitemata	64	214	377,064	5,892	17.0	3.3	29.9
Auckland	56	322	328,560	5,867	17.0	5.8	17.4
Counties-Manukau	25	134	320,973	12,839	7.8	5.4	18.7
Waikato <sup>b</sup>	16	140	255,312	15,957	6.3	8.8	11.4
Bay of Plenty	12	85	74,460	6,205	16.1	7.1	14.1
Lakes	6	36	151,290	25,215	4.0	6.0	16.7
Tairāwhiti	2	12	32,805	16,403	6.1	6.0	16.7
Hawke's Bay	12	57	114,168	9,514	10.5	4.8	21.1
Taranaki	7	33	81,558	11,651	8.6	4.7	21.2
Whanganui	3	21	54,930	18,310	5.5	7.0	14.3
MidCentral	10	60	118,893	11,889	8.4	6.0	16.7
Capital and Coast <sup>c</sup>	19	166	220,758	11,619	8.6	8.7	11.4
Hutt	13	71	105,282	8,099	12.3	5.5	18.3
Wairarapa	1	14	30,459	30,459	3.3	14.0	7.1
Nelson-Marlboro.	12	72	104,301	8,692	11.5	6.0	16.7
West Coast		8	24,936				
Canterbury	39	233	353,022	9,052	11.0	6.0	16.7
South Canterbury	2	25	65,073	32,537	3.1	12.5	8.0
Otago	30	188	141,702	4,723	21.2	6.3	16.0
Southland <sup>d</sup>	6	51	90,795	15,133	6.6	8.5	11.8
Total	346	2000 <sup>e</sup>	3,160,008	9,133	10.9	5.8	17.3

<sup>a</sup>Calculated using the population aged over 14 years

<sup>b</sup>Includes all of the Ruapehu TLA (part of which is usually included in Whanganui DHB – affects Ohakune technicians)

<sup>c</sup>Includes all of the Kapiti Coast TLA (part of which is usually included in MidCentral DHB – affects Otaki technicians)

<sup>d</sup>Includes all of the Queenstown Lakes TLA (part of which is usually included in Otago DHB – affects Wanaka technicians)

<sup>e</sup>Location unknown for 6 dentists

Table 5-5: Distribution of clinical dental technicians only by District Health Board (DHB) area

DHB area	No of technicians	Population:technician ratio <sup>a</sup>	Technicians per 100,000 population <sup>a</sup>
Northland	7	16,238	6.2
Waitemata	18	20,948	4.8
Auckland	9	36,507	2.7
Counties-Manukau	11	29,179	3.4
Waikato <sup>b</sup>	9	28,368	3.5
Bay of Plenty	9	8,273	12.1
Lakes	3	50,430	2.0
Tairāwhiti	2	16,403	6.1
Hawke's Bay	5	22,834	4.4
Taranaki	3	27,186	3.7
Whanganui	2	27,465	3.6
MidCentral	7	16,985	5.9
Capital and Coast <sup>c</sup>	10	22,076	4.5
Hutt	6	17,547	5.7
Wairarapa	1	30,459	3.3
Nelson-Marlboro.	6	17,384	5.8
West Coast	0	∞	0
Canterbury	22	16,046	6.2
South Canterbury	2	32,537	3.1
Otago	14	10,122	9.9
Southland <sup>d</sup>	3	30,265	3.3
Total	149	21,208	4.7

<sup>a</sup>Calculated using the population aged over 14 years

<sup>b</sup>Includes all of the Ruapehu TLA (part of which is usually included in Whanganui DHB – affects Ohakune technicians)

<sup>c</sup>Includes all of the Kapiti Coast TLA (part of which is usually included in MidCentral DHB – affects Otaki technicians)

<sup>d</sup>Includes all of the Queenstown Lakes TLA (part of which is usually included in Otago DHB – affects Wanaka technicians)

**Author's comments**

Some errors in data entry and errors in the way dental professionals had provided information in the dental workforce questionnaire were corrected as a part of the analytical process; however, some small inconsistencies have persisted in the form of a small amount of missing data.

I welcome any feedback and suggestions that readers may have: please email me directly at [jonathan.broadbent@stonebow.otago.ac.nz](mailto:jonathan.broadbent@stonebow.otago.ac.nz).