

Dental Council

Workforce Analysis 2010

Reporting period:

**Dentists and Dental Specialists 1 October 2010
- 30 September 2011**

**Dental therapists, hygienists, and technicians 1
April 2010 - 30th March 2011**

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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 2051 dentists were included in the current workforce analysis for dentists registered up to September 2011, up from 2000 the previous year. A further 423 dentists were in the register who did not have current APCs; of these, 209 were resident outside New Zealand, and the residence status of 8 dentists was unavailable.

The proportion of female dentists in the workforce has continued its increasing trend, as has the representation of ethnic minority groups. New Zealand Europeans remain the largest ethnic group within the workforce; however, their number and proportion relative to other ethnicities is dropping. The number of Maori dentists has remained approximately static. The rise in the proportion of overseas graduates has continued. Nearly three of every ten dentists in New Zealand did not obtain their primary dental qualification in New Zealand (Figure 2-2).

1.1.1 Employment

Proportionally more dentists (37%, Table 2-8) worked part-time (defined as less than 35 hours per week) than the previous year (35%), returning to the level in 2009 (37%). A marked gender difference remains between male and female dentists in the proportion undertaking part time work - 50% of female dentists worked part-time, while 30% 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. Only 76 dentists (3.7%) were experiencing insufficient dental work, 10 (0.5%) were working part-time while looking for full-time employment, and only 2 (0.1%) were not working at all while looking for employment.

1.1.2 Postgraduate education

A surprisingly large number of dentists (113, 5.5%) stated that they were engaged in some form of postgraduate study, a further increase from 98 in 2010 and 74 in 2009 (Table 2-

10). Of the 113 students, 31 (27.4%) stated that they do not intend to practice in New Zealand upon completion of their postgraduate study.

1.1.3 Practice characteristics

Nearly three in every four dentists are self-employed in private practice (1489, 72.6%), with the remainder practising as employees of private practices (105, 5.1%), District Health Boards (81, 3.9%), Ministry of Health (5, 0.2%) and other government Departments (23, 1.1%), the School of Dentistry (67, 3.3%), Iwi organisations (10, 0.5%), or other forms of employment (14, 0.7%). The remaining 257 dentists did not respond to this query (12.5%, Table 2-15).

1.1.4 Cohort remainder rates

In recent years, the cohort remainder rate for Otago graduates appears to have been dropping with increasing time since graduation (Table 2-3). Some graduates may begin to return after working overseas or not practicing for a time, but the majority are not returning. 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 2-18). Evidence suggests nearly all new Otago graduates register immediately subsequent to graduation, yet a number never practise here and subsequently allow their registration to lapse.

1.1.5 Distribution of dentists

By DHB, the number of dentists has increased in Northland (6 dentists), Auckland (10 dentists), Waikato (15 dentists), Lakes (2 dentists), Capital & Coast (6 dentists), Waitemata (1 dentist), Hawkes Bay (2 dentists), Taranaki (1 dentist), Nelson Marlborough (1 dentist), and Otago (2 dentists), but remained static or decreased in all other areas. More dentists reported the number of hours worked in the most recent survey, and this has increased the population-to-full-time-equivalent dentists. The number of dentists working in Auckland has increased yet further (now up to 332, or 237.9 FTE dentists); there is one dentist for every 990 people in Auckland (or 1 FTE dentist per 1381 people). Otago also continues to

have a high proportion of dentists per head of population due to the presence of the School of Dentistry (Table 2-23).

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; however, the mean age of dental therapists working in New Zealand has dropped slightly after being on the rise for many years. The median age of dental therapists in New Zealand has dropped back to 51 years, while the mean age is now 48.0 years. Of those who provided details of their ethnic identification, the number of dental therapists who self-identify as Maori has increased by nearly 25% over the previous year – 82 dental therapists (11.0%) identified themselves as Maori; however, 4 in 5 dental therapists still identify themselves as New Zealand European. The proportion of dental therapists working full-time had dropped by nearly 2%, to 68.2%. Slightly fewer dental therapists were working in the DHB sector (82.5% of those who answered the question).

The proportion of dental therapists who are able to perform tasks associated with diagnostic radiography has increased to (89.5%). Variability has only slightly decreased between regions in the scopes in which dental therapists are able to practice. There are no dental therapists in Wairarapa, West Coast, or South Canterbury who can perform pulpotomies or place stainless steel crowns; however, in Waikato, pulpotomy and stainless steel crown work may be performed by 82.5% and 57.9% of therapists, respectively. Across the country, 14 dental therapists were registered as practising in the scope of Adult Dental Care. More detailed data on the distribution of dental therapists by scopes of practice is provided in Table 3-7.

The dental therapist: population ratio in Northland has improved further since 2010. The ratio of FTE dental therapists to population aged under 14 years remains lowest in the Greater Wellington region and Canterbury (Table 3-8). This is in spite of the number of

therapists in Wellington and Canterbury actually having increased; it is likely that this is due to a high number of new dental therapists who are also registered in the scope of dental hygiene and have more than one source of employment.

1.2.2 **The Dental Hygienist Workforce**

The active hygiene workforce has increased to 502 individuals, up from 378 the previous year, suggesting rapid growth of this area of the workforce. Like the dental therapist workforce, it was made up of a predominately female group; however the number of male dental hygienists more than doubled from 2009-2010, from 7 up to 18 practitioners.

Very few general dental hygienists worked for DHBs or the MoH, although the proportion doing so has increased from 4.8% to 7.5%. The proportion who are employed or self-employed in private practice has dropped slightly, due to the increases in those working for DHBs, the MoH, and the University of Otago Dental School (Table 4-3). The number of hygienists working more than 31 hours per week has dropped, with only 46.1% now doing so (Table 3-65). More than half of them worked full-time, with around one-quarter working for more than one employer. Dental hygienists worked fewer hours on average than other dental practitioners, at a mean of 27.2 hours per week. More than one in every two dental hygienists could perform local anaesthesia, an increase from just over one in three. Three in every four therapists were able to perform intra-oral radiography, up from two in three (Table 4-6).

Among the 51 dental hygienists who were also registered in the scope of dental therapy and also provided information on the number of hours they worked per week during the past year (on average), the mean number of hours worked in dental hygiene was 20.0 hours (sd 12.8, range 3 to 55) and the mean number of hours worked in dental therapy was 22.0 hours (sd 11.9, range 2 to 42).

1.2.3 **The Dental Technician Workforce**

There were 356 dental technicians (up by 10 from the previous year), of whom 48.9% were clinical dental technicians (an increase of 5.8%). The age groupings of the dental

technology workforce were very similar to that of the dentists, dominated by males and with very few Maori practitioners, as opposed to the dental therapy and hygiene workforce. The proportion of females was 23.0% for all dental technicians, and was 17.8% for clinical dental technicians. Of the clinical dental technicians 54.6% were aged 50 and over (a drop of 4.4%), compared to 24.2% of dental technicians (a drop of 3.8%, Table 5-1). New Zealand Europeans remained at 52.0% of the dental technology group, 'Other Europeans' comprised 14.3%, and Māori still comprised less than 3%.

Dental technicians appear to be the most active dental professionals, with 88.8% reporting being engaged in full-time work, and most being self-employed. Only 9 dental technicians reported they were working part-time due to there not being enough work available, and two were working part-time while seeking full-time work. Nearly all worked in one place of employment, and 7.9% reported they were undertaking postgraduate training, most of whom were dental technicians studying to become clinical dental technicians.

As with the dental therapists and dental hygienists, there were considerable differences by DHB in the population:practitioner ratio for dental technicians. Otago had the most dental technicians per head of population, with 1 technician per 3,800 people (Table 5-4). On the other hand, the ratios in Wairarapa, and South Canterbury remain poor (the ratio in Wairarapa was 1 technician per 30,459 people). Dentist:technician ratios roughly mirrored the population:technician ratios. No technicians were listed as practising in the West Coast.

Section 2: **The Dentist workforce**

A total of 2475 dentists appeared in the dental register as at September 2011, a slight increase from 2286 dentists as at 31 March 2010. There was a large increase in the number of non-practising dentists, to 423 up from 232. The register included dentists who first registered up until 1 September 2011 and are as follows:

Full registration ('REG')	2051
Full registration, non-practising ('REGN')	423
Other codes ('REMOVE')	1
Total	2475

Within New Zealand

Full registration ('REG')	1971
Full registration, non-practising ('REGN')	206
Other codes ('REMPEND')	1
Total	2178

Figures for dentists include both dental specialists and general dentists, unless otherwise specified. Dentists who did not hold a current APC are excluded from subsequent analyses, unless otherwise specified. Some 66 dentists had current APCs, but were listed as residing outside New Zealand. A further 206 were on the register, resident in New Zealand on retention and did not have current APCs. In total, 2051 dentists with current APCs 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 ^a	1867	68.6	31.4	25.4
2009 ^b	2000	66.5	33.5	27.6
2010	2051	65.8	34.2	30.3

^aReporting date 31 March (previously 31st December)

^bReporting date to 30 September

(Data source: Dental Register)

Table 2-2: Age by current registration status

	Registered (%)	Retention (%)
Under 29 years	259 (12.6)	66 (15.6)
30-34 years	203 (9.9)	73 (17.3)
35-39 years	258 (12.6)	63 (14.9)
40-44 years	254 (12.4)	44 (10.4)
45-49 years	262 (12.8)	46 (10.9)
50-54 years	280 (13.7)	40 (9.5)
55-59 years	216 (10.5)	38 (9.0)
60-64 years	163 (7.9)	21 (5.0)
65+ years	156 (7.6)	32 (7.6)
Total	2051 (82.9)	423 (17.1)

Unless otherwise indicated, brackets contain percentages in this and all following tables.
Dentist age calculated as at 31 September 2011

Table 2-3: Longitudinal analysis of the cohort remainder rate of University of Otago dental graduates (domestic students only).

	Year of graduation							
	Number of students (percentage cohort remainder rate)							
	2010	2009	2008	2007	2006	2005	2004	2003
	Total number of graduates who were not externally-funded ^a							
Practising status as at	60	55	57	61	62	60	56	56
September 2011	57 (95.0)	46 (83.6)	34 (59.6)	27 (44.3)	29 (46.8)	32 (53.3)	25 (44.6)	29 (52.8)
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)

^aNote that data in this row comes from dental school data, not the register, so data in this table may differ from that in Table 2-18.

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

Figure 2-1: Number of NZ dental graduates practising in NZ as at September 2011, by graduation year

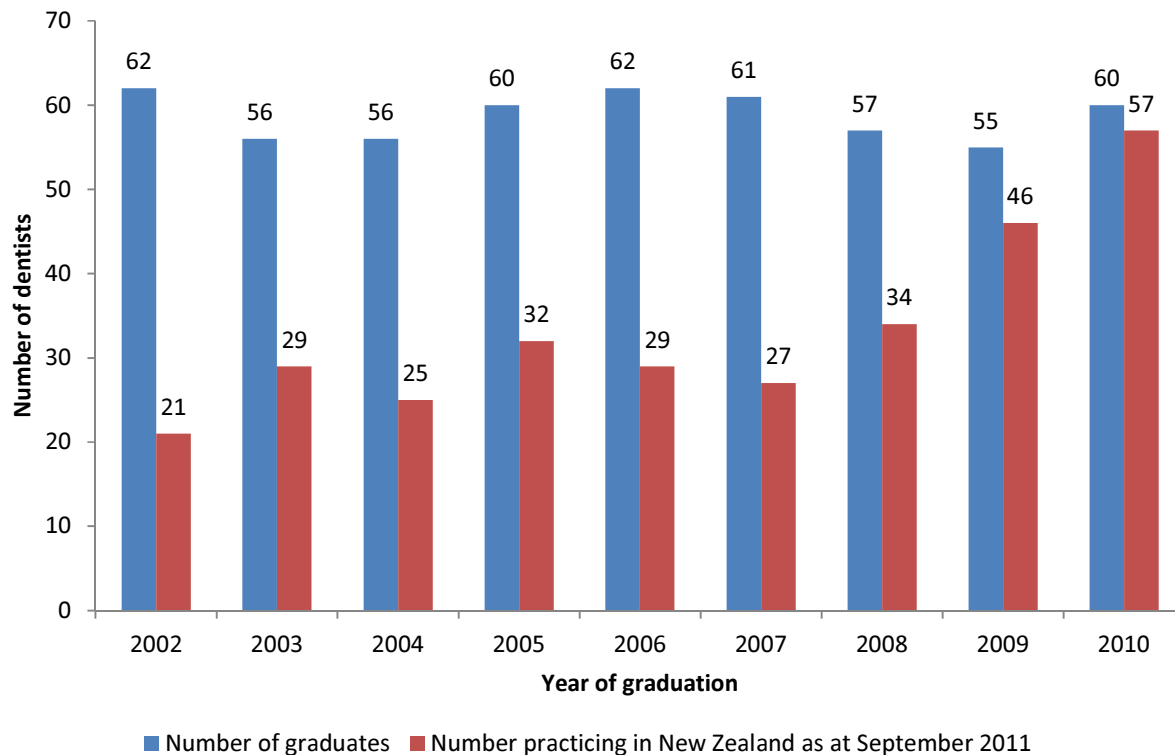


Table 2-4: Response rates to the Workforce Survey

Current registration status	Total number of dentists	Number who completed questionnaire	Response Rate
Current APC	2051	2040	99.6%
No current APC	423	415	98.1%

(Data sources: Dental Register and Workforce Survey)

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

Ethnicity	Primary (%)	Secondary	Total ^a (%)
NZ European	1042 (50.8)		1042 (53.5)
Māori	11 (0.5)	41	52 (2.5)
Other European	204 (9.9)	21	225 (10.5)
Samoan	4 (0.2)	1	5 (0.2)
Cook Island Māori	1 (0.0)		1 (0.0)
Tongan	1 (0.0)	1	2 (0.1)
Niuean	0		0
Tokelauan	0		0
Fijian	3 (0.1)	1	4 (0.2)
Other Pacific Peoples	4 (0.2)		4 (0.2)
Chinese	184 (9.0)	2	186 (9.1)
Other East Asian	31 (1.5)	3	34 (1.5)
Indian	169 (8.2)	6	175 (8.5)
Other Asian	84 (4.1)	9	93 (3.5)
Other	139 (6.8)	15	154 (7.5)
No response to question	174 (8.4)		174 (4.2)
Total	2051		
Total selecting an 'Other' group	462 (22.5)	48	510

^aTotal is greater than 2051 due to double reporting of ethnicity; however denominator used for % values is 2051 to allow accurate reporting of percentages relative to total number of dentists.

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

Africa		Great Britain		Asia	
African	4	British/UK	57	Bangladeshi	2
Egyptian	3	British white	3	Bengali	1
Mauritian		English	31	Burmese	1
South African	40	Northern Irish	2	Cambodian	1
South African British	1	Scottish	12	Indonesian	1
South African European/White	3	Welsh	1	Korean (South)	29
South African Greek	1			Malaysian	7
South African Indian	3	Other European		Malaysian Chinese	12
Sudanese	1	Austrian		Pakistani	1
		Belgian	1	Singhalese	2
North American		Bulgarian	1	South East Asian	1
American/US	9	Croatian	2	Sri Lankan	22
Canadian	1	Czech	1	Sri Lankan Tamil	2
Canadian Chinese		Danish	1	Taiwanese	13
Hispanic	1	Dutch	3	Taiwanese Chinese	1
US Caucasian/White	2	European	1	Thai	4
		Finnish	1	Turkish	1
South America		German	7	Vietnamese	1
Argentinean/European Argentinean	2	German English	1		
Brazilian	3	Greek	1	New Zealand	
Colombian	1	Irish	6	New Zealander	16
Italian South American	1	Irish Malaysian	1	Kiwi	1
Latin American	5	Italian	1	New Zealand British	1
South American	1	Latvian	1	New Zealand Chinese	5
		Lithuanian	2	New Zealand Indian	2
Middle East		Magyar/Hungarian	3	New Zealand Iraqi	1
Arab	17	Polish	3	New Zealand Sri Lankan	2
Hebrew	1	Polish German	1	New Zealand Taiwanese	1
Israeli	2	Portuguese	1	Pakeha	
Iranian	3	Romanian	2		
Iraqi	28	Russian	6	Other Oceania	
Kurdish	1	Serbian	1	Australian	7
Middle eastern	16	Spanish	1	Fijian Indian	3
Persian	2	Swedish	1	Filipino	4
Phoenician	1	Ukrainian	2	Vanuatuan	1
Syrian	1	Yugoslavian	1		
Yemeni	1			Other unspecified	9

(Data source: Workforce Survey)

Table 2-7: Gender by current registration status

Gender	Current APC	No current APC	All dentists registered in NZ (col %)
Male	1349 (65.7)	246 (58.2)	1595 (64.4)
Female	702 (34.2)	177 (41.8)	880 (35.6) ^a
Total	2051 (82.9)	423 (17.1)	2475

(Data source: Dental Register)

Table 2-8: Reasons for part-time employment

Reason for practising part-time	Females (%)	Males (%)	Overall number (col %)
Engaged in non-dental work	10 (23.8)	32 (76.2)	42 (2.0)
Insufficient dental work	27 (35.5)	49 (64.5)	76 (3.7)
Seeking dental work	4 (40.0)	6 (60.0)	10 (0.5)
Semi-retired from dentistry	6 (8.5)	65 (91.5)	71 (3.5)
Parental responsibilities	168 (88.0)	23 (12.0)	191 (9.3)
Personal choice	103 (36.7)	178 (63.3)	281 (13.7)
Other (see below)	32 (37.6)	53 (62.4)	85 (4.1)
Total working part time	350 (49.9)	406 (30.1)	756 (36.9)
Working full time	352 (50.1)	943 (69.9)	1295 (63.1)
Total	702 (34.2)	1349 (65.7)	2051

Reasons offered by the 85 who selected 'other' reason:

- Studying (31)
- Teaching (6)
- Health problems – self or partner (9)
- Maternity leave/pregnancy (4)
- Ethnicity (4)
- Practice management/paperwork (3)
- Voluntary (9)
- NZDC/NZDA work (3)
- Research, study, and administration (2)

Part-time position (4)
Recently moved city, resettling (1)
Extended holiday or overseas travel (3)
Only working as locum / not working every week (2)
Doing non-dental work (2)
Other (2)

(Data source: Workforce Survey)

Table 2-9: Practising pattern, all dentists

Employment status	Females (%)	Males (%)	Overall number (col %)
Practising overseas	115 (43.4)	150 (56.6)	265 (10.7)
Overseas and not practising	11 (36.7)	19 (63.3)	30 (1.2)
In NZ but not practising	20 (38.5)	32 (61.5)	52 (2.1)
Did not answer question	32 (41.6)	45 (58.4)	77 (3.1)
Currently practising (has APC)	702 (34.2)	1349 (65.8)	2051 (82.9)
Total	880 (35.6)	1595 (64.4)	2475
Employment status of 'In NZ but not practising' group			
Another health profession	1 (25.0)	3 (75.0)	4 (7.7)
Non-health profession	3 (50.0)	3 (50.0)	6 (11.5)
Full-time study	3 (60.0)	2 (40.0)	5 (9.6)
Parental responsibilities	6 (100)		6 (11.5)
Other unpaid work	1 (25.0)	3 (75.0)	4 (7.7)
Seeking work	0	2 (100)	2 (3.8)
Retired	5 (16.1)	19 (79.2)	24 (46.2)
Not reported	1		1 (1.9)

(Data source: Workforce Survey)

Table 2-10: Postgraduate training

	Current APC (%)	No current APC (%)	Overall (col %)
Expected year of completion			
Date in the past	21 (67.7)	10 (32.3)	31 (27.4)
2011	29 (78.4)	8 (21.6)	37 (32.7)
2012	18 (81.8)	4 (18.2)	22 (19.5)
2013	1 (50.0)	1 (50.0)	2 (1.8)
2014	2 (33.3)	4 (66.7)	6 (5.3)
2015	1 (50.0)	1 (50.0)	2 (1.8)
2016			
2017			
2018			
2019	1 (100)		1 (0.9)
Not stated/unsure	9 (75.0)	3 (25.0)	12 (10.6)
Intend to practise in NZ?			
Yes	64 (78.0)	18 (22.0)	82 (72.6)
No	18 (58.1)	13 (41.9)	31 (27.4)
Total in postgraduate training	82 (72.6)	31 (27.4)	113

(Data source: Workforce Survey)

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

	Current APC (%)	No current APC (%)	Overall (col %)
Branch of dentistry			
General dentistry	2	0	2 (1.8)
Dental public health/Community dentistry	7	0	7 (6.2)
Endodontics	5	1	6 (5.3)
Oral Medicine	2	1	3 (2.7)
Oral Pathology	1	1	2 (1.8)
Oral Surgery	2		2 (1.8)
Oral & maxillofacial surgery	10	4	14 (12.4)
Orthodontics	8	2	10 (8.8)
Paediatric dentistry	7	1	8 (7.1)
Periodontics	6	1	7 (6.2)
Restorative dentistry	0	1	1 (0.9)
Prosthodontics	9	2	11 (9.7)
Special needs/Hospital dentistry	2	0	2 (1.8)
More than one branch (e.g. Oral Surgery & Special Needs Dentistry)		2	2 (1.8)
Other/not reported (or not a dental branch)	21	15	36 (31.9)
Total	82	31	113

(Data source: Workforce Survey)

Table 2-12: Work type by primary employer – practitioners registered in specialist scopes^a

	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			6	31.8 (8.8)			1	20.0
Administration/Management	1	40.0						
Dental Public Health	3	33.3 (11.5)	1	30.0			3	8.3 (5.8)
Endodontics			19	30.2 (11.3)	1	40.0	3	13.3 (5.8)
Spec Needs/Hospital Dentistry	3	14.7 (8.3)	2	4.5 (2.1)				
Oral Medicine & Pathology	3	26.7 (4.6)	3	15.3 (13.3)			4	32.5 (11.9)
Oral Surgery	1	30.0	6	27.8 (14.7)				
Oral & Maxillofacial Surgery	6	34.7 (21.7)	27	34.2 (12.9)			1	40.0
Orthodontics	2	35.5 (0.7)	67	32.8 (10.6)	4	33.8 (10.3)		
Paediatric Dentistry	3	26.0 (15.9)	5	23.6 (12.2)			2	15.0
Periodontics			18	29.6 (14.1)	2	26.5 (26.2)	4	28.3
Research	1	7.0	1	8.0			7	14.1 (10.2)
Restorative Dentistry	1	8.0	6	11.7 (4.8)	2	19.5 (6.4)	1	5.0
Prosthodontics	1	30.0	9	27.4 (11.6)	1	23.0	3	28.3 (12.6)
Teaching							1	40.0
Other			2	4.0 (1.4)				
No hours recorded	0		6		0		3	
Number specialists working 1+ hours / week ^b	22	31.9 (14.2)	157	32.6 (10.8)	9	32.2 (12.4)	23	27.3 (11.0)
Total number of specialists ^c	22	31.9 (14.2)	163	31.4 (12.3)	9	32.2 (12.4)	26	24.1 (13.6)

^aThis information not sought from general dentists

^bSpecialists reporting not working any hours are excluded from these calculations, as were specialists who reported they worked an average of more than 24 hours per day

^cTotal 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 2-13: Work type by secondary employer – practitioners registered in specialist scopes^a

	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	3.0				
Administration/Management								
Dental Public Health								
Endodontics			1	5.0			1	16.0
Spec Needs/Hospital Dentistry	2	14.0 (5.7)	1	4.0				
Oral Medicine & Pathology			1	8.0				
Oral Surgery	1	14.0						
Oral & Maxillofacial Surgery	7	14.3 (5.5)	5	14.4 (8.0)				
Orthodontics	5	10.0 (5.6)	6	8.7 (4.3)			1	4.0
Paediatric Dentistry			1	8.0	1	8.0	1	12.0
Periodontics	1	6.0	3	8.3 (5.9)				
Research								
Restorative Dentistry	1	12.0						
Prosthodontics					1	3.0	1	3.0
Teaching								
Other								
No hours recorded	4		9		0		5	
Number specialists working 1+ hours / week ^b	17	12.4 (5.3)	19	9.3 (6.0)	2	5.5 (3.5)	4	8.8 (6.3)
Total number of specialists ^c	21	10.0 (6.8)	28	6.3 (6.6)	2	5.5 (3.5)	9	3.9 (6.0)

^aThis information not sought from general dentists

^bSpecialists reporting not working any hours are excluded from these calculations, as were five specialists who reported they worked an average of more than 24 hours per day

^cTotal 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 2-14: Work type by primary and secondary employer – general dentists

	General dentistry		Teaching ^b		Administration ^b		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)	Number not reported ^c
Primary employer									
Private practice (self-emp) ^a	1293	32.4 (9.4)	3	3.3 (0.6)	12	9.2 (6.6)	1293	33.2 (29.4)	36
Private practice (employee)	90	30.2 (9.8)			2	9.0 (1.4)	90	30.4 (9.8)	7
DHB or Min. of Health	77	31.4 (12.9)			11	8.8 (9.4)	79	31.8 (12.9)	4
University Dental School	16	25.6 (14.9)	14	20.6 (14.2)			26	26.8 (13.7)	15
Total number ^d							1461		
Secondary employer									
Private practice (self-emp) ^a	69	13.7 (18.8)	13	6.9 (3.6)	5	9.6 (7.7)	85	10.9 (7.2)	1246
Private practice (employee)	6	11.7 (5.6)					6	11.7 (5.6)	91
DHB or Min. of Health	10	8.7 (6.1)			1	16.0	11	9.4 (6.7)	72
University Dental School	5	9.2 (3.3)					5	9.2 (3.3)	36
Total number ^d							107		

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

^aSolo or group practice

^bWhere specifically employed to do so

^cNote 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

^dTotal of the column above may sum to greater than this, as some dentists reported activity in more than one scope

(Data source: Workforce Survey)

Table 2-15: Type of practice – general dentists and dental specialists

	Number (%)	Overall percentage
Self-employed dentists & dental specialists ^a		
Solo practice	426 (28.6)	20.8
Group practice	1063 (71.4)	51.8
Subtotal	1489	72.6
Employee dentists& dental specialists		
Private practice	105 (36.1)	5.1
DHB	81 (27.8)	3.9
School of Dentistry	67 (23.0)	3.3
Government Department, not MOH	23 (7.9)	1.1
Iwi	10 (3.4)	0.5
Ministry of Health	5 (1.7)	0.2
Subtotal	291	14.2
Other forms of employment	14	0.7
No reply to question	257	12.5
Total number of specialist-registered dentists	274	13.4
Total number of general dentists	1777	86.6
Total	2051	100.0

^aNote: only the information on the primary employer was analysed.
(Data source: Workforce Survey)

Table 2-16: 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	87 (4.8)	66 (4.2)	21 (8.4)
11 to 20	160 (8.7)	135 (8.5)	25 (10.0)
21 to 30	329 (18.0)	289 (18.3)	40 (16.1)
31 to 40	1028 (56.2)	913 (57.8)	115 (46.2)
41 to 50	165 (9.0)	125 (7.9)	40 (16.1)
51 to 60	32 (1.7)	26 (1.6)	6 (2.4)
More than 60	28 (1.5)	26 (1.6)	2 (0.8)
Number giving data on hours	1829	1580	249
Mean no. of hours/week (SD)	33.6 (10.9)	33.6 (10.7)	33.1 (12.5)
Nil response or excluded	222	197	25
Total ^a	2051	1777	274

^a218 dentists did not report any hours worked and were excluded from analysis. Data for a further 4 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 2-17: Country of primary dental qualification

Qualification source	Specialist dentists	General dentists	All dentists in NZ
	N (row %)	N (row %)	N (row %)
New Zealand	216 (78.8)	1215 (68.4)	1431 (69.8)
Overseas	58 (21.2)	559 (31.5)	617 (30.1)
Unknown		3 (0.1)	3 (0.1)
Total	274 (13.4)	1777 (86.6)	2051
	N (col %) ^a	N (col %) ^a	N (col %) ^a
Argentina		5 (0.3)	5 (0.2)
Australia	5 (1.8)	25 (1.4)	30 (1.5)
Bangladesh		1 (0.1)	1 (0.1)
Brazil		9 (0.5)	9 (0.4)
Bulgaria		2 (0.1)	2 (0.1)
Canada	1 (0.4)	5 (0.3)	6 (0.3)
Chile		1 (0.1)	1 (0.1)
China		4 (0.2)	4 (0.2)
Colombia	1 (0.4)	2 (0.1)	3 (0.1)
Czech Republic		3 (0.2)	3 (0.1)
Egypt		2 (0.1)	2 (0.1)
Fiji	1 (0.4)	6 (0.3)	7 (0.3)
Finland		1 (0.1)	1 (0.0)
France	1 (0.4)	1 (0.1)	2 (0.1)
Germany	3 (1.1)	5 (0.3)	8 (0.4)
Holland/Netherlands	1 (0.4)	2 (0.1)	3 (0.1)
Hong Kong		1 (0.1)	1 (0.0)
India	6 (2.2)	112 (6.3)	118 (5.8)
Indonesia		1 (0.1)	1 (0.0)
Iran		1 (0.1)	1 (0.0)
Iraq	3 (1.1)	47 (2.6)	50 (2.4)
Ireland	2 (0.7)	3 (0.2)	5 (0.2)
Israel		2 (0.1)	2 (0.1)
Italy	1 (0.4)		1 (0.0)
Jordan	1 (0.4)	3 (0.2)	4 (0.2)
Korea		4 (0.2)	4 (0.2)
Latvia		1 (0.1)	1 (0.0)
Macedonia		1 (0.1)	1 (0.0)
Malaysia	2 (0.7)	1 (0.1)	3 (0.1)
Philippines		7 (0.4)	7 (0.3)
Poland		2 (0.1)	2 (0.1)
Puerto Rico		1 (0.1)	1 (0.1)
Romania		9 (0.5)	9 (0.4)
Russia		11 (0.6)	11 (0.5)
Serbia		2 (0.1)	2 (0.1)
Singapore		6 (0.3)	6 (0.3)
South Africa	7 (2.6)	80 (4.5)	87 (4.2)
Sri Lanka	2 (0.7)	8 (0.5)	10 (0.5)
Sweden		1 (0.1)	1 (0.0)
Syria		1 (0.1)	1 (0.0)
Taiwan	1 (0.4)	1 (0.1)	2 (0.1)
Thailand	1 (0.4)	1 (0.1)	2 (0.1)
Turkey		1 (0.1)	1 (0.0)
Ukraine		2 (0.1)	2 (0.1)
United Kingdom	15 (5.5)	150 (8.4)	165 (8.0)
USA	4 (1.6)	19 (1.1)	23 (1.1)
USSR		1 (0.1)	1 (0.0)
Yugoslavia		5 (0.3)	5 (0.2)

^aColumn percentages calculated with NZ included

Table 2-18: Cohort remainder rate for University of Otago graduates^a

Graduation cohort	Years since graduation	Total number of graduates	Registered dentists	
			Number of graduates still practising	Cohort remainder rate (%)
1946-1950	61-65	128	1	0.8
1951-1955	56-60	175	3	1.7
1956-1960	51-55	176	9	5.1
1961-1965	46-50	188	39	20.7
1966-1970	41-45	239	102	42.7
1971-1975	36-40	212	115	54.2
1976-1980	31-35	272	172	63.2
1981-1985	26-30	269	200	74.3
1986-1990	21-25	224	153	68.3
1991-1995	16-20	247	166	67.2
1996	15	54	28	51.9
1997	14	52	30	57.7
1998	13	55	27	49.1
1999	12	58	24	41.4
2000	11	60	31	51.7
2001	10	60	29	48.3
2002	9	59	21	35.6
2003	8	58	29	50.0
2004	7	58	25	43.1
2005	6	66	32	48.5
2006	5	68	29	42.6
2007	4	61	27	44.3
2008	3	57	34	59.6
2009	2	55	47	85.5
2010	1	60	57	95.0
Total		3008		

Figure 2-2 Trends in the proportion of practising female dentists and overseas graduates with APCs from 1983 to 2011

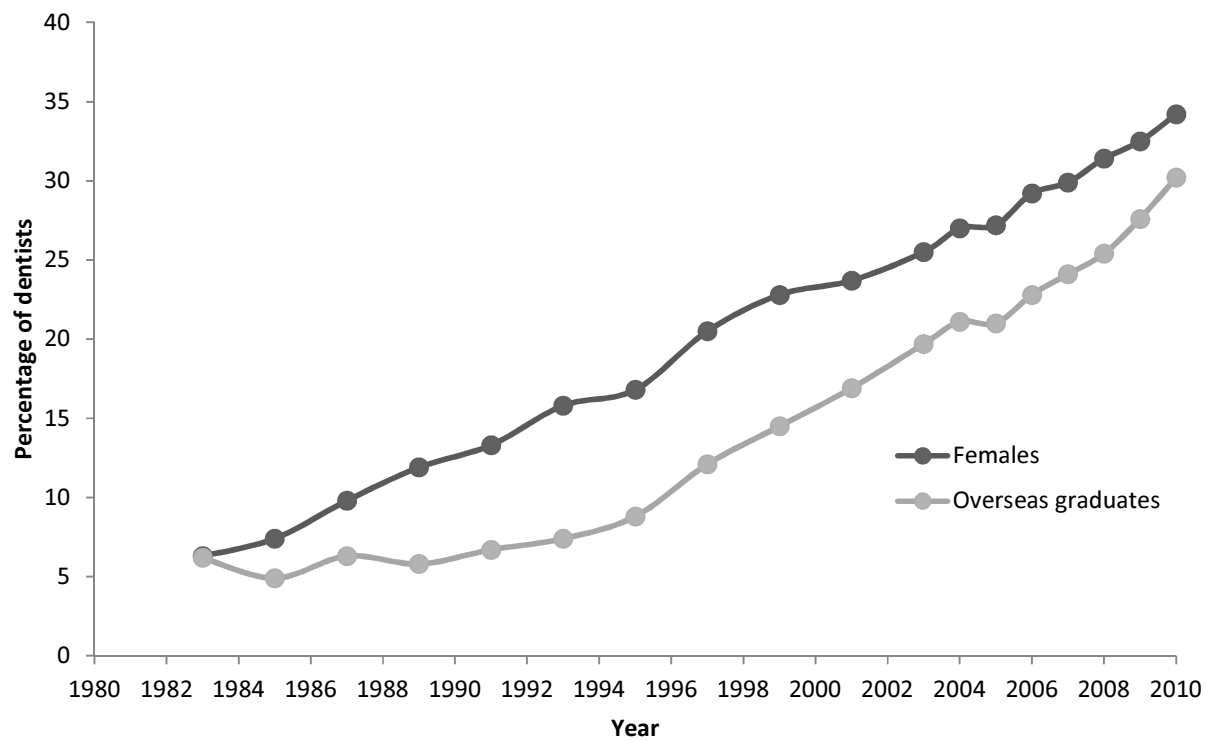


Table 2-19: Overseas dentists – NZDREX and equivalency, percentage of total dentists by year of first registration in New Zealand

Year of first registration in NZ	Overseas qualified dentists – NZDREX (col %)	Overseas qualified dentists – equivalency (col %)	Total number of dentists
1946-1950			0
1951-1955			0
1956-1960			0
1961-1965			0
1966-1970		1 (0.3)	1 (0.2)
1971-1975		6 (1.9)	6 (1.0)
1976-1980		5 (1.5)	5 (0.8)
1981-1985		5 (1.5)	5 (0.8)
1986-1990		22 (6.8)	22 (3.5)
1991-1995	13 (4.4)	19 (5.9)	32 (5.2)
1996	3 (1.0)	4 (1.2)	7 (1.1)
1997	19 (6.4)	6 (1.9)	25 (4.0)
1998	19 (6.4)	6 (1.9)	25 (4.0)
1999	17 (5.7)	3 (0.9)	20 (3.2)
2000	24 (8.1)	6 (1.9)	30 (4.8)
2001	15 (5.1)	7 (2.2)	22 (3.5)
2002	13 (4.4)	10 (3.1)	23 (3.7)
2003	13 (4.4)	17 (5.3)	30 (4.8)
2004	11 (3.7)	15 (4.6)	26 (4.2)
2005	21 (7.1)	29 (9.0)	50 (8.1)
2006	20 (6.7)	21 (6.5)	41 (6.6)
2007	29 (9.8)	19 (5.9)	48 (7.7)
2008	13 (4.4)	19 (5.9)	32 (5.2)
2009	22 (7.4)	37 (11.5)	59 (9.5)
2010	30 (10.1)	38 (11.8)	68 (11.0)
2011 ^a	15 (5.1)	28 (8.7)	43 (6.9)
Total	297	323	620

^a Up to September 2011

Table 2-20: Dentists & Dental Specialists status by gender

Specialist status	All dentists in NZ with APC Number of dentists (Col %)	Gender differences	
		Men (Row %)	Women (Row %)
Specialists	274 (13.4)	204 (74.5)	70 (25.5)
Dentists	1777 (86.6)	1145 (64.4)	632 (35.6)
Total	2051	1349 (65.8)	702 (34.2) ^a
Specialty			
Endodontics	28 (10.1)	19 (67.9)	9 (32.1)
Oral & Maxillofacial Surgery	41 (14.7)	41 (100.0)	0 (0.0)
Oral Medicine	4 (1.4)	2 (50.0)	2 (50.0)
Oral Pathology	7 (2.5)	4 (57.1)	3 (42.9)
Oral Surgery	6 (2.2)	5 (83.3)	1 (16.7)
Orthodontics	88 (31.7)	64 (72.7)	24 (27.3)
Paediatric Dentistry	14 (5.0)	4 (28.6)	10 (71.4)
Periodontology	33 (11.9)	24 (72.7)	9 (27.3)
Prosthodontics	23 (8.3)	19 (82.6)	4 (17.4)
Public Health Dentistry	15 (5.4)	8 (53.3)	7 (46.7)
Restorative Dentistry	10 (3.6)	10 (100.0)	0 (0.0)
Special Needs Dentistry	9 (3.2)	6 (66.7)	3 (33.3)
Total	278 ^a		

Total sums to more than 274 as four dentists were registered in more than one specialist scope
(Data source: Dental Register)

Geographic distribution of dentists by District Health Board area (Table 2-21 to Table 2-23):

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

Table 2-21: Practising location by DHB area - all dentists

District Health Board	Number of general dentists (%)	Number of specialist dentists (%)	Total number of dentists (%)
Northland	53 (3.0)	5 (1.9)	58 (2.9)
Waitemata	186 (10.6)	29 (10.7)	215 (10.5)
Auckland	288 (16.5)	44 (16.3)	332 (16.5)
Counties-Manukau	120 (6.9)	11 (4.1)	131 (6.5)
Waikato ^a	139 (8.0)	16 (5.9)	155 (7.7)
Bay of Plenty	77 (4.4)	6 (2.2)	83 (4.1)
Lakes	34 (1.9)	4 (1.5)	38 (1.9)
Tairāwhiti	9 (0.5)	1 (0.4)	10 (0.5)
Hawke's Bay	54 (3.1)	5 (1.9)	59 (2.9)
Taranaki	29 (1.7)	5 (1.9)	34 (1.7)
Whanganui	18 (1.0)	1 (0.4)	19 (0.9)
MidCentral	53 (3.0)	5 (1.9)	58 (2.9)
Capital and Coast ^b	155 (8.9)	17 (6.3)	172 (8.5)
Hutt	57 (3.3)	8 (3.0)	65 (3.2)
Wairarapa	13 (0.7)		13 (0.6)
Nelson-Marlborough	62 (3.5)	11 (4.1)	73 (3.6)
West Coast	8 (0.4)		8 (0.4)
Canterbury	200 (11.4)	30 (11.1)	230 (11.4)
South Canterbury	23 (1.3)	2 (0.7)	25 (1.2)
Otago	126 (7.2)	64 (23.7)	190 (9.4)
Southland ^c	44 (2.5)	6 (2.2)	50 (2.5)
Missing	29	4	33
Total	1777	274	2051

^aIncludes all of the Ruapehu TLA (part of which is usually included in Whanganui DHB – affects Ohakune dentists)

^bIncludes all of the Kapiti Coast TLA (part of which is usually included in MidCentral DHB – affects Otaki dentists)

^cIncludes all of the Queenstown Lakes TLA (part of which is usually included in Otago DHB – affects Wanaka dentists)

(Data source: Dental Register)

Table 2-22: Department of Statistics 2006 census population by District Health Board (DHB) area

District Health Board	Total population ^a	Population >14 years ^a
Northland	148,440	113,667
Waitemata	481,614	377,064
Auckland	404,658	328,560
Counties-Manukau	433,083	320,973
Waikato ^b	330,474	255,312
Bay of Plenty	194,910	151,290
Lakes	98,322	74,460
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 ^c	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 ^d	113,832	90,795
Total	4,027,536	3,160,008

^aBased upon the 2006 Census (excludes 399 individuals residing outside Territory Local Authority (TLA) areas at that time)

^bIncludes all of the Ruapehu TLA (part of which is usually included in Whanganui DHB – affects Ohakune dentists)

^cIncludes all of the Kapiti Coast TLA (part of which is usually included in MidCentral DHB – affects Otaki dentists)

^dIncludes all of the Queenstown Lakes TLA (part of which is usually included in Otago DHB – affects Wanaka dentists)

(Data source: Statistics New Zealand)

Table 2-23: Distribution of practising dentists and full-time equivalent (FTE) dentists by District Health Board (DHB) area

DHB area	No of dentists with APC ^b	Population to dentist ratio ^a	Dentists per 100,000 population ^a	FTE dentists ^b	Population-to-FTE dentist ratio ^b	FTE dentists per 100,000 population ^b
Northland	58	1960	51.0	41.9	2713	36.9
Waitemata	215	1754	57.0	162.1	2326	43.0
Auckland	332	990	101.0	237.9	1381	72.4
Counties-Manukau	131	2450	40.8	99.0	3242	30.8
Waikato ^c	155	1647	60.7	118.3	2158	46.3
Bay of Plenty	83	1823	54.9	62.5	2421	41.3
Lakes	38	1959	51.0	28.3	2631	38.0
Tairāwhiti	10	3281	30.5	8.5	3859	25.9
Hawke's Bay	59	1935	51.7	44.6	2560	39.1
Taranaki	34	2399	41.7	29.2	2793	35.8
Whanganui	19	2891	34.6	13.5	4069	24.6
MidCentral	58	2050	48.8	45.6	2607	38.4
Capital and Coast ^d	172	1283	77.9	123.8	1783	56.1
Hutt	65	1620	61.7	45.7	2304	43.4
Wairarapa	13	2343	42.7	9.0	3384	29.5
Nelson-Marlboro.	73	1429	70.0	52.1	2002	50.0
West Coast	8	3117	32.1	5.8	4299	23.3
Canterbury	230	1535	65.2	169.1	2088	47.9
South Canterbury	25	2603	38.4	18.8	3461	28.9
Otago	190	746	134.1	120.1	1180	84.8
Southland ^e	50	1816	55.1	40.3	2253	44.4
Unknown location	33					
Overall average	2051	1574	63.5	1476.0	2141	46.7
Number not reporting hours				222		

^aCalculated using the population aged over 14 years (Table 2-22)

^bIncludes 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

^cIncludes all of the Ruapehu TLA (part of which is usually included in Whanganui DHB – affects Ohakune dentists)

^dIncludes all of the Kapiti Coast TLA (part of which is usually included in MidCentral DHB – affects Otaki dentists)

^eIncludes 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 2-24: Geographic distribution of dentists by Territorial Local Authority (TLA) area, for all dentists

TLA area	Number of general dentists (%)	Number of specialist dentists (%)	Total number of dentists (%)
Far North	18 (1.0)		18 (0.9)
Whangarei	32 (1.8)	5 (1.8)	37 (1.8)
Kaipara	3 (0.2)		3 (0.1)
Rodney	28 (1.6)	2 (.7)	30 (1.5)
North Shore	111 (6.2)	20 (7.3)	131 (6.4)
Waitakere	47 (2.6)	7 (2.6)	54 (2.6)
Auckland	288 (16.2)	44 (16.1)	332 (16.2)
Manukau	94 (5.3)	8 (2.9)	102 (5.0)
Papakura	15 (0.8)	1 (.4)	16 (0.8)
Franklin	11 (0.6)	2 (.7)	13 (0.6)
Thames-Coromandel	12 (0.7)		12 (0.6)
Hauraki	2 (0.1)		2 (0.1)
Waikato	4 (0.2)		4 (0.2)
Matamata-Piako	11 (0.6)		11 (0.5)
Hamilton	76 (4.3)		76 (3.7)
Waipa	16 (0.9)	16 (5.8)	32 (1.6)
Otorohanga	6 (0.3)		6 (0.3)
South Waikato	5 (0.3)		5 (0.2)
Waitomo	1 (0.1)		1 (0.0)
Taupo	10 (0.6)	1 (.4)	11 (0.5)
Western BoP	8 (0.5)	1 (.4)	9 (0.4)
Tauranga	59 (3.3)	5 (1.8)	64 (3.1)
Rotorua	24 (1.4)	3 (1.1)	27 (1.3)
Whakatane	8 (0.5)		8 (0.4)
Kawerau	1 (0.1)		1 (0.0)
Opotiki	1 (0.1)		1 (0.0)
Gisborne	9 (0.5)	1 (.4)	10 (0.5)
Wairoa	2 (0.1)		2 (0.1)
Hastings	22 (1.2)	2 (0.7)	24 (1.2)
Napier	27 (1.5)	3 (1.1)	30 (1.5)
Central Hawkes Bay	3 (0.2)		3 (0.1)
New Plymouth	20 (1.1)	5 (1.8)	25 (1.2)
Stratford	1 (0.1)		1 (0.0)
South Taranaki	8 (0.5)		8 (0.4)
Ruapehu District	6 (0.3)		6 (0.3)
Wanganui	16 (0.9)	1 (0.4)	17 (0.8)
Rangitikei	2 (0.1)		2 (0.1)
Manawatu	5 (0.3)		5 (0.2)
Palmerston North	35 (2.0)	5 (1.8)	40 (2.0)
Tararua	3 (0.2)		3 (0.1)
Horowhenua	10 (0.6)		10 (0.5)
Kapiti Coast	14 (0.8)		14 (0.7)
Porirua	12 (0.7)		12 (0.6)
Upper Hutt	13 (0.7)	2 (0.7)	15 (0.7)
Lower Hutt	44 (2.5)	6 (2.2)	50 (2.4)
Wellington	129 (7.3)	17 (6.2)	146 (7.1)
Masterton	8 (0.5)		8 (0.4)
Carterton	5 (0.3)		5 (0.2)
South Wairarapa			
Tasman	19 (1.1)	2 (0.7)	21 (1.0)
Nelson	29 (1.6)	9 (3.3)	38 (1.9)

Marlborough	14 (0.8)		14 (0.7)
Kaikoura	1 (0.1)		1 (0.0)
Buller			
Grey	7 (0.4)		7 (0.3)
Westland	1 (0.1)		1 (0.0)
Hurunui			
Waimakariri	8 (0.5)		8 (0.4)
Christchurch	187 (10.5)	30 (10.9)	217 (10.6)
Selwyn	4 (0.2)		4 (0.2)
Ashburton	7 (0.4)	1 (0.4)	8 (0.4)
Timaru	16 (0.9)	1 (0.4)	17 (0.8)
Mackenzie			
Waimate			
Chatham Islands			
Waitaki	16 (0.9)	2 (0.7)	18 (0.9)
Central Otago	8 (0.5)	1 (0.4)	9 (0.4)
Queenstown Lakes	13 (0.7)		13 (0.6)
Dunedin	98 (5.5)	61 (22.3)	159 (7.8)
Clutha	4 (0.2)		4 (0.2)
Southland	2 (0.1)		2 (0.1)
Gore	3 (0.2)	1 (0.4)	4 (0.2)
Invercargill	26 (1.5)	5 (1.8)	31 (1.5)
TLA Code not available	29 (1.6)	4 (1.5)	33 (1.6)
Total	1777 (100.0)	274 (100.0)	2051 (100.0)

(Data source: Dental Register)

Table 2-25: Department of Statistics 2006 census population by TLA area^a

TLA area	Total population	Population >14 years ^a
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	4,015,164 ^b	3,163,335

^a2006 Census; "usually resident" population (excludes visitors)

^bExcludes 336 persons residing outside any TLA

(Data source: Statistics New Zealand 2006 census. These data are the denominators for the estimates in Table 2-26)

Table 2-26: Distribution of dentists and full-time equivalent (FTE) dentists

	No. of dentists with APC	Population-to-dentist ratio ^b	Dentists per 100,000 population ^b	FTE dentists ^a	Population-to-FTE-dentist ratio ^a	FTE per 100,000 population ^a
Far North	18	2346	42.6	11.6	3641	27.5
Whangarei	37	1554	64.3	27.4	2099	47.6
Kaipara	3	4642	21.5	2.9	4802	20.8
Rodney	30	2331	42.9	24.1	2902	34.5
North Shore	131	1258	79.5	96.2	1714	58.4
Waitakere	54	2635	38.0	41.9	3396	29.4
Auckland	332	990	101.0	237.9	1381	72.4
Manukau	102	2379	42.0	77.2	3143	31.8
Papakura	16	2117	47.2	11.8	2871	34.8
Franklin	13	3420	29.2	10.0	4445	22.5
Thames-Coromandel	12	1781	56.1	8.6	2485	40.2
Hauraki	2	6674	15.0	2.0	6674	15.0
Waikato	4	8189	12.2	2.9	11294	8.9
Matamata-Piako	11	2132	46.9	9.2	2549	39.2
Hamilton	76	1329	75.2	68.8	1468	68.1
Waipa	32	1028	97.3	12.6	2611	38.3
Otorohanga	6	1150	87.0	4.9	1408	71.0
South Waikato	5	3323	30.1	3.7	4490	22.3
Waitomo	1	6981	14.3	1.0	6981	14.3
Taupo	11	2293	43.6	8.3	3038	32.9
Western BoP	9	3663	27.3	5.6	5887	17.0
Tauranga	64	1282	78.0	48.9	1678	59.6
Rotorua	27	1824	54.8	20.1	2450	40.8
Whakatane	8	3100	32.3	6.1	4065	24.6
Kawerau	1	4977	20.1	1.0	4977	20.1
Opotiki	1	6501	15.4	1.0	6501	15.4
Gisborne	10	3281	30.5	8.5	3859	25.9
Wairoa	2	3132	31.9	2.0	3132	31.9
Hastings	24	2239	44.7	17.6	3054	32.7
Napier	30	1455	68.7	22.5	1940	51.5
Central Hawkes Bay	3	3348	29.9	2.4	4185	23.9
New Plymouth	25	2182	45.8	22.6	2414	41.4
Stratford	1	20169	5.0	1.0	20169	5.0
South Taranaki	8	1271	78.7	5.6	1816	55.1
Ruapehu District	6	5569	18.0	4.8	6961	14.4
Whanganui	17	668	149.8	12.1	938	106.6
Rangitikei	2	10877	9.2	1.5	14502	6.9
Manawatu	5	12043	8.3	4.5	13381	7.5
Palmerston North	40	335	298.2	31.3	429	233.4
Tararua	3	7838	12.8	3.0	7838	12.8
Horowhenua	10	3726	26.8	6.8	5480	18.2
Kapiti Coast	14	2557	39.1	11.2	3197	31.3
Porirua	12	847	118.0	9.3	1093	91.5
Upper Hutt	15	1995	50.1	11.7	2557	39.1
Lower Hutt	50	1507	66.3	34.0	2217	45.1
Wellington	146	1012	98.9	103.3	1430	69.9
Masterton	8	2227	44.9	6.0	2969	33.7
Carterton	5	1121	89.2	3.0	1868	53.5
South Wairarapa	0		0.0			
Tasman	21	1668	60.0	13.5	2594	38.5
Nelson	38	912	109.7	16.6	2087	47.9
Marlborough	14	2474	40.4	12.0	2886	34.7

Kaikoura	1	2952	33.9	0.7	4217	23.7
Buller	0		0.0			
Grey	7	1480	67.6	5.1	2032	49.2
Westland	1	6777	14.8	0.8	8471	11.8
Hurunui	0		0.0			
Waimakariri	8	4142	24.1	6.4	5177	19.3
Christchurch	217	1303	76.7	158.1	1789	55.9
Selwyn	4	6482	15.4	3.9	6648	15.0
Ashburton	8	2713	36.9	6.0	3618	27.6
Timaru	17	2036	49.1	12.9	2683	37.3
Mackenzie	0		0.0			
Waimate	0		0.0			
Chatham Islands	0		0.0			
Waitaki	18	911	109.7	12.9	1271	78.7
Central Otago	9	1510	66.2	6.5	2091	47.8
Queenstown Lakes	13	1478	67.7	10.2	1883	53.1
Dunedin	159	621	161.1	96.9	1019	98.2
Clutha	4	3249	30.8	3.9	3332	30.0
Southland	2	10995	9.1	1.6	13744	7.3
Gore	4	2387	41.9	2.3	4152	24.1
Invercargill	31	1292	77.4	26.3	1523	65.7
Missing	33					
Overall average	2051	1541	64.9	1476.0	2141	46.7

^aIncludes all dentists, regardless of employment type

^bCalculated using the population aged over 14 years (Table 2-25)
(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 785 dental therapists were listed on the Dental Council register, up from 679 for the previous reporting period. Of these, 740 held a current APC, well up from 647 in the previous reporting period, while 42 dental therapists were in the register but did not have current APCs. Three were in the process of being removed from the register.

Dental therapists' ages ranged from 21 to 72 years, with a mean age of 48.0 years (SD, 12.9) and a median of 51 years. 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 ^a	Number of females	Total number	Cumulative percentage
19 or younger	0	0	0	0
20 to 24	5	31	36	4.9
25 to 29	7	71	78	15.4
30 to 34	4	40	44	21.4
35 to 39	5	42	47	27.7
40 to 44	2	67	69	37.0
45 to 49	1	63	64	45.7
50 to 54	1	112	113	60.9
55 to 59	0	152	152	81.5
60 to 64	0	102	102	95.3
65+	0	35	35	100
Total	25 (3.4)	715 (96.6)	740	

^a Gender data were not available for two registered dental therapists
Therapist age calculated as at 31 March 2011

Over half of the active dental therapists are aged 50 or over, with 35.8% in the 50-59 age band. One in four dental therapists were below 40 years of age, up from one in five. There were 25 male dental therapists registered, an increase of ten over 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 ^a
NZ European	547 (80.6)	1	548 (80.7)
Māori	35 (5.2)	47	82 (11.2)
Other European	10 (1.4)	4	14 (2.1)
Samoan	6 (0.8)	1	7 (1.0)
Niuean	1 (0.1)	1	2 (0.2)
CookIslandMāori		1	1 (0.1)
Tokelauan	1 (0.1)		1 (0.1)
Fijian	6 (0.8)		6 (0.8)
OtherPacificPeoples	1 (0.1)		1 (0.1)
Other East Asian	4 (0.5)	1	5 (0.7)
Chinese	24 (3.2)	1	25 (3.7)
Indian	14 (1.9)	5	19 (2.7)
OtherAsian	10 (1.4)	2	12 (1.7)
Other	20 (2.7)	3	23 (3.4)
Total	679		679 ^a
No response to question	61 (8.2)		61 (8.2)

^aColumn may sum to greater than 679 due to the double-reporting of ethnicity

Table 3-3: Self-identification of "other" ethnicity among dental therapists^{a, b}

Africa		Other European		Asia	
African	1	Dutch	2	Afghani	1
South African	2	Georgian	1	Assyrian	1
South African Coloured	1	Russian	3	Chinese	1
		Serbian	1	Iraqi	2
North American		Ukrainian	1	Japanese	2
Latin American	1			Korean	4
		Other Oceania		Middle Eastern	2
Great Britain		Australian	1	South East Asian	2
British/UK	1	Fijian Indian	1	Sri Lankan	1
English	1	Gilbertese/Kiribati	1	Taiwanese	2
		Rotuman	1	Thai	2
New Zealand				Vietnamese	1
New Zealander	4				
New Zealand Pakeha	1				

^aAn 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.

^bNote that this is a self-identification.

3.2 Practising characteristics

3.2.1 Full- or part-time practice

Full-time practice was reported by 505 dental therapists (68.2%). Of the 235 (31.8%) who reported part-time practice: 16 (6.8%) were doing non-dental work; 17 (7.2%) reported that there was not enough dental work available; 2 (0.9%) reported they were seeking dental work; 3 (1.3%) were semi-retired from practice; 51 (21.7%) cited parental responsibilities; 112 (47.7%) did so by personal choice; and 34 (14.5%) indicated other reasons, including management, teaching, or study responsibilities as well as health reasons or dual dental therapy/hygiene work.

Of the 740 dental therapists with APCs, a total of 23 (3.1) reported they were not currently practising; of those, 2 were practising overseas, 2 were overseas but not practising, and 19 were in New Zealand but not practising. Of the 19 who were in New Zealand but not practising, 5 were working in another health profession, 1 was working in another non-health-related profession, 7 were full-time students, 4 cited parental duties, 1 was seeking work, and 1 did not give a reason.

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 nearly doubled over the previous year, increasing from 7.9% to 14.5%. On the other hand, the proportion working for DHBs decreased from 83.6% to 82.5%. Of the 29 who reported a second employment type, 22 were in private practice (8 of whom were self-employed), 5 worked in the DHB sector, and 2 were employed by the University of Otago Dental School.

Table 3-4: Type of practice among dental therapists

Type of practice ^a	Number (%)
Private practice ^b	96 (14.5)
<i>Self-employed, solo</i>	18 (2.7)
<i>Self-employed, group</i>	34 (5.1)
<i>Employee</i>	44 (6.6)
DHB	547 (82.5)
Government Dept, not MoH	3 (0.5)
University Dental School	9 (1.4)
Iwi	5 (0.8)
MoH	2 (0.3)
Other	1 (0.2)
Total	663 (89.6)
No reply to question	77 (10.4)

^aNote: only the information on the primary employer was analysed

^bOf these dental therapists in private practice, 54.2% were self-employed, while 45.8% 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 ^b Mean (SD) [number]	Administration ^b Mean (SD) [number]	Total hours Mean (SD) [number]
Primary employer				
Private practice (self-emp) ^a	28.6 (9.8) [46]	-	28.5 (16.3) [2]	29.2 (10.3) [47]
Private practice, employee	21.9 (14.0) [38]	-	-	21.9 (14.0) [38]
DHB or Min. of Health	32.73 (7.7) [514]	31.0 (24.6) [5]	26.4 (8.7) [20]	33.3 (8.3) [524]
University Dental School	29.3 (6.8) [4]	26.3 (16.7) [6]		30.6 (10.8) [9]
Secondary employer				
Private practice (self-emp) ^a	17.6 (12.9) [5]	-	-	17.6 (12.9) [5]
Private practice, employee	10.2 (5.7) [5]	-	18.0 [1]	10.2 (5.7) [6]
DHB or Min. of Health	11.6 (10.9) [14]	24.0 [1]	-	12.5 (11.0) [15]
University Dental School	-	-	-	-

^aSolo or group practice

^bWhere specifically employed to do so
(Data source: Workforce Survey)

No. of respondents providing data on hours worked	632
Total no. of dental therapists with APCs	740

3.4 Hours worked

The total hours worked by dental therapists ranged from 0 to 100 hours per week, with a mean of 32.3 (SD 9.4) among the 632 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	24 (3.8)
11 to 20	34 (5.4)
21 to 30	144 (22.8)
31 to 40	416 (65.8)
41 to 50	4 (0.6)
51 to 60	4 (0.6)
More than 60	6 (0.9)
Total	632 (85.4)
Nil or no response	108 (14.6)
Mean no. of hours/week (sd)	32.3 (9.4)
Range	0 to 100

3.5 Workforce development

3.5.1 Postgraduate training

A total of 23 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, 23 of those expected to practise in New Zealand at the completion of that training. Postgraduate training courses that dental therapists reported studying were varied, and many were studying courses that are unrelated to dental therapy: 7 reported they were training in an expanded scope of practice, 5 were studying public health or dental public health, while the remainder were completing educational courses unrelated to dental therapy.

Sixteen of the dental therapists who reported they were undertaking postgraduate training were expected to have completed their qualifications in 2009 or 2010.

3.5.2 Areas of practice

The number of practising dental therapists allowed to practise in those areas previously known as “additional scopes of practice” were: 662 (89.5%) in diagnostic radiography in dental therapy practice; 580 (78.4%) in radiography in dental therapy practice; 308 (41.6%) in pulpotomies in dental therapy practice; 260 (35.1%) in stainless steel crowns in dental therapy practice; and 14 (1.9%) in adult dental care in dental therapy practice.

The number of dental therapists that can perform these tasks according to their SOPs are presented by DHB in Table 3-7.

3.6 Geographic distribution

Data on the geographic distribution of dental therapists are presented in Table 3-8. Greater Wellington, Canterbury, South Canterbury, Southland had low numbers of FTE dental therapists for population.

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

DHB area	Diagnostic radiography SOP ^a (%)	Radiography SOP ^a (%)	Pulpotomies (%)	Stainless steel crowns (%)	Adult dental care (%)	Total registered in General dental therapy (column %)
Northland	36 (97.3)	29 (78.4)	13 (35.1)	25 (67.6)	3 (8.1)	37 (5.0)
Waitemata	100 (91.7)	79 (72.5)	52 (47.7)	46 (42.2)	0	109 (14.7)
Auckland	57 (89.1)	41 (64.1)	32 (50.0)	24 (37.5)	2 (3.1)	64 (8.6)
Counties-Manukau	67 (85.9)	55 (70.5)	47 (60.3)	44 (56.4)	0	78 (10.5)
Waikato	55 (96.5)	50 (87.7)	47 (82.5)	33 (57.9)	0	57 (7.7)
Bay of Plenty	40 (95.2)	37 (88.1)	16 (38.1)	7 (16.7)	0	42 (5.7)
Lakes	24 (96.0)	22 (88.0)	6 (24.0)	4 (16.0)	0	25 (3.4)
Tairāwhiti	8 (88.9)	8 (88.9)	1 (11.1)	1 (11.1)	0	9 (1.2)
Hawke's Bay	27 (93.1)	26 (89.7)	2 (6.9)	12 (41.2)	1 (3.4)	29 (3.9)
Taranaki	20 (90.9)	20 (90.9)	15 (68.2)	10 (45.5)	3 (13.6)	22 (3.0)
Whanganui	15 (75.0)	14 (70.0)	9 (45.0)	12 (60.0)	2 (11.1)	20 (2.7)
MidCentral	27 (87.1)	25 (80.6)	3 (9.7)	2 (6.5)	1 (3.2)	31 (4.2)
Capital and Coast	18 (60.0)	16 (53.3)	5 (16.7)	5 (16.7)	0	30 (4.1)
Hutt	28 (93.3)	27 (90.0)	8 (26.7)	8 (26.7)	0	30 (4.1)
Wairarapa	4 (57.1)	4 (57.1)	0 (0.0)	0	0	7 (.9)
Nelson-Marlboro.	20 (95.2)	21 (100.0)	19 (90.5)	0	2 (9.5)	21 (2.8)
West Coast	5 (100.0)	5 (100.0)	0 (0.0)	0	0	5 (.7)
Canterbury	50 (96.2)	49 (94.2)	6 (11.5)	3 (5.8)	0	52 (7.0)
South Canterbury	10 (90.9)	10 (90.9)	0 (0.0)	0	0	11 (1.5)
Otago	38 (95.0)	31 (77.5)	17 (42.5)	17 (42.5)	0	40 (5.4)
Southland	13 (81.3)	11 (68.8)	10 (62.5)	7 (43.8)	0	16 (2.2)
Total	662 (90.1)	580 (78.9)	308 (41.9)	260 (35.4)	14 (1.9)	735 (100.0)
Unknown area						5

^a 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	37	26.5	1312.2	76
Greater Auckland ^b	292,758	251	165.0	1774.3	56
Waikato	75,162	57	39.9	1883.8	53
Bay of Plenty	43,620	42	33.3	1309.9	76
Lakes	23,862	25	16.2	1473.0	68
Tairāwhiti	11,658	9	8.5	1371.5	73
Hawke's Bay	34,080	29	23.1	1475.3	68
Taranaki	22,716	22	14.9	1524.6	66
Whanganui	15,993	20	11.9	1343.9	74
MidCentral	32,403	31	18.8	1723.6	58
Greater Wellington ^b	84,285	60	37.0	2278.0	44
Wairarapa	8,151	7	4.9	1663.5	60
Nelson-Marlborough	25,764	21	14.1	1827.2	55
West Coast	6,390	5	4.2	1521.4	66
Canterbury	86,010	52	38.0	2263.4	44
South Canterbury	16,176	11	7.3	2215.9	45
Otago	30,690	40	26.5	1158.1	86
Southland	23,037	16	10.6	2173.3	46
Total	867,528	735 ^{a c}	500.5 ^d	1733.3	58

^aIncludes 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)

^bWaitemata, Greater Auckland, and Counties-Manukau were combined into Greater Auckland. Hutt and Capital & Coast DHBs were combined into Greater Wellington.

^cDental therapists for whom DHB data were missing are excluded (n=5).

^dTherapists who did not report hours worked are excluded from calculation of FTE

(Data sources: Workforce Survey and Statistics New Zealand)

Section 4: **The Dental Hygienist Workforce**

4.1 Description of the current dental hygiene workforce

A total of 570 individuals were listed in the register as hygienists, a large increase from 423 in 2010; however, only 502 of these held current APCs. Some 63 were in the register but did not have current APCs, and 5 were due for removal from the register. Unless otherwise indicated, all subsequent analyses pertain to the 502 individuals with current APCs. Exploration of the SOPs of these groups revealed that of these, 415 (82.7%) of these had a scope of general dental hygiene, and 94 (18.7%) were orthodontic auxiliaries¹. Of the 502, 7 (1.4%) were practising in both the general hygiene and orthodontic SOPs.

4.2 Sociodemographic characteristics

The 415 general dental hygienists' ages ranged from 21 to 69 years, with a mean age of 39.1 (sd 10.6) years and a median of 39 years. The mean and median age of dental hygienists has dropped by two years since the previous year. The dental hygienist workforce continues to be dominated by women; however, the number of males registered as hygienists has more than doubled, from 7 males to 18 males (4.3% of the general dental hygiene workforce).

The 94 orthodontic auxiliaries' ages ranged from 21 to 70 years, with a mean age of 46.8 (sd 11.5) years and a median of 48 years. The orthodontic auxiliary workforce is also dominated by women; one male (1.1%) was registered as an orthodontic auxiliary.

¹ '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 can be found on the Dental Council website.

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

Age group	Dental hygienists	Orthodontic auxiliaries
Under 20	0	0
20 to 24	33 (8.0)	2 (2.1)
25 to 29	73 (17.6)	3 (3.2)
30 to 34	52 (12.5)	15 (16.0)
35 to 39	67 (16.1)	10 (10.6)
40 to 44	72 (17.3)	11 (11.7)
45 to 49	43 (10.4)	10 (10.6)
50 to 54	40 (9.6)	15 (16.0)
55 to 59	21 (5.1)	17 (18.1)
60 to 64	11 (2.7)	6 (6.4)
65+	3 (0.7)	5 (5.3)
Total	415 ^a	94 ^a

Hygienist age calculated as at 31 March 2011

^aThe total will sum to greater than 502 as 7 practitioners were registered as a dental hygienist and an orthodontic auxiliary.

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

Ethnicity	Primary	Secondary	Total ^a
Dental hygienists			
NZ European	211 (61.9)		211 (50.8)
Māori	3 (0.9)	19	22 (5.3)
Other European	31 (9.1)	4	35 (8.4)
Samoan	2 (0.6)		2 (0.5)
Cook Is Māori			0 (0.0)
Other Pacific	2 (0.6)		2 (1.4)
Other East Asian	6 (1.8)		6 (1.4)
Chinese	13 (3.8)		13 (3.1)
Indian	9 (2.6)		9 (2.2)
Other Asian	10 (2.9)	1	11 (2.7)
Other	54 (15.8)	1	55 (13.3)
No response to question	74		74 (17.8)
Orthodontic auxiliaries			
NZ European	68 (80.0)		68 (72.3)
Māori		2	2 (2.1)
Other European	5 (5.9)		5 (5.3)
Samoan			0 (0.0)
Cook Is Māori	1 (1.2)		1 (1.1)
Other Pacific			0 (0.0)
Other East Asian	1 (1.2)		1 (1.1)
Chinese	1 (1.2)		1 (1.1)
Indian	1 (1.2)		1 (1.1)
Other Asian	4 (4.7)		4 (4.3)
Other	5 (5.9)		5 (5.3)
No response to question	9		9 (9.6)
Total	502 ^b		

^aAn element of inaccuracy is introduced here, with the counting twice of those with two ethnic groups.

^bNote that 7 general dental hygienists were also registered as orthodontic auxiliaries

4.3 Practicing characteristics

4.3.1 Full- or part-time practice

Part-time practice was reported by 236 (47.0%, a decrease from 53.7% in 2010); this included 194 general dental hygienists (46.7%), and 47 orthodontic auxiliaries (50.0%). Of the 236 overall who reported part-time practice: 9 (3.8%) were doing non-dental work; 28 (11.9%) reported that there was not enough dental work available; 5 (2.1%) reported that they were seeking dental work; 5 (2.1%) were semi-retired; 85 (36.0%) cited parental responsibilities; 85 (36.0%) did so by personal choice; and 19 (8.1%) indicated other reasons. Of the 19, 8 reported they were also working part-time doing other dental work (dental therapy), 4 cited contractual arrangements, 4 were studying, 2 were job-sharing, and one did not specify a reason.

A total of 28 had current APCs but reported they were not currently practising; of those, 7 were practising overseas and 21 were in New Zealand but not practicing (4 were working in another profession, 7 were undertaking full-time study, 6 had full-time parental duties, 2 were seeking work, and the remaining 2 did not specify a reason).

4.3.2 Type and location of practice

Data is presented on the type of hygiene practice in Table 4-3. The majority of hygienists in private practice, but nearly one-third of general dental hygienists were self-employed.

4.3.3 Hours worked

An analysis of hours worked by hygienists is presented in Table 4-4. Very few orthodontic auxiliaries completed the questionnaire section pertaining to the number of hours worked, so those data are not included 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	24 (7.5)	3
Private practice self-employed	102 (31.7)	30
Private practice employed	187 (58.1)	24
University Dental School	9 (2.8)	2
Total	322	
Not stated	93	
<i>Orthodontic auxiliaries</i>		
DHB/MoH	2 (2.4)	1
Private practice self-employed	15 (18.1)	1
Private practice employed	66 (79.5)	2
University Dental School	0	
Total	83	
Not stated	11	

(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 ^b Mean (sd) [N]	Administration ^b Mean (sd) [N]	Total hours Mean (sd) [N]
<i>Primary employer</i>				
DHB or Min. of Health	28.4 (16.0) [11]	5.0 [1]	1.0 [1]	28.9 (15.4) [11]
Private practice (self-emp) ^a	25.3 (9.3) [98]		13.5 (12.2) [4]	25.6 (9.8) [99]
Private practice, employee	27.1 (16.4) [159]	4.0 [1]	2.0 [1]	27.1 (16.4) [159]
University Dental School	27.0 (21.3) [3]	27.6 (11.9) [5]		27.4 (14.5) [8]

^aSolo or group practice

^bWhere specifically employed to do so
(Data source: Workforce Survey)

The total hours worked by general hygienists ranged from 2 to 55 per week, with a mean of 27.2 (sd, 11.0). An summary of hours worked is presented below in Table 4-5.

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

No. of hours worked	No. of hygienists (%)
1 to 10	36 (11.9)
11 to 20	53 (17.5)
21 to 30	73 (24.1)
31 to 40	129 (42.6)
41 to 50	10 (3.3)
51 to 60	2 (0.7)
Total	303
Mean no. of hours/week (sd)	27.2 (11.1)
Range ^a	2 - 55
Nil or no response	112

^aData for one dental hygienist who reported working 186 hours was recoded to the next-highest value (55 hours)

^bData for dental and orthodontic auxiliaries are not included in this chart, as few reported hours worked

4.4 Workforce development

4.4.1 Postgraduate training

Some form of current postgraduate training was reported by 6 hygienists. Of these, 1 was studying for each of the following: Postgraduate Diploma in Health Science, Bachelor of Health Science, Graduate Diploma in Tertiary Teaching, Master of Public Health, and further training in local anaesthesia, while 1 did not report her course of study.

4.4.2 Scopes of practice

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

Table 4-6: Hygienist areas of practice, by occupational category

Scope of practice	Hygienists	Orthodontic auxiliaries
General dental hygiene	415 (100.0)	7 (7.4)
Extra-oral radiography	113 (27.2)	64 (68.1)
Intra-oral radiography	307 (74.0)	48 (51.1)
Local anaesthetic	221 (53.3)	1 (1.1)
Orthodontic auxiliary practice	7 (1.7)	94 (100.0)
Orthodontic procedures in hygiene	145 (34.9)	6 (6.4)
Total number	415	94

^aThe total will sum to greater than 502 as 7 were registered and practising in more than 1 scope of practice, and some able to perform activities in more than one area of practice.

Section 5: **The Dental Technician Workforce**

5.1 Description of current dental technician workforce²

Of the 406 individuals listed in the dental technology scopes on the Register, 356 (87.7%) had a current APC and were practising in New Zealand (ten more technicians than in 2010). Unless otherwise indicated, all subsequent analyses pertain to those 356 individuals, of whom 174 (48.9%) were registered in the clinical dental technology SOP (5.8% more than the previous year).

5.2 Sociodemographic characteristics

The ages of active dental technicians ranged from 24 to 85, with a mean age of 46.8 years (sd, 12.6) and a median of 46 years. Overall, there were 274 males (77.0%) and 82 females (23.0%). The proportion of clinical dental technicians who are female had increased slightly from the previous year. Data on technicians' distribution (by gender) across the various age groups are presented (by occupational group) in Table 5-1.

5.2.1 Ethnicity

About one in every two technicians, 185 (52.0%), self-identified as NZ European. Of the remainder, there were 10 Māori (2.8%), 51 'Other European' (14.3%), 1 Samoan (0.3%), 1 Tongan (0.3%), 1 Niuean (0.3%), 4 Fijian (1.1%), 14 Chinese (3.9%), 17 'Other East Asians' (4.8%), 4 Indians (1.1%), 27 'Other Asian' (7.6%), and 39 of 'other' ethnicities (11.0%). In the latter, the dominant groups in the latter category were Germans (21), Japanese (22), South Africans (16), Koreans (15), New Zealanders (9) and Britons (8). Ethnicity was unknown for 20 dental technicians.

² *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. A more detailed description of these dental technicians and their SOPs can be found on the Dental Council website.

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 clinical dental technicians and their SOPs can be found on the Dental Council website.

Table 5-1: Age group by gender and occupational group

	Females	Males	All combined
Dental technicians			
20 to 24	5 (9.8)	1 (0.8)	6 (3.3)
25 to 29	5 (9.8)	11 (8.4)	16 (8.8)
30 to 34	13 (25.5)	13 (9.9)	26 (14.3)
35 to 39	10 (19.6)	19 (14.5)	29 (15.9)
40 to 44	8 (15.7)	22 (16.8)	30 (16.5)
45 to 49	7 (13.7)	24 (18.3)	31 (17.0)
50 to 54	2 (3.9)	17 (13.0)	19 (10.4)
55 to 59	1 (2.0)	12 (9.2)	13 (7.1)
60 to 64	0	8 (6.1)	8 (4.4)
65+	0	4 (3.1)	4 (2.2)
Total	51	131	182
Clinical dental technicians			
20 to 24	0	0	0
25 to 29	8 (25.8)	5 (3.5)	13 (7.5)
30 to 34	3 (9.7)	7 (4.9)	10 (5.7)
35 to 39	4 (12.9)	9 (6.3)	13 (7.5)
40 to 44	2 (6.5)	18 (12.6)	20 (11.5)
45 to 49	6 (19.4)	17 (11.9)	23 (13.2)
50 to 54	3 (9.7)	22 (15.4)	25 (14.4)
55 to 59	3 (9.7)	19 (13.3)	22 (12.6)
60 to 64	2 (6.5)	20 (14.0)	22 (12.6)
65+	0	26 (18.2)	26 (14.9)
Total	31	143	174
All combined			
20 to 24	5 (6.1)	1 (0.4)	6 (1.7)
25 to 29	13 (15.9)	16 (5.8)	29 (8.1)
30 to 34	16 (19.5)	20 (7.3)	36 (10.1)
35 to 39	14 (17.1)	28 (10.2)	42 (11.8)
40 to 44	10 (12.2)	40 (14.6)	50 (14.0)
45 to 49	13 (15.9)	41 (15.0)	54 (15.2)
50 to 54	5 (6.1)	39 (14.2)	44 (12.4)
55 to 59	4 (4.9)	31 (11.3)	35 (9.8)
60 to 64	2 (2.4)	28 (10.2)	30 (8.4)
65+	0	30 (10.9)	30 (8.4)
Total	82	274	356

Technician age calculated as at 31 March 2011

5.3 Practising characteristics

5.3.1 Full- or part-time practice

Full-time practice was reported by 316 respondents (88.8%); this included 90.1% of dental technicians and 87.4% of clinical dental technicians. Of the 40 (11.2%) overall who reported part-time practice: 5 (12.5%) were doing non-dental work; 9 (22.5%) reported that there was not enough dental work available; 2 (5.0%) was seeking dental work; 4 (10.0%) were semi-retired from practice; 7 (17.5%) cited parental responsibilities; 6 (15.0%) did so by personal choice; and 7 (17.5%) indicated other reasons including education, lecturing, and workplace problems.

A total of 19 reported they were not currently practising; of those, 6 were working in another health profession, 2 were working in another non-health profession, 7 were full-time students, 3 cited parental duties, and 1 was seeking work.

Substantially more clinical dental technicians were in self-employed private practice than in employed private practice (75.0% and 18.1%, respectively), while dental technicians were more evenly spread across self-employed and employed private practice (50.7% and 38.7%, respectively); more detail is provided in Table 5-2.

Table 5-2: Type of practice

	Dental technology	Clinical dental technology	Overall
MoH or DHB	7 (4.7)	4 (2.5)	11 (3.5)
Private self-employed	76 (50.7)	120 (75.0)	196 (63.2)
Private employed	58 (38.7)	29 (18.1)	87 (28.1)
University Dent School	9 (6.0)	7 (4.4)	16 (5.2)
Total ^a	150	160	310 ^a

^a46 technicians did not provide this information

5.4 Workforce development

5.4.1 Postgraduate training

Some form of postgraduate training was reported by 28 respondents (7.9%) overall, of whom 7 were dental technicians and 21 were clinical dental technicians. All but three were studying for post-graduate diplomas in clinical dental technology (although all but two were already listed in the clinical dental technology SOP). Of the remainder, one was completing an honours degree, one was completing an MSc, and one was completing a PhD.

5.4.2 Scopes of practice

Of the clinical dental technicians, 24 (13.8%) were registered in the implant overdentures in clinical dental technology scope.

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 was 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 (2.2)	7 (4.0)	11 (3.1)
Waitemata	45 (24.9)	22 (12.6)	67 (18.9)
Auckland	37 (20.4)	12 (6.9)	49 (13.8)
Counties-Manukau	17 (9.4)	15 (8.6)	32 (9.0)
Waikato ^a	5 (2.8)	10 (5.6)	15 (4.2)
Bay of Plenty	4 (2.2)	8 (4.6)	12 (3.4)
Lakes	2 (1.1)	4 (2.3)	6 (1.7)
Tairāwhiti		2 (1.1)	2 (0.6)
Hawke's Bay	6 (3.3)	6 (3.4)	12 (3.4)
Taranaki	1 (0.6)	4 (2.3)	5 (1.4)
Whanganui		2 (1.1)	2 (0.6)
MidCentral	2 (1.1)	6 (3.4)	8 (2.3)
Capital and Coast ^b	10 (5.5)	9 (5.2)	19 (5.4)
Hutt	6 (3.3)	7 (4.0)	13 (3.7)
Wairarapa		1 (0.6)	1 (0.3)
Nelson-Marlboro.	9 (5.0)	6 (3.4)	15 (4.2)
West Coast			
Canterbury	12 (6.6)	26 (14.9)	38 (10.7)
South Canterbury	1 (0.6)	3 (1.7)	4 (1.1)
Otago	18 (9.9)	19 (10.9)	37 (10.4)
Southland ^c	2 (1.1)	5 (2.9)	7 (2.0)
Total	181	174	355 ^d

^aIncludes all of the Ruapehu TLA (part of which is usually included in Whanganui DHB – affects Ohakune technicians)

^bIncludes all of the Kapiti Coast TLA (part of which is usually included in MidCentral DHB – affects Otaki technicians)

^cIncludes all of the Queenstown Lakes TLA (part of which is usually included in Otago DHB – affects Wanaka technicians)

^dDHB area unknown for one dental technician

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

DHB area	No of technicians	Dentists	Population > 14 yrs	Population: technician ratio ^a	Technicians per 100,000 population ^a	Dentist: technician ratio	Technicians per 100 dentists
Northland	11 (3.1)	58	113,667	10,333	9.7	5.3	19.0
Waitemata	67 (18.9)	215	377,064	5,628	17.8	3.2	31.2
Auckland	49 (13.8)	332	328,560	6,705	14.9	6.8	14.8
Counties-Manukau	32 (9.0)	131	320,973	10,030	10.0	4.1	24.4
Waikato ^b	15 (4.2)	155	255,312	17,021	5.9	10.3	9.7
Bay of Plenty	12 (3.4)	83	151,290	12,608	7.9	6.9	14.5
Lakes	6 (1.7)	38	74,460	12,410	8.1	6.3	15.8
Tairāwhiti	2 (0.6)	10	32,805	16,403	6.1	5.0	20.0
Hawke's Bay	12 (3.4)	59	114,168	9,514	10.5	4.9	20.3
Taranaki	5 (1.4)	34	81,558	16,312	6.1	6.8	14.7
Whanganui	2 (0.6)	19	54,930	27,465	3.6	9.5	10.5
MidCentral	8 (2.3)	58	118,893	14,862	6.7	7.3	13.8
Capital and Coast ^c	19 (5.4)	172	220,758	11,619	8.6	9.1	11.0
Hutt	13 (3.7)	65	105,282	8,099	12.3	5.0	20.0
Wairarapa	1 (0.3)	13	30,459	30,459	3.3	13.0	7.7
Nelson-Marlboro.	15 (4.2)	73	104,301	6,953	14.4	4.9	20.5
West Coast		8	24,936				
Canterbury	38 (10.7)	230	353,022	9,290	10.8	6.1	16.5
South Canterbury	4 (1.1)	25	65,073	16,268	6.1	6.3	16.0
Otago	37 (10.4)	190	141,702	3,830	26.1	5.1	19.5
Southland ^d	7 (2.0)	50	90,795	12,971	7.7	7.1	14.0
Total	355 ^d	2051	3,160,008	8,901	11.2	5.8	17.3

^aCalculated using the population aged over 14 years

^bIncludes all of the Ruapehu TLA (part of which is usually included in Whanganui DHB – affects Ohakune technicians)

^cIncludes all of the Kapiti Coast TLA (part of which is usually included in MidCentral DHB – affects Otaki technicians)

^dIncludes all of the Queenstown Lakes TLA (part of which is usually included in Otago DHB – affects Wanaka technicians)

^eLocation unknown for 1 technician and 33 dentists

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

DHB area	No of technicians	Population:technician ratio ^a	Technicians per 100,000 population ^a
Northland	7 (4.0)	16,238	6.2
Waitemata	22 (12.6)	17,139	5.8
Auckland	12 (6.9)	27,380	3.7
Counties-Manukau	15 (8.6)	21,398	4.7
Waikato ^b	10 (5.7)	25,531	3.9
Bay of Plenty	8 (4.6)	18,911	5.3
Lakes	4 (2.3)	18,615	5.4
Tairāwhiti	2 (1.1)	16,403	6.1
Hawke's Bay	6 (3.4)	19,028	5.3
Taranaki	4 (2.3)	20,390	4.9
Whanganui	2 (1.1)	27,465	3.6
MidCentral	6 (3.4)	19,816	5.0
Capital and Coast ^c	9 (5.2)	24,529	4.1
Hutt	7 (4.0)	15,040	6.6
Wairarapa	1 (0.6)	30,459	3.3
Nelson-Marlboro.	6 (3.4)	17,384	5.8
West Coast		∞	0
Canterbury	26 (14.9)	13,578	7.4
South Canterbury	3 (1.7)	21,691	4.6
Otago	19 (10.9)	7,458	13.4
Southland ^d	5 (2.9)	18,159	5.5
Total	174	18161	5.5

^aCalculated using the population aged over 14 years

^bIncludes all of the Ruapehu TLA (part of which is usually included in Whanganui DHB – affects Ohakune technicians)

^cIncludes all of the Kapiti Coast TLA (part of which is usually included in MidCentral DHB – affects Otaki technicians)

^dIncludes 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@otago.ac.nz.