Practice patterns of oral and maxillofacial surgeons in Australia

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KA Singh, DS Brennan, AJ Spencer, AN Goss

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KA Singh
Research Fellow
Australian Research Centre for Population Oral Health
The University of Adelaide

DS Brennan
Senior Research Fellow
Australian Research Centre for Population Oral Health
The University of Adelaide

AJ Spencer
Director
Australian Research Centre for Population Oral Health
The University of Adelaide

AN Goss
Professor of Oral and Maxillofacial Surgery
Dental School
The University of Adelaide

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Abbreviations

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
DSRU	Dental Statistics and Research Unit
ANZAOMS	Australian and New Zealand Association of Oral and Maxillofacial Surgeons

Symbols

%	percentage
–	zero or rounded to zero
n	number
sd	standard deviation

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1 Introduction

Understanding current practice patterns of oral and maxillofacial surgeons and identifying trends over time are key elements in the process of planning for the future. They inform debate on issues relevant to the specialty such as the supply of services and anticipated training needs. However, the relative lack of such quantitative information on the services provided by oral and maxillofacial surgeons has been contrasted with the amount of clinical service provided (Goss & Gerke 1991; Waldman 1987).

A previous study of the oral and maxillofacial workforce was done in 1990 (AIHW DSRU 1992; Spencer, Brennan et al. 1993; Spencer, Szuster et al. 1993; Spencer et al. 1992). These previous Australian data have shown that services provided by oral and maxillofacial surgeons were dominated by dentoalveolar services, with variations in service provision between private and public practice. This report presents findings from a follow-up study done in 2000.

1.1 Background: demographic and oral health trends

The Australian population has shown improved oral heath over recent decades, with reduced caries experience among children (Spencer et al. 1994) and decreased tooth loss among adults (ABS 1979; AIHW DSRU: Carter et al. 2001). Demographic changes are projected to maintain the pool of children and young adults, while the pool of middle to older aged adults is projected to increase (NHMRC 1993). With more people retaining their teeth and the age structure of the population changing, shifts in service provision have been observed among dental patients in private general practice (Brennan & Spencer 2003).

While these broad changes in oral health and demographics may provide one source of influence on the pattern of services provided by oral and maxillofacial surgeons, there are also issues more directly related to the specialty that may impact on the services provided by oral and maxillofacial surgeons. It has been predicted that the dominance of dentoalveolar surgery might be reduced if calls for the development of standards and criteria of care (Kelly 1987), and ongoing assessment of the risks and benefits of removal of third molars (Mercier & Precious 1992), impact on practice patterns of surgeons. Clinical practice guidelines have since been developed and adopted by the American Association of Oral and Maxillofacial Surgeons (AAOMS 2001) which attempt to incorporate the best available evidence about the diagnosis and treatment of diseases, injuries and defects of the oral and maxillofacial region.

1.2 Qualifications

Oral and maxillofacial surgery has a unique position, straddling the dental and medical professions (Punjabi & Haug 1990) which created controversy over whether dual medical and dental qualifications are necessary (Peterson et al. 1989). This controversy has since been resolved in most western countries. Predicted changes in the training of both dentists and oral and maxillofacial surgeons could alter referral dynamics and decrease the amount of minor surgery performed by oral and maxillofacial surgeons (Guralnick 1984; Pedlar 1991).

There have been major changes of the training of oral and maxillofacial surgeons in Australia over the last two decades. In the 1980s it became clear to the specialty that the traditional dental model of a three-year MDS via Dental School was inadequate for the developing scope and service range of the specialty. There was a need to move towards the medical surgical model of College training. This has occurred with the process developing at the time of the 1990s survey and largely being complete for new entries into the specialty by the year 2000. Key steps in the process were the development of partnerships with the Royal Australasian College of Dental Surgeons in the late 1980s; the mandatory requirements of a medical degree for new trainees commencing in 1994 and the acceptance of the FRACDS (OMS) by the Australian Government for Medicare purposes in 1999. While the core of oral and maxillofacial surgery is dentoalveolar, knowledge of the orofacial region forms the basis for the wider scope of the modern specialty (Goss & Gerke 1991). It has been reported that oral and maxillofacial surgeons with medical qualifications, while maintaining a broad scope, tended to have a greater range of procedures within the major groupings (Goss & Gerke 1990).

1.3 Sampling and data collection

All registered oral and maxillofacial surgeons in Australia were surveyed in both 1990 and 2000 using mailed self-complete questionnaires. Service provision data were collected from a one-week log. Data were collected with a primary approach letter sent initially to each surgeon, followed a week later by the survey materials. A reminder card was sent two weeks later, followed by up to four additional mailings of survey materials to surgeons who had not yet responded, in order to ensure higher response rates (Dillman 1978).

1.4 Structure and themes

The findings will be covered in three major parts:

(i) workforce survey results from the questionnaire covering demographic and practice characteristics;

(ii) workforce survey results dealing with service provision obtained from a weekly log of patients; and

(iii) a comparison of major findings from the 1990 and 2000 studies.

The structure reflects the dual research themes of describing the main details of the background and practice patterns of oral and maxillofacial surgeons in Australia, and describing the services that they provide to patients. The comparison of 1990 and 2000 data is aimed at examining trends in key areas of service provision and practice patterns of oral and maxillofacial surgeons in Australia.

2 Practice patterns, 2000

2.1 Social and demographic characteristics

Table 1 shows the response rates to the survey broken down by state/territory. The overall response rate of 65.1% was adequate, with response rates ranging from 53.4% in New South Wales to 100.0% in Northern Territory.

Table 1: Total surgeons contacted and number of respondents for each state/territory

		Exclusions			Responded		
State/Territory	Study population	Non-contact	Over-seas	Refusal	Retired, etc.	Completed survey	Response rate (%)
NSW	62	2	4	19	8	22	53.4
Vic	52	4	—	10	4	32	75.0
Qld	37	2	1	6	3	19	64.7
WA	14	—	—	1	2	7	64.3
SA	17	—	—	2	2	11	76.5
Tas	4	—	—	1	1	1	50.0
ACT	4	—	—	—	—	3	75.0
NT	1	—	—	—	—	1	100.0
Total	**191**	**8**	**5**	**39**	**20**	**96**	**65.1**

Response rate = Responded / (Study population – Exclusions) x 100

The age and sex distributions of the responding surgeons are presented in Table 2. The majority of surgeons were male (91.3%), with only a small percentage of female surgeons (8.7%). The highest percentages of surgeons were in the 40–49 (32.6%) and 50–59 years age groups (31.5%). This pattern reflected the male age distribution, with higher percentages of female surgeons in the 30–39 and 40–49 years age groups.

Table 2: Age and sex distribution of responding surgeons in Australia

	Male		Female		Total	
Surgeon age (years)	n	(%)	n	(%)	n	(%)
20–29	2	(2.4)	0	(0.0)	2	(2.2)
30–39	15	(17.9)	3	(37.5)	18	(19.6)
40–49	26	(31.0)	4	(50.0)	30	(32.6)
50–59	28	(33.3)	1	(12.5)	29	(31.5)
60+	13	(15.5)	0	(0.0)	13	(14.1)
Total sampled	**84**		**8**		**92**	

Table 3 shows that the majority of surgeons were born in Australia (68.1%), with a large minority coming from the UK (18.1%). Melbourne (26.9%) and Sydney (22.6%) were the most common dental schools of graduation, followed by Queensland (15.1%) and other overseas schools (15.1%), not including New Zealand.

Table 3: Country of birth and dental school of graduation

Country of birth	Number of surgeons	Percentage of surgeons
Australia	64	68.1
NZ	4	4.3
UK	17	18.1
Other	9	9.6
Dental school of graduation		
WA	6	6.5
Sydney	21	22.6
Melbourne	25	26.9
Qld	14	15.1
Adelaide	9	9.7
NZ	4	4.3
Other	14	15.1

2.2 Private and public practice

While the majority of surgeons worked in both private and public practice (68.4%), Table 4 shows that there was also a high percentage that worked in private practice only (21.1%).

Table 4: Type of practice

	Number of surgeons	Percentage of surgeons
Private	20	21.1
Public	9	9.5
Both	65	68.4
Not stated	1	1.1

The percentage of time spent by a surgeon in their principal practice is presented in Table 5. Nearly one-third (29.3%) of surgeons spend 90–100% of the time in their principal practice, with the next highest percentage (19.0%) spending 80–89% of time in their principal practice.

Table 5: Percentage of time spent in principal practice

	Percentage of time in principal practice									
Surgeons	**10–19**	**20–29**	**30–39**	**40–49**	**50–59**	**60–69**	**70–79**	**80–89**	**90–100**	**Missing**
Number	1	3	1	5	7	7	6	11	17	37
Percentage	1.1	3.2	1.1	5.3	7.4	7.4	6.3	11.6	17.9	38.9
Valid %	1.7	5.2	1.7	8.6	12.1	12.1	10.3	19.0	29.3	—

Type of principal practice is presented in Table 6. The highest percentage of surgeons was in solo practice (37.9%) or associateships (26.3%) at their principal practice, with the next highest percentage in general hospitals (10.5%).

Table 6: Type of principal practice

	Number	Percentage
Private		
Solo	36	37.9
Associateship	25	26.3
Partner: without cost sharing	0	0
Partner: with cost sharing	4	4.2
Assistant	3	3.2
Public		
General hospital	10	10.5
Dental hospital	4	4.2
University	3	3.2
Other	1	1.1
Missing	**9**	**9.5**

Table 7 shows that few surgeons had another activity in dentistry (11.7%), but about a quarter had another activity outside dentistry (25.3%). The majority of surgeons (59.6%) were the sole earner of the family income.

Table 7: Proportion of surgeons who have another activity within dentistry and/or another work activity outside dentistry, and surgeons who are sole earners of family income

		Number of surgeons	Percentage
Another activity in dentistry	Yes	11	11.7
	No	83	88.3
Another activity outside dentistry	Yes	24	25.3
	No	71	74.7
Sole earner of family income	Yes	56	59.6
	No	38	40.4

Overall, the highest percentages of surgeons worked 61–80% (35.1%) or 81–100% (44.7%) in private practice (Table 8). This pattern was reflected in most states/territories.

Table 8: Percentage of activity in private practice by state/territory

Level of activity in private practice (%)	NSW n	Vic n	Qld n	WA n	SA n	Tas n	NT n	ACT n	All n	%
0–20	5	3	1	1	1	0	2	1	14	12.3
21–40	1	0	2	0	0	0	0	0	3	2.6
41–60	3	2	1	0	0	0	0	0	6	5.3
61–80	14	13	6	1	4	0	1	1	40	35.1
81–100	14	12	11	3	6	1	2	2	51	44.7
All	**37**	**30**	**21**	**5**	**11**	**1**	**5**	**4**	**114**	

The overall distribution of activity in private practice is presented in Figure 1.

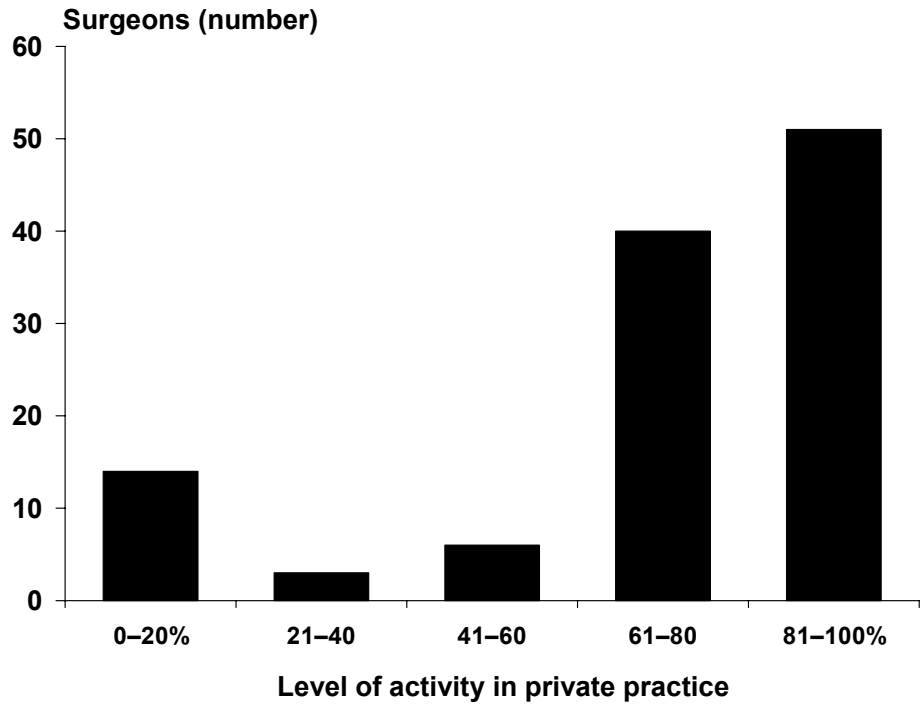

Figure 1: Percentage of activity in private practice

The amount of time devoted to practice in terms of hours per year, patients per week and patients per year is presented in Table 9, broken down by the level of activity in private and public practice. Surgeons who had higher levels of activity in the private sector worked more hours per year, but treated fewer patients on average than surgeons who had lower levels of activity in the private sector.

Table 9: Time devoted to practice and patients treated by level of activity in private and public practice

	<80% Private			≥80% Private			All		
	n	Mean	sd	n	Mean	sd	n	Mean	sd
Hours/year	25	1,513.0	768.4	50	1,746.0	622.5	76	1,651.1	690.3
Patients/week	24	61.9	43.2	48	51.7	34.5	73	54.41	37.8
Patients/year	24	2,727.7	1,876.4	48	2,393.9	1,650.0	73	2,474.4	1,730.8

2.3 Current practice experience

Most surgeons worked full-time (84.7%), as shown in Table 10. Of those who worked part-time most did not state a reason and few attributed their part-time status to either study or semi-retirement.

Table 10: Reasons for working less than full-time

Surgeons who work:	Number (%)
Full-time	72 (84.7)
Part-time	13 (15.3)
– Part-time: study	2
– Part-time: semi-retired	1
– Part-time: reason not stated	10

Surgeons who expected to spend more time in practice in the next 12 months already had higher levels of time devoted to work than surgeons who expected to spend the same or less time in practice (Table 11). Surgeons who expected to spend more time in practice in the next 12 months also reported treating a higher number of patients.

Table 11: Expected time in practice in next 12 months by time devoted to practice measured as hours per year, patients seen per week and patients seen per year

	Hours per year			Patients per week			Patients per year		
	n	Mean	sd	n	Mean	sd	n	Mean	sd
More	11	1,837.1	725.4	14	67.0	42.7	14	2,977.8	2,026.1
Same	58	1,667.1	667.4	52	54.0	37.0	52	2,477.6	1,667.1
Less	6	1,140.3	789.8	6	31.5	27.2	6	1,459.7	1,385.2

2.4 Perceived busyness

The majority of surgeons were as busy as they preferred to be (61.8%), as shown in Table 12. However, nearly a quarter of surgeons were busier than they preferred (24.7%) and some were less busy than they preferred (13.5%).

Table 12: Perceived busyness

	Number	Percentage
Busier than preferred	22	24.7
As busy as preferred	55	61.8
Less busy than preferred	12	13.5

While only small numbers of surgeons had low levels of activity in private practice, a higher percentage of these surgeons tended to report being busier than they preferred to be. For example, Table 13 shows that 45.5% of surgeons who worked 0–20% in private practice reported being busier than they preferred, compared to 12.2% of surgeons who worked 81–100% in private practice.

Table 13: Perceived busyness by level of practice in private practice

	Level of activity in private practice				
	0–20%	21–40%	41–60%	61–80%	81–100%
	n (%)	n (%)	n (%)	n (%)	n (%)
Busier than preferred	5 (45.5)	1 (33.3)	1 (16.7)	8 (30.8)	5 (12.2)
As busy as preferred	5 (45.5)	2 (66.6)	4 (66.6)	15 (57.7)	29 (70.7)
Less busy than preferred	1 (9.1)	0 (0.0)	1 (16.7)	3 (11.5)	7 (17.1)

Table 14 shows perceived busyness by length of wait for an appointment. In general, waiting times were longer for public compared to private practice, and for surgery compared to consultation appointments. Surgeons who reported being busier than

they preferred had longer waiting times for appointments, although the difference between those who reported being busier and those who reported being less busy than they preferred was small for surgery in public practice.

Table 14: Perceived busyness by length of wait for appointment in weeks

	Private practice						Public practice					
	Consultation			Surgery			Consultation			Surgery		
	n	Mean	sd	n	Mean	sd	n	Mean	sd	n	Mean	sd
Busier than preferred	14	3.79	3.86	14	4.71	3.45	18	13.03	16.18	17	35.85	56.16
As busy as preferred	50	1.75	1.49	50	2.30	1.64	34	5.65	6.10	34	24.32	29.65
Less busy than preferred	12	1.15	1.90	11	1.38	1.70	8	2.89	1.92	7	34.50	22.47

Surgeons who reported being busier than they preferred to be worked less hours per year compared to surgeons who reported being as busy or less busy than they preferred, but surgeons who reported being busier treated more patients.

Table 15: Perceived busyness by time devoted to practice measured as hours per year, patients seen per week and patients seen per year

	Hours per year			Patients per week			Patients per year		
	n	Mean	sd	n	Mean	sd	n	Mean	sd
Busier than preferred	18	1,538.9	908.7	18	57.7	32.0	18	2,643.3	1,489.7
As busy as preferred	48	1,688.9	657.5	44	55.0	43.7	44	2,471.5	1,988.2
Less busy than preferred	10	1,672.1	348.1	11	46.8	16.6	11	2,209.6	818.5

2.5 Type of practice and mix of cases

The highest percentage of surgeons (44.2%) had 90% of their patients from dentoalveolar surgery (Table 16). The highest percentages of surgeons also indicated that 90% of their time was spent on dentoalveolar surgery (31.8%) and 90% of their income was derived from dentoalveolar surgery (49.4%).

Table 16: Estimated mix of cases measured by number of patients seen, time spent and income derived at different levels of activity in dentoalveolar surgery and major maxillofacial surgery

	Number of patients seen (%)	Time spent (%)	Income (%)
100% (dentoalveolar)	7 (8.1)	6 (7.1)	7 (8.4)
90	38 (44.2)	27 (31.8)	41 (49.4)
80	15 (17.5)	17 (20.0)	17 (20.5)
70	10 (11.7)	11 (12.9)	6 (7.2)
60	6 (7.0)	9 (10.6)	3 (3.6)
50	4 (4.7)	5 (5.9)	4 (4.8)
60	1 (1.2)	4 (4.7)	1 (1.2)
70	0 (0.0)	0 (0.0)	2 (2.4)
80	3 (3.5)	4 (4.7)	1 (1.2)
90	1 (1.2)	1 (1.2)	1 (1.2)
100% (maxillofacial)	1 (1.2)	1 (1.2)	0 (0.0)

The mix of cases in terms of number of patients seen in dentoalveolar and major maxillofacial surgery is presented in Figure 2.

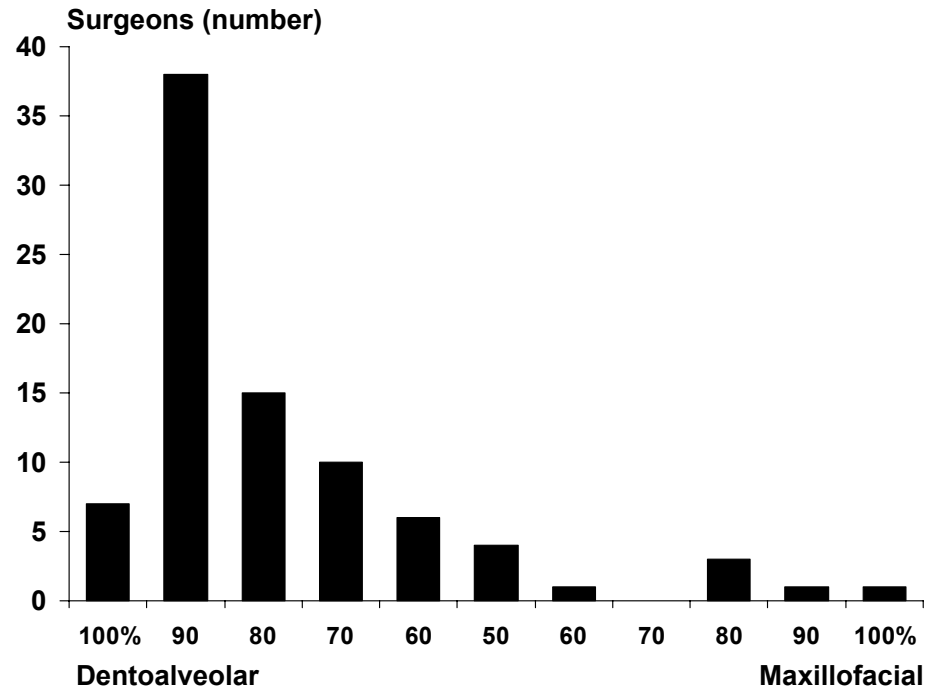

Figure 2: Mix of cases in terms of number of patients seen at different levels of activity in dentoalveolar surgery and major maxillofacial surgery

Table 17 shows that overall numbers of surgical procedures were highest for implants and trauma, followed by cysts and orthognathic surgery. Surgeons who had less activity in the private sector had higher rates of trauma, malignancies and orthognathic surgery.

Table 17: Estimated numbers of major maxillofacial surgical procedures per surgeon per year for a selected subset of procedures by level of activity in private and public practice

	<80% private (n = 28)		≥80% private (n = 53)		All (n = 81)	
	Mean	sd	Mean	sd	Mean	sd
Trauma	86.6	102.7	35.0	39.8	52.6	71.8
Cysts	25.6	40.0	25.7	22.6	25.6	26.3
Malignancies	10.7	11.1	6.6	7.0	8.0	8.8
Orthognathic	30.0	45.6	14.7	20.1	20.0	31.9
Preprosthetic	14.3	21.4	10.4	12.3	11.7	16.0
Implants	38.6	49.3	37.9	55.6	53.2	38.1
TMJ	10.4	12.8	8.7	18.6	9.3	16.7
Bone grafts	15.9	14.5	15.9	29.0	15.9	24.9

The majority of surgeons indicated that they expected no change in their rates of surgical procedures (Table 18). The highest expected increases were for implants (45.7%) and orthognathic surgery (35.2%).

Table 18: Perceived changes in scope for selected surgical procedures

	Decrease (%)	No change (%)	Increase (%)
Trauma	8 (10.7)	58 (77.3)	9 (12.0)
Cysts	4 (5.6)	61 (84.7)	7 (9.7)
Malignancies	7 (10.0)	51 (72.9)	12 (17.1)
Orthognathic	7 (9.9)	39 (54.9)	25 (35.2)
Preprosthetic	6 (8.6)	54 (77.1)	10 (14.3)
Implants	1 (1.4)	37 (52.9)	32 (45.7)
TMJ	7 (9.9)	59 (83.1)	5 (7.0)
Bone grafts	4 (5.8)	48 (69.6)	17 (24.6)

2.6 Referral sources

The highest percentage of surgeons had 90% of their referrals from dental sources (42.4%), as shown in Table 19. Among the dental referrals, the highest percentage of surgeons had 90% of their dental referrals from general (31.8%) rather than specialist sources. Among the medical referrals received, the highest percentage of surgeons had 90% of their referrals from general (36.9%) rather than specialist medical sources.

Table 19: Percentage of referrals from dental and medical practitioners

Surgeons	**Dental**										**Medical**
	100%	**90**	**80**	**70**	**60**	**50**	**60**	**70**	**80**	**90**	**100%**
Number	1	36	24	12	5	4	0	2	1	0	0
Per cent	1.2	42.4	28.2	14.1	5.9	4.7	0.0	2.4	1.2	0.0	0.0
	General dental										**Specialist dental**
	100%	**90**	**80**	**70**	**60**	**50**	**60**	**70**	**80**	**90**	**100%**
Number	3	27	13	18	11	6	2	3	2	0	0
Per cent	3.5	31.8	15.3	21.2	12.9	7.1	2.4	3.5	2.4	0.0	0.0
	General medical										**Specialist medical**
	100%	**90**	**80**	**70**	**60**	**50**	**60**	**70**	**80**	**90**	**100%**
Number	4	31	13	13	4	10	3	2	3	1	0
Per cent	4.8	36.9	15.5	15.5	4.8	11.9	3.6	2.4	3.6	1.2	0.0

The percentage of referrals from dental and medical sources is presented in Figure 3.

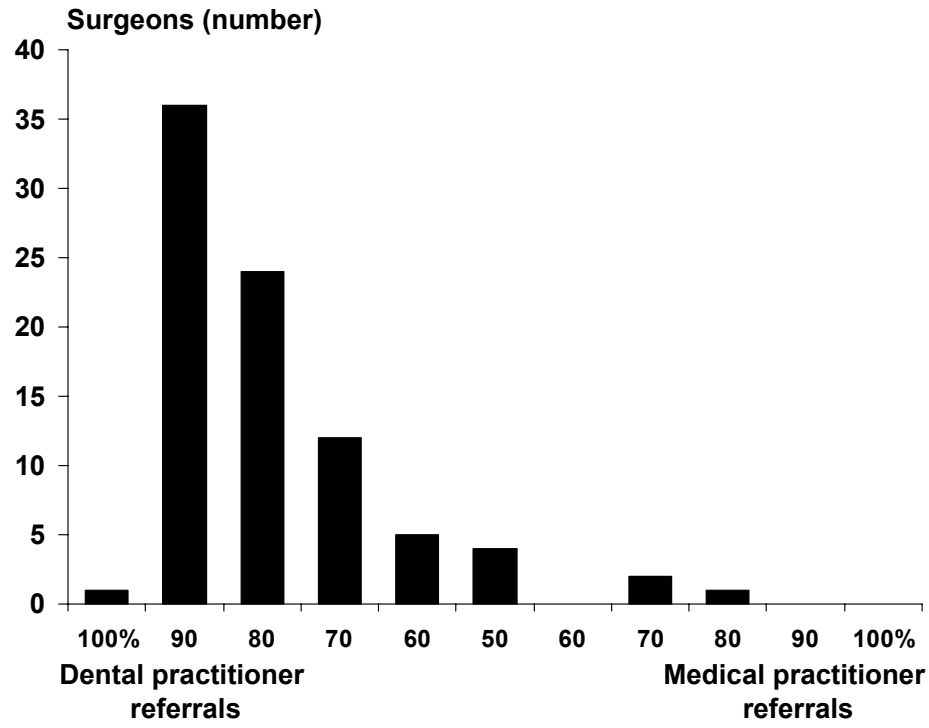

Figure 3: Percentage of referrals from dental and medical sources by number of surgeons

2.7 Typical week

Table 20 shows that the most time in a typical week was devoted to private operating time (15.0 hours per week) and private consultations by appointment (13.9 hours), followed by public operating time (5.9 hours) and both public outpatient time and other surgical activities (3.8 hours each). Surgeons who had less activity in the private sector spent more time in public operating time (8.5 hours) and outpatient time (6.0 hours) than surgeons who had more activity in the private sector (3.6 and 1.9 hours respectively).

Table 20: Hours devoted to practice in a typical week by level of activity in private and public practice

	<80% private			≥80% private			All		
Surgeons	**n**	**Mean**	**sd**	**n**	**Mean**	**sd**	**n**	**Mean**	**sd**
Private									
Operating time	23	11.6	8.4	54	16.5	7.4	77	15.0	8.0
Consult-appointment	23	12.1	8.1	54	14.7	7.5	77	13.9	7.7
Consult-emergency	23	2.0	2.1	53	1.8	1.7	76	1.8	1.8
Case discussion	23	2.3	2.5	53	1.1	1.4	76	1.5	1.9
Administration	23	3.7	3.5	54	5.5	4.1	77	4.9	4.0
Public									
Operating time	29	8.5	6.2	33	3.6	2.2	62	5.9	5.1
Outpatient time	29	6.0	5.2	34	1.9	1.9	63	3.8	4.3
Teaching	29	2.2	2.1	33	0.3	0.6	62	1.2	1.8
Case discussion	29	1.3	1.2	32	0.2	0.5	61	0.7	1.0
Others	29	3.5	5.2	35	0.6	0.7	64	1.9	3.8
Private/Public									
Travel	29	2.8	3.2	46	3.2	2.6	75	3.1	2.8
Other surgical	26	4.0	3.8	42	3.6	8.5	68	3.8	7.0

Figure 4 presents time devoted to practice in a typical week as a percentage.

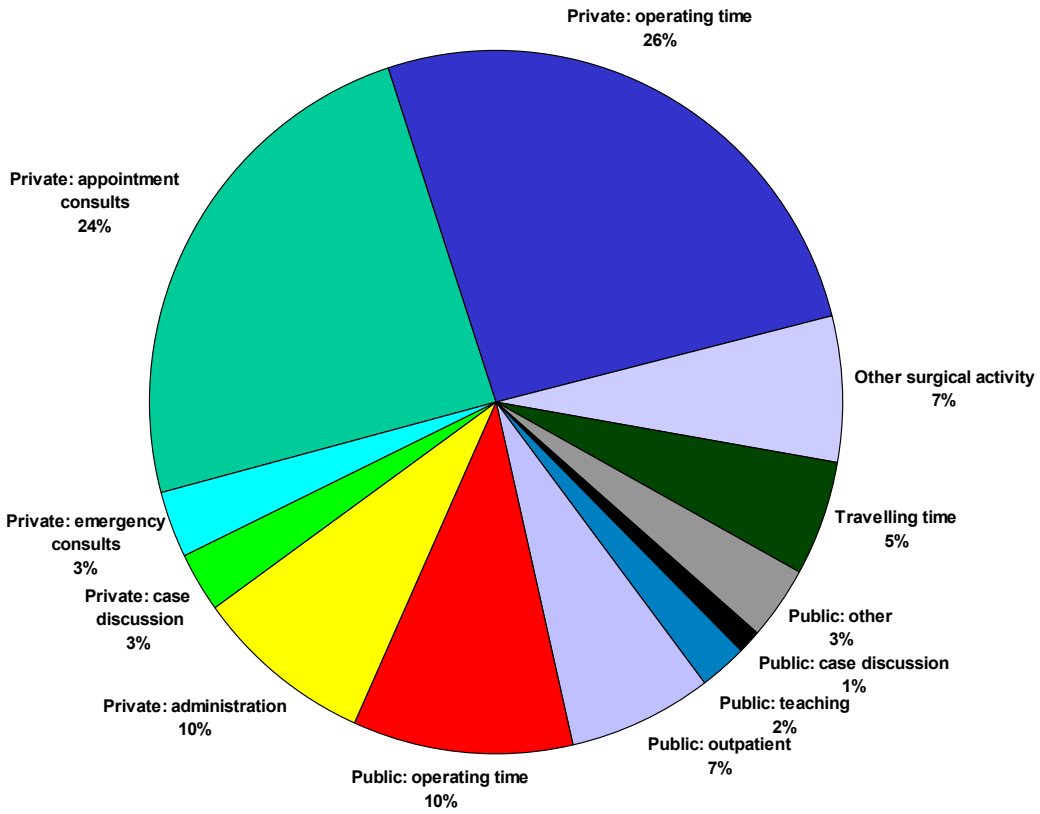

Figure 4: Percentage of time by type of activity in a typical week

2.8 Public/private on-call

The highest percentages of surgeons were rostered on-call for 1 or 2 weeks per month (35.1% and 38.6% respectively), as shown in Table 21. Only 1.8% were not rostered on-call.

Table 21: Rostered on-call frequency for surgeons in public practice

	Number	Percentage
On-call (weeks/month)		
1	20	35.1
2	22	38.6
3	1	1.8
4	7	12.3
Other on-call arrangements:	7	12.3
2 in 3 weeks	1	1.8
1 in 5 weeks	1	1.8
Continuous	3	5.3
Relieving	1	1.8
Not on-call	1	1.8

2.9 Surgeons' perceptions

Table 22 shows that the majority of surgeons were satisfied with their work (91.7%). However, some surgeons reported being overworked (31.0%), with lack of back-up (76.2%) and lack of personnel (i.e. not enough surgeons in the specialty) (43.8%) cited as the two main reasons for feeling overworked.

Table 22: Surgeons' perceptions of surgical satisfaction and/or being overworked, and explanations for perceptions of being overworked

			Explanations for being overworked	
	Satisfied (%)	Overworked (%)	Lack back-up (%)	Lack personnel (%)
Yes	77 (91.7)	26 (31.0)	16 (76.2)	7 (43.8)
No	7 (8.3)	58 (69.0)	5 (23.8)	9 (56.3)

Surgeons who felt overworked reported a range of other reasons; these are presented in Table 23.

Table 23: Other reasons given for being overworked

	Number	Percentage
Personal	1	6.2
Lacking staff	4	25.0
Demand	1	6.2
Choice	2	12.5
Administrative	1	6.2
Travel time	1	6.2
Study	1	6.2
Uncertain future	1	6.2
Age	1	6.2
Not stated	3	18.8

Table 24 shows that a higher percentage of surgeons who had a lower level of activity in private practice (i.e. relatively more activity in public practice) reported being overworked (55.6%) compared to surgeons with a higher level of activity in private practice (16.4%).

Table 24: Surgeons' perceptions of being overworked by level of activity in private practice

		<80% private (%)	≥80% private (%)	Total (%)
Overworked	Yes	15 (55.6)	9 (16.4)	26 (31.0)
	No	12 (44.4)	46 (83.6)	58 (69.0)

Table 25 shows that only a small percentage of surgeons perceived that there was insufficient surgery for an adequate income (16.3%) and even fewer perceived that there was insufficient surgery to maintain competence generally. However, a higher percentage of surgeons (21.9%) reported a perception that there was insufficient surgery to maintain competence in areas of special interest.

Table 25: Perceptions of insufficient surgery for adequate income, to maintain competence generally and to maintain competence in chosen area of specialist interest

	Adequate income (%)	Competence generally (%)	Competence in area of special interest (%)
Insufficient surgery	13 (16.3)	5 (6.0)	16 (21.9)
Sufficient surgery	67 (83.8)	79 (94.0)	57 (78.1)

A range of specialist areas were nominated as having insufficient surgery to maintain competence, the most frequent being orthognathic surgery (25.0%), as shown in Table 26.

Table 26: Specialist areas with perceptions of insufficient surgery to maintain competence

	Number	Percentage
Orthognathic	4	25.0
Trauma	3	18.8
Maxillofacial	1	6.3
Soft tissue	1	6.3
Implants	1	6.3
TMJ	1	6.3
TMJ/Implant/Orthognathic	2	12.5
Craniofacial	1	6.3
Study	2	12.5
Total	**16**	**100**

2.10 Personnel requirement

Few surgeons reported a perception that more surgeons were required in private practice (7.2%) in their geographic area (Table 27). However, a higher percentage of surgeons (37.0%) reported that more surgeons were required in public practice.

Table 27: Perceptions of requirement for more surgeons in geographic area in private and public practice

	Private (%)	Public (%)
More surgeons required	6 (7.2)	30 (37.0)
More surgeons not required	77 (92.8)	51 (63.0)

Over a quarter of surgeons (26.2%) reported that they were seeking personnel (Table 28), with surgeons (31.3%), associates (25.0%) and secretaries/receptionists (25.0%) the most common type of staff being sought.

Table 28: Recruitment of personnel and type being sought

Seeking personnel?	Number	Percentage
No	45	73.8
Yes	16	26.2
– Secretary/receptionist	4	25.0
– Nursing	2	12.5
– Associate	4	25.0
– Surgeon	5	31.3
– Hygienist	1	6.3

Table 29 shows that 28.0% of surgeons reported difficulty in recruiting personnel, with lack of skills being the most common difficulty.

Table 29: Difficulty in recruitment of personnel and type of difficulty

Difficulty recruiting personnel	Number	Percentage
No	36	72.0
Yes	14	28.0
– Lack skill	7	50.0
– Low salary	2	14.3
– Prefer city	2	14.3

Table 30 shows that surgeons who had a lower level of activity in private practice had more difficulty in recruiting (46.2%) than surgeons with a higher level of activity in private practice (22.2%). Among the reasons reported for difficulty in recruiting, lack of skill was the most common, both for surgeons who had a lower level of activity in private practice (60.0%) and for surgeons who had a higher level of activity in private practice (50.0%).

Table 30: Difficulty recruiting personnel by level of activity in private practice

Difficulty in recruiting	<80% private (%)	≥80% private (%)	Total (%)
No	7 (53.8)	28 (77.8)	35 (71.4)
Yes	6 (46.2)	8 (22.2)	14 (28.6)
– Lack skill	3 (60.0)	4 (50.0)	7 (50.0)
– Low salary	2 (40.0)	0 (0.0)	2 (14.3)
– Prefer city	0 (0.0)	2 (25.0)	2 (14.3)

2.11 Practice revenue and fees

Tables 31 to 34 present a breakdown of gross practice revenue generated and fees charged for specific surgical procedures. The distribution of gross practice revenue was highest in the lowest income category and decreased across higher income categories; however, there was a large percentage of missing data for this variable.

Table 31: Estimate of gross practice revenue generated

Income ($)	Number	Percentage
<50,000–199,999	18	18.9
200,000–399,999	14	14.7
400,000–599,999	12	12.6
600,000–799,999	12	12.6
800,000 and above	6	6.3
Missing	33	34.8

Fees charged for a consultation plus extraction of four impacted wisdom teeth under GA (Table 32) were concentrated in the $801–1,000 category (50.8%), while fees charged for other procedures were more evenly distributed. The fee category of $810–1,000 for a consultation plus bilateral mandibular fracture, open reductions and fixation was (Table 33) charged by the highest percentage of surgeons (32.5%). The fee categories of $1,501–2,000 and $2,001–2,500 were charged by 48.8% of surgeons (24.4% each) for a consultation plus Le Fort 1 osteotomy.

Table 32: Fee charged by surgeons on consultation plus extraction of four impacted wisdom teeth under GA

Fee ($)	Number	Percentage
400–600	4	6.8
601–800	17	28.8
801–1,000	30	50.8
1,001–1,200	4	6.8
1,201–1,400	4	6.8

Table 33: Fee charged by surgeons on consultation plus bilateral mandibular fracture, open reductions and fixation

Fee ($)	Number	Percentage
500–800	5	12.5
801–1,100	13	32.5
1,101–1,400	11	27.5
1,401–1,700	9	22.5
1,701–2,000	2	5.0

Table 34: Fee charged by surgeons on consultation plus Le Fort 1 osteotomy

Fee ($)	Number	Percentage
1,000–1,500	5	12.2
1,501–2,000	10	24.4
2,001–2,500	10	24.4
2,501–3,000	8	19.5
3,001–3,500	4	9.8
3,501–4,000	1	2.4
>4,000	3	7.3

3 Services provided to patients, 2000

3.1 Patients' age and sex

A slightly higher percentage of patients were female (56.0%), and there were high percentages of patients aged 18–24 (28.6%) and 25–44 (30.1%) years (Table 35). Both male and female patients had similar age distributions.

Table 35: Age and sex distribution of patients from weekly log

Age group (years)	Male (%)	Female (%)	Total (%)
<5	8 (0.3)	9 (0.3)	17 (0.5)
5–11	43 (1.4)	29 (0.9)	72 (2.3)
12–17	161 (5.2)	263 (8.4)	424 (13.6)
18–24	371 (11.9)	523 (16.8)	894 (28.6)
25–44	423 (13.5)	517 (16.6)	940 (30.1)
45–64	248 (7.9)	275 (8.8)	523 (16.8)
65+	120 (3.8)	132 (4.2)	252 (8.1)
Total	**1,374 (44.0)**	**1,748 (56.0)**	**3,122**

3.2 Main areas of service provided

Dentoalveolar procedures comprised the highest percentage of services (63.7%), followed by pathology (13.5%), as shown in Table 36. This pattern was also reflected in the mean number of services per surgeon per week.

Table 36: Main areas of procedures as a percentage and as mean per surgeon from weekly log

Area	Per cent	Mean	sd
Dentoalveolar	63.7	40.7	26.2
Trauma	6.1	3.9	7.3
Pathology	13.5	8.7	8.6
Orthognathic	7.9	5.0	8.0
Reconstructive surgery	8.6	5.5	7.4
Other (Major medical compromise)	0.3	0.2	0.7

3.3 Subcategories of services provided

Table 37 presents a breakdown of services into subcategories. The highest subcategories of services were unerupted (31.6%) and multiple extraction (17.7%), both in the dentoalveolar area of service.

Table 37: Subcategories of procedures presented as a percentage and as mean per surgeon from weekly log

Subcategory	Per cent	Mean	sd
Dentoalveolar			
Simple extraction	6.7	4.2	5.2
Multiple extraction	17.7	11.1	17.7
Unerupted	31.6	19.8	18.8
Apicectomy	0.8	0.5	1.0
Exposure	1.3	0.8	1.6
Other	5.3	3.3	9.3
Trauma			
Dentoalveolar	0.1	0.1	0.3
Mandible	2.9	1.8	3.0
Maxilla	0.4	0.3	0.7
Zygoma	1.1	0.7	1.6
Complex injury	0.7	0.5	1.2
Soft tissue only	0.2	0.1	0.5
Multi-trauma care	0.3	0.2	0.7
Pathology			
Cyst	1.8	1.1	1.4
Soft tissue	4.5	2.8	3.8
Hard tissue	1.1	0.7	1.2
Salivary gland	0.7	0.5	0.9
Maxillary antra	0.2	0.1	0.4
Malignancy	3.7	2.3	4.9
Infection	1.2	0.7	1.3
Orthognathic			
Mandible	2.7	1.7	3.4
Maxilla	1.0	0.6	1.5
Bimaxillary	3.9	2.4	4.3
Craniofacial	0.2	0.1	0.8
Postoperative	0.0	0.0	0.0
Sleep apnoea	0.2	0.1	0.6
Reconstructive surgery			
Preprosthetic	0.7	0.4	1.0
TMJ	3.1	2.0	3.4
Post pathology	0.1	0.1	0.2
Post trauma	0.2	0.1	0.4
Implant	4.1	2.6	5.7
Other (major medical compromise)	**0.3**	**0.2**	**0.7**

The most common treatment items provided were surgical removal of unerupted or partly erupted tooth requiring both removal of bone and tooth division (24.8%) and consultations including examinations (12.6%), as shown in Table 38.

Table 38: Ten most common individual procedures recorded as items of service from ADA/Medicare schedules in the weekly log as a percentage and as mean per surgeon

Subcategory	Per cent	Mean	sd
Surgical removal of unerupted or partly erupted tooth, requiring both removal of bone and tooth division (324)	24.8	22.1	19.1
Consultation, including examination (014)	12.6	11.2	14.3
Surgical removal of unerupted or partly erupted tooth, requiring removal of bone or tooth division (323)	9.8	8.8	11.8
Removal of permanent tooth (311)	8.2	7.3	13.7
Professional attendance at consulting rooms, hospital or residential aged care facility where patient has been referred (51700)	6.5	5.8	7.1
Subsequent attendance at consulting rooms, hospital or residential aged care facility where patient has been referred (51703)	6.3	5.6	10.9
Surgical removal of erupted tooth (321)	6.1	5.4	9.1
Consultation by referral, including examination (016)	4.2	3.7	7.2
Consultation – extended (30 minutes) – including examination (015)	1.9	1.7	5.3
Surgical removal of unerupted or partly erupted tooth, not requiring removal of bone or tooth division (322)	1.8	1.6	5.0

3.4 Types of services provided

Table 39 shows that consultations (36.7%), operations (33.1%) and reviews (30.2%) were provided at approximately equal percentages.

Table 39: Types of services provided from weekly log

Type	Number	Per cent
Consultation	1,184	36.7
Operation	1,070	33.1
Review	973	30.2

3.5 Location of services provided

Table 40 shows that the majority of services were provided in private practice rooms (58.3%) and theatres (16.8%), and public practice rooms (16.7%).

Table 40: Location of services provided from weekly log

Location	Number	Per cent
Private practice		
Rooms	1,880	58.3
Theatre	542	16.8
Wards	55	1.7
Public practice		
Rooms	539	16.7
Theatre	145	4.5
Wards	64	2.0

3.6 Referral sources

The majority of patients were from general dental referrals (62.1%), followed by specialist dental sources (21.5%), as shown in Table 41.

Table 41: Referral sources of services provided from weekly log

Source	Number	Per cent
Dental		
General	1,905	62.1
Specialist	661	21.5
Medical		
General	330	10.8
Specialist	172	5.6

3.7 Main areas of procedure

The highest percentages were dentoalveolar services consultations (63.9%), operations (78.7%) and reviews (46.4%), as shown in Table 42. However, reviews were less dominated by dentoalveolar services, with higher percentages of orthognathic (13.9%) and reconstructive (13.3%) surgery compared to consultations and operations.

Table 42: Main areas of procedure by types of services provided from weekly log

Area	Consultation (%)	Operation (%)	Review (%)
Dentoalveolar	728 (63.9)	836 (78.7)	431 (46.4)
Trauma	56 (4.9)	41 (3.9)	92 (9.9)
Pathology	178 (15.6)	92 (8.7)	152 (16.4)
Orthognathic	75 (6.6)	42 (4.0)	129 (13.9)
Reconstructive surgery	97 (8.5)	50 (4.7)	123 (13.3)
Major medical compromise	6 (0.5)	1 (0.1)	1 (0.1)

Table 43 shows that dentoalveolar services dominated the distribution of services in both private practice rooms (66.6%) and theatres (84.5%), and public practice theatres (60.0%). Dentoalveolar services also comprised a high percentage of services in public practice rooms (40.6%), where pathology services were also high (23.3%). Trauma services were more prominent in public practice wards (64.1%), where there was also a high percentage of pathology services (23.4%). Private practice wards had a high percentage of orthognathic surgery (58.2%).

Table 43: Main areas of procedure by location of services provided from weekly log

	Private practice			Public practice		
	Rooms	Theatre	Wards	Rooms	Theatre	Wards
Area	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Dentoalveolar	1,224 (66.6)	457 (84.5)	14 (25.5)	183 (40.6)	87 (60.0)	2 (3.1)
Trauma	41 (2.2)	7 (1.3)	1 (1.8)	73 (16.2)	26 (17.9)	41 (64.1)
Pathology	256 (13.7)	23 (4.3)	6 (10.9)	105 (23.3)	17 (11.7)	15 (23.4)
Orthognathic	126 (6.7)	28 (5.2)	32 (58.2)	45 (10.0)	10 (6.9)	6 (9.4)
Reconstructive surgery	197 (10.6)	25 (4.6)	2 (3.6)	41 (9.1)	5 (3.4)	0 (0.0)
Major medical compromise	3 (0.2)	1 (0.2)	0 (0.0)	4 (0.9)	0 (0.0)	0 (0.0)

Table 44 shows that the service distribution of patients from dental referrals was dominated by dentoalveolar from both general (82.8%) and specialist (51.1%) sources. Medical referrals were associated with higher percentages of trauma and pathology for both general (26.9% and 49.2% respectively) and specialist sources (33.5% and 28.2% respectively).

Table 44: Main areas of procedure by referral sources of services provided from weekly log

	Dental		Medical	
	General	Specialist	General	Specialist
Area	n (%)	n (%)	n (%)	n (%)
Dentoalveolar	1,551 (82.8)	336 (51.1)	29 (8.9)	17 (10.0)
Trauma	18 (1.0)	6 (0.9)	88 (26.9)	57 (33.5)
Pathology	176 (9.4)	32 (4.9)	161 (49.2)	48 (28.2)
Orthognathic	13 (0.7)	201 (30.5)	5 (1.5)	18 (10.6)
Reconstructive surgery	109 (5.8)	83 (12.6)	43 (13.1)	30 (17.6)
Major medical compromise	7 (0.4)	0 (0.0)	1 (0.3)	0 (0.0)

Table 45 shows that male patients had a higher percentage of trauma (10.0%) than female patients (2.8%), who had relatively more dentoalveolar and reconstructive surgery.

Table 45: Main areas of procedure by patient sex from weekly log

	Patient sex	
	Male	Female
Area	n (%)	n (%)
Dentoalveolar	835 (60.6)	1,158 (66.5)
Trauma	138 (10.0)	49 (2.8)
Pathology	207 (15.0)	217 (12.5)
Orthognathic	94 (6.8)	143 (8.2)
Reconstructive surgery	101 (7.3)	169 (9.7)
Major medical compromise	3 (0.2)	5 (0.3)

Table 46 shows that dentoalveolar services were more common among patients aged 5–11 to 25–44 years. Pathology services were highest among patients aged 45–64 and 65+ years. Orthognathic surgery was highest among 12–17-year-old patients. Reconstructive surgery was highest among <5-year-olds and 45–64-year-olds.

Table 46: Main areas of procedure by patient age group from weekly log

		Age group (years)						
Area		<5	5–11	12–17	18–24	25–44	45–64	65+
Dentoalveolar	n:	2	49	286	725	610	212	94
	(%):	(25.0)	(71.0)	(67.9)	(81.7)	(65.9)	(41.0)	(38.7)
Trauma	n:	0	3	9	53	62	33	9
	(%):	(0.0)	(4.3)	(2.1)	(6.0)	(6.7)	(6.4)	(3.7)
Pathology	n:	1	10	15	19	109	150	108
	(%):	(12.5)	(14.5)	(3.6)	(2.1)	(11.8)	(29.0)	(44.4)
Orthognathic	n:	0	2	96	62	58	15	2
	(%):	(0.0)	(2.9)	(22.8)	(7.0)	(6.3)	(2.9)	(0.8)
Reconstructive surgery	n:	5	5	15	28	84	105	27
	(%):	(62.5)	(7.2)	(3.6)	(3.2)	(9.1)	(20.3)	(11.1)
Major medical compromise	n:	0	0	0	0	3	2	3
	(%):	(0.0)	(0.0)	(0.0)	(0.0)	(0.3)	(0.4)	(1.2)

3.8 Service-mix

Table 47 shows that dentoalveolar services dominated the distribution of services provided by surgeons from all age groups, but was highest among the youngest age group of surgeons.

Table 47: Percentage service-mix: main areas by age of surgeon from weekly log

	Surgeon age group				
Area	**20–29**	**30–39**	**40–49**	**50–59**	**60+**
Dentoalveolar	87.5	67.4	54.9	67.7	68.2
Trauma	12.5	7.8	5.2	5.5	7.6
Pathology	0.0	9.0	18.4	12.5	11.2
Orthognathic	0.0	6.0	13.2	5.2	5.4
Reconstructive surgery	0.0	9.9	8.3	8.4	7.6
Major medical compromise	0.0	0.0	0.0	0.6	0.0

Table 48 shows that dentoalveolar services dominated the distribution of services provided by all surgeons regardless of qualifications.

Table 48: Percentage service-mix: main areas by qualification from weekly log

	Type of qualification			
		Medical and dental		
Area	**Dental**	**Medical graduate**	**+ FRACDS (OMS)**	**MDS**
Dentoalveolar	65.4	59.6	59.1	63.8
Trauma	5.1	8.2	6.4	1.1
Pathology	12.8	15.2	12.7	12.1
Orthognathic	7.3	9.2	13.3	14.3
Reconstructive surgery	9.1	7.5	8.4	8.7
Major medical compromise	0.2	0.4	0.0	0.0

Table 49 shows that there were high percentages of dentoalveolar services for both higher (73.6%) and lower (47.6%) levels of activity in private practice. However, surgeons with lower levels of activity in private practice were less dominated by dentoalveolar services, showing higher percentages of trauma, pathology and orthognathic surgery services.

Table 49: Percentage service-mix: main areas by level of activity in private and public practice from weekly log

	Level of activity	
Area	**<80% private**	**≥80% private**
Dentoalveolar	47.6	73.6
Trauma	11.7	2.6
Pathology	17.9	10.8
Orthognathic	14.2	4.0
Reconstructive surgery	8.6	8.7
Major medical compromise	0.1	0.4

4 Comparisons: 1990 and 2000

The following sections provide comparisons between 1990 and 2000 data in terms of service provision and practice patterns.

4.1 Service provision

The percentage of patients receiving services per visit is presented in Figure 5 for main areas of service by time of study. Dentoalveolar surgery dominated the service distributions in both 1990 and 2000. However, the distribution of services differed between the two studies, with lower percentages of dentoalveolar and trauma services in 2000 compared with 1990, but higher percentages of pathology, orthognathic and reconstructive surgery. Only a small number of services were provided in the 'other' category; hence, further analysis excludes these services.

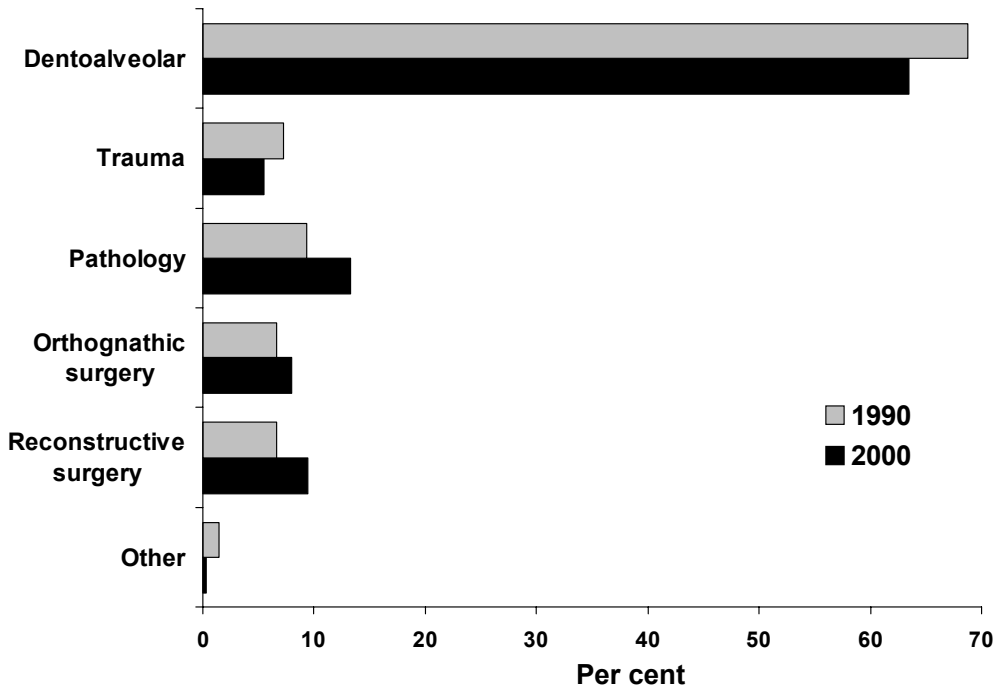

Figure 5: Distribution of services: percentage of patients receiving services per visit for main areas of service by time of study

Figure 6 presents the percentage of patients receiving dentoalveolar services per visit in each main area of service by time and patient and visit characteristics. For dentoalveolar services, comparison across time showed a slight reduction in the percentage receiving dentoalveolar services in 2000 compared with 1990 for both males and females, but this pattern was not observed consistently across all levels of the other patient and visit variables. Lower percentages of dentoalveolar services were observed in 2000 for 12–17-year-olds, private sector visits, services provided in rooms and wards, consultations and reviews, and both general and specialist dental referrals.

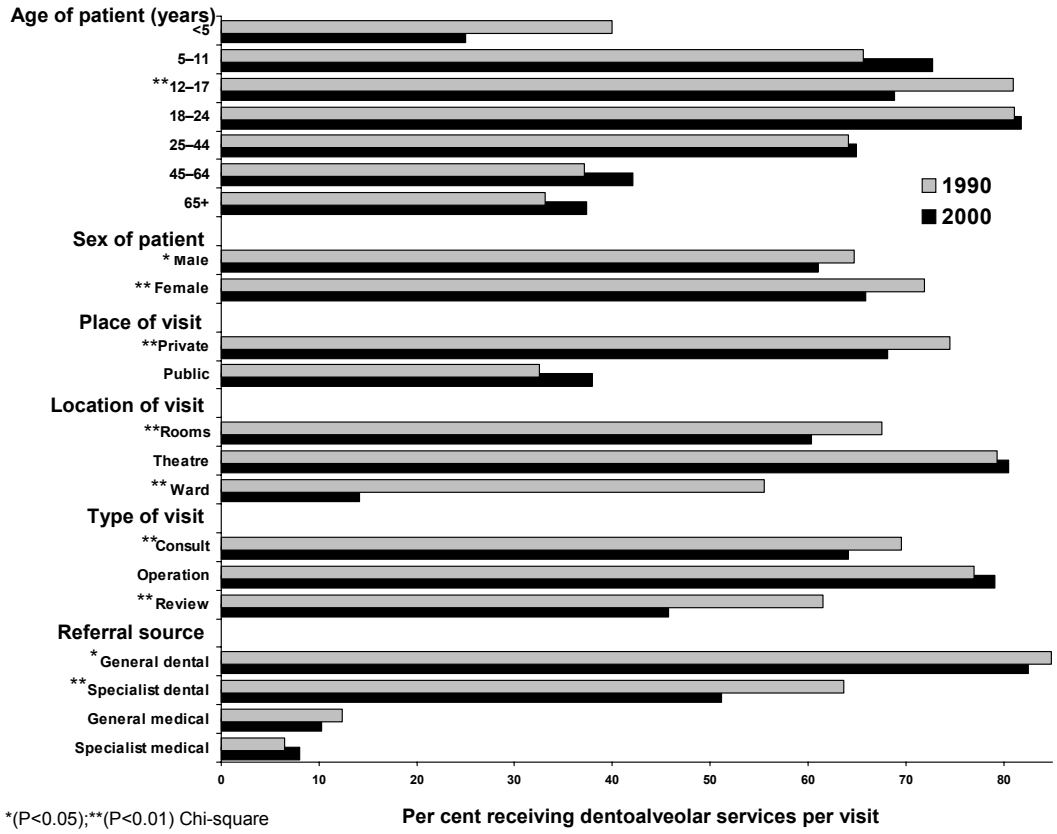

Figure 6: Percentage of patients receiving dentoalveolar services per visit by time of study and patient and visit characteristics

The percentage of patients receiving trauma services per visit in both studies is shown in Figure 7. Comparison across time showed a reduction in the percentage receiving trauma services in 2000 compared with 1990 within some levels of all the patient and visit variables, but not for all levels. Lower percentages of trauma services were noted in 2000 for 18–24 and 25–44-year-olds, male patients, public sector visits, services provided in theatres, operations, and both general and specialist medical referrals.

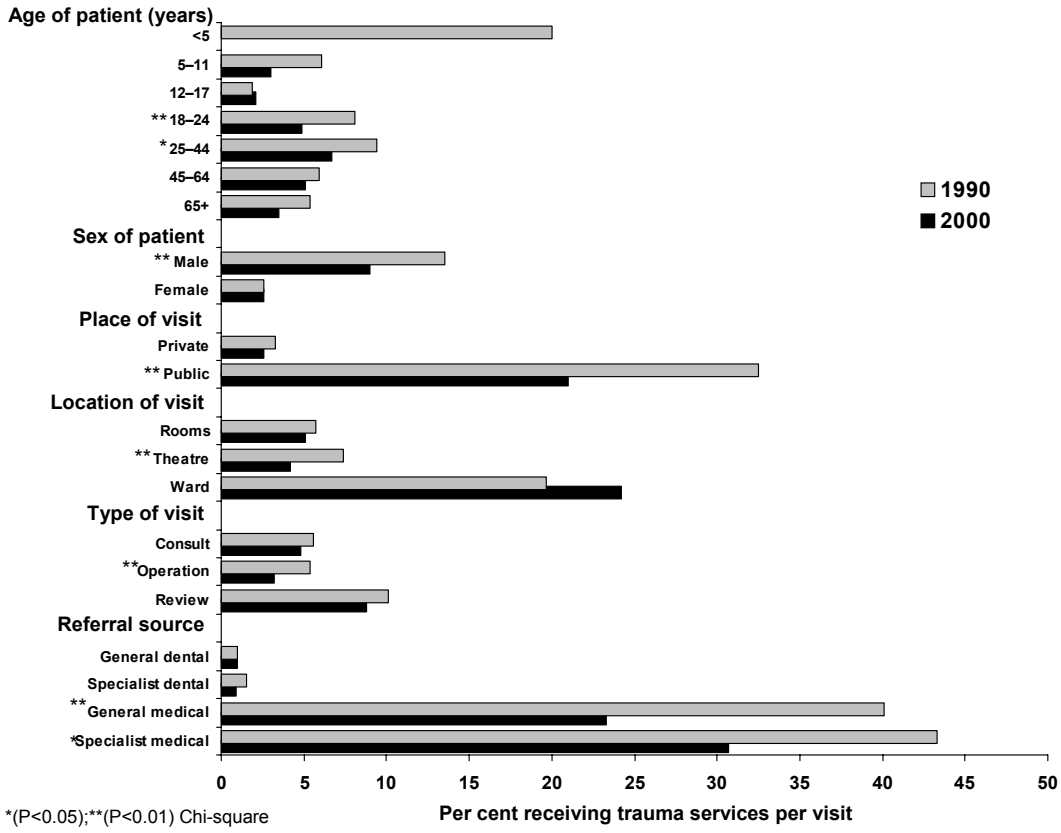

Figure 7: Percentage of patients receiving trauma services per visit by time of study and patient and visit characteristics

The percentage of patients receiving pathology services per visit for both studies is shown in Figure 8. Comparison across time showed an increase in the percentage receiving pathology services in 2000 compared with 1990 for both males and females, and private and public sector visits, but significant differences were not observed by patient age, and did not occur consistently across all levels of the other patient and visit variables. Higher percentages of pathology services were noted in 2000 for services provided in rooms and wards, consultation and review visits, and general medical referrals.

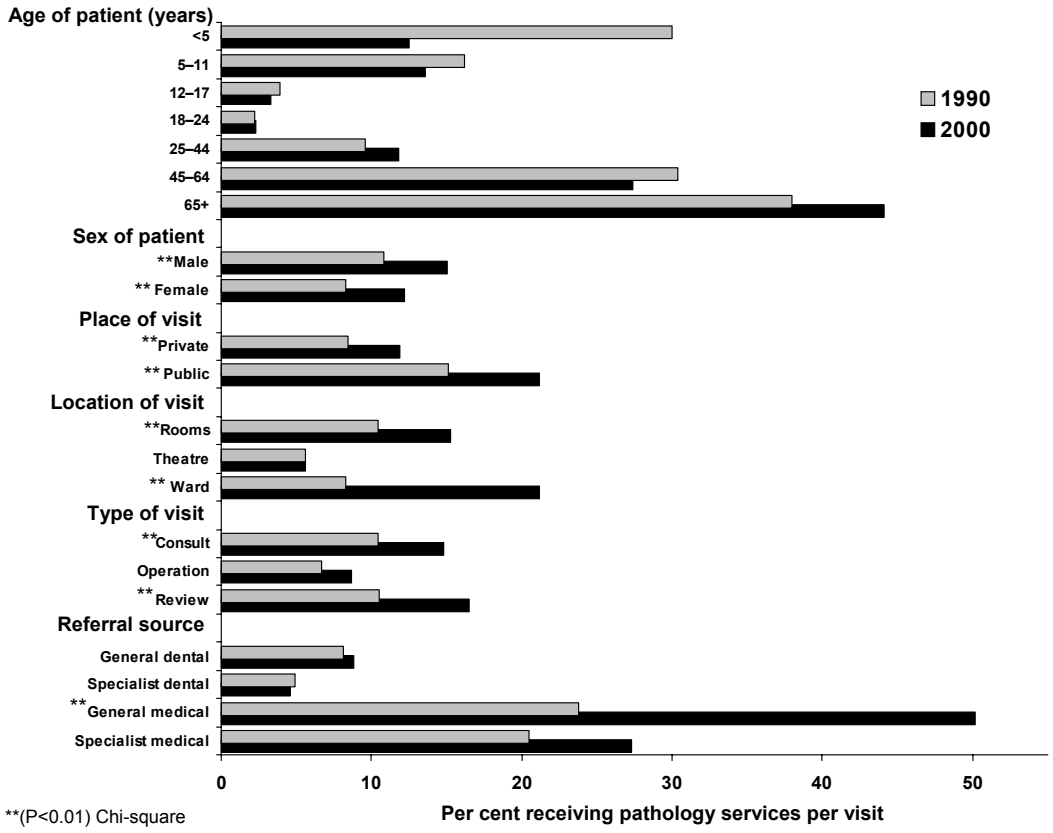

Figure 8: Percentage of patients receiving pathology services per visit by time of study and patient and visit characteristics

The percentage of patients receiving orthognathic services per visit for both studies is shown in Figure 9. Comparison across time showed an increase in the percentage receiving orthognathic surgery in 2000 compared with 1990, but this pattern was not observed by patient sex and did not occur consistently across all levels of the other patient and visit variables. Higher percentages of orthognathic services were observed in 2000 for 12–17-year-olds, private sector visits, services provided in wards, review visits and specialist dental referrals. A lower percentage of orthognathic services was observed in 2000 for general dental referrals.

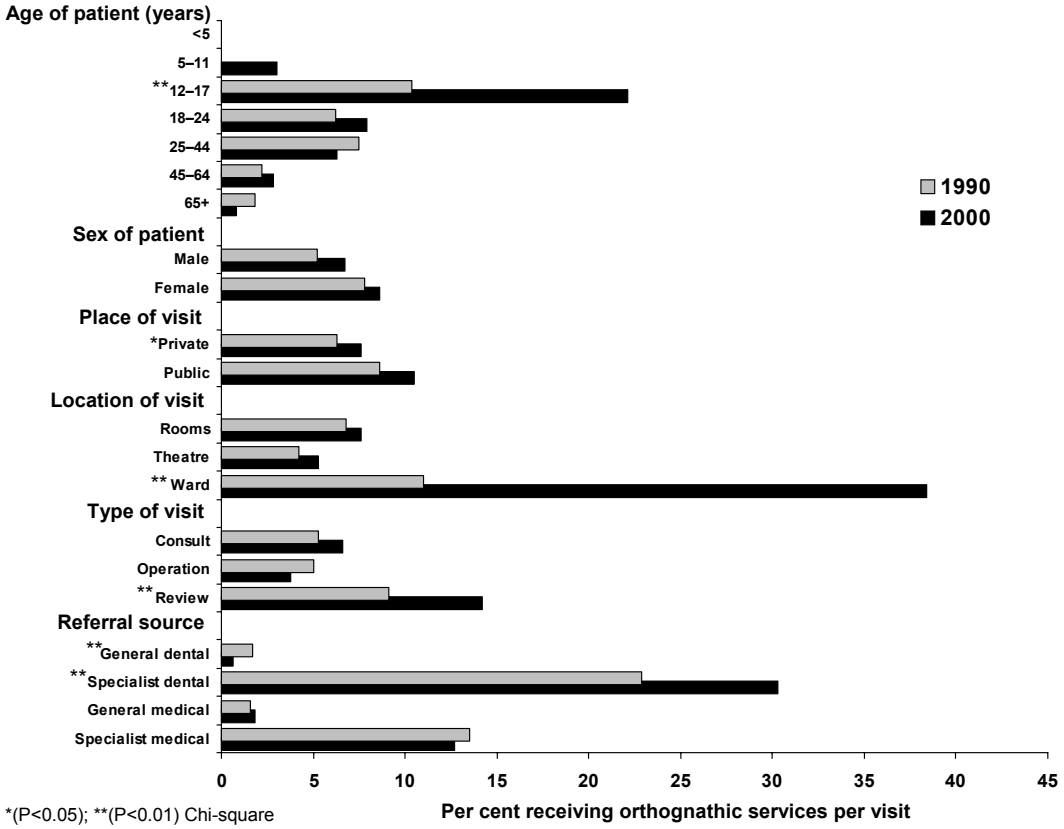

Figure 9: Percentage of patients receiving orthognathic services per visit by time of study and patient and visit characteristics

The percentage of patients receiving reconstructive services per visit for both studies is shown in Figure 10. Comparison across time showed an increase in the percentage receiving reconstructive surgery services in 2000 compared with 1990 for both males and females, but this did not occur consistently across all levels of the other patient and visit variables. Higher percentages of reconstructive services were observed in 2000 for <5 and 25–44-year-olds, private sector visits, services provided in rooms, both operations and reviews, and general and specialist dental referrals. A lower percentage of reconstructive services was observed in 2000 for general medical referrals.

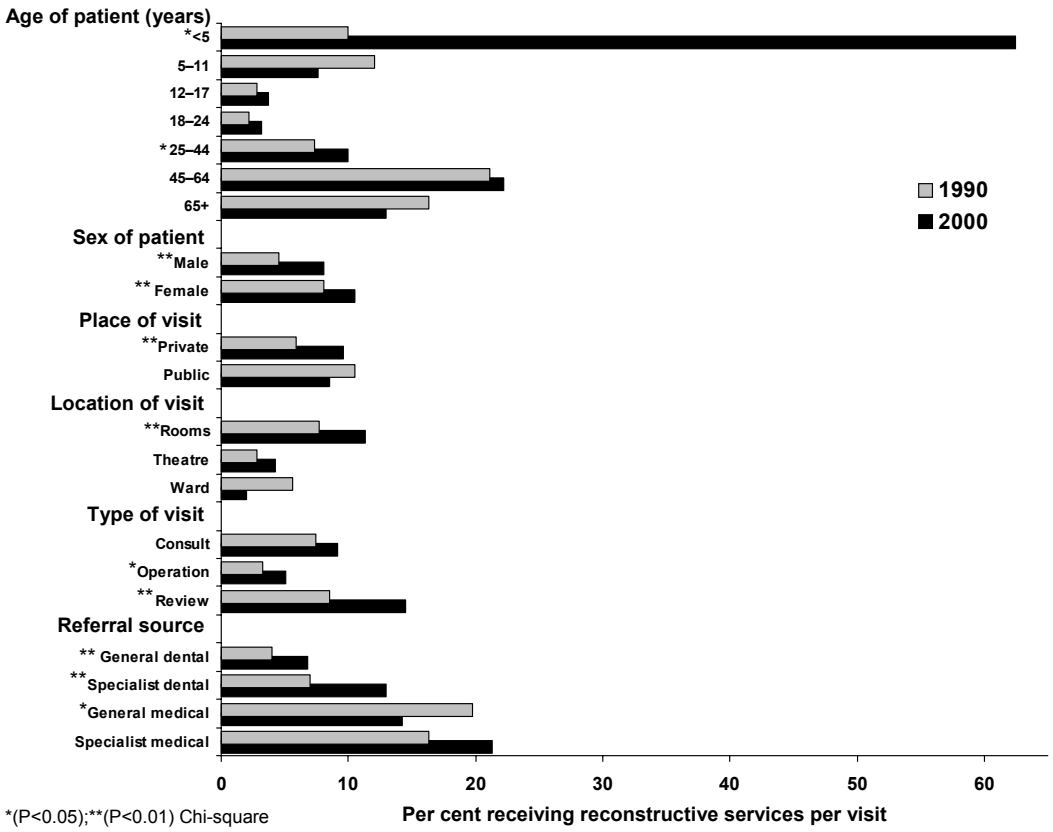

Figure 10: Percentage of patients receiving reconstructive services per visit by time of study and patient and visit characteristics

While all services showed variation over time in the bivariate analyses presented here, further multivariate analyses (Brennan et al. 2004a) showed that only orthognathic services varied significantly over time, after controlling for the patient and visit characteristics using regression models. Distributions of patient age and visit characteristics varied between the two studies, and were associated with variation in service provision; hence, it is likely that the differences in crude service provision measures over time reflected changes in patient and visit characteristics that were associated with variation in service provision. While provision of orthognathic services increased, the actual change was small in size and from an area of service that comprised a small component of total services, giving an overall impression of stability with only a small change in service patterns.

4.2 Practice patterns

The distribution of annual numbers of selected major maxillofacial surgical procedures per surgeon is presented in Figure 11 by year of study. There were high numbers of facial fracture procedures performed in both 1990 and 2000. Significant increases between 1990 and 2000 were observed for dental implants and bone graft procedures. While there were relatively high numbers of both jaw cyst and orthognathic surgery procedures in 1990 and 2000, the increase in dental implants resulted in these procedures being ranked second in terms of the selected major maxillofacial surgery rates in 2000.

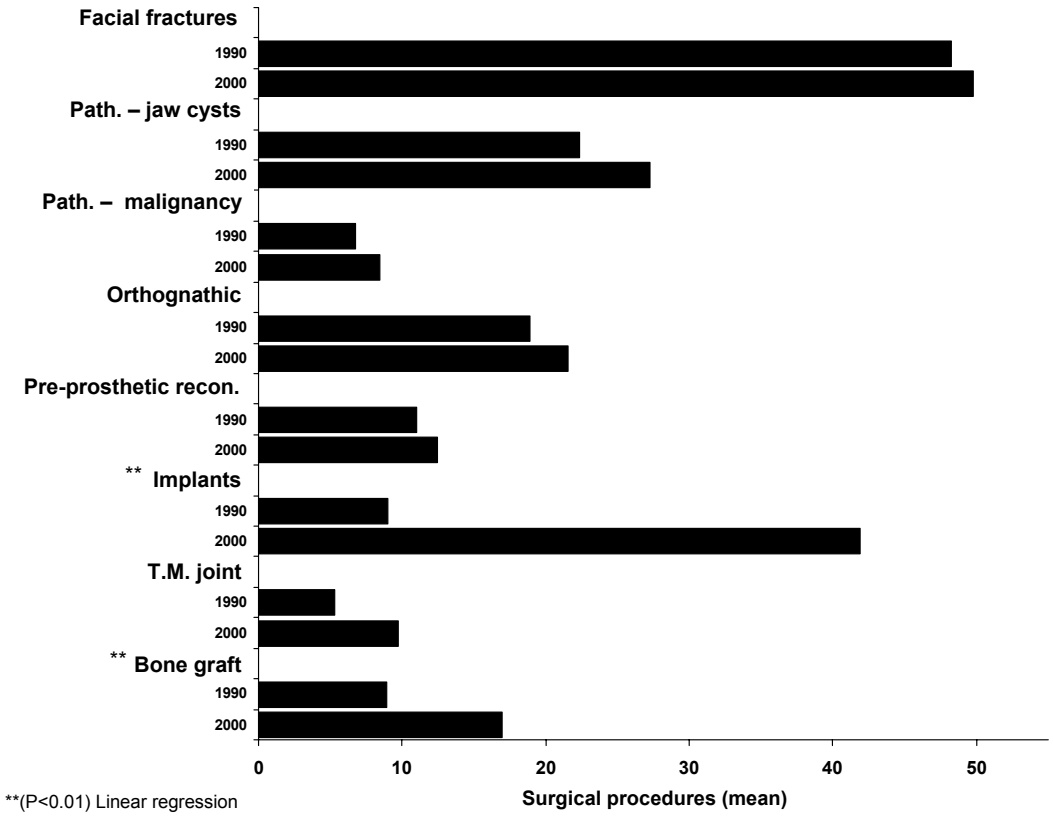

Figure 11: Distribution of major maxillofacial surgical procedures (mean per year) by time of study

Multivariate analyses (Brennan et al. 2004b) showed that higher rates were observed in 2000 compared to 1990 for dental implants, TMJ surgery and bone graft procedures.

Figures 12 and 13 show the mean number of annual surgical procedures per surgeon for selected non-dentoalveolar services by practice activity level and qualifications and year of study. Higher rates of facial fracture procedures were reported by surgeons who worked less than 80% in the private sector in both 1990 and 2000 (i.e. among those who worked more time in the public sector). Surgeons who worked less than 80% in the private sector in 2000 also reported higher rates of surgery for malignancy and orthognathic surgery procedures.

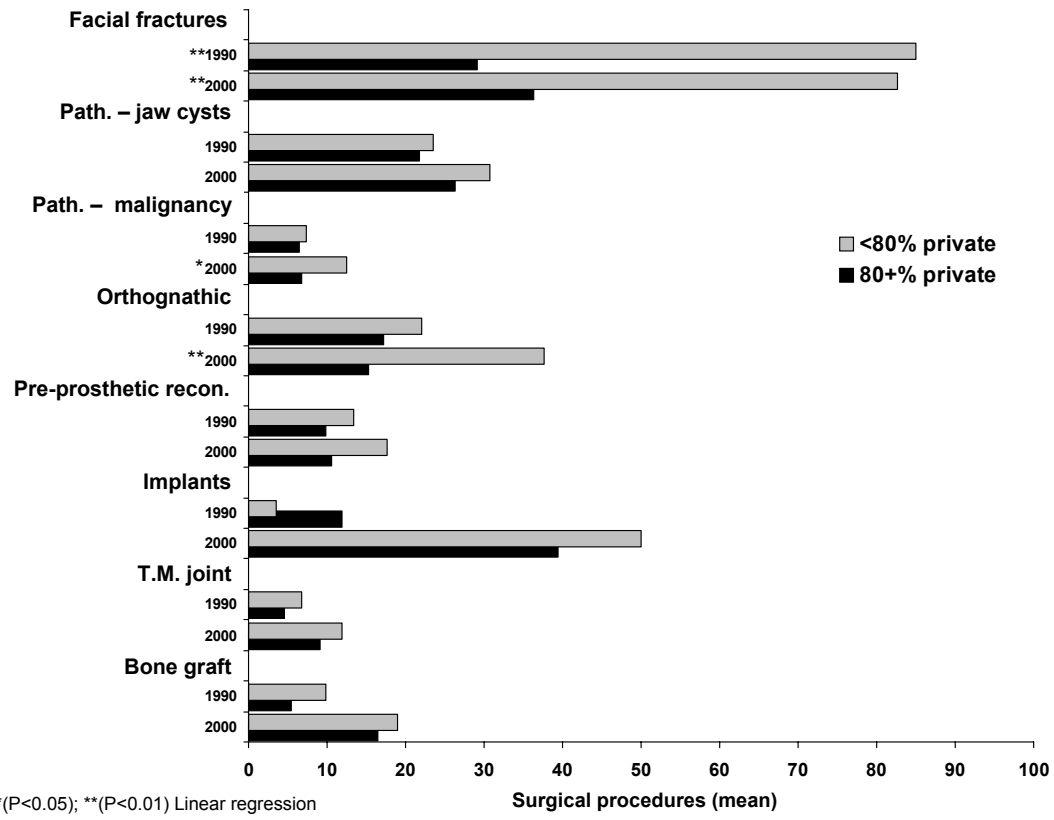

Figure 12: Distribution of surgical procedures (mean per year) by time of study and practice activity level in the private sector

Multivariate analyses (Brennan et al. 2004b) showed that surgeons who worked more than 80% in the private sector had lower rates of facial fracture and orthognathic surgery procedures compared to surgeons who worked less than 80% in the private sector.

Figure 13 shows that surgeons with dual qualifications reported higher rates of TMJ surgery in 1990 and bone graft surgery in 2000.

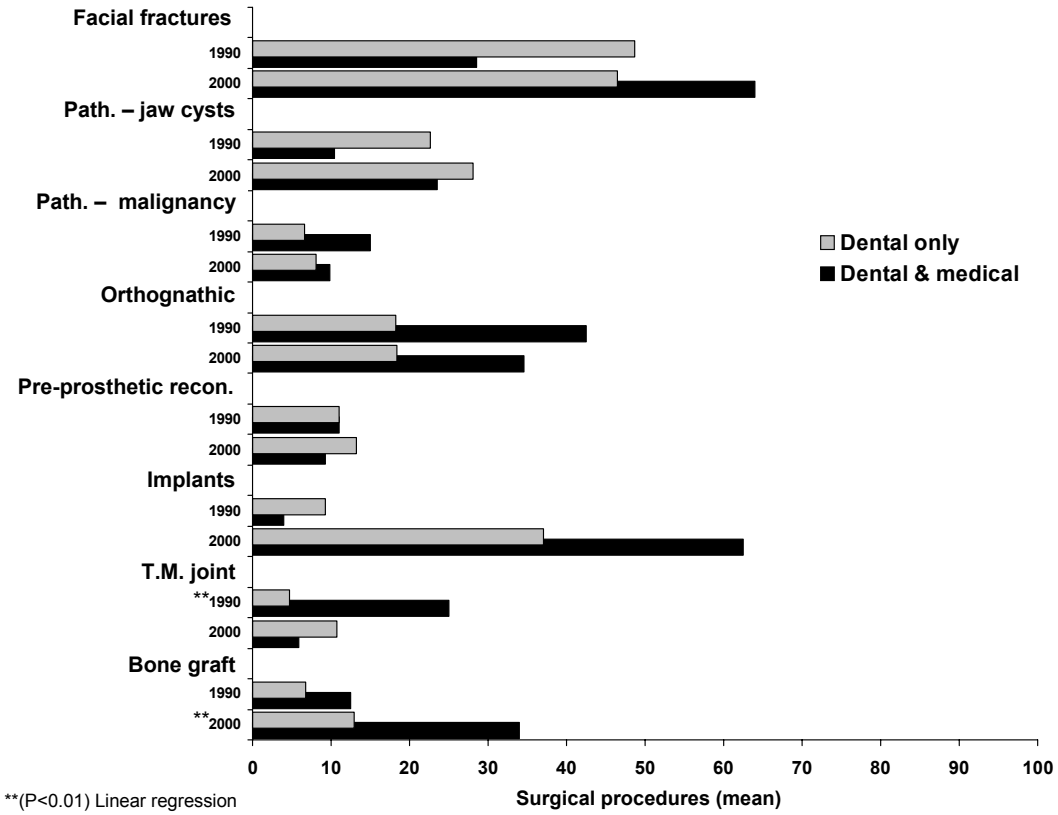

Figure 13: Distribution of surgical procedures (mean per year) by time of study and qualification

Multivariate analyses (Brennan et al. 2004b) showed that dual qualified surgeons had higher rates of dental implants, orthognathic surgery and bone graft procedures.

Figures 14 and 15 show the percentage distributions of surgical perceptions by practice activity level and qualifications and year of study. While there was a trend towards those surgeons who worked less than 80% in the private sector to report higher percentages of being overworked and more surgeons being required in the public sector, these associations were only statistically significant in 2000. This reflected a higher percentage of surgeons who worked less than 80% in the private sector reporting being overworked in 2000 compared to 1990, and a lower percentage of surgeons who worked more than 80% in the private sector reporting that more surgeons were needed in the public sector.

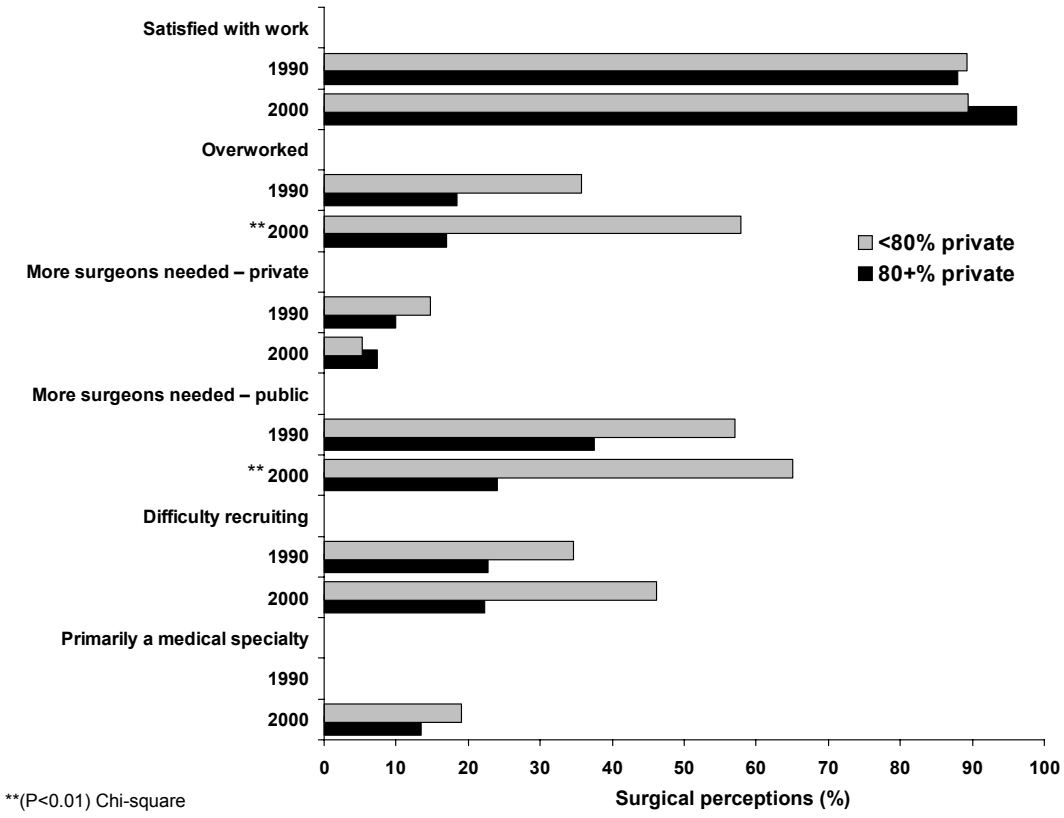

Figure 14: Surgical perceptions by time of study and practice activity level in the private sector

There were no significant associations of surgical perceptions by qualification, although the high percentage of dual-qualified surgeons reporting that oral and maxillofacial surgery was primarily a medical specialty nearly approached statistical significance in 2000 (P = 0.0711).

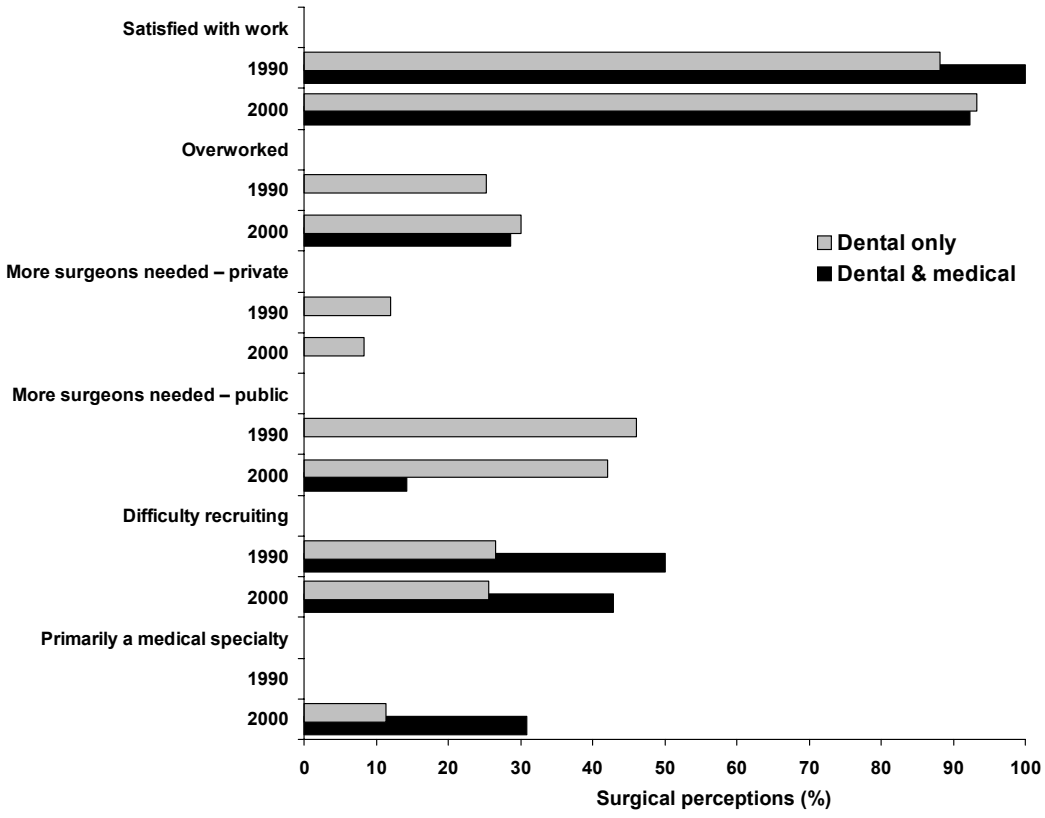

Figure 15: Surgical perceptions by time of study and qualification

5 Summary

5.1 Practice patterns

The majority of surgeons had a high percentage of their practice in the private sector, high percentages of referrals from dental sources, and high percentages of their mix of cases from dentoalveolar rather than major maxillofacial surgery. The majority of surgeons reported being satisfied with their work, not being overworked, not requiring more surgeons in their geographic area, and having no difficulty in recruiting personnel.

5.2 Service provision

The mix of services was dominated by dentoalveolar services. The association of services with place of visit indicated fundamental differences between the private and public sectors. Private practice was dominated by dentoalveolar services, while public practice has relatively higher levels of major maxillofacial surgery, particularly trauma and orthognathic surgery.

5.3 Trends

While main areas of service were associated with a range of explanatory variables such as age and sex of patients; place, location and type of visit; and referral source, the distribution of main areas of service remained relatively stable over time.

Despite the mix of cases being dominated by dentoalveolar rather than major maxillofacial surgery in both 1990 and 2000, there was the beginning of an expansion of some selected non-dentoalveolar major maxillofacial surgical procedures, with increases in dental implants, TMJ surgery and bone graft procedures over time. However, given the increase in the percentage of dual dentally and medically qualified surgeons over time, the change in service provision was relatively minor and dentoalveolar remained the dominant area of service.

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Appendix: Example of questionnaire

ORAL AND MAXILLOFACIAL SURGEONS

2000 WORKFORCE STUDY

This survey is being sent to all registered Oral and Maxillofacial Surgeons and accredited Trainees in Oral and Maxillofacial Surgery in Australia and New Zealand

Australian Institute of Health and Welfare
Dental Statistics and Research Unit
Adelaide University
SOUTH AUSTRALIA 5005

In conjunction with the
Australian and New Zealand
Association of Oral and
Maxillofacial Surgeons

Funded by the ANZAOMS Research and Education Foundation and Trust

CONFIDENTIALITY

This Study is being conducted by the Australian Institute of Health and Welfare's Dental Statistics and Research Unit located at The University of Adelaide, in conjunction with the Australian and New Zealand Association of Oral and Maxillofacial Surgeons.

Responses to this questionnaire are STRICTLY CONFIDENTIAL and will be reported in statistical form only such that individual identity is not revealed. Your questionnaire is identified by a serial number; only the research team led by Professor A John Spencer has access to the master list relating individual names to serial numbers.

SECTION A

SURGEON NUMBER ☐☐☐☐

HOW TO ANSWER QUESTIONS

If your professional activities have recently changed or will soon change in any way, answer in terms of your **CURRENT, ACTUAL** situation. Good estimates are acceptable if exact answers cannot be given.

Each surgeon receiving a questionnaire in a group practice or partnership should complete a separate questionnaire; surgeons directly supervising trainees should include that work.

Answer questions by putting a tick in the boxes provided, or by writing the answer when a line is provided.

PLEASE ANSWER ALL QUESTIONS, YOUR CO-OPERATION IS IMPORTANT AND APPRECIATED

1. YEAR OF BIRTH _____

2. PLACE OF BIRTH
   Australia ☐
   New Zealand ☐
   Other ☐ Please specify: _____

3. SEX Male ☐ Female ☐

4. (A) WORK STATUS: (Tick one)
   I am a registered Oral and Maxillofacial Surgeon ☐
   I am a registered Oral Surgeon ☐
   I am an accredited Trainee in Oral and Maxillofacial Surgery ☐

   (B) YEAR & SCHOOL OF DENTAL UNDERGRADUATE DEGREE: _____ (Year) _____ (University)

   (C) YEAR & SCHOOL OF MEDICAL UNDERGRADUATE DEGREE: (if applicable) _____ (Year) _____ (University)

   (D) Have you completed a FRACDS (OMS)? Yes ☐ No ☐ → Year of completion:_____

   (E) Have you completed an MDS? Yes ☐ No ☐ → Year of completion:_____

   (F) Have you completed other qualifications? Yes ☐ No ☐ → Give details below:

   Details of other qualifications: (if applicable) _____ (Year), _____ (Qual.); _____ (Year), _____ (Qual.); _____ (Year), _____ (Qual.)

   (G) Have you commenced specialist or restricted practice? Yes ☐ No ☐ → Year of commencement:_____

5. TYPE OF PRACTICE (tick one)
   - Private only ☐
   - Public only ☐
   - Private and Public ☐

6. PRIVATE AND PUBLIC PRACTICE - Please estimate the percentage of activity in Private and Public Practice (Circle the appropriate percentages)

	Percentage										
Private Practice	100	90	80	70	60	50	40	30	20	10	00
Public Practice	00	10	20	30	40	50	60	70	80	90	100

7. From the list below please tick where you are registered to practice as an Oral and Maxillofacial Surgeon.

NEW ZEALAND	☐	QUEENSLAND	☐	TASMANIA	☐
NEW SOUTH WALES	☐	SOUTH AUSTRALIA	☐	NORTHERN TERRITORY	☐
VICTORIA	☐	WESTERN AUSTRALIA	☐	AUSTRALIAN CAPITAL CITY	☐

Recent workforce studies and research have indicated that a number of economic and social factors (peripheral to the profession) may influence a dentist's level of participation in dental practice. Questions 8 to 12 are included to explore these factors among oral and maxillofacial surgeons.

8. DO YOU HAVE ANOTHER AREA OF ACTIVITY IN DENTISTRY?
   Yes ☐ - Please provide information below
   No ☐ - Go to Question 9

   (eg dental insurance consultant, supplier of dental materials)

   AREA AND TYPE OF ACTIVITY - specify _____

   HOURS PER WEEK_____ WEEKS PER YEAR _____

9. DO YOU HAVE AN ACTIVITY OUTSIDE OF DENTISTRY FROM WHICH YOU DERIVE AN INCOME?
   Yes ☐ - Please provide information below
   No ☐ - Go to Question 10

   (eg property developer, executive manager)

   AREA AND OF ACTIVITY OUTSIDE DENTISTRY - specify _____

10. ARE YOU THE SOLE EARNER OF YOUR FAMILY INCOME?
    Yes ☐
    No ☐

11. HOW MANY OTHER PEOPLE ARE DEPENDENT ON THE TOTAL FAMILY INCOME? - exclude yourself _____

12. PLEASE PROVIDE THE AGES OF ANY DEPENDENT CHILDREN (starting with the oldest child) _____ , _____ , _____ , _____ , _____ , _____

13. IF YOU HAVE NOT BEEN TREATING PATIENTS IN AUSTRALIA OR NEW ZEALAND IN THE LAST TWELVE MONTHS PLEASE TICK HERE ☐ AND RETURN THE QUESTIONNAIRE NOW. THANK YOU FOR YOUR COOPERATION AND TIME.

14. (a) Do you work full-time?:
    Yes ☐ (go to Question 15)
    No ☐ (answer Part (b) below)

    (b) Answer if applicable. If you work less than FULL-TIME (eg 35 hours per week), or work on a casual basis, please indicate your MAJOR reason for doing so:
    ☐ Business pursuits
    ☐ Further study
    ☐ Illness
    ☐ Preference
    ☐ Other - specify _____

15. (a) How much time do you expect to spend practising in the next 12 months COMPARED TO the last 12 months?:
    ☐ More
    ☐ Same
    ☐ Less

    (b) How BUSY are you:
    ☐ About as busy as you would like to be?
    ☐ Less busy than you would like to be?
    ☐ Busier than you would like to be?

16. PRACTICE: LOCATION, TYPE AND CURRENT ACTIVITY - Answer in terms of YOUR practice experience using a TYPICAL or AVERAGE day or week as indicated excluding separate time for administration. USE DECIMALS OR FRACTIONS AS NEEDED

	Principal practice	Other practices (if applicable) 1	2	3	4	5
Postcode of Practice (or Suburb/City if postcode unknown)						
Percentage of Time						
Type of Practice:	(circle one)	(circle one)	(circle one)	(circle one)	(circle one)	(circle one)
Private						
– Solo	1	1	1	1	1	1
– Associateship	2	2	2	2	2	2
– Partnership with no sharing of costs	3	3	3	3	3	3
– Partnership with complete sharing of costs	4	4	4	4	4	4
– Assistant	5	5	5	5	5	5
Public						
– General Hospital	6	6	6	6	6	6
– Dental Hospital	7	7	7	7	7	7
– University	8	8	8	8	8	8
– Other	9	9	9	9	9	9
– (Please specify):	_____	_____	_____	_____	_____	_____
Type of Payment:	(circle one)	(circle one)	(circle one)	(circle one)	(circle one)	(circle one)
– Honorary	1	1	1	1	1	1
– Sessional	2	2	2	2	2	2
– Fee for service	3	3	3	3	3	3
– Annual salary	4	4	4	4	4	4
Number of Oral Surgeons in practice (exclude yourself)						
How many HOURS PER DAY do you spend treating patients?						
How many DAYS PER WEEK do you practise?						
How many WEEKS did you work in the last 12 months?						
How many PATIENTS PER WEEK on average, do you treat?						

17. APPROXIMATELY HOW LONG DOES A PATIENT REQUESTING AN APPOINTMENT WITH YOU HAVE TO WAIT? Exclude patients with emergencies and those scheduled for a series of treatments.

(a) Private Practice

Appointment for consultation: _____

Appointment for Surgery: _____

(b) Public Practice

Appointment for consultation: _____

Appointment for Surgery: _____

18. Is Oral and Maxillofacial Surgery primarily: (tick one)

A Dental specialty? ☐
A Medical speciality? ☐

19. TYPE OF PRACTICE- RELATIVE MIX OF CASES (Circle the appropriate percentages)

(a) Please estimate the percentage of activity in terms of the **number of patients seen**

	Percentage										
Dentoalveolar Surgery	100	90	80	70	60	50	40	30	20	10	00
Major maxillofacial	00	10	20	30	40	50	60	70	80	90	100

(b) Please estimate the percentage of activity in terms of the **time spent**

	Percentage										
Dentoalveolar Surgery	100	90	80	70	60	50	40	30	20	10	00
Major maxillofacial	00	10	20	30	40	50	60	70	80	90	100

(c) Please estimate the percentage of your **gross income** contributed by these activities

	Percentage										
Dentoalveolar Surgery	100	90	80	70	60	50	40	30	20	10	00
Major maxillofacial	00	10	20	30	40	50	60	70	80	90	100

20. Approximately how many of the following procedures do you do per year, and which are likely to change?

	How many?	Which areas are likely to change in scope? (circle one response per line)		
	Number per year	Decrease	No change	Increase
Trauma - Facial fractures		1	2	3
Pathology - Jaw cysts		1	2	3
- Malignancy		1	2	3
Orthognathic surgery		1	2	3
Pre prosthetic reconstruction		1	2	3
Implants		1	2	3
T.M. joint		1	2	3
Bone grafts		1	2	3

21. REFERRAL SOURCES (Circle the appropriate percentages)

(a) Please estimate the percentage of patients referred to you by dental practitioners as compared to medical practitioners.

	Percentage										
Dental	100	90	80	70	60	50	40	30	20	10	00
Medical	00	10	20	30	40	50	60	70	80	90	100

(b) Within the group referred by dental practitioners, please estimate the percentage from general as compared to other specialist dentists.

	Percentage										
General Dental	100	90	80	70	60	50	40	30	20	10	00
Specialist Dental	00	10	20	30	40	50	60	70	80	90	100

(c) Within the group referred by medical practitioners, please estimate the percentage from general as compared to other specialist medical practitioners.

	Percentage										
General Medical	100	90	80	70	60	50	40	30	20	10	00
Specialist Medical	00	10	20	30	40	50	60	70	80	90	100

22. TYPICAL WEEK - Please estimate the hours per week you spend in a typical week for the following activities.

			Hours per week
1.	**Private Practice**		
1.1	Operating Time		
1.2	Consultations	- by appointment	
		- emergencies	
1.3	Case Discussion		
1.4	Administration (including telephone calls, correspondence, staff matters, etc)		
2.	**Public Hospital commitments**		
2.1	Operating Time (including Registrar training)		
2.2	Outpatient Time		
2.3	Other Teaching Time		
2.4	Case Discussion		
2.5	Other (including meetings, administration, etc)		
3.	**Travelling Time**		
4.	**Other Surgically Related Activities** (including research, continuing education, etc)		

23. PUBLIC PRACTICE - ROSTERED ON-CALL Answer if applicable

If you are rostered on-call in public practice please circle the appropriate frequency. If this is not an accurate description of you rostered on-call arrangements please specify.

Circle only ONE number: 1 2 3 4 weeks per month

or OTHER - Specify _____

24. SURGICAL SATISFACTION

1. Overall are you satisfied with your work? Yes ☐ No ☐

2. Are you **overworked**? Yes ☐ (If yes, is this because of the following reasons below) No ☐ (If no, please go to part 3 below)

- not enough back-up in area Yes ☐ No ☐
- not enough surgeons in specialty Yes ☐ No ☐
- other Yes ☐ → Specify _____ No ☐

3. Is there **insufficient** surgery for adequate income? Yes ☐ No ☐

4. Is there **insufficient** surgery to maintain competence?

- generally Yes ☐ No ☐
- in chosen area of specialist interest Yes ☐ → Specify _____ No ☐

5. Are **more** Oral and Maxillofacial surgeons required in your geographical area?

- private Yes ☐ No ☐
- public Yes ☐ No ☐

SECTION B

SERVICES PROVIDED DURING A WORKING WEEK

Please record the number of patient visits and total number of services that you provide in one week commencing on Monday and concluding on the following Sunday. Separate pages are included for each day. Please record the date for each day of the week. In providing this information, please DO NOT include other Oral and Maxillofacial Surgeons who work in your practice: surgeons directly supervising trainees should include that work.

Additional log pages are enclosed if there is not enough space on the pages provided in this questionnaire. If these are used, please record the date and return them along with this questionnaire.

The Weekly Log forms provide space to record the following:

Column 1 PATIENT NUMBER
Write in "01" for the first patient for each day, "02" for the second patient, etc.

Column 2 LOCATION
Private Practice - Write in R for rooms or outpatient clinic, T for theatre and W for wards.
Public Practice - Write in PR for rooms or outpatient clinic, PT for theatre and PW for wards.
Note: If you have a theatre set up in your rooms, then count as 'Theatre' for procedures done with an anaesthetist present, if not then code as 'Rooms'.

Column 3 & 4 AREA OF PROCEDURE. Group by main area of procedure.

MAIN	SUBCATEGORY
Dentoalveolar	- 'simple' extraction - multiple extraction - unerupted teeth - apicectomy - exposure - other
Trauma	- dentoalveolar - mandible - maxilla - zygoma - complex injury - soft tissue only - multi-trauma care
Pathology	- cyst - soft tissue (benign) - hard tissue (benign) - salivary gland - maxillary antra - malignancy (all types) - infection
Orthognathic	- mandible alone - maxilla alone - bimaxillary - craniofacial - sleep apnoea
Reconstructive Surgery	- pre prosthetic - implant - TMJoint - post pathology - post trauma
Major Medical Compromise	

Column 5 TYPE OF SERVICE.
Write in C for consultation, O for operation and R for review.
Note: Include pre op. work up as 'Operation'.

Column 6 DENTAL ITEM NUMBER.
Record the dental service code, ONE PER LINE, until ALL of the dental procedures performed for any one patient have been listed. It does not matter if particular services are not completed. Multiple services of the same type (eg, Surgical removal of 2 erupted teeth) should be recorded as multiple separate services (eg, 321 twice).

There are a number of different schedules which apply ie, ADA, Medicare, etc. However use the number appropriate to your practice **and indicate which system you have used on the space provided** under the heading 'Item Number'.

Note: Please include all items, even if the patient was not charged for the procedure.

Column 7 PATIENTS AGE (IN YEARS)
Please estimate if exact age is not known.

Column 8 PATIENTS SEX (M or F)
Note: The patients age group and sex are important demographic characteristics for the estimation and projection of the use of services by the population.

Column 9 INSURANCE STATUS (Y or N)
Indicate whether the patient has dental insurance.

Column 10 POST CODE (4 digit code)
Indicate the postcode for the residential address of the patient.
(List the Suburb/City if the postcode is unknown).

Column 11 REFERRED BY: Record GD for general dentist
SD for other specialist dentist
GM for general medical
SM for specialist medical

Note: Please do not include the procedures provided by other dental professionals on patients you have seen during the week.

EXAMPLE

WEEKLY LOG

DAY: Monday **DATE:** 30 October 2000 **[Trainees only: Number of supervisors: _____]**

Number	Location (*R,T,W or PR, PT,PW*)	Main area	Subcategory	Type of service (*C,O,R*)	Item Number *Specify:* ADA & Medicare	Age (*yrs*)	Sex (*M, F*)	Insured (*Y or N*)	Postcode	Referred by (*GD,SD, GM,SM*)
01	R	Dentoalveolar	simple extraction	O	311	28	F	Y	5001	GD
02	R	Trauma	mandible	C	016	27	M	N	5008	GM
03	R	Dentoalveolar	unerupted teeth	C	016	20	F	N	5056	GD
04	R	Dentoalveolar	multiple extraction	O	(323) x 2	36	M	Y	5027	GD
34	PT	Recon. Surgery	TMJ	O	7907	45	M	Y	5051	SD
35	PT	Trauma	zygoma	O	7770	36	M	N	5007	SM
36	PT	Pathology	cyst	O	3258	16	F	N	5045	GM

WEEKLY LOG

DAY: Monday **DATE: __________________** **[Trainees only: Number of supervisors: _____]**

Number	Location (*R,T,W or PR, PT,PW*)	Main area	Subcategory	Type of service (*C,O,R*)	Item Number *Specify:*	Age (*yrs*)	Sex (*M, F*)	Insured (*Y or N*)	Postcode	Referred by (*GD,SD, GM,SM*)

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WEEKLY LOG

DAY: Tuesday **DATE: ___________________** **[Trainees only: Number of supervisors: _____]**

Number	**Location** (*R,T,W or PR, PT,PW*)	**Main area**	**Subcategory**	**Type of service** (*C,O,R*)	**Item Number** *Specify:*	**Age** (*yrs*)	**Sex** (*M, F*)	**Insured** (*Y or N*)	**Postcode**	**Referred by** (*GD,SD, GM,SM*)

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WEEKLY LOG

DAY: Wednesday DATE: ___________________ [Trainees only: Number of supervisors: _____]

Number	Location (*R,T,W or PR, PT,PW*)	Main area	Subcategory	Type of service (*C,O,R*)	Item Number *Specify:*	Age (*yrs*)	Sex (*M, F*)	Insured (*Y or N*)	Postcode	Referred by (*GD,SD, GM,SM*)

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WEEKLY LOG

DAY: Thursday DATE: ___________________ [Trainees only: Number of supervisors: _____]

Number	Location (*R,T,W or PR, PT,PW*)	Main area	Subcategory	Type of service (*C,O,R*)	Item Number *Specify:*	Age (*yrs*)	Sex (*M, F*)	Insured (*Y or N*)	Postcode	Referred by (*GD,SD, GM,SM*)

WEEKLY LOG

DAY: Friday **DATE: ___________________** **[Trainees only: Number of supervisors: _____]**

Number	Location (*R,T,W or PR, PT,PW*)	Main area	Subcategory	Type of service (*C,O,R*)	Item Number *Specify:*	Age (*yrs*)	Sex (*M, F*)	Insured (*Y or N*)	Postcode	Referred by (*GD,SD, GM,SM*)

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WEEKLY LOG

DAY: Saturday DATE: __________________ [Trainees only: Number of supervisors: _____]

Number	Location (*R,T,W or PR, PT,PW*)	Main area	Subcategory	Type of service (*C,O,R*)	Item Number *Specify:*	Age (*yrs*)	Sex (*M, F*)	Insured (*Y or N*)	Postcode	Referred by (*GD,SD, GM,SM*)

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WEEKLY LOG

DAY: Sunday **DATE: ___________________** **[Trainees only: Number of supervisors: _____]**

Number	Location (*R,T,W or PR, PT,PW*)	Main area	Subcategory	Type of service (*C,O,R*)	Item Number *Specify:*	Age (*yrs*)	Sex (*M, F*)	Insured (*Y or N*)	Postcode	Referred by (*GD,SD, GM,SM*)

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All information provided is treated as STRICTLY CONFIDENTIAL

Please estimate the gross practice revenue YOU generated over the last 12 months? (salary and private)

☐	Less than $50,000	☐	$500,000 - $549,999
☐	$50,000 - $99,999	☐	$550,000 - $599,999
☐	$100,000 - $149,999	☐	$600,000 - $649,999
☐	$150,000 - $199,999	☐	$650,000 - $699,999
☐	$200,000 - $249,999	☐	$700,000 - $749,999
☐	$250,000 - $299,999	☐	$750,000 - $799,999
☐	$300,000 - $349,999	☐	$800,000 - $849,999
☐	$350,000 - $399,999	☐	$850,000 - $899,999
☐	$400,000 - $449,999	☐	$900,000 and above
☐	$450,000 - $499,999	☐	Prefer not to answer

The questions in this box relate to registered Oral and Maxillofacial Surgeons. (Trainees should leave them blank.)

What total fees do YOU charge for the following treatment items? (Do not include GST in New Zealand)

(a) Consultation plus Four impacted wisdom teeth under GA $_____

(b) Consultation plus bilateral mandible fracture, open reductions and fixation $_____

(c) Consultation plus Le Fort 1 osteotomy $_____

ARE YOU CURRENTLY SEEKING PERSONNEL OF ANY TYPE?

Yes ☐ - What type? _____

No ☐

ARE YOU ENCOUNTERING ANY DIFFICULTY IN RECRUITING NEW PERSONNEL?

Yes ☐ - Please describe_____

No ☐

WOULD YOU LIKE TO RECEIVE A COPY OF THE MAIN FINDINGS OF THE STUDY? Yes ☐ No ☐

THANK YOU FOR YOUR COOPERATION AND TIME IN ANSWERING OUR QUESTIONNAIRE. PLEASE RETURN THE COMPLETED QUESTIONNAIRE AS SOON AS POSSIBLE IN THE REPLY PAID ENVELOPE PROVIDED.

IF YOU HAVE ANY QUERIES PLEASE CONTACT EITHER:
AUSTRALIA: PROFESSOR A. JOHN SPENCER ON (08) 8303 5438, OR
DR DAVID BRENNAN ON (08) 8303 4046,
NEW ZEALAND: DR MURRAY THOMSON ON 643 479 7116.

YOUR COMMENTS ARE INVITED

WEEKLY LOG [ADDITIONAL PAGE]
DAY: **DATE:**___________________

[Trainees: No. of supervisors: ____] SURGEON NUMBER

Number	Location (*R,T,W or PR, PT,PW*)	Main area	Subcategory	Type of service (*C,O,R*)	Item Number *Specify:*	Age (*yrs*)	Sex (*M, F*)	Insured (*Y or N*)	Postcode	Referred by (*GD,SD, GM,SM*)

SERVICES PROVIDED DURING A WORKING WEEK: CODING CARD

Column 1 PATIENT NUMBER
Write in "01" for the first patient for each day, "02" for the second patient, etc.

Column 2 LOCATION
Private Practice - Write in R for rooms or outpatient clinic, T for theatre and W for wards.
Public Practice - Write in PR for rooms or outpatient clinic, PT for theatre and PW for wards.
Note: If you have a theatre set up in your rooms, then count as 'Theatre' for procedures done with an anaesthetist present, if not then code as 'Rooms'.

Column 3 & 4 AREA OF PROCEDURE. Group by main area of procedure.

MAIN	SUBCATEGORY	MAIN	SUBCATEGORY
Dentoalveolar	- 'simple' extraction	**Orthognathic**	- mandible alone
	- multiple extraction		- maxilla alone
	- unerupted teeth		- bimaxillary
	- apicectomy		- craniofacial
	- exposure		- sleep apnoea
	- other		
Trauma	- dentoalveolar	**Pathology**	- cyst
	- mandible		- soft tissue (benign)
	- maxilla		- hard tissue (benign)
	- zygoma		- salivary gland
	- complex injury		- maxillary antra
	- soft tissue only		- malignancy (all types)
	- multi-trauma care		- infection
Reconstructive Surgery	- pre prosthetic	**Major Medical compromise**	
	- implant		
	- TMJoint		
	- post pathology		
	- post trauma		

Column 5 TYPE OF SERVICE.
Write in C for consultation, O for operation and R for review.
Note: Include pre op. work up as 'Operation'.

Column 6 DENTAL ITEM NUMBER.
Record the dental service code, ONE PER LINE, until ALL of the dental procedures performed for any one patient have been listed. It does not matter if particular services are not completed. Multiple services of the same type (eg, Surgical removal of 2 erupted teeth) should be recorded as multiple separate services (eg, 321 twice).

There are a number of different schedules which apply ie, ADA, Medicare, etc. However use the number appropriate to your practice **and indicate which system you have used on the space provided** under the heading 'Item Number'.

Note: Please include all items, even if the patient was not charged for the procedure.

Column 7 PATIENTS AGE (IN YEARS) Please estimate if exact age is not known.

Column 8 PATIENTS SEX (M or F)

Column 9 INSURANCE STATUS (Y for insured or N for not insured)

Column 10 POST CODE (4-digit post code for residential address of patient - list Suburb/City if unknown)

Column 11 REFERRED BY: Record GD for general dentist GM for general medical
SD for other specialist dentist SM for specialist medical

Note: Please do not include the procedures provided by other dental professionals on patients you have seen during the week.