

Public dental patients remain a group at risk of poorer oral health outcomes due to reported high levels of emergency care and associated higher levels of tooth extraction (DSRU, 1993). Persons eligible for public dental care are holders of government health cards, such as the unemployed and aged pensioners. These card-holders are a financially disadvantaged group of adults within the Australian population.

This report describes the service patterns of dentate public dental patients by age, sex, geographic location and type of visit based on a total of 1,549 dental patients who were examined by the dental authorities in three States/Territories of Australia, providing a representative sample of the public dental patients they treated during the 2001–02 period.

Patient and visit characteristics

Table 1 presents patient and visit characteristics by age of patient. The percentage of female patients was stable across age groups. The percentage of patients from urban locations increased across older age groups, indicating an older age distribution among urban patients. The percentage of emergency care decreased across older age groups, indicating a younger age distribution for emergency care patients.

Table 1: Sex, location and visit type (%) by age

Age group	Sex	Location	Visit type
	% Female	% Urban	% Emergency
18–24 years	54.5	48.5	81.0
25–44 years	56.3	53.8	65.2
45–64 years	56.3	51.7	56.9
65+ years	49.1	66.8	50.4

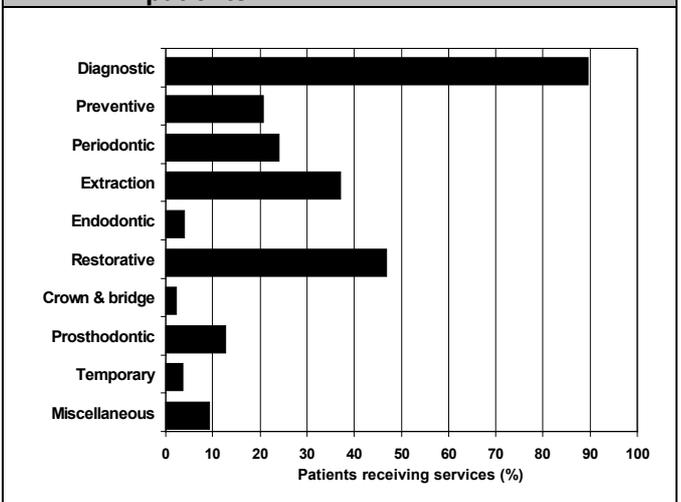
Note: The data in this table relate to dentate persons aged 18 years or more.

The following sections look at service provision in terms of the percentage of patients who received services in a particular service area over a course of care by age, sex, location and visit type among dentate patients aged 18 years or more.

Main areas of service

Figure 1 shows that a high percentage of patients received diagnostic services, with the next highest percentages occurring for restorative and extraction services, followed by periodontic and preventive services.

Figure 1: Main areas of service among public patients



Main areas of service by age

Table 2 shows that service provision varied by age, with areas such as diagnostic and extraction services being higher among younger age groups, while other areas such as periodontic and prosthodontic services were higher among older age groups of patients.

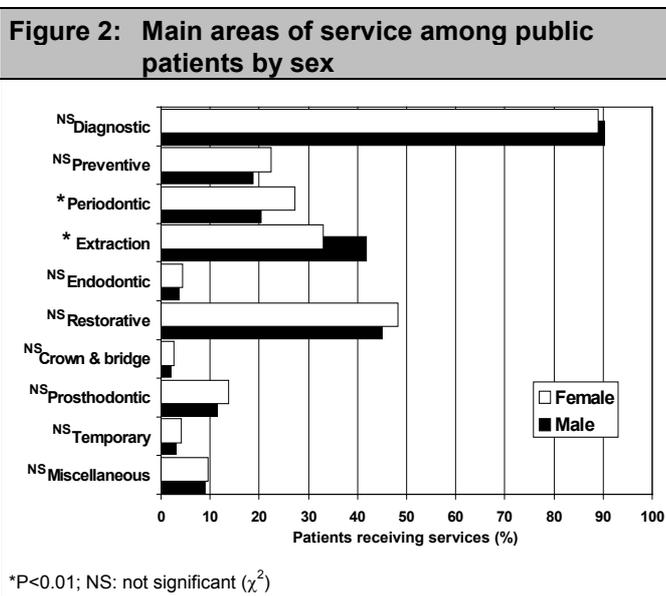
Table 2: Main areas of service by age

Main area	Age group (years)				Total
	18–24	25–44	45–64	65+	
Diagnostic*	94.0	90.4	91.2	85.6	89.6
Preventive ^{NS}	19.8	20.5	22.9	19.1	20.7
Periodontic**	13.9	20.7	27.7	27.9	24.0
Extraction**	40.6	43.9	35.7	27.9	37.1
Endodontic ^{NS}	4.0	5.1	3.7	3.1	4.0
Restorative ^{NS}	36.6	45.8	47.5	50.3	46.8
Crown/bridge ^{NS}	0.0	1.6	3.2	3.1	2.3
Prosthodontic**	0.0	6.4	14.1	23.7	12.7
Temporary ^{NS}	6.9	4.3	2.9	2.5	3.6
Miscellaneous ^{NS}	9.0	11.5	9.3	6.5	9.3

*P<0.05; **P<0.01; NS: not significant (χ^2)

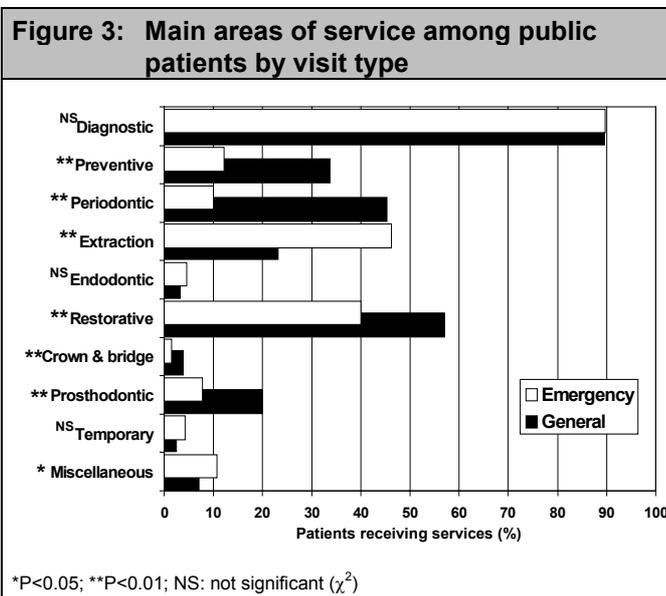
Main areas of service by sex

Figure 2 shows that a higher percentage of male patients received extractions compared with female patients, but a higher percentage of female compared with male patients received periodontic services.



Main areas of service by visit type

A higher percentage of emergency patients had extractions compared to general care; however, lower percentages of emergency patients received preventive, periodontic, restorative, crown and bridge and prosthodontic services (Figure 3).



Main areas of service by sex and age

Table 3 shows that the differences in extraction and periodontic services by sex of patient were consistent within age groups but they were most pronounced among older patients. For example, among 65+-year-olds 34.9% of males received an extraction compared with 20.6% of females.

	Age group (years)				Total
	18-24	25-44	45-64	65+	
Males	Patients receiving services (%)				
Diagnostic	100.0	89.7	92.6	86.6	90.3
Preventive	19.6	20.7	20.2	15.1	18.8
Periodontic	8.7	17.4	25.6	22.6	20.4
Extraction	41.3	48.4	41.1	34.9	41.8
Endodontic	4.4	5.6	2.5	2.2	3.6
Restorative	32.6	46.2	44.8	46.8	45.0
Crown/bridge	0.0	2.3	3.0	1.1	2.0
Prosthodontic	0.0	1.9	11.0	25.8	11.5
Temporary	10.9	2.3	1.8	3.8	3.1
Miscellaneous	13.0	7.5	11.0	8.1	9.0
Females	Patients receiving services (%)				
Diagnostic	89.1	90.9	90.5	84.6	89.0
Preventive	20.0	20.1	25.1	23.7	22.4
Periodontic	18.2	23.4	29.4	33.7	27.2
Extraction	40.0	40.5	31.3	20.6	33.0
Endodontic	1.8	4.7	4.7	4.1	4.4
Restorative	40.0	45.3	49.8	53.8	48.3
Crown/bridge	0.0	1.1	3.3	5.3	2.7
Prosthodontic	0.0	9.9	16.6	21.2	13.8
Temporary	5.5	5.8	3.8	1.2	4.1
Miscellaneous	7.3	14.6	7.6	4.7	9.6

Main areas of service by visit type and age

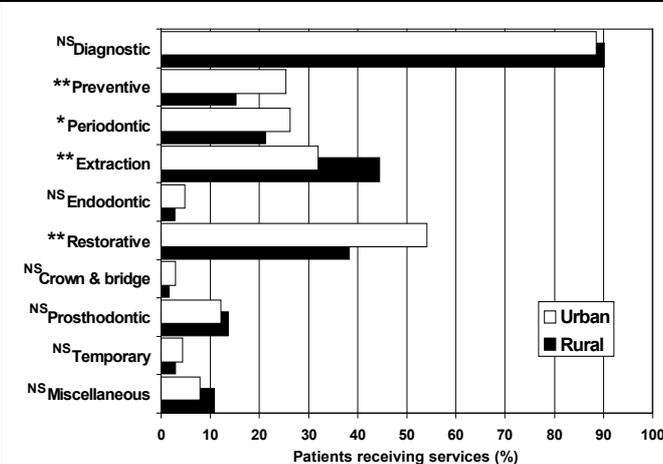
The differences by visit type in extraction, preventive, periodontic, restorative, crown and bridge and prosthodontic services were consistent within age groups (Table 4), with the exception of crown and bridge and prosthodontic services in the 18-24 years age group.

	Age group (years)				Total
	18-24	25-44	45-64	65+	
Emergency	Patients receiving services (%)				
Diagnostic	93.8	89.9	92.0	85.1	89.8
Preventive	12.2	12.7	13.7	9.1	12.1
Periodontic	7.4	8.9	15.1	7.4	9.9
Extraction	44.4	50.6	48.8	35.8	46.2
Endodontic	2.5	4.4	5.2	5.1	4.6
Restorative	34.1	39.2	40.6	43.8	40.1
Crown/bridge	0.0	1.3	1.4	2.8	1.4
Prosthodontic	0.0	5.1	8.1	15.3	7.7
Temporary	7.4	3.8	4.2	4.0	4.2
Miscellaneous	9.9	13.0	11.4	6.3	10.7
General	Patients receiving services (%)				
Diagnostic	94.7	91.2	90.2	86.8	89.6
Preventive	52.6	34.5	35.0	29.7	33.7
Periodontic	36.8	42.9	43.9	49.4	45.3
Extraction	26.3	31.0	18.9	18.9	23.1
Endodontic	5.3	6.4	1.8	1.1	3.2
Restorative	47.4	57.3	56.7	58.3	57.1
Crown/bridge	0.0	2.3	5.5	4.0	3.8
Prosthodontic	0.0	8.8	21.5	31.0	19.9
Temporary	5.3	4.7	1.2	1.1	2.5
Miscellaneous	5.3	8.8	6.7	6.3	7.0

Main areas of service by location

Figure 4 shows that higher percentages of urban patients received preventive, periodontic and restorative services, but a higher percentage of rural patients had extractions.

Figure 4: Main areas of service among public patients by location



*P<0.05; **P<0.01; NS: not significant (χ^2)

Main areas of service by location and age

The differences in provision of preventive and restorative services by location were consistent within each patient age group (Table 5). The differences in extractions were consistent within age groups of patients that were 25–44 years and older. Periodontic services were higher for urban patients aged 25–44 and 45–64 years.

Table 5: Main areas of service: location and age

	Age group (years)				Total
	18–24	25–44	45–64	65+	
Urban	Patients receiving services (%)				
Diagnostic	89.4	88.5	90.2	86.9	88.6
Preventive	27.7	25.7	30.2	20.5	25.3
Periodontic	8.5	25.7	29.1	27.9	26.2
Extraction	42.6	39.5	30.8	22.3	31.9
Endodontic	4.3	7.1	3.8	3.9	4.9
Restorative	42.6	50.0	59.0	57.2	54.1
Crown/bridge	0.0	1.6	4.4	3.9	3.0
Prosthodontic	0.0	5.5	13.7	20.6	12.1
Temporary	10.4	5.1	3.3	3.1	4.4
Miscellaneous	4.3	9.9	9.3	5.2	7.9
Rural	Patients receiving services (%)				
Diagnostic	98.0	91.5	91.5	82.6	90.2
Preventive	14.0	14.3	15.3	17.4	15.3
Periodontic	16.3	15.8	24.9	28.1	21.2
Extraction	38.0	50.7	43.5	37.2	44.5
Endodontic	2.0	2.7	3.4	1.7	2.8
Restorative	32.0	41.9	36.7	36.7	38.2
Crown/bridge	0.0	1.8	1.1	1.7	1.6
Prosthodontic	0.0	7.7	14.6	28.9	13.7
Temporary	6.0	3.6	2.8	1.7	3.0
Miscellaneous	14.0	13.0	9.0	8.3	10.9

Receipt of extractions

In order to more fully understand the effects of age, sex, visit type and location on provision of extractions, the presence or absence of extractions was analysed using multivariate logistic regression to estimate the effect of each variable after controlling for the effects of the other variables.

Table 6 presents the odds ratios from a logistic regression of presence of extractions. An odds ratio of 1.0 indicates that the odds of the outcome variable are the same for the explanatory variable in relation to the reference category. Odds ratios greater than 1.0 indicate higher odds of the outcome for the explanatory variable in relation to the reference category, and odds ratios less than 1.0 indicate lower odds of the outcome for the explanatory variable in relation to the reference category.

Table 6: Logistic regression of provision of extractions: by age group, sex, location and visit type

	Odds ratio	95% confidence interval		Sig.
		Lower bound	Upper bound	
Age group				
18–24 years	1.30	0.80	2.14	NS _{0.293}
25–44 years	1.95	1.43	2.67	**0.000
45–64 years	1.48	1.06	2.06	*0.023
65+ years	1.00	reference		
Sex				
Male	1.51	1.19	1.92	**0.001
Female	1.00	reference		
Visit type				
Emergency	2.66	2.06	3.44	**0.000
General	1.00	reference		
Location				
Urban	1.00	reference		
Rural	1.62	1.27	2.06	**0.000

*statistically significant at P<0.05 level
**statistically significant at P<0.01 level
NS: not statistically significant
Note: The data in this table relate to dentate persons aged 18 years or more.

Compared to the reference group of 65+-year-olds, patients aged 25–44 and 45–64 years had higher odds of receiving an extraction (1.95 and 1.48 times respectively). Higher odds of an extraction were also observed for males (1.51 times) compared with females, emergency (2.66 times) compared with general care, and rural (1.62 times) compared with urban patients.

Adult Dental Programs Survey

The Adult Dental Programs Survey is a random sample of patients attending for public-funded dental care. Dentists assessed oral health at the initial visit of a course of care, and services items were recorded over the course of care. The items were coded into main areas of service using the Australian Dental Association's *Schedule of Dental Services*, with some exceptions. Scale and clean items were defined as 'periodontic' rather than 'preventive'. Temporary restorations and other emergency items were classified as 'temporary' services. The service area of 'extraction' refers to services listed as 'oral surgery' in the schedule.

Location was classified as 'urban' or 'rural', based on postcode using the RRMA classification scheme (1994). Visit type was classified as 'emergency' if care was initiated for relief of pain; otherwise visit type was classified as 'general'.

Data were weighted by the estimated number of persons whose last dental visit was public-funded in the last year for persons aged 18 years or more from the National Dental Telephone Interview Survey 1999 to provide representative estimates for adults receiving public dental care in each participating State/Territory.

Scope of data

This report is based on data collected on 1,549 patients in 2001–02 by the dental authorities in New South Wales (n=733), Queensland (n=533), and Northern Territory (n=283).

Sample size estimates were based on measures of oral health status from the 1995–96 Adult Dental Programs Survey (Brennan & Spencer 1997). To achieve estimates of key outcome variables with a precision of 20% relative standard error or less, target yields were set of 324 patients in smaller States (Tasmania) and Territories and 648 patients in mainland States. While the obtained sample yields varied between localities, limiting disaggregations in some specific localities, the total sample yield across all localities comprised 95.6% of the target, thereby providing a sufficient sample size to closely approximate the desired level of precision.

Estimates based on users of dental services are by definition restricted to those persons who were able to access dental care and therefore may not necessarily be representative of the population eligible for public dental services who did not access public care during the survey period.

Summary

- Male patients had more extractions (41.8%) but less periodontic treatment (20.4%) than females (33.0% and 27.2% respectively).
- Emergency patients had higher levels of extraction (46.2%) but lower preventive (12.1%), periodontic (9.9%) and restorative (40.1%) services compared with general care (23.1%, 33.7%, 45.3% and 57.1% respectively).
- Urban patients had higher levels of preventive (25.3%), periodontic (26.2%) and restorative care (54.1%) but lower levels of extraction (31.9%) than rural patients (15.3%, 21.2%, 38.2% and 44.5% respectively).

Acknowledgements

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References

- Australian Dental Association. *Schedule of dental services*. Sydney: ADA, 1993.
- Brennan DS, Spencer AJ. *Prospective Adult Dental Programs Survey, 1995–96*. Adelaide: DSRU, 1997.
- Depts. of Primary Industries and Energy, and Human Services and Health. *Rural, remote and metropolitan areas classification*. Canberra: 1994.
- DSRU. *Dental care for adults in Australia. Proceedings of a workshop*. Adelaide: DSRU, 1993.

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