

# The 1999 BDA Heathrow Timings inquiry

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**In the summer of 1999 the BDA conducted a Timings Inquiry in order to provide information on treatment timings within the General Dental Services (GDS) and to develop a model of an hourly rate for general practice. A panel of dentists measured the absolute time taken to carry out 21 key treatments. The relative times of related treatments were then estimated. The panel also came to consensus about the variables to construct the hourly rate model. The absolute timings exercise was applied to the hourly rate model in order to draw some conclusions about the average earnings of a full-time dentist committed to the NHS. This information formed a central part of the BDA's 1999 evidence to the Doctors and Dentists Review Body.**

Since 1980 a panel inquiry method has been used to determine a structure of the timings of the over 300 treatments paid by fees in the General Dental Services (GDS).<sup>1</sup> These timings have been carried out using a relative timings method (relativities) based on the absolute timing of one key item in the Statement of Dental Remuneration (SDR). The first such exercise took place in Sunningdale in 1980, then Keele in 1985, Windermere in 1988, and again in Windermere in 1991, but the results of the 1991 study were never incorporated into the feescal. So the current feescal is still based on the results of the inquiry in 1988. Since then, there have been fundamental changes to the GDS, both in terms of regulations and treatment items in the SDR. Furthermore, the Doctors and Dentists Review Body (DDRB) have been asking the BDA and the Health Departments to carry out a new exercise in order to inform their deliberations.

## Aims

The GDSC decided to carry out a new Inquiry, during the summer of 1999. The Timings Inquiry had two primary aims. The first aim was to examine the structure of timings within the SDR. The second aim

was to develop a model of an hourly rate for general dental practice. This could then be used in conjunction with the information gathered on timings to inform the debate concerning the earnings of an average dentist committed to the NHS. This is an area in which the DDRB had sought agreement between the BDA and the Health Departments.

## Inquiry method

### Selection of panel members

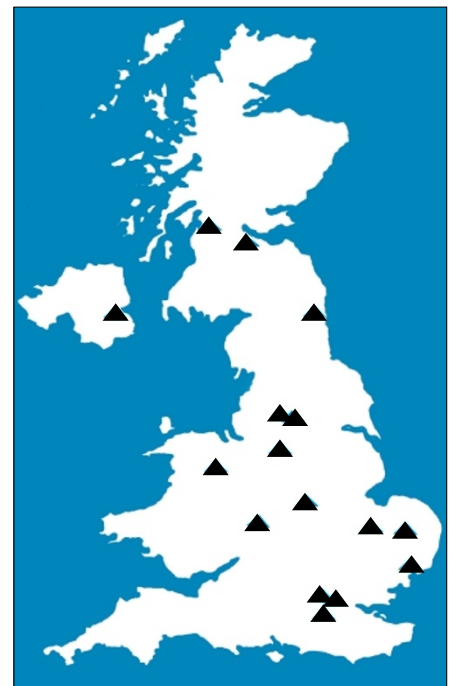
The inquiry was conducted by a panel of dentists from various BDA committees. They were chosen to reflect the profession in terms of gender, geography and age, and were in active practice, predominantly in the GDS. A working party produced a list of 18 potential panel members who subsequently attended a half-day training session. Between the training day and the main exercise two potential panel members dropped out, leaving a panel of 16. Table 1 shows that the panel was representative of the overall profession in terms of age and gender. Figure 1 shows that representation of panel members was reasonably geographically spread.

### The training exercise

The training exercise was held at BDA headquarters on June 10th, 1999 where it was explained that the fee scale is split into groups, or 'families', the following of which were to be included in the exercise:

## In brief

- This paper shows that on average dentist with a reasonable commitment to the GDS works 43.5 hours per week. They have 4.5 weeks holiday a year. Taking account of sickness and bank holidays, this leaves 1953 hours of working time available in a year. Of this, 405 hours are spent on administration (including post graduate education), leaving 1548 hours of clinical time (excluding time spent on call).
- A dentist committed to the NHS had average net earnings after expenses of around £46,700 in 1998/99. The hourly rate required to achieve this is around £47.
- The absolute time taken for a range of treatments lends credibility to this hourly rate and net earnings figure.
- The majority of relative timings within the fee scale appear to be about right but there are some anomalies.



**Fig. 1** Map showing geographical location of panel members

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Table 1 Characteristics of panel and profession			
	Per cent of GDS dentists	Per cent of panel	Number of panel
Male under 40	33%	31%	5
Female under 40	19%	12.5%	2
Male 40+	39%	44%	7
Female 40+	9%	12.5%	2
Male overall	72%	75%	12
Female overall	28%	25%	4
Total	–	–	16

Table 2 Absolute timings results					
Treatment	Average time (minutes)			Standard deviation	
	Initial estimate	Final estimate following group discussions	Change	Initial estimate	Final estimate
Clinical exam and report	10.1	11.3	1.2	1.76	2.31
Full case assessment	21.6	25.0	3.4	6.23	8.62
Small intraoral radiograph	6.3	8.9	2.6	3.93	2.94
Simple scaling	14.2	15.1	1.0	2.81	3.07
Chronic periodontal, 1–4 teeth	33.3	50.8	17.6	20.42	15.51
MO or DO amalgam filling	18.3	19.7	1.4	3.22	2.94
Composite filling	17.8	20.9	3.1	4.48	4.44
Lower premolar root filling	40.0	49.4	9.4	9.64	12.87
Molar root filling	67.4	75.7	8.3	13.36	12.57
Porcelain veneer	50.2	50.5	0.3	18.88	16.16
Precious metal bonded crown	59.6	63.7	4.1	18.88	14.06
Refixing a crown	12.2	13.2	0.9	3.54	2.93
Extraction of 1 tooth	15.6	17.6	2.0	5.01	3.41
Complete dentures, without special trays	63.0	76.4	13.3	15.81	15.77
Metal partial denture, skeleton design 4–8 teeth	64.7	79.1	14.3	19.23	19.30
Dentures: addition of a tooth	18.8	20.9	2.1	5.75	4.59
Recalled attendance more than 1 mile	66.2	66.9	0.6	24.09	19.88
Deciduous teeth: 1 filling	16.2	17.6	1.4	5.24	4.81
Composite resin restoration	14.4	18.2	3.9	5.92	4.00
Under 12 years extraction	17.2	17.5	0.3	5.97	4.50
Treatment of acute conditions	9.8	10.2	0.4	2.12	1.81

- Examination
- Diagnosis
- Periodontal
- Fillings
- Root fillings
- Veneers and inlays
- Crowns and bridgework
- Extractions
- Dentures
- Repairs and alterations
- Domiciliary/recalled attendance
- Miscellaneous
- Deciduous teeth

Within these families, eight out of the ten items used in previous timings

exercises were selected for the absolute timings part of the inquiry (the GDSC had decided that orthodontics and general

anaesthesia/sedation should not be included in the current exercise). The panel agreed to add 13 other items, which they believed should be timed absolutely – the final list is shown in Table 2.

It was explained that an actual, or ‘absolute’ time would be calculated for each of the key items. The panel would then consider each other item within the family in relation to the key item, and produce a relative timing.

For the absolute timings part of the exercise the panel was asked to split key treatment items into three parts and to determine how much time is spent on each element:

- Time taken for the patient to enter and to leave the surgery.
- Where appropriate, the time taken to administer a local anaesthetic.
- Time taken to carry out the treatment.

They were asked to assume that they carried out all treatments themselves, rather than delegating to a professional complementary to dentistry. For items such as fillings and crowns, they were asked to consider these as if they were done as a single item, rather than as two or more on the same visit. Likewise, the timing of a scaling and polishing was to be considered as a standalone, although it was appreciated that this was often not the case. However, it was emphasised that estimates should relate to whatever they considered to be normal circumstances of work in providing each treatment item. If they thought of other special considerations, then they were asked to tell the panel and let the other members take them into account too. The panel were given data sheets and asked to consider and record

Fig. 2 Schedule of events		
Date	Time	Activity
6th July	6:00–6:30	Panel shown hourly rate model and given the opportunity to change any of the variables following discussion. Final version of hourly rate model produced.
	6:30–7:00	Data sheet results considered in groups of three.
	7:00–7:15	Absolute timings reviewed in light of discussions.
	7:15–7:30	Final results of the absolute timings produced.
7th July	9:00–4:00	Consideration of relative timings.

Table 3		The hourly rate based on BDA earnings calculations	
		Weeks	Total hours <sup>1</sup>
<b>Total time available</b>		<b>52</b>	<b>2,262</b>
<b>Deduct</b>			
	Holidays	4.5	195.8
	Bank Holidays	1 3/5	69.6
	Illness	1	43.5
	<b>Total</b>	<b>7</b>	<b>309</b>
<b>Working time available</b>			<b>1,953</b>
<b>Deduct</b>			
	Practice administration (non-clinical) 7.5 hours per week	45	338
	Committees/Postgraduate education 1.5 hours per week	45	68
			<b>405</b>
<b>Clinical time available</b>			<b>1,548</b>
	Net Income (before tax) (a)		£46,730
	Expense ratio		54.7
	Expenses (b)		£56,427
	Gross Turnover (a) + (b)		£103,157
<b>Less</b>			
	Direct payments		£2,469
	Laboratory bills (15% of exps)		£8,464
	Continuing care payments		£9,702
			<b>£20,635</b>
<b>Income generated from fees</b>			<b>£82,522</b>
	HOURLY RATE (excluding laboratory bills and on call)		£53
	Capitation payments		£9,236
	HOURLY RATE (allowing for capitation payments)		£47
	<sup>1</sup> based on 43.5 hour week		

Health, and two statisticians from the BDA secretariat attended. The event proceeded as described in Figure 2.

For the relative timings part of the exercise the panel was split into three groups and given sheets showing current relative time values between associated items in the family groups. Each group was given a set of family treatments to consider. Where groups had spare time they moved on to the families being considered by other groups.

### Results and Analysis

#### The working week

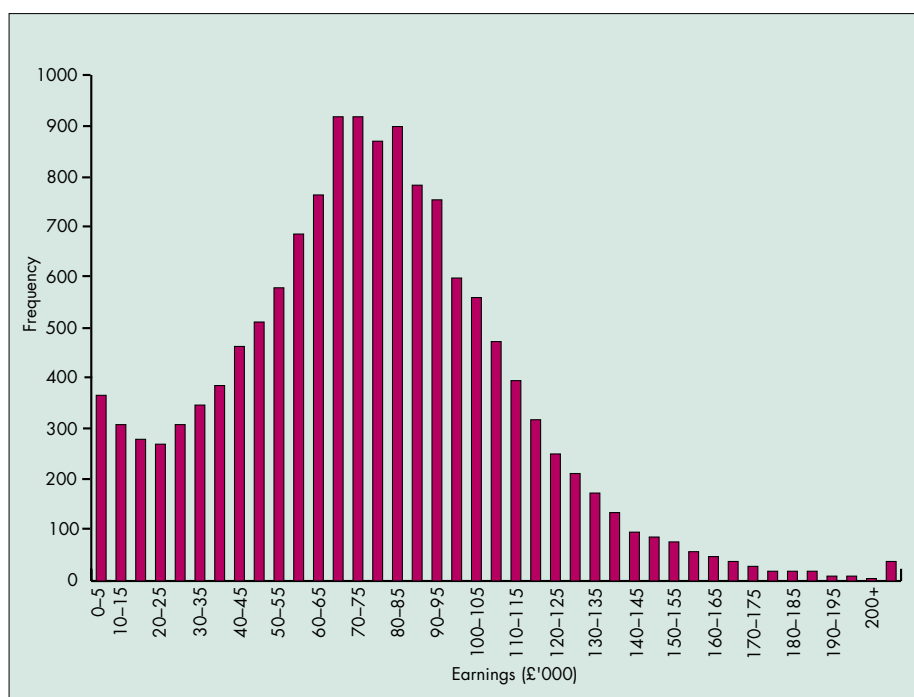
The panel decided that a normal full-time working week for a general dental practitioner (GDP) consists of 43.5 hours. They also decided that four and a half weeks would be spent on holidays (in addition to bank holidays) and that GDPs lose on average one week a year from illness. This leaves 45 weeks available for work, giving a total number of hours of work per annum of 1,953. It was agreed that time spent on-call should be ignored as this was too variable. Continuing Care payments (CCPs) and a continuing care element of capitation payments would also be excluded

their personal timings in their own practices on the 21 key items in Table 2.

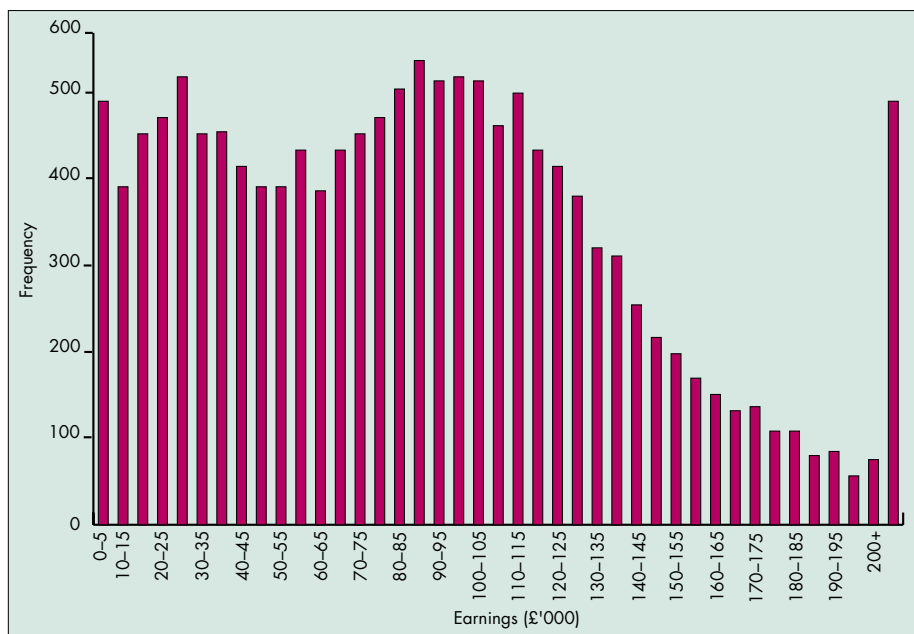
#### The actual event

The main exercise was held at a hotel in

Heathrow, London on July 6th and 7th 1999. In addition to the 16 panel members, two observers from the secretariat to the DDRB, the Office of Manpower Economics, two observers from the Department of



**Fig. 3 DRSG earnings distribution — England and Wales 1990/91**



**Fig. 4 DRSG earnings distribution — England and Wales 1997/98**

from the income calculations, as the panel felt that essentially CCPs paid for this on-call work.

Taking the balance between first and second party associates, partners and single-handed GDPs, the panel concluded that around seven and a half hours per week is spent on administration. Also around one and a half hours is spent on postgraduate

**Expenses**

An expenses ratio of 54.7% of turnover was used, as evidenced by the last known Inland Revenue expenses survey.<sup>2</sup> Fifteen percent of the expenses would be deducted from turnover for laboratory bills, again based on the Inland Revenue survey. Direct payments such as Rates Reimbursement and Seniority Pay would also be deducted from the aver-

during the 1990s. In 1990/91 a reasonably standard earnings curve is evident, with a small left-hand tail of low earners followed by a clearly identifiable peak and a long right hand tail. The distribution had changed dramatically by 1997/98. The left-hand tail of low earners grew, the central peak became much less clearly defined, and the right hand tail became increasingly significant. In 1997/98 the distribution is trimodal, although the left hand half of the distribution is fairly flat, calling into question the use of an arithmetic mean, or indeed any other measure of the average for the whole distribution.

First, the distribution may have been distorted by dentists working more part time in the GDS. There are an increasing proportion of female dentists and older dentists, and both of these groups tend to work relatively fewer hours. Part time GDS work also reflects the shift into private practice. The right hand tail also includes dentists who have unusually high NHS earnings and are also unrepresentative of the average dentist committed to the NHS.

The BDA used the following methodology to overcome this problem in its 1999 evidence to the DDRB.

- Remove the data of dentists with gross NHS earnings of less than £48,000.
- Remove the data of dentists with gross NHS earnings of more than £180,000.
- Calculate mean gross NHS earnings of all remaining dentists.

For 1998/99 this gives average gross NHS earnings from fees of £103,157 giving a net figure of £46,730, after deduction of expenses at 54.7%.

When introduced into the hourly model this gives an hourly rate of £53, calculations

Table 4		Treatment scenarios based on the April 1999 fee scale <sup>3</sup> and absolute timings			
		Treatment	Fee	Time taken	Implied hourly rate
Example 1	Patient A	Exam, 2 radiographs	£10.05	15 mins	
	Patient B	2 surface metal filling	£12.40	18 mins	
	Patient C	Molar root filling*	£35.00	40 mins	
			£57.45	73 mins	£47.22
Example 2	Patient D	Exam, scaling	£15.35	20 mins	
	Patient E	Lower premolar root filling†	£35.50	52 mins	
				£50.85	
Example 3	Patient F	Two white fillings	£23.90	30 mins	
	Patient G	One extraction	£10.65	16 mins	
	Patient H	One deciduous filling	£5.85	17 mins	
				£40.40	

\* First visit, and including one radiograph.  
† Including one radiograph.

education and committee work. They based this on the assumption that half the profession did these, but for three hours a week. Non-clinical work is therefore 405 hours per annum. This leaves 1,548 hours available for fee earning clinical work. The assumption was made that dentists do not normally work on bank holidays, other than providing out of hours cover.

age amount. The part of capitation fees that does not constitute the continuing care element would be for treatment and so needed to be part of the hourly rate.

**Average earnings**

The hourly rate model needed an estimate of average earnings. Figures 3 and 4 show how the earnings distribution has changed

for which are shown in Table 3. It is estimated that in 1998/99 £9,236 of gross turnover would come from capitation payments after deducting the CCP element. This would reduce the hourly rate from item of service fees by £6–47.

The Health Departments use a different set of assumptions to estimate average earnings. In their evidence to the DDRB in November 1999, they estimate net average income from fees to be around £50,000, giving corresponding hourly rate figures of £57 and £51.

#### Absolute timings

Table 2 shows the results from the original data sheets and the revised timings in light of the panel's discussions. All timings were revised upwards as a result of the deliberations of the panel. The standard deviation is a measure of the dispersion of the absolute timings and shows the extent to which views converged following discussion. The spread of results narrowed for over three quarters of the treatments measured.

The hourly rate model combined with the absolute timings can be used to draw conclusions about the robustness of the various estimates of average earnings. This is somewhat limited as only treatments with no laboratory charges can be used (this means that the fee is paying solely for the dentist's time and materials used), but it provides some useful indications. Table 4 shows three examples of what a dentist might do within a typical hour, and the related fees. The hourly rate ranges from £38.48 to £47.22.

#### Relative timings

Results are shown in Table 5. It was decided on the day not to include the families for veneers, recalled attendance, deciduous fillings and under-12 extractions. Where more than one group considered a treatment, an average has been taken. For the bulk of treatments the relativities had not changed much from their 1988 values. Items for which the relative timings had changed significantly are shown in Table 6. These items have been selected broadly on the basis of a change of 10% or more, although discretion has been applied for treatments with very low or very high incidences.

Table 5		Relativities	
Fee scale item	Current 1999	Fee scale item	Current 1999
<b>EXAMINATION</b>		17C Porcelain jacket	100 100
1A Clinical exam and report	100 100	17D1 Bonded FJC—gold	100 100
1B Extensive exam and report	160 173	17D2 Bonded FJC—non precious	100 100
1C Full case assessment	320 323	17D3 Bonded PJC—platinum	100 100
1D Transfer report	50 67	17F2 Core/posterior—metal alloy	100 78
<b>MISCELLANEOUS</b>		17F3 Prefabricated	29 55
36B Stoning and smoothing 1 tooth	35 53	17F4 Pin or screw retention	10 50
3611 Stoning and smoothing 2 or more	65 77	17G Temporary crown—non posterior retained	23 33
36D Sensitive cementum or dentine	65 74	17G Temporary crown—posterior retained	29 43
36E Issue of a prescription only	87 92	17K Refixing a crown	18 25
36G Removal fractured part of crown	120	18D1 Acid etch retainer—metal	37 95
36H Preparation of tooth for overdenture	87	18D2 Pontic—bonded	6 10
37 Acute conditions	100 100	18G1 Recementing—acid etch bridge	31 65
<b>DIAGNOSIS</b>		18G2 Any other bridge	23 40
2A1 Small Film—1 film	100 100	<b>EXTRACTIONS</b>	
2 films	129 130	21 1 tooth	100 100
3 films	158 170	2 teeth	179 190
each additional film	38 45	3–4 teeth	268 360
2A4 Panorax Film	292 275	5–9 teeth	357 700
3 Colour photograph—1 film	100 88	10–16 teeth	446 1200
each additional copy	13 25	17+ teeth	554 1500
7B Topical Fluoride	1250	Additional fee per visit	113 45
<b>PERIODONTAL</b>		22 Buried root soft tissue	243 285
10A Scaling and polishing	100 100	Bone removal—inc. & can. other not 3rd	323 325
10B Periodontal treatment 2 visits	247 249	Impacted 3rd not div—upper	405 450
10C Chronic perio trt-1–4teeth	333 303	lower	364 400
5–9 teeth	400 410	Impacted 3rd req div—upper	536 540
10–16 teeth	467 500	lower	580 665
17 or more	533 600	22B Fraenectomy	323 400
Additional fee per sextant	67	A1 Abnormal haemorrhage	280 311
<b>FILLINGS</b>		23A2 Removal of plugs or sutures	89 88
14A Amalgam Filling—1 surface	51 77	23B Infected sockets—1 visit	86 95
2 or more surfaces	78 92	2311 2 or more visits	173 205
14A3 MO or DO filling	100 100	<b>DENTURES (acrylic)</b>	
14A4 MOD filling	131 127	27B1 Synthetic resin full	
14B Tunnel restoration—per filling	98 116	upper and lower	100 100
14C1 Composite/synthetic—1 filling	90 97	27B2 Full upper (only)	75 81
2 or more	139 146	Full lower (only)	75 84
additional fees—1 angle	30 40	27B3 Partial—1–3 teeth	50 58
incisal edge	6 5	4–8 teeth	62 70
2 angles	51 74	9 or more teeth	73 84
cuspid tip	44 48	<b>DENTURES (metal)</b>	
14C2 Glass ionomer etc—1 filling	78 86	27C1 METAL full denture Upper	99 103
2 or more	114 118	METAL full denture Lower	99 105
14E Fissure seal—sealant only	44 53	27C2 Plate-1–3 teeth	88 92
composite resin	56 88	4–8 teeth	89 96
glass ionomer	65 88	9–12 teeth	95 103
Both of above	78 105	27C3 Single bar—1–3 teeth	96 96
14G Surface with GI—1 filling	78 86	4 or more teeth	100 100
<b>ROOT FILLINGS</b>		27C4 Multi bar—1–3 teeth	99 100
15A Incisor/canine	82 93	4 or more teeth	104 105
Upper pre-molar	120 133	<b>REPAIRS AND ALTERATIONS</b>	
Lower pre-molar	100 100	28A1 REPAIRS—single	32 42
Molar	202 175	28A4 Additional fee for impression technique	57 54
15C Apicectomy—incisor/canine	100 125	28B1 Adjusting denture	90 53
pre-molars	137 188	28C1 Reline excl. repair/addition	141 147
buccal root molar	181 240	28C2 Addition of flange	162 164
Additional fee—retro root fill	21 25	28C3 Soft lining existing denture	180 170
<b>CROWNS AND BRIDGEWORK</b>		28D1 ADDITION—clasp	92 101
17B1 Full or 3/4—precious metal	100 108	28D2 Tooth	100 100
17B2 Jacket—non-precious metal alloy	100 98	28D3 New gum	103 98
		29D Heat-Cured acr occlusal app	350

Table 6 Treatments for which relative timings have shifted significantly since the 1988 Relativities Inquiry					
Fee scale item		Direction of change	Fee scale item		Direction of change
1D	Transfer report	Up	17F4	Pin or screw retention	Up
2	Additional radiographs (after 3)	Up	17G	Temporary crowns	Up
3	Colour photographs	Down	17K	Recementing Crowns	Up
10C	Chronic Perio, 17 or more teeth	Down	18D1&D2	Maryland Bridges	Up
14A1	Amalgam Filling-1 surface	Up	18G	Recementing Bridges	Up
14A2	Same - 2 or more surfaces	Up	21	Multiple extractions (> 5 teeth)	Up
14B	Tunnel restorations	Up	22	Surgical Extractions, lower wisdom teeth	Up
1422	Composite additional fees-1 angle	Up	23A	Abnormal haemorrhage	Up
1424	Same-2 angles	Up	23B	Infected sockets	Up
14E	Fissure sealant restorations	Up	28A1	Denture repairs	Up
15C	Apicectomies	Up	28B1	Adjusting dentures	Down
17F	Core / post	Down	36B	Stoning & smoothing	Up

**Conclusion**

Using a panel of representative dentists, the 1999 BDA Timings Inquiry had two primary aims. The first was to examine the structure of the timings within the SDR. Changes in fees based on such an exercise have not occurred since 1988 and fundamental changes to the GDS have occurred since then. Whilst many of the relative timings within treatment families have not changed significantly, there have been some notable exceptions. Some of these items appear to be over-imbursed in the feescale and some under-imbursed. The results will be noted by the GDSC and will be used as the basis of future negotiations over the feescale.

The second aim of the Inquiry was to develop a model of an hourly rate for general dental practice and to use this to draw some conclusions about the average earnings of a full-time dentist committed to the NHS. The results of the timings exercise

were used to construct three hypothetical scenarios for what treatments a dentist might carry out within an hour. These gave hourly rates ranging from £38.48 to £47.22. In evidence to the DDRB this year the BDA and the Health Departments estimated average net earnings from fees of £46,730 and around £50,000 respectively. This equates to hourly rates of £47 per hour (after capitation payments are accounted for) for the BDA and £51 (ND) for the Health Departments. The BDA's result is much more in line with the results of the hypothetical treatments scenarios. It is

suggested that the BDA's estimate of average net earnings in 1998/99 of under £47,000 is more realistic than the Health Department's figure of around £50,000.

- 1 Nettley M P, Scarrott D, Windermere Relativities Inquiry, *Brit Dent J*, 1988; **165**: 188-192
- 2 Department of Health. *General Dental Practitioners: Supplementary Evidence on Earnings and Expenses for the year 1997/98: Initial Analysis*; Department of Health, 1999.
- 3 *Statement of Dental Remuneration*, Number 83, Department of Health, London.