IN BRIEF

- Policy makers will need to consider the rationale for the differing preferences that GDPs have for various remuneration mechanisms.
- GDPs felt that how they are remunerated is important in influencing the provision of care but not in the determination of disease levels.
- The sex differences, with females preferring a salaried plus bonus arrangement, are likely to become more important as the profile of dental graduates changes.

# General dental practitioners' beliefs on the perceived effects of and their preferences for remuneration mechanisms

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**Objective** To identify GDPs preferences for differing remuneration mechanisms and their beliefs on the effect of the mechanisms in care provision.

**Design** Postal questionnaire survey of 300 GDPs holding an NHS contract with a London Health Authority.

**Results** GDPs perceive that remuneration mechanisms are important in determining the provision of care but not overall disease levels. There were differences in the preferred remuneration mechanisms when working under the NHS compared with the non-NHS sector. When providing care under the NHS, either the current remuneration system or a salaried plus bonus would be the preferred choice, while for non-NHS care a fee-per-item mechanism is preferred. Fee-per-item arrangement was the preferred choice of younger general practitioners compared with older practitioners. Females showed a greater preference for a salaried with bonus arrangement compared with males.

**Conclusions** If policy makers are to use remuneration mechanisms to influence the provision of care effectively, the beliefs that care providers hold about various mechanisms are important to understand how they would respond to changes in the system.

Policy makers in all fields have used remuneration as a tool to try to influence outcomes. In the continuous discussion between those responsible for financing healthcare and those providing the services, reimbursement arrangements play an important role. Two key issues are: first, the amount to reward the care provider with; and secondly the type or method of reimbursement. The philosophy underpinning remuneration is one of providing incentives to motivate providers to produce desired outcomes. Data suggest that modification to the remuneration of dentists, either by increasing/decreasing the fees or by altering the method of payment, can change the pattern of practice of dentists,[1] although this may not necessarily be coterminous with improvements in health.

General dental practitioners (GDPs) in the UK make up approximately 75% of all dentists and are, in consequence, responsible for the oral well-being of the majority of the population. In formulating any policy on dental remuneration, the views of the GDPs are very important. Dimensions of the views include the nature and types of incentives that GDPs regard as desirable and would motivate them to provide services that will lead to improvements in oral health.

The National Health Service (NHS) Dental Contract, in the majority, has remained a fee-per-item service method of remuneration since the inception of the NHS in 1948, although a degree of change to a mixed capitation/ fee-for-service method occurred in 1990. It was hoped that this change would encourage GDPs to provide more preventive and continuing care for their patients, rewarding them with a steady flow of income based on patient numbers and independent of treatment provision. However, concern was raised that this new method of remuneration was leading to under treatment, termed 'supervised neglect'.[2] Although the evidence for supervised neglect was weak, representation by the General Dental Services Committee (GDSC) of the British Dental Association (BDA) led to the re-introduction of fee-for-service payments for child conservation and extractions in 1996. This change in remuneration was directed at preventing under treatment.

To date, few studies have been carried out to assess the views of GDPs on methods of remuneration. This study sets out to investigate the preferences that GDPs have for differing remuneration mechanisms. The study also sought to determine whether GDPs believe that modifications to the remuneration system could lead to improvements in oral healthcare provision. The results will help to provide an understanding on how any proposals for modifying the remuneration system will impact and hence, be used as a tool to allow policy makers to maximise the nature and extent of change to benefit patients.

## METHODS

The study population consisted of GDPs working in the London area that held an NHS contract with one of the 16 London NHS Health Authorities (HA). The London area was defined according to

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the criteria used by the Dental Practice Board (DPB). The study therefore excluded those dentists who worked under a wholly private contractual arrangement as they would not hold a NHS contract.

All 16 HAs in the London area were contacted to provide a list of dentists who at the time had a contract with the HA. The list contained details of names, addresses and telephone numbers of the dentists. The lists contained approximately 3,000 dental practitioners and a 10% sample of dentists from each health authority was selected using random numbers generated by *Survey Plus,* a computer software package. Dentists may hold more than one contract and as such, should an individual have already been selected from one HA, a replacement was chosen.

Following a pilot study carried out outside of the London HAs, postal questionnaires were sent to the sample. Following the initial mail out, a reminder was sent to those dentists who had failed to reply.

The questionnaire was divided into three sections. The first dealt with current working patterns and included questions to ascertain the number of sessions worked per week and the proportion of practice turnover devoted to NHS work. The second section dealt with their views on preferences for remuneration systems for care provision in both the NHS and non-NHS sectors and their rationale for it. The methodology used both open and closed questions. The section also included questions to elicit dentists' views on the possible impact of remuneration in influencing the provision of care. The final section included questions to obtain demographic data. The data were coded and analysed using the *Statistical Package for the Social Sciences (SPSS).*

## RESULTS

The response rate achieved in the study was 62%. Sixty eight per cent of the respondents were male, 32% female. The mean age was 41 years ranging from 24 to 74 years. Thirty three per cent of the respondents had been qualified for less than 10 years with the mean number of years being 17.1. The average number of years spent in general practice was 15.2. Thirty six per cent had spent less than 10 years in general dental practice and almost 70% less than 20 years in practice.

Thirty six per cent of respondents reported that they had additional qualifications. The most popular additional qualifications were the MSc and DGDP. Sixty one per cent of respondents were principals and 33% associates. Thirty eight per cent of respondents replied that 80–100% of turnover was devoted to NHS dentistry and 26% reported a turnover of 50–80%, (Table 1 and Fig. 1).

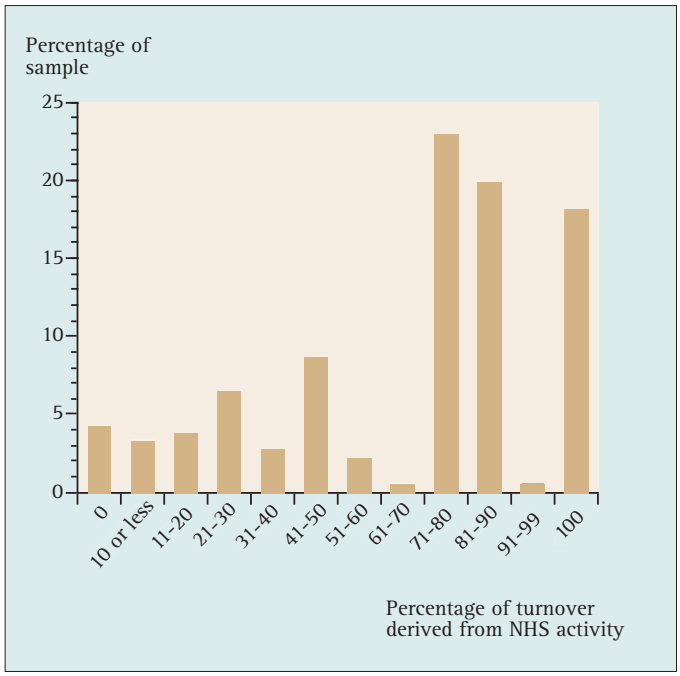


**Fig. 1 The distribution of percentage of turnover derived from NHS activity**

**Table 1. Percentage of turnover derived from NHS activity**

| Percentage of turnover | Frequency | Per cent |
|---|---|---|
| 0 | 8 | 4.3 |
| 10 or less | 6 | 3.3 |
| Between 11 and 20 | 7 | 3.8 |
| Between 21 and 30 | 12 | 6.5 |
| Between 31 and 40 | 5 | 2.7 |
| Between 41 and 50 | 16 | 8.7 |
| Between 51 and 60 | 4 | 2.2 |
| Between 61 and 70 | 1 | 0.5 |
| Between 71 and 80 | 42 | 22.9 |
| Between 81 and 90 | 37 | 19.9 |
| Between 91 and 99 | 1 | 0.5 |
| 100 | 33 | 18.1 |
| Total | 184 | 100 |

### Importance of a remuneration system in influencing the provision of care

The respondents were asked to indicate on a scale of 1 to 5 how important they thought a remuneration system was in influencing provision of care with 1 graded as 'not very important' and 5 'very important'. The results are shown in Table 2. Sixty-six (36%) of respondents felt that a remuneration system was very important in influencing the provision of care, 19% were unsure and only 8.7% reported that remuneration was not important. There were no differences by sex, age or status of respondent.

### Importance of a remuneration system in determining disease levels

The distribution of perceptions of whether remuneration can be used to impact on overall disease levels was very different. Twenty five per cent felt that remuneration was not very important, with an almost equal proportion thinking it was very important (Table 3). As with the provision of care, there were no discernible characteristics to explain the variation.

**Table 2. Importance of remuneration system in influencing provision of care**

| Scale | Frequency | Per cent |
|---|---|---|
| 1 | 16 | 8.7 |
| 2 | 13 | 7.1 |
| 3 | 35 | 19.0 |
| 4 | 54 | 29.3 |
| 5 | 66 | 35.9 |
| Total | 184 | 100 |

**Table 3. Importance of renumeration systems in determining disease levels**

| Scale | Frequency | Per cent |
|---|---|---|
| 1 | 46 | 25.1 |
| 2 | 23 | 12.6 |
| 3 | 40 | 21.9 |
| 4 | 29 | 15.8 |
| 5 | 45 | 24.6 |
| Total | 183 | 100 |

**Table 4. Percentage of practitioners by the most and least favourable method of remuneration for NHS care provision.**

| Remuneration mechanism | Most favourable | Least favourable |
|---|---|---|
| Fee-per-item only | 23.1 | 12.8 |
| Salaried | 13.9 | 39.7 |
| Capitation | 10.8 | 28.4 |
| Salary plus bonus | 33.1 | 6.8 |
| Fee-per-item with capitation component | 30.7 | 10.7 |

**Table 5. Percentage of practitioners by the most and least favourable method of remuneration for non-NHS care provision**

| Remuneration mechanism | Most favourable | Least favourable |
|---|---|---|
| Fee-per-item only | 66.2 | 16.6 |
| Salaried | 10.0 | 51.5 |
| Capitation | 7.7 | 23.1 |
| Salary plus bonus | 9.1 | 5.3 |
| Fee-per-item with capitation component | 13.1 | 3.8 |

Although not statistically significant, there was a tendency for practitioners who felt that remuneration under a fee-per-item arrangement was ideal to also feel that remuneration methods were important in reducing disease levels, while those who preferred a salaried arrangement felt that it was not.

### Preferred remuneration mechanism for both NHS and non-NHS sectors

The respondents were asked to rank their preferred method of remuneration for both NHS and non-NHS sectors using a scale of 1, least suitable, to 5, ideal. For care provision under NHS arrangements, the highest ranked method was a salaried plus bonus arrangement, although the percentage reporting a fee-per-item arrangement with capitation was very similar. The least preferred arrangement was a pure salaried arrangement (Table 4). Reasons respondents gave to support the choice of salary plus bonus included:

- Reflects true professional services
- Constant income. Bonus provides incentive and motivation to work
- Eliminated tendency to over treat
- Reduces stress, promotes better quality of life
- Decisions are made regardless of financial considerations
- Good quality of care
- Allows better distribution of dentists countrywide
- Can make ends meet in areas of high failed appointments.

However, there was a statistical difference by age for the choice: the fee-per-item arrangement was the preferred choice of younger general practitioners when compared with older practitioners ($P < 0.01$). Females showed a greater preference for a salaried with bonus arrangement when compared with males, ($P < 0.05$).

In marked contrast, for non-NHS care provision, the overwhelming preference was for a fee-per-item arrangement. Sixty-six per cent thought this method of remuneration was the most preferable. As with the preference for NHS remuneration, the least favourable was a salaried arrangement (Table 5). Respondents supported their choice with the following statements:

- Free market philosophy. Rewards for effort
- Charge reflects nature of treatment
- Allows provision of quality treatment
- Contract between dentist and patient. No third party involved.

Principals were more likely to express a preference for a salaried arrangement than associates ($P < 0.05$) which is likely to be a co-founding variable associated with age. Other demographic factors showed no association with preference for remuneration arrangements.

## DISCUSSION

The discussion is handled in two parts: first, beliefs about the role of a remuneration system, and secondly, GDPs preferences for remuneration arrangements. Krasnik[3] suggested that changing the remuneration system could lead to a change in the provision of care, although Kristianson and Mooney[4] found that the medical condition at hand was more important in influencing the provision of care than the remuneration system. Kristianson and Holtedahl[5] found that financial incentives might be used to change behaviour for elective procedures. This is in agreement with the findings of this study, the vast majority of dental procedures are elective procedures. Thirty six per cent of respondents felt that a remuneration system was very important in influencing the provision of care.

With respect to disease levels, the findings of Kay and Blinkhorn[6] in their qualitative study of GDPs' was mixed, with comments such as 'money will definitely not affect my diagnosis' but conversely 'I suppose if you didn't get paid to put a filling in a tooth you might think harder about it'. Holloway *et al.*[7] concluded that the introduction of capitation into the remuneration of dentists had led to dentists putting greater efforts towards newer treatments and preventive items. In this study the results suggest GDPs had very mixed opinions concerning whether remuneration mechanisms impact on untreated disease levels.

In the recent survey of young dentists by the British Dental Association[8] 70% said they would like the option of being salaried employees of larger companies and 35% said there was a likelihood of them choosing this option if it was widely available. In the present study the younger dentists preferred a fee-for-service method of remuneration with older dentists tending towards a salaried system. The difference between the findings of this study and that of the BDA may be caused by the way in which the question on remuneration by the BDA was worded. The BDA survey asked dentists whether they would like the option of a salaried system whereas this study asked dentists to select what they consider to be an ideal remuneration system, including a refined arrangement that included a performance related bonus.

Respondents felt that one of the advantages of such a mechanism was that it provided a constant income with a bonus that provided the incentive and motivation to work, reduced stress and allowed decisions to be made regardless of financial considerations. This is in agreement with Maynard[9] who suggested that in a system based in the majority on salaries, a bonus could act as a motivator, especially for those who have reached the top of a promotion ladder. Those younger dentists who chose this payment system may not wish to be burdened with the responsibilities of practice ownership and would prefer a stable income. For older dentists, the treadmill aspect of the present system is possibly no longer attractive. Furthermore, they may also have less financial needs and derive income from other sources such as the employment of associates and assistants or by combining NHS and non-NHS care. It is interesting to note that, while two of the first wave pilot PDS programmes have adopted what is largely a capitation based system, bonus arrangements also feature.

The respondents also thought that the salaried plus bonus mechanism offered the opportunity for the provision of good quality care. This may possibly be because financial considerations are less of an issue in decision-making. This is in agreement with the views of Robson[10] who stated that a salaried system could provide a basis in which clinical quality can be developed.

The current method of remunerating dentists in the NHS was the most preferred method of remunerating NHS dentists. Though not statistically significant, a greater proportion of younger dentists supported this method when compared with the older members of the profession. One possible explanation is that younger dentists have the energy and drive to produce more through a fee-per-item arrangement when compared with other mechanisms. It is also possible that, because this is the current method of payment in the GDS, the dentists in this study opted for this payment system because of familiarity.

Most previous studies compared a capitation system with other single systems rather than a mixed system. The mixed fee-per-item with capitation system attempts to overcome the negative aspects of the stand alone fee-per-item system. For example, both O'Brien and Corkill[11] and Turbill *et al.*[12] state that the fee-per-item system in the GDS encourages quantity as opposed to quality. By combining a fee-for-service with a capitation system dentists are able to spend more time treating patients and are encouraged to register more patients and so provide a quality service.

Conversely, the majority of respondents felt that a fee-per-item method of remuneration would be their preferred choice for the non-NHS sector. The additional supporting statements for their choice, for example 'free market philosophy, which rewards effort' and 'a contract between dentist and patient with no third party involved', suggest that this method was believed to provide more independence than other possibilities. This would suggest that motivational issues are not purely financial. Respondents also commented that the arrangement allowed provision of quality treatment and has been tried and tested by every profession and 'it works'.

The difference in NHS and non-NHS arrangements is interesting. One of the criticisms of the NHS fee-per-item system is that it encourages over treatment, yet this comment is not perceived to apply to the non-NHS sector. In the non-NHS sector, as dentists are able to work to a differing fee scale, they can spend more time providing treatment but the possible incentive to overtreat remains. Associates felt more strongly about this than principals. This is in keeping with the rest of the findings that the younger dentists prefer a fee-for-service system.

While the study was limited to the London area, the demographic characteristics of the sample are similar to that of England and Wales. Figures for England and Wales for the period ending March 1998 give the distribution as 73% males and 27% females. This compares with the distribution in this study of 68% males and 32% females. Other studies of GDPs, for example Wilson *et al.*,[13] also show similar gender distribution. Those involved in developing policy for remuneration will need to consider these findings, in particular, the differences of opinion between NHS and non-NHS care provision. Further work is required to explore the lack of popularity of the capitation mechanism. This may in part be associated with the negative history of the mechanism in the GDS, or alternatively, a lack of understanding of the opportunities that it provides.

## CONCLUSION

This study highlights that the preferred remuneration method is different between the NHS and non-NHS sectors. When working in the NHS sector, either the current method of remuneration, a fee-per-item mechanism with a capitation component, or a salary plus bonus system were the preferred options. This contrasts with the non-NHS sector, where a pure fee-per-item arrangement was the choice. While GDPs feel that a remuneration system is very important in influencing the provision of care, it is not an important determinant of disease levels.

If policy makers are to use remuneration mechanisms to influence the provision of care effectively, they need to understand what beliefs care providers hold about various mechanisms. This will help identify how providers would respond to any changes in the system. Further work is required to clarify some of the conflicting statements and views identified in this present study.


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