Analysis of Responses to: Dental Earnings and Expenses, Northern Ireland, Experimental Statistics: A consultation on the Health Service/ Private Share measure

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Executive Summary

Between 10 November 2010 and 2 February 2011, The NHS Information Centre (The NHS IC), as Secretariat of the Dental Working Group (DWG)\(^1\), held an open consultation asking questions about the methods used to analyse the earnings and expenses of dentists in Northern Ireland by a measure of Health Service/ Private Share.

Having considered the responses, The NHS IC has set out the following conclusions and actions to be taken forward and delivered through DWG:

- It is proposed to publish both the earnings and time based methods of representing the division of work between Health Service and private dentistry.

- Further action will be taken by The NHS IC, in conjunction with DWG, to develop both methodologies further in an effort to make the results increasingly robust and reliable.

- In addition to making improvements to the methodologies, additional explanation and information will be provided with the analyses, and the report in general, to provide increasing context to the results.

\(^1\) The Dental Working Group is responsible for production of the dental earnings and expenses report, and includes representatives from The Department of Health, Social Services and Public Safety, Northern Ireland; The Northern Ireland Health and Social Care Business Services Organisation; The British Dental Association; The Secretariat for the Review Body on Doctors’ and Dentists’ Remuneration; Her Majesty’s Revenue and Customs: Knowledge, Analysis and Intelligence Division; and The National Association of Specialist Dental Accountants.
Introduction

Between 10 November 2010 and 2 February 2011, The NHS Information Centre (The NHS IC), as Secretariat of the Dental Working Group (DWG), held an open consultation asking questions about the methods used to analyse the earnings and expenses of dentists in Northern Ireland by a measure of Health Service/ Private Share. The consultation document is available at:


The consultation posed specific questions about two methods that were proposed to estimate the Health Service/ Private Share of dentists (i.e. the division of a dentist’s work between Health Service and private dentistry, expressed as a percentage). The two methods were:

- The percentage of a dentist’s total gross earnings that were generated through Health Service work (the earnings method)
- The self-reported split of a dentist’s working time between Health Service and private dentistry (the time method)

Three organisations submitted a response to the consultation: the British Dental Association, Northern Ireland (BDANI), and the Department of Health, Social Services and Public Safety, Northern Ireland (DHSSPSNI) and the Health and Social Care Board (Northern Ireland), who submitted a joint response. These responses are reproduced in full as Annexes A and B to this document. We would like to take this opportunity to express our thanks to these organisations for their helpful and constructive feedback.

This document details our response and conclusions following the consultation, addressing each of the questions posed by the consultation, in turn, followed by a general set of conclusions and an action plan.

The report which led to the consultation, Dental Earnings and Expenses, Northern Ireland, 2008/09, Experimental Statistics, is available at:

www.ic.nhs.uk/pubs/dentalearnexp0809ni
Responses Analysis – Earnings Method

This section presents a summary of the responses received to the questions posed regarding the earnings method, as well as general feedback received within the responses.

Question 1: What are your views on the use of the above method and its limitations?

Responses to this question expressed contrasting views as to the use of the above method: DHSSPSNI\(^2\) emphasise the benefit of using robust administrative data over survey data, and suggest that the use of a monetary measure is appropriate within the context of the earnings and expenses report; whilst BDANI express concerns regarding the effects of secondary transactions on the results in the report, both in terms of the Health Service/ Private Share analyses, and as a general issue in all analyses within the report.

The NHS IC acknowledges that the double counting of earnings and expenses across tax returns does have some effect on the results presented in the report for average gross earnings and expenses for Principal Dentists\(^3\). However, it has no effect on the estimates of average taxable income. It is currently not possible to redress the issue of secondary transactions using the current data source. The NHS IC and DWG will continue to provide and review the commentary related to this issue in the report.

Question 2: Do you agree with the interpretation of the limitations presented?

Both DHSSPSNI and BDANI agreed with the interpretation of the limitations presented. DHSSPSNI stated that despite the limitations of the earnings method, this was still preferred over the survey method.

Question 3: Are there any strengths or further limitations to the method that have not been addressed?

Although DHSSPSNI did not identify any further strengths or limitations that had not already been highlighted, disappointment was expressed at the perceived failure to overcome or minimise the effect of the limitations of the method on the results by attempting to account for the secondary transactions, or only produce the results for non-associates\(^4\).

The NHS IC acknowledges that it would have been preferable for these issues to have been addressed at the design stage of the analyses informing the report; however the possibility of accounting for the secondary transactions was explored during production of the 2007/08 edition of the report, and it was mutually agreed within DWG that with the data currently available, accurate corrective action was not possible. The issue was discussed again for the 2008/09 publication. The NHS IC and DWG made a professional judgement, based on sound statistical reasoning and with the support of the Head of Profession (Statistics), not to

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\(^2\) Reference to DHSSPSNI also refers to the Health and Social Care Board, as they issued a joint response.

\(^3\) See paragraphs 1.17 and 1.18 in *Dental Earnings and Expenses, Northern Ireland, 2008/09, Experimental Statistics*.

\(^4\) Non-associates are dentists who do not have formal business links with other dentists.
include the results in question within the report and to hold an open consultation to seek to establish an agreed way forward to resolve the issue.

At the time of producing the 2008/09 publication a non-associates analysis was not an area that was discussed. The NHS IC will however raise with DWG the possibility of producing some results for non-associates, subject to receiving reliable data highlighting these dentists.

As a further limitation, BDANI point to the complexity of the payment system for Health Service dentistry in Northern Ireland, whereby dentists receive differing types and elements of payment for different purposes and/or activity. In contrast, private dentistry is a fee based system.

Although this issue is acknowledged, The NHS IC does not feel that this limits the value of exploring the percentage of total gross earnings that are generated through providing Health Service as opposed to private dentistry (although a fee based system, elements of these fees will be used to cover expenses and practice overhead costs). However, consideration will be given to providing extra context around the Health Service remuneration system for dentists, and any additional commentary will be agreed through DWG.

BDANI also raise the issue of population size and diversity in response to this question, providing an example of mean averages being inflated by a relatively small number of high earning ‘orthodontic dentists’. This can be considered to be an issue related to the report in general, and not specific to the earnings method.

In both 2007/08 and 2008/09 The NHS IC requested that HMRC provide analyses of average earnings and expenses by levels of orthodontic activity5; however, due to the small sample sizes it was not possible to produce or publish such analyses, which could have been potentially disclosive and would not have been sufficiently reliable. Such analyses will continue to be requested for future editions of the report. The NHS IC also propose to explore the provision of analysis by practice size and/or single-hander status to examine the diversity of the dental population in Northern Ireland, and provide further context around the results presented in the report.

It is acknowledged that the potential for a small number of high earning dentists to increase the mean averages does exist, and this is made clear throughout the report (equally, it is possible that a small but significant number of lower earning part-time or part-year dentists may have the opposite effect). It is not felt that it would be appropriate to exclude ‘orthodontic dentists’ from the analyses in order to remedy this, as these dentists are within the target population of the analysis in the report. The NHS IC will consider the possibility of publishing confidence intervals for some analyses in the report, and will discuss this further through DWG.

The final point raised by BDANI in response to this question relates to the use of mean rather than median average figures, and is applicable to all of the analyses presented within the report; not just those by Health Service/ Private Share. It is argued that the mean

5 Those whose Health Service orthodontic work accounts for more than 30 per cent of all their Health Service work, and those whose Health Service orthodontic work does not.
average can be misleading in analyses based on small populations, and that the median average should be used instead.

The NHS IC acknowledges that mean averages can be subject to the influence of extreme values, particularly in analyses based on small samples, and this is consistently referenced throughout the commentary provided in the report. Medians are published for high level results, and particular care has been taken when producing the 2008/09 edition of the report to draw the attention of the reader towards this, including the addition of new charts to demonstrate the difference between the mean and median averages for average taxable income. It is felt that the report should continue to use the mean average as the main indicator in all analyses, but that consideration should be given to complementing the average taxable income figures with their median counterparts for some results. The potential addition of more median averages to the results will be discussed through DWG.

**Question 4: What are your opinions on the potential use of pension contributions data?**

In response to this question, DHSSPSNI restated that the use of accurate and objective administrative data would be preferred to the use of any self-reported measure, but that it was unclear as to how The NHS IC proposes to use pension contributions data to improve the earnings method of measuring Health Service/ Private Share. The NHS IC propose to obtain and explore pension contributions data in order to investigate whether it could be used to either (a) measure Health Service/ Private Share on its own\(^6\), or (b) to provide information and data that could be used to account for secondary transactions.

BDANI explain that although there is a relationship between superannuable Health Service earnings and total Health Service earnings, not all income from Health Service work is pensionable (e.g. practice allowances), and therefore pension contributions data may not give a complete picture and may understate Health Service/ Private Share.

It is currently understood that certain payments made to Health Service dentists, such as practice allowances, do not appear in the average earnings figures for dentists, as rather than being recorded as income on the self assessment tax return, they are used to reduce the expenses figure for the expense that they are provided against. The NHS IC will investigate this issue further, and the potential use of pension contributions data will be discussed further through DWG, and the issues pointed out by BDANI are noted.

**Question 5: What other data sources are available that might allow for a more accurate estimate of Health Service/ Private Share using a measure of earnings?**

In response to this question, BDANI were unable to identify any other sources of data that might be available. DHSSPSNI identified the new DA1 form – which came into effect on 1 April 2010 and provides information about the percentage of a dentist’s earnings that come from the Health Service – as a potential source of data. The NHS IC is keen to explore the possibility of using of this data for the 2010/11 edition of the report and beyond, and will pursue this action through DWG.

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\(^6\) i.e. whether the superannuable Health Service earnings give a better account of Health Service earnings than the figures for gross Health Service earnings as provided by the Health and Social Care Business Services Organisation
Question 6: How else might this measure be improved?

DHSSPSNI identify use of data from the new DA1 form as a means of improving this method. It is stated that data from the DA1 form are not susceptible to the secondary transaction problem. Although the DA1 is a self-declaration, it is certified by an accountant and may therefore be considered sufficiently robust to be used to replace the earnings method as it currently stands.

As stated, the NHS IC is keen to explore use of the DA1 data for use in the 2010/11 edition of the report, and particularly to learn why it is that this method does not involve secondary transactions. This action will be carried out through DWG.

BDANI question whether this method can be sufficiently improved to recognise that private and Health Service dental care are different, with payment models that in their view are not directly comparable, concluding that steps to improve the measure are not feasible.

The NHS IC does not share the view that Health Service earnings and private earnings are not comparable: it is recognised that there are differences between the two (i.e. private treatment is generally more expensive, and different treatments are available) which should be put into context in any report commentary, but a like-for-like comparison can be made between earnings. Indeed, both types of earnings are combined for most of the earnings and expenses report.

Question 7: Are equivalent data available for England and Wales and Scotland that would allow use of this measure in these reports?

Both respondents suggested that no equivalent data are available for England and Wales, but that it should be for Scotland. The NHS IC will seek to explore the possibilities for joint working as suggested by DHSSPSNI and investigate the desire for such analyses through DWG.
Responses Analysis – Time Method

This section presents a summary of the responses received to the questions posed regarding the time method, as well as general feedback received within the responses.

Question 8: What are your views on the above method and its limitations?

In response to this question, DHSSPSNI suggest that the time method suffers from too many limitations that cannot be removed or minimised because it is based on a sampling methodology. It is also suggested that the results presented using this method are not very helpful as they are only disclosed for the Mainly Health Service band due to necessary suppression as a result of small sample numbers. DHSSPSNI express a view that using a measure of time in a monetarily focussed report is not appropriate.

The NHS IC agrees that sampling methodologies do have limitations; however, we feel that such sampling methodologies are sufficiently robust to be used within the report. For example, other analyses within the report which examine earnings and expenses as a function of working hours, working hours and gender, and business arrangement, are based on the same sampling methodology and are considered relatively robust.

The NHS IC recognises that suppression of results within the analyses can hinder the utility of these results. Suppression only occurs where it is absolutely necessary, either because a sample is so small that the results would not be reliable, or where the population numbers are small and it may be possible to estimate individual earnings. Where one set of results are suppressed, secondary suppression occurs in order to prevent calculation of the suppressed results. Levels of suppression will vary from year to year as sample sizes and population distributions change; it is therefore hoped that less suppression of these results will be necessary in the future. The NHS IC will also consider, through DWG, whether to round the population estimates provided in the report, which may eliminate the need for some secondary suppression.

Whilst it is agreed that the output of the analyses – average earnings and expenses – are monetary values, this does not prohibit the analysis of earnings and expenses as a function of non-monetary values. For example, the report analyses earnings and expenses as a function of age, or a function of weekly working hours, and these results are considered to be both robust and useful: analysing earnings and expenses by the percentage of time spent performing Health Services as opposed to private dentistry is an equally valid piece of analysis if sufficient contextual information is provided.

In response to this question, BDANI state that although measuring dental activity by time provides useful information about how dentists use their time, measurement has to be based on a self-reported estimate which has an inherent and unquantifiable risk of error. BDANI specifically comment that converting time to a percentage is not always straightforward. BDANI state that they are supportive of measuring how dentists use their time, but express concerns about linking such data to earnings and expenses data, particularly where issues with sample size and skewing exist.

The NHS IC welcomes the support for the continued measure of time in the Dental Working Patterns Survey, and will work with BDA representatives and others on DWG in an effort to improve the Dental Working Patterns Survey. The NHS IC and DWG take care to
understand and mitigate against issues of sampling and representativeness. The NHS IC believes that it is valid to link such data to the earnings and expenses analysis and that is provides useful results for inclusion in the report.

**Question 9: Do you agree with the interpretation of the limitations presented?**

Both respondents agreed with the limitations as described in the consultation. BDANI suggested that because of these limitations, any results could be uncertain and even misleading.

The NHS IC acknowledges that any results based on samples will always be subject to a degree of uncertainty, and this is clearly stated on several occasions within the report. However, with regard to the figures being misleading, The NHS IC feel that with the caveats stated throughout the report a reader will be able to understand the data and the limitations, and be able to interpret the results accordingly. The NHS IC will work with DWG to add further context to the results presented.

**Question 10: Are there any strengths or further limitations to the method that have not been addressed?**

In response to this question, DHSSPSNI highlight that the measure of time used is self-reported, and therefore subjective, difficult to validate, and can be inaccurate. It is also stated that such a measure does not take account of the efficiency of the dentist or the complexity of the work they are undertaking.

The NHS IC accept that any self-reported measure is limited in that it can be subjective, difficult to validate, and potentially inaccurate on some occasions; however, self-reporting is often the only way in which certain things can be measured and we believe that the report commentary makes it clear that analyses informed by self-report data should be interpreted as such. The NHS IC are keen to look for ways in which these self-reported data could be improved and validated, and address this further in question 13. Regarding the efficiency of the dentist and the complexity of the work that is being undertaken, The NHS IC feels it is reasonable to assume that (a) the efficiency of the dentist will be consistent whether Health Service or private dentistry is being performed, and (b) that the complexity of the work will generally have a positive linear relationship with the amount of time taken to complete the work, thus these issues should not have an effect on the results.

The BDANI response to this question again highlights the differences between Health Service and private dentistry, suggesting that comparisons between the two are not necessarily like-for-like.

The NHS IC does not accept the view that time spent on Health Service dentistry cannot be compared with time spent on private dentistry, for the same reasons as set out in the conclusions to the responses in respect of consultation question 3: both activities amount to dental activity, and therefore the examination of a dentist’s division of time between them is both possible and appropriate.
Question 11: What are your opinions on the recommendation of revisions to the weighting methodology?

DHSSPSNI state that the recommendation to revise the weighting methodology is sensible, but that it only addresses the limitation associated with the current weighting methodology and does not resolve the other limitations. BDANI take a similar view, stating that the proposal does not address the key weaknesses of the methodology, including sample size. BDANI also state again that although the exploration of how dentists split their time is useful, the representation of earnings from Health Service/Private Share becomes unreliable due to assumptions that private and Health Service dentistry provide the same services and are paid for in the same way. This point has been addressed in other questions.

The NHS IC recognises that producing a revision to the weighting methodology will not address all of the limitations associated with this method; however, it would represent an improvement to the methodology as it stands, and work towards this revision will continue to be pursued through DWG.

Question 12: If the recommendations for revisions to the weighting methodology were implemented, should they be applied to all analyses using responses to the survey, regardless of whether the population distribution is skewed by the original weighting, and for all countries?

In response to this question, BDANI stated that the issue of representativeness should be taken into consideration in applying any weighting methodology. In contrast, DHSSPSNI express a view that the revision should only be applied where it is necessary.

The NHS IC intend to used this revised weighting methodology only in cases where it is shown that the weighting causes a bias or skew in the results. Although it is acknowledged that it may be considered preferable to apply the revised weighting to all analyses, this would create additional work and expense that in a vast majority of cases – where there is no skew caused by the weighting – would realise little benefit. This will continue to be discussed through DWG.

Question 13: Are other data sources or collection methods available that might allow for a more accurate estimate of Health Service/Private Share using a measure of time?

DHSSPSNI did not identify any other data sources or collection methods that could be used to improve this measure. BDANI stated that the BDA regularly engages members in surveys to ascertain their division of time between Health Service and private dentistry. The NHS IC are keen to work with the BDA to cross-validate survey data. Although the same limitations as the method used by The NHS IC will apply, such cross validations can help to ensure reliability of the results.
**Question 14: How else might this measure be improved?**

DHSSPSNI state that any time measure can only be improved by being verified against another source or certified in some way. As stated in response to question 13, The NHS IC intends to work with BDA representatives on DWG to explore the possibility of cross-validation and verification of the time measure. Although both The NHS IC and BDA data will be self-reported, such cross-validation will provide a clear indication of confidence in these estimates.

BDANI suggest that this measure could be improved by examining the weighted Health Service spend as derived from the results, and checking it against the known total spend on Health Service dentistry. Unfortunately, such a check is not possible because data from the self assessment tax return does not allow for the disaggregation of Health Service and private earnings; earnings can be double counted across tax returns; and not all earnings from Health Service dentistry are thought to be included as earnings on the self assessment (e.g. payments made to dentists to cover a specific item such as business rates would not be included as earnings, but would reduce the expenditure on business rates).
Responses Analysis – Type of Measure: Time versus Earnings

**Question 15: Do you agree with the proposal to include results by both measures of Health Service/Private Share?**

In response to this question, BDANI expressed no support for the continued analyses of earnings and expenses by Health Service/Private Share using the earnings method, which they felt was neither robust nor improvable. In contrast, DHSSPSNI expressed a preference for the earnings method to be used to inform future analyses. Both respondents expressed support for the continued examination of how dentists divide their time between private and Health Service dentistry, but suggest that this should be confined to the Dental Working Hours report, and be appropriately labelled. BDANI did not express support for the linkage of such data with average earnings and expenses.

The NHS IC has given due consideration to the responses received; balanced the concerns raised against the view that both pieces of analyses are likely to be useful to the Doctors’ and Dentists’ Review Body (DDRB) – and can be improved – and intends to propose the following course of action to DWG:

- Average earnings and expenses should be analysed using both the earnings method and the time method, and both sets of results should be included within the report. Constant efforts will be made to improve each method.
- Neither will be labelled ‘Health Service/Private Share’; rather, they will be referred to as “Earnings and Expenses by Percentage of Gross Earnings from Health Service Dentistry” and “Earnings and Expenses by Percentage of Time Spent Performing Health Service Dentistry”, respectively.
- Results produced using the time method will be situated within the “Earnings and Expenses by Working Patterns” section of the report, so that it is made clear that some of the underlying data are derived from self-reported survey responses.

**Question 16: If it is not possible to implement the proposed improvements to each or either method, are these results still useful?**

No responses to this question raised any issues that have not been addressed in response to question 15.

**Question 17: Are there any other sources of data or method of measuring Health Service/Private Share that have not been considered and could be used?**

In response to this question, DHSSPSNI did not identify any further sources of data that had not already been referenced. BDANI identified a business rate reimbursement form as a potential use of data about the split of Health Service and private work within a practice building.

It is unclear whether the business rate form to which BDANI are referring is actually the DA1 form, identified by DHSSPSNI in response to questions 5 and 6. The NHS IC welcomes the identification of additional data sources and will explore the potential for use of these to inform analyses for the report. Any new data source must be quality assured and its use approved through consultation with DWG.
Question 18: Do you have any other related comments or suggestions?

BDANI stated that the statistics in the report should continue to be labelled as experimental. The NHS IC recognises the importance of the experimental statistics label as described by the Code of Practice on Official Statistics; however, statistics normally carry the experimental statistics label for a maximum of two years, and so the report as a whole is not likely to carry this label in the future. The NHS IC will consider whether specific chapters or pieces of analysis within the report should be individually labelled as experimental.

The NHS IC is committed to continuing to produce statistics in ways that engage their users (e.g. through consultation with DWG and stakeholders); to continuously improve the methods used to produce the statistics; and to provide clear and comprehensive metadata and commentary about the statistics, all of which will see the ‘ethos’ of the experimental statistics label being adhered to.
Conclusions

The NHS IC would like to thank again all those who contributed to and responded to this consultation. Having considered the responses, The NHS IC has set out the following proposals and actions to be taken forward and delivered through DWG:

1. Use both the earnings and time measures:
   - Publish both methods but neither will be called ‘Health Service/Private Share’. Naming convention will be agreed through DWG.
   - Explore Scotland earnings data and the potential for further joint working.
   - Explore rounding of population estimates to reduce the need for double suppression.
   - The NHS IC to investigate the potential for continuing to use the Experimental Statistics label for the publication.

2. Continuous improvement to both methodologies:
   - HMRC are conducting some additional analyses to assist in developing the methodologies. This will be reviewed and discussed at DWG.
   - Explore analysis by practice size and the potential for non-associate analysis.
   - Continue to request analysis by orthodontic status and publish subject to sufficient sample sizes.
   - Explore potential use/limitations of pensions data and discuss with DWG.
   - Explore use of DA1 and how DA1 accounts for secondary transactions.
   - Discuss with BDA the possibility of using results from their surveys to validate the results of the Dental Working Patterns Survey conducted by The NHS IC.

3. Context to be provided:
   - Provide commentary/context around Health Service payments system, and differences to private dentistry to aid interpretation.
   - Explore provision of confidence intervals to assist in understanding the results.
   - Explore provision of medians to add further context to the results.
   - Further explore practice allowance recording on Self Assessment tax forms to provide further context and clarity to the results.

If you have any queries or comments about this consultation, please send an email to enquiries@ic.nhs.uk, or call 0845 300 6016.

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Response to the Above Consultation Exercise from the Department of Health, Social Services & Public Safety Northern Ireland (DHSSPSNI)

Consultation Questions 1-7 (% of Gross Earnings from Health Service Dentistry)

Before responding to the specific consultation questions, it is worth acknowledging that although both methods are designed to measure “health service/private share”; the 2 methods measure very different things. Although both are supposedly aimed at estimating the division of a dentist’s work between health service and private dentistry, one measures time devoted to each and the other measures income generated from each. We would not necessarily expect the results of these measures to equate. It would surely not be unreasonable to expect % of earnings generated from private work to be higher than % of time devoted to this type of work, given the higher costs of private treatment.

1. We are content with the income method; given that it is derived from hard data rather than relying on self-declaration. As the Dental Earnings and Expenses Report is concerned with earnings and expenses, then surely a monetary measure is more appropriate. The payments data is accurate and robust and this method allows comparison across years. An accurate, robust administrative data would always be preferred over survey data which will have a number of limitations due to sampling error and bias.

2. We agree with the interpretation of the limitations presented; however, on balance when compared with the limitations of the time measure, this income method is still preferred.

3. We cannot identify any further limitations with the income method. As already stated, its main strength is in the accuracy and robustness of the payment system as a data source. It is disappointing, in that having identified the limitation, that no attempt was made to overcome or minimise the affect of the problem. It would have been encouraging to see an attempt to account for the secondary transactions. Or (as was the case for GB up to 2005/06) that these figures were only produced for non-associates (we acknowledge that dental type has also had to be derived but the method of classification was thought to be reasonably accurate).

4. Any method which uses an administrative data source would be welcomed over a self-reported measure, due to the accuracy and objectivity of the administrative data source. The consultation paper states that the NHS Information Centre intends to request health service pension contribution data but no detail is given as to how this data might be used to improve the income method. We would welcome further details on this methodology in order to make an informed response regarding its suitability.
5. With effect from 1st April 2010, the Business Services Organisation (BSO) will be fully implementing its procedures relating to claims submitted for payment under Determinations III, V-IX and XI of the Statement of Dental Remuneration (SDR). The change will require all dentists to submit a DA1 form certified by their accountant. The DA1 form is a declaration of the % of earnings from dentistry attributable to health service gross earnings. The form should be submitted to the BSO by June each year. DS (contract) numbers and GDC numbers on the DA1 form allow linkage with the DEEQ dataset. A discussion with the NHS Information Centre would be welcomed regarding availability of this data in terms of working it into the DEEQ work timetable.

6. Use of the DA1 form improves the income method; it does not have the secondary transaction problem that the income method has. Although the form is a self-declaration, it is certified by an accountant and would therefore be acceptable to us as a replacement for the income method.

7. Scotland continues to operate a similar SDR system to Northern Ireland, so equivalent data should be available; there would be an opportunity here for joint working. Equivalent data would not be available for England and Wales.

Consultation Questions 8-14 (% of Time Spent on Health Service Dentistry)

Firstly, it is important to acknowledge that this is a measure of time which is not, in our view, deemed suitable in a report which is monetary focused. It has its place within the Dental Working Hours Survey; here within a report on working hours and patterns, a measure of time is suitable. However, it must be clearly noted in the reports that these figures are not interchangeable between the 2 reports and rather than quote both/either figures as health service/private share (even if we were to move to the DA1 form declaration), the distinction between measuring “time” and “earnings” should be made clear.

8. Data derived from sampling is not preferred over hard data from an administrative source. There are too many limitations with the survey method which cannot be removed or minimised due to being connected with sampling methodology. Results published using the survey method are not that helpful as they are only disclosed for the one band (mainly health service) due to necessary suppression due to small sample numbers.

9. We agree with the interpretation of the limitations presented.

10. A further limitation of the time measure is the self-declared nature of the data. The time measure is subjective and un-validated. Self-reported measures are subjective and can be of poor quality as respondents can report what they think the researcher wants to hear or respondents report to reflect themselves more positively. Self-reported measures may not be accurate simply due to poor memory recollection and they are also a measure of perception rather than measuring the construct directly. It does not take account of the dentist’s efficiency or the complexity of the work.

11. The recommendation to revise the weighting methodology is sensible but this only tackles bias created by the current weighting methodology; the general issues of representativeness and response bias will still exist.

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12. If the weighting is not necessary for all analyses, then it should be applied in the health service/private share analysis only.

13. We are not aware of any other data sources that would allow for a more accurate estimate of health service/private share in terms of time; however, as already stated we do not object to a measure of time for the working hours report but any time measure is inappropriate in the DEEQ Report.

14. Any time measure can only be improved by being verified against another source or certified in some way.

Consultation Questions 15-18 (Recommendations)

15. We would prefer to see data collected and published in the Dental Earnings & Expenses Report via some form of income method as this would continue to measure % of gross earnings from health service dentistry. Where these figures are at variance from figures derived from self-reported time spent on health service dentistry as published in the Dental Working Hours Report; the difference in methods, what is being measured and the results should be clarified across the 2 reports. Results from the self-reported time spent method only have a place in the Dental Working Hours Report.

16. It could be argued that collection and publication of results from both methods could be confusing; however, results from both methods are very useful to the DHSSPS as long as they are published within their rightful context. It is important that the reports are worded clearly to distinguish between the 2 methods; we support publication of results by both measures but with each method confined to its relevant publication.

17. Other sources of data that should be considered for measuring health service/private share have been discussed under point 5.

18. The above response is supported by Mr Michael Donaldson, Head of Dental Services, Health & Social Care Board (NI) and should be accepted as a joint response from the 2 organisations (DHSSPS and HSCB).
Annex B – Response from the British Dental Association (Northern Ireland)

The British Dental Association is the trade union and professional association for dentists. We have over 23,000 members from all spheres of dentistry including general dental practitioners, salaried primary care and hospital dentists, dental academics, as well as dental students. This paper contains our response to the NHS IC consultation ‘Dental Earnings and Expenses, Northern Ireland, Experimental Statistics: A Consultation on the Health Service/Private share measure.

Method 1: Percentage of gross earnings from Health Service dentistry

1. What are your views on the use of the above method and its limitations?

The method of measuring the health service and private share by gross earnings suffers from limitations which are set out in the consultation document.

BDA has already highlighted to NHS IC that there are issues associated with double counting of turnover when secondary transactions happen within a practice and NHS IC reports have acknowledged that there is the potential for double counting within the income and expenses data for dentists. This is highlighted in NHS IC reports through the statement that ‘flows of money between dentists … mean that gross earnings and expenses could be duplicated across tax returns.’

Data from the Business Services Organisation (BSO) Family Practitioner Statistical Report 2007 2008 points to both how and why double counting occurs. Available data indicates that at April 2009 Department of Health, Social Services & Public Safety Northern Ireland (DHSSPSNI) had 997 dental contracts in place with Northern Ireland’s 819 individual dentists. The payments made by BSO to Northern Ireland’s dentists were made to 480 unique bank accounts. It is through those 480 unique bank accounts that the gross costs of all HS dental payments in 2007/08 of £68.8 million will have been made.

This means that 52% (517) of contractors received their total gross turnover as a secondary transaction which happens within the practice.

The effect of this typical model arrangement between principal and associate needs to be recognised in the NHS IC data and steps taken to ensure that turnover and expenses are counted once only.

Therefore the method as it stands presents significant flaws.

2. Do you agree with the interpretation of the limitations presented?

BDA NI believe that the interpretation of the limitations identified are correct. There are further limitations and these are described at the answer to question 3.
3. Are there any strengths or further limitations to the method that have not been addressed?

**Further limitations**

The relationship between gross earnings and health service share is not straightforward or linear and is heavily influenced by the payment system for health service dentistry in Northern Ireland.

Essentially the payment system for dentists in Northern Ireland is made up of six broad elements of payment:

- Fees for patient registration
- Fees for clinical care and treatment
- Fees for defined non-clinical work
- Allowances for expenses (practice allowance)
- Reimbursement of costs
- Commitment payments

There are also payments for dentists in respect of undertaking the role of vocational trainer. Since these are made to a maximum of 40 practitioners each year, we have not included them in the explanation of the payment system.

**Fees for Patient registration**

The payment system provides capitation and continuing care payments for patient registration.

**Fees for Clinical Care and Treatment**

The payment system provides fixed fees for over 400 defined treatment items as set out in the Statement of Dental Remuneration.

**Fees for defined non-clinical work**

The work of a general dental practitioner includes necessary areas of non-clinical work (on a defined and limited basis). Fees for non-clinical work provide recompense to dentists when they exchange clinical care of patients for certain types of non-clinical work, such as continuing professional development; recompense for reduced working speed for dentists over 55 years; and recompense for inability or excusal from work, for example due to maternity or sick leave.

**Allowance for expenses (practice allowance)**

A practice allowance for practices meeting the definition of ‘committed health service practice’ is to help address the increasing requirements in relation to the provision of premises, health and safety, staffing support and information collection and provision.

**Reimbursement of rates**

Reimbursement of the cost incurred through non-domestic rates, in proportion to their commitment to the health service.

**Commitment payments**

These provide a reward to individual dentists for commitment to the health service (over time) and volume/value of work carried out in the health service.
Commitment payments are paid to dentists who have been on the health service list for five years.

The ratio of the payment system in place for dentists in Northern Ireland demonstrates that allowances (practice allowance and re-imbursement for rates) account for almost ten per cent of gross turnover (not including payment for VT).

In responding to this NHS IC consultation exercise on the health service/private share BDA seeks to set out that the payment system for health service dentistry is not straightforward and that the complexity must be fully understood in developing a model and methodology to explore the relationships between health service and private dentistry. The table below shows that in Health Service dentistry only £2 out of every £3 of Health Service Spend relates to clinical treatment whereas in private dentistry clinical fees or monthly capitation fees account for all income.

<table>
<thead>
<tr>
<th>The allocation of HS dental spend in Northern Ireland by type</th>
<th>2008/09</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Health Service Spend</strong></td>
<td>£ 83,821,420.30</td>
<td>100%</td>
</tr>
<tr>
<td>Fees for clinical care and treatment</td>
<td>£ 53,000,499.25</td>
<td>63%</td>
</tr>
<tr>
<td>Fees for Patient Registration</td>
<td>£ 19,959,770.37</td>
<td>24%</td>
</tr>
<tr>
<td>Fees for defined non-clinical work</td>
<td>£ 1,201,917.31</td>
<td>1%</td>
</tr>
<tr>
<td>Practice Allowance</td>
<td>£ 7,521,751.07</td>
<td>9%</td>
</tr>
<tr>
<td>Re-imbursement of rates</td>
<td>£ 636,290.17</td>
<td>1%</td>
</tr>
<tr>
<td>Commitment Payments</td>
<td>£ 1,501,192.13</td>
<td>2%</td>
</tr>
</tbody>
</table>

Population size
The total population of dentists in Northern Ireland is small, yet it is inclusive of a diverse group of dentists and dental practices. This is demonstrated through the example of consideration of the health service activity of the population of dentists who carry out more than 30% of their treatment value claims through orthodontic items and those do not (i.e. carry out general dentistry).

Information available from Business Services Organisation shows that in 2008/09 the health service spend on clinical care and treatment was £53,000,499.25. The gross cost of orthodontic items of treatment, provided by dentists who do more than 30% of their treatment claims as orthodontic items, in 08/09 was £7,351,925.90. BSO record 48 dentists as fitting the criteria whereby they do more than 30% of their treatment as orthodontics in Northern Ireland in 2008/09 which equates to each of those 48 dentists claiming on average £153,165.12. The remaining dental spend on items of care and treatment during 08/09 of £45,648,573.35 was split between the remaining 775 dentist contractors listed by BSO and equates to an average claim of gross of £58,901.38.

This clearly demonstrates how the activity of a small group with high values can have an undue influence on the overall values, leading to an overall skewing of the results. Therefore, at the very least there needs to be a clear statement of the confidence intervals for the evidence, to highlight the uncertainty caused by the use of a small sample containing a significant weighting at the high end of the scale.
It is also worth noting that in view of this evidence the assumption could be made that health service activity by general dentists who are not orthodontists must be low within Northern Ireland. This is not the case and Northern Ireland at end March 2009 had a population of 867,917 patients registered with a dentist via the health service arrangements. This is from a population total for Northern Ireland of 1.79 million at 2009.

Use of averages
The consultation does not refer to the use of averages. However the report generated will refer to information which is then subject to averaging. The use of the mean average in a population size this small and subject to skewing can be misleading. BDA suggests that in any results presented relating to HS/private share, the median average should be used as the main indicator.

Understanding HS v Private dentistry
At the answer to Question 6 we have set out some general information about health service dentistry and private dentistry and the difficulties of including them in the same equation when clearly they have very different payment systems in operation.

4. What are your opinions on the potential use of pension contributions data?

A principal practitioner’s pensionable pay is the gross health service fees earned less notional practice expenses. Notional practice expenses are currently set at 56.1%. Therefore the individual pension contributions made by each dentist will have a relationship to the gross health service fees earned by that individual. However for the purpose of pensions contributions, the gross health service fees earned are inclusive only of individual payments to dentists such as payments for treatment and registering patients, but practice payments for the practice allowance and reimbursement of non domestic rates are not superannuable. For that reason, pension contributions would not give a complete picture as only parts of the pay package are pensionable, so whilst the use of pension data would give additional information, it would understake the gross HS earnings.

5. What other data sources are available that might allow for a more accurate estimate of Health Service/ Private Share using a measure of earnings?

We are not aware of any other earnings information than that arising from the HMRC inquiry

6. How else might this measure be improved?

Health Service dental treatment provides a specifically defined set of treatment items which are laid out in the narrative of the Statement of Dental Remuneration (SDR) as defined by Department of Health Social Services and Public Safety Northern Ireland. Each treatment item has a fee set by government and rules are applied governing when items such as examinations can be carried out.

Private dental care offers any dental care and treatment which the patient and dentist agree.

Private dental care is not defined or limited to a specific set of treatments, as is the case on the health service. Very often health service and private dental care will exist in a complementary way where private treatment enhances treatment options available.
Given the very different nature of private dentistry when compared to health service dentistry, it is questionable whether any piece of work can be sufficiently improved to recognise that:

- Private dental care and health service dental care are different
- The payment model for health service care is unique and not directly comparable to that for private care

Given the complex nature of the relationship between health service earnings as a percentage of gross earnings our view is that the measure is not reliable and the steps to improve are not feasible.

7. Are equivalent data available for England and Wales and Scotland that would allow use of this measure in these reports?

Equivalent data isn’t available for England and Wales but it is for Scotland.

Method 2: Percentage of time spent on Health Service as opposed to private dentistry

8. What are your views on the above method and its limitations?

Measuring activity
Measuring dentist activity by time provides valuable information on how dentists spend their time both non-clinically and clinically and whether on health service or private work.

There are limitations on how use of time can be accurately measured. The current time measure relies on estimation of the time spent by the individual on HS or private dentistry. Dentists find this hard to work out and must estimate it as closely as possible, but have little way of knowing how accurate the estimate is as it is not a clear cut measure and can vary by day, month or season. Therefore, any estimation has an inherent and unquantifiable risk of error.

The NHS IC survey is endorsed by BDA as a good method of understanding work patterns of individual dentists. However our feedback shows that it can be hard to complete as time needs to be converted to a percentage and this often requires the use of calculator. In addition, all gross income generated by the dentist is attached to clinical work and this can overstate the health service income as it assumes that all income is generated through clinical activity. The explanation at question 3 shows that this is not the case.

Sample size
BDA agrees with the limitations identified re sample size, representativeness and skewing.

Representativeness
Information available from Business Services Organisation shows that in 2008/09 the gross health service spend on clinical care and treatment was £53,000,499.25. The gross cost of orthodontic items of treatment, provided by dentists who do more than 30% of their treatment claims as orthodontic items, in 08/09 was £7,351,925.90. BSO record 48 dentists as fitting the criteria whereby they do more than 30% of their treatment as orthodontics in Northern Ireland in 2008/09 which equates to each of those 48 dentists claiming on average
£153,165.12. The remaining dental spend on items of care and treatment during 08/09 of £45,648,573.35 was split between the remaining 775 dentist contractors listed by BSO and equates to an average claim of gross of £58,901.38. This demonstrates that there is significant skewing within any population of dentists in dentists in Northern Ireland whereby 6% of the individual contractors take 14% of the total annual clinical spend on health service dentistry.

Notwithstanding this, the measure of time spent is a useful measure. However the link between time spent and gross turnover by HS/private split is more complex and the methodology does not allow the complexity to be considered.

9. Do you agree with the interpretation of the limitations presented?

The consultation is very clear about the limitations of this method. Limitations i, ii, and iii clearly set out our concerns. The diminished sample size could have significant impacts on the certainty rates of any finding, especially given the significant skew of earnings towards the high end in the health service by a small number of contractors. Given the small population sample and the potential for the survey sample to not be representative, the results could be uncertain and even misleading.

10. Are there any strengths or further limitations to the method that have not been addressed?

It needs to be recognised that private dentistry very often offers treatment to complement that available within the health service or to provide a completely different range of care. Some forms of dentistry are only available privately such as dental implants, so any piece of work which considers private dentistry should also consider the treatment options that are being provided via the health service or privately. This does raise an issue as it means that any data gathered is not necessarily comparing like with like.

11. What are your opinions on the recommendation of revisions to the weighting methodology?

The proposal does not address the key weaknesses in this methodology, which significantly reduce the value of this approach. The key aspect is the sample size. Small sample sizes of diverse populations will greatly increase the likelihood of skewed data and inaccurate results. The exploration of how dentists split their time is very useful. However, when earnings data are applied to this, the representation of earnings from HS/private becomes unreliable due to assumptions that private and health service dentistry provide the same things and are paid for in the same way.

12. If the recommendations for the revisions to the weighting methodology were implemented, should they be applied to all analyses using responses to the survey, regardless of whether the population distribution is skewed by the original weighting, and for all countries?

The considerations at the answer to Question 8 on representativeness should be taken into consideration in applying any weighting methodology.
13. Are other data sources or collection methods available that might allow for a more accurate estimate of Health Service/ Private Share using a measure of time?

The BDA regularly asks members in surveys for their NHS/private split according to time.

14. How else might this measure be improved?

The health service spend is known. Therefore when the population is weighted, the accuracy can be checked against the values which are clearly known.

**Type of measure: time versus earnings**

15. Do you agree with the proposal to include results by both measures of Health Service/ Private Share?

Given the limitations explored in the consultation and further limitations identified and set out by BDA in this response, BDA recommends that measuring HS/private split by gross is not sufficiently robust and in our view is unlikely to become sufficiently robust.

Measuring how dentists spend their time is very valuable and this measure should be continued.

Applying earnings data to the information on how dentists spend their clinical time does not recognise the complexities and differences in the payment systems for HS or private; nor does it recognise differing natures of health service dentistry and private dentistry.

16. If it is not possible to implement the proposed improvements to each or either method (as recommended in this document), are these results still useful?

BDA do not feel that the earnings method would produce useful results as it currently is calculated. It is our view also that the proposed improvements to the earnings method recommended in the consultation document would either produce results that still contained significant levels of

NHS Information Centre must fully consider the information available and in consultation with BDA and stakeholders, determine the benefit of providing data which is clearly recognised as having limited robustness.

BDA support the Dental Working Patterns survey and, notwithstanding the limitations identified, believe it offers a valuable method of measuring the split between Health Service and Private dentistry.

17. Are there any other sources of data or methods of measuring Health Service/ Private Share that have not been considered and could be used?

The business rate reimbursement form provides data about the HS/private split within a practice building.
18. Do you have any other related comments or suggestions?

The reports should continue to be labelled as experimental and NHS IC should clarify and make clear that all references should include this label.

BDA Northern Ireland
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This consultation may be requested in large print or other formats.

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