The Dental Working Hours series of reports provides a detailed study of the working patterns, motivation and morale of self-employed primary care dentists in England, Wales, Northern Ireland and Scotland. Results are taken from the biennial Dental Working Patterns Survey.

This Data Quality Statement is designed to accompany Dental Working Hours, Working Patterns, Motivation and Morale 2016/17 and 2017/18, and each subsequent edition of the report.
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This product may be of interest to remuneration boards, employers, stakeholders, policy officials, commissioners and members of the public. Interests will range from pay comparisons of the NHS workforce at local, regional and national levels to managing recruitment, staffing and training and prioritising commissioning.
1. Introduction

The Dental Working Hours series of Official Statistics provides information on dental working patterns, motivation and morale for self-employed primary care Providing-Performer/Principal and Associate dentists in England & Wales, Northern Ireland and Scotland.

The results are based on responses to the biennial Dental Working Patterns Survey\(^1\) (DWP). All primary care dentists in the United Kingdom who conducted some NHS/Health Service during one or both of the financial years covered by the survey (2016/17 and/or 2017/18) were invited to participate.

All dentists included in the analysis answered every (relevant) question on the survey.

The results relate to dentists with varying levels of self-employment earnings from both NHS/Health Service and private dental work. However, dentists who performed only private dentistry were not invited to participate in the survey and thus are not covered by the results.

The report includes a time series of results since the surveys were first run, presenting results from the 2006/07 & 2007/08 survey for England & Wales and from 2008/09 onwards for Northern Ireland and Scotland.

The report content and structure are agreed by the Dental Working Group (DWG) in response to user and stakeholder needs. DWG is a technical group with a UK wide remit and membership. Its primary role is to carry out agreed programmes of work to meet the requirements relating to doctors’ and dentists’ remuneration (including the associated Review Body on Doctors’ and Dentists’ Remuneration (DDRB)). The members of the DWG are shown in the ‘Relevance’ section.

The findings of the report are included in material submitted for consideration by the Review Body on Doctors’ and Dentists’ Remuneration.

2. Accuracy

As the Dental Working Patterns Survey results are based on a sample, the findings are weighted, to present the results for the overall population. To achieve this, the population is stratified, and appropriate weights are applied to minimise the effect of any bias in the constitution of the sample.

Dentists were invited to participate in the survey using data provided as follows:

- Data from NHS Business Services Authority (NHS BSA) were used to derive the population of dentists in England & Wales. Dentists were allocated to strata according to:
  - dental type
  - contract type
  - gender
  - age

- The Northern Ireland Health and Social Care Business Services Organisation (BSO) and NHS National Service Scotland, Information Services Division (ISD) provided data relating to the primary care dentist populations for Northern Ireland and Scotland

\(^1\) Please see annex A of Dental Working Hours, Working Patterns, Motivation and Morale Analysis 2016/17 & 2017/18 for a copy of the survey.
respectively. Because of the much smaller populations in these countries, dentists were allocated to strata according to:

- gender
- age

2016/17 survey results were weighted to the final dental populations effective at 31 March 2017. However, final-year data were not available for all countries at the time the report was produced and as a result, the mid-year dental workforce populations as at 30 September 2017 were used to weight the 2017/18 results. The effect of using the mid-year data has been tested and found to be minimal, while the report benefits from being released earlier for use in the DDRB evidence submissions which better meets the needs of users and other stakeholders.

For each country grouping – England & Wales, Northern Ireland and Scotland – one set of weighting factors are derived based on the strata, and the same set of weights are applied throughout. Further information is available in the Methodology that accompanies the 2016/17 and 2017/18 report and can be found at https://digital.nhs.uk/data-and-information/publications/statistical/dental-working-hours/2016-17-and-2017-18-working-patterns-motivation-and-morale

As the results are weighted up to the full-year self-employed dental population they are subject to sampling error and uncertainty. This is because using information from or about a sample of the population can never be as accurate as using information for the entire population. Apparent differences between groups and sub-group of dentists, or in results compared to the previous years may therefore not be statistically significant. In addition, small dental populations for some sub-groups mean that extreme values can have noticeable effects on the averages; in such cases, results may be subject to more uncertainty.

Statistical significance is used in this report to illustrate the extent to which users can be confident that differences between compared results are not due to chance.

Dental population figures cited in the report should not be regarded as the definitive dental populations, and they will not be the same as those published in NHS Dental Statistics for England or comparable country reports produced by NHS Digital. This is due to some dentists being excluded from the DWP Survey results for methodological reasons (for example, the results are only based on those dentists that worked for a full year discounting any annual leave taken). More detail on the dental population can be found in the accompanying Methodology document.

All changes to the methodology, structure, content and presentation of results are discussed by the DWG prior to implementation. In addition, at each stage the report was further validated and quality assured by NHS Digital analysts unconnected with the production of the report.

**Representative Sample and Non-Responder Characteristics**

To assess whether the composition of the survey responder population was representative of the dental population, the relationship between the numbers of dentists in each sub-group was evaluated. It was found that the survey responder population is generally representative of the primary care dental population.

The response rate for dentists in England & Wales and Northern Ireland decreased in 2018; this follows a decrease in all countries’ response rate when the previous survey was undertaken in 2016. However, the response rate in Scotland improved for the 2018 survey. Despite the decreases in some countries, nonetheless there were sufficient responses to undertake the analysis and to be able to demonstrate that the sample population is representative of the whole.
The representativeness of the survey responder population is discussed in Section C of the accompanying Methodology. However, the fact that some cohorts of dentists may be over- or under-represented in the survey responder population means that results should be treated with a degree of caution.

The representativeness of survey data was also tested by considering average NHS/Health Service dental activity for those who did and did not respond to the survey. It was found that survey responders were likely to do more NHS/Health Service work than non-responder dentists, however, it is difficult to predict what effect this will have on the reported figures. For example, some non-responders may undertake more private activity and work a similar number of weekly hours compared to responders showing high levels of NHS activity. Where it has been possible to account for differences in the survey responder population this has been done by stratifying the sample to account for the major variables of gender and age along with dental and contract type for England & Wales. This will lessen some of the effects of variable response rates. However, it should be borne in mind that the results presented in the report are from a sample of dentists rather than the entire population, and that a degree of uncertainty is typical when considering data based upon survey results.

**Known Issues**

As part of the validation process for DWP Survey data, all dentists who record more than 80 working hours per week are excluded from the analyses; this accounted for a very low percentage of dentists, for example 0.2% in England & Wales in 2011/12. Since 2016, the online survey tool has included a validation rule asking dentists to check their response if a figure greater than 80 weekly working hours has been entered. It is possible that a small number of dentists who may normally have entered a figure greater than 80 could have reassessed their answer, which would not have happened in earlier surveys.

**3. Relevance**

The findings from the Dental Working Patterns Survey that are published in the Dental Working Hours series are cited as evidence presented to the Review Body on Doctors’ and Dentists’ Remuneration and underpins their annual recommendations on remuneration for dentists. Findings are also used to inform workforce planning and retention.

The Dental Working Hours reports have been produced by NHS Digital with technical and specialist contributions from the Dental Working Group (DWG) which is chaired by NHS Digital and includes representatives from:

- Department of Health and Social Care
- NHS England
- Welsh Government
- Department of Health, Northern Ireland
- Scottish Government
- NHS National Services Scotland: Information Services Division
- Secretariat for the Review Body on Doctors’ and Dentists’ Remuneration (DDRB)
- NHS Business Services Authority (NHS BSA) Information Services
- HMRC: Knowledge, Analysis and Intelligence Division
- National Association of Specialist Dental Accountants and Lawyers (NASDAL)
- British Dental Association which represents the views and interests of dentists
4. Coherence and Comparability

The primary source of data for this report is the biennial Dental Working Patterns Survey, an invitation for which was sent to dentists across UK who performed some NHS/Health Service work in 2016/17 and/or 2017/18. In addition, workforce data provided by administrative systems within each country (as listed in section 2) were used to compile the population and weighting variables.

Comparisons across domains included within each country (for example NHS England regions. regions) are appropriate and encouraged. However, if making comparisons between countries it should be borne in mind that different dental contracts are in place in these countries.

The results are comparable to previous survey results, which are discussed within the publication.

5. Timeliness and Punctuality

The DWP Survey data refers to 2016/17 and 2017/18 and was collected from January to March 2018. The report is published as soon as possible after closing the survey collection and validating the data. There have been no issues in relation to punctuality in the production of this report.

The workforce data used to compile the population and weighting variables for the 2017/18 results was the mid-year data set effective as at 30 September 2017. This is because the final-year data effective at 31 March 2018 were not available at the time of production; the effect of using the earlier data rather than the final year data has been found to be minimal.

6. Accessibility

The report and accompanying Methodology are accessible via the NHS Digital website as PDF documents. The results are also available in spreadsheet format. The publication is also accompanied by an interactive Power BI visualisation.

7. Performance Cost and Respondent Burden

The workforce population data used within the publication (as described in section 2) is a secondary use of the data and so adds no additional burden on the NHS or the dental industry. The workforce data is obtained from administrative systems within each country: NHS BSA Information Services, the Northern Ireland Health and Social Care BSO and NHS National services Scotland ISD.

The Dental Working Patterns Survey is a biennial online survey with invitations sent to dentists within the UK who performed some NHS/Health Service activity in 2016/17 and/or 2017/18. The survey takes approximately fifteen minutes to complete and consists of 17 questions for each year. No other data source exists for this information.

There is an inevitable cost and burden when issuing a survey, however, using an online (biennial) collection system with straightforward questions has helped keep the costs and burden to a minimum.

The findings of the survey are also used in the Dental Earnings and Expenses Estimates series of Official Statistics which is also overseen by the DWG and used in the DDRB evidence submissions.
8. Confidentiality, Transparency and Security

All publications are subject to a standard NHS Digital disclosure risk assessment prior to issue. Disclosure control is implemented where judged necessary.

Data are held on secure, encrypted servers and transferred on secure file transfer systems or secure email. Data Sharing, Data Processing and Service Level Agreements exist between all parties involved in production of the report to ensure appropriate security levels are maintained.

The information contained in this publication are Official Statistics. The Code of Practice for Statistics is adhered to from collecting the data to publishing.

NHS Digital policies relating to Disclosure Control, Revisions, Statistical Governance and a range of other useful documents are available on NHS Digital’s website.