Health Survey for England 2015
Quick guide to the survey

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This guide provides a brief introduction to the content and methodology of the Health Survey for England 2015. Full details are in the report Health Survey for England 2015: Methods.
## Contents

This is a National Statistics publication 3

### Introduction

About this guide 4
The Health Survey for England (HSE) 4
Publications 4
Availability of data 5

### Sample design

Sample design 6
Sample size 6

### Data collection and response

Ethical approval 7
Data collection 7
Fieldwork procedures, documents and protocols 9
Interview length 9
Consents 10
Fieldwork period 10
Response rate 10

### Analysis

Weighting the data 12
Selecting the appropriate weight 12
Weighted data 13
Standard breakdowns 13
Age-standardisation 13
Design effects and true standard errors 14
Significance testing 14
Table conventions 14

### Biological samples

Sample analytes 15
Quality control of blood and saliva analytes 15
Internal Quality Control (IQC) 15
External Quality Assessment (EQA) 15

### Notes

16
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This quick guide may be of interest to people working in public health, policy officials, analysts and commissioners of health and care services to understand the content of the Health Survey for England, how the survey data have been collected and the statistical methods used.
Introduction

About this guide

This Quick Guide to the Health Survey for England (HSE) 2015 is designed as a reference tool to introduce the survey and indicate where further information can be found.

The Health Survey for England (HSE)

The HSE is a series of annual surveys, of which the 2015 survey is the twenty fifth. The surveys provide regular information that cannot be obtained from other sources on a range of issues related to the public’s health and many of the factors that affect health.

Each survey in the series includes core questions, covering general health; hypertension and diabetes; social care; lifestyle behaviours, including smoking and drinking alcohol; and measurements such as blood pressure, anthropometric measurements and analysis of blood and saliva samples. In addition there are modules of questions on specific issues that vary from year to year.

Data collection in 2015 involved an interview including a self-completion questionnaire, followed by a visit from a specially trained nurse for all those who agreed. Height and weight were measured during the interview, and the nurse visit included measurements and collection of blood and saliva samples, as well as additional questions.

In some years, the core sample has also been augmented by an additional boosted sample from a specific population subgroup; in 2015, there was an additional boost sample of children aged between 2 and 15, who were interviewed but did not have a nurse visit.

For a more detailed introduction to the HSE 2015, see Section 1 of the report Health Survey for England 2015: Methods.

Publications

The HSE 2015 is published online at www.digital.nhs.uk/pubs/hse2015. The published documents consist of the following:

- a summary of key findings
- nine topic reports, each in PDF format with supporting Excel tables
  - Adult cigarette smoking
  - Adult alcohol consumption
  - Adult overweight and obesity
  - Adult social care
  - Children’s physical activity
  - Children’s body mass index, overweight and obesity
  - Children’s smoking and exposure to other people’s smoke
  - Children’s drinking
- Children’s well-being
  - a methods report, giving a full account of the technical aspects of the survey
  - Excel tables showing true standard errors, confidence intervals and design effects
  - documentation, including the questionnaires, field materials and protocols for collecting survey measures.


The following topics are included in the trend tables for adults; population estimates are also available for those marked with an asterisk*.

<table>
<thead>
<tr>
<th>Blood pressure</th>
<th>Fruit and vegetable consumption*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean height &amp; weight</td>
<td>General health</td>
</tr>
<tr>
<td>Body mass index, overweight and obesity*</td>
<td>Longstanding illness, acute sickness</td>
</tr>
<tr>
<td>Mean waist circumference</td>
<td>Prevalence of IHD or stroke</td>
</tr>
<tr>
<td>Estimated alcohol consumption (heaviest drinking day last week)*</td>
<td>Prevalence of diabetes</td>
</tr>
<tr>
<td>Estimated weekly alcohol consumption</td>
<td>Levels of physical activity*</td>
</tr>
<tr>
<td>Cigarette smoking*</td>
<td>Well-being</td>
</tr>
</tbody>
</table>

The trend tables for children include the following topics.

<table>
<thead>
<tr>
<th>Mean height &amp; weight</th>
<th>Fruit and vegetable consumption*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body mass index</td>
<td>General health</td>
</tr>
<tr>
<td>Overweight and obesity prevalence*</td>
<td>Longstanding illness</td>
</tr>
<tr>
<td>Cigarette smoking</td>
<td>Acute sickness</td>
</tr>
<tr>
<td>Experience of alcohol</td>
<td>Levels of physical activity*</td>
</tr>
</tbody>
</table>

**Availability of data**

As with previous years, only a proportion of the HSE results are included in the 2015 reports and 2015 trend tables. A copy of the full HSE 2015 dataset will be deposited with the UK Data Service (UKDS). Copies of the anonymised data files for 2015 and every other HSE year since 1993 can be made available for specific research projects through the UKDS. Full documentation is available in the archive, including a list of all the variables and definitions for derived variables.

For further information go to: [http://discover.ukdataservice.ac.uk/series/?sn=2000021](http://discover.ukdataservice.ac.uk/series/?sn=2000021)
Sample design

Sample design

As with all previous surveys, the HSE 2015 involved a multi-stage, stratified, random probability sample designed to be representative of the population living in private households in England. Those living in institutions (such as care homes) were outside the scope of the survey.

The sampling frame was the small user Postcode Address File (PAF). The very small proportion of households living in addresses not on PAF (less than 1%) was not covered. The sample consisted of 9,372 addresses selected at random from 579 postcode sectors.

All HSE surveys cover the adult population aged 16 and over living in private households in England (up to a maximum of ten adults per household). From 1995, the survey included children aged 2 to 15, and from 2001 infants aged under 2 have also been included. Up to four children per household were interviewed (up to two aged between 0 and 12, up to two aged between 13 and 15). Where there were three or more children in an age band, two of the children were selected at random to limit the respondent burden for parents.

In 2015, an additional child boost sample was issued, comprising 17,252 addresses. Households were screened for the presence of children aged 2 to 15. As with the ‘core’ sample, up to four children were interviewed per household. No adults were interviewed for the child boost.

For more detailed information about the sample design see Section 2 of the report Health Survey for England 2015: Methods.

The complex survey design and the method of weighting the data (see Sections 7 and 8 of the Methods report) mean that analysis and statistical tests for significance should be done in a package which takes the complex survey design into account, e.g. Stata or SPSS 15 or later versions.

Sample size

The achieved sample size for 2015 at the interview stage was 8,034 adults aged 16 and over and 2,123 children aged 0 to 15 for the ‘core’ survey, including 5,378 adults and 1,297 children who had a nurse visit.

An additional 3,591 children aged between 2 and 15 were interviewed as part of the child boost.
Data collection and response

Ethical approval

Ethical approval for the 2015 survey was obtained from the West London Research Ethics Committee (reference number 14/LO/0862).

Data collection

Data collection involved both interviews and self-completion. The household interview included questions on household size, composition and relationships; type of dwelling, tenure, and the number of bedrooms; car ownership; smoking within the home; the economic status and occupation of the household reference person; and household income.

Adults were asked to participate in a face to face interview which included a self-completion questionnaire. The content of the self-completion booklets varied with age: young adults aged 16 to 17 asked about smoking and drinking behaviour as well as other questions. Interviewers also had the option of using this booklet for those aged 18 to 24 if they felt that it would be difficult for anyone in this age group to give honest answers to the questions face-to-face with other household members present.

In the core sample, children aged 0 to 15 were also interviewed and were eligible for a nurse visit. During the interview, those aged 13 to 15 answered on their own behalf while parents answered on behalf of children aged 0 to 12. In addition, children aged 8 and over answered questions on some sensitive topics within a self-completion questionnaire. In the child boost, children aged 2 to 15 were interviewed, following the same procedures as in the core sample.

Figure 1 summarises the interview topic coverage, and Figure 2 summarises the questions included in the self-completion booklets.

Interviewers also measured the weight of all participants and the height of everyone aged 2 and over.

For adults and children in the core sample, the interview was followed by a nurse visit. Children in the child boost sample did not have a nurse visit.

At the nurse visit, questions were asked about prescribed medicines, and adults were asked about the use of nicotine replacement products. Nurses took waist and hip measurements for those aged 11 and over and measured the blood pressure of those aged 5 and over. Adults were also asked to provide non-fasting blood samples for the analysis of total cholesterol, HDL cholesterol and glycated haemoglobin. Samples of saliva were taken from adults and children aged 4 and over for the analysis of cotinine (a derivative of nicotine that shows recent exposure to tobacco or tobacco smoke). Written consent was obtained for these samples. Details of the analysis of these samples are provided in Section 9 of the report Health Survey for England 2015: Methods.

Further information about topic coverage can be found in Section 3 of the report Health Survey for England 2015: Methods.
Figure 1: Content of interview by age group

<table>
<thead>
<tr>
<th>Age in years</th>
<th>0-1</th>
<th>2-4</th>
<th>5-15</th>
<th>16-64</th>
<th>65+</th>
</tr>
</thead>
<tbody>
<tr>
<td>General health, longstanding illness, limiting longstanding illness</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Self-reported height and weight</td>
<td></td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Personal care plans</td>
<td></td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Doctor diagnosed hypertension and diabetes</td>
<td></td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Use of health services</td>
<td></td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Shingles and stroke</td>
<td></td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Receipt of social care</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>•</td>
</tr>
<tr>
<td>Provision of social care</td>
<td></td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Smoking(^a)</td>
<td></td>
<td>•(^a)</td>
<td></td>
<td></td>
<td>•</td>
</tr>
<tr>
<td>Exposure to second-hand smoke</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
<td>•</td>
</tr>
<tr>
<td>Drinking(^a)</td>
<td></td>
<td>•(^a)</td>
<td></td>
<td></td>
<td>•</td>
</tr>
<tr>
<td>Fruit and vegetable consumption</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Physical activity</td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Height and weight measurements</td>
<td></td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Reported birth weight</td>
<td></td>
<td>•</td>
<td>•</td>
<td></td>
<td>•</td>
</tr>
<tr>
<td>Economic status, occupation</td>
<td></td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Educational attainment</td>
<td></td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Ethnic origin, national identity</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Consent to link data to health records</td>
<td></td>
<td></td>
<td></td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

\(^a\) Questions about smoking and drinking were included in the self-completion questionnaires for young adults aged 16 to 17. Interviewers also had the option of using this booklet for those aged 18 to 24 if they felt that they would be inhibited from giving honest answers to the questions face-to-face with other household members present.
Figure 2: Content of self-completion booklets by age group

<table>
<thead>
<tr>
<th>Age in years</th>
<th>8-12</th>
<th>13-15</th>
<th>16-17</th>
<th>18+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking(^a)</td>
<td>⋄</td>
<td>⋄</td>
<td>⋄</td>
<td></td>
</tr>
<tr>
<td>Drinking(^a)</td>
<td>⋄</td>
<td>⋄</td>
<td>⋄</td>
<td></td>
</tr>
<tr>
<td>Well-being (Warwick Edinburgh Mental Well-being Scale)(^b)</td>
<td></td>
<td>⋄</td>
<td>⋄</td>
<td>⋄</td>
</tr>
<tr>
<td>Well-being (ONS measures)(^b)</td>
<td>⋄</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gambling</td>
<td></td>
<td>⋄</td>
<td>⋄</td>
<td></td>
</tr>
<tr>
<td>Learning difficulties</td>
<td>⋄</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical activity(^b)</td>
<td>⋄</td>
<td>⋄</td>
<td>⋄</td>
<td></td>
</tr>
<tr>
<td>Perception of own weight</td>
<td>⋄</td>
<td>⋄</td>
<td>⋄</td>
<td>⋄</td>
</tr>
<tr>
<td>Perception of child’s weight</td>
<td></td>
<td>⋄</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning difficulties(^c)</td>
<td>⋄</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual orientation</td>
<td>⋄</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion</td>
<td>⋄</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Interviewers had the option of using the booklet for 16 and 17 year olds for those aged 18 to 24 if they felt that they would be inhibited from giving honest answers to the questions about smoking and drinking face-to-face with other household members present.

\(^b\) In January and February 2015, there was no child boost sample and the booklets for children aged 8 to 15 omitted questions about well-being and physical activity.

\(^c\) Adults were asked about their own experience of learning difficulties; parents answered on behalf of children aged 11 to 15. In addition, a responsible adult completed a similar questionnaire on behalf of anyone in the household who had already been identified as having learning difficulties.

Fieldwork procedures, documents and protocols

Full details of the fieldwork procedures can be found in Sections 4 and 5 of the report Health Survey for England 2015: Methods.


Interview length

Interviews could be conducted with between one and four persons per session; the most common session types were with one or two individuals. The median interview length for a single adult was 38 minutes, and for two people (including at least one adult) median interview length was 59 minutes. Nurse visits were conducted with a single individual at a time, and the nurse visit for adults who took part in all the
measurements averaged 33 minutes\(^2\). Interviews with children were shorter than with adults, and the interview length varied with age as some modules were only asked of older children. When children were interviewed without adults, the median interview length was 26 minutes for a single child aged 8 to 15, and 40 minutes for two children of this age. The median length of the nurse interview for a child was 11 minutes.

**Consents**

Verbal consent was obtained for the following during the interview or nurse visit:

- Interview
- Completing self-completion booklet
- Nurse visit
- Taking height and weight measurements
- Taking waist and hip measurements
- Taking blood pressure measurements

Written consent was obtained for the following during the interview or nurse visit:

- Collecting blood and saliva samples
- Sending results from the nurse visit to the GP
- Storing a small amount of the blood sample
- Data linkage of survey results to the Hospital Episode Statistics and the NHS Central Register for mortality and cancer.

Fully informed consent requires a full explanation of the study and what is required of the participant. Assent - seeking the child’s agreement - requires a clear, age-appropriate explanation which is comprehensible rather than comprehensive, since consent will be sought from the parent.

Adults aged 16 and over gave informed consent for all stages of the interview and nurse visit process. Parents gave verbal or written consent for their children aged 0-15, and the children themselves gave verbal assent for the interview, nurse visit and measurements. If children were able to, they gave written assent for results being sent to their GP and giving a saliva sample.

**Fieldwork period**

For the core (general population) survey, addresses were issued in 12 monthly batches from January to December, with an additional issue of addresses in January 2016. The child boost addresses were issued in 12 monthly batches between March 2015 and February 2016.

All fieldwork was completed in April 2016.

**Response rate**

In the general population sample, a household response rate of 60% was achieved. A total of 8,034 adults and 2,123 children were interviewed. This is equivalent to an
individual response rate of 57% of adults and 62% of children. Within co-operating households, 85% of adults and 91% of children were interviewed. In addition, 5,378 adults and 1,297 children who had a nurse visit. Tables 1 and 2 show the response rates to the different survey elements for adults and children.

**Table 1: Response among all adults**

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
<th>All adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviewed</td>
<td>54%</td>
<td>61%</td>
<td>57%</td>
</tr>
<tr>
<td>Height measured</td>
<td>47%</td>
<td>54%</td>
<td>51%</td>
</tr>
<tr>
<td>Weight measured</td>
<td>47%</td>
<td>52%</td>
<td>50%</td>
</tr>
<tr>
<td>Saw a nurse</td>
<td>36%</td>
<td>41%</td>
<td>38%</td>
</tr>
<tr>
<td>Waist and hip measured</td>
<td>35%</td>
<td>39%</td>
<td>37%</td>
</tr>
<tr>
<td>Blood pressure measured</td>
<td>35%</td>
<td>40%</td>
<td>38%</td>
</tr>
<tr>
<td>Gave blood sample</td>
<td>27%</td>
<td>30%</td>
<td>28%</td>
</tr>
<tr>
<td>Gave saliva sample</td>
<td>34%</td>
<td>39%</td>
<td>37%</td>
</tr>
</tbody>
</table>

**Table 2: Response among all children in general population (core) sample**

<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th>Girls</th>
<th>All children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviewed</td>
<td>61%</td>
<td>63%</td>
<td>62%</td>
</tr>
<tr>
<td>Height measured</td>
<td>42%</td>
<td>45%</td>
<td>43%</td>
</tr>
<tr>
<td>Weight measured</td>
<td>47%</td>
<td>51%</td>
<td>49%</td>
</tr>
<tr>
<td>Saw a nurse</td>
<td>37%</td>
<td>38%</td>
<td>38%</td>
</tr>
</tbody>
</table>

The response rate varied by age and sex, as well as by region and type of dwelling. In the child boost sample, 63% of eligible households took part. A total of 3,591 children aged between 2 and 15 were interviewed, a response rate of 96% in co-operating households.


Analysis

Weighting the data

Weighting is applied to HSE 2015 data to correct for probabilities of selection and to minimise bias from non-response.

Selection weights have been applied to HSE samples to correct for the probability of selection in two situations:

- If there were multiple dwelling units or households at a selected address, in which case only one was selected at random
- If there were more than two children at the selected address, in which case two were selected at random.

From 2003 a non-response adjustment was also incorporated into the weighting strategy. Both selection and non-response weights were applied to HSE 2015 data.

An interview weight is provided. To account for the child boost sample and because of sample attrition, further separate weights have been calculated for data from different stages of the survey (see below).

Further detail about how the weights were calculated and combined can be found in Section 7 of the report Health Survey for England 2015: Methods.

Note that the complex survey design and the method of weighting the data mean that analysis and statistical tests for significance should be done in a package which takes the complex survey design into account, e.g. Stata or SPSS 15 or later versions.

Selecting the appropriate weight

Different weights have been provided to be used as appropriate.

- Core sample interview (adult and child)
- All children (core and boost)
- Nurse visit
- Cotinine (saliva) sample (adults and children)
- Blood sample (adults only)
- Gambling questionnaire (within the self-completion questionnaires for adults)

If questions from different stages of the survey are combined in analysis, the weights for the latest stage of the survey should be used (that is, the latest in the list above). For instance, if blood sample results are being cross-tabulated with questions from the interview stage, the blood sample weight should be used; or if waist circumference results (from the nurse visit) are cross-tabulated with BMI data from the interview, the nurse visit weight should be used.
Weighted data

All 2015 data in the topic reports and trend tables are weighted. Both weighted and unweighted bases are given in each table. The weighted numbers show the relative size of each group in the population, so that data from different columns can be combined in their correct proportions. The unweighted bases show the actual number of participants in each group.

Standard breakdowns

For most data analysis in the topic reports, four standard analysis breakdowns have been used.

Age

For adults, 10-year age groups have been used in the trend tables and topic reports, from 25 to 34 upwards (with 16 to 24 as the youngest age group). Where numbers allow, the oldest age group reported is 85 and over.

The age groups shown for children vary, as pragmatic decisions have been taken within each topic report to make the results as meaningful as possible. The age groups used are a compromise between providing detailed age-specific data while ensuring sufficient bases for each analysis.

Region

Analysis by region is provided throughout the topic reports. The former Government Office Regions have been used.

Both observed and age-standardised data are provided by region in the tables. Observed data can be used to examine actual prevalence or mean values within a region. Age-standardised data are required for comparisons between regions to exclude age-related effects.

Base sizes for regions are often relatively small, and caution should be exercised in examining regional differences.

Equivalised household income

This measure of income takes into account the number of persons in the household. More detail of how this is derived is provided in the Glossary, Appendix B of the report Health Survey for England 2015: Methods.

Index of Multiple Deprivation (IMD)

This index combines a number of indicators, chosen to cover a range of economic, social and housing issues, into a single deprivation score for each small area in England. This allows each area to be ranked relative to others according to their level of deprivation. Quintiles (fifths) of IMD are used in the tables.

Age-standardisation

Most adult tables, apart from the age and sex tables, have been age-standardised. This allows comparisons between groups after adjusting for the effects of any difference in age distributions.
Analyses for adults are generally presented separately for men and women. All age standardisation has been undertaken separately within each sex. When comparing data for the two sexes, it should be remembered that no standardisation has been introduced to remove the effects of the sexes’ different age distributions.

When comparing prevalence across regions by age the age-standardised values should be used. However when looking at actual prevalence within one region, the observed values should be used.

**Design effects and true standard errors**

HSE 2015 used a complex survey and weighting design. One of the effects of this is that the standard errors for the survey estimates are generally higher than the standard errors that would be derived from an unweighted simple random sample of the same size.

The ratio of the standard error of the complex sample to that of a simple random sample of the same size is known as the design factor or ‘deft’. It is the factor by which the standard error of an estimate from a simple random sample has to be multiplied to give the true standard error of the complex design. True standard errors and defts are shown for key survey estimates are provided on the website via [www.digital.nhs.uk/pubs/hse2015](http://www.digital.nhs.uk/pubs/hse2015).

**Significance testing**

Significance testing was carried out to evaluate findings in the 2015 topic reports. The term ‘significant’ refers to statistical significance at the 95% level and is not intended to imply substantive importance. A p-value is the probability of the observed result occurring due to chance alone. A p-value of less than 5% is conventionally taken to indicate a statistically significant result (p<0.05). It should be noted that the p-value is dependent on the sample size, so that with large samples differences or associations which are very small may still be statistically significant.

The significance tests are carried out in order to test the relationship between variables in a cross tabulation, usually an outcome variable nested within sex, cross-tabulated with an explanatory variable such as age (in categories), income groups or region. The test is for the main effects only (using a Wald test). For example the test might examine whether there is a statistically significant relationship between smoking prevalence and age (after controlling for sex) and between smoking prevalence and sex (after controlling for age).

It is worth noting that the test does not establish whether there is a statistically significant difference between any particular pair of subgroups (e.g. the highest and lowest subgroups). Rather it seeks to establish whether the variation in the outcome between groups that is observed could have happened by chance or whether it is likely to reflect some ‘real’ differences in the population.

Using this method of statistical testing, differences which are significant at the 5% level indicate that there is sufficient evidence in the data to suggest that the differences in the sample reflect a true difference in the population.

**Table conventions**

For further information about the data analysis and reporting of HSE 2015, see Section 8 of the report Health Survey for England 2015: Methods.

**Biological samples**

**Sample analytes**

Blood samples were tested for total and HDL cholesterol and glycated haemoglobin (HbA$_{1C}$). Saliva samples were tested for cotinine, a derivative of nicotine.

**Quality control of blood and saliva analytes**

The overall conclusion for the 2015 data is that methods and equipment used for the measurement of blood and saliva analytes produced internal quality control (IQC) and external quality assessment (EQA) results within expected limits. The results of the analyses for each of the main blood analytes and saliva cotinine levels were acceptable for the HSE 2015.

For details of procedures used in the collection, processing and transportation of the biological specimens see Section 9 of the report Health Survey for England 2015: Methods, and the accompanying documentation.

**Internal Quality Control (IQC)**

Internal quality controls help identify and prevent the release of any errors in an analytical run, as well as being used to monitor trends over time.

For each analyte or group of analytes, the laboratory obtains a supply of quality control materials. The results obtained by the laboratory are evaluated from replicate measurements (over several runs) in conjunction with target values provided by manufacturers of IQC materials, if available. IQC values are assessed against an acceptable range and samples are re-analysed if they are not within the acceptable range.

For further information on IQC see Section 9 of the report Health Survey for England 2015: Methods. Full tables are provided in Appendix A of that report.

**External Quality Assessment (EQA)**

EQAs allow the comparison of results between laboratories measuring the same analyte. An EQA scheme for an analyte or group of analytes distributes aliquots (sub-samples) of the same samples to participating laboratories, which are blind to the concentration of the sample received. This process is repeated with multiple samples over the course of a year. Results are returned to the scheme organisers, who provide a laboratory-specific report including the mean values, measures of between-laboratory precision and the bias of the results obtained by that laboratory.

EQA is a retrospective process of assessment of performance, especially of inaccuracy or bias related to mean values. Unlike IQC it does not provide control of release of results at the time of analysis.

For further information on IQC see Section 9 of the report Health Survey for England 2015: Methods. Full tables are provided in Appendix A of that report.
Notes

1 For some blood sample analyses it is necessary for participants to fast for a period before the sample is taken as the composition of the blood sample is affected by recent intake of food or drink. However, for the analytes in the HSE, 'non-fasting' blood samples can be used and participants do not have to fast before the nurse visit.

2 The median is the value of a distribution which divides it into two equal parts such that half the cases have values below the median and half the cases have values above the median. It may be a better indicator of interview length than the mean, which can be disproportionately influenced by a relatively small number of cases with very high values (i.e. very long interviews). This can happen because of interruptions, because the respondent has a great deal of information to impart or because the pace of the interviewer is slower than usual, for example because the respondent has difficulties in comprehending questions or instructions.