A survey carried out on behalf of The NHS Information Centre
Edited by Rachel Craig and Jennifer Mindell

Joint Health Surveys Unit

NatCen
National Centre for Social Research

Department of Epidemiology and Public Health,
UCL Medical School
A survey carried out on behalf of The NHS Information Centre

Health Survey for England

2010

Volume 1

Respiratory health

Edited by
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THE NHS INFORMATION CENTRE
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I am delighted to introduce the findings of the 20th annual Health Survey for England, which provides a crucial insight into the health and behaviour of people in England.

The survey is conducted annually on behalf of The NHS Information Centre for health and social care (The NHS IC), and collects information from a representative sample of the general population. Combining information gathered through interviewing the sampled respondents (including a wealth of socio-demographic variables) with objective measures of health such as height, weight and blood pressure measurements, its findings play a vital role in aiding better understanding of health issues and helping decision-makers manage policies to improve services.

The main focus of this year’s survey is respiratory health and lung function in both adults and children and it looks at respiratory symptoms, diagnosed diseases and their treatment, as well as measurement of lung function (spirometry).

Respiratory symptoms, such as wheezing, coughing, and shortness of breath, are very common among adults in England. The two most common respiratory diseases are asthma, particularly among younger adults, and chronic obstructive pulmonary disease (COPD), which is more common in older people; distinguishing between these can be difficult clinically, as well as in surveys.

The survey also examines the impact of respiratory symptoms and asthma on adults’ and children’s day to day life; according to the World Health Organization, more than half of those affected by asthma are suffering from allergic asthma (caused by an allergic reaction). Asthma is now one of the most common chronic diseases affecting an estimated 235 million people worldwide, and it is the most common chronic condition among children.

As well as the focus topics, in 2010 there are chapters covering contraception and sexual health, adult and child obesity, mental health and well-being, kidney disease, and dental health. However there is much more to the survey than can be covered in this volume; the trend tables published at the same time focus upon key changes in core topics and measurements, including estimates of the number, as well as the proportion, of people with a range of health related problems and lifestyle behaviours. In addition, the full dataset will be placed on the UK Data Archive at the University of Essex in 2012 to allow secondary analysis.

This is a large and complex survey only made possible by the hard work and dedication of a skilled team, along with the co-operation of all the respondents across England who took part. For this reason, I would like to pay tribute to all those who worked on this survey in the Joint Health Surveys Unit of the National Centre for Social Research (NatCen) and the Department of Epidemiology and Public Health at University College London (UCL) Medical School, as well as my colleagues within The NHS Information Centre. I would also like to thank the team of skilled interviewers and nurses whose commitment and hard work were crucial in the delivery of the survey, as well as the respondents who gave up their time to take part.

I am sure those reading the results of the 2010 Health Survey for England will find much to interest and inform them about the health and well-being of people in this country.

Tim Straughan

Chief Executive
The NHS Information Centre for health and social care
Editors’ acknowledgements

We wish to thank, first of all, all those who gave up their time to be interviewed and who welcomed interviewers and nurses into their homes. We should also like to acknowledge the debt the survey’s success owes to the commitment and professionalism of the interviewers and nurses who worked on the survey throughout the year.

We should like to thank all those colleagues who contributed to the survey and this report. In particular we would like to thank:

• The authors of all the chapters: Maria Aresu, Gary Boodhna, Alex Bryson, Sally Bridges, Moushumi Chaudhury, Elizabeth Fuller, Francis Green, Julia Hall, Vasant Hirani, Deborah Jarvis, Anne Johnson, Catherine Mercer, Jennifer Mindell, Anthony Nardone, Chloe Robinson, Paul Roderick, Marilyn Roth, Janet Stocks, Joanne Thompson.
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• The programmers, Jo Periam, Sandra Beeson, Sven Sjodin, Colin Miceli and Miness Patel.
• Those who helped with training and guidance for introducing the new spirometry equipment and protocol: Sue Hill, Brendan Cooper, Kevin Holt, Anamika Jithoo, Livio Gagliardi and staff at NDD; with over-reading results: Martyn Bucknall, Stephanie Rees, Jane Kirkby; and with reviewing the spirometry chapters: Ramyani Gupta, Professor Peter Burney.

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Last, but certainly not least, we wish to express our appreciation of the work of the staff at The NHS Information Centre at all stages of the project, and in particular the contributions made by Vicky Cooper, Paul Eastwood, Paul Glossop, Victoria Jones, Alison Neave, Sharif Salah, Jesmond Smith, Bethan Thomas and Steve Webster.

Rachel Craig, Jennifer Mindell
Notes

1. The data used in the report have been weighted. The weighting is described in Chapter 7, in Volume 2 of this report, Methods and documentation. Both unweighted and weighted sample sizes are shown at the foot of each table. The weighted numbers reflect the relative size of each group in the population, not numbers of interviews made, which are shown by the unweighted bases.

2. Children’s data each year have been weighted to adjust for the probability of selection, since a maximum of two children are selected in each household. This ensures that children from larger households are not under-represented. Since 2003, as for adults, non-response weighting has also been applied.

3. Six different non-response weights have been used: for the interview stage, for the nurse visit, for each of the blood, urine and cotinine samples, and for the spirometry sample.

4. The following conventions have been used in tables:
   - no observations (zero value)
   - 0 non-zero values of less than 0.5% and thus rounded to zero
   - [ ] used to warn of small sample bases, if the unweighted base is less than 50. If a group’s unweighted base is less than 30, data are normally not shown for that group.

5. Because of rounding, row or column percentages may not add exactly to 100%.

6. A percentage may be quoted in the text for a single category that aggregates two or more of the percentages shown in a table. The percentage for the single category may, because of rounding, differ by one percentage point from the sum of the percentages in the table.

7. Values for means, medians, percentiles and standard errors are shown to an appropriate number of decimal places. Standard Error may sometimes be abbreviated to SE for reasons of space.

8. ‘Missing values’ occur for several reasons, including refusal or inability to answer a particular question; refusal to co-operate in an entire section of the survey (such as the nurse visit or a self-completion questionnaire); and cases where the question is not applicable to the participant. In general, missing values have been omitted from all tables and analyses.

9. The group to which each table refers is stated at the upper left corner of the table.

10. The term ‘significant’ refers to statistical significance (at the 95% level) and is not intended to imply substantive importance.
1.1 The Health Survey for England series

The Health Survey for England (HSE) comprises a series of annual surveys, of which the 2010 survey is the twentieth. All surveys have covered the adult population aged 16 and over living in private households in England. Since 1995, the surveys have also covered children aged 2-15 living in households selected for the survey. Since 2001, infants aged under two have been included as well as older children.

The HSE is part of a programme of surveys currently commissioned by The NHS Information Centre for health and social care (NHS IC), and before April 2005 commissioned by the Department of Health. The surveys provide regular information that cannot be obtained from other sources on a range of aspects concerning the public’s health, and many of the factors that affect health. The series of Health Surveys for England was designed to:

1. Provide annual data from nationally representative samples to monitor trends in the nation’s health;
2. Estimate the proportion of people in England who have specified health conditions;
3. Estimate the prevalence of certain risk factors associated with these conditions;
4. Examine differences between subgroups of the population (by age, sex or income) in their likelihood of having specified conditions or risk factors;
5. Assess the frequency with which particular combinations of risk factors are found, and in which groups these combinations most commonly occur;
6. Monitor progress towards selected health targets; and since 1995
7. Measure the height of children at different ages, replacing the National Study of Health and Growth; and
8. Monitor the prevalence of overweight and obesity in children.

Each survey in the series includes core questions and measurements such as blood pressure, anthropometric measurements and analysis of blood and saliva samples, as well as modules of questions on specific issues that vary from year to year. In recent years, the core sample has also been augmented by an additional boosted sample from a specific population subgroup, such as minority ethnic groups, older people or, as in 2010, children.

The Health Survey for England has been designed and carried out since 1994 by the Joint Health Surveys Unit of the National Centre for Social Research (NatCen) and the Department of Epidemiology and Public Health at the University College London (UCL) Medical School.

1.2 The 2010 survey

1.2.1 Topics

The main focus of the HSE in 2010 was respiratory health and lung function. Additional modules of questions were also included covering contraception and sexual health, well-being, kidney disease and dental health.
Respiratory symptoms, such as wheezing, coughing, and shortness of breath, are very common among adults in England. In the HSE 2001, around one in three adults had a history of wheezing, while one in five had wheezed in the previous 12 months.¹ The two most common respiratory diseases are asthma, particularly among younger adults, and chronic obstructive pulmonary disease (COPD) which is more common in older people.

Asthma is an inflammatory disease of the airways leading to short term and sometimes very marked variations in airflow. Symptoms of wheezing, coughing, and shortness of breath occur. The prevalence of asthma has changed over the last century, and is now more common in children and young adults than in older adults. The prevalence of asthma in England and the UK is among the highest in the world with about 6% being recorded as having asthma by their GP.² Direct healthcare costs associated with asthma are estimated as £1 billion per year; GP prescriptions alone were estimated at £600 million per year in 2002. Asthma causes around 1,000 deaths and at least 12.7 million lost working days per year.²

The consultation document on chronic obstructive lung disease, published in February 2010 by the then government, included a chapter on asthma in which the Department of Health expressed its intention to produce a good practice guide for the management of asthma in adults.³ Self-management education, advice, and support including a personal asthma action plan, are important for all adults with asthma.

Chronic obstructive pulmonary disease (COPD) is defined by the World Health Organization (WHO) as ‘a lung disease characterised by chronic obstruction of lung airflow that interferes with normal breathing and is not fully reversible’.³ It is associated with symptoms and clinical signs that in the past have been called ‘chronic bronchitis’ and ‘emphysema’. It is a progressive systemic disease that results in debility over time. Around three million people in the UK are estimated to have COPD, of whom less than one-third (about 900,000) have been diagnosed.⁴ COPD is the fifth most common cause of death in England, killing more than 25,000 people annually.⁵ It is predicted to become the third most common cause of death worldwide by 2010.⁶ COPD most commonly develops after the age of 35 years but is seldom diagnosed before the age of 50. It is the second most common cause of emergency hospital admission in the UK.⁷ COPD accounts for 24 million working days in sick leave and £3.8 billion in direct costs from lost productivity in England per year.⁷

New national guidance⁴ and a COPD Outcomes Strategy⁶ aim to reduce mortality and morbidity from COPD by earlier detection and earlier and better treatment.

1.2.2 Sample size

Data collection involved an interview, followed by a visit from a specially trained nurse for all those in the core sample who agreed. The nurse visit included measurements and collection of blood, saliva and urine samples, as well as additional questions.

A total of 8,420 adults and 5,692 children were interviewed, with 2,074 children from the core sample and 3,618 from the boost. A household response rate of 66% was achieved for the core sample, and 70% for the boost sample. Among the general population sample, 5,587 adults and 1,327 children had a nurse visit.

1.3 Ethical approval

Ethical approval for the 2010 survey was obtained from the Oxford B Research Ethics Committee (reference number 09/H0605/73).
1.4 2010 survey design

1.4.1 Introduction

The survey was designed to yield a representative sample of the general population of any age, and a boost sample of children aged 2-15, living in private households in England. More detailed information about survey design is presented in Chapters 2-7, Volume 2 of this report.

Those living in institutions were outside the scope of the survey. This should be borne in mind when considering survey findings since the institutional population is likely to be older and, on average, less healthy than those living in private households.

1.4.2 The core general population sample

A random sample of 8,736 core addresses was selected from the Postcode Address File (PAF), using a multi-stage sample design with appropriate stratification. Addresses in smaller Strategic Health Authorities (North East, East Midlands, South East Coast and South Central) were over-sampled to provide a minimum sample size (of approximately 700 adults) in each Strategic Health Authority for regional analyses. 672 postcode sectors were selected, and 13 core addresses were issued in each.

Where an address was found to have multiple dwelling units, one was selected at random. Where there were multiple households at a dwelling unit, a single household was selected at random.

Each individual within a selected household was eligible for inclusion. Where there were more than two children in a household, two were randomly selected for inclusion, to limit the burden on any household.

1.4.3 The child boost sample

To increase the number of children in the sample, a boost sample was used. The boost sample was obtained by randomly selecting 17,136 addresses from the PAF. 10,752 addresses were selected in the 672 core postcode sectors (16 per sector); and 6,384 addresses were selected in 168 additional boost-only postcode sectors (38 per sector). As for the core sample, dwelling unit and household selection was made when necessary, and where there were three or more children in a selected household, two of the children were selected at random to limit the respondent burden for parents.

1.4.4 Fieldwork

Interview

A letter stating the purpose of the survey was sent to each sampled address before the interviewer visited. The interviewer sought the permission of each eligible selected adult in the household to be interviewed, and both parents’ and children’s consent to interview selected children aged up to 15.

Computer-assisted interviews were conducted. The content of the interview is detailed in Volume 2, Chapter 3; full documentation is provided in the Appendices to Volume 2.

Adults were asked core modules of questions on general health, alcohol consumption, smoking and fruit and vegetable consumption, and were also asked about respiratory health, kidney disease and dental health.

Children aged 13-15 were interviewed themselves, and parents of children aged 0-12 were asked about their children, with the interview including questions on respiratory health, general health and fruit and vegetable consumption.

Adults and children aged 8-15 were asked to fill in a self-completion booklet during the interview; this covered the General Health Questionnaire (GHQ12) for those aged 13 and over; the Warwick-Edinburgh Mental Well-being Scale (WEMWBS) and EQ-5D for adults.
aged 16 and over; and questions on contraception and sexual health for adults aged 16-69. For children and some young adults details of drinking and smoking were also collected by self-completion.

Height and weight measurements were taken at the end of the interview.

**Nurse visit**

Nurse visits were offered to all participants in the core sample. At the nurse visit, questions were asked about prescribed medication, vitamin supplements and use of nicotine replacements. For infants, additional information was collected on immunisations and measurements at birth. Nurses took waist and hip measurements for those aged 11 and over, spirometry (lung function measurements) for those aged 7 and over, and measured the blood pressure of those aged 5 and over.

Non-fasting blood samples (for the analysis of total and HDL cholesterol, glycated haemoglobin, serum creatinine and Vitamin D), and samples of urine (for the analysis of sodium, potassium, creatinine, albumin and, for those aged 35 and over, melatonin) were taken from adults aged 16 and over. Samples of saliva (for the analysis of cotinine, a derivative of nicotine) were taken from participants aged 4 and over. Written consent was obtained for these samples.

**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. Interview length for a single adult averaged around 50 minutes, and for two people (including at least one adult) interview length averaged around 60 minutes. Nurse visits were conducted with a single individual at a time, and the nurse visit for adults who took part in all the measures averaged 50 minutes.

Interviews with children were shorter than with adults, and the interview length varied with age as some modules were only asked of older children. In child boost households where only children were interviewed, the average interview length was around 20 minutes for a single child aged 8-15, and around 25 minutes for two children of this age.

### 1.5 Survey response

Interviews were held in 5,249 households with 8,420 adults aged 16 and over, and 2,074 children aged 0-15 from the general population. The boost sample resulted in an additional 3,618 children aged 2-15 being interviewed, giving a total child sample of 5,692. Among the general population sample, 5,587 adults and 1,327 children had a nurse visit. More detailed information on survey response can be found in Volume 2, Chapter 6.

Response to the survey can be calculated in two ways: at a household level and at an individual level. Interviews were carried out at 66% of sampled eligible households in the general population (after removing vacant addresses etc.), and at 70% of known eligible boost sample households. Within the general population sample, interviews were obtained with 86% of adults and 93% of (sampled) children in ‘co-operating’ households (where at least one person was interviewed).

The assumption is made that households where the number of adults and children was not known contained, on average, the same number of adults and children as households where it was known. On this basis, the individual response rate for the general population sample, based on all eligible households, was estimated to be 58% among adults and 65% among (sampled) children.

Table 1A shows individual response rates to the different stages of the survey for adults in the general population sample. The first column gives the individual response rates for adults in all eligible households, and the second column gives individual response rates for adults in co-operating households.
In the core sample, the response among eligible children in all eligible households was 65%, and 42% saw a nurse. Table 1B shows a summary of responses obtained to the interview component of the survey among the total sample of children, from the core and boost sample, in co-operating households.

Only children in the core sample were eligible for the nurse visit. Table 1C shows, for children in core co-operating households only, the response to the nurse visit and nurse measures.

### 1.6 Data analysis

#### 1.6.1 Introduction

The HSE is a cross-sectional survey of the population. It examines associations between health states, personal characteristics and behaviour. However, such associations do not necessarily imply causality. In particular, associations between current health states and current behaviour need careful interpretation, as current health may reflect past, rather than present, behaviour. Similarly, current behaviour may be influenced by advice or treatment for particular health conditions.

#### 1.6.2 Weighting the samples

**The general population sample**

For the general population sample, weights were calculated at the household level and at the individual participant level. The household weight corrected for the probability of selection where additional dwelling units or households were identified at a selected address. Calibration weighting was also used for adults to reduce non-response bias resulting from differential non-response at the household level, based on the age and sex profile of the
residents and the region in which the household was situated. 86% of adults in participating households were interviewed, and weights were therefore also calculated at an individual level to correct for non-response within participating households.

The sample of children

The sample of children comprised all those aged 0-15 from the core sample and those aged 2-15 from the boost sample. The weights for the child sample include selection weights for the dwelling unit/household, selection weights for the children in the household, and calibration weighting to adjust the sex and age profile of the achieved sample.

Non-response weighting for the nurse visit and samples

Further weights were calculated for the core sample, as well as weights to allow for non-response at the interview stage. These were to adjust for non-response to the nurse visit, the spirometry measurement and for obtaining a saliva, urine or blood sample.

Further details on the weighting procedures are given in Volume 2, Chapter 7.

1.6.3 Weighted and unweighted data and bases in the report

All 2010 data in this report are weighted. Both weighted and unweighted bases are given in each table in the report. The unweighted bases show the number of participants involved. The weighted bases show the relative sizes of the various sample elements after weighting, reflecting their proportions in the population in England, so that data from different columns can be combined in their correct proportions.

Non-response weighting was introduced to the HSE in 2003, and has been used in all subsequent years. In this report, chapters focus on 2010 results, but in a small number of chapters trend tables are presented. In tables for adults, results for years up to 2002 are unweighted and from 2003 onwards results are weighted. For tables showing trends in children’s data, results for years up to 2002 have selection weighting only, and results for 2003 onwards have both selection and non-response weighting.

1.6.4 Age as an analysis variable

Age is a continuous variable but results are presented in this report by age groups. Age in Health Survey for England reports always refers to age at last birthday.

1.6.5 Age standardisation

Adult data have been age-standardised throughout the 2010 report to allow comparisons between groups after adjusting for the effects of any differences in their age distributions. When different sub-groups are compared in respect of a variable on which age has an important influence, any differences in age distributions between these sub-groups are likely to affect the observed differences in the proportions of interest.

It should be noted that all analyses in the report are presented separately for men and women. All age standardisation has been undertaken separately within each sex, expressing male data to the overall male population and female data to the overall female population. When comparing data for the two sexes, it should be remembered that no age standardisation has been introduced to remove the effects of the sexes’ different age distributions.

Details of the direct standardisation method used are given in Volume 2, Chapter 8.

1.6.6 Standard analysis breakdowns

For most tables in this report, three standard analysis breakdowns have been used as well as age. These are Strategic Health Authority (SHA), equivalised household income and Spearhead status.
Strategic Health Authority

From July 2006 a new configuration of Strategic Health Authorities (SHAs) was introduced in England, reducing the number from 28 to 10 SHAs. The boundaries are the same as those of Government Office Regions (GOR) with the exception of South East Coast SHA and South Central SHA, which are combined into the South East GOR.

Both observed and age-standardised data are provided by SHA 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 areas to exclude age-related effects, and are discussed in the report text.

It should be noted that base sizes for SHAs are often relatively small, and caution should be exercised in examining regional differences. In 2010, the smaller Strategic Health Authorities (North East, East Midlands, South East Coast and South Central) were oversampled to provide a minimum unweighted sample size of approximately 700 adults; the weighting process adjusted for this.

Equivalised household income

The second standard breakdown is equivalised household income. Household income was established by means of a show-card (see Appendix A in Volume 2, Methods and documentation) on which banded incomes were presented. This can be used as an analysis variable, but there has been increasing interest recently in using measures of equivalised income that adjust income to take account of the number of persons in the household. To derive this, each household member is given a score based, for adults, on the number of adults apart from the household reference person, and for dependent children, on their age. The total household income is divided by the sum of the scores to provide the measure of equivalised household income. All individuals in each household were allocated to the equivalised household income quintile to which their household had been allocated.

Further details about equivalised household income are given in the Glossary at the back of Volume 2.

Spearhead status

Spearhead Primary Care Trusts (PCTs) are the most health-deprived areas of England. They are defined as the local authority (LA) areas that are in the bottom fifth nationally for three or more of the following five indicators:

- Male life expectancy at birth
- Female life expectancy at birth
- Cancer mortality rate in those aged under 75
- Cardiovascular disease (CVD) mortality rate in those aged under 75
- Index of multiple deprivation 2004 (LA summary), average score.

These local authority areas have been mapped onto primary care trust boundaries to identify Spearhead PCTs. This report uses Spearhead status as designated in 2008.

1.6.7 Logistic regression analysis

Logistic regression modelling has been used in some chapters to examine the factors associated with selected outcome variables, after adjusting for other predictors. For instance in Chapter 3, regression analyses have been performed to examine the association between possible abnormal lung function (the outcome variable), and a variety of predictor variables including age, participants’ self-reported respiratory conditions, smoking and BMI status and income. Forward stepwise models have been used for men and women separately. An estimate is given of the independent effect of each predictor variable on the outcome when all the other independent variables were included in the model.

The results of the regression analyses are presented in tables showing odds ratios for the final models, together with the probability that the association is statistically significant. The predictor variable is significantly associated with the outcome variable if p<0.05. The models show the odds of being in the particular category of the outcome variable (i.e.
having possible airflow limitation) for each category of the independent variable (e.g. quintile of equivalised household income). Odds are expressed relative to a reference category, which has a given value of 1. Odds ratios greater than 1 indicate higher odds, and odds ratios less than 1 indicate lower odds. Also shown are the 95% confidence intervals for the odds ratios. Where the interval does not include 1, this category is significantly different from the reference category. Missing values were included in the analyses, that is, people were included even if they did not have a valid answer, score or classification (on income); since on income there was a large number of missing values, these were included as a separate category rather than being combined with another category.

1.6.8 Statistical information

The HSE 2010 used a clustered, stratified multi-stage sample design. In addition, weights were applied when obtaining survey estimates. One of the effects of using the complex design and weighting is that standard errors for survey estimates are generally higher than the standard errors that would be derived from an unweighted simple random sample of the same size. The calculations of standard errors shown in tables, and comments on statistical significance throughout the report, have taken the clustering, stratification and weighting into account. Full details of the sample design and weighting are given in Volume 2, Methods and documentation.

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. Put another way, the design factor (or ‘deft’) 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. The true standard errors and defts for the HSE 2010 have been calculated for selected survey estimates presented in the topic chapters, and are shown in Volume 2, Tables 17-27.

1.6.9 Presentation of results

Commentary in the report highlights differences that are statistically significant at the 95% level. It should be noted that statistical significance is not intended to imply substantive importance.

A summary of findings is presented at the beginning of each chapter. Following the chapter introduction and details of methods and definitions, the results are outlined in detail, and a discussion section at the end of most chapters makes comparisons with other data sources and trend data, and sets the results in a broader context. Tables at the end show the results discussed in the chapter, and as well as prevalence percentages, means and standard errors are presented when appropriate.

1.6.10 Availability of further data

As with surveys from previous years, a copy of the HSE 2010 data will be deposited at the Data Archive at the University of Essex. Copies of anonymised data files can be made available for specific research projects through the Archive. In addition, trend tables showing data for variables collected every year (‘core’ modules) for adults and children are available on The NHS Information Centre’s website.

1.7 Content of this report

This volume contains chapters with substantive results from the 2010 HSE, and is one of two volumes based on the survey, published as a set as ‘The Health Survey for England 2010’:

Volume 1: Respiratory health
Volume 2: Methods and documentation

Volume 2 gives full details of the survey methods and documentation. This includes a description of the survey design and response rates; sampling errors; analysis of non-
response; description of weighting procedures; and information on laboratory techniques and quality control of analysis of saliva, urine and blood samples. Appendices to Volume 2 are as follows:

Appendix A: Questions asked by interviewers and nurses and copies of other key fieldwork documents
Appendix B: Protocols for measurements
Appendix C: Glossary.

References and notes

3 www.who.int/respiratory/copd/definition/en/index.html
8 www.esds.ac.uk/government/hse/
9 www.ic.nhs.uk/pubs/hse10trends

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**National Centre for Social Research**

www.natcen.ac.uk

The National Centre for Social Research is the largest independent social research institute in Britain, specialising in social survey and qualitative research for the development and evaluation of policy. NatCen specialises in research in public policy fields such as health, housing, employment, crime, education and political and social attitudes. Projects include ad hoc and continuous surveys, using face-to-face, telephone, online and postal methods; many use advanced applications of computer assisted interviewing. NatCen has approximately 275 staff, a national panel of over 1,000 interviewers, and 150 nurses who work on health-related surveys.

**Research Department of Epidemiology and Public Health, UCL Medical School**

www.ucl.ac.uk/epidemiology

The Research Department of Epidemiology and Public Health, chaired by Professor Richard Watt, is a leading centre for research into the social determinants of health. The department has a strong interdisciplinary structure. The Department houses over 180 staff in 13 main research groups, including the Joint Health Surveys Unit, part of the Health and Social Surveys Research Group. Collaborative research is conducted through the International Institute for Society and Health and across the Division.

The Department’s research programme is concerned particularly with social factors in health and illness and inequalities in these, including national cross-sectional surveys of health and behaviour (such as diet), longitudinal studies of cardiovascular disease (Whitehall studies) and the English Longitudinal Study of Ageing (ELSA); international studies of cardiovascular disease and diabetes; socio-dental indicators of need; and the socio-economic and policy implications of an ageing population.