The Prevalence of Smoking in the North East

Background
This report updates and replaces Occasional Paper 30. Sources of data used to construct measures of smoking prevalence have changed, importantly with the first publication in 2011, of data from the Integrated Household Survey. The purpose of this report is to describe the data sources that can be used at Regional level by Fresh (Smoke Free North East, SFNE) and at local level to provide support for service commissioners and providers in tobacco control.

Cigarette smoking is a well recognised cause of preventable ill health, premature death and health inequalities in the North East of England.

Smoking causes chronic respiratory disease, cardiovascular disease, cancers of lung and other sites. Smoking is more common amongst the disadvantaged than affluent members of society\(^1,2\).

Reducing smoking prevalence, particularly in the more deprived, is essential to reducing health inequalities in the North East\(^3\).

To address these inequalities we need information on smoking prevalence at a number of different levels:
- Regional (e.g. Fresh);
- Local (e.g. local authority);
- Neighbourhood (e.g. electoral ward/Middle Layer Super Output Area (MSOA)).

The information is required for a number of purposes including:
- Comparing between groups and areas to understand underlying problems and inequalities;
- Planning and targeting services;
- Advocating for change; and
- Monitoring changes.

This paper describes the data sources that Fresh use as ‘official’ figures (e.g. for media enquiries and other agencies).

There are other data sources which can be used to examine smoking prevalence, however it is recommended that the figures in this report should be used wherever possible.

We do not recommend the local collection of further smoking prevalence data without discussion with SFNE.

Summary
Advised sources of smoking data:
- the General Lifestyle Survey (GLF) remains the UK’s official statistics, but only available at National and Regional level,
- at regional and local authority level data from the Integrated Household Survey (IHS) is most accurate; and
- for small areas use synthetic estimates of smoking prevalence produced in the Public Health Observatory Local Health profiles. Caution should be used in their interpretation because of wider confidence intervals, not being suitable to monitor change, and lack of comparability with IHS data.
Regional Level

Previously data from the General Household Survey (GHS), now General Lifestyle Survey (GLF) was used to monitor smoking prevalence at regional level. The reasons for this were that: i) the National Tobacco team used the GHS; ii) it provided trend data for several years; and iii) the GHS would be incorporated into the new Integrated Household Survey (IHS).

The General Household Survey – General Lifestyle Survey

The General Household Survey changed its name in 2008 to the General Lifestyle Survey to coincide with its inclusion as a module in the IHS. The survey is a continuous national survey of people living in private households in England, conducted by the Office for National Statistics. The sample size for the most recent survey (2009, at the time of writing the report) was 8206 households and 15 325 individuals, with an approximately 73% response rate.

The smoking questions were answered by 13 488 individuals, this sample size represents a small proportion of the population (580 individuals in the North East) and useful information can only be made at relatively large population sizes. Consequently, results are not usually reported below regional level, but can be used to model synthetic estimates at a lower level. However, the inclusion of questions on smoking in every year since 2000, together with the relative stability of smoking prevalence in recent years, facilitates the combination of several years of data to enable more robust regional comparisons to be made.4

The North East data from the 2009 GHS/GLF gives a smoking prevalence of 22% (20% of men and 23% of women, sample size 580) compared to 21% for Great Britain (22% in men 20% in women). The 2007-09 combined data (sample size 1870) are: North East 22% overall: 19% in men and 23% in women. For Great Britain they are: 21% overall, 22% in men and 20% in women.

Figure 1 Prevalence of cigarette smoking: North East, 1998 to 2009 (single year data)

Source: Office for National Statistics: General Lifestyle Survey
The Integrated Household Survey (IHS)

The survey is a composite survey combining responses from a number of surveys carried out by the Office for National Statistics (ONS). It is an un-clustered, household survey, with full implementation having taken two years (starting January 2008) to bring all surveys into this format. The April 2009 - March 2010 sample size was approximately 450,000 individuals across Great Britain and Northern Ireland. This equates to nearly 16,500 adults per year in the North East – sufficient to measure annual changes at Local Authority level. Core topics asked of all people surveyed cover demography, health, limiting long term illness and smoking. Questions (to over 18s) are Have you ever smoked? and Do you smoke now?

In March 2011, ONS released revised data from the first IHS for the period April 2009 – March 2010, having improved weighting methods applied to the data previously released in September 2010. Smoking prevalence for the North East and England for this period are reported in the box below.

The North East data from the first IHS for April 2009 – March 2010 gives a prevalence of 24.3% (confidence interval 23.6% - 24.9%)\(^5\). 25.0% male (confidence interval 23.7% - 26.4%) and 23.9% female (confidence interval 22.6% - 25.1%), from a sample size of 16470\(^6\).

The prevalence for England is 21.4% (confidence interval 21% - 22%), 23.8% for males (confidence interval 23.4% – 24.1%) and 19.1% for females (confidence interval 18.8% - 19.4%)\(^6\).

There is also regional smoking prevalence data reported on smokers within the routine and manual group (NSSEC socio-economic classification) for April 2009 – March 2010. The prevalence for the North East is 32.2% (confidence interval 30.9% - 33.4%) from a sample size of 5141. The prevalence for England is 29.7% (confidence interval 29.4 – 30.1%)\(^5\).

Unlike the old GHS, the IHS data is updated quarterly and is able to provide a rolling 12 month smoking prevalence figure. North East and England prevalence figures for the twelve months April 2010 – March 2011 were released in November 2011: North East 22.4% (confidence interval 21.8% - 23.0%, sample size 19,501), England 20.7% (confidence interval 20.5% - 20.8%). These figures show a significant drop in smoking prevalence for the North East from April 2009 – March 2010, reported in the box above.

Updated releases of the IHS are available from the London Public Health Observatory web site: [www.lho.org.uk/viewResource.aspx?id=16678](http://www.lho.org.uk/viewResource.aspx?id=16678). These releases however do not show smoking prevalence broken down by male and female. Updates on these statistics can only be made once the raw data from the survey has been made more widely available. Data for April 2010 – March 2011 were not available at the time of the release of this report to update the figures in the box above.
Local Authority Level

There are two nationally available sources of smoking prevalence data at local authority level: model based estimates of current smoking and data published from the IHS. For information, there are also a number of other sources of smoking prevalence estimates for local authorities, including: local lifestyle surveys, commercial data and primary care data, each with their own strengths and weaknesses.\(^7\)\(^8\)

However, it is recommended that only data from the Integrated Household Survey be used to report on smoking prevalence at local authority level. As with the regional data, the local authority data from the IHS is updated quarterly and provides a rolling 12-month prevalence figure. IHS smoking prevalence figures for North East local authorities are presented in table 1 and figure 2 for April 2010 – March 2011.

Model based estimates are presented in figure 3 for comparison purposes only, they are now out of date and have been superseded by the IHS data. The estimates were produced by the National Centre for Social Research (NatCen) in February 2010, based on the Health Surveys for England 2006 – 2008. The estimates are based on a model, and only indicate an expected prevalence, given the population and social characteristics of an area. NatCen suggested words such as: ‘given the characteristics of the local population, we would expect a prevalence of approximately x% within area X’; when quoting a modelled estimate value. Prior to the availability of the IHS local authority data, model estimates were useful for planning and advocacy, but not as true estimates of smoking prevalence, or for monitoring change. The IHS data can be used to monitor change and can be used to produce a more accurate estimate of smoking prevalence, as the data are from a survey which has a large enough sample to produce direct estimates of smoking prevalence at local authority level.

### Integrated Household Survey Estimates of Smoking Prevalence

**Table 1 Integrated Household Survey Estimates of Smoking Prevalence for NE Local Authorities - April 2010 – March 2011**

<table>
<thead>
<tr>
<th>Area Name</th>
<th>Estimate of Current smokers (%)</th>
<th>Lower 95% Confidence Interval (%)</th>
<th>Upper 95% Confidence Interval (%)</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>County Durham</td>
<td>22.3</td>
<td>20.5</td>
<td>24.2</td>
<td>1848</td>
</tr>
<tr>
<td>Darlington</td>
<td>21.1</td>
<td>18.7</td>
<td>23.4</td>
<td>1413</td>
</tr>
<tr>
<td>Hartlepool</td>
<td>21.9</td>
<td>19.5</td>
<td>24.3</td>
<td>1496</td>
</tr>
<tr>
<td>Stockton-on-Tees</td>
<td>19.6</td>
<td>17.4</td>
<td>21.8</td>
<td>1513</td>
</tr>
<tr>
<td>Middlesbrough</td>
<td>23.2</td>
<td>20.9</td>
<td>25.5</td>
<td>1664</td>
</tr>
<tr>
<td>Redcar and Cleveland</td>
<td>22.4</td>
<td>20.1</td>
<td>24.7</td>
<td>1650</td>
</tr>
<tr>
<td>Gateshead</td>
<td>23.1</td>
<td>20.8</td>
<td>25.4</td>
<td>1557</td>
</tr>
<tr>
<td>South Tyneside</td>
<td>24.8</td>
<td>22.5</td>
<td>27.1</td>
<td>1638</td>
</tr>
<tr>
<td>Sunderland</td>
<td>24.4</td>
<td>22.2</td>
<td>26.6</td>
<td>1767</td>
</tr>
<tr>
<td>Newcastle upon Tyne</td>
<td>23.8</td>
<td>21.7</td>
<td>26.0</td>
<td>1596</td>
</tr>
<tr>
<td>North Tyneside</td>
<td>23.4</td>
<td>21.2</td>
<td>25.6</td>
<td>1766</td>
</tr>
<tr>
<td>Northumberland</td>
<td>18.8</td>
<td>16.8</td>
<td>20.9</td>
<td>1593</td>
</tr>
<tr>
<td><strong>North East</strong></td>
<td><strong>22.4</strong></td>
<td><strong>21.8</strong></td>
<td><strong>23.0</strong></td>
<td><strong>19501</strong></td>
</tr>
<tr>
<td><strong>England</strong></td>
<td><strong>20.7</strong></td>
<td><strong>20.5</strong></td>
<td><strong>20.8</strong></td>
<td><strong>251063</strong></td>
</tr>
</tbody>
</table>

**Figure 2 Estimated Prevalence of Cigarette Smoking for NE Local Authorities April 2010 – March 2011**


**Model Based Estimates (synthetic estimates) of Smoking Prevalence**

**Figure 3 Model-Based Estimates of Current Smoking for NE Local Authorities**

Neighbourhood

There are currently few options for analysis of geographies below local authority level. Up to date electoral ward level data on smoking prevalence is not available. The lowest level geography at which smoking estimates have been published is Middle Layer Super Output Area (MSOA). MSOAs geographies offer advantages over electoral ward geographies because they contain similar population sizes and their boundaries do not change. There are 6781 MSOAs in England with an average population size of 7200.

The most recent data on smoking prevalence at MSOA level is available from Health Profiles: Local Health: [www.localhealth.org.uk](http://www.localhealth.org.uk/). These data are modelled estimates produced by National Centre for Social Research (NatCen) based on Health Survey for England 2006 – 2008. Although the data is presented at MSOA level, ward boundaries can be overlaid on a map, to place the MSOAs in a familiar context, as seen in figure 3. Both maps and data can be downloaded from the Health Profiles website. The data is also available from the Joint Strategic Needs Assessment (JSNA) web page on the Public Health Observatory website: [www.apho.org.uk/resource/view.aspx?RID=91736](http://www.apho.org.uk/resource/view.aspx?RID=91736).

Smoking prevalence at MSOA level in the North East ranges from 51% (MSOA in Middlesbrough, straddling Pallister and Thorntree wards) to 10% (MSOA in Northumberland, straddling wards Ponteland West and Ponteland South with Heddon).

Of the 342 MSOAs in the North East, 277 (81%) have confidence intervals overlapping the England average, indicating there is no significant difference in the expected prevalence to the England average. There are 6 (2%) MSOA’s with expected prevalence significantly better than the England average and 59 (17%) significantly worse.

These data are useful for planning and advocacy. But they cannot be used for monitoring change because they do not change with local interventions. Caution must also be exercised in making comparisons because of the very wide confidence intervals. It should also be remembered, that these estimates are from the Health Survey for England, and not the Integrated Household Survey and are therefore not comparable with IHS data for Local Authorities.

Figure 3 Smoking Prevalence at MSOA Level: Example of Map Output with Ward Overlay

![Figure 3 Smoking Prevalence at MSOA Level: Example of Map Output with Ward Overlay](image-url)

Source: Local Health: [www.localhealth.org.uk](http://www.localhealth.org.uk) using MSOA modelled estimates using Health Surveys for England 2006 to 2008
Summary

Table 3 holds source of data which should be used when reporting on smoking prevalence at each level of geography in the North East.

Table 3 Advised data sources for smoking prevalence in the North East

<table>
<thead>
<tr>
<th>Geography</th>
<th>Data Source Name</th>
<th>Web Source</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region</td>
<td>Integrated Household Survey</td>
<td>London Health Observatory</td>
<td>Can be used to monitor change in smoking prevalence. Estimates produced from national survey. Updated quarterly, reporting on rolling 12 month periods. Data available at England, Region and Local Authority level. Smoking prevalence within routine and manual social group is also reported. No data are reported by gender. Contact NEPHO if these figures are required: <a href="mailto:contactus3@nepho.org.uk">contactus3@nepho.org.uk</a>.</td>
</tr>
<tr>
<td>Local Authority</td>
<td>Integrated Household Survey</td>
<td>London Health Observatory</td>
<td>Can be used to estimate levels of smoking prevalence for planning and advocacy. They cannot be used to monitor change. Estimates are modelled estimates, based on national survey data. The model is based on the relationships seen at national level between prevalence of smoking and other social and economic factors, which are then applied to the local data for each factor, to give an estimate of the prevalence of smoking in each area.</td>
</tr>
<tr>
<td>Locality (MSOA)</td>
<td>Modelled estimate from Health Survey of England data and socio-economic data associated with smoking prevalence</td>
<td>Public Health Observatory, Local Health</td>
<td></td>
</tr>
</tbody>
</table>

Further Information

Further details of analyses and methodology presented in this report are available from NEPHO.

Tobacco Control Profiles for Local Authorities and Primary Care Trusts are available from www.lho.org.uk.

References


6. SOURCE: IHS data from UK data archive, analysed by NEPHO using STATA


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