

# Lifestyle and health

## Indicator guide and glossary

This document describes the indicators, data sources and terms used in the Lifestyle and Health profiles for Wales and its health boards. It summarises the more technical aspects of both the indicators and data sources included. Definitions of the indicators used, notes for interpretation relating to both the indicators and data sources, and details of where to find further information are included.

### How to use this Indicator Guide and Glossary:

- Section 1 describes the traffic light tables used within the Wales and health board profiles.
- Section 2 contains a list of indicators included in the traffic light tables. Notes for interpretation relating to the indicators are also included.
- Section 3 contains a list of data sources both for the indicators included in the traffic light tables and for the charts included within the Wales report.
- Section 4 is the Glossary, which contains a list of abbreviations and definitions for terms used within the Lifestyle and Health profiles and this guide.

On the electronic version of this guide you can click on the contents page to navigate the document.



The Lifestyle and Health profiles consist of a reference document for Wales 'Lifestyle and health. Wales and its health boards' and a set of seven individual health board profiles. Links to the profiles, additional resources and this indicator guide and glossary are available from the website at [www.publichealthwales.org](http://www.publichealthwales.org).



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The project team acknowledge the use of '*The Health Profiles 2009 Indicator Guide*'<sup>1</sup> produced by the Association of Public Health Observatories, in the development of this profile.

Reference:

1. Association of Public Health Observatories. *The Indicator Guide: Health Profiles 2009*. York: APHO; 2009. Available at: [http://www.apho.org.uk/default.aspx?QN=HP\\_USERGUIDE](http://www.apho.org.uk/default.aspx?QN=HP_USERGUIDE)  
[Accessed 2<sup>nd</sup> Dec 2009]

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# 1. Understanding the traffic light tables

Traffic light tables are included in the Wales and individual health board profiles. These tables are used to provide a snapshot of health-related behaviours and their impact on health, and present data for a range of indicators. The traffic light tables also aid the reader in making comparisons between different geographical areas and the national (Wales) average.

In the traffic light tables **statistical significance** is shown compared to Wales. Green and red indicator values in the traffic light tables represent results that are statistically significantly better and worse respectively, compared to the Wales value. It is important to note that whilst an indicator may show a 'green' result, this means only that the result is significantly different to Wales, not that public health action is unnecessary. For example, 53% of adults in Cardiff and Vale University Health Board are overweight or obese; this is statistically significantly lower (better) than the Wales rate, but still represents a considerable concern to public health.

Statistical significance refers to how likely it is that the difference between two values (in this case the national and local value) might be due to chance. Statistical significance is not the same as public health importance. A 'statistically significant' result (red or green in the traffic light tables) means that it is very unlikely that the local value would be this different (extreme) from the national value, due to chance alone. The cut off point used was 5%, i.e. if only random chance was responsible for the difference between the two figures, only up to one in 20 results would be expected to be reported as statistically significant.

Statistical significance is determined, within the traffic light tables, using the confidence intervals (CIs) of the local value. If the national average falls outside the local CI, the difference is statistically significant. The national average is treated as an exact reference value. This means that where the national value is outside the CI of the local value, but the CI of the national value overlaps with the CI of the local value, the difference is assumed to be statistically significant. This is known as a type I error (see glossary). Therefore, the play of chance is not completely ruled out by a statistically significant result. Furthermore the results for areas with larger populations have smaller confidence intervals, and therefore are more likely to be statistically significantly different to Wales than areas with smaller populations. For this reason, it is essential that the colouring of the traffic light table be used only as a guide to interpretation.

Two areas may for the same indicator display the same rate whilst displaying a different colour and different significance result in the traffic light table. For example Swansea and Bridgend show the same value for adults who drink above guidelines but display different levels of significance. This is because their confidence intervals are different, resulting in a different level of significance when each area is compared to Wales.

Where appropriate (see traffic light table footnotes) the data has been **age-standardised**. This is because the age profile within each local authority / health board is different. When comparing these areas in respect of an indicator in which age has an important influence (such as adults participating in recommended levels of physical activity), the difference in the age profile between areas is likely to affect the observed differences in the proportions of interest. For instance, some health behaviours may become more (or less) common with age. This means an area with an older population might be expected to have higher (or lower) levels of these health-related behaviours. Therefore, where possible the data has been age-standardised to adjust for the effect of age in comparisons between areas. Welsh Health Survey indicators were supplied by the Welsh Assembly Government having been directly age-standardised using the overall age structure for Wales. Indicators relating to hospital admissions and mortality were directly age-standardised using the European standard population (see glossary).

## 2. Indicators

### 2.1 Adults who eat fruit & vegetables (5-a-day)

What is being measured?	The proportion of adults who consume five or more portions of fruit and vegetables per day.
How is this indicator defined?	<ul style="list-style-type: none"> <li>Percentage of resident population, adult persons.</li> <li>Results are reported as a proportion, (or percentage) of adults reporting eating five or more portions of fruit and vegetables the previous day.</li> <li>The results are standardised to 2007 mid-year population estimates to adjust for the effect of age in comparisons between areas.</li> <li>Age-standardised percentages are the results that the area would have had if its population had the same age distribution as that of Wales as a whole.</li> </ul>
What does a high/low level of indicator value mean?	<ul style="list-style-type: none"> <li>A green indicator value in the traffic light table represents a statistically significantly better (higher) level of adults who report consuming 5 or more portions of fruit and vegetables per day when compared to the Welsh value.</li> <li>A red indicator value in the traffic light table represents a statistically significantly worse (lower) level of adults who report consuming 5 or more portions of fruit and vegetables per day when compared to the Welsh value.</li> </ul>
Where does the data actually come from?	Welsh Health Survey
Who does it measure?	Adults (aged 16 plus)
When does it measure it?	2008
What geographical area does it cover?	Wales, Welsh health boards, Welsh local authorities
How accurate and complete will the data be for this indicator? Are there any problems, notes for interpretation or warnings with the data in relation to this indicator?	<ul style="list-style-type: none"> <li>Self-reported prevalence of healthy eating may be prone to respondent bias<sup>1</sup> i.e. people may overestimate or underestimate their behaviour to give a more favourable response.</li> <li>Interpretation may have been difficult in relation to this question as although guidance as to portion size was provided for respondents it may still be difficult to determine portion size for fruit and vegetables in composite foods e.g. apple pie, stew etc<sup>2</sup>.</li> <li>For further details see the Welsh Health Survey data sources section.</li> </ul>
References	<ol style="list-style-type: none"> <li>1. Miller TM, Abdel-Maksoud MF, Crane LA, Marcus AC, and Byers TE. Effect of social approval bias on self-reported fruit and vegetable consumption: a randomized controlled trial. <i>Nutrition Journal</i> 2008; 7:18. Available at: <a href="http://www.nutritionj.com/content/7/1/18">http://www.nutritionj.com/content/7/1/18</a> [Accessed 14<sup>th</sup> Jan 2010]</li> <li>2. Association of Public Health Observatories. <i>The Indicator Guide: Health Profiles 2009</i>. York: APHO; 2009. Available at: <a href="http://www.apho.org.uk/default.aspx?QN=HP_USERGUIDE">http://www.apho.org.uk/default.aspx?QN=HP_USERGUIDE</a> [Accessed 2<sup>nd</sup> Dec 2009]</li> </ol>

## 2.2 Adults who meet physical activity guidelines

What is being measured?	Adults achieving recommended levels of physical activity.
How is this indicator defined?	<ul style="list-style-type: none"> <li>The written survey asked adults on which days in the past week they did at least 30 minutes of light, moderate and vigorous exercise or physical activity</li> <li>Blocks of activity lasting more than 10 minutes, which were done on the same day, count towards the full 30 minutes. Respondents were asked to include physical activity which is part of their job. Examples of each type of activity are <ul style="list-style-type: none"> <li>Light activity: housework or golf</li> <li>Moderate activity: heavy gardening or fast walking</li> <li>Vigorous activity: running or aerobics</li> </ul> </li> <li>Department of Health guidelines currently recommend that adults do at least 30 minutes of at least moderate intensity physical activity, on five or more days a week<sup>1</sup>.</li> <li>Results are reported as a proportion (or percentage), standardised to 2007 mid-year population estimates to adjust for the effect of age in comparisons between areas.</li> <li>Age-standardised percentages are the results that the area would have had if its population had the same age distribution as that of Wales as a whole.</li> </ul>
What does a high/low level of indicator value mean?	<ul style="list-style-type: none"> <li>A green indicator value in the traffic light table represents a statistically significantly better (higher) estimated percentage of adults reporting to participate in physical activity compared to the Welsh average.</li> <li>A red indicator value in the traffic light table represents a statistically significantly worse (lower) estimated percentage of adults reporting to participate in physical activity when compared to the Welsh average.</li> </ul>
Where does the data actually come from?	Welsh Health Survey
Who does it measure?	Adults (aged 16 plus)
When does it measure it?	2007-2008
What geographical area does it cover?	Wales, Welsh health boards, Welsh local authorities.
How accurate and complete will the data be for this indicator? Are there any problems, notes for interpretation or warnings with the data in relation to this indicator?	<ul style="list-style-type: none"> <li>Self-reported physical activity may be prone to respondent bias<sup>2</sup> i.e. people may overestimate or underestimate their behaviour to give a more favourable response.</li> <li>There may be misclassification e.g. some housework may be 'moderate' rather than 'light'.</li> <li>For further details see the Welsh Health Survey data sources section.</li> </ul>
References	<ol style="list-style-type: none"> <li>Welsh Assembly Government . <i>Welsh Health Survey 2007 + 2008 Local Authority / Health Board Results</i>. SB 55/2009. Cardiff: WAG; 2009. Available at: <a href="http://wales.gov.uk/docs/statistics/2009/090929sb552009en.pdf?lang=en">http://wales.gov.uk/docs/statistics/2009/090929sb552009en.pdf?lang=en</a> [Accessed 12<sup>th</sup> Jan 2010]</li> <li>Adams SA, Matthews CE, Ebbeling CB, Moore CG, Cunningham JE, Fulton J, and Herbert JR. The Effect of Social Desirability and Social Approval on Self-Reports of Physical Activity. <i>American Journal of Epidemiology</i> 2005; 161 (4):389-398. Available at: <a href="http://aje.oxfordjournals.org/cgi/content/full/161/4/389">http://aje.oxfordjournals.org/cgi/content/full/161/4/389</a> [Accessed 14<sup>th</sup> Jan 2010]</li> </ol>

### 2.3 Adults who are overweight or obese

What is being measured?	Adults who are overweight or obese (%) based on self-reported height and weight measurements.
How is this indicator defined?	<ul style="list-style-type: none"> <li>The survey asked adults to report their height and their weight.</li> <li>In order to define overweight or obesity, a measurement is required which allows for differences in weight due to height.</li> <li>The Body Mass Index (BMI) is calculated as weight in kilograms (kg) divided by squared height (m<sup>2</sup>).</li> <li>Overweight and obese is defined as BMI 25+kg/m<sup>2</sup>. BMI 30+kg/m<sup>2</sup> is defined as obese.</li> <li>BMI was calculated for all respondents excluding pregnant women, with valid height and weight measurements<sup>1</sup>.</li> <li>This indicator reports the proportion (percentage) of the resident adult population who are overweight or obese.</li> <li>The results are standardised to 2007 mid-year population estimates to adjust for the effect of age in comparisons between areas.</li> <li>Age-standardised percentages are the results that the area would have had if its population had the same age distribution as that of Wales as a whole.</li> </ul>
What does a high/low level of indicator value mean?	<ul style="list-style-type: none"> <li>A red indicator value in the traffic light table represents a statistically significantly worse (higher) level of estimated adult overweight / obesity prevalence when compared to the Welsh average.</li> <li>A green indicator value in the traffic light table represents a statistically significantly better (lower) level of estimated adult overweight / obesity prevalence when compared to the national average.</li> <li>However the prevalence of people who are overweight or obese at any level greater than 0 is undesirable, therefore a low indicator value does not mean that action is not needed</li> </ul>
Where does the data actually come from?	Welsh Health Survey
Who does it measure?	Adults (aged 16 plus)
When does it measure it?	2007-2008
What geographical area does it cover?	Wales, Welsh health boards, Welsh local authorities
How accurate and complete will the data be for this indicator? Are there any problems, notes for interpretation or warnings with the data in relation to this indicator?	<ul style="list-style-type: none"> <li>BMI does not distinguish between mass due to body fat and mass due to muscular physique, nor does it take account of the distribution of fat.</li> <li>Height and weight of respondents are self-reported, and there is evidence to show that some people tend to under report weight and/or over report height resulting in an under-estimation of the prevalence of overweight and obesity<sup>2</sup>.</li> <li>Results in the lifestyle and health profiles do not distinguish between overweight and obesity.</li> <li>Ethnicity may affect BMI.</li> <li>For further details see the Welsh Health Survey data sources section.</li> </ul>

References	<ol style="list-style-type: none"><li data-bbox="480 145 1509 302">1. Welsh Assembly Government. <i>Welsh Health Survey 2008</i>. Cardiff: WAG; 2009. Available at <a href="http://wales.gov.uk/topics/statistics/publications/healthsurvey2008/?lang=en">http://wales.gov.uk/topics/statistics/publications/healthsurvey2008/?lang=en</a> [Accessed 9<sup>th</sup> Dec 2009]</li><li data-bbox="480 302 1509 510">2. Gorber SC et al. A comparison of direct vs. self-report measures for assessing height, weight and body mass index: a systematic review. <i>Obesity reviews</i> 2007; 8:307-326. Available at: <a href="http://www3.interscience.wiley.com/journal/117981349/abstract?CRTRY=1&amp;SRETRY=0">http://www3.interscience.wiley.com/journal/117981349/abstract?CRTRY=1&amp;SRETRY=0</a> [Accessed 12<sup>th</sup> Jan 2010]</li></ol>
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## 2.4 Adults who smoke

What is being measured?	The prevalence of smoking, that is, the proportion (or percentage) of adults who reported smoking daily or occasionally.
How is this indicator defined?	<ul style="list-style-type: none"> <li>The written survey asked adults whether they smoked (daily or occasionally), used to smoke (daily or occasionally) or had never smoked.</li> <li>This profile reports the proportion (percentage) of people who reported smoking daily or occasionally (current smokers).</li> <li>The results are standardised to 2007 mid-year population estimates to adjust for the effect of age in comparisons between areas.</li> <li>Age-standardised percentages are the results that the area would have had if its population had the same age distribution as that of Wales as a whole.</li> </ul>
What does a high/low level of indicator value mean?	<ul style="list-style-type: none"> <li>A red indicator value in the traffic light table represents a statistically significantly worse (higher) level of estimated adult smoking prevalence when compared to the Welsh average.</li> <li>A green indicator value in the traffic light table represents a statistically significantly better (lower) level of estimated adult smoking prevalence when compared to the national average.</li> <li>However smoking at any prevalence level greater than 0 is undesirable, therefore a low indicator value does not mean that action is not needed.</li> </ul>
Where does the data actually come from?	Welsh Health Survey
Who does it measure?	Adults (aged 16 plus)
When does it measure it?	2007-2008
What geographical area does it cover?	Wales, Welsh health boards, Welsh local authorities
How accurate and complete will the data be for this indicator? Are there any problems, notes for interpretation or warnings with the data in relation to this indicator?	<ul style="list-style-type: none"> <li>Self-reported prevalence of smoking may be more prone to respondent bias<sup>1</sup> i.e. smokers may be less likely to answer questions about smoking.</li> <li>The results presented within the profiles do not distinguish between people who report smoking daily and those smoking occasionally.</li> <li>For further details see the Welsh Health Survey data sources section.</li> </ul>
References	<ol style="list-style-type: none"> <li>Wilson A, Manku-Scott T, Shepherd D and Jones B. A comparison of individual and population smoking data from a postal survey and general practice records. <i>Br J Gen Pract.</i> 2000; 50(455):465-468. Available at: <a href="http://ukpmc.ac.uk/articlerender.cgi?articid=600304">http://ukpmc.ac.uk/articlerender.cgi?articid=600304</a> [Accessed 14<sup>th</sup> Jan 2010]</li> </ol>

## 2.5 Deaths from smoking (males and females)

What is being measured?	The rate of mortality (per 100,000 population) from diseases that are attributable to smoking.																																														
How is this indicator defined?	<ul style="list-style-type: none"> <li>• The proportions of deaths from specified diseases that are considered to be attributed to smoking (<i>'attributable fractions'</i>) were calculated using a combination of i) relative risks from published studies<sup>1</sup>, and ii) the proportion of smokers and ex-smokers in Wales (from the Welsh Health Survey<sup>2</sup>). For example, it was calculated that for women aged 60-64, 78% of deaths from lung cancer and 35% of deaths from coronary heart disease were attributable to smoking.</li> <li>• Numbers of deaths from specified diseases were then multiplied by these age/sex-specific attributable fractions (proportions)</li> <li>• This gave the total number of deaths in each local authority which were estimated to be attributable to smoking.</li> <li>• Mortality rates were directly age-standardised using the European standard population and presented per 100,000 population.</li> <li>• Deaths in people under the age of 35 were excluded</li> <li>• Attributable fractions were calculated for the following causes of death: <table border="0" data-bbox="550 907 1141 2004"> <thead> <tr> <th style="text-align: left;">Disease</th> <th style="text-align: left;">ICD-10 codes</th> </tr> </thead> <tbody> <tr> <td colspan="2"><i>Malignant cancers</i></td> </tr> <tr> <td>Lip, Oral Cavity, Pharynx</td> <td>C00-C14</td> </tr> <tr> <td>Oesophagus</td> <td>C15</td> </tr> <tr> <td>Stomach</td> <td>C16</td> </tr> <tr> <td>Pancreas</td> <td>C25</td> </tr> <tr> <td>Larynx</td> <td>C32</td> </tr> <tr> <td>Trachea, Lung, Bronchus</td> <td>C33-C34</td> </tr> <tr> <td>Cervix Uteri</td> <td>C53</td> </tr> <tr> <td>Kidney and Renal Pelvis</td> <td>C64-C65</td> </tr> <tr> <td>Urinary Bladder</td> <td>C67</td> </tr> <tr> <td>Acute Myeloid Leukemia</td> <td>C92.0</td> </tr> <tr> <td colspan="2"><i>Cardiovascular diseases</i></td> </tr> <tr> <td>Coronary Heart Disease</td> <td>I20-I25</td> </tr> <tr> <td>Other Heart Disease</td> <td>I00-I09, I26-I51</td> </tr> <tr> <td>Cerebrovascular Disease</td> <td>I60-I69</td> </tr> <tr> <td>Atherosclerosis</td> <td>I70</td> </tr> <tr> <td>Aortic Aneurysm</td> <td>I71</td> </tr> <tr> <td>Other Arterial Disease</td> <td>I72-I78</td> </tr> <tr> <td colspan="2"><i>Respiratory diseases</i></td> </tr> <tr> <td>Pneumonia, Influenza</td> <td>J10-J18</td> </tr> <tr> <td>Bronchitis, Emphysema</td> <td>J40-J42, J43</td> </tr> <tr> <td>Chronic Airway Obstruction</td> <td>J44</td> </tr> </tbody> </table> </li> </ul>	Disease	ICD-10 codes	<i>Malignant cancers</i>		Lip, Oral Cavity, Pharynx	C00-C14	Oesophagus	C15	Stomach	C16	Pancreas	C25	Larynx	C32	Trachea, Lung, Bronchus	C33-C34	Cervix Uteri	C53	Kidney and Renal Pelvis	C64-C65	Urinary Bladder	C67	Acute Myeloid Leukemia	C92.0	<i>Cardiovascular diseases</i>		Coronary Heart Disease	I20-I25	Other Heart Disease	I00-I09, I26-I51	Cerebrovascular Disease	I60-I69	Atherosclerosis	I70	Aortic Aneurysm	I71	Other Arterial Disease	I72-I78	<i>Respiratory diseases</i>		Pneumonia, Influenza	J10-J18	Bronchitis, Emphysema	J40-J42, J43	Chronic Airway Obstruction	J44
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<p>What does a high/low level of indicator value mean?</p>	<ul style="list-style-type: none"> <li>• A red indicator value in the traffic light table) represents a statistically significantly worse (higher) level of deaths from smoking compared to the Welsh average</li> <li>• A green indicator value in the traffic light table represents a statistically significantly better (lower) level of deaths from smoking compared to the Welsh average</li> <li>• However, all deaths from smoking are avoidable, and therefore a low indicator value does not mean that action is not needed.</li> </ul>
<p>Where does the data actually come from?</p>	<ul style="list-style-type: none"> <li>• Numerator: Annual District Deaths Extract (ADDE)</li> <li>• Denominator: Office for National Statistics (ONS): mid-year population estimates.</li> <li>• Other: <ul style="list-style-type: none"> <li>○ Welsh Health Survey 2007: proportion of smokers and ex-smokers in Wales:</li> <li>○ Eastern Region Public Health Observatory: relative risks of death from specified causes for smokers and ex-smokers, which originated from the SAMMEC website: <a href="http://apps.nccd.cdc.gov/sammec/">http://apps.nccd.cdc.gov/sammec/</a></li> </ul> </li> </ul>
<p>Who does it measure?</p>	<p>Males and females aged 35 and over</p>
<p>When does it measure it?</p>	<p>2005-2007</p>
<p>What geographical area does it cover?</p>	<p>Wales, Welsh health boards, Welsh local authorities</p>
<p>How accurate and complete will the data be for this indicator? Are there any problems, notes for interpretation or warnings with the data in relation to this indicator?</p>	<ul style="list-style-type: none"> <li>• The registration of death is mandatory in the UK, so the dataset should be a near complete record of mortality. The assigning of cause of death on the medical certificate is known to vary. See ADDE 'data source' section for more information.</li> <li>• Fractions were calculated using national proportions of smokers and ex-smokers for Wales from the 2007 Welsh Health Survey. However, there is variation across Wales in the proportion of people who smoke. Therefore, in areas where smoking rates are higher, this indicator will underestimate the true number of deaths attributable to smoking, and vice versa.</li> <li>• Also, the results from the 2007 Welsh Health Survey are self-reported. This means, for example, that no medical checks are made to see if someone really is a non-smoker. As a result, the proportion of people smoking reported by the Welsh Health Survey is more likely to underestimate rather than overestimate the true proportion of smokers.</li> <li>• The results of the American Cancer Prevention Society study (1982-1988) were used to calculate the attributable fractions. The use of these data assumes that smoking affects people in Wales in 2005-07 in the same way as people in America in 1982-88.</li> </ul>
<p>References</p>	<ol style="list-style-type: none"> <li>1. Smoking-Attributable Mortality, Morbidity, and Economic Costs (SAMMEC). Cited in: Association of Public Health Observatories. <i>The Indicator Guide: Health Profiles 2009</i>. York: APHO; 2009. Available at: <a href="http://www.apho.org.uk/default.aspx?QN=HP_USERGUIDE">http://www.apho.org.uk/default.aspx?QN=HP_USERGUIDE</a> [Accessed 15th Dec 2009]</li> <li>2. Welsh Assembly Government. <i>Welsh Health Survey 2007</i>. Cardiff: WAG; 2008. Available at: <a href="http://wales.gov.uk/topics/statistics/publications/publication-archive/healthsurvey2007/?lang=en">http://wales.gov.uk/topics/statistics/publications/publication-archive/healthsurvey2007/?lang=en</a> [Accessed 15th Dec 2009]</li> </ol>

## 2.6 Smokers contacting Stop Smoking Wales

What is being measured?	Proportion (percentage) of smokers who contact Stop Smoking Wales (2008/09)
How is this indicator defined?	<ul style="list-style-type: none"> <li>The number of smokers who choose to contact Stop Smoking Wales (SSW) divided by the estimated number of smokers (x100).</li> <li>The number of smokers in each area was estimated by applying the smoking prevalence in the Welsh Health Survey for the area to the corresponding population estimate.</li> <li>Age standardisation was not possible due to the lack of robust age-specific prevalence of smoking at local authority level.</li> </ul>
What does a high/low level of indicator value mean?	<ul style="list-style-type: none"> <li>A green indicator value in the traffic light table represents a statistically significantly better (higher) level of interest in undertaking the SSW programme of smoking cessation.</li> <li>A red indicator value in the traffic light table) represents a statistically significantly worse (lower) level of interest in undertaking the SSW programme of smoking cessation.</li> </ul>
Where does the data actually come from?	<ul style="list-style-type: none"> <li>Numerator: SSW client database</li> <li>Denominator: Welsh Health Survey and ONS mid-year population estimates</li> </ul>
Who does it measure?	<ul style="list-style-type: none"> <li>Persons, aged 16 and over (Note: a very small number of under 16 year olds may be included in the numerator).</li> <li>There is currently no adolescent smoking cessation service, hence SSW will accept calls from any smoker who wishes to quit. SSW did run an adolescent service in the past but due to the small number of people under the age of 16 contacting the adolescent service this was absorbed into the adult service.</li> </ul>
When does it measure it?	<ul style="list-style-type: none"> <li>SSW client database financial year 2008/09</li> <li>Welsh Health Survey calendar years 2007 and 2008</li> <li>ONS mid-year population estimates 2008</li> </ul>
What geographical area does it cover?	Wales, Welsh health boards, Welsh local authorities
How accurate and complete will the data be for this indicator? Are there any problems, notes for interpretation or warnings with the data in relation to this indicator?	<ul style="list-style-type: none"> <li>The geography (area of residence) for the numerator is manually coded.</li> <li>The denominator is based on two estimates and is therefore subject to an unknown degree of error. However, it is the best known estimate of the actual smoking population.</li> <li>The three data sources cover overlapping but slightly different time periods.</li> <li>The Welsh Health Survey smoking prevalence is a self-reported measure and therefore, people may over or under estimate their response to give a more favourable response.</li> <li>For further details of issues relating to ONS mid-year estimates see the data sources section.</li> <li>It is important to bear in mind that this indicator is only a reflection of smokers seeking to quit via SSW. There are many other routes smokers may wish to take, though no other national cessation services</li> <li>For further details see the Stop Smoking Wales data sources section.</li> </ul>

## 2.7 Adults who drink alcohol above guidelines

What is being measured?	The prevalence of adults who drink above the recommended amount of alcohol, that is, the proportion (percentage) of adults who reported drinking above the daily guidelines for alcohol the previous week.
How is this indicator defined?	<ul style="list-style-type: none"> <li>The written survey asked adults a set of questions about their alcohol consumption. Respondents were asked to indicate how many measures of each type of alcohol they had consumed on their heaviest drinking day the previous week. Diagrams and guides are provided to help the respondent calculate the number of units of alcohol consumed.</li> <li>The Department of Health guidelines about sensible drinking are that men should not drink more than 3-4 units of alcohol per day, and women should not drink more than 2-3 units.</li> <li>This profile reports the proportion (percentage) of people who reported drinking above guidelines (men &gt;4 units, women &gt;3 units).</li> <li>The results are standardised to 2007 mid-year population estimates to adjust for the effect of age in comparisons between areas.</li> <li>Age-standardised percentages are the results that the area would have had if its population had the same age distribution as that of Wales as a whole.</li> </ul>
What does a high/low level of indicator value mean?	<ul style="list-style-type: none"> <li>A red indicator value in the traffic light table represents a statistically significantly worse (higher) level of adults who report drinking above guidelines when compared to the Welsh average.</li> <li>A green indicator value in the traffic light table represents a statistically significantly better (lower) level of adults who report drinking above guidelines when compared to the national average.</li> <li>However any drinking above guidelines is undesirable, therefore a low indicator value does not mean that action is not needed.</li> </ul>
Where does the data actually come from?	Welsh Health Survey
Who does it measure?	Adults (aged 16 plus)
When does it measure it?	2008
What geographical area does it cover?	Wales, Welsh health boards, Welsh local authorities
How accurate and complete will the data be for this indicator? Are there any problems, notes for interpretation or warnings with the data in relation to this indicator?	<ul style="list-style-type: none"> <li>The alcohol questions were reviewed and changed for the 2008 survey. Results for 2008 are therefore not comparable with previous years, resulting in a smaller sample size and loss of precision<sup>1</sup>.</li> <li>Self-reported drinking prevalence is prone to respondent bias as respondents are more likely to understate the amount they drink<sup>2</sup>. The figures reported only reflect the week before the survey, whereas binge drinking may depend on events that do not occur weekly e.g. birthday celebration, sporting event. Also, it may be difficult to estimate the amount of alcohol poured without a measure.</li> <li>The question change in 2008 was partly to address concerns that the original question required respondents to calculate the number of units of alcohol consumed which was thought to affect the quality and accuracy of the results.</li> <li>For further details see the Welsh Health Survey data sources section.</li> </ul>

References	<ol style="list-style-type: none"><li data-bbox="480 143 1495 324">1. Welsh Assembly Government . <i>Welsh Health Survey 2007 + 2008 Local Authority / Health Board Results</i>. SB 55/2009. Cardiff: WAG; 2009. Available at: <a href="http://wales.gov.uk/docs/statistics/2009/090929sb552009en.pdf?lang=en">http://wales.gov.uk/docs/statistics/2009/090929sb552009en.pdf?lang=en</a> [Accessed 12<sup>th</sup> Jan 2010]</li><li data-bbox="480 324 1495 492">2. Goddard E. <i>Obtaining information about drinking through surveys of the general population</i>. Methodology series No. 24. Newport: ONS; 2001. Available at: <a href="http://www.statistics.gov.uk/StatBase/Product.asp?vInk=9223">http://www.statistics.gov.uk/StatBase/Product.asp?vInk=9223</a> [Accessed 12<sup>th</sup> Jan 2010]</li></ol>
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## 2.8 Hospital admissions due to alcohol (males and females)

What is being measured?	The annual rate of hospital admissions attributable to alcohol.
How is this indicator defined?	<ul style="list-style-type: none"> <li>Numbers of hospital admissions were multiplied by age/sex-specific attributable fractions, based on published studies<sup>1,2</sup>. For example, 57% of admissions for liver cirrhosis in women aged 55-59 were considered to be attributable to alcohol. A full list of the attributable fractions used can be found in the report <i>Alcohol-attributable fractions for England: Alcohol-attributable mortality and hospital admissions</i><sup>1</sup>.</li> <li>This gave the total number of admissions in each local authority which were estimated to be attributable to alcohol-related harm.</li> <li>Admissions in patients aged under 16 were only included if the condition was considered to always be attributable to alcohol, i.e. the attributable fraction was one.</li> <li>Admission rates were directly age-standardised using the European standard population and presented per 100,000 population..</li> </ul>
What does a high/low level of indicator value mean?	<ul style="list-style-type: none"> <li>A red indicator value in the traffic light table represents a statistically significantly worse (higher) level of hospital admissions attributable to alcohol compared to the Welsh average.</li> <li>A green indicator value in the traffic light table represents a statistically significantly better (lower) level of hospital admissions attributable to alcohol compared to the national average</li> <li>However alcohol-attributable admissions place a large burden on hospital services, and therefore a low indicator value does not mean that action is not needed.</li> </ul>
Where does the data actually come from?	<ul style="list-style-type: none"> <li>Numerator: Patient Episode Database for Wales (PEDW)</li> <li>Denominator: Office for National Statistics (ONS): mid-year population estimates.</li> <li>Other: North West Public Health Observatory (NWPHO): attributable fractions<sup>1</sup>.</li> </ul>
Who does it measure?	Males and Females
When does it measure it?	2006-2008
What geographical area does it cover?	Wales, Welsh health boards, Welsh local authorities
How accurate and complete will the data be for this indicator? Are there any problems, notes for interpretation or warnings with the data in relation to this indicator?	<ul style="list-style-type: none"> <li>This indicator is based on 'any mention' of alcohol-attributable conditions in the diagnostic record. Therefore, the propensity of doctors and clinical coders to list these conditions in patient records will affect the number of admissions reported. This is likely to vary across hospitals, though the overall impact on the results is difficult to quantify.</li> <li>Figures presented for this indicator represent residents of health boards admitted to any hospital for an alcohol attributable condition i.e. not admissions into health facilities within the health board area.</li> <li>Hospital admissions for patients with alcohol-attributable conditions do not provide a proxy for the prevalence of alcohol misuse.</li> <li>This indicator represents admissions and not individuals. Individual people can be admitted multiple times, and the average number of admissions per patient is likely to vary across different areas.</li> <li>Attributable fractions calculated for England were used<sup>1</sup>. However, it is assumed that they can also be applied to Wales, regardless of any differences between local authorities. However, underestimation may occur in areas of higher alcohol consumption and overestimation in areas of lower alcohol consumption.</li> </ul>

References	<ol style="list-style-type: none"><li data-bbox="480 114 1508 302">1. Jones L et al. <i>Alcohol-attributable fractions for England: Alcohol-attributable mortality and hospital admissions</i>. Liverpool: North West Public Health Observatory; 2008. Available at: <a href="http://www.nwph.net/nwpho/Publications/AlcoholAttributableFractions.pdf">http://www.nwph.net/nwpho/Publications/AlcoholAttributableFractions.pdf</a> [Accessed 12<sup>th</sup> Jan 2010]</li><li data-bbox="480 302 1508 535">2. North West Public Health Observatory. <i>Hospital admissions for alcohol-related harm: Technical Information and Definition for Vital Signs Indicator(VSC26), National Indicator Set NI39 and Public Service Agreement Indicator 25.2</i>. London: Department of Health; 2008. Available at: <a href="http://www.nwph.net/alcohol/lape/81916_NI39Technical.pdf">http://www.nwph.net/alcohol/lape/81916_NI39Technical.pdf</a> [Accessed 12<sup>th</sup> Jan 2010]</li></ol>
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## 2.9 Deaths from alcohol (males and females)

What is being measured?	The rate of mortality (per 100,000 population) from diseases that are attributable to alcohol.
How is this indicator defined?	<ul style="list-style-type: none"> <li>Deaths were extracted for 47 disease groups (considered either entirely or in part attributable to alcohol) and multiplied by age/sex-specific attributable fractions as published by North West Public Health Observatory (NWPHO)<sup>1</sup>.</li> <li>This gave the total number of deaths in each local authority which were estimated to be attributable to alcohol.</li> <li>Deaths aged under 16 were only included if the condition was wholly attributable to alcohol, i.e. the attributable fraction was 1.</li> <li>Mortality rates were directly age-standardised using the European standard population and presented per 100,000 population.</li> </ul>
What does a high/low level of indicator value mean?	<ul style="list-style-type: none"> <li>A red indicator value in the traffic light table represents a statistically significantly worse (higher) mortality rate compared to Wales.</li> <li>A green indicator value in the traffic light table represents a statistically significantly better (lower) mortality rate compared to Wales.</li> <li>An indicator value lower than the Wales rate does not mean that action is not needed.</li> </ul>
Where does the data actually come from?	<ul style="list-style-type: none"> <li>Numerator: Annual District Deaths Extract (ADDE) from Office for National Statistics (ONS)</li> <li>Denominator: ONS: mid-year population estimates</li> <li>Other: North West Public Health Observatory (NWPHO): attributable fractions<sup>1</sup>.</li> </ul>
Who does it measure?	Males and females, all ages
When does it measure it?	2003-2007
What geographical area does it cover?	Wales, Welsh health boards, Welsh local authorities
How accurate and complete will the data be for this indicator? Are there any problems, notes for interpretation or warnings with the data in relation to this indicator?	<ul style="list-style-type: none"> <li>The registration of death is mandatory in the UK, so the dataset should be a near complete record of mortality. The assigning of cause of death on the medical certificate is known to vary. See ADDE 'data source' section for more information.</li> <li>As advised by NWPHO, only positive fractions were applied, as this indicator is based on alcohol-related harm and therefore excludes any potentially beneficial effects of drinking.</li> <li>Mortality attributable to alcohol is an estimate of harm relating to alcohol and may be considered experimental.</li> <li>Attributable fractions calculated for England were used<sup>1</sup>. However, it is assumed that they can also be applied to Wales, regardless of any differences between local authorities. However, underestimation may occur in areas of higher alcohol consumption and overestimation in areas of lower alcohol consumption.</li> </ul>
References	<p>1. Jones L et al. <i>Alcohol-attributable fractions for England: Alcohol-attributable mortality and hospital admissions</i>. Liverpool: North West Public Health Observatory; 2008. Available at: <a href="http://www.nwph.net/nwpho/Publications/AlcoholAttributableFractions.pdf">http://www.nwph.net/nwpho/Publications/AlcoholAttributableFractions.pdf</a> [Accessed 12<sup>th</sup> Jan 2010]</p>

## 2.10 Hospital admissions due to drugs (males and females)

What is being measured?	The rate of people admitted to hospital per year with a diagnosis directly related to illicit drug use.
How is this indicator defined?	<p>Hospital admissions were extracted for the following codes:</p> <p><b>Mental and behavioural disorders due to psychoactive substance use</b>  F11 Opioids  F12 Cannabinoids  F13 Sedatives and Hypnotics  F14 Cocaine  F15 Other stimulants  F16 Hallucinogens  F19 Multiple drug use / use of other psychoactive substances</p> <p><b>Poisoning by drugs, medicaments and biological substances</b>  X40-X44* Accidental  X60-X64* Intentional  Y10-Y14* Undetermined Intent  X85* Assault  F18* Volatile substances</p> <p>*In this section, each code had to be accompanied with a T40 code before an individual was identified as a substance user. T40 indicates poisoning by opium, heroin, other opioids, methadone, other synthetic narcotics, cocaine, other and unspecified narcotics, cannabis (derivatives), lysergide (LSD) and other and unspecified psychodysleptics (hallucinoogens).</p> <ul style="list-style-type: none"> <li>• Rates were directly age-standardised using the European standard population and presented per 100,000 population.</li> <li>• This new definition has been used for comparability with the APHO report Indications of Public Health in the English Regions: Drug Use<sup>1</sup>.</li> </ul>
What does a high/low level of indicator value mean?	<ul style="list-style-type: none"> <li>• A red indicator value in the traffic light table represents a statistically significantly worse (higher) level of hospital admissions directly related to the use of illicit drugs compared to the Welsh average</li> <li>• A green indicator value in the traffic light table represents a statistically significantly better (lower) level of hospital admissions directly related to the use of illicit drugs compared to the national average</li> <li>• However drug use at any prevalence level greater than 0 is undesirable. An indicator value lower than the Welsh average does not mean that action is not needed.</li> </ul>
Where does the data actually come from?	<ul style="list-style-type: none"> <li>• Numerator: Patient Episode Database Wales (PEDW)</li> <li>• Denominator: Office for National Statistics mid-year population estimates</li> </ul>
Who does it measure?	Males and females aged 15 to 64
When does it measure it?	2006-2008
What geographical area does it cover?	Wales, Welsh health boards, Welsh local authorities

<p>How accurate and complete will the data be for this indicator? Are there any problems, notes for interpretation or warnings with the data in relation to this indicator?</p>	<ul style="list-style-type: none"> <li>• This is a person-based query which 'allows' one admission per person for each calendar year. Therefore, if someone is admitted twice in one year (e.g. in March and June), they will only be counted once. However, an individual who is admitted twice in different years (e.g. in October 2006 and January 2007) will be counted twice.</li> <li>• This indicator does not attempt to capture the total amount of hospital activity associated with drug use. The results presented are therefore likely to underestimate the burden that drug use has on secondary care.</li> <li>• Figures presented for this indicator represent residents of health boards admitted to any hospital for a drug related condition i.e. not admissions into health facilities within the health board area.</li> <li>• Since this work is based on 'any mention' of drug related conditions in the diagnostic record, the propensity of doctors and clinical coders to list these conditions in patient records will affect the number of admissions reported. Furthermore, it is highly unlikely that patients admitted to different NHS Trusts in Wales will have an exactly equal chance of having secondary diagnoses recorded. This may therefore account for some variation at the Local Health Board and Local Authority level, but the overall impact on the results is difficult to quantify.</li> <li>• This can be considered a 'prevalence' of drug misuse requiring admission to hospital.</li> <li>• This indicator uses a new definition to identify hospital admissions related to illicit drug use. This definition is not comparable with work previously published by the NPHS.</li> </ul>
<p>References</p>	<p>1. Association of Public Health Observatories. <i>Indications of Public Health in the English Regions 10: Drug Use</i>. Liverpool: APHO; 2009. Available at: <a href="http://www.apho.org.uk/resource/view.aspx?RID=70746">http://www.apho.org.uk/resource/view.aspx?RID=70746</a> [Accessed 12<sup>th</sup> Jan 2010]</p>

## 2.11 Teenage conceptions

What is being measured?	Conceptions in females aged under 16 years.
How is this indicator defined?	<ul style="list-style-type: none"> <li>• Conceptions among under-16s divided by female population in Wales aged 13 to 15 years and multiplied by 1,000 to give a rate per 1,000 population.</li> <li>• Conception statistics include pregnancies that result in one or more live or still births (maternities) and legal abortions under the Abortion Act 1967. They do not include miscarriages or illegal abortions.</li> <li>• Maternities which result in one or more live births or stillbirths are only counted once.</li> <li>• Date of conception is estimated by subtracting the gestation of that pregnancy from the baby's date of birth or date of termination.</li> <li>• A woman's age at conception is estimated from her date of birth on the birth registration or abortion notification, together with the estimated date of conception.</li> <li>• Conception Figures include live births stillbirths and abortions that occurred in Wales to women usually resident in Wales</li> </ul>
What does a high/low level of indicator value mean?	<ul style="list-style-type: none"> <li>• A red indicator value in the traffic light table represents a statistically significantly worse (higher) under-16s conception rate, compared to the Welsh average.</li> <li>• A green indicator value in the traffic light table represents a statistically significantly better (lower) rate compared to the Welsh average.</li> </ul>
Where does the data actually come from?	<ul style="list-style-type: none"> <li>• Numerator: Office for National Statistics, Conception Statistics<sup>1</sup>.</li> <li>• Denominator: data come from the Office for National Statistics, Mid-year population estimates.</li> </ul>
Who does it measure?	Females under 16 years
When does it measure it?	2003-07
What geographical area does it cover?	Wales, Welsh health boards, Welsh local authorities
How accurate and complete will the data be for this indicator? Are there any problems, notes for interpretation or warnings with the data in relation to this indicator?	<ul style="list-style-type: none"> <li>• Recording data relating to births and legal abortions is mandatory; therefore data are expected to be of a high level of quality and completeness.</li> <li>• Conception data do not include miscarriages; therefore the actual number of teenage conceptions may be underestimated.</li> <li>• Even when combining five years' data, there were less than 50 conceptions in some local authority areas. Smaller numbers of events are more prone to random variation, meaning that rates could substantially change from one period to another by chance alone.</li> </ul>
References	<p>1. Office for National Statistics. <i>Conception Statistics. Conceptions for women resident in England and Wales, 2007</i>. Newport: ONS; 2009. Available at: <a href="http://www.statistics.gov.uk/downloads/theme_health/conceptions2007/ConceptionsARV2007.pdf">http://www.statistics.gov.uk/downloads/theme_health/conceptions2007/ConceptionsARV2007.pdf</a> [Accessed 10<sup>th</sup> Dec 2009]</p>

## 2.12 Dental health in 5-year-olds

What is being measured?	Number of children aged five years with decayed, missing or filled teeth
How is this indicator defined?	<ul style="list-style-type: none"> <li>• Average number of teeth per child, which were either decayed missing or filled. A full description is available from the Welsh Oral Health Information Unit<sup>1</sup>.</li> </ul>
What does a high/low level of indicator value mean?	<ul style="list-style-type: none"> <li>• A red indicator value in the traffic light table represents a statistically significantly worse (higher) number of decayed, missing or filled teeth in children aged five years compared to the Welsh average.</li> <li>• A green indicator value in the traffic light table represents a statistically significantly better (lower) number of decayed, missing or filled teeth in children aged five years compared to the Welsh average.</li> </ul>
Where does the data actually come from?	<ul style="list-style-type: none"> <li>• Welsh Oral Health Information Unit (WOHIU), Cardiff University</li> <li>• Data are collected as part of a dental epidemiological study, from five year olds who are randomly selected from school registers/lists. Dental examinations take place in school.</li> </ul>
Who does it measure?	Persons aged five years
When does it measure it?	2005/06
What geographical area does it cover?	Wales, Welsh health boards, Welsh local authorities
How accurate and complete will the data be for this indicator? Are there any problems, notes for interpretation or warnings with the data in relation to this indicator?	<ul style="list-style-type: none"> <li>• Parental consent to take part in the survey may cause bias. Parents living in more deprived areas may be less likely to return consent forms. Levels of decayed, missing and filled teeth are known to be higher in deprived areas.</li> <li>• Variation between schools in how proactive they are at encouraging parents to return consent forms may affect the sample.</li> <li>• Data for Health Boards and Local Authorities were received from the WOHIU. Statistical significance of differences between LAs and the Welsh average were taken from the 2005-06 WOHIU annual report<sup>2</sup>. The report did not include Health Board data; therefore statistical significance of differences between Health Boards and the average for Wales was determined using the methods employed elsewhere in the profile and described in the 'Understanding the traffic light tables' section.</li> </ul>
References	<ol style="list-style-type: none"> <li>1. Welsh Oral Health Information Unit. <i>All Wales Epidemiological Survey of 5-year-old Children 2005/06 Protocol</i>. Cardiff: Cardiff University; 2005. Available at <a href="http://www.cardiff.ac.uk/dentl/resources/Protocol5yrold0506.doc">http://www.cardiff.ac.uk/dentl/resources/Protocol5yrold0506.doc</a> [Accessed 14th Dec 2009]</li> <li>2. Welsh Oral Health Information Unit. <i>A Picture of Oral Health in Wales. Survey of 5 year olds 2005/06</i>. Cardiff: Cardiff University; 2006. Available at <a href="http://www.cardiff.ac.uk/dentl/resources/Pictureoforalhealth0506.doc">http://www.cardiff.ac.uk/dentl/resources/Pictureoforalhealth0506.doc</a> [Accessed 10th Dec 2009]</li> </ol>

### ***2.13 Health Behaviour in School-aged Children (HBSC)***

For details of the indicators used from the HBSC study see Appendix A - Health Behaviour in School-aged Children (HBSC).

### 3. Data sources

#### 3.1 Welsh Health Survey

<p>How are the data collected?</p>	<ul style="list-style-type: none"> <li>• The Welsh Health Survey provides information about the health of people living in Wales, the way they use health services and their health related lifestyle.</li> <li>• It is based on a representative sample of people living in private households in Wales, selected using a random sample from the Post Office's Postcode Address File (with appropriate stratification at unitary authority level)<sup>1</sup>.</li> <li>• The survey collects information on households (through a short interview) and on individuals (through a self-completion questionnaire).</li> <li>• The findings presented within this report are based on the results from the individual self completed questionnaire.</li> <li>• The Welsh Health Survey was designed to be available at the local authority level. Most of the results presented within this report are based on combined data from two survey years (2007 and 2008).</li> <li>• During this two year period around 27,000 adults(aged 16 and over) participated fully in the survey<sup>2</sup>.</li> <li>• Due to question changes implemented in the 2008 survey some of the results are presented for 2008 only (approx 13,000 adults)<sup>1</sup>.</li> </ul>
<p>How accurate or complete will the data be?</p>	<ul style="list-style-type: none"> <li>• The Welsh Health Survey was designed to be representative of the general adult population</li> <li>• The Welsh Health Survey is the most regular comprehensive survey of lifestyle data at the local authority level across Wales.</li> <li>• A household interview was obtained for 74% of eligible households in the sample (2007-2008). Individual response to self-completion questionnaires within productive households was 80% for adults in participating households (ranging at local authority level from 73% in Blaenau Gwent to 85% in Gwynedd)<sup>2</sup>.</li> <li>• For the 2008 survey, a household interview was obtained for 74% of households and self-completion questionnaires were obtained for 78% of adults<sup>2</sup>.</li> <li>• The Postcode Address File covers more than 99% of private households in Wales; the small proportion of people not covered by the Postcode Address File, for example those living in institutions, were not covered by the Welsh Health Survey.</li> <li>• The Welsh Health Survey therefore does not include adults living in institutional settings such as care homes or nursing homes etc.</li> <li>• It should be noted that people living in institutions are likely to be on average, in poorer health than those in private households. This should be kept in mind when considering results from this survey.</li> </ul>
<p>Are there any notes for interpretation /warnings /problems associated with the data?</p>	<ul style="list-style-type: none"> <li>• The results reflect people's own understanding of their height and weight and health-related behaviours, rather than measured.</li> <li>• Interpretation of the results should take account of the questionnaire design, as the mode of collection and the questions themselves affect the information collected.</li> <li>• The questionnaire is available in the appendix of: Welsh Assembly Government. <i>Welsh Health Survey 2008</i>. Cardiff: Welsh Assembly Government; 2009. Available at <a href="http://wales.gov.uk/topics/statistics/publications/healthsurvey2008/?lang=en">http://wales.gov.uk/topics/statistics/publications/healthsurvey2008/?lang=en</a></li> </ul>

<p>Potential for errors due to type of measurement, or bias and confounding</p>	<ul style="list-style-type: none"> <li>• The survey results were weighted to take account of unequal selection probabilities and for differential non-response i.e. to ensure that the age and sex distribution of the responding sample matches that of the population of Wales. If the difference between the distribution of the survey sample and the true population was left uncorrected, it would lead to bias in the survey estimates. However, this will not fully account for differences that may occur between those who do not participate and those that do.</li> <li>• The age profile within each local authority / health board is different. Therefore, when comparing these groups in respect of a variable in which age has an important influence (such as lifestyle behaviours), the difference in the age profile between the groups is likely to affect the observed differences in the proportions of interest. Therefore the results are reported as a proportion, standardised to 2007 mid-year population estimates to adjust for the effect of age in comparisons between areas.</li> <li>• Age-standardised percentages are the results that the area would have had if its population had the same age distribution as that of Wales as a whole.</li> <li>• Results are prone to respondent bias i.e. people may under or over estimate their behaviour to give a more favourable response.</li> <li>• The difference between the sample based survey estimates and the true value based on a full count of the population is known as the sampling error. The size of the sampling error can be estimated by calculating the standard error of the survey estimates. Confidence intervals for survey estimates also give the range within which the true value for the population is likely to fall. Standard errors and confidence intervals for survey estimates are available in the WHS technical report<sup>3</sup>.</li> </ul>
<p>Who manages the data?</p>	<p>The National Centre for Social Research (NatCen) (<a href="http://www.natcen.ac.uk/">http://www.natcen.ac.uk/</a>) carried out the survey on behalf of the Welsh Assembly Government.</p>
<p>Where can you get hold of the data?</p>	<p>Welsh Health Survey results are available at <a href="http://wales.gov.uk/topics/statistics/theme/health/health-survey/results/?skip=1&amp;lang=en">http://wales.gov.uk/topics/statistics/theme/health/health-survey/results/?skip=1&amp;lang=en</a></p>
<p>References</p>	<ol style="list-style-type: none"> <li>1. Welsh Assembly Government. <i>Welsh Health Survey 2008</i>. Cardiff: WAG; 2009 available at <a href="http://wales.gov.uk/topics/statistics/publications/healthsurvey2008/?lang=en">http://wales.gov.uk/topics/statistics/publications/healthsurvey2008/?lang=en</a> [Accessed 9<sup>th</sup> Dec 2009]</li> <li>2. Welsh Assembly Government . <i>Welsh Health Survey 2007 + 2008 Local Authority / Health Board Results</i>. SB 55/2009. Cardiff: WAG; 2009. Available at: <a href="http://wales.gov.uk/docs/statistics/2009/090929sb552009en.pdf?lang=en">http://wales.gov.uk/docs/statistics/2009/090929sb552009en.pdf?lang=en</a> [Accessed 12<sup>th</sup> Jan 2010]</li> <li>3. National Centre for Social Research. <i>Welsh Health Survey - 2008 Technical Report</i>. London: NatCen; 2009. Available at: <a href="http://www.wales.gov.uk/statistics">http://www.wales.gov.uk/statistics</a> [Accessed 10th Dec 2009]</li> </ol>

### 3.2 Office for National Statistics (ONS) Annual District Death Extract (ADDE)

How are the data collected?	Individual records for death registrations are sent on a weekly basis from the Registrars' offices across England and Wales to the Office for National Statistics (ONS). The Office for National Statistics collates and validates the data. The data are based on the underlying cause of death e.g. if an individual dies from pneumonia but had been made vulnerable to that disease by end-stage cancer, then cancer (rather than pneumonia) is recorded as the underlying cause of death. The information presented in the Lifestyle profiles relates to deaths registered between 2003 and 2007.
How accurate or complete will the data be?	It is a legal requirement to register a death and so the ADDE provides a reliable and complete data source.
Are there any notes for interpretation /warnings /problems associated with the data?	Cause of death is based on the medical certificate of cause of death. This is completed by the certifying doctor for about three quarters of deaths and by a coroner for the remainder. Most of the deaths certified by a coroner do not involve an inquest or any suspicion of violence; but are referred to the coroner because they were sudden and unexpected, or because there was no doctor in attendance during the deceased's last illness. There will be a long delay in registering a small number of deaths for which a coroner's ruling is required e.g. suicide, homicide, undetermined intent.
Potential for errors due to type of measurement, or bias and confounding	<ul style="list-style-type: none"> <li>It is important to note that with many thousands of doctors writing certificates, the differences in their training, habits and knowledge mean that there would inevitably be variations in the quality of medical certificates of cause of death.<sup>1</sup></li> <li>The cause of death is easier to define in younger people. Older people are far more likely to have many underlying health conditions, making it more difficult to determine the underlying cause of death.<sup>2</sup></li> </ul>
Who manages the data?	Office for National Statistics
Where can you get hold of the data?	<ul style="list-style-type: none"> <li>The Office for National Statistics website: <a href="http://www.statistics.gov.uk/hub/health-social-care/health-of-the-population/causes-of-death/index.html">http://www.statistics.gov.uk/hub/health-social-care/health-of-the-population/causes-of-death/index.html</a></li> <li>The Welsh Assembly Government website: <a href="http://www.statswales.wales.gov.uk/ReportFolders/reportFolders.aspx">http://www.statswales.wales.gov.uk/ReportFolders/reportFolders.aspx</a></li> </ul>
References	<ol style="list-style-type: none"> <li>Office for National Statistics. <i>Mortality Statistics. Deaths registered in 2008</i>. Series DR08. Newport: ONS 2009. Available at: <a href="http://www.statistics.gov.uk/downloads/theme_health/DR2008/DR_08.pdf">http://www.statistics.gov.uk/downloads/theme_health/DR2008/DR_08.pdf</a> [Accessed 29th Dec 2009]</li> <li>Gorina Y, Lentzner H. Multiple Causes of Death in Old Age. <i>Aging Trends</i> 2008; 9:1-9. Available at: <a href="http://www.cdc.gov/nchs/data/ahcd/agingtrends/09causes.htm">http://www.cdc.gov/nchs/data/ahcd/agingtrends/09causes.htm</a> [Accessed 15th Dec 2009]</li> </ol>

### 3.3 Stop Smoking Wales (SSW)

<p>How are the data collected?</p>	<ul style="list-style-type: none"> <li>SSW provide support and treatment (through a six-week behavioural support programme) to any person in Wales who wishes to stop smoking. Any smoker who wishes to enquire about the SSW service can do so via a freephone number (0800 085 2219). Such an enquiry will result in the creation of a unique record for each contact, including details of the person's address. The information presented in the lifestyle profiles relates to the number of smokers contacting SSW in the financial year 2008/09.</li> </ul>
<p>How accurate or complete will the data be?</p>	<ul style="list-style-type: none"> <li>The details provided by the smoker are assumed to be correct, no validation is attempted by SSW.</li> <li>Some smokers may contact the service and refuse to provide any further details, in which instance no record is created and hence such contacts cannot be reported. However, such occurrences are considered rare.</li> </ul>
<p>Are there any notes for interpretation /warnings /problems associated with the data?</p>	<ul style="list-style-type: none"> <li>These contacts represent only the number of smokers who have made an initial contact with the service. They do not represent the number of people who have undertaken the SSW smoking cessation programme. Approximately half of all contacts progress to the first step of the programme, attendance at an information session.</li> <li>These contacts do not represent the total number of smokers, the total number of smokers who wish to quit or the total number of smokers who try to quit, via SSW or other means.</li> </ul>
<p>Potential for errors due to type of measurement, or bias and confounding</p>	<ul style="list-style-type: none"> <li>The smoker's local authority area of residence is based on the address provided by the smoker and is not checked against any postcode database. Therefore it is possible that in a very small number of cases the wrong area of residence is allocated.</li> </ul>
<p>Who manages the data?</p>	<p>Stop Smoking Wales, part of Public Health Wales NHS Trust</p>
<p>Where can you get hold of the data?</p>	<p>The 2008/09 SSW annual report is available at <a href="http://www2.nphs.wales.nhs.uk:8080/SSWTeamDocs.nsf/61c1e930f9121fd080256f2a004937ed/ade58eff9a37999380257680003e14ac/\$FILE/SSW%20Annual%20Report%202008-09%20Final.pdf">http://www2.nphs.wales.nhs.uk:8080/SSWTeamDocs.nsf/61c1e930f9121fd080256f2a004937ed/ade58eff9a37999380257680003e14ac/\$FILE/SSW%20Annual%20Report%202008-09%20Final.pdf</a></p>

### 3.4 Patient Episode Database for Wales (PEDW)

<p><b>How are the data collected?</b></p>	<ul style="list-style-type: none"> <li>• The Patient Episode Database for Wales (PEDW) is managed by Health Solutions Wales (HSW) and comprises records of all episodes of inpatient and daycase activity in NHS Wales hospitals. Hospital activity for Welsh residents treated in other UK nations (primarily England) is also included.</li> <li>• The data are collected and coded at each hospital. The records are then electronically transferred to HSW, where they are validated and merged into the main database.</li> <li>• The information presented in the Lifestyle profiles is based on admissions to hospital between 2006 and 2008 by area of residence.</li> </ul>
<p><b>How accurate or complete will the data be?</b></p>	<ul style="list-style-type: none"> <li>• Postcodes are provided for the large majority of records. The postcodes are used to assign the local authority and health board areas of residence for each record.</li> <li>• Outpatient activity is not included in this dataset</li> </ul>
<p><b>Are there any notes for interpretation /warnings /problems associated with the data?</b></p>	<ul style="list-style-type: none"> <li>• The data held in PEDW is of interest to public health services since it can provide information regarding both health service utilisation and also the incidence and prevalence of disease. However, since PEDW was created to track hospital activity from the point of view of payments for services, rather than epidemiological analysis, the use of PEDW for public health work is not straightforward. For example:             <ul style="list-style-type: none"> <li>○ Counts will vary depending on the number of diagnoses fields used e.g. primary only, all fields;</li> <li>○ there are a number of different 'currencies' that can be counted in PEDW, such as episodes, admissions, discharges, patients and potential limitations associated with the use of each of these.</li> </ul> </li> </ul>
<p><b>Potential for errors due to type of measurement, or bias and confounding</b></p>	<ul style="list-style-type: none"> <li>• Coding practices vary. In particular, coding practices for recording secondary diagnoses is likely to vary for different hospitals. This makes regional variations more difficult to interpret. The validation process led by the Corporate Health Improvement Programme and implemented by HSW is aiming to address some of these inconsistencies.</li> </ul>
<p><b>Who manages the data?</b></p>	<p>Health Solutions Wales</p>
<p><b>Where can you get hold of the data?</b></p>	<p>Contact details for Health Solutions Wales can be found on their website: <a href="http://www.hsw.wales.nhs.uk/">http://www.hsw.wales.nhs.uk/</a></p>

### 3.5 Office for National Statistics (ONS) Conceptions Data

<p>How are the data collected?</p>	<ul style="list-style-type: none"> <li>• Data are collected through the mandatory recording of births and legal abortions.</li> <li>• The registration of life events is carried out by the Local Registration Service in partnership with the General Register Office and information is passed on to the Office for National Statistics (ONS). Most information on live births and still births is supplied by one or both parents. For stillbirths, details are supplied on a certificate or notification by a doctor or midwife<sup>1</sup>.</li> <li>• Information on abortions is derived from notifications supplied under the Abortion Act 1967. These are sent by registered practitioners to the Chief Medical Officer for Wales<sup>1</sup>.</li> <li>• Maternities which result in one or more live births or stillbirths are only counted once.</li> <li>• Date of conception is estimated by subtracting the gestation period from the baby's date of birth or date of termination.</li> </ul>
<p>How accurate or complete will the data be?</p>	<ul style="list-style-type: none"> <li>• The recording of births and legal abortions is mandatory and so conceptions data provide a complete available data source.</li> <li>• Conception figures include only live births, stillbirths and abortions that occurred in England and Wales to women usually resident in England and Wales.</li> <li>• The postcode of the woman's address at the time of the maternity or abortion was used to assign the local authority and health authority of residence at the time of the conception.</li> </ul>
<p>Are there any notes for interpretation /warnings /problems associated with the data?</p>	<ul style="list-style-type: none"> <li>• Miscarriages and illegal abortions are not included in ONS conception data. Data may therefore underestimate the actual number of teenage conceptions.</li> <li>• Teenagers from more deprived backgrounds or those with poor education attainment are more likely to become teenage parents<sup>2</sup>.</li> </ul>
<p>Potential for errors due to type of measurement, or bias and confounding</p>	
<p>Who manages the data?</p>	<p>Office for National Statistics</p>
<p>Where can you get hold of the data?</p>	<p>ONS (2009) <i>Conception Statistics, England and Wales web page</i> [online]. Available at: <a href="http://www.statistics.gov.uk/statbase/product.asp?vlnk=15055">http://www.statistics.gov.uk/statbase/product.asp?vlnk=15055</a> [Accessed 10<sup>th</sup> Dec 2009]</p>
<p>References</p>	<ol style="list-style-type: none"> <li>1. Office for National Statistics. <i>Conception Statistics. Conceptions for women resident in England and Wales, 2007</i>. Newport: ONS; 2009. Available at: <a href="http://www.statistics.gov.uk/downloads/theme_health/conceptions2007/ConceptionsARV2007.pdf">http://www.statistics.gov.uk/downloads/theme_health/conceptions2007/ConceptionsARV2007.pdf</a> [Accessed 10<sup>th</sup> Dec 2009]</li> <li>2. Association of Public Health Observatories. <i>The Indicator Guide: Health Profiles 2009</i>. York: APHO; 2009. Available at: <a href="http://www.apho.org.uk/default.aspx?QN=HP_USERGUIDE">http://www.apho.org.uk/default.aspx?QN=HP_USERGUIDE</a> [Accessed 2<sup>nd</sup> Dec 2009]</li> </ol>

### 3.6 Welsh Dental Survey

<p>How are the data collected?</p>	<ul style="list-style-type: none"> <li>Data are collected via a survey of children aged five years. The children are randomly selected from school registers/lists. The survey aims to randomly select 70 subjects from each Dental Planning Area so that, after allowing for absenteeism and refusals, at least 50 subjects should be examined in each Dental Planning Area. There are 161 Dental Planning Areas in Wales. Dental Planning Areas are based around local communities and vary in size. Characteristics such as location of dentists and the population they served were used to help map out Dental Planning Areas. They were also defined upon what people felt communities to be. With the exception of North Wales, Dental Planning Areas constitute aggregations of electoral wards (as at 1991).</li> <li>"<i>Negative</i>" parental consent was used: a letter was sent home to parents, if they did not reply it was assumed that they were happy for their children to participate.</li> <li>Dental examinations take place in the school and non clinical data are collected by a questionnaire sent to parents of children in the sample.</li> </ul>
<p>How accurate or complete will the data be?</p>	<ul style="list-style-type: none"> <li>Dental examiners and recorders attend training to ensure standardisation of procedures.</li> <li>Data cleansing and analysis is undertaken by the Welsh Oral Health Information Unit to ensure a common method is used. Data undergo a three way data handling process to ensure continued data quality.</li> <li>The 2005/06 survey examined 10,660 pupils out of a sample of 11,993 pupils giving an examination rate of 88.9%</li> </ul>
<p>Are there any notes for interpretation /warnings /problems associated with the data?</p>	<ul style="list-style-type: none"> <li>Data for health boards and local authorities were received from the Welsh Oral Health Information Unit (WOHIU). Statistical significance of differences between local authorities and the Welsh average were taken from the 2005-06 WOHIU annual report<sup>1</sup>. The report did not include health board data; therefore methods were used to determine statistical significance of differences between health boards and the average for Wales.</li> </ul>
<p>Potential for errors due to type of measurement, or bias and confounding</p>	<ul style="list-style-type: none"> <li>There is a potential for bias caused by variations between schools in how pro-active they are at encouraging parents to return consent forms. Also, parents living in more deprived areas may be less likely to return consent forms<sup>2</sup>.</li> </ul>
<p>Who manages the data?</p>	<ul style="list-style-type: none"> <li>Data are collated by health boards in Wales and submitted to the Welsh Oral Health Information Unit, Cardiff University for processing.</li> </ul>
<p>Where can you get hold of the data?</p>	<p>Cardiff University School of Dentistry website available at:  <a href="http://www.cardiff.ac.uk/dentl/research/themes/appliedclinicalresearch/epidemiology/oralhealth/index.html">http://www.cardiff.ac.uk/dentl/research/themes/appliedclinicalresearch/epidemiology/oralhealth/index.html</a> [Accessed 15<sup>th</sup> Dec 2009]</p>
<p>References</p>	<ol style="list-style-type: none"> <li>Welsh Oral Health Information Unit. <i>All Wales Epidemiological Survey of 5-year-old Children 2005/06 Protocol</i>. Cardiff: Cardiff University; 2005. Available at:  <a href="http://www.cardiff.ac.uk/dentl/resources/Protocol5yrold0506.doc">http://www.cardiff.ac.uk/dentl/resources/Protocol5yrold0506.doc</a> [Accessed 14th Dec 2009]</li> <li>Association of Public Health Observatories. <i>The Indicator Guide: Health Profiles 2009</i>. York: APHO; 2009. Available at:  <a href="http://www.apho.org.uk/default.aspx?QN=HP_USERGUIDE">http://www.apho.org.uk/default.aspx?QN=HP_USERGUIDE</a> [Accessed 2<sup>nd</sup> Dec 2009]</li> </ol>

### 3.7 Health Behaviour in School-aged Children (HBSC)

<p>How are the data collected?</p>	<ul style="list-style-type: none"> <li>• HBSC is a cross-national research study conducted in collaboration with the World Health Organisation (WHO) Regional Office for Europe<sup>1</sup>.</li> <li>• The study aims to gain new insight into, and increase our understanding of young people's health and well-being, health behaviours and their social context<sup>1</sup>.</li> <li>• HBSC was initiated in 1982 by researchers from three countries and was subsequently adopted by the WHO as a collaborative study. There are now 43 participating countries and regions<sup>1</sup>.</li> <li>• The first cross-national survey was conducted in 1983/84, the second in 1985/86 and since then data collection has been carried out every four years using a common research protocol. The most recent survey, the seventh in the series, was conducted in 2005/06<sup>1</sup>.</li> <li>• In 2005/06 41 countries across Europe and North America drew national samples of 11, 13, and 15-year olds in accordance with the study protocol. In the main, fieldwork took place between October 2005 and May 2006. More than 200,000 young people took part in the survey and approximately 1,500 respondents in each age group were targeted in each country. Pupils were sampled from schools and/or school classes and data were collected by self-administered questionnaire<sup>2</sup>.</li> <li>• The HBSC average presented in this report is based on equal weighting of each region, regardless of differences in achieved sample size.</li> </ul>
<p>How accurate or complete will the data be?</p>	<ul style="list-style-type: none"> <li>• There is a lack of systematic data collection systems in relation to young people aged 11-15 years in most member states of the WHO European region. HBSC goes some way to filling this gap, providing a key insight into the health-related behaviours of young people.</li> <li>• The limited sample size means that results are only meaningful at the all-Wales level.</li> </ul>
<p>Are there any notes for interpretation /warnings /problems associated with the data?</p>	<ul style="list-style-type: none"> <li>• The questionnaire is developed in English and is subsequently translated into national and sub-national languages. Specific guidance is provided for translators on the underlying concepts being addressed. Questionnaires are then translated back into English for checking but it is important to acknowledge that some cross-national variation in the way that students understand certain terms may remain<sup>2</sup>.</li> <li>• As the results are self-reported some of the results will be over or under estimates.</li> <li>• Due to cultural sensitivities some countries were not able to collect data on certain topic areas for example Ireland, Norway Poland, Turkey and the United States did not collect data on sexual health<sup>2</sup>.</li> </ul>
<p>Potential for errors due to type of measurement, or bias and confounding</p>	<ul style="list-style-type: none"> <li>• Pupils who were absent on the day of the survey were not followed up.</li> </ul>
<p>Who manages the data?</p>	<ul style="list-style-type: none"> <li>• International HBSC research network</li> </ul>
<p>Where can you get hold of the data?</p>	<ul style="list-style-type: none"> <li>• The HBSC website available at <a href="http://www.hbsc.org/index.html">http://www.hbsc.org/index.html</a></li> </ul>
<p>References</p>	<ol style="list-style-type: none"> <li>1. Health Behaviour in School-aged Children [online]. 2009. Available at: <a href="http://www.hbsc.org/overview.html">http://www.hbsc.org/overview.html</a> [Accessed 17th Dec 2009]</li> <li>2. Currie C et al. <i>Inequalities in young people's health: HBSC international report from the 2005/2006 survey</i>. Copenhagen: WHO Regional Office for Europe; 2008. Available at: <a href="http://www.euro.who.int/datapublications/Publications/Catalogue/2008_0616_1">http://www.euro.who.int/datapublications/Publications/Catalogue/2008_0616_1</a> [Accessed 14<sup>th</sup> Jan 2010]</li> </ol>

### 3.8 Office for National Statistics ONS Mid-year population estimates

How are the data collected?	Mid-year population estimates (as at 30 June each year) provide an estimate of the resident population of an area based on births, deaths and an estimate of migration since the last census.
How accurate or complete will the data be?	<ul style="list-style-type: none"> <li>• The estimated resident population of an area includes all people who usually live there, whatever their nationality<sup>1</sup>.</li> <li>• Members of the UK and non-UK armed forces stationed in the UK are included<sup>1</sup>.</li> <li>• UK forces stationed outside the UK are excluded<sup>1</sup>.</li> <li>• Students are taken to be resident at their term time address<sup>1</sup>.</li> <li>• The estimates include long term international migrants (defined as somebody who changes his or her country of usual residence for a period of at least one year)<sup>1</sup>.</li> <li>• The estimates do not include short term migrants (people who come to or leave the UK for less than a year)<sup>1</sup>.</li> <li>• Full guidance on the methodology used by ONS to calculate population estimates can be accessed at <a href="http://www.statistics.gov.uk/about/data/methodology/specific/population/PEMethodology/">http://www.statistics.gov.uk/about/data/methodology/specific/population/PEMethodology/</a></li> </ul>
Are there any notes for interpretation /warnings /problems associated with the data?	<ul style="list-style-type: none"> <li>• ONS have a long-term programme of work on improving migration and population statistics. Between December 2009 and February 2010, ONS will run a consultation on proposed improvements to mid-year population estimates and a revised set of mid-year estimates for 2002-2008 will be published on 27 May 2010<sup>2</sup>.</li> <li>• The census and therefore mid-year population estimates are thought to underestimate the population in some areas e.g. areas of multi-occupancy housing.</li> </ul>
Potential for errors due to type of measurement, or bias and confounding	<ul style="list-style-type: none"> <li>• Mid-year population estimates are occasionally revised (e.g. following a Census of Population or a change in methodology). They also take into account boundary changes. 2002-2005 mid-year estimates were revised on 22 August 2007. The revisions were due to an improved method for estimating the international migration component of the mid-year estimates. This affected the migration component of the population estimates and therefore the population estimates overall<sup>2</sup>.</li> </ul>
Who manages the data?	Office for National Statistics
Where can you get hold of the data?	Office for National Statistics website available at: <a href="http://www.statistics.gov.uk/statbase/Product.asp?vlnk=601&amp;More=N">http://www.statistics.gov.uk/statbase/Product.asp?vlnk=601&amp;More=N</a>
References	<ol style="list-style-type: none"> <li>1. Office for National Statistics . <i>Population estimates for UK, England and Wales, Scotland and Northern Ireland - current datasets</i> [Online]. 2009. Available at: <a href="http://www.statistics.gov.uk/statbase/Product.asp?vlnk=15106&amp;More=Y">http://www.statistics.gov.uk/statbase/Product.asp?vlnk=15106&amp;More=Y</a> [Accessed 30<sup>th</sup> Dec 2009].</li> <li>2. Welsh Assembly Government. <i>2008 Mid-year Estimates of Population</i>. SB 49/2009. Cardiff: WAG; 2009. Available at: <a href="http://wales.gov.uk/docs/statistics/2009/090827sb492009en.pdf?lang=en">http://wales.gov.uk/docs/statistics/2009/090827sb492009en.pdf?lang=en</a> [Accessed 14 Jan 2010]</li> </ol>

## 4. Glossary

### 4.1 Abbreviations

ADDE	Annual District Death Extract
APHO	Association of Public Health Observatories
BMI	Body Mass Index
CI	Confidence interval
EASR	European age-standardised rates
HBSC	Health Behaviour in School-aged Children
HSW	Health Solutions Wales
ICD-10	International Classification of Diseases 10 <sup>th</sup> Revision
IOTF	International Obesity Task Force
LA	Local authority
LHB	Local health board
LSD	Lysergic Acid Diethylamide (hallucinogenic drug)
NatCen	The National Centre for Social Research (NatCen) ( <a href="http://www.natcen.ac.uk/">http://www.natcen.ac.uk/</a> )
NPHS	National Public Health Service for Wales
NWPHO	North West Public Health Observatory
ONS	Office for National Statistics
PEDW	Patient Episode Database Wales
SAMMEC	Smoking -Attributable Mortality, Morbidity, and Economic Costs
SSW	Stop Smoking Wales
STI	Sexually transmitted infection
WCfH	Wales Centre for Health
WHO	World Health Organisation
WHS	Welsh Health Survey
WOHIU	Welsh Oral Health Information Unit

## 4.2 Definitions

### Age-standardised rate

- Age-standardisation allows comparison of rates across different populations while taking account of the different age structures of those populations. Failure to take account of differing age structures can be very misleading when comparing rates of health-related behaviours in different populations. Measures are standardised to Wales unless otherwise stated.

### Attributable fractions (population attributable fractions)

- Attributable fractions are the proportions of all cases (e.g. deaths or hospital admissions) that are thought to be caused by a particular exposure, in this case alcohol or smoking. The fractions are calculated for conditions where there is considered sufficient evidence of a causal relationship between the exposure and the disease or injury.

### Body Mass Index (BMI)

- BMI is a measurement of a person's weight, compared to their height. BMI is calculated as weight (in kilograms) divided by the height squared (in metres). Adults with a BMI of 25 or more are categorised as overweight and with a BMI of 30 or more as obese.

### Census

- A Census is a survey of all people and households. The data gathered includes birth date, sex and occupation, but also education level and health-related data. In England and Wales it is undertaken every 10 years and the next Census will be conducted in 2011.

### Cardiovascular diseases

- See *circulatory diseases*

### Circulatory diseases

- Circulatory diseases include all diseases caused by hardening of the inner lining of the arteries with fatty deposits. These diseases are often referred to as cardiovascular diseases and include coronary heart disease.

### European age-standardised rate

- The European age standardised rate represents the overall rate you would get if the population had the same age-structure as a theoretical standard European population. In order to calculate this we apply the rates which occur in each age band to the new (standard) population structure. The measure only allows for comparison between rates which have been standardised; it is not a proportion or risk of an event occurring and does not, of itself, involve a comparison with rates across Europe.
- See *age-standardised rate* for further details

### Health board

- Health boards are the NHS bodies in Wales responsible for the health of the population within their geographical area. This includes planning, designing, developing and securing the delivery of primary, community, in-hospital care services and specialised services. There are seven health boards in Wales, changed from 22 local health boards and seven NHS Trusts previously.

### Mid-year estimates

- Annual ONS estimates of the resident population, based on the Census and taking into account population change (births, deaths and migration).

### Outcome measure

- An outcome measure in this report refers to an indicator to assess the impact of a health-related behaviour e.g. death due to smoking is an outcome of smoking behaviour.

### National Public Health Service for Wales

- See *Public Health Wales NHS Trust*

### Public Health Wales NHS Trust

- Public Health Wales was established as an NHS Trust on 1 October 2009. The Trust incorporates the functions and services previously provided by the National Public Health Service for Wales, the Wales Centre for Health, the Welsh Cancer Intelligence and Surveillance Unit and Screening Services Wales

### Statistical significance

- A difference is called statistically significant if it is unlikely to have occurred by chance.

### Type I and Type II errors

- In making decisions about whether to reject a hypothesis two types of error are possible: a null hypothesis can be rejected when it is in fact true, or it is possible to fail to reject it when it is false. These are called type I and type II errors respectively. A significance test can never prove that a null hypothesis is either true or false. It can only give an indication of the strength of the evidence against it<sup>1</sup>.

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### Reference

1. Kirkwood B R, Sterne J A C. *Essential Medical Statistics*. 2<sup>nd</sup> ed. Oxford: Blackwell Publishing; 2003

## Appendix A – Health Behaviour in School-aged Children (HBSC)

Indicators from the HBSC study that have been included in the Lifestyle Profile are detailed below.

<p><b>% overweight or obese</b></p>	<ul style="list-style-type: none"> <li>• Young people were asked to give their self-reported height (without shoes) and weight (without clothes)<sup>1</sup>.</li> <li>• The findings presented in this report show the proportion of 15-year olds who are overweight or obese.</li> <li>• Body Mass Index (BMI) is the most commonly employed index of fatness status among children and adolescents.</li> <li>• HBSC has adopted the international BMI standards for young people that are recommended by the International Obesity Task Force (IOTF). These cut-offs used with self-reported BMI may lead to underestimation of overweight and obesity<sup>1</sup>.</li> <li>• There were high levels of missing data in several countries related to this measure. The results for other UK nations for this age group should be treated with caution as over 30% of values are missing<sup>1</sup>.</li> </ul>
<p><b>% eating fruit daily</b></p>	<ul style="list-style-type: none"> <li>• Young people were asked how often they eat fruit, response options ranged from 'never' to 'more than once a day'<sup>1</sup>.</li> <li>• The findings presented in this report are the proportions of 15-year olds that reported eating fruit at least every day or more than once a day<sup>1</sup>.</li> </ul>
<p><b>% moderate to vigorous activity daily</b></p>	<ul style="list-style-type: none"> <li>• Young people were asked how to report the number of days over the past week that they were physically active for a total of at least 60 minutes per day<sup>1</sup>.</li> <li>• The question was preceded by explanatory text that defined moderate to vigorous physical activity as 'any activity that increases your heart rate and makes you get out of breath some of the time' and gave some examples of such activities<sup>1</sup>.</li> <li>• The findings presented in this report show the proportions of 15-year olds that meet the recommended guidelines of at least 60 minutes physical activity every day over the past week.</li> </ul>
<p><b>% smoking weekly</b></p>	<ul style="list-style-type: none"> <li>• Young people were asked how often they smoke tobacco at present. Response options ranged from 'every day' to 'I do not smoke'<sup>1</sup>.</li> <li>• The findings presented in this report the proportions of 13-year olds that reported smoking at least once a week.</li> </ul>
<p><b>% drinking alcohol weekly</b></p>	<ul style="list-style-type: none"> <li>• Young people were asked how often they drink anything alcoholic and given a list of drinks: beer, wine, spirits, alcopops, or any other drink that contains alcohol. Response options ranged from 'never' to 'every day'<sup>1</sup>.</li> <li>• The findings presented in this report are the proportions of 13-year olds that reported drinking any alcohol at least every week.</li> </ul>
<p><b>% have used cannabis in last 30 days age 15</b></p>	<ul style="list-style-type: none"> <li>• Young people (15-year olds only) were asked whether they had used cannabis in the last 30 days. Response options ranged from 'never' to '40 times or more'<sup>1</sup>.</li> <li>• The findings presented in this report show the proportions that reported using cannabis at least once in the last 30 days.</li> <li>• Recent cannabis use is indicative of regular rather than experimental use<sup>1</sup>.</li> </ul>

<p>% have had sexual intercourse age 15</p>	<ul style="list-style-type: none"> <li>• 15-year olds were asked whether they had ever had sexual intercourse<sup>1</sup>.</li> <li>• The question was qualified by colloquial terminology for example “having sex” or “going all the way” to ensure that respondents understood the question<sup>1</sup>.</li> <li>• The findings presented in this report show the proportions that reported that they had had sexual intercourse.</li> </ul>
<p>Reference</p>	<p>Currie C et al. <i>Inequalities in young people’s health: HBSC international report from the 2005/2006 survey</i>. Copenhagen: WHO Regional Office for Europe; 2008. Available at: <a href="http://www.euro.who.int/datapublications/Publications/Catalogue/20080616_1">http://www.euro.who.int/datapublications/Publications/Catalogue/20080616_1</a> [Accessed 14<sup>th</sup> Jan 2010]</p>