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Key messages

- Alcohol is a major preventable cause of death and illness in Wales. Around 1,000 deaths are attributable to alcohol per year in Wales.

- Alcohol consumption in children and young people is of particular concern. Wales had the highest percentage of all 40 countries surveyed in 13-year olds having been drunk more than twice (27% of boys and 26% of girls). In children aged under 16 more girls were admitted to hospital than boys with 215 admissions in boys and 295 in girls for alcohol-related conditions in 2006.

- Substantial inequalities were found between the most deprived and least deprived communities. The most deprived areas experienced alcohol-related mortality rates more than three times higher than the least deprived areas.

- Comparisons with UK sales estimates suggest that surveys including the Welsh Health Survey may underestimate alcohol consumption, and may only represent 55-60% of the true consumption figure.

- The number of deaths linked to alcohol can be estimated in different ways. There were 260 alcohol-related deaths per year amongst males in Wales (conditions most directly linked to alcohol) compared to 670 alcohol-attributable deaths (4.3% of all male deaths) using a new wider definition that includes conditions in part linked to alcohol. When estimating or monitoring the impact of alcohol on mortality these new indicators of alcohol-attributable harm should also be considered.

- The alcohol-related mortality rate for males almost doubled in the period of 1991-1993 to 2004-2006, although the trend has been levelling out in the latest UK rates released. The rate for persons in Wales in 2007 was slightly higher than the rate for England, and just over half the rate for Scotland.

- The trend in both alcohol-related and alcohol-attributable hospital admission rates is upwards, with rates approximately twice as high for males than females.

- The average annual number of alcohol-related hospital admissions for residents of Wales was around 8,400 for males and 4,500 for females (1.5% of all admissions).

- Alcohol is perceived to be a major cause of crime by around half of respondents to the British Crime Survey. There were an estimated 18,000 incidents of violent crime attributable to alcohol in Wales in the year 2007/08.

- There were around 15,300 referrals for treatment of alcohol misuse in Wales in the year 2007-08; around 1600 were for patients of age 19 and younger.
1. Introduction

Alcohol consumption is deeply ingrained within the culture of the UK and other western countries. Many people enjoy alcoholic drinks in moderation, and sensible drinking can have some benefit as it is associated with a lower risk of coronary heart disease and stroke in older people (BMA, 2008). But alcohol is also an addictive drug and alcohol misuse can lead to significant harm to the individuals, families and society. Alcohol is estimated to be the third highest of twenty-six risk factors for ill-health in the EU, ahead of overweight/obesity and behind only tobacco and high blood pressure (Anderson & Baumberg, 2006). It therefore presents a major public health challenge.

The new 10-year substance misuse strategy recently launched by the Welsh Assembly Government (2008) sets out a national agenda to reduce harm caused by alcohol, drugs and other substances. It aims to prevent substance misuse through education and other mechanisms; improve services for substance misusers; support and protect families and tackle the inappropriate availability of alcohol (Welsh Assembly Government, 2008). There have been many reports on the topic of alcohol in the media recently, particularly relating to binge drinking and young people’s drinking. A number of health intelligence reports and data relating to alcohol and health have been published for England and the English regions. For Wales, reports are available on specific topics, for example on alcohol-related mortality (Welsh Assembly Government, 2007), or as alcohol sections in reports on substance misuse (NPHS, 2006; Welsh Assembly Government, 2008). The latest method used in England to estimate alcohol-attributable harm has not previously been applied to data for Wales. This joint health intelligence report by the Wales Centre for Health (WCfH) and the National Public Health Service for Wales (NPHS) addresses this gap for Wales and presents comprehensive information based on a number of available data sources on the subject. Like previous titles in this series, on smoking and rural health, it is aimed at public health professionals and the interested public, and intends to use as little technical jargon as possible.
2. Definitions of units and drinking patterns

2.1 Alcohol units

Alcoholic drinks in the UK are measured in units and each unit corresponds to approximately 8 grams (g) or 10 millilitres (ml) of pure alcohol. The number of units in an alcoholic drink depends on the strength of the drink and the size of the measure. The strength of some drinks, for example wine, has increased in recent years and serving sizes can vary, making it difficult for consumers to count their unit intake.

The number of units in a drink is calculated by multiplying the amount in millilitres (ml) by the strength (Alcohol by Volume, ABV) and dividing the result by 1000. Information for consumers and a unit calculator can be found on the 'Alcohol: know your limits' website (units.nhs.uk) and Table 1 lists the number of units in common alcoholic drinks.

Table 1: Number of units in common alcoholic drinks

<table>
<thead>
<tr>
<th>Drink (and unit strength (ABV))</th>
<th>Quantity</th>
<th>Units</th>
<th>Quantity</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lager, beer and cider (4%)</td>
<td>Bottle (330ml)</td>
<td>1.3 units</td>
<td>Pint (568ml)</td>
<td>2.3 units</td>
</tr>
<tr>
<td>Lager, beer and cider (6%)</td>
<td>Bottle (330ml)</td>
<td>2 units</td>
<td>Pint (568ml)</td>
<td>3.4 units</td>
</tr>
<tr>
<td>Wine (10%)</td>
<td>Standard glass (175ml)</td>
<td>1.75 units</td>
<td>Large glass (250ml)</td>
<td>2.5 units</td>
</tr>
<tr>
<td>Wine (14%)</td>
<td>Standard glass (175ml)</td>
<td>2.5 units</td>
<td>Large glass (250ml)</td>
<td>3.5 units</td>
</tr>
<tr>
<td>Spirits (38-40%) (Gin, rum, vodka &amp; whiskey)</td>
<td>Small measure (25ml)</td>
<td>1 unit</td>
<td>Large measure (35ml)</td>
<td>1.4 units</td>
</tr>
<tr>
<td>Alcopops (5%)</td>
<td>1 bottle (275ml)</td>
<td>1.4 units</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Department of Health (2009)

2.2 Sensible drinking

Sensible drinking is consuming alcohol in a way that is unlikely to cause oneself or others significant risk of harm (Department of Health, 2007). Guidelines used to be defined in terms of weekly limits, but the Department of Health (2007) has shifted the emphasis to daily drinking limits.

It is recommended that men should not regularly drink more than 3-4 units per day and women not more than 2-3 units per day. Reported drinking above guidelines (i.e. levels above sensible drinking) from surveys used in this report refers to drinking above these recommended limits, and data is available for Wales.
2.3 Hazardous drinking

Hazardous drinking is a pattern of alcohol use that increases the risk of harmful consequences for the individual. It is measured in surveys as drinking between 22 and 50 units per week for men, and between 15 and 35 units per week for women (Deakon et al., 2008). In contrast to harmful use, hazardous use refers to patterns of use that are of public health significance despite the absence of any current disorder in the individual user (World Health Organisation, 2008). Figures from the Welsh Health Survey, although currently not produced for the definition of hazardous drinking, could provide valuable data for monitoring this group.

2.4 Harmful drinking

Harmful drinking is a pattern of alcohol use that causes harm to physical and/or mental health and commonly, but not always, has adverse social consequences (World Health Organisation, 2008). Women who regularly drink over 6 units a day (or over 35 units a week) and men who regularly drink over 8 units a day (or 50 units a week) are at highest risk of such alcohol-related harm (Department of Health, 2007). Figures from the Welsh Health Survey, although currently not produced for harmful drinking, could provide valuable data.

2.5 Binge drinking

The term 'binge drinking' has no standard definition. It usually refers to drinking too much alcohol over a short period of time, e.g. in one evening, and typically leads to drunkenness (Department of Health, 2007). In surveys, it is usually measured as drinking over 6 units a day for women or over 8 units a day for men, and in practice, many binge drinkers drink substantially more than this level (Department of Health, 2007). This definition, also listed in Table 2, is used throughout this report where survey results are reported, with data available for Wales.

Table 2: Overview of definitions of consumption patterns

<table>
<thead>
<tr>
<th>Category</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensible drinking</td>
<td>Not more than 3-4 units per day</td>
<td>Not more than 2-3 units per day</td>
</tr>
<tr>
<td>(recommended limit)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazardous drinking</td>
<td>22-50 units per week</td>
<td>15-35 units per week</td>
</tr>
<tr>
<td>(data not available for Wales)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harmful drinking</td>
<td>Above 50 units per week</td>
<td>Above 35 units per week</td>
</tr>
<tr>
<td>(data not available for Wales)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Binge drinking</td>
<td>Above 8 units during a single session</td>
<td>Above 6 units during a single session</td>
</tr>
</tbody>
</table>
3. Patterns of drinking

Data on drinking patterns come from surveys which ask a sample of the population about their drinking habits. These results are then used as an estimate of drinking patterns in the population. The main survey of adults in Wales is the Welsh Health Survey, which annually asks around 15,000 residents in Wales about their health and lifestyle choices including drinking patterns. Another survey is the General Household Survey, which covers adults in England, Scotland and Wales, and allows comparisons across the United Kingdom. Further information on these surveys can be found in Appendix 1. Additionally, socio-economic patterns of alcohol consumption are discussed in Section 6.

3.1 Drinking during pregnancy

Guidance from the Government for all four nations advises that pregnant women should avoid drinking alcohol, but if they choose to drink, they should not drink more than 1 to 2 units of alcohol once or twice a week (Department of Health, 2009). Additional advice from the National Institute for Health and Clinical Excellence (NICE) advises women to avoid alcohol in the first three months in particular, because of the increased risk of miscarriage. Based on results from the Infant Feeding Survey, it is estimated that 55% of women consumed alcohol during pregnancy in Wales (see Figure 1). Most of the women who choose to drink consume little alcohol with 40% of pregnant women overall drinking less than 1 unit a week. However, 7% of pregnant women in Wales drink more than 1 to 2 units per week.

Figure 1: Estimated weekly alcohol consumption during pregnancy by UK nation

Source: Infant Feeding Survey 2005
3.2 Drinking in children and young people

The Health Behaviour in School-aged Children survey (HBSC) is conducted in 40 countries, including Wales, England and Scotland. In 2005/2006 amongst 11-year olds in Wales 7% of boys and 4% of girls said that they drink alcohol at least once a week. For 13-year-olds, this percentage rises to 23% of boys and 20% of girls (see Figure 2). Wales has a higher percentage of 13-year-olds drinking alcohol at least once a week compared to England and Scotland, and out of the 40 countries surveyed Wales has the fourth highest percentage amongst 13-year old boys (third highest amongst girls). Norway has the lowest percentage amongst 13-year olds with 2% of boys and 1% of girls reporting drinking alcohol at least once a week. Overall, boys in northern Europe reported relatively low rates of weekly drinking with the exception of boys in Great Britain (HBSC, 2008). Also, there is a general tendency for weekly drinking to be more common among boys than girls, but for Wales, Scotland and England these differences are relatively narrow and not statistically significant (Currie et al., 2008).

Figure 2: Percentage of 13-year olds who reported drinking at least once a week for selected countries (2005/06)

Source: HBSC 2005/06
Children were also asked about their experience of drunkenness. Amongst 11-year-olds, 8% of boys and 4% of girls in Wales reported that they have been drunk at least twice. Amongst 13-year olds in Wales this percentage rises to 27% of boys and 26% of girls, the highest percentage of all 40 countries surveyed (see Figure 3). For 15-year-olds, the percentage of those that have been drunk at least twice doubles to 54% of boys and 52% of girls, compared to 13-year-olds.

Self reported intake is inevitably subjective, and there are some issues with the sample size and methodological variation (see also Appendix 1), however, these are concerning indications of alcohol use in children of such young age in Wales.

### 3.3 Consumption in adults in Wales by age group and sex

Survey results are essential to identify characteristics of those drinking, and patterns are reported by age group and sex.

Respondents to the Welsh Health Survey (see Appendix 1) were asked questions on their drinking habits including how often they drank and how much they drank on the heaviest drinking day in the previous week.

Results from the Welsh Health Survey 2007 showed that more men than women reported drinking above guidelines or binge drinking. This is highest in men at 56% amongst the 25-34 year olds, and decreases with age (see Figure 4). For women the highest percentage was 41% amongst the 16-24 year olds and decreases with age, particularly from age 55 and older.

A similar pattern is seen with binge drinking, although the decrease with age is more pronounced for binge drinking, particularly in females. The peak in binge drinking for men is 39% amongst the 25-34 year olds, and for females 27% amongst the 16-24 year olds (see Figure 5). The difference between men and women is wider for binge drinking than for drinking above guidelines.
Figure 4: Percentage who reported drinking above guidelines in the past week in Wales by age and sex

Source: WHS 2007

Figure 5: Percentage who reported binge drinking in the past week in Wales by age and sex

Source: WHS 2007
Figure 6 shows how often, on average, the respondents drank alcohol and the pattern is very different for men and women. 12% of men and 20% of women reported that they never drank, and 13% of men and 22% of women only drank alcohol at special occasions.

In men, those drinking on weekends and occasionally during the week were the largest group with 30%. 12% of males and 7% of females reported drinking alcohol on most days.

### 3.4 Drinking patterns and trends in Great Britain

The General Household survey (see Appendix 1) covers England, Wales and Scotland and asks respondents about drinking patterns, including how much they drank in the past week. Results from the General Household Survey 2006 (GHS) show that in Wales 22% of men reported binge drinking on at least one day in the past week compared to 12% of women (see Figure 7). The corresponding percentages in Scotland and England are similar to Wales for males, and very slightly lower for females in Wales. In contrast to the GHS figures, the corresponding percentage of men reporting binge drinking from the Welsh Health Survey 2005/06 was 25% and 13% for women, slightly higher than the GHS result. Similarly, Figure 8 shows that 42% of men and 34% of women in Wales reported that they drank above recommended guidelines, which is only very slightly higher than in Scotland and England. The corresponding figures as above from the Welsh Health Survey are 47% for men and 32% for women drinking above guidelines.

There are differences in survey methodology and sample size between the two surveys, which may account for these differences in results. A new methodology being implemented in future releases of the Welsh Health Survey is likely to increase these differences (further details on the surveys see Appendix 1). A discussion of surveys and their suitability to convey consumption levels in the population can be found in Section 3.6. To be able to compare figures for Wales, England and Scotland the General Household survey results are used in this section.
Figure 7: Percentage who reported binge drinking in the last week, 2006, by nation and sex

Source: General Household Survey 2006 (improved method)

Figure 8: Percentage who reported drinking above guidelines, 2006, by nation and sex

Source: General Household Survey 2006 (improved method)
Figures 9 for males and 10 for females illustrate the trend in the percentage of binge drinking in 1998-2006. Both charts suggest that binge drinking in the younger age groups has declined over the last few years. Amongst males aged 16-24, for example, 37% reported binge drinking in 2003 compared to 27% in 2006.

From 2006 onwards an improved methodology was used in light of changing glass sizes and drink strength, which generally shows higher percentages compared to the method shown here in the chart. Using the new method, however, would not allow a comparison over time.
3.5 Drinking patterns by local authority in Wales

Data from the Welsh Health Survey (see Appendix 1) allows a comparison of reported binge drinking in each local authority with the Wales average.

The age-standardised percentages are available for persons (see Figure 11) and show that binge drinking percentages are higher than the Wales average in Rhondda Cynon Taff and lower in Carmarthenshire, Monmouthshire and the Isle of Anglesey.

In an area where the population is younger, the respondents may be more likely to binge drink (see also Section 3.3) compared to areas with an older population. Age-standardised percentages are shown in Figure 11, as these are calculated proportions as if the local authorities had the same age profile as that of Wales. It therefore adjusts for the effect of age, when making comparisons between local authorities. It also should be noted that these are percentages of respondents resident in local authorities, which may not necessarily be where the drinking occurs. City centres in Cardiff or Swansea, for example, also attract revellers from neighbouring areas.

Figure 11: Percentage who reported binge drinking by local authority, persons, age-standardised

Source: WHS 2005/07 (Percentages and Confidence intervals)
3.6 Comparison of survey results and sales data

Survey data are used to estimate alcohol consumption in the population. However, they are known to underestimate alcohol intake and it is suggested that survey estimates only represent between 55% and 60% of the true figure (Goddard, 2007; Catto, 2008). People tend to understate the amount they drink, partly unintentionally, as they genuinely forget some of the drinking or as it is increasingly difficult to calculate the units due to different strengths and serving sizes (Goddard, 2007). Some may deliberately understate the amount drunk, because they feel that it is not socially acceptable. It is also reported that under-representation of heavy drinkers in surveys may be one of the main reasons for the underestimation in the population (Goddard, 2007).

Figure 12 shows a comparison of weekly alcohol consumption for Great Britain and Wales and UK per person sales data. In 2006 the average weekly alcohol consumption per adult in Great Britain (General Household Survey) was 10.2 units, the estimated weekly consumption in Wales (Welsh Health Survey, see Appendix 1) was 10.6 units and UK sales data was 21.2 units. Sales data are derived from HM Revenue and Customs’ duty clearances for alcohol released for sale, but not necessarily sold or consumed. They also include drinks industry figures and exclude, for example, cross-border shopping or illicit consumption, and unfortunately sales figures are not available for Wales separately. Also, data from the Welsh Health Survey and General Household Survey includes those aged 16 and above, whilst the UK sales figures are for those aged 15 and above. The estimated weekly consumption figures from the Welsh Health Survey are similar to those from the General Household survey for recent years. It is not clear how accurate the sales figures are as an estimate of consumption, but they are approximately twice the number of units compared to both survey results and suggest underestimation of alcohol intake in the population as reported by Goddard (2007).

While there may be underestimation in the survey results, survey data are still essential to identify characteristics of those drinking, for example comparisons between age groups, males and females, or frequency of drinking, which sales data cannot provide.

Figure 12: Average weekly alcohol consumption: UK sales data, General Household survey (GHS) and Welsh Health Survey (WHS)

Source: BBPA, GHS, WCFH/NPHS from WHS (03/04, 04/05, 05/06 charted as 2004, 2005, 2006), 2007 WHS figure from WAG
3.7 International comparison of consumption estimates

It is often assumed that alcohol consumption in the UK is higher than in other European countries. The consumption estimates in Figure 13 based on drinks industry figures and other sources show that the UK compares favourably to some European neighbours. Germany, France and Spain are estimated to consume approximately 10 litres of pure alcohol per head compared to the UK with just over 8 litres. The Scandinavian countries, Australia and the USA are estimated to consume less. It is not certain how reliable these estimates are for all countries included, but this comparison is meant to give a general indication. Unfortunately figures for Wales are not available separately.

Figure 13: International consumption estimates for selected countries, litres per head of pure alcohol, 2006

Source: BBPA 2008
3.8 Affordability and consumption

It is widely reported that affordability of alcohol has increased and that this plays a significant role in the rise in alcohol consumption (British Medical Association, 2008). Figure 14 shows the affordability of alcohol (relative price of alcohol compared to other items) and estimated UK consumption of pure alcohol per person aged 15 and over.

Affordability of alcohol is based on the average price of alcohol compared to other goods indexed to prices in 1980 (value 100). A value of affordability above 100 means alcohol is more affordable. Affordability has increased by 69% between 1980 and 2007 and estimated UK consumption by 19% during the same period. Although no firm conclusions can be drawn from this type of chart, it suggests that estimated alcohol consumption has increased with rising affordability.

Figure 14: Estimated affordability and consumption of pure alcohol per head aged 15 and over, UK, 1980-2007

Source: (The Information Centre, 2008), BBPA 2008 (axis truncated)
4. Mortality

This report uses two ways of estimating the impact of alcohol on mortality. One is alcohol-related mortality, which is defined by the Office for National Statistics (ONS) to include only those causes of death most directly linked to alcohol use such as alcoholic liver disease (see Appendix 2). This definition is likely to underestimate the burden of alcohol use on mortality as it does not include conditions in part related to alcohol such as cancers of the mouth, oesophagus and liver. The second wider definition used is alcohol-attributable mortality, which includes deaths due to conditions in part attributable to alcohol (see Appendix 2 for further details).

There were substantial differences in the numbers of death between the two definitions. There was an average of 260 deaths per year in males using the ONS definition of alcohol-related mortality compared to 670 alcohol-attributable deaths in Wales, which were estimated to be attributable to alcohol. For females there was an average of 146 alcohol-related deaths, compared to 344 alcohol-attributable deaths per year. Table 3 shows the annual numbers of deaths and also the percentages of total deaths in Wales. Alcohol-attributable deaths for males accounted for 4.3% of the total deaths in males (2% for females). Whilst the percentages may appear small, these untimely deaths could be avoided.

Table 3: Comparison of average annual alcohol-related and alcohol-attributable deaths in Wales (numbers and percentages)

<table>
<thead>
<tr>
<th></th>
<th>Alcohol-related deaths (ONS)</th>
<th>Alcohol-attributable deaths</th>
<th>Total deaths in Wales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>260 (1.7%)</td>
<td>670 (4.3%)</td>
<td>15422</td>
</tr>
<tr>
<td>Female</td>
<td>146 (0.9%)</td>
<td>344 (2%)</td>
<td>17115</td>
</tr>
</tbody>
</table>

Source: WCfH/NPHS from ONS ADDE (average 2002-2006)
4.1 Alcohol-related mortality (ONS definition)

Alcohol-related mortality is defined by the ONS to include only those causes of death most directly linked to alcohol use such as alcoholic liver disease. Figure 15 shows the trend in alcohol-related mortality over time. Mortality rates for males have almost doubled from 8.8 per 100,000 in the period of 1991-1993 to 16.8 in 2003-2005. In the latest period of 2004-2006 this rate was only very slightly lower than the previous period at 16.7 per 100,000.

It appears that the rising trend has been slowing in recent years for males. For females the alcohol-related mortality rate was lower than for males and has increased from 4.9 per 100,000 in the period of 1991-1993 to a rate of 8.9 per 100,000 in 2004-2006. The latest ONS release of rates for 2007 shows that the UK trend for both males and females is levelling out (ONS, 2009). A comparison to rates in England, Northern Ireland and Scotland for persons is displayed in Figure 16. It shows that the rate for Wales was slightly higher than the rate for England, and slightly lower than the rate for Northern Ireland, in both 2004 and 2007. Scotland had the highest rate, nearly twice the rate for Wales in 2007.
Figure 16: Alcohol-related mortality, European age-standardised rate (EASR), by nation, persons, 2004 and 2007

Source: ONS, GRO

Figure 17 shows the percentage of male alcohol-related deaths for each condition. It shows that nearly two thirds of the alcohol-related deaths in males (63.1%) were due to alcoholic liver disease and nearly a quarter of these deaths (23.0%) were due to fibrosis and cirrhosis of the liver.

Figure 17: Percentage of alcohol-related deaths by condition, Wales, males, 2002-06

Source: WCfH/NPHS from ONS ADDE
Figure 18 shows the alcohol-related mortality rates for males by local authority for the years 2002-2006. The rates for Monmouthshire and Powys are lower than the Welsh average of 16.6 per 100,000 people. Cardiff has a higher rate than the Welsh average, but other local authorities with smaller populations have higher rates but are not statistically significantly different. Merthyr Tydfil has the highest rate at 23.2 per 100,000, nearly three times the rate for Powys at 8.3.

Figure 18: Alcohol-related mortality, European age-standardised rate (EASR) per 100,000, ranked local authorities, males, 2002-06

Source: WCfH/NPHS from ONS ADDE MYE
Figure 19 shows the percentage of female alcohol-related deaths by condition. It shows that nearly two thirds of the alcohol-related deaths in females (63.0%) are due to alcoholic liver disease and a quarter of these deaths (25.3%) are due to fibrosis and cirrhosis of the liver.

![Figure 19: Percentage of alcohol-related deaths by condition, Wales, females, 2002-06](source)

- Alcoholic liver disease: 63.0%
- Fibrosis and cirrhosis of liver (excluding biliary cirrhosis): 25.3%
- Mental and behavioural disorders due to use of alcohol: 5.9%
- Accidental poisoning by and exposure to alcohol: 2.9%
- Chronic hepatitis nec: 1.8%
- Others: 0.2%

Source: WCfH/NPHS from ONS ADDE
Figure 20 shows the alcohol-related mortality rates for females by local authority for the years 2002-2006. The rate for Monmouthshire is lower than the Welsh average of 8.5 per 100,000 people, whereas Conwy has a significantly higher rate than the Welsh average. Alcohol-related mortality by deprivation is discussed in Section 6.
4.2 Alcohol-attributable mortality

Alcohol-attributable mortality is a wider definition than alcohol-related mortality reported in Section 4.1. It also includes deaths due to conditions which are in part attributable to alcohol and uses population attributable fractions to estimate alcohol-attributable deaths. Details on the definition and method can be found in Appendix 2.

Figure 21 shows the trend in alcohol-attributable mortality for males and females between 2001 and 2006. It shows that the rate for males was higher than for females, and that the rate over time for females has been consistent. Although there are small fluctuations in the rate for males, there appears to be little change over the six years examined.

The rate for males in Wales in 2006 was 42.0 per 100,000, slightly higher than in England with a rate of 39.8. For females the corresponding rate for Wales was 17.5 per 100,000 compared to 16.2 for England, but this very small difference is unlikely to be statistically significant.

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Figure 21: Trend in alcohol-attributable mortality, annual European age-standardised rate (EASR) per 100,000 by sex, Wales, 2001-06

Source: WCfH/NPHS from ONS ADDE MYE using attributable fractions (see Appendix 2)
Figure 22 shows the alcohol-attributable mortality rates for males for local authorities in Wales. The rate for males in Wales was 41.6 per 100,000 (2002 - 2006) and rates for Conwy and Carmarthenshire are significantly higher than the Wales average, compared to those for Monmouthshire and Powys which were significantly lower. The alcohol-attributable mortality rates for females are displayed in Figure 23. The chart shows that the rate for females in Wales is 17.1 per 100,000 (2002 - 2006) with rates in Conwy significantly higher than the Wales average, and the rates in Monmouthshire significantly lower.

Figure 22: Alcohol-attributable mortality, European age-standardised rate (EASR) per 100,000, males, ranked by local authority, 2002-06

Source: WCfH/NPHS from ONS ADDE MYE using attributable fractions (see Appendix 2)
Figure 23: Alcohol-attributable mortality, European age-standardised rate (EASR) per 100,000, females, ranked by local authority: 2002-06

Source: WCfH/NPHS from ONS ADDE MYE using attributable fractions (see Appendix 2)
5. Admissions to hospital

Hospital admissions data are useful both as an indicator of the level of alcohol associated harm in the population and also, of course, as an indicator of the burden placed on health services. The data included here relate to hospital admissions which are classed as:

- ‘inpatients’ - emergency or elective admissions involving at least one overnight stay; or
- day cases - elective admissions where the patient is admitted during the day with the intention of receiving care but where no overnight stay is required.

The data exclude attendance at outpatient clinics and, importantly, accident and emergency (A&E) units. The data also, of course, exclude GP consultations. For this reason, the data will underestimate the true level of illness and health service use associated with alcohol. At the time of writing a new routine source of A&E attendance data called the Emergency Department Data Set (EDDS) is due to start collecting data from all Welsh A&E Units in April 2009. EDDS data will include information on the reason for the attendance, for example, whether it is alcohol-related.

As with the mortality analysis contained within section four of this report, the analysis of admissions has been undertaken for alcohol-related admissions, that is for diagnoses which are deemed to be entirely due to alcohol, and for alcohol attributable admissions, that is where the admission is either entirely or partially due to alcohol. Further information regarding the methodology is provided in the following sections and in Appendix 2.

5.1 Alcohol-related hospital admissions

Alcohol-related admissions include inpatient and day case admissions where there is any mention of one or more of the diagnoses specified by the ONS as being due to alcohol such as, for example, alcoholic liver disease (see Appendix 2 for the full list of diagnoses). Since there are many other conditions requiring admission to hospital that are partly due to alcohol, the data will not reflect the true burden of alcohol in terms of population health and health services. Also, as mentioned above, since the data refer only to inpatients and day cases they focus on the more severe end of the spectrum of alcohol-related harm. Nevertheless, the data are still of value both for comparisons between areas and over time. The average annual number of alcohol-related hospital admissions for residents of Wales between 2002 and 2006 was 8,403 for males and 4,512 for females representing around one and a half per cent of all admissions. In children aged under 16 more girls were admitted than boys, with 215 boys and 295 girls admitted for alcohol-related conditions in 2006.

Figure 24 shows the trend in the age-standardised rate for alcohol-related hospital admissions in Wales for the period 1999 to 2006. It is clear that, in both females and males, rates have increased. It is not possible to say for certain whether this is due to a genuine increase in alcohol-related illness or other factors such as greater awareness of these conditions among medical staff composing patient notes or an increased tendency to admit patients with certain diagnoses.

Figure 25 shows a breakdown of the alcohol-related conditions for which males resident in Wales were admitted between 2002 and 2006. The chart shows the proportion (percentage) of alcohol-related admissions each condition accounts for. The largest condition was mental and behavioural disorders due to alcohol that accounted for over 60 per cent of admissions in males. The majority of admissions for this condition, when further broken down, are due to acute intoxication, dependence syndrome, harmful use and withdrawal state. Other major conditions were alcoholic liver disease and intentional self-poisoning due to alcohol.
Figure 24: Trend in alcohol-related hospital admissions in Wales residents, European age-standardised rate (EASR) per 100,000 by sex, 1999-2006

Source: WCfH/NPHS from HSW (PEDW), ONS (MYE)

Figure 25: Percentage of alcohol-related hospital admissions by condition, Wales, males, 2002-06

Source: WCfH/NPHS from HSW (PEDW)
Figure 26 shows the equivalent information for females. A similar pattern is exhibited with mental and behavioural disorders due to alcohol accounting for over 60 per cent of admissions and a breakdown of ‘sub-categories’ similar to males. However, the proportion of admissions due to intentional self-poisoning due to alcohol was more than twice as high in females compared with males.

Figure 26: Percentage of alcohol-related hospital admissions by condition, Wales, females, 2002-06

Source: WCfH/NPHS from HSW (PEDW)
Figure 27 shows the age-specific rates for alcohol-related admissions for males and females in Wales for the period 2002-06. The chart shows an ‘n’ shaped pattern, the middle-aged groups having the highest rates. With the notable exception of the 10-15 year old age group, males exhibit higher rates than females.

Source: WCfH/NPHS from HSW (PEDW), ONS (MYE)
Figure 28 shows the age-standardised rate per 100,000 for alcohol-related hospital admissions for local authorities in Wales. Rates vary considerably, ranging from under 400 per 100,000 in Ceredigion to almost 900 in Blaenau Gwent. The four areas with the lowest rates for this indicator tend to exhibit lower than average rates for adverse health in general, however other areas which tend to have poor health overall such as Rhondda Cynon Taff and Caerphilly show alcohol-related hospital admission rates which are similar to the Wales average. Conversely, there are some areas with better than average health overall such as Conwy and Denbighshire which exhibit a high rate for this indicator.

Figure 28: Alcohol-related hospital admissions, European age-standardised rate (EASR) per 100,000, ranked local authorities, males, 2002-06

Source: WCfH/NPHS from HSW (PEDW), ONS (MYE)
Figure 29 shows the equivalent data for females. Across all areas the rate in females is much lower than in males (Figure 28). The difference between Monmouthshire and its neighbour, Blaenau Gwent, is stark, the rate being more than twice as high in Blaenau Gwent. In general, however, the pattern shown does not reflect the classic divide between the more deprived valley areas and their less deprived counterparts. Rhondda Cynon Taff, for example has low rates whilst in Conwy rates are much higher than the Wales average. A similar pattern was also found for alcohol-related mortality where Conwy and Denbighshire had high rates for both males and females (see Section 4.1).

![Figure 29: Alcohol-related hospital admissions, European age-standardised rate (EASR) per 100,000, ranked local authorities, females, 2002-06](image)

Source: WcFH/NPHS from HSW (PEDW), ONS (MYE)
5.2 Alcohol-attributable hospital admissions

As with the analysis of mortality in Section 4.2, alcohol-attributable hospital admissions give a fuller picture of the extent of harm and burden placed on health services due to alcohol. This is because, as well as including conditions which are entirely due to alcohol consumption, conditions which are partially due to alcohol are taken into account. As such, data showing alcohol-attributable hospital admissions are estimates which are derived using the methods developed by the North West Public Health Observatory (NWPHO); please refer to Appendix 2 for details. The average annual number of alcohol-attributable hospital admissions for residents of Wales between 2002 and 2006 was 27,290 for males and 17,574 for females representing around five per cent of all admissions.

Figure 30 shows the trend in the age-standardised rate for alcohol-attributable hospital admissions in Wales for the period 1999 to 2006. It is clear that in both females and males, rates have increased. Due to the fact that the data are modelled using the method developed by NWPHO it is difficult to say with certainty that the trend is due directly to increased consumption of alcohol. The trend shown is in line with that for alcohol-related admissions (Section 5.1), however, it does not reflect the trend in alcohol-attributable deaths (Section 4) which has not shown any increase.

![Figure 30: Trend in alcohol-attributable hospital admissions in Wales residents, European age-standardised rate (EASR) per 100,000 by sex, 1999-2006](source: WCFH/NPHS from HSW (PEDW), ONS (MYE))
Figure 31 shows the age-specific rates for alcohol-attributable admissions for males and females in Wales for the period 2002-06. The chart shows how rates increase sharply with age. The rise with age in males is greater: rates in males and females in the younger age groups are not dissimilar; however, by age 85+ the rate for males is almost double that for females.

The pattern exhibited here is markedly different from the age specific rates for alcohol-related admissions. This is due to the fact that alcohol-attributable admissions include a number of high volume conditions which are strongly associated with age, for example hypertension (high blood pressure).
Figure 32 shows the male age-standardised rate per 100,000 for alcohol attributable hospital admissions for local authorities in Wales. The rate varies considerably ranging from 1162 per 100,000 in Powys to 2307 in Blaenau Gwent. In comparison with alcohol-related admissions in males (Figure 27) the data show a slightly more typical pattern of ill-health with rates tending to be higher in urban and South Wales valley local authorities than in rural areas.

**Figure 32: Alcohol-attributable hospital admissions, European age-standardised rate (EASR) per 100,000, ranked local authorities, males, 2002-06**

Source: WCFH/NPHS from HSW (PEDW), ONS (MYE)
Figure 33 shows the equivalent data for females. Rates are lower in females than males across all local authorities, however, once again, they vary considerably from 740 in Ceredigion to 1387 in Blaenau Gwent where the rate is noticeably higher than in any other local authority.

**Figure 33: Alcohol-attributable hospital admissions, European age-standardised rate (EASR) per 100,000, ranked local authorities, females, 2002-06**

![Graph showing alcohol-attributable hospital admissions per 100,000 among local authorities in Wales, ranked from lowest to highest. Rates vary significantly, with Ceredigion having the lowest rate at 740 and Blaenau Gwent having the highest at 1387. The Wales rate is 937.](image)

Source: WCfH/NPHS from HSW (PEDW), ONS (MYE)
6. Socio-economic patterns in alcohol consumption and alcohol-related mortality

It is important to investigate whether drinking patterns and alcohol-related harm are related to deprivation, and whether alcohol use is a potential source of health inequalities.

Figure 34 shows the distribution of reported binge drinking and drinking above guidelines from the Welsh Health Survey across deprivation fifths as measured by the Welsh Index of Multiple Deprivation 2005 (WIMD). The chart shows that the percentages are only slightly different between the deprivation fifths, suggesting that both binge drinking and drinking above guidelines are not very strongly related to deprivation.

Reported drinking above guidelines is slightly higher in the least deprived areas at 39% compared to the others, although this may not be statistically significant. Binge drinking appears slightly lower in the two least deprived fifths, particularly the second least deprived fifth, but statistical significance could not be established.

Figure 34: Percentage of persons who reported binge drinking and drinking above guidelines in the past week by WIMD fifth (age-standardised)

Source: WHS 2007
In contrast to alcohol consumption, there is a striking socio-economic pattern in both alcohol-related mortality and alcohol-attributable mortality. The alcohol-related mortality rate in the most deprived communities of Wales was 22.0 per 100,000 in 2002-2006, more than three times higher than 6.2 in the least deprived areas. The alcohol-related rate (see Figure 35) was significantly higher in the two most deprived fifths compared to the Wales rate of 12.4 per 100,000.

Similarly, the alcohol-attributable mortality rate (see Figure 36) in the most deprived communities was 43.8, more than twice the rate of 18.0 in the least deprived areas. Although the rate increase from the least deprived to the most deprived areas is steeper in alcohol-related mortality than in alcohol-attributable mortality, this pattern suggests that both alcohol-related and alcohol-attributable mortality are strongly related to deprivation as measured by the WIMD.
It is not clear why alcohol consumption appears to be similar in the least and most deprived communities, whilst alcohol-related mortality is substantially higher in more deprived areas compared to least deprived areas. There may be differences in individuals’ binge drinking in the least and most deprived areas, for example the regularity of binge drinking or the actual units consumed. Figures for the heaviest drinkers amongst the binge drinkers would have to be analysed, but these are not available. It also may be that underestimation of consumption in surveys (see Section 3.6) is proportionally greater in deprived areas, for example the under-representation of heavy drinkers. Further investigation would be required, however, to draw any firm conclusions.

There may be other factors contributing to the pattern in alcohol-related mortality rates, for example poorer general health and differences in individuals seeking help or treatment. It is clear, however, that deprived areas experience a greater burden of alcohol-related harm, suggesting that alcohol consumption is a source of health inequalities.
7. Alcohol-related crime

As well as potentially causing harm to the individual who is drinking, alcohol consumption can also have an effect on wider society through alcohol-related crime.

These crimes include violent behaviour, anti-social behaviour, disorderly behaviour, acquisitive crime and criminal damage (Finney et al., 2003). Data is available on recorded crimes from the Home Office and also on perceptions of crime from the British Crime Survey (BSC).

7.1 Perceptions of alcohol-related crime

The British Crime Survey (BCS) asks respondents about their experience and perceptions of crime, including major causes of crime. Figure 37 shows the perceived major causes of crime in Britain from the British Crime Survey (2007/8). The chart illustrates that drugs and lack of discipline from parents are the most perceived major causes of crime in Britain. Approximately 50% of individuals perceive alcohol to be a major cause of crime in Britain, the third greatest cause of crime according to the survey.

Figure 37: Percentage of perceived major causes of crime, 2007/08

Source: BCS 2007/08
Figure 38 shows the percentage of violent incidents where the victim believed the offender was under the influence of alcohol, by type of offence. It illustrates that a high proportion of victims perceived those offenders committing violence, wounding or assault with minor injury to be under the influence of alcohol. The proportion of those perceiving the offender not to be under the influence of alcohol was higher for robbery and for assault with no injury, but only slightly higher for the latter. These data illustrate that the influence of alcohol can be at the very least a perceived major factor in violent incidence, however, care should be used in drawing conclusions from these data as they are based on perceptions of the victim alone.

Figure 38: Percentage of violent incidents where the victim believed the offender(s) to be under the influence of alcohol, 2007/08

Source: BCS 2007/08
7.2 Violent crime attributable to alcohol by local authority

Alcohol is implicated in many crimes, but it is not consistently recorded whether alcohol was involved in any particular crime. It is estimated that 37% of violent crime is attributable to alcohol, based on urine samples provided on arrest (Deakon et al, 2008), suggesting that over 18,000 violent crimes in Wales in the year 2007/08 are estimated to be attributable to alcohol. Based on this proportion and recorded violent crime, rates per 1,000 population of violent crime against the person can be calculated.

These rates are published annually for England (Deakon et al, 2008).

Figure 39 shows these rates for Wales by local authority in 2007/08 and the chart suggests that the higher rates can be found in Newport and Cardiff, two predominantly urban areas that accommodate large numbers of revellers from within and the surrounding areas. Lower rates can be found in rural areas such as Powys and Ceredigion. It should be noted however, that these data are derived from estimates of the total violent crimes against a person and should therefore be interpreted with caution.
7.3 Driving under the influence of alcohol

Driving whilst under the influence of alcohol can impair an individual’s judgement and thus their ability to drive safely. The result can be slower reaction times and an inability to judge distance and speed as effectively. Increased alcohol levels can increase an individual’s confidence which can lead to more risk taking when driving (Deakon et al, 2008).

The data illustrated in Figure 40 show the proportion of people being involved in an accident and testing positive for alcohol by police force area. The proportion of individuals testing positive for alcohol in the blood following an accident was highest in South Wales with approximately 4% of results. The lowest was Dyfed Powys police force with just over 2%, although percentages in all forces were generally low.

7.4 Sexual assault

Due to the highly sensitive nature of sexual assaults, accurate estimates of the number of incidents can be difficult to ascertain. This is complicated by an overlap between serious sexual assault and partner abuse.

The influence of alcohol and drugs on sexual assault has been recorded in the British Crime Survey (BCS) which suggested that approximately 35% of sexual assault victims believed the offender was under the influence of alcohol (Povey et al, 2008).
8. Other data

8.1 Referrals for treatment of alcohol misuse

People with an alcohol problem can be referred for treatment, either through self-referral or through organisations including GPs. The Welsh National Database for Substance Misuse (WNDSM) contains details relating to people referred to treatment agencies for drug and alcohol problems since 2005. There were 15,301 referrals for alcohol misuse in Wales in 2007-08 (55% of all referrals). The most common source of referrals for alcohol was self-referral at 32% (Welsh Assembly Government, 2008).

Individuals can leave and subsequently return to treatment within a given year and may be counted more than once as a referral. Many individuals misuse a variety of substances and may only report some of them. The figures for misusing a particular substance such as alcohol may therefore be underestimated.

Figure 41 shows the number of referrals seen for alcohol misuse by age group for the year 2007/08. The data show that males have a higher number of referrals than females and that the highest number for males was amongst the 30-39 age group and for females amongst the 40-49 age group. There were 1602 referrals of age 19 and younger.

Figure 41: Number of referrals seen at treatment agencies for alcohol misuse by age group, Wales, 2007/08

Source: WAG, Welsh National Database for Substance Misuse
Figure 42 shows the standardised rate per 100,000 for referrals seen for alcohol misuse by local authority in Wales for 2007-8. The chart shows that Rhondda Cynon Taff, Merthyr Tydfil, Denbighshire and Swansea have the highest rates while Monmouthshire has the lowest rate.

Caution should be used when interpreting these data as there are some technical difficulties with the system in some areas, and in addition data are self-reported. Also, the rates shown are those for referrals seen in any particular local authority and may not be a measure of those in need for treatment in the particular area.

**Figure 42: Referrals seen for alcohol misuse, European Age-standardised Rate (EASR) per 100,000, ranked by local authority, 2007-2008**

Source: WAG, Welsh National Database for Substance Misuse
8.2 Benefit claimants where the main medical reason is alcoholism

People with a severe alcohol problem may be unable to work, and may be claiming benefits. In May 2007, there were 2,200 (1.1% of the total claimants) people in Wales claiming incapacity benefit (IB) and severe disablement allowance (SDA) where the main medical reason was ‘alcoholism’. Table 4 shows the numbers and percentages of such claimants of the total IB/SDA claimants for Wales, Scotland and the English regions. Wales has the lowest percentage with 1.1% of the total claimants, whereas Scotland has the highest with 3.1%. This does not necessarily mean that alcoholism is less of a problem in Wales, as this percentage does not take into account the patterns of claims due to other main diagnoses or those which may be eligible but are not claiming this benefit. The definition of ‘alcoholism’ used is considered to be narrow, and may therefore also not include every person in part incapacitated by alcoholism.

Table 4: Number of Incapacity Benefits (IB) and Severe Disablement Allowance (SDA) where main medical reason is alcoholism in Wales, Scotland and English regions, May 2007

<table>
<thead>
<tr>
<th>Region</th>
<th>All IB/SDA claimants (thousands)</th>
<th>Alcoholism (thousands)</th>
<th>Alcoholism as a proportion of total claimants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wales</td>
<td>200.5</td>
<td>2.2</td>
<td>1.1%</td>
</tr>
<tr>
<td>Scotland</td>
<td>306.5</td>
<td>9.4</td>
<td>3.1%</td>
</tr>
<tr>
<td>English regions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North East</td>
<td>164.7</td>
<td>2.7</td>
<td>1.7%</td>
</tr>
<tr>
<td>North West</td>
<td>409.6</td>
<td>8.7</td>
<td>2.1%</td>
</tr>
<tr>
<td>Yorkshire and The Humber</td>
<td>239.2</td>
<td>3.8</td>
<td>1.6%</td>
</tr>
<tr>
<td>East Midlands</td>
<td>180.9</td>
<td>2.6</td>
<td>1.4%</td>
</tr>
<tr>
<td>West Midlands</td>
<td>242.6</td>
<td>3.6</td>
<td>1.5%</td>
</tr>
<tr>
<td>East of England</td>
<td>179.2</td>
<td>2.4</td>
<td>1.3%</td>
</tr>
<tr>
<td>London</td>
<td>311.5</td>
<td>6.8</td>
<td>2.2%</td>
</tr>
<tr>
<td>South East</td>
<td>241.1</td>
<td>4.8</td>
<td>2.0%</td>
</tr>
<tr>
<td>South West</td>
<td>198.0</td>
<td>4.3</td>
<td>2.2%</td>
</tr>
</tbody>
</table>

Source: Department for Work and Pensions, 2008
9. Conclusions

This report presents a range of available data on alcohol consumption patterns and harm relating to alcohol, providing evidence for the substantial impact of alcohol on health in Wales.

The extent of drinking in children and young people in Wales is of particular concern. Among 13-year olds in Wales, 23% of boys and 20% of girls reported drinking alcohol at least once a week. Wales had the highest percentage of all 40 countries surveyed in 13-year olds reporting having been drunk more than twice (27% of boys and 26% of girls). There were 1602 referrals for treatment of alcohol misuse in patients of age 19 and younger in 2007/08. In children aged under 16 there were more admissions to hospital in girls were than in boys, with 215 admissions in boys and 295 in girls for alcohol-related conditions in 2006.

Data for harmful/hazardous drinking, although widely used in England, is unfortunately not available for Wales. Hazardous use, in particular, increases the risk of harmful consequences in individuals, despite the absence of any current disorder. It refers to a pattern of use that is of public health significance and it would be advantageous if data for these measures could be developed from Welsh Health Survey data.

Substantial inequalities were found between the most deprived and least deprived communities in the experience of alcohol-related harm. Binge drinking and drinking above guidelines amongst adults is reported to be similar amongst the most and least deprived communities. In contrast, the most deprived areas experience alcohol-related mortality rates which are more than three times higher than those in least deprived areas. This suggests that alcohol consumption is a source of health inequalities.

Comparisons with UK sales estimates of consumption suggest that surveys including the Welsh Health Survey may underestimate alcohol consumption, and that survey results only represent 55-60% of the true consumption figure (Goddard, 2007; Catto, 2008). Whilst there may be underestimation in survey results, survey data are still essential to identify characteristics of those drinking for comparisons between age groups, males and females, or the frequency of drinking, which sales estimates cannot provide. Survey figures for example for binge drinking in Wales, however, may not be suitable to indicate true consumption levels in the population as a whole.

This report uses two ways of estimating the impact of alcohol on mortality. One is alcohol-related mortality, which is defined by the Office for National Statistics to include only those causes of death most directly linked to alcohol use such as alcoholic liver disease. The second wider definition used is alcohol-attributable mortality, which includes deaths due to conditions in part attributable to alcohol and is widely used in England. Alcohol-attributable deaths accounted for 4.3% of all male deaths in Wales; these untimely deaths could be avoided. There were more than twice as many alcohol-attributable deaths than alcohol-related deaths, and when estimating and monitoring the burden of alcohol on mortality these new indicators of alcohol-attributable harm should also be considered.

The alcohol-related mortality rate for males has almost doubled between the periods 1991-1993 to 2004-2006, although it appears that the rising trend has been slowing for males in recent years. This trend has been levelling out in the latest UK rates release. The rate for Wales in 2007 was slightly higher than the rate for England, and slightly lower than the rate for Northern Ireland. The rate for Scotland was twice the rate for England.
The alcohol-attributable mortality rate for males in Wales in 2006 was slightly higher than for England, whilst the corresponding rate for females was similar to England. The trend in alcohol-attributable mortality over time in Wales has been stable between 2001 and 2006.

Hospital admissions data are a useful indicator both of the extent of harm caused at the population level and the burden placed on health services by alcohol consumption. However, as the data do not include A&E or outpatient clinic attendance or, of course, GP consultations, the focus of these data is only on the more severe end of the spectrum of illness.

As with mortality data, hospital admissions information can be analysed according to whether the admission is alcohol-related or alcohol-attributable. The trend in the hospital admission rate is upward for both categories in males and females. Rates are twice as high in males compared with females for alcohol-related admissions and just under twice as high for alcohol-attributable admissions. Analysis of age-specific rates shows that whilst alcohol-related admissions peak in middle age, using the wider definition of alcohol-attributable admissions shows that rates increase sharply with age right through to the 85+ age group.

Alcohol-related and attributable admissions rates vary considerably across Wales. At the local authority level Blaenau Gwent exhibits consistently the highest rates in Wales for both males and females.

As well as potentially causing harm to the individual drinker, alcohol consumption can also have an effect on the wider society through alcohol-related crime. Alcohol was perceived to be a major cause of crime by around half of respondents to the British Crime Survey 2007/08. There were an estimated 18,000 incidents of violent crime attributable to alcohol in Wales in the year 2007/08.

Two mostly urban areas, Newport and Cardiff, had higher estimated rates of violent crime attributable to alcohol, whilst Powys and Ceredigion had lower rates.

This report presents information and data relating to alcohol and health from a number of sources, using the latest methods, and provides evidence for the substantial impact of alcohol use on the health of the people of Wales. It highlights inequalities in the experience of alcohol-related harm between the most and least deprived communities in Wales. Some of its indicators, particularly those for alcohol-attributable harm, are recommended for future monitoring of the burden of alcohol. It is clear that the effect of alcohol use presents a major public health challenge for Wales and the UK.
10. References


Department of Health (2009) How many units in your drink, know your units, Alcohol Know your limits campaign. Available at URL: http://units.nhs.uk/howMany.html [Accessed 22/01/09]


Appendix 1: Data Sources

Annual District Deaths Extract
The Annual District Deaths Extract (ADDE) is supplied by ONS and is based on details from the medical certificate of cause of death and other relevant particulars supplied by informants (usually relatives) to local Registrars. Data in this profile are based on the 'underlying cause of death'. This is generally the most useful single cause for public health purposes (Devis and Rooney, 1999), and is defined by the World Health Organisation as:

a) the disease or injury that initiated the train of events directly leading to the death; or

b) the circumstances of the accident or violence that produced the fatal injury.

British Beer and Pub Association
The British Beer and Pub Association publish an annual Statistical Handbook, containing drinks industry statistics such as sales, consumer expenditure, prices and licensing figures. The latest 35th edition was published in August 2008. Sales data used in this report is published as “UK consumption of alcoholic drink” and are derived from HM Revenue and Customs' duty clearances for alcohol released for sale and industry figures. These data have been labelled “UK sales data” in this report (Figure 12) as in Catto (2008) to distinguish them from consumption figures sourced from consumer surveys. For international consumption estimates BBPA state that for some countries ‘best estimates’ were used as it was difficult to obtain up-to-date reliable data, however, it was not specified which countries they were. It is therefore unclear how reliable or comparable the individual country estimates are.

General Household Survey
The General Household Survey is conducted by the Office for National Statistics and provides estimates for England, Scotland and Wales. The survey is used to present a picture of households, families and individuals. It commenced in 1971 and has been conducted annually since, except for breaks to review it in 1997/8 and for re-development work in 1999/2000. It includes questions on drinking behaviour, including amounts consumed on at least one day in the past week. These reported amounts are then matched to categories of binge drinking and drinking above guidelines as listed in Section 2. The unweighted sample size for Wales in 2006 was 888 (compared to 13,783 in the Welsh Health Survey 2005/06).

Since 2006 an improved method of converting volumes of alcohol drunk into alcohol units was introduced in light of changing glass sizes and drinks strength, in parallel to the previous method. The new method generally shows higher percentages than the previous one, and these are shown in the nation comparison in Figures 7 and 8. Using the new method, however, would not allow a comparison in time, and therefore the results using the previous method were used for the trends charts in Figures 9 and 10. http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=5756

Health Behaviour in School-aged Children (HBSC)
The Health Behaviour in School-aged Children study is a cross-national research study conducted in collaboration with the World Health Organisation (WHO) Regional Office for Europe. It involves 40 countries from across Europe and North America and is conducted every four years. The study is school-based, and in Wales involves a sample of pupils aged around 11, 13 and 15. There are some concerns about bias due to self-reporting and the fact that those not attending school are not covered. The latest report published in 2008 (Currie et al., 2008) covers data for 2005/2006 and contains data from more than 400,000 young people (4,400 in Wales). http://www.hbsc.org
Infant Feeding Survey
The 2005 Infant Feeding Survey is a national survey providing estimates for the four countries of the UK. It covers the incidence, prevalence and duration of breastfeeding and other feeding practices adopted by mothers in the first eight to ten months after their baby was born, together with information about smoking and alcohol use. http://new.wales.gov.uk/docrepos/40382/40382313/statistics/health/1104216/infant-feed2005-final.pdf?lang=en

Patient Episode Database for Wales
The Patient Episode Database for Wales (PEDW) is managed by Health Solutions Wales (HSW) and provides an electronic record of all inpatient and day case activity for Wales residents in NHS hospitals in Wales, England and elsewhere and for all patients treated in Welsh Trusts. Records within PEDW are based on finished episodes of care under a particular consultant in one health care provider (FCEs). Multiple FCEs may occur within one hospital provider spell (or stay in hospital). Admissions data in this profile are based on the admitting FCE.

Welsh Health Survey
The Welsh Health Survey is a source of information about the health and health-related lifestyle of people in Wales. It started in 2003/04 and around 15,000 adults participate fully each year. It is nationally representative of people of different ages, sex and geographic area. Respondents to the Welsh Health Survey were asked questions on their drinking habits including how often they drank and how much they drank on the heaviest drinking day in the previous week. Survey results are then published based on the reported amounts and the definitions of binge drinking and drinking above guidelines as listed in section 2. A new improved method of converting volumes of alcohol drunk into alcohol units will be introduced from 2008 in light of changing glass sizes and drinks strength. This may mean that any differences between the Wales results of the GHS (where this has already been implemented, see previous paragraph) and the Welsh Health Survey are likely to be larger in future releases.

The WHS does not include a question on average weekly consumption, but an estimated weekly consumption could be derived using a methodology supplied by the Welsh Assembly Government (Statistical directorate).

Since the latest release of 2007 the period covered was changed to calendar years. In Figure 12 survey results of previous financial years were charted in the year they ended, i.e. results for 2005/2006 were charted as 2006.
www.wales.gov.uk/statistics

Appendix 2: Methodology and definitions

Alcohol-related mortality and hospital admissions (ONS definition)
The term ‘alcohol-related’ is not used consistently in publications, but often refers to the definition published by the Office for National Statistics containing those conditions which are most directly related to alcohol.

These conditions are (including ICD-10 codes):
F10*: Mental and behavioural disorders due to use of alcohol
G31.2: Degeneration of nervous system due to alcohol
G62.1: Alcoholic polyneuropathy
I42.6: Alcoholic cardiomyopathy
K29.2: Alcoholic gastritis
K70*: Alcoholic liver disease
K73*: Chronic hepatitis nec (not elsewhere classified)
K74*: Fibrosis and cirrhosis of liver (excluding K74.3 - K74.5 - Biliary cirrhosis)
K86.0: Alcohol induced chronic pancreatitis
X45: Accidental poisoning by and exposure to alcohol
X65: Intentional self-poisoning by and exposure to alcohol
Y15: Poisoning by and exposure to alcohol, undetermined intent

*indicates that any fourth-character classification can be added to the first three characters.
Public Health Observatories in England publish "alcohol-specific" mortality or hospital admissions, which includes those conditions which are wholly attributable to alcohol i.e. those with alcohol-attributable fractions of 1. There is some overlap with the ONS definition, but there are differences and these measures are not comparable. This report uses alcohol-related measures using the ONS definition.

**Alcohol-attributable fractions**

A recent report by Liverpool University and the North West Public Health Observatory (NWPHO), commissioned by the Department of Health, published revised alcohol-attributable fractions for mortality and hospital admissions (Jones et al., 2008). Alcohol-attributable fractions (AAFs) were calculated for conditions where there was sufficient evidence in the recent epidemiological literature of a causal relationship between alcohol consumption and the disease or injury (Jones et al., 2008). The authors have published these AAFs for each condition and age group for England (see Jones et al., 2008). Alcohol consumption in Wales is considered to be similar to England, and it is assumed that the AAFs could also be applied to data for Wales, regardless of any differences between local authorities. Fractions are available for age 16 and above, and for ages 15 and under only those conditions entirely attributable to alcohol (fractions of 1) were included. The 36 conditions include certain cancers, stroke, and road traffic accidents. For example, the fraction for cancer of the lip, oral cavity and pharynx in males aged 25-34 is 0.5, with half of the deaths linked to alcohol, whilst alcoholic liver disease has a fraction of 1 for all age groups. Whilst applying these fractions to mortality or hospital admissions data may be considered experimental, these indicators, widely used in England, provide us with an additional method of estimating harm attributable to alcohol as well as comparisons to England. When using the results, it has to be made clear that they are estimates. These fractions were also used to calculate the updated National indicator on hospital admissions for England, and detailed guidance is due to be published soon.
Alcohol-attributable mortality

Alcohol-attributable mortality includes deaths due to causes both wholly and in part linked to alcohol, using alcohol-attributable fractions as described in the previous section. Rates were calculated to be comparable with English indicators and as advised by NWPHO all positive fractions were applied to deaths data, because this indicator relates to alcohol-related harm.

Table 5: Average weekly alcohol consumption in units: UK sales data, General Household survey (GHS) and Welsh Health Survey (WHS)

<table>
<thead>
<tr>
<th>Year</th>
<th>UK per person sales estimate 15+</th>
<th>Average weekly consumption: GHS, Great Britain 16+</th>
<th>Estimated weekly consumption: WHS Wales 16+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>18.8</td>
<td>10.7</td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>19.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>18.8</td>
<td>11.5</td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>19.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>20.0</td>
<td>12.0</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>20.6</td>
<td>12.1</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>21.2</td>
<td>12.1</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>21.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>22.1</td>
<td></td>
<td>10.9</td>
</tr>
<tr>
<td>2005</td>
<td>21.7</td>
<td>10.8</td>
<td>10.7</td>
</tr>
<tr>
<td>2006</td>
<td>21.2</td>
<td>10.2</td>
<td>10.6</td>
</tr>
<tr>
<td>2007</td>
<td>21.5</td>
<td></td>
<td>10.7</td>
</tr>
</tbody>
</table>

Source: BBPA, GHS (1992-1996 data is unweighted), WCfH/NPHS from WHS (03/04, 04/05, 05/06 listed as 2004, 2005, 2006), 2007 WHS figure from WAG
Table 6: Alcohol consumption per head in leading countries (BBPA estimates)

<table>
<thead>
<tr>
<th>Country</th>
<th>Litres per head of pure alcohol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sweden</td>
<td>5.7</td>
</tr>
<tr>
<td>Canada</td>
<td>6.6</td>
</tr>
<tr>
<td>USA</td>
<td>7</td>
</tr>
<tr>
<td>Finland</td>
<td>7.5</td>
</tr>
<tr>
<td>Australia</td>
<td>7.6</td>
</tr>
<tr>
<td>Netherlands</td>
<td>7.8</td>
</tr>
<tr>
<td>Italy</td>
<td>8.1</td>
</tr>
<tr>
<td>UK</td>
<td>8.3</td>
</tr>
<tr>
<td>Republic of Ireland</td>
<td>8.6</td>
</tr>
<tr>
<td>France</td>
<td>10</td>
</tr>
<tr>
<td>Germany</td>
<td>10.2</td>
</tr>
<tr>
<td>Spain</td>
<td>10.2</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>12.4</td>
</tr>
</tbody>
</table>

Source: BBPA

Table 7: Alcohol-related mortality, rate per 100,000, UK nations, persons

<table>
<thead>
<tr>
<th>Country</th>
<th>2004</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>Wales</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>Scotland</td>
<td>26</td>
<td>25</td>
</tr>
</tbody>
</table>

Source: ONS, GRO