Annexes

Alcohol misuse: How much does it cost?

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Annex 1

Alcohol attributable fractions – General background

There are numerous publications and reports in the epidemiological and biological literature, which report evidence of causal relationships between alcohol misuse and various health outcomes. For estimating alcohol attributable fractions it is important to have both a descriptive summary of all the evidence and also estimates of the alcohol-related risk functions for each condition. Corrao et al (1999) using a meta-analytic approach provided risk function estimates for 12 conditions commonly considered to be associated with alcohol misuse. Separate risk functions were given by gender, area, and outcome (incidence versus deaths) where appropriate. These functions were later utilised by Britton and McPherson (2001) in a British context to derive the number of alcohol related deaths in England in 1998.

All conditions, which are by definition attributed to alcohol misuse are included and have an attributable fraction equal to 1. In contrast for those conditions where alcohol is a contributory cause the attributable fraction is greater than 0 but less than 1 and is usually interpreted as a percentage. For example from we can see from Table 1 that the attributable fraction for respiratory tuberculosis is 0.25. In a mortality context this can be interpreted as 25 per cent of all deaths due to respiratory tuberculosis may be attributed to alcohol. Negative attribution fractions indicate benefits from moderate alcohol use.

There are two methods for acquiring appropriate attributable fractions; a “direct” and an “indirect” method. First in the case of the direct method, a death or a hospitalisation might be recorded in administrative data as being directly alcohol related. In this case the death or hospitalisation of an individual may be directly attributed to alcohol misuse and hence the attributable fractions for mortality or morbidity may be calculated directly. Such examples may be found in the literature the case of accidents, fires or poisoning (English et al, 1995).

However, where causes of death or morbidity are multiple or complex and alcohol might be just one of the attributable factors the direct method of calculating attributable fractions is no longer feasible or appropriate. In this latter case an indirect approach may be followed, which combines estimates of *relative risk* of particular disorders related to alcohol misuse with prevalence data on consumption patterns.

A relative risk represents the likelihood of a particular disorder in exposed individuals relative to those who are not exposed. For example the risk of dying from stomach cancer among drinkers compared to those who do not drink. These relative risks may then be combined with population prevalence data on alcohol consumption to compute attributable fractions or population attributable fractions (PAF), as they are more commonly known in the literature.

Studies, which use existing attributable fractions, do not need to have estimates of the prevalence of alcohol consumption for the particular population of interest. In this case the implicit assumption is that levels of consumption do not vary by certain population characteristics such as age and gender. Several studies have used the simple dichotomous exposure of any drinking to none. The attributable fraction then

usually represents the proportion of total mortality or morbidity, which would be avoided if everyone were an abstainer from alcohol. This approach takes no notice of the dose-response relationship between many diseases and alcohol consumption, implying therefore that the distribution of drinking is the same in the target population as in the epidemiological study from where the attributable fractions were borrowed.

McDonell and Maynard (1985) and Godfrey and Maynard (1992) chose a different dichotomous exposure of severe heavy drinking ("alcoholics") to that of the rest of the population. There are two serious issues for consideration here. First, this method requires an accurate estimation of the proportion of the heaviest drinkers, or alcoholics, in the population. Second, alcohol attributable mortality and morbidity among those in the population considered not being alcoholics is ignored. In addition if alcohol consumption at low levels is assumed to heave any beneficial effects on the risk of Coronary Heart Disease (CHD), this is not taken into consideration.

English et al (1995) differentiated alcohol consumption between "none", "low", "hazardous" and "harmful". They recognised that individuals with "low" alcohol consumption have the lowest death rates and calculated the excess attributable to consuming above this level. They computed relative risks from an overview of the epidemiological literature, utilising several thousand papers, which were previously assessed for quality by imposing exclusion restrictions to all those studies where no control group was mentioned, confounders were unadjusted or only specific beverages were considered.

Most of the existing studies considered the need for age and gender specific relative risks. Due to the lack of data on which to base such modifications it is hard to make comparisons, particularly as the baselines, age ranges and conditions included vary. However obtaining a reliable estimate of mortality and morbidity attributable to alcohol misuse is vital for the accuracy of this alcohol-related cost estimation exercise. It is therefore necessary that the estimates of attributable fractions be derived by taking into consideration the age, gender and alcohol consumption patterns of the English population and the estimates derived in this study do just that. The following conditions, as found in Britton and McPherson (2001), are considered to be partially alcohol related:

Table 1.1 Diseases associated with alcohol misuse

Neoplasms	Circulatory	Gastrointestinal	Injuries and adverse effects[1]
♦ Rectal cancer ♦ Colon cancer ♦ Oropharyngeal cancer ♦ Laryngeal cancer ♦ Liver cancer ♦ Oesophangeal cancer ♦ Breast cancer	♦ Haemorrhagic stroke ♦ Ischaemic Heart Disease ♦ Essential hypertention	♦ Chronic pacreatitis	♦ Assaults ♦ Accidental drowning ♦ Accidental falls ♦ Accidents caused by fire/flames ♦ Occupational injuries ♦ Motor vehicle traffic accidents ♦ Suicide

[1] Attributable fractions for these conditions come from English et al (1995) who give attributable fractions by gender and age.

Box 1.1 Estimating Alcohol Attributable fractions

In order to estimate the alcohol attributable fractions it is necessary to apply the relative risk estimates as calculated by Britton (2001) to the prevalence data of alcohol consumption in England. The data come from the Health Survey of England (HSE) which is an annual survey containing a representative random sample of around 16,000 people. The survey contains questionnaire interviews and health measurements. The set of questions related to alcohol consumption is designed to provide estimates of average weekly consumption in alcohol units.

Corrao's (1999) meta-analyses risk functions as adapted by Britton (2001) are given for an exposure measurement in grams of alcohol per day. It is therefore necessary to convert the HSE data by equating one unit to 8 grams of alcohol and assuming that one the individual's weekly consumption is spread evenly across the week and thereby dividing the weekly measures by 7.

Corrao et al (1999) estimated a single risk function for all injuries combining ICD-9 800-899. However as Britton (2001) points out from a Public Health perspective it is more informative if alcohol attributable fractions estimates are given separately for each type of injury.

It is possible to calculate attributable fractions from prevalence data and relative risks for an exposure variable with several categories. English et al (1995) argued that for such an exposure variable the attributable fraction for a particular level of exposure can be calculated using consumption levels for each gender and age category in the following formula.

$$PAF = \frac{\sum_{i=1}^{k} p_i(RR_i - 1)}{\sum_{i=0}^{k} p_i(RR_i - 1) + 1}$$

where RR_i = relative risk of mortality in exposed groups compared with unexposed groups, p_i = the proportion of the population exposed in each group i=0 to K where i=0 represents non drinkers.

Table 1.2 Attributable Fractions for quantifying alcohol-caused morbidity and mortality (WHO, Australia, USA and Canada)

Disorder	ICD-9 Codes	AF (Lowest)	AF (Highest)	AF (Men L)	AF (Men H)	AF (Women L)	AF (Women H)
Alcoholic Psychosis	291	1	1	1	1	1	1
Alcohol Dependence	303	1	1	1	1	1	1
Alcohol Abuse	305.0	1	1	1	1	1	1
Alcoholic Polyneuropathy	357.5	1	1	1	1	1	1
Alcoholic Cardiomyopathy	425.5	1	1	1	1	1	1
Alcohol Gastritis	535.3	1	1	1	1	1	1
Alcoholic Liver Cirrhosis	571.0-571.3	1	1	1	1	1	1
Ethanol Toxicity	980	1	1	1	1	1	1
Methanol Toxicity	980.1	1	1	1	1	1	1
Alcohol Bev Poisoning	E860.0	1	1	1	1	1	1
Other Ethanol Poisoning	E860.1-E860.2	1	1	1	1	1	1
Respiratory tuberculosis	011-012	0.25	0.25				
Lip Cancer	140	0.5	0.5				
Oropharyngeal Cancer	141-143-146, 148,149	0.08	0.5	0.21	0.29	0.08	0.15
Oesophageal Cancer	150	0.06	0.75	0.14	0.38	0.06	0.22
Stomach Cancer	151	0.2	0.2				
Colorectal Cancer	153,154	0.2	0.2				
Liver Cancer	155	0.12	0.29	0.18	0.29	0.12	0.16
Laryngeal Cancer	161	0.26	0.5	0.41		0.26	
Female Breast Cancer	174	0.03	0.04			0.03	0.04
Diabetes	250	0.05	0.05				
Epilepsy	345	0.15	0.15	0.15		0.15	
Hypertension	401-405	0.01	0.11	0.05	0.11	0.01	0.06
Ischaemic Heart Disease	410-414	0.005	0.005	0.005		0.005	
Supra ventricular cardiac Arrhythmias	427.0, 427.2, 427.3	0.05	0.26	0.08	0.26	0.05	0.13
Heart Failure	428-429	0.004	0.002	0.004		0.002	

Stroke	430-438	0.001	0.16	0.023	0.14	0.001	0.16
Oesophageal Varices	456.0-456.2	0.217	0.54	0.388	0.54	0.217	0.43
Pneumonia and influenza	480-487	0.05	0.05				
Gastro-Oesophageal	530.7	0.1	0.47	0.1	0.47	0.1	0.47
Peptic Ulcer	531-534	0.1	0.1				
Unspecified Cirrhosis	571.5-571.9	0.43	0.54	0.5	0.54	0.43	0.54
Cholelithiasis	574	-0.05	-0.02	-0.05		-0.02	
Acute Pancreatitis	577	0.24	0.42	0.24		0.24	
Chronic Pancreatitis	577.1	0.6	0.84		0.84		0.84
Sponteneous Abortion	634	0.04	0.2			0.04	0.2
Low Birthweight	656.5, 764, 765	-0.02	-0.02				
Psoriasis	696.1	0.01	0.03	0.03		0.01	
Road Injuries	E810-E819	0.18	0.43	0.37	0.43	0.18	0.43
Other Road Accidents	E826,E829	0.2	0.2	0.2		0.2	
Water Transport Accidents	E839-E838	0.2	0.2	0.2		0.2	
Air/Space Transport Accidents	E840-E845	0.2	0.2	0.2		0.2	
Fall Injuries	E880-E888	0.152	0.35	0.238	0.34	0.152	0.34
Fire Injuries	E890-E899	0.375	0.45	0.375	0.44	0.375	0.44
Accidental Excessive Cold	E901	0.25	0.25	0.25		0.25	
Drowning	E910	0.227	0.38	0.299	0.34	0.227	0.34
Aspiration	E911	0.25	1	0.25	1	0.25	1
Work/Machine Injuries	E919-E920	0.07	0.25	0.07		0.07	
Accidents with Firearms	E922	0.25	0.25	0.25		0.25	
Suicide	E950-E959	0.16	0.41	0.272	0.41	0.16	0.168
Assault	E960,65,66,68,69	0.27	0.47	0.27	0.47	0.27	0.47
Child Abuse	E967	0.16	0.16	0.16		0.16	
All-Cause Mortality	All of the above	0.034	0.07	0.034	0.07	0.034	0.04

Adapted from the International Guide for monitoring alcohol consumption and related harm (2000) published by the World Health Organisation (WHO).

Annex 2

Hospital inpatient visits and day hospital attendances

Hospitalisation data were obtained from the Hospital Episode Statistics (HES) (Department of Health, 2001). HES is a "records based" system, which collects in-patient details for each NHS hospital. Records are stored according to the financial year in which the treatment finished (the period 1st April to 31st March). For the 2000/01 financial year, HES has collected nearly 12 million records detailing episodes of in-patient treatment delivered by NHS hospitals in England.

Cost calculations in this section are based on the sum of all days that patients' in the group occupied hospital bed days during the HES year (1st April 2000 to 31st March 2001). Day cases are excluded from this estimation. It must be noted that the figures presented might underestimate the number of bed days for patients who have spent more than a year in the hospital. Also the data presented in the HES tables has not been adjusted to account for shortfalls in the number of records submitted or for missing or invalid clinical information.

Costs for a single bed day are quoted by the Netten and Curtis (2002) as £242 at 2001 prices. In addition, the data from the National annual Returns of the NHS Trusts (TFR2E) indicate that the total cost on day care cases related to alcohol related problems is **£6,383,988** million bringing the overall in-patient costs where the primary diagnosis was directly attributable to alcohol misuse are £126.2 million.

Hospitalisation Indirectly due to Alcohol Misuse

Low and high cost estimates are derived representing a variation in the range of diseases presumed to be partially attributable to alcohol misuse. The low estimate represents a narrower range of diseases as indicated by Britton and McPherson (2001) and can be found in Annex 1. The high estimate represents a wider range of diseases partially attributable to alcohol misuse, as indicated by the World Health Organisation and can be also found in Annex 1. The attributable fractions used to calculate these estimates are a mix of those estimated by this study based on Britton and McPherson (2001), where the range of diseases coincides with those include in the low cost estimate, and the low values of the attributable fractions used in other international studies and presented in Table 1.

The number of inpatient bed days indirectly attributable to alcohol misuse was estimated to be 1,410,551 for the year ending March 2001. The corresponding for day care cases was 33,045. Given average bed day and day care costs of £242 (Netten and Curtis, 2002) and £85.33 (TFR2E, 2001) respectively the total cost for morbidity indirectly attributable to alcohol misuse for the period ending 31st March 2001 ranged between £344 and £400 million.

It should be noted here that all figures presented in Table 7 exclude ischaemic stroke cases. Meta-analysis conducted by Corrao et al (1999) on 26 studies indicated that daily alcohol intake has no significant effects on ischaemic stroke. The evidence

linking alcohol to haemorrhagic stroke seems to fulfil the main epidemiological criteria for causality in terms of dose-response effect and consistency across studies, but this is not yet the case for ischaemic stroke.

Hospital outpatient visits

Data on outpatient visits was available for the whole of England but the total number of outpatient attendances attributable to alcohol was not available. As a result an attempt was made in line with previous research to provide two estimates of such costs.

As with the lack of data in other cases we have to rely on other studies, which have discovered some interesting associations between drinking patterns and outpatient consultations. The Birmingham Untreated Heavy Drinkers (BUHD) (Dalton and Orford, 2002) project commissioned by the Department of Health (grant reference 121/4047) is such a study. The project was set up to conduct a longitudinal investigation into the "natural history of untreated heavy drinking" and its consequences for society and the individual. Participants were selected in 1997 to represent a good range of demographic characteristics. The main criteria for inclusion within the study were twofold. It was required that:

- at least half of the year before the study commenced participants had been drinking 50 or more units of alcohol per week if male and 35 or more units per week if female and
- they had not received any treatment for their drinking in the last 10years.

In order to facilitate more accurate comparison with general population figures the participants were requested to report the number of visits to an outpatient department for both the last year and the last 3 months. The results suggest that the cohort of heavy drinkers used these services almost twice as much as their general population counterparts. 34% and 46% of male and female heavy drinkers respectively had at least one outpatient visit in the last 12 months in 2001.

Data from the General Household Survey (ONS, 2001a) indicate that the mean number of outpatient visits in the last in the UK in 2000/01 was 1.41 and 1.33 for men and women respectively over 18 years of age. Accepting the claim from the BUHD project, due to the lack of better data, that heavy drinkers use outpatient services at a rate double that of the population average implies that the average number of consultations for have male and female drinkers is 2.82 and 2.66 respectively.

The average cost of an outpatient attendance is quoted by the Annual Financial Returns of NHS Trusts as £83.34. Using prevalence of drinking 50/35 plus units (men and women respectively) from the General Household Survey (ONS, 2001a) this puts the cost of outpatient attendances for that heavy group of drinkers at £445.59m (£445,599,053) in 2001 prices.

Alternatively if assumed that only the excess outpatient consultations for the heavy drinker groups, 1.41 and 1.33 for men and women respectively, were a result of alcohol misuse, then this puts the lower cost estimate of outpatient attendances for

that heavy group of drinkers at £222.79m (£222,799,527) in 2001 prices. Both figures remains an underestimate, as it does not consider the use of these services by other types of alcohol users whose reasons for attendance may also be alcohol related.

Accident and Emergency Consultations

The number of accident and emergency attendances attributable to alcohol misuse was not available. Data provided by the Department of Health Hospital Activity Statistics indicate that for the period 2000-2001 the total number of accident and emergency attendances was 14.29 million.

However, research by MORI commissioned by the Strategy Unit indicates that 35% of these A&E attendances were alcohol related. This is based on A & E staff perceptions and is a mid point estimate. This implies that 4.5 million A&E attendances are alcohol related, which priced on average at £61 (Netten and Curtis, 2002) generate a total cost for the economy of £ 305 million at 2001 prices.

Ambulance Services

The number of ambulance transportation cases attributable to alcohol misuse was not available. Nevertheless statistics provided by the Department of Health on Ambulance Services in England for the 2000-01 period indicate that the total number of ambulance journeys in England was 18 million (18,060,000). Of that nearly 3 million (2,914,000) were emergency journeys covering transport requests generally made via a 999 call and therefore most commonly associated with journeys to A&E departments.

Following the previous findings from the MORI survey commissioned by the Strategy Unit (2002) we can assume that 35% of these journeys are alcohol related. Hence, 1 million (1,019,900) emergency ambulance journeys in England in 2000-01 were estimated to be due to alcohol misuse. Average paramedic and emergency ambulance services cost is £201 at 2001 prices (Netten and Curtis, 2002). The total cost of emergency ambulance journeys in England in 2000-01 due to alcohol misuse is £205 million (£204,999,900).

Practice nurse consultations

Again as in the case of outpatient attendances no data exist linking directly practice nurse consultations and patient alcohol consumption. Data from the Birmingham Untreated Heavy Drinkers (BUHD) (Dalton and Orford, 2002) project indicate that heavy drinkers in the study had on average one practice nurse contact a year, which compares closely with general population averages for the same age cohort. However, the study also found a significant association between alcohol consumption and contact with a practice nurse.

With that in mind and assuming that all consultations of heavy drinkers with the practice nurse have been due to problems associated with alcohol misuse then the

overall cost is, for an average of 1 consultation a year for men and 1 for women. That means we have 1,319,285 male consultations and 611,420 female consultations, which cost in total £19,307,050 (£19m) (High Estimate). The cost per consultation is given by Netten and Curtis (2002) as £10.

An alternative cost estimate may be derived by looking at the average practice nurse cost associated with individuals of the particular cohort of heavy drinkers included in the BUHD study which was estimated to be £9.91. Given that the study found a significant association between alcohol consumption and contact with a practice nurse and taking the number of heavy drinkers in the economy as indicated before an alternative total cost for practice nurse services comes to £19 million (19,133,287) (low estimate).

GP Consultations

Data on GP consultations due to alcohol misuse face the same array of problems as those in the case of outpatient visits and practice nurse consultations. In all these cases the reason for which the individual has visited his or her GP is unknown and as a result no direct association can be made between NHS GP consultations and drinking problems.

However, as in the previous cases the BUHD study indicated that the mean number of visits in the 12 months preceding the interview were 3.5 in 1999 and 3.3 in 2001 for males and 4.7 and 5.1 for females. These numbers are very similar to the general population from the General Household Survey for 2000/01 (ONS 2001a). These suggest on average 3 GP visits for men and 5 for women aged 16-44 and 5 for men and women aged 45-64, ages corresponding to the BUHD sample.

Moreover, participants in the BUHD study were asked to give the reasons for their four most recent visits to the GP. Out of the 712 GP contacts recorded only 7 participants reported drinking as a reason for their visit to the GP. However a large part of self-reported problems were alcohol related. After consulting with the authors of the study it was possible to isolate 156 visits out of 712 to be alcohol related, which represents 22 percent of all GP visits of the particular cohort of heavy drinkers.

The GHS contains information on the average number of times that individuals consult their GP and also detailed information on individual drinking patterns. The average number of annual GP consultations for all men and women by following their drinking patterns was also examined. It was found that on average those drinking more than 51 or 35 units a week (men and women respectively) visit their GP 4 times a year (Table 5).

Table 2.1 Average number of GP consultations per year amongst adults aged 16 and over, by weekly alcohol consumption level and gender

England, 2000/01

Weekly alcohol consumption level	Average number of GP consultations	Weekly alcohol consumption level	Average number of GP consultations
Men		Women	
Non-drinker	6	Non-drinker	7
Under 1 unit	5	Under 1 unit	6
1 to 10 units	4	1 to 7 units	5
11 to 21 units	3	8 to 14 units	5
22 to 35 units	3	15 to 25 units	5
36 to 50 units	3	26 to 35 units	6
51 units and over	4	36 units or more	4
All men	**4**	**All women**	**6**

Source: ONS 2001a

The results were used to allocate 4 GP consultations to the number of heavy drinkers in the England as acquired from the GHS (ONS, 2001a). This implies 7,722,820 annual GP consultation among heavy drinkers. Assuming that 20 percent of all consultations were alcohol related this amounts to 1,544,564 GP consultations, which at a cost of £18 (Netten and Curtis, 2002) per consultation produces a resource cost estimate of £27.8 million (£27,802,152). Taking a wider range of illnesses from the same study that are considered to be alcohol related (35 percent of all GP consultations) produces an upper bound estimate of 2,702,987 GP consultations with a cost of £48.6 million (£48,653,766).

Other Primary Care Service Usage

Evidence on the usage of all other primary care services, such as counselling, community psychiatric nurse visits, health visitor consultations etc., is very hard to come by. Looking again at the BUHD study for guidance, the figures show that the percentage of the cohort of heavy drinkers who used these services at least once in the previous year was less than 5%. The mean number of contacts per type of service is described in Table 6 below.

Table 2.2 BUHD cohort usage of other primary care based services

Mean contacts	Males	Females	All persons
Counselling	0.1	1.7	0.6
Community Psychiatric Nurse	0.09	0.03	0.07
Health visitor	0	0.08	0.04
Other services	0.04	0.3	0.1

Adapted from BUHD, 2002

The costs for these services from Netten and Curtis (2002) are:

Mean cost (£s)	Per hour	20 min(visit)
Counselling	28.47 (NHS)	---
Community Psychiatric Nurse	70	23
Health visitor	72	25
Practice Nurse	30	10
Other professionals	1.24*	1.24*

* Mean cost calculated in the BUHD

Attributing all these consultations to reasons and ailments associated with alcohol misuse generates a total cost estimate of £35 million a detailed in table 7 below.

Table 2.3 Costs of usage of other primary care based services by heavy
England 2001

	Number of consultations			
	Males	Females	ALL	Total costs
Counselling	131,929	1,039,414	1,171,343	33,348,135
Community Psychiatric Nurse	118,736	18,343	18,461	424,603
Health visitor	0	48,914	48,914	1,222,850
Other services	52,771	183,426	236,197	292,994
TOTAL	**303,436**	**1,290,097**	**1,593,533**	**35,288,582**

One might argue that treating all of the above costs of other primary care services by heavy drinkers as alcohol related could be seen as an overestimate of health service costs relating to alcohol misuse. To our defence the estimates only relate to current health service use and do not account for the impact of current alcohol misuse on future health-care demands. Furthermore this figure covers only heavy drinkers and excludes others with alcohol related ailments who have different drinking patterns.

Treatment Services

In September 2002 Alcohol Concern (2002b) produced a study for the department of Health which provided a map of alcohol services available in England, the different types of treatment provided and the costs and sources of this treatment. A questionnaire was sent to all alcohol services in England listed in the Alcohol Concern Directory, together with other known alcohol services. An additional copy of the questionnaire was sent to each of the Drug Action Teams (DATs) in England, who were requested to copy it on to services of which they were aware but did not appear in the Directory. More than 475 alcohol agencies were identified and to date this has produced 323 responses, 68% of the total number of services.

Respondents were asked about the type of treatment purchased and divided this into seven categories:

- Assessment and Care Management
- Open Access
- Residential Detox
- Structured Day Care
- Community Detox
- Planned Counselling
- Residential Rehabilitation

The evidence presented in Table 14 came from the 255 sources, which provided full data on the total amount spent on alcohol services. However alcohol services today are also contracted to provide at least some element of service for drug misusers. Services were therefore asked to estimate the proportion of their work, which was concerned with alcohol issues only, and the proportion of their budget spent thereon. Given this information and on the basis that the overall response rate was high and respondents were fairly representative of the overall field, it was estimated that the amount spent on specialist alcohol services by the 475 in England would be £96,155,000. It should be noted however that this figure is still considered to be potentially quite a significant under-estimate of alcohol treatment services spend.

Annex 3

Absence rates in Autumn 2001 varied depending on the existence of a limiting health problem. As it might be expected the figures indicate that those without a limiting longstanding illness are less likely to be absent from work, but nevertheless their absence rates are quite high (see table 3.1 below).

Table 3.1 Sickness absence rates by presence of a limiting longstanding illness, UK, Autumn, 2001

	With limiting longstanding illness		Without limiting longstanding illness	
	Men	**Women**	**Men**	**Women**
16 –	9.1	7.3	3.5	6.6
25 –	9.4	9.8	4.4	4.4
35 –	7.1	7.6	3.2	4.8
45 – 59 /	6.3	7.2	2.9	4.0
All	**7.2**	**7.8**	**3.3**	**4.7**

Source: Labour Force Survey, Barham and Leonard 2002

The General Household Survey (ONS, 2001a) indicates that the prevalence of self-reported longstanding illness has increased in the last 20 years from 21 percent in 1972 to 33 percent in 2000. In addition, the prevalence of limiting longstanding illness (a longstanding illness which limits daily activities) has shown a similar, albeit less pronounced, trend rising from 15 percent in 1972 to 19 percent in 2000. Based on these data one might infer that there has been a slight increase in the levels of morbidity in the population as a whole since the 1970s. It should be noted however that although these data provide a good indication of general health over time they capture longstanding rather than short-term illnesses, which may play a larger part in influencing the levels of sickness absence in the economy.

The Labour Force Survey (LFS) collects information on people who have been absent from work due to sickness or injury for at least one day in a reference week. There are however still some topics on which the LFS still does not collect any data such as the total length of absence and reasons for absence. The most comprehensive series has been put together by Barmby et al. (1997, 1999) from both the GHS and the Labour Force Survey (LFS). They found that although the average rate of sickness absence in the UK fell from 3.5 percent in 1971 to 2.7 percent in 1984, it remained fairly stable around 3.2 percent in the years following 1984 to date (Barmby et al, 1999; Ercolani 2002).

Another way of measuring absence from work is by carrying out surveys of employers and their records of levels and reasons for absence. The advantage of such data is that they avoid the problem of workers underreporting the length of their absence. There are however a number of issues with regard to the extent to which such surveys are representative or their data conveniently and accurately recorded.

Over the last fifteen years the Confederation of British Industry (CBI) has accumulated trend data on absence rates and cause of absence. The CBI survey was sent to private and public sector employers and replies were received from 746 organisations. It covered a representative sample of 2.3 million employees – 9 % of the UK workforce in 2001. The survey covers organisations from all regions in the UK with a relatively even geographical and industrial spread. Respondents were from the public and private sector and from organisations of all sizes.

Absence rates have been falling since 1997/8, when they were 3.7%. Absence rates remained the highest among manual employees – 8.8 (9.5 in 2000) days per employee – compared to 5.5 (6.3 in 2000) days per non-manual employees (CBI, 2002). In addition some sectors suffered higher than average absence rates. 7.2 days per worker were lost in manufacturing compared to 6.6 days lost in the service sector. Furthermore, absence rates were the highest in the public sector where 10.1 days were lost per public sector employee in 2001 compared with an average of 6.7 days in the private sector.

At a national level the main cause for absence as indicated by the CBI survey was general sickness. Employers were asked to indicate the significance they would attribute to possible causes of absence and in particular specific types of illness. Short-term minor illness was perceived as the most significant type of sickness-related absence. The type of short-term illnesses was not specified however. Employers' perceptions of the causes of absence are presented in Table 3.2 below. The numbers indicate a mean ranking score with 1 indicating low significance and 5 high significance.

Table 3.2 Employers' perception of the cause of absence for manual and non-manual employees

Cause of absence	Mean Rank	
	Manual	Non manua
General sickness (physical and mental)	3.8	3.71
Paid sickness absence seen as entitlement	2.36	1.87
Personal problems	2.29	2.08
Home and family responsibilities	2.19	2.1
Lack of commitment	2.16	1.68
Poor workplace morale	1.95	1.69
Work-related accidents	1.8	1.15
Impact of long hours	1.63	1.65
Drink/drug problems	1.42	1.21

Source: CBI, 2002

Although drug and alcohol problems have the lowest ranking among manual workers and the second to last ranking among non manual workers in employers' perception of work absence there is the obvious question over the possible existence of hidden alcohol related problems (hangovers etc) in the general sickness category. Such a hypothesis might be consistent with the different patterns with regard to short and long-term illness absences as presented in Table 3.3 below.

Table 3.3 Employers' perception of the significance of different types of illnesses as a cause of absence

Cause of absence	Mean Rank	
	Manual	Non manual
Short-term minor illness	4	4
Recurring / periodic illness	3	2
Serious long-term illness	2	2
Stress	2	2
Acute illness	2	1

Source: CBI, 2002

Although the data presented above could give us a general idea of the magnitude of illness absences from work in the UK economy, data with regard to the reasons behind such absences are sketchier. The Cabinet Office study on Sickness absence (AON, 2002) indicates that the main reasons for sickness absence among civil servants in 2001were related to the respiratory, digestive or nervous system and were more likely to be self-certificated than medically certificated (Table 3.4).

Findings from the Cabinet Office analysis of sickness absence in the civil service (Health and Safety Executive, 2002) indicate that the average number of working days sickness absence per employee was 8.0 in 2001 (7.3 in 2000). The percentage of working days lost was 4.4% while the total number of working days lost was 4,193,444. The same study indicates that the presence of a longstanding health problem is not a perfect indicator of long-term sickness absence but is even less effective in predicting short-term absence.

Table 3.4 Reasons given for employee absence in the Civil Service

Reasons for absence	Cases	Percentage
Respiratory system	271,486	37
Digestive system	149,289	21
Nervous system/Semse organ	72,179	10
Musculoskeletal	46,869	6
Mental illness	32,184	4
Symptoms ill-defined	44,623	6
Blood/blood-forming organs	1,383	0
Accidents/external	27,950	4
Other / unclassified	19	3
Circulatory system	7,813	1
Infective and Paracitic	21,348	3
Neoplasm	499	0
Endocrine?nutritional/Metabolic	2,359	0
Genito-urinary system	17,254	2
Pregnacy complications	7,992	1
Skin/subcutaneous tissue	7,618	1
Congenital anomalies	99	0
Total	**729,453**	**100**

Source: AON (2002) for the Cabinet Office

The value of lost production due to alcohol related sickness absence

As indicated above, employees who misuse alcohol are known to have above average rates of sickness absence from work. The value of the output lost during alcohol related sickness has thus been regarded as one of the main costs to the economy from alcohol misuse. Measurement of that output is based on the value that the employer places on his or her employees.

In theory, the value of workers to the employer is determined by calculating the amount that they work times the value of their productivity (output per hour, output per worker) when they work. In a perfectly functioning labour market workers' wages are expected to equal the value of output they produce (their productivity). Given that earnings are by definition the amount of time worked by an employee times his or her wages paid per amount of time, then the value of workers to the employer can be approximated by the employee's earnings.

Hence estimating productivity costs due to absenteeism may be done by calculating the number of working days lost due to alcohol misuse and value them using the average costs of an employee, after taking into account employers' costs such as

national insurance contributions, pension contributions etc. The addition of the latter is valid and well justified in that together with employee earnings represent the total amount which employers are willing to pay for an employee and one can equate this with the value of the employee's output.

Some caution must be exercised here around the following issues. If the labour market were indeed working perfectly then reduced productivity due to alcohol misuse would in fact result in a wage reduction paid by the employer to the employee. This in turn may imply however that the costs of alcohol misuse by employees are borne by the employees in the form of lower wages. This line of reasoning has led some researchers to conclude that these costs are then private costs borne by the employees and not social costs borne by the rest of the economy.

Following Becker and Murphy's (1988) theory of rational addiction, an employee may have perfect information related to alcohol consumption and hence have also made rational choices. Such an assumption might be at best spurious. However, it is even more dubious in this case to assume that the labour, market is so perfect that it would automatically reflect lower worker productivity in the form of lower wages. Hence only where markets are functioning perfectly one may assume that lost productivity costs are totally private costs.

The debate around the effect of alcohol misuse on individual productivity and in particular with relation to issues of absenteeism has nevertheless, been further hampered with the lack of reliable data at a national level. Individual employers may have some records of their employee absence behaviour but no national data are available on employee absences by detailed cause of absence. Surveys such as the Health Survey of England, the Labour Force Survey etc provide some consistent information on sickness levels among employees but they still have no details on the reasons for absence, one of which might of course be alcohol. The number of days of sickness may also be found in the Statistics from the Social Security Department but again there are no recorded reasons for this absence. As a result the following estimation process was adopted.

First, for comparison reasons, it is necessary that the average number of days per year of employee absence is known. However, as it was mentioned previously, the Labour Force Survey does not collect any overall annual data of this kind. Findings from Barmby et al (1997, 1999) and Ercolani (2002) indicate that the average rate of employee absence in the UK is 3.2 percent, which on a total of 227 full-time working days in 2001 implies that the average number of days of employee absence in 2001 was 7.2 days. This finding is very much in line with that of 7.1 days derived by the CBI (2002).

Second, due to the lack of accurate evidence on alcohol related absenteeism, this study needs to make further assumptions with regard to the rate of absence of employees who misuse alcohol. Studies by Holtermann and Burchell (1981), Power (1990), Godfrey and Hardman (1994) Hutcheson et al (1995) and a report by the Scottish Executive (2002) however indicate that alcohol dependent employees take between 3 to 4 times more days off work than the average and all the excess days, those above the population average, are then attributable to alcohol misuse.

More recent findings by the Health and Safety Executive (2002) from the Whitehall II study, as detailed in the previous section, indicate that alcohol dependent employees in the Civil service are 1.25 to 1.29 times more likely than those who have no such dependency to be absent from work. Marmot et al (1993) reported that alcohol consumption levels among the Civil Service were fairly similar to those seen in non-manual social classes in general population surveys. Primatesta et al (2002) however indicate that the prevalence of heavy drinking among men is higher among manual occupations (Primatesta et al, 2002).

As a result this study, utilises the findings from the Health and Safety Executive Study (2002) study but in turn attributes all the days lost in 2001 among alcohol dependent employees to alcohol dependence. It is of course possible that for some individuals alcohol dependence may coexist with other serious conditions, which may also imply higher than average absence rates. As a result any attempt to eliminate alcohol misuse may not result in the savings of the size estimated here. In the absence of any definitive information of such rates of co-morbidity no allowance was made for it here.

Hence it was assumed that alcohol dependent employees are 1.27 (middle point estimate between the 1.25 and 1.29 found by the Health and Safety Executive (2002)) times more likely than those who are not dependent to be absent from work. Accounting for part-time and full-time employment rates and assuming that rates of absenteeism were the same among full and part-time employees it was found that in 2001 nearly 11 million (10,988,096) days were lost in England among alcohol-dependent employees due to alcohol misuse. Data on alcohol dependency among employees were taken from the Psychiatric Morbidity Survey (2001b). Using UK dependency rates it was suggested that in 2001 1,199,006 employees in England have some form of alcohol dependence ranging from mild to heavy, as measured by the Severity of Alcohol Dependence Questionnaire (SAD-Q) questionnaire.

The average weekly earnings per employee was taken to from the New Earnings Survey (ONS, 2001c) to be £486.3 and £364.6 for men and women respectively. This implies that the total cost of absenteeism (including employer costs) due to alcohol misuse in England is £1.21 billion (£1,213,631,951).

However, using alcohol dependency rates implies that our findings are serious underestimates for the general population. Short-term absence due to hangovers or injuries among the drinking but non-dependent population was not accounted for in the estimate above. A higher estimate is also thus calculated in line with some further assumptions.

Once more the findings from Health and Safety Executive (2002) report show that spells of absence attributable to injury were related to the amount of alcohol consumed in the last week. There was found to be an increased risk of absence due to injury at moderate levels of alcohol consumption (11-21 units per week in men / 8-14 units per week in women) as well as at heavy levels of drinking. Estimated risks were very similar for men and women with both moderate and heavy drinkers having a 20 percent increased risk of spell of absence due to injury when compared to light drinkers. Adjustments for smoking and health status did not alter these risks which roughly translate to about 2 extra days of absence over and above the population

average. It is these only these excess days that we are taking into account in the calculation of the absenteeism costs below.

Accounting for part-time and full-time employment rates and assuming that rates of absenteeism were the same among full and part-time employees it was found that in 2001 17 million (17,282,802) days were lost in England due to alcohol misuse. Data on prevalence rates of alcohol consumption among employees were taken from the GHS (ONS, 2001a). As in the previous estimate average weekly earnings per employee was taken to from the New Earnings Survey (ONS, 2001c) and the total cost of absenteeism (including employer costs) due to alcohol misuse in England is £1.8 billion (£1,785,907,643).

Welfare and transfer payments

Transfers of resources take place in many different forms within an economy. Examples of such transfers include social security benefits, subsidies or gifts. Transfers of this kind do not change the availability of resources in the economy but tend to redistribute available resources among different individuals or groups in the economy. A sharp distinction needs therefore to be made between resource costs, i.e. those reflecting the use of scarce resources such as capital labour or land and transfers, which do not alter the availability of resources but involve the distribution of income among different individuals or groups of individuals in an economy.

In dealing with the welfare costs attributable to alcohol misuse care must therefore be taken to distinguish between the real resource costs of misuse, such as administrative costs for alcohol misuse related benefits, and the social security and other benefits themselves, which are transfer payments. The provision of social security and other benefits require an administrative process, which involves personnel, buildings and equipment. The resources used in this process are an opportunity cost to society because in the absence of alcohol misuse these resources could be employed in a productive way elsewhere in the economy.

Disability pensions or social security benefits, such as sickness benefit, unemployment benefit and other supplementary benefits are borne by the state and are transfer payments between one group in society, the alcohol misusers, and another, the taxpayers. For example when a member of the workforce becomes ill due to alcohol misuse his or her production is lost but he or she does not lose the whole value of his or her income. Part of that income is replaced by a welfare benefit. It is important to ensue that there is no double counting of costs or benefits.

If a person previously in the workforce receives any welfare benefits as a result of alcohol related sickness it would be double counting to include in the estimate of external resource costs both the values of these benefits as well as the productivity loss. The same is true of tax revenue. Thus the only cost, which could be included in this study representing forgone resource costs, are administrative costs. However due to the lack of robust data in this filed these costs have not been included in this study.

Annex 4

The human capital method is the most commonly used approach for valuing forgone productivity due to premature death or illness. According to this approach, an individual is seen as producing a stream of output over time that is valued at market earnings. In particular, it has been an established practice to take the discounted present value of the earnings stream of the dead individual over the life cycle. Such a method looks into the future and assumes that the individual involved would have average life expectancy and an average probability of being economically active.

The value of lost output or productivity due to premature mortality is therefore estimated as being the product of the number of deaths associated with alcohol misuse and the present value of future earnings. The value of current and future output forgone in the economy as a result of premature mortality has been calculated by taking the discounted present value of an employee's earnings stream. A 3.5 percent discount rate was used which after thirty years was reduced to 3 percent in line with guidelines from the Treasury Green Book (HM Treasury, 2002). The present value of lost output in the economy due to premature deaths among employees who misuse alcohol was between £ 2.3 billion (2,254,321,758) and £ 2.5 billion (2,481,810,172). The low and high estimates correspond to the low and high mortality estimates explained above.

The calculations assumed that without the presence of alcohol misuse people would have had an average life expectancy, and an average probability of being economically active. Economic activity rates were taken from the 2001 Labour Force Survey and were age and gender specific. Male and female gross annual earnings were taken from the 2001 New Earnings Survey, as before, and the average annual growth rate was assumed to be 2 percent. The estimates include the 530 alcohol related deaths from motor accidents. Death estimates are taken from the Department of Transport (DTLR, 2001). It was found that 6% of all road accidents and 16% of road deaths in 2000 occurred when someone was driving over the legal limit for alcohol.

Minimum Causes of death for indirect alcohol-related deaths	*ICD-9 codes*	*Total number of deaths*	*Alcohol-related deaths*
Cancer:			
Oropharynxr	140.0-149.9	1633	501
Oesophagus	150.0-150.9	6061	1152
Colon	153.0-153.9	9554	1365
Rectum	154.0-154.9	4682	671
Liver	155.0-155.9	2091	175
Larynx	161.0-161.9	709	75
Breast	174.0-174.9	11363	743
Essential hypertension	401.0-404.9	3184	45
Stroke:			
Ischaemic	433.0-438.9	44971	1764
Haemorrhagic	430.0-432.9	7553	1266
Chronic pancreatitis	577.1	77	12
Assaults	E960, 65, 66 68, 69	254	103
Accidents:			
Drowning	E910	188	71
Falls	E880-E888	4281	1386
Fire or flames	E890-E899	347	130
Inhalation and ingestion	E911	246	62
Occupational and machine injuries	E919-920	70	5
Suicide	E950-E959	3479	1007
Motor vehicle accidents	E810-E819	2837	758

Maximum Causes of death for indirect alcohol-related deaths	*ICD-9 codes*	*Total number of deaths*	*Alcohol-related deaths*
Respiratory tuberculosis	011-012	279	135
Cancer:			
Oropharynxr	140.0-149.9	1633	501
Oesophagus	150.0-150.9	6061	1152
Stomach	151	5779	1156
Colon	153.0-153.9	9554	1365
Rectum	154.0-154.9	4682	671
Liver	155.0-155.9	2091	175
Larynx	161.0-161.9	709	75
Breast	174.0-174.9	11363	743
Diabetes	250	5773	289
Epilepsy	345	845	127
Essential hypertension	401.0-404.9	3184	468
Oesophangeal varices	456.0-456.2	44	11
Pneumonia and influenza	480-487	56838	2842
Gastro-Oesophangeal	530.7	38	4
Peptic ulcer	531-534	4007	401
Unspecified chirrhosis	571.5-571.9	1727	811
Acute pancreatitis	577	848	204
Chronic pancreatitis	577.1	77	12
Psoriasis	696.1	10	0
Supra ventricular cardiac arrhythmias	427.0,427.2, 427.3	2545	150
Heart Failure	428-429	10959	30
Stroke:			
Ischaemic	433.0-438.9	44971	1765
Haemorrhagic	430.0-432.9	7553	1266
Assaults	E960, 65, 66 68, 69	254	103
Accidents:			
Water transport	E830-E838	20	4
Air and space transport	E840-E845	27	5
Drowning	E910	188	71
Excessive cold	E901	168	42
Falls	E880-E888	4281	1386
Fire or flames	E890-E899	347	130
Firearms	E922	11	3
Inhalation and ingestion	E911	246	62
Occupational and machine injuries	E919-920	70	5
Suicide	E950-E959	3479	1007
Child Abuse	E967	5	1
Motor vehicle accidents	E810-E819	2837	758
Other road accidents	E826, E829	32	6

Annex 5

Limitations of the Data/Methodology issues

There are problems with most of the sources of information on alcohol and crime (as there are, to be fair, with many other aspects of social policy and social research). In particular, however, are these potential biases (Finney, forthcoming). In some cases, the role of alcohol may be overstated and in some cases understated compared to reality. It is not always clear what the net effect might be.

(1) **Police data** – these are only based on what is observed by the police and then only what is recorded (not always the same thing). Research in the USA demonstrated that offenders under the influence of alcohol were six times more likely to be arrested for the same crimes than non-alcohol-using offenders. If true in the UK, this means that police arrest data will overestimate alcohol's role in crime. It may also be the case that victims are less willing to report incidents to the police if they were drunk at the time.
(2) **Court data** – same problems as above but there is further attrition, although we do not know if there is an alcohol bias (i.e. whether or not alcohol-misusing offenders are more likely to go to court or not).
(3) **Prison data** – again, as above but with even further attrition.
(4) **Self-report data** – alcohol use may be inflated in self-reported data if it is used as an excuse for criminal and anti-social behaviour.
(5) **A&E data** – some (and maybe even most) victims of alcohol-related injuries do not go to A&E, sober victims are more likely to attend and attendees may not admit the full extent of victimisation and the role of drinking.
(6) **Coroner data** – Blood Alcohol Concentration is routinely recorded in homicide victims but this is a small (but obviously vital) subgroup of crime.
(7) **Victim reports of offender intoxication** – a crude measure of alcohol's involvement; it is likely that this leads to underestimates for stranger violence and overestimates for Intimate Partner Violence. Data from the BCS are weighted for non-response – this means that the answers from respondents with similar characteristics to people less likely to be captured in the survey are given a greater weight than those who are more likely to be captured. There is no real way of assessing the degree of under-reporting of, say, domestic violence incidents.

Alcohol Attributable fractions and incidence of alcohol related crime

Relative risks and attributable fractions for alcohol's role in violence and other type of crimes in a given society have not yet been fully developed. In fact researchers agree that there is no direct objective way of measuring alcohol-related crime. Given the lack of robust population attributable fractions determining what proportion of crime is alcohol related in this study is done by relying on data from research on those arrested by the police.

In particular this study uses the NEW ADAM arestee survey to derive estimates of alcohol-related crime. Based on alcohol test findings in individuals' urine the proportion of those tested positive were considered to have committed alcohol related crimes. So for example, it was found that 13 percent of sexual offences and 12 percent

of robberies were alcohol-related. Given that the total number of sexual offences in the year in question was 144,998 then alcohol-related sexual offences were 18,848 (13%). The rest can be found in the table below. The attribution of violent offence to alcohol misuse was assumed to be 47 percent as indicated by the British Crime Survey (Home Office 2002). For homicide the attribution factor was assumed to be 36 percent (Brookman and Maguire, 2003). Details on the total numbers of all offences used in this study as well as those calculated and assumed to be alcohol related can also be found below.

There are two important caveats that need exploring at this stage. First, urine testing is not infallible. Unlike drugs like heroin or cocaine, alcohol is dispersed in the body very quickly, so a positive urine test for alcohol may only indicate very recent or heavy use. Hence, although it remains a useful measure it may understate the role of alcohol in offending. On the other hand using alcohol-test data as attributable fractions may overestimate the cost findings as those found to have drunk prior to committing an offence may not necessarily commit that offence.

Second, it could be possible that a proportion of the crimes counted as alcohol related may also be counted as drug-related if arestees had tested positive for both alcohol and drug use. However examining the NEW-ADAM arestee raw data it was found that in fact only about 5% of arestees were found positive for both drugs and alcohol and 1% only found that their criminal behaviour was due to both alcohol and drugs. In addition arestees under the influence of drugs commit different types of crimes than those under the influence of alcohol. The survey indicates that the majority of overlap is in drug specific offences and handling of stolen goods, albeit very small. In the first case it is assumed that this is a drug-related cost and hence excluded from these calculations. In the second case the overall crime costs are relatively low, considering that alcohol-related crime is mostly high trauma crime (e.g. violence, and hence the small overlap is ignored.

NEW-ADAM alcohol test data – Alcohol attributable fractions

Violence against person	37%
Sexual offenses	13%
Robbery	12%
Burglary	17%
Theft&handling stolen goods	13%
Fraud & Forgery	16%
Criminal Damage	47%
Drug Offenses	19%
Other	26%

Notifiable offence categories used in this study

Violence against person	Homicide
	more serious offenses (excluding homicide)
	less serious offenses
Common assault	
Sexual offenses	
Robbery	Robbery from individual
	Robbery from business
Burglary	burglary in a dwelling
	burglary in business
Theft&handling stolen goods	theft of a vehicle
	theft from a vehicle
	attempted vehicle theft
	theft of commercial vehicle
	theft from commercial vehicle
	Other theft (including thft from a person of a pedal cycle and other theft (shoplifting)
Criminal Damage	Criminal damage against individuals/ households
	Criminal damage against commercial / public sector

Crime statistics 2001/02 in England and Wales

		Overal crimes	**Alcohol related Crimes**
Violence against person	Homicide	886	319
	common asault	1,791,000	841,770
	wounding	659,000	309,730
Sexual offenses	Sexual offenses	144,988	18,848
Burglary	burglary in business	941,165	159,998
Criminal Damage	property	6,706,161	3,151,896
Robbery	Robbery from individual	362,000	43,440
	Robbery from business	76,543	9,185
Burglary	burglary in a dwelling	991,000	168,470
Theft&handling stolen goods	theft from a person	616,000	80,080
	theft of a pedal cycle	385,000	50,050
	theft of vehicle	330,000	42,900
	theft from a vehicle	1,560,000	202,800
	attempted vehicle theft	707,000	91,910
	other theft and handling	1,484,000	192,920
Total		**16,754,743**	**5,364,316**

Estimates are taken from Simmons et al (2002) and recorded offences are adjusted to be made comparable to British Crime Survey levels by using the multipliers from Brand and Price (2002)

Costs in response to crime

Man L-H et al (2002) estimated the cost of drunkenness in the custody suite to be £180.6 for alcohol related arrests (that is crimes that can partly be attributed to alcohol misuse) and £117.2 for alcohol specific arrests (drunkenness and disorder). Combining these estimates with the NEW-ADAM attribution fractions as detailed in Annex 5 and arrestee numbers from Ayres et al (2002) the total costs for alcohol related arrests comes to £ 63 million (63,548,225) in 2001 prices. It should be noted here that drunkenness and disorder arrests are not recorded by the Home Office. Instead individual police forces keep their own individual records. There are estimated to be 566 custody suites in England. Using data from over half of them (326) (Home office and SU, 2002) it was calculated that around 81,000 arrests in 2001/02 were for drunkenness and disorder.

Finally, separate calculations were made for the costs incurred in Magistrate Courts when processing drunkenness, disorder and other similar offences. Estimates from the courts were taken from the Criminal Justice Statistics for England and Wales (ONS, 2001d). It was found that in 2001 33,749 cases of drunkenness and disorder passed through the Magistrate courts while no cases for drunkenness went to the Crown courts. The average cost of a magistrates' court proceeding is £550 (Harries, 1999) which at 2001 prices brings the total cost for Magistrate cost proceedings to £20 million (20,424,038).

This section therefore indicates that the total costs in response to alcohol related crime (excluding drink driving) is around £ 1.8 billion (1,750,320,032). The next section proceeds with estimating the next category of alcohol-related crime costs, those in anticipation of crime.

Table 5.1 Costs of crime - England and Wales 2000/01 (Maximum estimates - 2001 prices)					
	Cases	**Average costs (£)**	**Total costs (£)**	**Deflator**	**Total costs (£)**
Arrests (2001/02)					2001 prices
Alcohol related	299,308	181	54,055,025	1.000	54,055,025
Alcohol specific (drunkenness and disorder)	81,000	117	9,493,200	1.000	9,493,200
CJS costs - In response to crime					
Homicide	319	22,000	7,017,120	1.048	7,352,279
Common assault	841,770	270	227,277,900	1.048	238,133,374
Wounding	309,730	2,700	836,271,000	1.048	876,213,811
Sexual offences	18,848	3,900	73,508,663	1.048	77,019,657
Burglary in Business	159,998	490	78,399,078	1.048	82,143,653
Criminal damage (property)	3,151,896	60	189,113,740	1.048	198,146,380
Robbery from individual	43,440	1,400	60,816,000	1.048	63,720,755
Robbery from business	9,185	1,400	12,859,157	1.048	13,473,349
Burglary in a dwelling	168,470	490	82,550,300	1.048	86,493,150
Theft from a person	80,080	90	7,207,200	1.048	7,551,437
Theft of a pedal cycle	50,050	30	1,501,500	1.048	1,573,216
Theft of vehicle	42,900	70	3,003,000	1.048	3,146,432
Theft from a vehicle	202,800	30	6,084,000	1.048	6,374,590
Attempted vehicle theft	91,910	10	919,100	1.048	962,999
Other theft and handling	192,920	20	3,858,400	1.048	4,042,689
CJS costs of drunkenness, disorder and related offences					
Magistrate courts	33,749	550	18,561,950	1.100	20,424,038
Costs - in anticipation of crime					
Homicide	319	0	0	1.048	0
Common assault	841,770	0	0	1.048	0
Wounding	309,730	2	619,460	1.048	649,047
Sexual offences	18,848	2	37,697	1.048	39,497
Burglary in Business	159,998	950	151,998,212	1.048	159,258,103
Criminal damage (property)	3,151,896	360	1,134,682,441	1.048	1,188,878,277
Robbery from individual	43,440	40	1,737,600	1.048	1,820,593
Robbery from business	9,185	1,300	11,940,646	1.048	12,510,967
Burglary in a dwelling	168,470	430	72,442,100	1.048	75,902,152
Theft from a person	80,080	20	1,601,600	1.048	1,678,097
Theft of a pedal cycle	50,050	20	1,001,000	1.048	1,048,811
Theft of vehicle	42,900	690	29,601,000	1.048	31,014,833
Theft from a vehicle	202,800	70	14,196,000	1.048	14,874,044
Attempted vehicle theft	91,910	30	2,757,300	1.048	2,888,997
Other theft and handling	192,920	20	3,858,400	1.048	4,042,689
Costs - as a consequence of crime					
Homicide	319	375,000	119,610,000	1.048	125,322,932
Common assault	841,770	270	227,277,900	1.048	238,133,374
Wounding	309,730	15,206	4,709,754,380	1.048	4,934,706,373
Sexual offences	18,848	15,206	286,608,390	1.048	300,297,666
Burglary in Business	159,998	1,240	198,397,666	1.048	207,873,734
Criminal damage (property)	3,151,896	470	1,481,390,965	1.048	1,552,146,640
Robbery from individual	43,440	3,326	144,481,440	1.048	151,382,307
Robbery from business	9,185	2,260	20,758,353	1.048	21,749,834
Burglary in a dwelling	168,470	1,424	239,901,280	1.048	251,359,685
Theft from a person	80,080	234	18,738,720	1.048	19,633,737
Theft of a pedal cycle	50,050	231	11,561,550	1.048	12,113,764
Theft of vehicle	42,900	4,010	172,029,000	1.048	180,245,621
Theft from a vehicle	202,800	490	99,372,000	1.048	104,118,305
Attempted vehicle theft	91,910	247	22,701,770	1.048	23,786,075
Other theft and handling	192,920	231	44,564,520	1.048	46,693,055
Costs of drink driving casualties					
Drink driving Arrests	96,591	181	17,444,335	1.000	17,444,335
CJS costs of drink driving offences					
Magistrates courts	95,983	550	52,790,650	1.100	58,086,474
Crown courts (including sentencing)	608	2,700	1,641,600	1.100	1,806,281
Lost output					
Serious casualties	2,140	15,810	33,833,400	1.000	33,833,400
Slight	15,530	1,670	25,935,100	1.000	25,935,100
Medical and ambulance					
Serious casualties	2,140	9,580	20,501,200	1.000	20,501,200
Slight	15,530	710	11,026,300	1.000	11,026,300
Human costs					
Serious casualties	2,140	108,800	232,832,000	1.000	232,832,000
Slight	15,530	7,970	123,774,100	1.000	123,774,100
TOTAL (£)					**11,939,728,429**