NHS Greater Glasgow & Clyde

Review of Audits of Alcohol Related Deaths Glasgow City and GGHB Area

Year of Deaths 2003, 2010, 2013

Author: Catherine Chiang

Contributors: Stephanie Dargan, Ewan Forrest, Donna Mullen, Stevie Lydon, Barbara McMenemy, Saket Priyadarshi, Iain Smith, Jennifer Torrens

May 2018

Index

1 Background

When alcohol is consumed to excess it is associated with a range of well know and defined effects. Monitoring the frequency of these conditions permits an examination of the effectiveness of measures to reduce alcohol related harm. Alcohol related death is the most serious of these outcomes. This has been monitored on an annual basis in Scotland and the UK for a number of years. On a UK basis, Scotland has the highest prevalence of alcohol related deaths for both males and females [1]. Approximately twice as many men are found to die from alcohol related causes as women. A comparison of the trend in alcohol related deaths for both males and females is shown in figures 1 and 2.

On a Scotland wide basis, the National Records Office has tracked alcohol related deaths and found the number of deaths were stable at approximately 600 per year in the 1980s and rose during the 1990s to a peak of 1,546 deaths in 2006. Subsequently there was a decline in alcohol related deaths for both males and females until this trend reversed [2]. The recent increase in alcohol related deaths in Scotland and Greater Glasgow and Clyde appears to be due mainly to an increase in deaths in males. Figure 3 shows the trend in alcohol related deaths by gender for Scotland and Greater Glasgow and Clyde.

Figure 1. Age Standardised Alcohol Related Deaths in the UK. Death rate per 100 000 Males

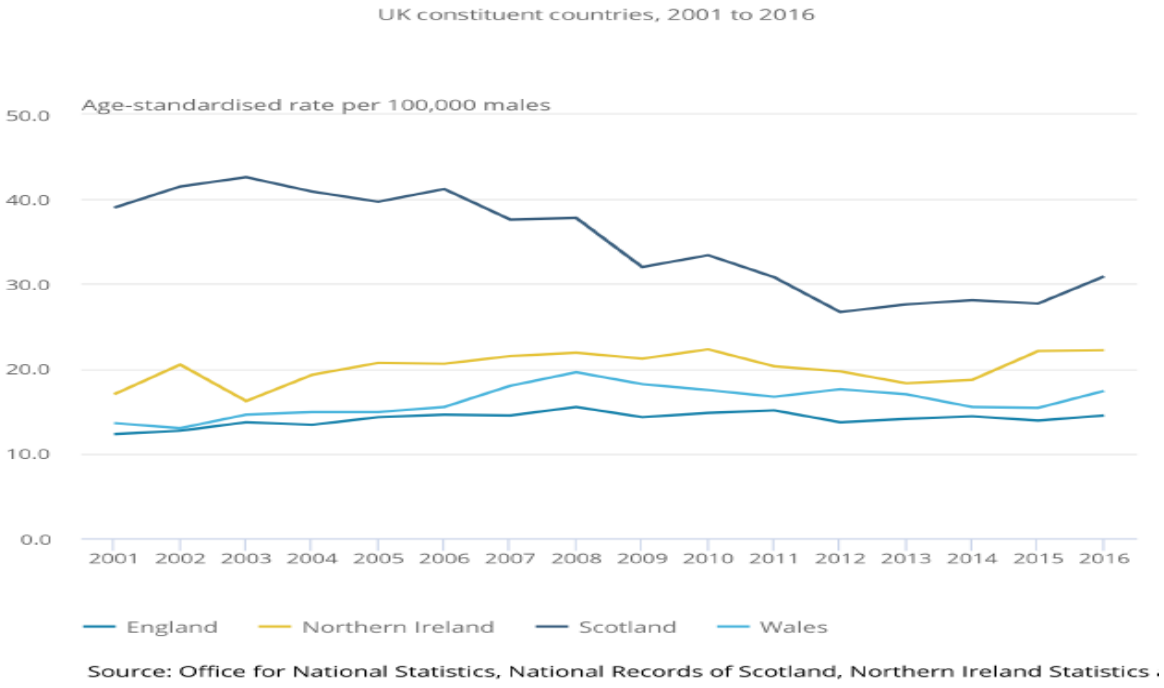
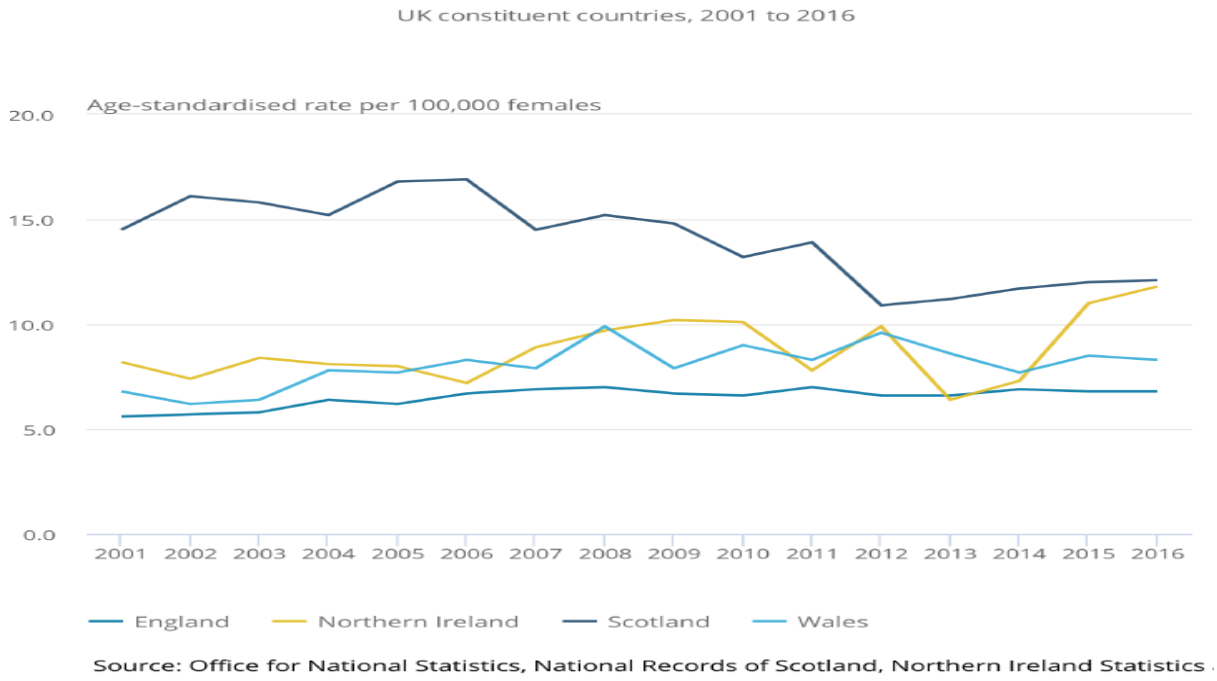
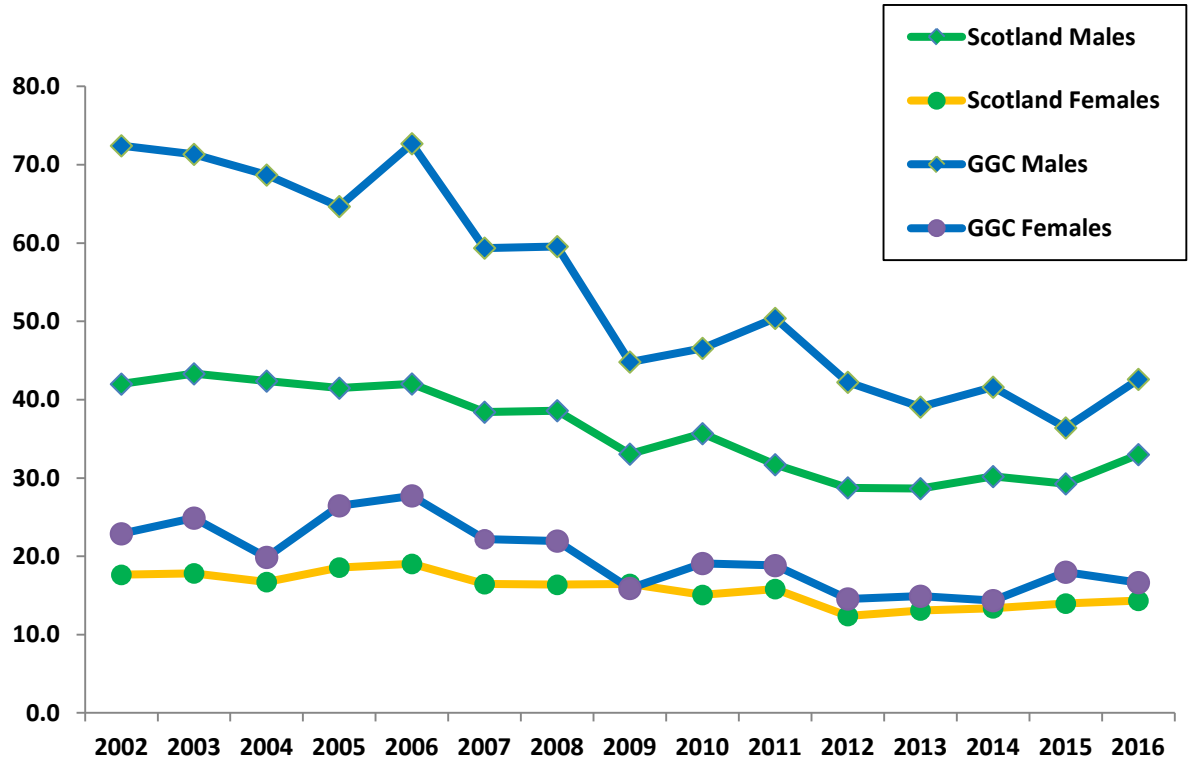


Figure 2. Age Standardised Alcohol Related Deaths in the UK, Death Rate per 100 000 Females



1. Rates are expressed per 100,000 population and standardised to the 2013 European Standard Population.
2. Deaths of non-Residents are included in figures for the UK.
3. Figures are for deaths registered in each calendar year.

Figure 3: Alcohol related deaths by Gender, Scotland and NHS GGC. Rates per 100,000 by Gender



The ratio of male to female deaths has been approximately 2:1 in Scotland and GGC for a number of years. The decline in death rates was greater in GGC compared with Scotland for both males and females.

Analysis by deprivation showed that the decrease in deaths rates was largely driven by a decrease among the most deprived males. It has been postulated that this decline was secondary to the impact of the recession which increased the relative price of alcohol particularly for the most deprived groups [3]. It is therefore possible that economic recovery has contributed to alcohol becoming more affordable and a resultant increase in its consumption. Alcohol related deaths by deprivation quintile in Scotland and Greater Glasgow and Clyde are shown in figures 4 and 5.

Figure 4 Trend in alcohol related deaths by deprivation quintile, Scotland

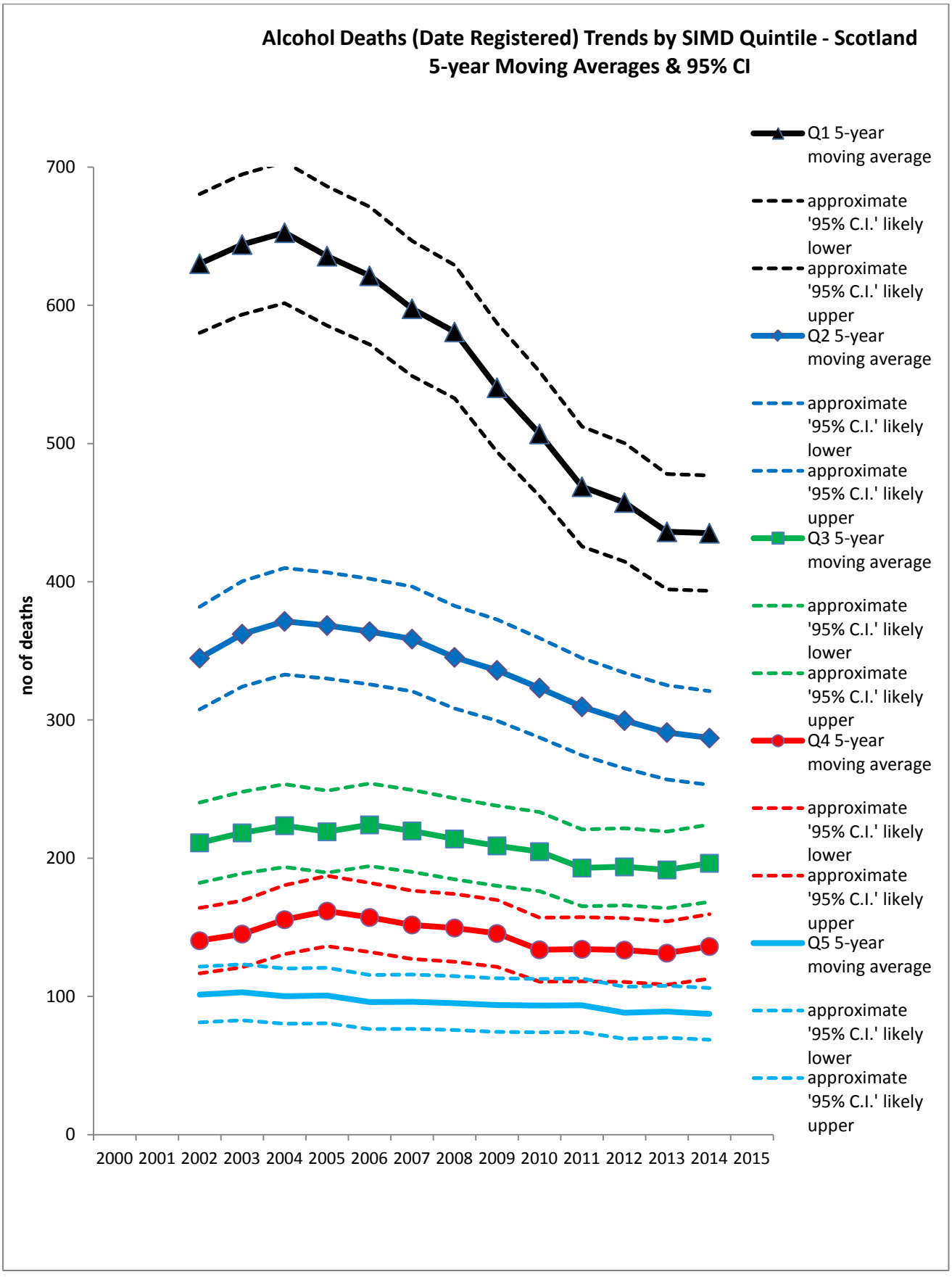
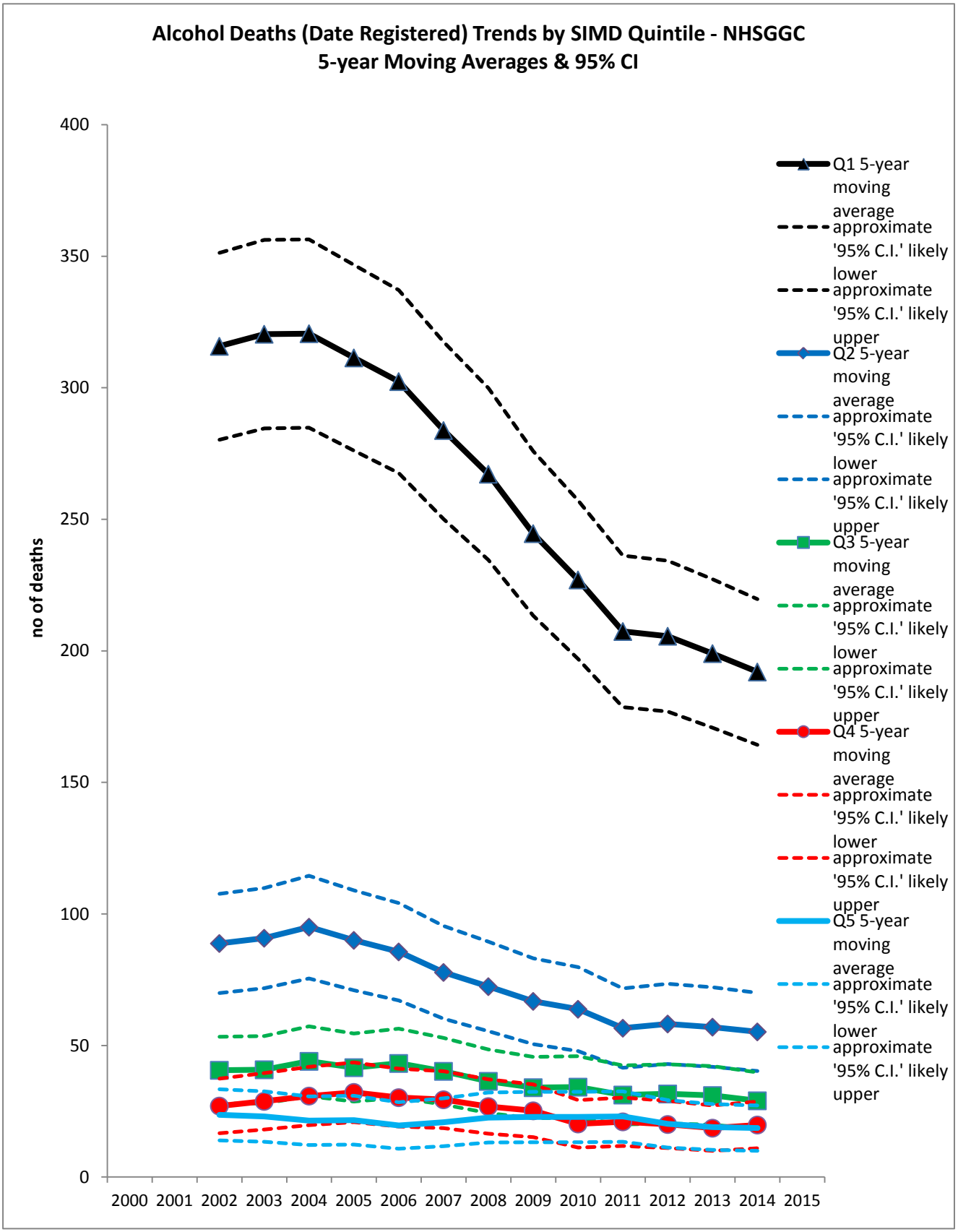


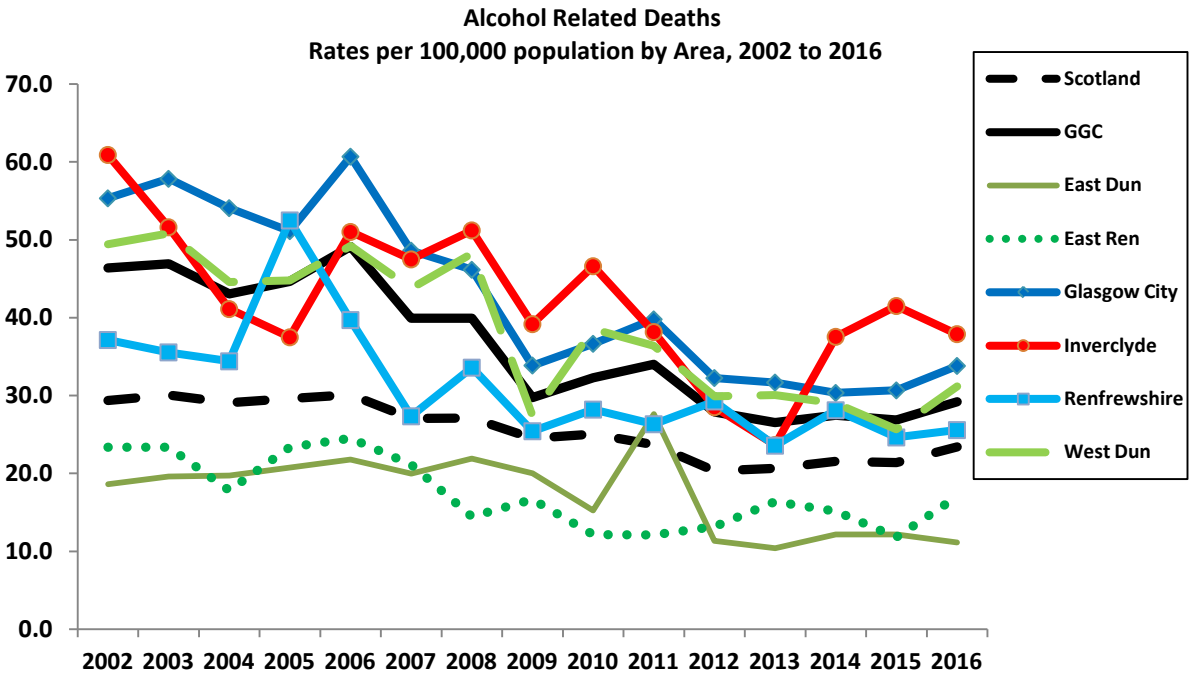
Figure 5 Trend in alcohol related deaths by deprivation quintile, NHS GGC



The figures illustrate the steeper decline in alcohol death rates in GGC compared to Scotland particularly in relation to the most deprived group. As the number of deaths is based on a five year moving average, small year to year fluctuations such as those reported in the most recent years have not yet had an obvious impact on the number of reported deaths. However, as GGC has a higher concentration of deprivation than the rest of Scotland it is more influenced by changes in death rates in the most deprived group. Nationally Scotland has witnessed an increase in alcohol related deaths in 4 of the last 5 years.

Analysis of data by local authority shows that East Dunbartonshire and East Renfrewshire have lower deaths rates than Scotland and Greater Glasgow and Clyde, and Glasgow City, West Dunbartonshire and Inverclyde generally have a higher death rate than both Scotland and GGC. Renfrewshire, while having a higher death rate than Scotland has a lower death rate than GGC. The trend in deaths by local authority is shown in figure 6.

Figures 6: Death Rates by Local Authority



1.2 **Age**

The peak age for alcohol related deaths in Scotland and GGC is shown in figures 7 and 8. The peak age for alcohol related deaths in GGC is 65-74 for males and 45-54 for females. This compares to 55-64 years for both males and females in Scotland.

Figure 7. Alcohol Related Deaths Rates per 100,000 Population. All Scotland by Age-Group and Sex

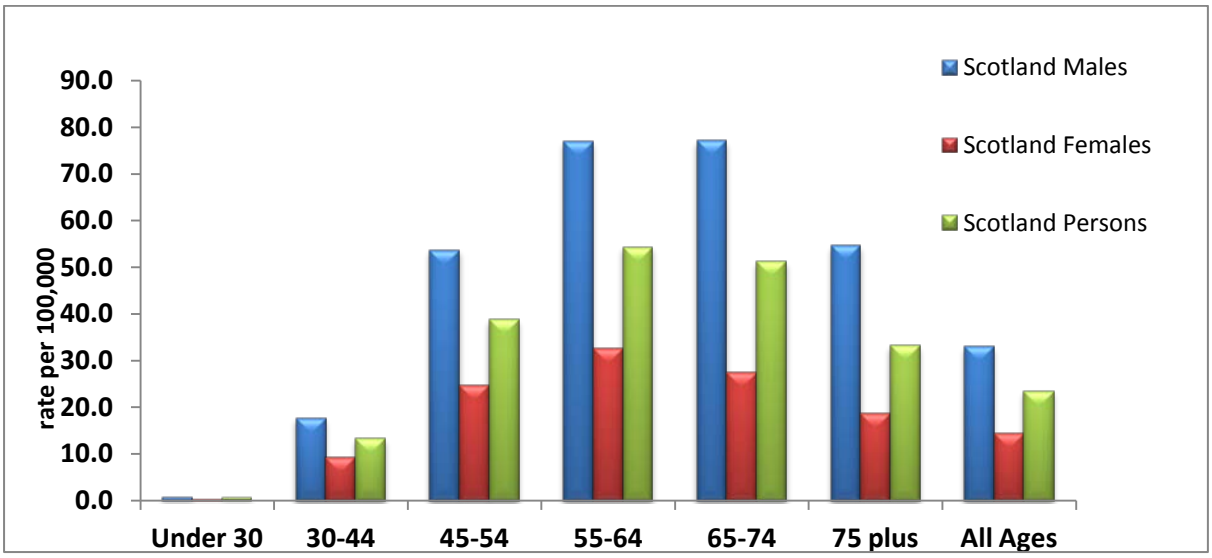
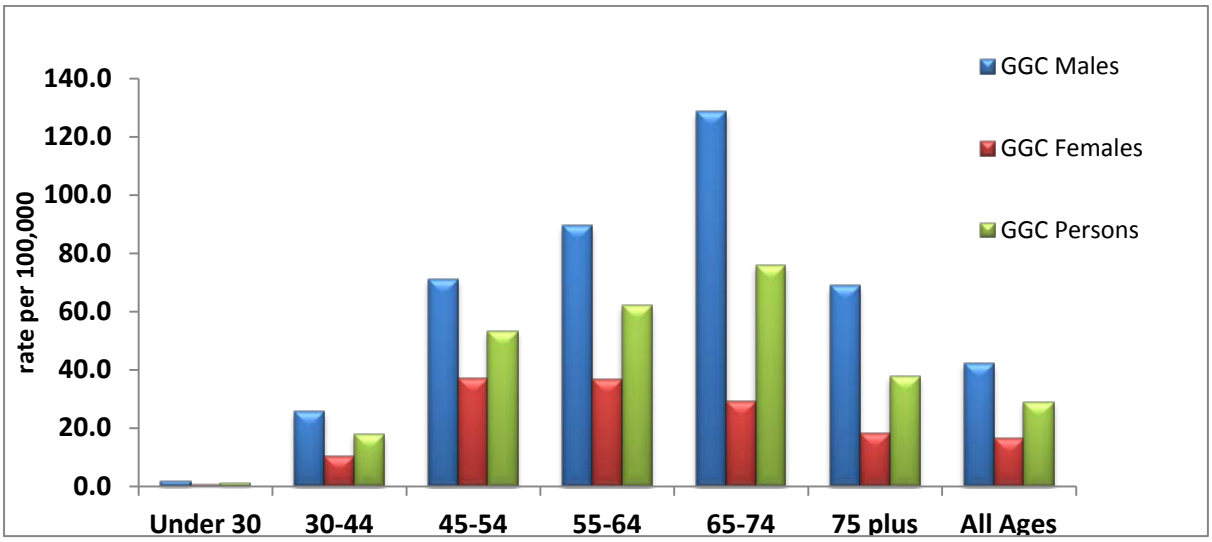


Figure 8. Alcohol Related Deaths Rates per 100,000 Population. All GGC by Age-Group and Sex



Source: NRS 2016 [2]

The peak age of alcohol related deaths of females in GGC is twenty years younger than males, and GGC females peak age of death is also on average a decade younger than females in Scotland.

2 Alcohol Death Audits

Alcohol related deaths audits have been carried out in the area of the old Greater Glasgow health board area for 2003, 2010 and for Glasgow City in 2013. The old Greater Glasgow Health Board area comprised Glasgow City, East Dunbartonshire, parts of East Renfrewshire and West Dunbartonshire and parts of North and South Lanarkshire. The first audit was conducted to describe the characteristics of people who have experienced an alcohol related death to allow resources to be targeted more appropriately to vulnerable people. Follow up audits were conducted to assess whether the development of services had an impact on the population at risk. It should be borne in mind when reviewing the data that wider socioeconomic changes including the global recession in addition to local service changes and national interventions for people with alcohol use disorders will also have had an influence on outcomes.

3 Definition of Alcohol Related Death

An alcohol related death was regarded as one where the cause of death was most directly related to alcohol consumption or where alcohol was a contributory factor. The definition of alcohol related deaths used are described in full in each of the audits [4, 5, 6.] In order to replicate the 2003 audit, the 2010 audit was restricted to individuals who resided in the area of the old GGHB. The 2013 audit was carried out by Glasgow City Community Addiction Team and was restricted to residents of Glasgow City council, a smaller geographical area. The old GGHB population was larger than the Glasgow City population, which is part of the explanation for the smaller number of total alcohol deaths in the 2013 sample. A representative random

sample of the population of alcohol related deaths was selected each year for detailed analysis to identify the characteristics of people whose cause of death was secondary to alcohol. The number of alcohol related deaths by year and the number patients selected for detailed audit is shown in Table 1.

Table 1: Number of Alcohol Related Deaths and Number Audited

Year	Total Alcohol Deaths	Total Audited
2003	501 (72% male, 28% female)	65 (74% male, 26% female)
2010	401 (72% male, 28% female)	65 (77% male, 23% female)
2013	187 (75% male, 25% female)	56 (77% male, 23% female)

Most patients died of alcoholic liver disease in all three audits. The range of secondary causes varies a little from year to year. The most common cause of death by Year Audited is shown in Table 2.

Table 2: Most Common Cause of Death

Year	Most common cause	2nd Most common	3rd Most common
2003	All alcohol liver disease 82%	Alcohol dependence 11%	Acute intoxication 3%
2010	All alcohol liver disease 64.6%	Alcohol dependence 16.9%	Acute myocardial infarction 7.7%
2013	All alcohol liver disease 56%	Chronic alcohol abuse 9%	Alcohol ketoacidosis 7%

A comparison of the average age at death by sex is shown for the samples that were audited in detail in table 3. In the last two audits the average age at death has been lower in females compared to males. In all audits the majority of deaths occurred in the white Scottish population. The proportion of deaths in ethnic minorities in all audits where that information was recorded did not exceed 2%.

Table 3: Average Age at Death

Year	Male	Female	Whole Sample
2003	56	57	56
2010	59	48	58
2013	54	51	54

4 Deprivation and Occupation

The majority of the population who died were relatively deprived compared to the general population. In the 2003 audit socioeconomic deprivation was assessed using occupational groups. It found that 60% of the population audited were employed in routine or semi-routine occupations, 11% were higher professional or lower managerial, 5% intermediate, 2% small employer and 9% lower supervisory. The remainder (19%) were either not known or never worked. The 2010 and 2013 audits used the Scottish Index of Multiple deprivation classification 2012 [7]. In 2010 66% lived in the most deprived deprivation quintile compared to 68% in 2013. Table 4 shows the comparison of deaths by deprivation quintile for both the 2010 and 2013 audits. Quintile 1 is the most deprived 20% of the population.

Table 4 % Deaths by SIMD 2012 Deprivation Quintile

SIMD 2012 quintile	2010 (% of sample quintile)	2013 (% of sample in quintile)
1	66	68
2	20	23
3	12	4
4	2	4
5	0	2

Most of the population sampled had previously worked. A comparison of the occupation for the 2010 and 2013 audits is shown in table 5. Women were more likely to be home makers and males drivers. The proportions in hospitality/retail and professional were roughly similar between the sexes.

Table 5: Occupation of 2010 and 2013 Samples

Occupation	2010	2013
Manual labour/builder/engineer	32%	29%
Not Stated	17%	11%
Hospitality/retail/leisure	14%	18%
Driver	14%	9%
Professional	12%	13%
Never worked	6%	5%
Homemaker	5%	13%

5 Family and Social Issues

Most of the sample lived alone at time of death. The marital status of the samples audited is shown in Table 6. Over half of the samples audited in 2010 and 2013 were single or divorced/separated.

Table 6: Marital Status at time of death

Year	Married/ cohabiting	Widowed	Divorced/ separated	Single	Not Stated
2003	40%	12%	19%	29%	0%
2010	21%	12%	19%	43%	5%
2013	23%	5%	40%	27%	5%

Over half did not have family or friends to assist them in 2003 audit, while the proportion who lived alone were reported to be 63% and 55% in the 2010 and 2013 cohorts respectively. Social isolation was frequently reported in all three

audits ranging from 31% who had no social network in 2010 to 66% in 2013. This may be cause or a consequence of excess alcohol consumption. It could be assumed that the social isolation would contribute to the self neglect that was a common occurrence in both sexes. Self neglect was reported in 45%, 65% and 43% of the 2003, 2010 and 2013 samples audited respectively.

Many of the persons audited had a close family member or friend who also had alcohol problems reported in 12%, 25% and 43% of the 2003, 2010 and 2013 audit samples respectively. It would be expected that those who had close associates who were also heavy drinkers would have a higher risk of becoming heavy drinkers themselves and possibly require additional help to curb alcohol consumption.

Financial problems were frequently reported. It was recorded in 9%, 17% and 27% of the 2003, 2010 and 2013 audits respectively. It would be expected that the high levels of alcohol consumption and the subsequent impact on performance and health would contribute to this.

Housing problems were also fairly common and were reported in 12%, 35%, 41% of the 2003, 2010 and 2013 audits respectively at some point in their life, though the majority lived in their own home rather than a hostel or care home (86% 78% ,86%) at time of death.

Criminal behaviour was noted more commonly in males than females. It is recorded in 20%, 15% and 34% of the 2003, 2010 samples and 2013 samples respectively. No females had a record of a prison stay in the 2003 or 2010 audits, but this was noted in 6% and 16% of men respectively in 2003 and 2010. In the 2013 sample a prison stay was noted in 15% of women and 19% of men, (2 females and 8 males), or 18% overall.

The relationship between alcohol use and domestic violence is shown in Table 7. Males and females both perpetrated domestic abuse under the influence of alcohol, though becoming a victim appears to be more common than becoming a perpetrator for females in each year audited.

Table 7: Relationship between Alcohol Use and Domestic Violence (%)

Year	Perpetrator of Domestic Violence			Victim of Domestic Violence		
	Male	Female	Total	Male	Female	Total
2003*	8	0	6	13	18	14
2010	8	7	8	4	33	11
2013#	12	23	14	0	77	18

*2003 data say victim of violence-Does not specify domestic abuse

The sample size was very small and please note in 2013 female perpetrators was 3 of 13, and victims 10/13

Child neglect is also more common in people who were heavy drinkers. Our audits found evidence of this in 4%, and 3% of persons in the 2003 and 2010 audits. No person audited in the 2013 audit had responsibility for children under the age of 16 years though 32% of the sample had children. Alcohol was noted to hinder the development of relationships with children and evidence was found of children being taken into care as a result of parental alcohol misuse.

6.1 Identification of Problem Drinking

Alcohol consumption was recorded in 86%, 98% and 96% of the 2003, 2010 and 2013 samples respectively. There was little difference in this between the sexes. The category of recorded drinking was shown in table 8. There has been an improvement in the quality of information recorded since the audit series started. The most common category of drinking recorded is now dependent. However, even in the latest audit patients who died of alcohol related causes the category of “social drinking” continues to be used to describe their drinking pattern. The use of intoxicated in 2013 suggests a lack of understanding of the classification of alcohol use disorders and indicates a need for further training for health care professionals.

Table 8: Category of Drinking in Successive Audits as % of Sample Audited

	2003			2010			2013		
Category of Drinking	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
Dependent	40	18	34	50	67	60	60	46	57
Harmful	15	-	11	20	13	18	12	0	9
Intoxicated	2	-	1	2	-	2	12	38	18
Social	4	-	2	8	7	8	12	15	13
Not Documented	40	82	51	20	13	12	5	0	4

The pattern of drinking as recorded in the audits is shown on table 9. The majority of patients are noted to be regular daily drinkers, however, as a proportion of patient did not have more detail of their drinking pattern recorded, it underlines the need for better history taking by professionals involved in their care.

Table 9: Drinking Pattern Recorded as % in Case Notes Audited

	2003			2010			2013		
Pattern of Drinking	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
Binge Drinking	13	18	14	2	7	3	17	15	16
Regular Daily Drinking	71	48	65	80	87	82	70	77	72
Not Documented	17	35	22	18	7	15	14	8	13

The median amount of alcohol consumed in units per week was collected from case notes in all 3 audits and was found to be 200, 200 and 220

respectively in the 2003, 2010 and 2013 audits. Males consumed more alcohol than females and some consumed considerably more than the average quoted here.

6.2 Age of Onset of Problem Drinking

A comparison of the average age of onset of problem drinking over time is shown in Table 10.

Table10: Average Age when Problem Drinking Started

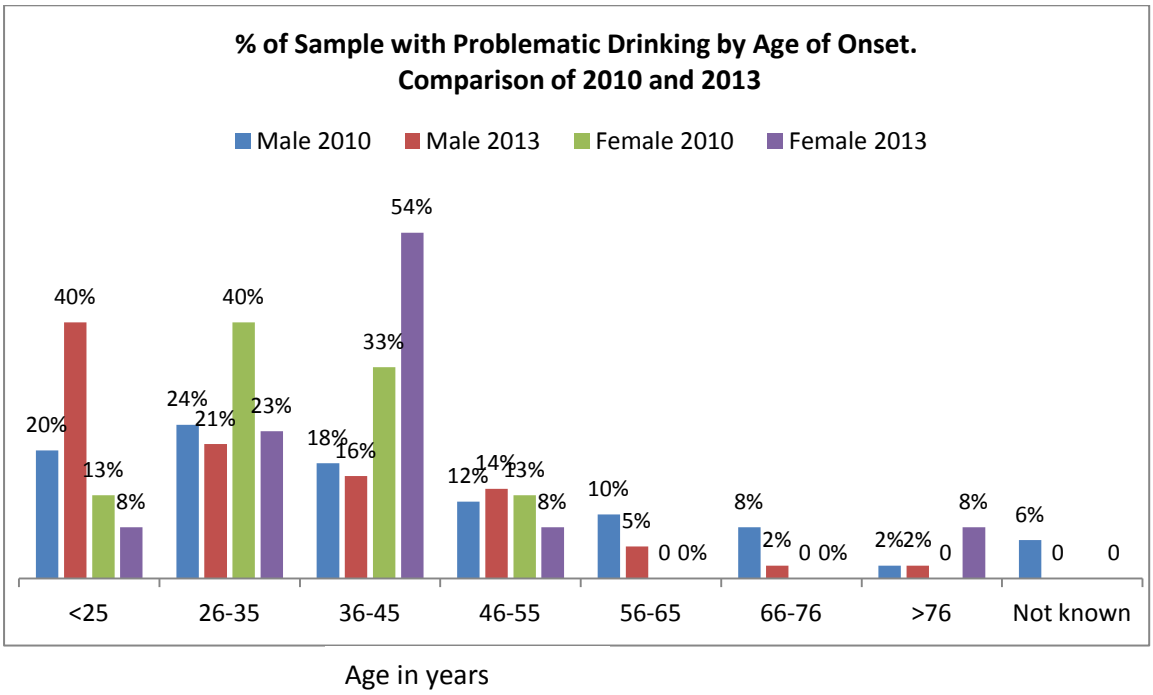
	2003		2010		2013	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Age	37	49	38	36	32	36

The 2003 and 2013 audits both found that males commenced their drinking career earlier than females. The 2013 audit in particular noted that 40% of males had problematic drinking by the age of 25 years. In the 2010 audit it was noted over half the females had problematic drinking by 35 years of age (53%). The data is presented in table 11 and figure 9.

Table 11. Age of Onset of Problem Drinking 2010 and 2013

	Male	Male	Female	Female	All	All
	2010	2013	2010	2013	2010	2013
<25	20%	40%	13%	8%	18%	32%
26-35	24%	21%	40%	23%	28%	21%
36-45	18%	16%	33%	54%	22%	25%
46-55	12%	14%	13%	8%	12%	13%
56-65	10%	5%	0	0%	8%	4%
66-76	8%	2%	0	0%	6%	2%
>76	2%	2%	0	8%	2%	4%
Unknown	6%	0		0	5%	0

Figure 9 Age of Onset of Problem Drinking by Sex 2010, 2013



6.3 Young Drinkers

The volume of alcohol consumed by people who commence problematic drinking at a young age has been found to be higher in the literature that those who developed problem drinking when they were older [8]. Our audit found that the median weekly amount of alcohol consumed by under 25's was 392 unit and 280 units in the 2010 and 2013 audits respectively. This compares with 200 and 220 units for the whole sample audited in 2010 and 2013 samples.

83% of the under 25s in 2010 were referred to psychiatric services for treatment of mental illness and alcohol problems compared to 67% of the 2013 sample of under 25s. As many of these young people commenced their drinking career as adolescents, when their bodies were still developing, they would have been more vulnerable to the effects of alcohol including the important effect that binge drinking has on the brain development[9]. More detailed analysis of the 2013 audit identified that 78% of the younger drinkers had a diagnosis of alcohol dependence syndrome by their GP and the age of death of this subsample of 2013 drinkers was 49 years compared to 54 years for the whole sample.

Both the 2010 and 2013 audits noted a time lag between the development of problematic drinking and this being noted in the case notes. The time lag was an average of 2 years in the 2010 audit and 5 years in the 2013 audit.

6.4 Interventions for Problem Drinking

Alcohol screening and brief interventions (ABIs) were commenced in primary care in Greater Glasgow and Clyde in 2009 as part of the Scottish Government's HEAT targets [10]. This was to encourage health care workers to discuss alcohol consumption as part of routine care and encourage patients to decrease their alcohol consumption. It was primarily aimed at people who were drinking at hazardous levels rather than patients who already were dependent on alcohol; however, this may have been beneficial for some of the patients.

Prior to the roll out of the HEAT programme the 2003 audit noted that 34% of the patients had ever answered an alcohol screening questionnaire (40% male, 18% female). They may not have had a brief intervention following the screening test. ABIs were conducted with 17% of the 2010 audit (27% male, 14% female,) and 25% of the 2013 audit (26% male, 23% female), an encouraging increase, though still less than half the population of problem drinkers who had such an intervention.

Drink diaries may be issued to patients to facilitate accurate collection of the quantity of alcohol consumed by the patient. Its use was noted in 2% of the sample in 2003 where the individual was reported to have complied with the request to complete it and one male who did not comply (2%). It was recorded in 6% of the 2010 population, (6% male, 7% female), who complied with the request, and 13% of the 2013 sample (14% male, 8% female) who complied with the request. While there has been a gradual increase in use of this tool it appears to be underused to aid identification of problem drinking with patients and professionals.

7 Physical Examination

Physical evidence of alcohol dependence was noted in all three audits. It was noted in 60% of the 2003 sample (67% male, 42% female), 78% of the 2010 sample (80% male, 73% female) and 57% of the 2013 audit (60% male, 46% female). In addition to the physical evidence of dependence there was frequent evidence of alcohol related cognitive impairment. It was noted in 20% of those in the 2003 audit (19% male, 23% female), 31% of patients in the 2010 audit (32% male, 27% female) and 13% of the 2013 audit (15% male, 11% female).

Biochemical evidence of alcohol misuse was frequently found in both sexes. Table 12 shows the frequency of abnormal biochemistry findings in the respective audits. The most frequent abnormal finding in all three audits was abnormal liver function tests. Elevated mean cell volume of red blood cells was the next most frequent finding.

Table 12: Frequency of Abnormal Biochemical Findings from Audits (%)

	2003			2010			2013		
	Male	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
Abnormal LFTS	83	77	82	88	73	85	91	100	93
Abnormal Liver or Spleen	42	47	43	64	47	60	65	23	55
Elevated red cell MCV	56	59	57	64	87	69	65	54	63
Reduced Platelets	48	41	46	56	47	54	72	54	68

8 Co-Morbid Health Issues

Many of the patients were frequent attenders in primary care due to the occurrence of co-morbid health problems. The SIGN 74 guideline identified a range of conditions associated with alcohol misuse to prompt alcohol screening and brief interventions [11]. Due to the low level of alcohol screening and brief intervention delivered to the patients audited it is useful to review the occurrence of co-morbidity identified across the local samples audited. The 2003 audit noted that the mean number of co-morbid conditions among the sample audited was three. The most common reasons for patients attending outpatients and inpatient admissions were related to their alcohol misuse such as alcohol related liver disease, alcohol dependence, seizures due to alcohol and oesophageal varices and ascites. Where misuse of alcohol is not disclosed the most common co-morbid conditions identified are shown in Table 13. The co-morbid health conditions were gathered from a range of different sources and the source which recorded the highest prevalence for the patient group was used. This method may have underestimated the co-morbid health problems as the older patient records were not available to cross-check.

Table 13: Co-Morbid Health Conditions (%)

Condition	2003	2010	2013
Depression	9	29	21
Anxiety disorder	9	23	12
Hypertension	2	27	11
Obesity	0	16	0
COPD	5	8	7
Fracture	9	8	0
Ischaemic heart disease	2	8	0
Diabetes	0	0	14
Asthma	0	0	7

While obesity was frequently reported in 2010, the 2013 audit identified diabetes rather than obesity. As diabetes and obesity are closely linked, it is possible that the different methodology of the audits, with the latter using electronic records, has resulted in diabetes rather than obesity being identified. Mental illness was frequently reported and often managed by use of medication. Depression was the most frequent mental health problem reported. Prescription of CNS medication was found in 66% of the 2003 sample (69% male, 59% female) of which 37% were prescribed anti-depressants and 54% anxiolytics. Seventy two percent of the 2010 sample was prescribed CNS medication of which 47% received antidepressants and 57% received anxiolytics, and 70% of the 2013 sample, 55% had had anti-depressants and 32% had been prescribed anxiolytics or other hypnotics. In all the audits the prescribing of CNS medication suggests a higher level of psychiatric morbidity than the health care records suggest.

9 Contact with Primary Care

The 2003 audit merged outpatient and GP attendance when reporting results and recorded an average of 7.9 years attendance prior to death (males 9 years, females 4.7 years). The mean number of alcohol related attendances over the lifespan was 19.3, (24 male, 5 female).

The 2010 audit found a wide variation in the age at which the patient first presented to the GP with an alcohol related condition from 18-78 years, average 38. There was also an average of 2 years between the patient presenting with an alcohol related condition and alcohol consumption being recorded as a concern in the GP notes.

The 2010 audit found alcohol consumption was recorded at time of GP registration in 51% of the sample (48% males, 60% female); alcohol advice was provided at time of GP registration to 17% of the sample (14% male, 27% female). However alcohol consumption was recorded in 95% of the sample GP notes (98% male, 87% female), alcohol problems were noted in 98% of the sample (male 98%, female 100%). Screening for hazardous and harmful

drinking was undertaken in 17% of the sample (14%male, 27% female) and advice was given at some point in 91% of cases (92% male, 87% female). An alcohol brief intervention was delivered to 6% of the sample, two males (4%) and 2 females (13%). Almost half (46% both sexes) attended primary care for appointments sent when repeat appointments are considered. It was the same for both sexes. Sixty four percent of males and 80% of females were referred to the Community Addiction Team for alcohol misuse, 60% overall. Referrals were also made for counselling (28%, 24%male, 40%female) and alcoholics anonymous (25%, 20% male, 40% female). Referral to any problem drinking service was made in 68%male, 80% females. Some of the referrals may have been made by services other than primary care.

The 2013 audit reports that 34% first reported to their GP with alcohol issues. An alcohol problem was noted by the GP for 95% of the sample (95% male, 92% female) usually as a result of attending with health related issues. Advice in relation to alcohol use was provided in 89% of cases (88% male, 92% female). Less than half (41%, 42%male, 38% female) had been screened for hazardous/harmful drinking and less than one quarter had received an alcohol brief intervention (26% male, 23% female). Referral to CAT was made for 51% male, 92% female, referral for counselling was made in 51% males, 69% females and referral to AA was made in 20% of males and no females. Overall, sixty three percent (58% males, 77% females) were referred to any service for their drinking problems.

A review of the information identified from the 2010 and 2013 primary care notes is presented in table 14.

Table 14 Summary of Primary Care Data 2010 and 2013 Audits

Year	2010			2013		
	Male	Female	Total	Male	Female	Total
Average age at first presentation with alcohol problems	38	36	38	32	36	32
Range of Ages at presentation			Minimum 18 years Maximum 78 years			Minimum 12 years Maximum 75 years
Time between first GP alcohol attendance and recording of alcohol problem			2 years			5 years
Alcohol consumption recorded at registration	48%	60%	51%	Not recorded		
Alcohol advice given at time of registration	14%	27%	17%	Not recorded		
Alcohol consumption recorded at any time	98%	87%	95%	95%	92%	95%
Alcohol problems noted by GP	98%	100%	98%	95%	92%	95%
Alcohol advice given by GP (any time)	92%	87%	91%	88%	92%	89%
Screened for hazardous and harmful drinking	14%	27%	17%	42%	38%	41%
Received ABI	4%	13%	6%	26%	23%	25%
Attended primary care appointments	46%	46%	46%	Not recorded		
Referral to CAT	64%	80%	60%	51%	92%	59%
Referral for counselling	24%	40%	28%	51%	69%	55%
Referral to AA	20%	40%	25%	20%	0%	18%
Referral to any problem drinking service	68%	80%	71%	65%	92%	71%

10 Attendance at Accident and Emergency Departments

Patients in all three audits were found to have attended Emergency departments. The percentage of patients who attended A&E in 2003 was 37% (42% of males, 24% of females). The mean number of attendances was 5 (range 1-20) and found to stretch over a 2 year time frame. The most common reason for attendance was superficial head injury (38%), alcoholic liver disease (21%), alcoholic seizures (16%), fractures (13%) and alcohol withdrawal and unspecified falls, both 10%. A range of other alcohol and non alcohol related diagnoses also identified.

The 2010 audit found 69% of the sample (70% male, 67% female) had attended accident and emergency at least once for an alcohol related condition. The number of alcohol related attendances ranged from 1-34 with a median of 4. In over one third of both sexes the first A and E visit related to alcohol misuse occurred more than 10 years prior to death and these attendances amounted to one third of all alcohol related A and E attendances by the sample. The most common A & E diagnosis was injury

The 2013 audit examined A & E attendance in the 6 years prior to death. It found and average of 8 attendances per person, range 1-37. Twenty eight percent of presentations recorded alcohol as part of the reason for attendance. The most common complaint was injury (13%) followed by unwell (12%). Other common complaints were pain, seizure, fall, collapse and intoxication. The most common discharge diagnosis was alcoholic liver disease (5.5%) followed by acute alcohol withdrawal (5%). Over half of all attendances resulted in an inpatient admission (56%).

A summary of the Accident and Emergency findings from all three audits is presented in table 15.

Table 15 Summary of Attendance at Accident and Emergency

Year of Audit	2003	2010	2013
% Who attended A&E	37%	69%	58%
Average number alcohol related attendances	5	8	8
Maximum number of attendances	20	34	37
Time span from 1st attendance to death	0-2 years	>10 years in 33% of cases	Audit was restricted to 6 years prior to death
Most common Diagnosis	Head Injury	Injury	Alcoholic liver disease
2nd	Alcoholic liver disease	Not collected	Acute alcohol withdrawal
3rd	Alcoholic seizures	Not collected	Alcohol withdrawal seizures

Conclusion: Most patients attend A&E at some point during the illness. The prevalence of A&E attendance is higher for the audit that took a life course approach, and it is likely that the attendance rate in the other two audits would be found higher than that reported if the patients' history had been extended. Injury is frequently a cause of early attendance, and this often occurred much earlier in the disease process presenting an opportunity for early intervention.

Recommendation: Early intervention in A&E should be exploited for maximum effect.

11.1 Acute Out Patients

The 2003 audit reported outpatient and GP attendance as a combined figure so it is not possible to identify the number of alcohol related outpatient visits or the number of years before death that they began separately. However, 54 patients (83%) of the sample attended either primary care or outpatients for an alcohol related issue prior to death (85% of the men and 76% of the women.) The specific clinic attended is not recorded, though data on diagnosis of combined outpatient and GP attendance is available. The most common reason for attendance was recorded as alcohol related liver disease 26% (male 25%, female 29%), alcohol dependence syndrome 25% (31% male, 6% female), and harmful use of alcohol 8% (4% male, 18% female).

The 2010 sample found that few patients were offered outpatient appointments. Over 60% of both sexes had no record of an outpatient appointment (64% male, 66% female). Of those who were offered an appointment, the majority attended on first or subsequent occasions with 10% of males and 7% of females being lost to follow up as a result of defaulting appointments. The median number of appointments for an alcohol related condition was 6 (range 1-60). The most common outpatient diagnosis was alcohol related liver disease followed by alcohol dependence syndrome and obesity.

The 2013 sample found a higher rate of outpatient appointment with 51 of 56 (91%) having at least one appointment. The median number of appointments was 15, range (1-63). The most frequently attended clinic was gastroenterology (65% of those who attended outpatients). Trauma and orthopaedics was attended by 55% of patients and 51% attended general medical outpatients. Sixty four percent of patients who were offered outpatient appointments attended the appointment given.

A summary of attendance at outpatient appointments is shown in table 16.

Table 16. Summary of Attendance at Outpatient Appointments

	2003*	2010	2013
% Offered outpatient appointment	85% males 76% females 83%All	Males 36% Female 34% All 35%	Males 88% Females 92% Total 91%
Attendance at Appointments#	63%	26%	64%
Number of Appointments	19.3	Median 6 Range 1-60	Median 15 Range 1-63
Most common outpatient diagnosis $	Alcohol related liver disease	Alcohol related liver disease	Gastroenterology
2nd most common	Alcohol dependence syndrome	Alcohol dependence syndrome	Trauma and orthopaedics
3rd most common	Harmful use of alcohol	Obesity	General medicine

*In 2003 the outpatient and primary care data were combined

% of whole sample who attended outpatients.

$ 2013 diagnosis was not recorded, only speciality they were referred to.

Contact with outpatients was variable, but could be improved with further assertive follow up. For those who attended, particularly gastroenterology and trauma clinics following alcohol consumption, interventions to reduce consumption should be exploited. As attendance was often many years before death, the opportunity to intervene at an early stage of the disease process was also available.

11.2 Acute Inpatient Hospital Admissions

The 2003 audit reported that the median number of inpatient hospital admissions for the sample audited was 4 (range 1-24) and they occurred on

average 4.7 years prior to death (males 4.6, female 4.4). The most common inpatient diagnosis was alcoholic liver disease in both sexes, 22.9% (male 24.2%, female 18.4%). Alcohol dependence and seizures due to alcohol were the next two most common reasons for admission. Hepatitis C was found in 4 patients (6% of the sample), all men. There appeared to be an association between illegal drug use and hepatitis C. However, the majority of the sample (95%) did not have a history of illegal drug use. One man, 2% of the sample was referred for consideration for transplantation, but found unsuitable.

The majority of the 2010 sample (89%) was admitted to an acute general hospital at least once with an alcohol related condition. Twenty two percent of men and 13% of women had no alcohol related admission. The median number of years over which these admissions spanned was 5.5 years (range 1-39 years). The average number of inpatient admissions was 3 (range 1-29). The most common reason for admission was alcoholic liver disease, 10%. Other common reasons for admission included alcohol withdrawal 6%, ascites and gastritis 4% each, cirrhosis 3%, hepatitis 3%, haematemesis 3%, and encephalopathy, deranged liver function tests and hyperaldosteronism 1% each. There were a wide range of other conditions directly or indirectly related to alcohol misuse. Twenty six percent of the sample was offered a screening test for hepatitis C (28% male, 20% female). Twenty four percent of those tested were positive (21% male, 33% female). Two patients (3%) of the sample were referred for consideration of liver transplant, and 1 patient was considered suitable and received a transplant.

In the 2013 sample 89% of patients had an inpatient or day case episode prior to death, with the average number of admission being 6. Over half of inpatient episodes were in general medicine, approximately 1 in 8 were for gastroenterology and less than 1 in 10 were for general surgery. All other specialities were less frequent. Over half (56%) of the admissions were classed as emergencies.

The most common primary diagnosis was alcoholic liver disease (8%). Further analysis suggests that 33% were for diseases of the digestive system with 60% of those recorded as diseases of the liver.

Fifty nine percent of the 2013 sample was tested for hepatitis C (58% male, 62% female). Of those who were tested 82% were negative, however, 16% of males in the 2013 sample and 23% of women in the same sample were positive for hepatitis C.

Three patients in the 2013 sample were referred to the liver transplant unit (5%). Two patients were assessed as not suitable and one died before attending the appointment, so no one received a liver transplant.

A summary of the inpatient admissions data is shown in table 17.

Table17 Inpatient Treatment in Samples Audited

	2003	2010	2013
% of sample admitted	M=75, F=88 All= 78%	M=78, F=87 All=89%	89%
Median number of admissions	4.5	3	6
Range in number of admissions	0-24	1-29	1-21
Mean number of years before death	4.6	5.5	Not available
Range of years before death	1-27 22% ≥10 years	1-39 28% 10≥ years	Not available
Most common inpatient diagnosis	Alcoholic liver disease	Alcoholic liver disease	Alcoholic liver disease
2nd most common diagnosis	Alcohol dependence	Alcohol withdrawal	Cirrhosis
3rd most common diagnosis	Alcohol seizures	Ascites/gastritis	Other liver disease
% Screened for hepatitis C	**Not collected**	M=28, F=20 All 26%	M=58, F=62, All=59%
% Hepatitis C positive All males, all females, % of all patients	M=8%, F=0 All=6%	M=6%, F=7% All=6%	M=16%,F=23% All=18%
Considered for transplantation	2%	3%	5%
Received transplantation	0	2%	0

All patients with liver disease should be screened for hepatitis C as part of good clinical practice, though there is no formal screening protocol in operation. The proportion of positive antibody tests has not been monitored over time so our current information is unable to confirm whether patients with alcohol liver disease are at increased risk of developing hepatitis C. Gastroenterologists have not noticed a gender difference in the prevalence of hepatitis C in their patients, though they have noticed a cohort of patients in their 50s in addition to a younger cohort in their 20s currently attending with liver disease and hepatitis C.

11.3 Acute Addiction Liaison Service

The acute addiction liaison service was established in 2005 in response to the 2003 audit amid concerns that patients were being treated at acute hospitals and discharged without further follow up. The service has increased incrementally since it was introduced. The service now provides training for the acute unit in alcohol screening and brief interventions for alcohol use disorders and also alcohol screening and withdrawal management of patients with alcohol withdrawal during a hospital admission. Part of their work is also focused on connecting patients who have been identified with alcohol problems to services when they are discharged from hospital. Much of this work has been in the form of information and contact details for the patient to follow up when discharged from hospital.

In the 2010 audit 23 patients (35%) were referred to the acute addiction liaison team (18 male (36%), 5 females (33%)). Of those referred 26% (13 males (26%), 3 females (20%)) complied and were seen. Of those who were referred, most patients were referred to this service only once (61%), 13% were referred twice, 4% were referred three times, and data is missing on the number of referrals for the remainder.

By the time the 2013 audit was undertaken this service had been in operation for 8 years and provided a range of services across emergency departments, minor injury units as well as inpatient services. Half the 2013 sample (28 patients) had previous contact with the Acute Addiction Liaison Service, 47% of the males and 62% of the women. There was a total of 127 contacts among the 28 referred patients (4.5 contacts per person referred).

A comparison of activity by the Acute Addiction Liaison Service is shown in table 18. In summary there has been an increase in the activity of the Acute Addiction Liaison Team whether assessed as proportion of sample referred, proportion of sample assessed by the team or the number of contacts with individual cases.

Table 18 Summary of Acute Addiction Liaison Service 2010 and 2013

	2010	2013
% Referred to Acute Addiction Liaison	M 36, F 33, All 35	All 50*
Average number of Referrals	1.3	**Not collected**
% Assessed by Acute Addiction Liaison	M 26, F 20, All 26	M 47, F 62, All 50
Average number of contacts per case where data available	1.15	4.5

*2013 records contact with Acute Addiction Liaison Service and not referral

12.1 Community Addiction Team

The Glasgow Addiction Team (CAT) was formed in 2004 as part of the recommendation of the 2003 audit. The service provides multidisciplinary care from both health and social work staff to improve co-ordination and follow up of patients with alcohol dependence issues. It is a tier 3 service and acts as a gatekeeper for the tier 4 Addiction Psychiatry Service.

The community addiction team did not exist in 2003 however, 22% of the 2003 sample was referred to social work addiction services and there was evidence of joint working between health and social care in 17% of the sample (19% of males, 12% females.). There was a suggestion that compliance following psychosocial interventions was about half in men but women were more amenable to “talking therapies” as part of their treatment. Three males in the 2003 audit (5% of the sample) had a record of using illegal drugs.

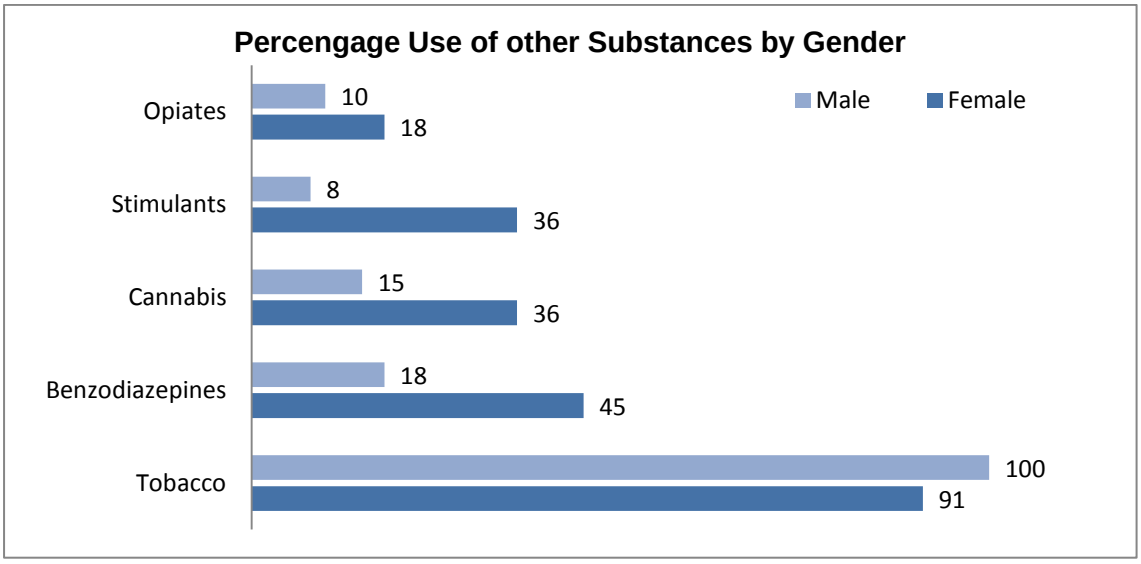
In the 2010 sample 39 patients (60%) of the cohort were referred to the Community Addiction Team (12 female (80%), 27 male (54%)). Attendance was poor despite assertive outreach. No women and ten males (20% of men) or 15% of the sample attended an appointment. The median number of appointments at the CAT was 3. These appointments occurred over a median of 5 years, (range 1-32 years).

Eighteen percent of the 2010 sample was referred to clinical psychology (male 16%, female 27%). Three patients (1 male, 2 female) attended. Psychosocial

interventions were reported for 11 patients (6 male, 5 female). Four men and 2 women are reported to have complied with the intervention. Proportionately more females than males were referred and participated in psychological interventions.

The CAT also manages addiction to substances other than alcohol. The predominant other substance of misuse was tobacco. Overall proportionately more women than men used other substances with the exception of tobacco. No one in the 2010 sample used novel psychoactive substances. Substance use by the 2010 sample is shown in Figure 10.

Figure 10: Substance Misuse by Gender 2010



In the 2013 sample 59% of the sample was in contact with the community addiction team as some point in their lives. In some instances there was evidence of planned discharge. When this occurred there was little evidence of either after care from CAT or onward referral to other agencies to provide this care.

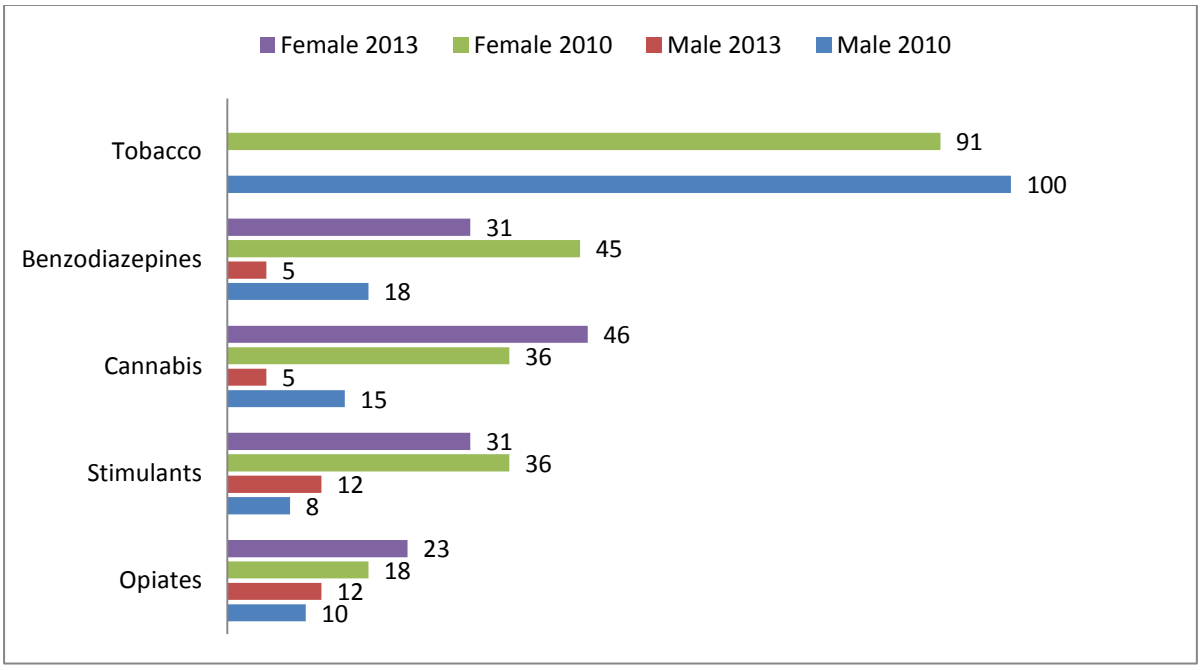
In most cases there was unplanned discharge due to non engagement. In some cases home visits were completed prior to discharge, but most were

given three further appointments and then discharged with no further follow up.

Ten patients (18%) of the 2013 sample were referred to clinical psychology. Of these 10, 7 attended at least one appointment.

Thirty eight percent of the 2013 sample used other substances in addition to alcohol. Cannabis use was reported by 10 patients (18%) and illicit diazepam by 8 patients (14%). Five patients who reported other substance misuse reported only cannabis (9%). The most common poly substance misuse was heroin and cannabis or heroin and diazepam. A comparison of substances misused in 2010 and 2013 is shown in figure 11. Proportionately, other substance misuse is more common in females than males. Tobacco use was not recorded in the 2013 audit, but was the most common other substance used in 2010.

Figure 11 Comparison of % Substance use by Sex 2010, 2013



A comparison of the activity of community addiction services is shown in table 19. It is not known how much time elapsed between first being referred to the community addiction team and final death. As attendance was so poor, particularly for women, the opportunity to intervene in this service is considerably less.

Table 19 Comparison of Community Addiction Team Activity

	2003	2010	2013
% Referred to CAT	22% referred to SW addiction services	M 54, F 80, All 60	M 74%, F 100, All 80%
% Attended any appointment	Detail not known	M 20, F 0, All 15	M 60%, F 79%, All 66%
Median number of appointments	Not known	3	Not collected
Time between 1st appointment and death	Not known	1-32 Years	Not collected
% Referred to clinical psychology	Not known	M 16, F 27, All 18	All 18%
% Complied with clinical psychology	Not known	M 2, F 13, All 5	All 12.5%
Offered psychosocial intervention % of All	M 40, F18% All 34%	M 12, F, 33, All 17	Not collected
Complied with psychosocial intervention % of All	M 17%, F 12%, All 15%	M 8, F 13, All 9	Not collected
% Used illegal drugs	5%		M 28, F 38, All 30%

Development of Community Addiction Service

The community addiction service continues to respond according to the needs of users. Following both the Community Addiction Team Review (CAT) and the Clinical Services Review (CSR) in 2015 Glasgow city continues to

implement and develop a tiered Recovery Orientated System of Care (ROSC). This includes outreach, injecting equipment provision, harm reduction services, crisis centre, immediate access to Glasgow Alcohol and Drug Recovery Services (GADRS), community rehabilitation, residential rehabilitation, aftercare services and recovery support services. This tiered approach allows the flexibility to tailor interventions depending on the personal circumstances of the service user in their recovery journey.
The primary objective of GADRS is to deliver integrated care for those individuals affected by drug and alcohol issues.

Individual needs are assessed by a competent, multi-skilled and multi-disciplinary joint NHS and social work team with full access to a wide range of intensive specialist services. If a participant demonstrates a particular need, this will be dealt with on a priority basis.

It is recommended that the service audits its referrals, attendance and follow up service to ensure that patients are not falling through the net.

12.2 Non-Statutory Alcohol Services

A range of different non statutory alcohol services has been available throughout the period of the audits.

The 2003 audit records 6 males (13%) and no females being referred to Alcoholics Anonymous (9%). Other than a recommendation to engage with non statutory services there does not appear to have been much evidence of this taking place in the 2003 sample audited.

In 2010 information gathered from the medical case notes recorded that 25% of the sample had been referred to alcoholics anonymous, and of the sample who were referred over half (56%) had attended. Nine percent of the sample was referred to other addiction specific voluntary agencies and one third of those who were referred attended. Twenty eight percent of the sample was

referred for counselling by a range of agencies. Of those who were referred, approximately half of those referred attended. The primary care notes were notable for their lack of information on referrals to non statutory services.

The 2013 audit recorded that fifty seven percent of the sample had been referred to the non-statutory alcohol services at some point in their journey, but the audit was unable to identify the level of treatment and care provided, or evidence that the referral had been discussed at subsequent consultations. CAT teams offered referral to non-statutory services when clients had met their treatment objectives, but the offer was generally declined. There remains lack of clarity about what the non-statutory services provide and their interface between the statutory services.

Recommendation: The service provided by non statutory providers should be assessed, particularly if the NHS is using these providers to continue to support patients discharged by the community addiction team. Data should be audited on patients referred, attendance rates and treatment outcomes.

13.1 Psychiatry

In the 2003 audit psychiatric referral was made for two thirds of the sample and it was mainly to the substance misuse service. The following information was extracted from the report of the audit of 2003 deaths and is presented in table 20.

Proportionately more women engaged with psychiatric services than men for general adult and old age psychiatry but not for substance misuse services.

Table 20: Psychiatry Referrals 2003 Audit

Type of Service	Male N=48	Female N=17	Total N=65
Referral to specialist alcohol service (%)	44%	24%	39%
Attended	23%	12%	20%
Referral for day case relapse prevention (%)	19%	18%	19%
Attended	8%	0	6%
Referral for residential relapse prevention (%)	12%	0	9%
Attended	6%	0	5%
Psychiatric Referral (%)	36 (75%)	9 (53%)	45 (69%)
Psychiatric speciality			
General Adult	4%	12%	6%
Old Age	4%	6%	5%
Substance Misuse	63%	35%	55%
Liaison	4%	_	3%

Psychiatric referral was made for 62% of the 2010 sample (56% male, 80% female). Approximately half of the referrals were made to addiction psychiatry. A comparison of the referrals to psychiatric specialities is shown in table 21. It seems fewer patients were referred to addiction psychiatry in 2010 and there have been more referrals to liaison psychiatry than in 2003. Unfortunately, the lower rate for referral to addiction psychiatry and poor attendance rates resulted in few patients benefiting from the service. Five males and 2 females attended any appointment, including repeat appointments, amounting to 11% of the deceased. The median number of appointments offered was 3 (range 1-33).

Table 21: Psychiatric Referrals 2010 Audit

Psychiatric Speciality	Male n=50 (%)	Female n=15 (%)	Total n=65 (%)
Addiction psychiatry	13 (26%)	6 (40%)	19 (29%)
Liaison psychiatry	6 (12%)	3 (20%)	9 (14%)
Old age	4 (8%)	1 (7%)	5 (8%)
General adult	4 (8%)	-	4 (6%)
Other	1 (2%)	1 (7%)	2 (3%)
Not stated	-	1 (7%)	1 (2%)
Total	28 (56%)	12 (80%)	40 (62%)

In 2010, a similar proportion referred to alcohol day services (17%, 6 male (12%), 5 females (33%)) as in the 2003 audit. Five men and three women attended alcohol day services (10% of the men, 20% of the women.). 14% of the patients attended residential rehabilitation services (6 male (12%), 3 female (20%)). Residential rehabilitation appears more popular with women than men in 2010.

The 2013 audit found that the majority of their sample (70%) had been in contact with non addiction specific mental health services (65% male, 85% female) and 39% of the sample had been in contact for addiction specific mental health (35% male, 54% female). This contrasts with earlier audit where the proportion of patients attending psychiatric services for addiction specific issues was much higher. Referral to Psychiatry for the 2013 sample is shown in table 22. There appears to have been a stepwise reduction in the proportion of patients referred to addiction psychiatry who died of alcohol misuse disorders and an increase in the proportion of referrals for other mental health issues particularly depression and anxiety.

Table 22: Psychiatry Referrals 2013 Audit*

Individuals may have been referred to more than one service.

Psychiatric Speciality	Male (%)	Female (%)	Total (%)
Addiction psychiatry	15 (35%)	7 (54%)	22 (39%)
Liaison psychiatry	4 (9%)	2 (15%)	6 (11%)
Old age	1 (2%)	1 (8%)	4 (2%)
General adult	20 (47%)	5 (38%)	25 (45%)
Other	3 (7%)	3 (23%)	6 (11%)

Unfortunately the 2013 data does not permit closer analysis of the referral and attendance rate for specific alcohol services. It would be useful to assess this data in future audits.

An overview of psychiatric referral over the 3 audit cycles is shown in table 23.

Table 23 Contact with Psychiatric Service over Three Audit Cycles. (%)

Psychiatric Speciality	2003		2010		2013	
	Male n=48	Female n=17	Male n=50	Female n=15	Male n=43	Female n=13
Referred to any Psychiatric Service *	75%	53%	56%	80%	65%	85%
Referral to Addiction Psychiatry	63%	35%	26%	40%	35%	54%
Attended Addiction Psychiatry	-	-	10%	13%	-	-
Referred to Specialist alcohol Service	44%	24%	-	-	-	-
Referral to Day Case relapse prevention	19%	18%	12%	33%	21%	23%
Attended Day Case relapse prevention	8%	0	10%	20%	17%	15%
Referral to Residential Relapse Prevention	12%	0	12%	20%	16%	0
Attended Residential Relapse Prevention	6%	0	12%	20%	14%	0
Referral to General Adult	4%	12%	8%	0	47%	38%
Referral to Old Age	4%	6%	8%	7%	2%	8%
Referral to Liaison	4%	0	12%	20%	9%	15%
Other Psychiatric service	-	-	2%	7%	7%	23%
Not Stated	-	-	0	2%	-	-

*2013 attendance at non addiction specific mental health services only.

13.2 Detoxification

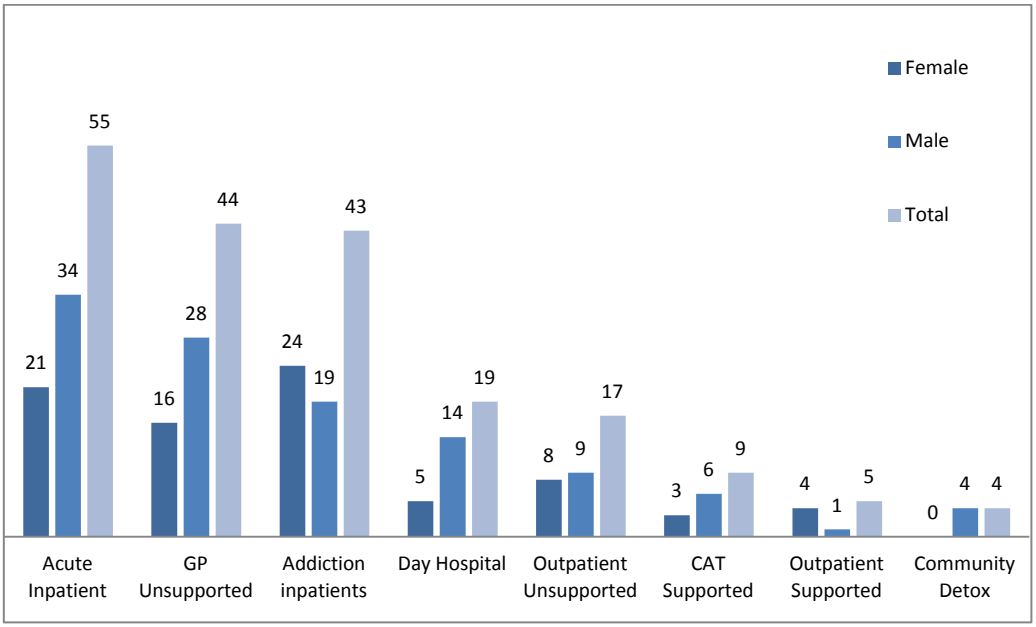
The 2003 audit found that less than half the sample (42%) had ever been detoxified (male 48%, female 24%). The mean number of inpatient detoxifications was 0.5 (male 0.6, female 0.2), the mean number of supported outpatient detoxifications was 0.6 (male 0.8, female 0.2). The mean number of unsupported outpatient detoxifications was 0.6 (male 0.9, female 0.1).

Males had a higher average number of detoxifications than females in all settings and the most common setting was unsupported outpatient detoxification.

In 2010, 63% of the sample had undergone detoxification at some point (60% male, 73% female). The most common setting for detoxification was acute inpatients. As the number of men in the sample was more than women the absolute number of males detoxified was higher though the proportion of women who where detoxified was higher than men.

The total number of detoxifications undertaken by setting is shown in figure 12. It is concerning that the most detoxifications were either unplanned or unsupported. The outcome following such detoxifications is likely to be poorer as the individual is less likely to be supported to maintain abstinence in the long term.

Figure 12 Total Number of Sample Detoxified by Sex and by Setting 2010

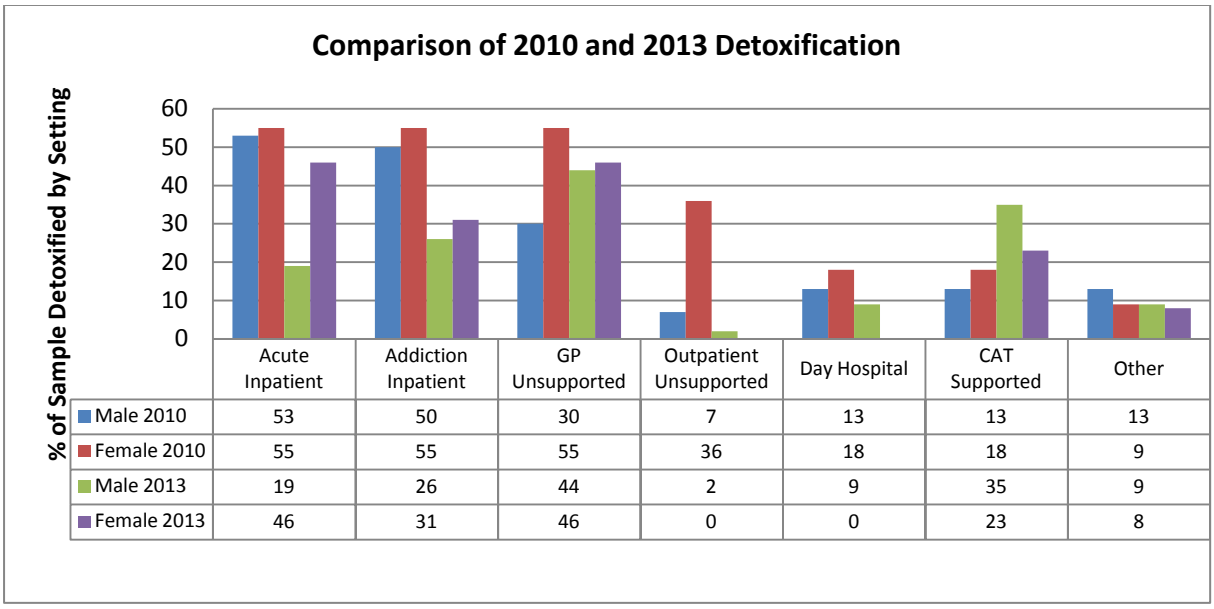


In 2013 two thirds of the sample had undergone a medication assisted detoxification or been prescribed chlordiazepoxide to reduce the symptoms of alcohol withdrawal, a similar proportion to 2010. The most common setting in

2013 was GP unsupported detoxification for both males and females, with acute inpatients being equally common in women.

Compared to the 2010 audit there appears to be a decrease in the number of patients undergoing detoxification, a decrease in acute inpatient detoxifications and an increase in CAT supported detoxifications. Fewer patients have been offered the opportunity to detoxify in 2013 compared to 2010. It is apparent that further work needs to be done to encourage people to stop drinking and improve the support provided to patients undergoing detoxification. A comparison of the proportions undergoing detoxification by sex and setting in 2010 and 2013 are shown in figure 13. As not all areas are served by the Community Addiction team and other parts of the health board may experience a different pattern of service delivery this was also examined for Glasgow City residents only (44 men and 14 women) as shown in figure 14.

Figure 13. Detoxification 2010 and 2013, Glasgow City Area

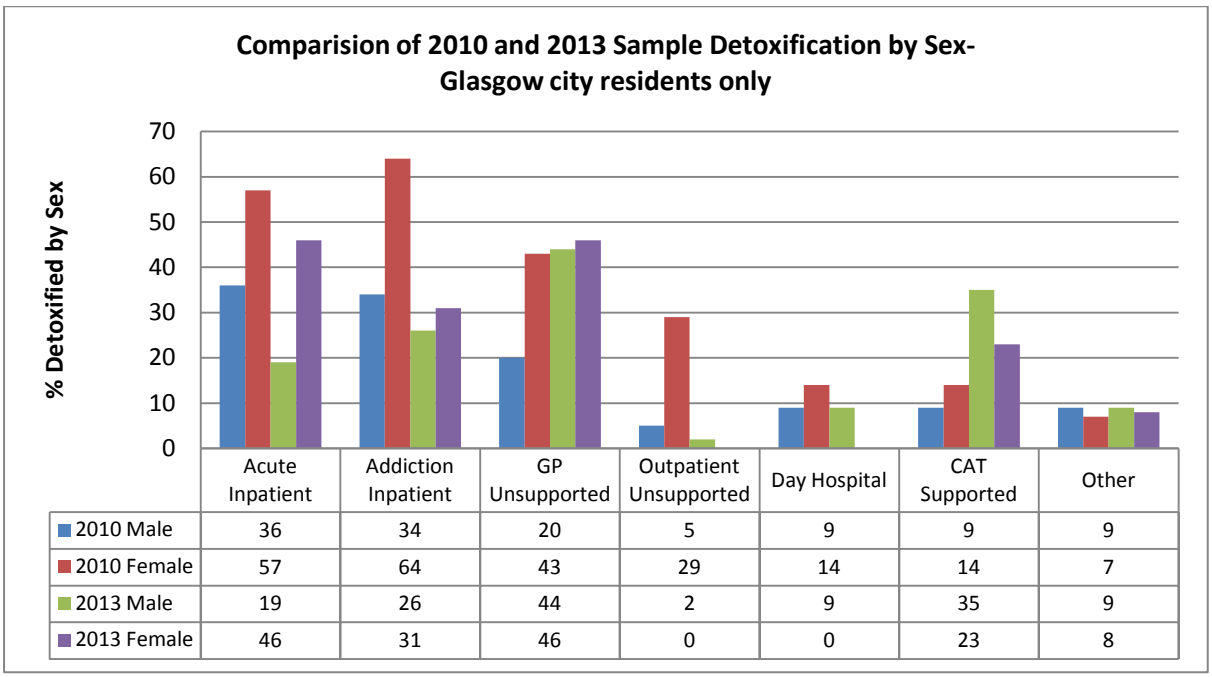


	Acute Inpatient	Addiction Inpatient	GP Unsupported	Outpatient Unsupported	Day Hospital	CAT Supported	Other
Male 2010	53	50	30	7	13	13	13
Female 2010	55	55	55	36	18	18	9
Male 2013	19	26	44	2	9	35	9
Female 2013	46	31	46	0	0	23	8

Removal of the non Glasgow city residents resulted in fewer men being detoxified in every identifiable setting, with the largest decrease noted in acute

inpatient and addiction inpatients. Removal of one women from the small number of women in the sample resulted in a higher proportion of women detoxified in addiction inpatient and acute inpatients, with the largest rise noted in addiction inpatients. There was a proportionate decrease in patients detoxified in unsupported GP setting, day hospital, CAT supported and other settings. Overall, removal of the non Glasgow City residents resulted on fewer patients undergoing supported detoxification.

Figure 14. Detoxification of Glasgow City Residents Only, 2010 and 2013.



	Acute Inpatient	Addiction Inpatient	GP Unsupported	Outpatient Unsupported	Day Hospital	CAT Supported	Other
2010 Male	36	34	20	5	9	9	9
2010 Female	57	64	43	29	14	14	7
2013 Male	19	26	44	2	9	35	9
2013 Female	46	31	46	0	0	23	8

13.3 Alcohol Specific Medication

Medication is used for the prevention and treatment of alcohol related brain disease and for relapse prevention following detoxification. In general, in all three audits the use of vitamin based treatment was far more common that any form of relapse prevention medication. A summary of medication use for the prevention of alcohol related brain cognitive impairment is shown in table 24. Thiamine prescribing has increased since the first audit was undertaken.

Patients who are undergoing detoxification should be prescribed thiamine and Pabrinex in line with NICE guidelines 32, 100 and 115 where the patient has been assessed as malnourished or at risk of malnourishment, have decompensated liver disease, acute withdrawal, or in specialist inpatient settings or prison settings undergoing medically assisted withdrawal, as the physiological demands of detoxification can provoke Wernicke Korsakoff syndrome [12, 13, 14]. Planned detoxification should include assessment of nutritional status, severity of dependence and liver function as part of routine care. Children and young people aged 10-16 years who have alcohol dependence are also at high risk of developing Wernicke's Encephalopathy and should receive parentral thiamine as part of routine care [14]. Patients who have unplanned or unsupported detoxification are less likely to be comprehensively assessed. Most instances of Wernicke Korsakoff syndrome are unrecognised and due to repeated subclinical events occurring when the patient is physically challenged due to nutritional deficiency and intercurrent illness [15, 16]. As the majority of patients (75%) who develop Wernicke Korsakoff Syndrome will develop long term memory impairment of varying severity, failure to prescribe appropriately could result in permanent damage resulting in the individual requiring long term social care [17]. An audit of the appropriateness of management of patients undergoing detoxification would permit assessment of the compliance with clinical guidelines.

Table 24 Proportions of Patients Prescribed Thiamine and Pabrinex

Medication	Male %	Female %	Total
Thiamine			
2003	77	53	71
2010	86	80	85
2013	86	92	88
Pabrinex			
2003	40	35	38
2010	58	53	57
2013	47	46	46

Relapse prevention medication is shown in table 25. No patient was prescribed Naltrexone in any of the audits. Its use was not authorised during the 2003 audit and does not appear to have been used in subsequent audits. Acamprosate is recommended as the preferred medication to support abstinence, however Disulfiram use is almost as frequently as Acamprosate. Pharmacy data obtained in from July to September 2017 showed that naltrexone was rarely used in either the community addiction teams or primary care and the prescribing preference for Acamprosate or Disulfiram did not appear to demonstrate any consistent pattern in the community addiction teams or primary care.

Table 25: Relapse Prevention Medication

Medication	Male %	Female %	Total
Disulfiram			
2003	4	0%	3%
2010	8	6	8%
2013	2	8	4%
Acamprosate			
2003	6%	6%	6%
2010	4%	7	5%
2013	7%	15%	9%

14 Social Work Involvement

In 2003 there was little evidence of joint working between the NHS and social work services. Forty five percent of the sample had contact with social work (44% males, 24% females). Males had 7.1 social work contacts over the course of their life time compared to 1.8 for women (6.3 for the combined cohort). The main social work group the clients engaged with was physical disability for both sexes 32% (males 29%, females 50%). The second most common for males was addiction (19%). No female was involved with

addiction services. Both sexes were in contact for occupational therapy assessment. The joint health and social care addiction service was established to improve services on the basis of the findings of this audit.

There was very little information in the primary care notes regarding any social work involvement in the 2010 audit. However 50 of the 65 patients (77%) had a social work file. Sixteen patients (25%) were open to social work addiction team at the time of death, the majority for alcohol misuse disorders. A further 8 people (12%) had been open to the addiction team as some point. Additionally, 21 (32%) people were open to another social work team at time of death. The main social work team involved throughout life was social work addictions team for alcohol used disorders, but 40% of the 65 patients were predominately involved with another team which could well have had a bearing on their primary care needs, was not recorded in the GP notes and appeared to be unknown to the GP who was responsible for co-ordinating patient care. There was also very little information in the primary care notes regarding patients attending the Community Addiction Team or patients defaulting the CAT appointments. Given the lack of information in GP notes it would be difficult for the primary care team to encourage or support their patients to engage with this service. The CAT notes also identified a much larger number of referrals to voluntary agencies than was identified from the GP notes. It could have been beneficial to the patients' care had the GP been kept informed of all this activity.

The 2013 audit found that 82% of the sample had been in contact with social work services at some point and 59% had been in contact with the community addiction team, 27% homelessness services and 21% with Community care. There is no indication from the report whether this information was available in general practice.

In 64% of patients there was contact with social work services outwith the CAT and in many instances it was documented that the individual had an alcohol problems but no indication of a discussion around alcohol use or referral to specialist alcohol services.

It is recommended that communication between the community addiction team and primary care is substantially improved. This should include attendance for alcohol use disorders, failure to attend and lost to follow up and referral to another non statutory alcohol voluntary organisation. Where the patient is referred to other social work teams, especially by the addiction team, the patient's GP should be informed to ensure that the GP is enabled to continue to provide holistic care and co-ordinate services appropriately.

15 Contact with Police, Fire and Other Services

Police involvement was more common in men in the 2003 audit. 27% of males had a criminal record but no women did. Six percent of men and no women had a custodial sentence. Four percent of the sample (2% male, 6% female) was recorded as neglecting children.

The 2010 audit found 14% of men and 20% of women had been in contact with the police in the three years prior to death. Reasons included committing or being a victim of crime or requiring medical attention and brought to A&E by police. Some had multiple contacts over a period of years.

Only 2% of the sample had any contact with the fire service.

The 2013 cohort found than just under 1 in 5 had been in contact with criminal justice and 14% had had a custodial sentence documented in their notes. Forty percent of the sample, (37% men, 46% women) had a history of contact with the police documented in their notes.

Nine percent had contact with the fire service as a result of a fire whilst the individual was under the influence of alcohol.

There is not a huge amount of variation in the level of police involvement over the time span of these audits. Police are vital partners both in preventing crime and disorder of people under the influence of alcohol and in intervening

to protect individuals at risk of harm due to their incapacity. The fire service similarly provides a public safety role which should be exploited for the benefit of patients and the wider community.

16 Conclusion

16.1 General

This overview of three audits includes two (2003 and 2010), which used similar methodology and included residents of the old Greater Glasgow Health Board area, and one (2013) which used a mix methods approach and was confined to residents of Glasgow City Council area. There were 65 patients in the first two audits and 50 on the latest audit. The samples selected for audit were similar to the larger groups of patients who died of alcohol related causes in their respective years.

Most deaths in all audits occurred in White males and the vast majority lived in deprived circumstances. The ratio of males to females was approximately 2:1. The average age at death has declined during the period audited, particularly for women. In Scotland, the average age of death for both sexes was 55-64 year, but women in GGC are dying on average 20 years younger than men and a decade younger than Scottish females. The peak age of death for GGC females was 45-54 years, compared to 65- 74 years for GGC males [2]. Our audit data reflect this trend, though the latest data from 2013 shows that the female average age of death has increased from 48 to 51 years.

16.2 Alcohol Services

Attendance at alcohol services has been poor. More needs to be done to ensure that the service provided is appropriate for different age groups and the needs of women.

Young people who develop drinking problems are vulnerable to problematic drinking, alcohol related brain damage and earlier age of death[6, 9].

Women are more vulnerable to the consequences of alcohol misuse as witnessed in their earlier age of death, poor attendance at alcohol services, vulnerability to domestic violence and the risk of adverse effects on their children including foetal alcohol syndrome and child neglect or abuse.

A range of different services and providers need to work together to co-ordinate care for these patients and ensure the needs of the wider family are met in addition to the individual patient.

16.3 Social and Occupational

The vast majority of patients in all audits were employed, the majority in manual, hospitality and retail and leisure or as drivers. Scope, therefore exists through alcohol work based policies to identify and manage these patients to protect both the patients and other members of the public who may be harmed by these patients continuing to work while under the influence of alcohol.

Social isolation was frequently reported in all audits. This could contribute to or result from excess alcohol consumption. People in recovery may need to re-establish social relationships as many of their previous social contacts may have focused on alcohol consumption. Good quality support and activities should be available that are alcohol free. The recovery community as well as housing associations and employers need to be aware of this. Some occupations, for instance in the hospitality industry, may be unsuitable for patients recovering from alcohol misuse.

There was also an increase in the prevalence and/or detection of financial problems, housing problems and criminal behaviour over the life cycle of the audit. It is not clear where the increase in real or apparent as experience may have heightened awareness of the auditors to the occurrence of these issues.

During recovery patients may benefit from help accessing appropriate benefits and managing debt. Appropriate advice may prevent patients developing problems with rent arrears. Debt counsellors should also be aware of the potential of alcohol misuse contributing to the patients' debt and be confident about screening and referring patients with alcohol problems for further assessment and support.

Housing issues may arise due to alcohol misuse, and again it would be beneficial if housing officers were trained to screen for alcohol problems and know where to refer. Housing officers may assist in the accommodation of patients in recovery who would benefit from placement in a location without immediate access to alcohol or previous drinking partners.

16.4 Medical Services

There has been some improvement in recording of alcohol consumption history over the time period of the audits, but the alcohol consumption history, classification of alcohol misuse disorder and management and referral to appropriate services provided by health care professional and social care staff could be further improved. Fewer patients have an undocumented drinking pattern in their notes, but classification of drinking patterns as intoxicated or social drinkers rather than dependent users of alcohol is inappropriate.

Problematic drinking has been recorded in approximately half the samples audited by 35 years of age in both sexes, rising to two thirds to three quarters by 45 years of age. There appears to be an earlier age of onset of problematic drinking in 2013 compared with 2010 though whether this is in fact due to earlier identification or is a real shift in behaviour is not clear. It is apparent that services need to be geared up to meet the needs of young people, including teenagers below the current legal drinking age. Many of the young people with alcohol misuse disorders have mental health needs which also need monitored and addressed. Some of the mental health issues may resolve on managing the alcohol problems, but those that are not need age appropriate services.

16.5 Primary care

There continues to be a gap of 2-5 years between first presentation to primary care with alcohol related diagnosis and the diagnosis of alcohol use disorders. The time lag is not shortening. Earlier identification of problematic drinking

may result in earlier intervention and improved outcomes. GPs were the first point of contact in 34% of cases in the 2003 audit.

Improvements could be made to:-
Screening for alcohol consumption at time of registration with GP
Providing advice to those who screen positive,
Improving the recording of alcohol consumption history,
classification of alcohol use disorders based on pattern of drinking
and appropriate treatment and referral.

While the use of alcohol screening and brief interventions has increased there is significant room for improvement. Alcohol screening and brief intervention has increased from 17% to 25% of the sample audited. Every effort should be taken to identify people with problematic drinking including young people who have potential to benefit most. Primary care is ideally placed to contribute to the care of these patients as they attend primary care more frequently than a range of other services such as community addiction teams or outpatient appointments.

Use of basics tools such as drink diaries, which have been helpful in providing a baseline for alcohol consumption may aid in identification of alcohol misuse for both patients and staff. Alcohol dependence is noted more frequently than alcohol related cognitive impairment.

The 2010 audit identified that patients were referred to the community addiction team in about 60% of cases, it was thus a more frequently used option than other forms of counselling or Alcoholics Anonymous. This information was not collected in the 2013 audit. Future audits should monitor the proportion that are referred to other services by primary care and the proportion who attend these services. This may be assisted by the development of a care pathway for patients identified in primary care and the introduction of quality control criteria that are auditable and repeatable.

Abnormal biochemistry is very common in these patients and detection of abnormal biomarkers should prompt further investigation for cause to exclude alcohol misuse.

Mental illness, hypertension, obesity and diabetes are the most common co-morbid conditions identified in patients with alcohol misuse in our local audits. The occurrence of mental illness in about 70% of patients is a consistent finding across the audits and should prompt further inquiry of alcohol use to determine whether a causal link is present. Other conditions such as injuries and fractures are less frequently found. Neuroleptic medication is more frequently prescribed than the medical records would suggest. If there is a need to prescribe, there is a need to think alcohol.

16.6 Accident and Emergency

This is used by 7 in 10 of patients with alcohol misuse disorder. Injury, alcoholic liver disease and alcohol withdrawal are the most common reasons for attending. In over 1 in 3 cases the first alcohol related attendance was more than 10 years before death due to an underlying alcohol cause. The most common cause of early presentation was alcohol related injury. Early identification through screening, brief intervention and referral should be exploited for maximum effect.

16.7 Acute Outpatients

Referral and attendance at outpatients appears more variable and while no opportunity should be missed, more concerted effort should be made to identify patients in primary care and A & E. Alcoholic liver disease is the most common reason for attendances, so focused efforts on gastroenterology, medical outpatients and trauma clinics may identify patients at risk. Assertive follow up of alcohol related conditions could improve attendance at outpatients.

16.8 Acute Inpatient Hospital Admissions

The majority of patients in all samples audited had at least one inpatient admission as a result of their alcohol misuse disorder. About 1 in 4 of these admissions occurred more than 10 years prior to death.

The most common diagnosis is liver disease. Screening and early identification particularly on gastroenterology wards could identify patients at an earlier stage of the disease process.

Assertive follow up and implementation of the recently published alcohol liver disease guidance may improve outcomes [18].

The increase in screening for Hepatitis C suggests greater awareness of the need to rule out other causes of liver diseases by clinicians. There remains room for improvement as over 40% of patients have no hepatitis C result. The percentage of patients who are screening positive has increased. Whether this is a real or apparent increase is still open for debate due to the previous low screening uptake. Anecdotally, clinicians report an older cohort in their 50s and a younger cohort in their 20s who are screening positive for hepatitis C. This may reflect current and previous patterns of drug misuse and preventive activity. Additionally, the recent availability of more effective therapy for hepatitis C may have encouraged both patients and clinicians to consider screening.

Few patients appear to be suitable for transplantation and this has not changed over the time period of the audits.

16.9 Acute Addiction Liaison Service

Activity has increased over the time period of the audits. Presentation of data in a format that permits audit of referrals and outcomes for individual could be used to monitor and enhance this service. Suitable data could include number and proportion of patients screened for alcohol used disorders, ABIs

delivered, proportion referred for follow up, proportion who attended any follow up and liaison with the community addiction teams.

16.10 Community Addiction Team

Attendance at community addiction teams was poor, particularly for women. The percentage of patients who were referred to the CAT was not recorded in 2013. This would be useful to collect as the 2010 audit indicated that attendance was poor. Referral and attendance for specific categories including by sex and age group could assist in improving the acceptability of the service and finding which categories of patients do not attend.

Poly substance misuse should be addressed by the CAT according to the NICE Guidance [14]. The 2010 audit identified tobacco as the most common other substance used and tobacco use carries its own well documented morbidity and mortality [5].

The 2013 audit showed a high level of unplanned discharge and lack of aftercare on discharge from the CAT [6]. Alternative long term support on discharge from the CAT may improve abstinence from alcohol.

The service provided by non statutory providers who support patients discharged from the CAT should be assessed for quality of support provided and audited on referral numbers, attendance rates, and treatment outcomes.

16.11 Psychiatry

Many patients have co-morbid mental health problems and the proportion attending psychiatric services for non substance misuse disorders has increased over the course of the audit series, while the proportion attending specialist substance misuse service has declined. Some of this may be due to improvements in the community addiction services. However, attendance at addiction psychiatry service following referral appears to be poor. Lack of adequate data on referral and attendance at this service prevented more in depth analysis.

It is recommended that auditable data are collected on referral and attendance at addiction psychiatric services to assess the effectiveness and acceptability of the service to patients. Patient focused outcomes of care would be useful here.

Detoxification management should be audited to assess the appropriateness of care. The majority of detoxifications still take place in acute inpatients or unsupported primary care settings where support to maintain abstinence from alcohol is less. While there has been some improvement in the occurrence of supported detoxification it is still less frequent than unsupported detoxification. In the re-analysis of the 2010 when the non Glasgow City residents were removed, there was a decline in the proportion of patients undergoing detoxification in all supported settings. This is concerning, and may be a more frequent occurrence following the introduction of minimum unit pricing in May 2018.

There continues to be low use of relapse prevention medication and lack of consistency in prescribing practice. The adoption of a policy on best practice may improve support and outcomes for patients.

16.12 Housing Associations

Complaints and evictions from homes may stem from alcohol misuse. Housing association should be able to screen and refer clients who are experiencing problems. Training should be offered to facilitate this.

People who are recovering from alcohol dependence, including those who have been homeless should be offered tenancies that do not facilitate immediate access to alcohol.

16.13 Licensing Board

The licensing board should consider the impact of outlet density as part of their overprovision assessment of licensing policy, paying particular attention

to those areas where statistics indicate high levels of alcohol related morbidity and mortality. Locations where specialist addiction services are sited and accommodation (including housing) for people recovering from alcohol dependence is placed should not be in the immediate vicinity of licensed premises. Off-sales premises are particularly important as a source of alcohol for persons with dependence and their operation should be monitored carefully.

More needs to be done to protect children and young people from exposure to alcohol and earlier onset of alcohol consumption. Efforts should be targeted at licensees who have a duty of care to children and young people in licensed premises. Occasional licences, where requests are frequently made for children and young people to be permitted to attend until late at night are a special cause for concern. Harm arises from the impact that normalisation of alcohol use has when guests around the children are drinking, and the children are given the impression that this drinking pattern is normal. They are upset or embarrassed by adults around them who are intoxicated. They are also at risk from friends and relatives supplying children and young people with alcohol [8]. The licensing board should also consider the risk of exposure of young people to alcohol consumption and the impact that normalisation of alcohol use has at sports activities, dances and concerts.

16.14 Social Work Services

There was evidence of poor communication between social work community addiction team and primary care across a range of activities [5]. Better communication may have facilitated better patient engagement particularly for women.

Development and implementation of guidance on communication between the community addiction team and primary care should be taken forward. This should be followed up by an audit to ensure that the primary care team who are responsible for co-ordinating the patients' care are informed of the situation and can respond appropriately to patients' needs including when the

social work service and community addiction team are not available to respond 24/7.

Other social work teams should refer to the community addiction team when alcohol use is identified as an issue by one of their staff. This does not seem to have been done.

16.15 Criminal Behaviour

Alcohol misuse may result in criminal behaviour in men and women, but seems more common in men [5, 6]. Screening and referral both in custody and as part of a probation order could support the management of alcohol use disorders.

Consideration of supervised treatment and monitoring as part of sentencing is a potential for social work, crown prosecution and the Scottish Government Criminal Justice Service to take forward.

Domestic violence may be fuelled by alcohol, but both males and females commit violent crimes under the influence of alcohol. In addition to abstinence from alcohol, anger management and appropriate psychosocial interventions could be exploited.

16.16 Children

Alcohol services need to consider the needs of children of problem drinkers and intervene to ensure they are safeguarded. Support for parents who are withdrawing from alcohol should consider whether appropriately monitored contact is beneficial for both parties.

Parents and carers need to be made aware that normalisation of alcohol use, offering sips of alcohol to children and young people and early initiation of young people into alcohol consumption all carry significant risk of harm and

are associated with the development of alcohol misuse disorders of their children in adulthood [8].

17 Recommendations

General

1. The median age of alcohol related deaths is younger in females than males. Services need to look at better ways of identifying and supporting women.
2. Services need to target the specific needs of patients in greatest need including the deprived, young people and women.

Social and Occupational

3. Health improvement work targeting manual workers, the hospitality sector, retail and leisure industry and drivers should include screening and early intervention of workers to identify alcohol problems at an earlier stage and protect workers and members of the public from alcohol related harm. A robust alcohol policy which supports workers undergoing treatment could assist employees to seek help and re-integrate safely back into the workforce.
4. Social isolation is frequently noted in people with alcohol misuse disorders and may be a cause or consequence of alcohol misuse. People in recovery need alcohol free environments at home, work and for leisure purposes. Employers, housing associations and councils should support access to alcohol free environments.
5. Alcohol misuse may result in financial difficulties. Training debt councillors in the identification of alcohol problems and onward referral may prevent debt problems getting worse. Supporting patients to manage financial issues may prevent rent arrears and housing problems.

Medical Services

6. Better screening for alcohol problems and identification, classification and recording or alcohol consumption and referral to appropriate services by health and social care staff could result in earlier and more appropriate interventions. Further training would be beneficial for both professions.

7. The median age of onset of problematic drinking appears to be declining. Approximately half of patients are first identified under the age of 35 years and two thirds to three quarters under the age of 45 years. Services need to address the needs of young people including those with mental health problems.

Primary Care

8. Improvements are required for the screening, recording and classification of alcohol use and referral for appropriate interventions for alcohol misuse disorders. A care pathway could assist in ensuring that this was achieved.
9. The most common co-morbid conditions associated with alcohol misuse locally include mental illness, obesity, diabetes and hypertension. Neuroleptic medication is frequently prescribed without a GP diagnosis of anxiety or depression. The occurrence of any of the above conditions should prompt screening for alcohol misuse.

Accident and Emergency

10. This service is used by 7 in 10 patients, and in one third of cases this occurs more than 10 years prior to deaths. Injury is a frequent cause of early attendance with liver disease and alcohol withdrawal becoming more prominent later. Identification of alcohol misuse and appropriate intervention and referral where necessary has potential to improve outcomes and should be exploited.

Acute Outpatients

11. Use of this service appears more variable than either primary care or Accident and Emergency. Patients who attended with alcohol misuse disorders were most common in gastroenterology services, general medical outpatients and trauma clinics. Any additional resources should target these clinics to achieve maximum impact. Assertive follow up of patients to attend outpatient services would also improve attendance.

Acute Inpatient Hospital Admissions

12. Over three quarters of patients had an inpatient admission. In a quarter of cases the first alcohol related admission was more than 10 years prior to death. The most common diagnosis was alcohol related liver disease. Implementation of the new alcohol liver disease guidance may improve outcomes [18].
13. Hepatitis C screening has improved but is still not achieving its maximum uptake. The increase in diagnosis of hepatitis C infection may be result of increased screening, thought could also be due to trends in other substance misuse. Improved uptake and monitoring of hepatitis C screening should be implemented while patients are admitted. Appropriate treatment and advice for these patients should be part of good clinical care.
14. Most patients are not identified at a stage where they are suitable for transplantation. Consideration of suitability of this at first presentation together with the adoption of the new practice guidance may result in more suitable patients or prevention of disease progression and the need for transplantation [18].

Acute Addiction Liaison Services

15. Activity has increased steadily since the service was first introduced following the publication of the first audit. Staff training and delivery of alcohol screening and alcohol brief interventions (ABI) has benefited patients. There is scope for increased delivery of ABIs and closer linking of patients identified in the hospital to community services to reduce the default rate for referrals to other services.
16. Production of regular reports of service activity could be used including delivery of ABIs, referral of patients to other services and attendance by patients at referred service could be used to monitor effectiveness, consider the impact of the service and modify delivery to prevent patients falling through the gaps.

Community Addiction Team

17. Poor uptake of this service and the large number of patients who are lost to follow up suggests that this service is not meeting the needs of patients. Consideration of what would make the service more attractive to different subgroups of patients may improve attendance. Strengthened links with primary care, Acute Addiction Liaison Service who refer patients into the service and voluntary organisations who support patients once discharged from CAT improve transition between services.
18. Most patients who misuse alcohol also smoke. Substance misuse services should also target smoking cessation services in line with NICE guidance [14].
19. An audit of patient focused outcomes on a regular basis could be used to ensure the service delivered met patient expectations.
20. Long term support appropriate to the needs of both male and female and young people as well as the older age group is needed to sustain recovery and prevent relapse into previous patterns of alcohol use.
21. A range of good quality non statutory service providers who offer a range of activity should be available. Monitoring of the quality of service provided should be undertaken on a regular basis.

Psychiatry

22. The proportion of patients who attended psychiatric substance misuse services was small and attendance was poor. This deserves closer inspection and the collection of auditable data on referral and attendance at substance misuse psychiatric services should be undertaken. The use of patient focused outcomes may help to identify why attendance was so poor.
23. Detoxification should be planned and supported. In the majority of patients audited this was not the case. Unplanned detoxification is more likely to result in relapse. More effort needs to take place to support patients who are undergoing detoxification in whatever setting to try and prevent the relapse into problematic alcohol misuse. This is particularly important when detoxification was not planned, as in the acute setting, and such instances may become more common with the introduction of minimum unit pricing.

Housing Associations

24. Housing associations may be made aware of issues related to problematic alcohol misuse in residents or requested to support individual following treatment. Housing officers should be trained to screen and identify residents with problems, know where to refer residents with problems and assist in the support of residents in recovery, who request housing in an alcohol free environment.

Licensing Board

25. Licensing boards have a responsibility to assess overprovision and should take into account the evidence that health professionals present on service use and alcohol related deaths. They should also take into account the need of people with alcohol misuse disorders for an alcohol free environment when considering whether to grant further licenses.
26. Licensing boards should ensure that their licensing policy includes adequate controls to prevent exposure and harm to children and young people, particularly at family orientated events. They should ensure that licensees are held to account for lapses in the protection that should be afforded to children and young people and the impact that any extended hours may have on the presence of children and young people in licensed premises.
27. As alcohol misuse is widespread in the population, licensing boards should consider the whole population effect of alcohol licenses in their area.

Social Work

28. The evidence of poor communication between social work and primary care resulted in the GP being unaware of a range of social work interventions. The development and implementation of best practice guidance between the community addiction team and the primary care team could help to ensure better patient engagement with the community addiction team and better

continuity of care when the community addiction team are not available and the GP is managing the patients.

29. Other social work teams should inform the social work alcohol misuse team at the community addiction team when alcohol misuse is identified.

Criminal Behaviour

30. Screening and referral for alcohol misuse should take place in custody and in the probation services. Innovative ways of monitoring alcohol use may benefit people on release from custody and prevent a recurrence of alcohol related crime.
31. Appropriate use of psychosocial interventions such as anger management may reduce the recurrence of violent behaviour by people who have committed crimes under the influence of alcohol.

References

1. Alcohol Specific Death Rate in the UK: Registered in 2016. Deaths in the UK which are known to be direct consequences of alcohol misuse. Bennett M. November 2017. Office for National Statistics.
2. Alcohol Related Deaths, 2017. Old National Statistics Definition. https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/deaths/alcohol-related-deaths
3. Monitoring and Evaluating Scotland's Alcohol Strategy. Final Annual Report, March 2016. NHS Health Scotland. http://www.healthscotland.scot/publications/mesas-final-report
4. Deaths from Alcohol in Glasgow. Greater Glasgow Alcohol Action Team. NHS Greater Glasgow and Clyde. 2006.
5. Audit Report on a Sample of Alcohol Related Deaths, Greater Glasgow Area. 2010. NHS Greater Glasgow and Clyde. 2017.
6. Alcohol Related Deaths in Glasgow City. A Cohort Study, 2013. NHS Greater Glasgow and Clyde, Glasgow City Council, Glasgow City Alcohol and Drug Partnership.
7. Scottish Index of Multiple Deprivation. 2012. Scottish Government. http://www.gov.scot/Topics/Statistics/SIMD/DataAnalysis/Background-Data-2012
8. Like Sugar for Adults. The Effect of Non-Dependent Parental Drinking on Children and Families. 2017. Alcohol Focus Scotland, The Institute of Alcohol Studies, Alcohol and Families Alliance. http://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(17)30240-2/fulltext
9. Alcohol and Young People. SHAAP. 2015. http://www.shaap.org.uk/images/shaap-alcohol-and-young-people-conference-report-final.pdf
10. The Scottish Government's HEAT Target on Alcohol and NHS Health Scotland's Contribution to its Implementation. 2008. NHS Health Scotland. http://www.healthscotland.com/uploads/documents/6564-BDP1508.pdf

11. Scottish Intercollegiate 74. The Management of Harmful Drinking and Alcohol Dependence in Primary Care. A National Clinical Guideline. 2003. http://lx.iriss.org.uk/sites/default/files/resources/sign74.pdf
12. Nutrition Support for Adults: Oral Nutrition Support, Enteral Tube Feeding and Parenteral Nutrition. NICE Clinical Guideline 32. 2006. https://www.nice.org.uk/guidance/cg32
13. Alcohol-Use Disorders: Diagnosis and Management of Physical Complications. NICE Clinical Guideline CG100. 2010. https://www.nice.org.uk/guidance/cg100
14. Alcohol-Use Disorders: Diagnosis, Assessment and Management of Harmful Drinking and Alcohol Dependence. NICE Clinical guideline CG115. 2011. https://www.nice.org.uk/guidance/cg115
15. Cook CH, Hallwood PM, Thomson AD. B Vitamin Deficiency and Neuropsychiatric Syndromes in Alcohol Misuse. Alcohol and Alcoholism. 1998; 33(4): 317-36.
16. Yellowlees PM. Thiamine Deficiency and Prevention of the Wernicke Korsakoff Syndrome. The Medical Journal of Australia. 1986; 145: 216-9.
17. Blansjaar BA, Takens H, Zwinderman AH. The course of Alcohol Amnesic Disorders: A Three Year Follow Up Study of Clinical Signs and Social Disabilities. Acta Psychaitr Scand 1992; 86: 240-6.
18. Alcohol-Related Liver Disease: Guidance for Good Practice. SHAAP 2017. http://www.shaap.org.uk/images/ald-report-web_May2017.pdf

Appendix A. ICD 10 Codes used in 2003, 2010 and 2013 Audits

Diagnosis	ICD 10 Code
Alcoholic Liver Disease	K70
Mental Disorder due to Alcohol	F10
Cardiovascular Disease	I21-I73
Respiratory Disease	J13-J98
Neoplasms	C02-C85
Gastrointestinal Disease	K25-K65, K92
Falls	W10-W19
Fire and other External Factors	X00-X59
Septicaemia	A40-A41
Tuberculosis	A16
Renal and Urinary Disorders	N10-N39
Viral Hepatitis	B16-B17
Diabetes	E11-E14
Dementia	F01-F03

Appendix B. Index of Tables

Appendix C. List of Figures