

Alcohol health equity audit series

Health care

January 2025 update



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Sophie Krousti: Public Health Lead for Alcohol & Domestic Abuse

Daniel MacIntyre: Consultant in Public Health (Project Sponsor)

Dani Plowman, Consultant in Public Health

Dr Rich Tyler: Principal Public Health Analyst

Dr Verity Pinkney: Principal Public Health Analyst

Jo Williams: Programme Support Officer

Holly Yandall: Public Health Lead

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Contents

Acknowledgements.....	2
Introduction.....	4
Key findings.....	5
Accident & Emergency Data	5
Hospital Admission Data	5
Mortality.....	5
The health and social burden of Alcohol	6
Hospital Episode Statistics.....	7
Overview of Accident & Emergency department attendances	9
Overview of inpatient admissions.....	14
Mortality	22
Conclusion	24
References.....	25

Introduction

Alcohol misuse remains a leading risk factor for premature mortality, morbidity, and disability in England¹. It is a causative factor for over 200 health conditions and injuries and is associated with important social consequences such as unemployment, crime, and relationship and family issues².

These health and social impacts can also adversely affect the families, partners, friends, and communities around the person who drinks. Alcohol, along with tobacco and overweight/obesity, has been highlighted as one of the key public health issues that should be prioritised in West Sussex.

Long-term surveys exploring the prevalence of risky drinking have reported an increase in the UK since the Covid-19 Pandemic. Deaths from causes directly linked to alcohol, have also increased since 2019, having been previously stable since 2012.

The West Sussex Alcohol Health Equity Audit (HEA) series was undertaken due to data indicating the significant levels of harms associated with alcohol misuse, as well as its contribution to health inequalities. It sought to understand the picture of people drinking at hazardous, harmful, or probable dependent levels in West Sussex and to identify potential inequality in access and outcomes from alcohol services.

Where data were available, we explored alcohol use and harms by a range of demographic and environmental factors listed under the Equality Act 2010 (such as age, disability, gender reassignment, marriage/civil partnership status, pregnancy/maternity, ethnicity, religion/belief, sex, sexual orientation) alongside other characteristics of interest, based on known inequalities in the research base or via local intelligence (deprivation, housing issues, employment status, involvement with criminal justice team and presence of a mental health condition).

This report is a chapter in the West Sussex Alcohol HEA Series. It outlines the methodology and findings from an analysis of Hospital Episode Statistics (HES) and published mortality data from the Office for National Statistics (ONS) to understand inequality in the healthcare impacts of alcohol use among different groups.

Other chapters in the series include:

- Alcohol Consumption & Estimated Need
- Commissioned Alcohol Services
- The Alcohol Landscape

There are also a number of interactive and downloadable resources available to support strategic work at a local level in our Alcohol Health Equity Audit resource library on the West Sussex JSNA website (<https://jsna.westsussex.gov.uk/alcohol-health-equity-audit-series/>).

It is intended that the information collated in the HEA will support the development of a strategic approach to alcohol in West Sussex, as well as future plans for the Supplementary Substance Misuse Treatment & Recovery Funding grant allocations.

Key findings

Accident & Emergency Data

- There were 6,125 alcohol poisoning A&E attendances between 2018/19 and 2020/21 among 4,555 patients.
- Males comprised 56% of the patients in the dataset (2,540 patients), and females comprised 44% (2,010 patients).
- One in seven patients had two or more attendances for alcohol poisoning. However, nearly three times as many males (70) had five or more alcohol poisoning attendances over the three-year study period compared to females (25).
- Among attendances where ethnicity was known (4,925 attendances), ethnic minority groups (those which were not White British) accounted for 13%.
- The age standardised rate of alcohol poisoning was significantly higher in Adur, Arun, Chichester, and Worthing compared to the County average. There were significantly lower rates in Crawley, Horsham, and Mid-Sussex.
- Those living in more deprived areas were disproportionately represented in attendance data than we might expect.

Hospital Admission Data

- In the three-year pooled period 2021/22 to 2023/24, there were 12,800 alcohol specific admissions among 6,660 West Sussex residents.
- Males consistently outnumber females by roughly two to one in alcohol specific admissions for most age groups.
- Three out of four alcohol specific admissions occurred among patients aged 45 and over with the highest proportion of admissions among those aged 55-64 years.

- One in ten alcohol specific admissions with an ethnicity recorded were among those from ethnic minority groups.
- Arun, Chichester, and Crawley had significantly higher admission rates compared to West Sussex.
- Different groups of people based on age, sex, and deprivation, were admitted for different alcohol specific conditions.
- Alcoholic liver disease makes up around 16% of alcohol specific admissions (one in six) among those living in the most deprived quintiles, whilst almost one in three alcohol specific admissions (30.1%) amongst those living in the least deprived quintiles were for this cause.

Mortality

- There are around 120 deaths wholly attributable to alcohol in West Sussex each year.
- The alcohol-specific mortality rate in West Sussex in 2022 was 13.2 per 100,000 population and was similar to the England average (14.5 deaths per 100,000 population).
- Due to small numbers, local data is limited, but pooled data for 2020 to 2022 indicates a significantly higher rate of alcohol specific deaths in Arun compared to West Sussex.
- National evidence indicates that males outnumber females two to one in alcohol specific mortality data.
- Alcoholic liver disease is a leading cause of mortality among younger age groups nationally. Local data indicates the majority of liver disease deaths occur between the ages of 45-64. There was clear evidence of inequalities based on sex and deprivation with those in most deprived areas of England having rates more than double that of those in the least deprived areas.

The health and social burden of Alcohol

Alcohol is a psychoactive substance with dependence-producing properties³. Whilst it has been used in society for centuries, the misuse of alcohol has significant health, social and economic consequences. As well as contributing as a causative factor for over 200 health conditions, including liver cirrhosis, cancers and cardiovascular disease, alcohol misuse is also associated with important social consequences such as unemployment, crime, and relationship and family issues.

A significant proportion of the disease burden attributable to alcohol consumption also arises from unintentional and intentional injuries, including those due to road traffic crashes, violence, and suicide. These health and social impacts adversely affect the families, partners, friends, and communities around the person who drinks.

In 2018 the UK had the fourth highest level of prenatal alcohol use anywhere in the world with up to one in four children exposed to binge levels of alcohol during pregnancy⁴. Whilst data on Foetal Alcohol Spectrum Disorder (FASD) is sparse, some studies have also reported that up to 17% of children in the UK may have symptoms associated with FASD.

Children of alcohol dependent parents are at increased risk of poorer outcomes and of developing similar dependencies in adulthood¹⁴. With an estimated 6,000 children in West Sussex living with in a household where a parent has a problem with alcohol or drug use¹⁵, the West Sussex Innovation Fund Project has taken steps to address the intergenerational impact of parental alcohol use, through the development of improved pathways, specialised support for parents and during pregnancy¹⁶.

There are also significant economic consequences of alcohol-related harm. These include direct economic costs to health and social care, welfare systems and the criminal justice system, which are typically borne by governments³. A recent report by the Alcohol Health Alliance estimates the cost of alcohol to the NHS is around £3.5bn per year in England and alcohol related crime costs around £11.4bn per year in England and Wales⁵.

Additionally, there are indirect economic costs due to lost productivity caused by unemployment, lost working years due to premature pension or death and absenteeism. Such costs are usually borne by people who drink and their families. There are also intangible costs, for example due to poor quality of life³.

This report uses Hospital Episode Statistics and other sources to examine health outcomes and healthcare use related to alcohol.

Hospital Episode Statistics

Hospital Episode Statistics (HES) is a record level data repository containing details about admissions, outpatient appointments and accident and emergency department attendances (until late 2021) at NHS hospitals in England⁶. It contains clinical information about diagnoses and operations as well as patient demographic information such as age, sex, and ethnicity as well as geographical information such as where patients are treated and the area where they live.

For this analysis, we have focused on two subset tables in HES: accident and emergency (A&E) attendances and admitted patient care (unplanned inpatient).

A decade ago, it was estimated that between 12 and 15% (roughly one in seven) A&E attendances in England were related to alcohol⁷ and this is likely to have increased as consumption has changed over the past 10 years. However, recording an A&E attendance as related to alcohol is not straight forward.

A&E attendance data in HES uses a clinical coding system whereby presenting symptoms are recorded by categories representing body system or type of injury⁸. Commonly only one clinical reason for attendance is recorded in A&E data and there are reported to be wide inconsistencies in the way information is recorded nationwide. A more sophisticated data recording system called the 'Emergency Care Data Set' (ECDS)⁹, with better recording of treatment needs, replaced the A&E data in HES from 2020, with the last available records for A&E activity in HES from November 2021.

The ECDS is not currently available in HES for us and as such we use the A&E data for the three-year period April 2018 to March 2021.

We have selected a sub-category of poisoning (diagnosis condition code 14 in the A&E data). There are four '14X' codes - 141 = prescriptive drugs, 142 = proprietary drugs, 143 = controlled drugs and 144 is 'other' and alcohol. This reason (144) can be expected to focus on attendances resulting from excessive or binge drinking although is likely to exclude attendances where short or long-term alcohol use has contributed to a fall or injury.

Another category – social problems – includes alcoholism although this cannot itself be isolated and as such has not been used in this analysis. It should be noted that this reason category 144 may include other poisons besides alcohol, but it is the most specific clinical reason for attendance due to alcohol captured in A&E data. From here, we refer to this condition as 'alcohol poisoning'.

For admitted patient care, the data quality is perceived to be much higher with internationally defined classifications of diagnosis codes (using the international classification for diseases (ICD-10) in which there are specific clinical codes for causes wholly and partially attributable to alcohol).

Since the publication of the first chapter in this HEA series, more recent data has become available from HES and as such, where possible we have updated the hospital admissions analysis to include data up to 2023/24.

For HES data analyses, the smallest geographical unit available is the Lower-layer super output area (LSOA). LSOAs segment districts and boroughs into blocks of neighbourhoods that roughly represent equal numbers of residents (on average 1,500 residents). It is a geography used by population and health services to detail small area characteristics, activity, and outcomes, because of its consistent population size and stable boundaries (which only change as a result of new Census outputs every 10 years). Area information such as neighbourhood deprivation is based on the LSOA geography and population estimates for calculating rates are published at LSOA level.

However, there are just over 500 LSOAs in West Sussex and these are defined by codes rather than meaningful names and do not always neatly represent areas that stakeholders may be familiar with (such as wards).

As such, where possible, we have represented small area variation by the 132 wards (as at 2021) using lookups from LSOA to wards across the county, although it is important to note caveats with the approach, we have taken to assign activity/outcomes to wards.

Wards and LSOA boundaries do not neatly align, and a ward can contain just a few LSOAs or several. Importantly, LSOAs can also span across more than one ward. The Office for National Statistics provides a 'best-fit' lookup which assigns LSOAs to the ward in which most of the population lies (based on the population weighted centroid of the area). This means that some residents can be assigned to a neighbouring ward if the majority of their neighbourhood falls into an adjacent ward.

As a result, we cannot be 100% certain that a record in the HES data has been assigned to the correct geographical ward if the patient's residence is not in the area of the population weighted centroid. We expect this impact to be minimal, but caution should be taken when comparing

alternative data sources in which the record has been assigned to a ward based on more detailed geographical information (e.g. postcode).

For both admitted patient care and A&E attendances, each record represents an attendance/event and not an individual. Individuals can have multiple attendances or admissions over time, even within the same year and even in the same day (though this is likely to be rare).

Whilst the HES dataset is pseudonymised (patients are given a secret key to identify the same patients over time), the data used in this analysis is not in the public domain and requires strict data processing which protects the privacy and confidentiality of individuals. In short, we must prevent the possibility of individuals being identified by their characteristics.

At a subnational level, numbers between 1 and 7 are suppressed and all other counts are rounded to the nearest 5. Row and column totals in tables are also rounded to the nearest five meaning that some totals may differ from the sum of individual table values. Percentages are calculated on rounded values (row and column totals may therefore sum to more than 100%).

For both A&E attendances and inpatient admissions, the following analyses of repeat attendances/admissions during the study periods do not include non-alcohol related episodes.

We use population estimates from the Office for National Statistics (ONS) to calculate rates per 100,000 population for some of our measures to consider differences across areas.

More details of methods used are given in each section below starting with an overview of A&E attendances related to alcohol poisoning.

Overview of Accident & Emergency department attendances

There were 6,125 alcohol poisoning A&E attendances between 2018/19 and 2020/21 among 4,555 patients with nearly two thirds of attendances arriving by ambulance. Males comprised 56% of the patients in the dataset (2,540 patients), and females comprised 44% (2,010 patients). This difference was statistically significant.

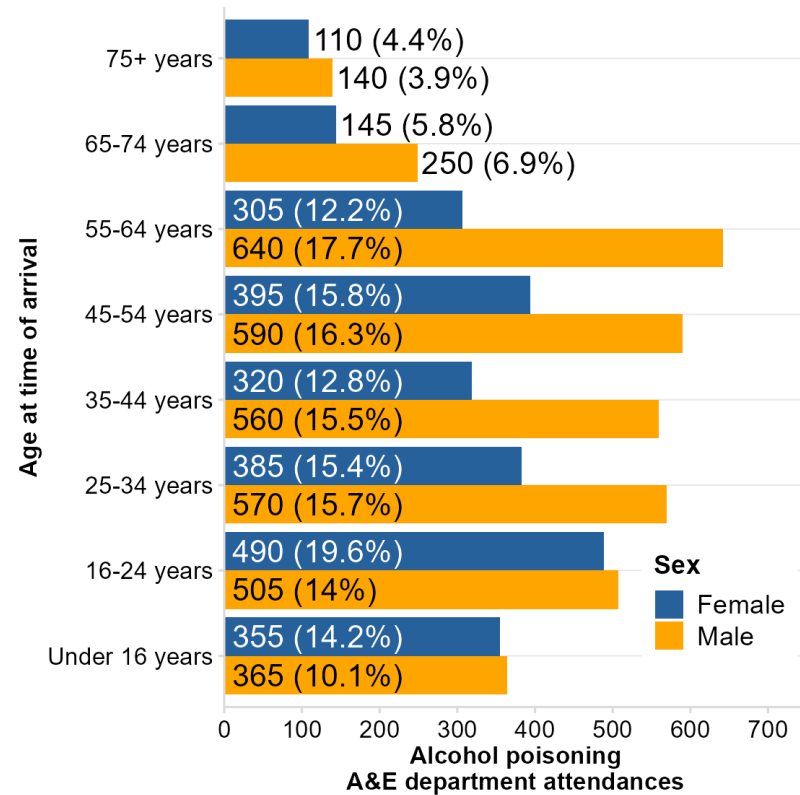
There appear to be peaks of alcohol poisoning attendances during the summer months for both males and females. Additionally, there was a dip in activity for both males and females in April 2020, when COVID-19 restrictions were first put in place. There was also a dip in activity for males in January 2021 (which coincided with more restrictions) but this was less pronounced for females.

The majority of patients (86.5%, 3,940 patients) had one A&E attendance recorded as alcohol poisoning over the three-year period with just one in seven patients having two or more attendances; though this could be an underestimate to the true picture of alcohol related A&E attendances which were coded as something else.

One in four alcohol poisoning attendances were among those aged under 25. The age profile of attendances differed between males and females, with 33.8% of female attendances in the under 25s, compared to 25.1% in male attendances. There were more males in each age group, but the differences were much starker from ages 25-64 (see figure 1). Comparing the confidence intervals of the proportions of people in each age group shows that there were statistically significantly more females compared to males, as a proportion, in under 16s and 16-24 year olds

and significantly more males in age groups 35-44 and 55-64 years. All other comparisons were statistically similar.

Figure 1 Number of alcohol poisoning A&E attendances by age and sex; West Sussex; 2018/19-2020/21



A slightly higher proportion of males (15%) had more than one alcohol poisoning related A&E attendance compared to females (12%). However, whilst the numbers are small, nearly three times as many males (70) had five or more alcohol poisoning attendances over the three-year study period compared to females (25).

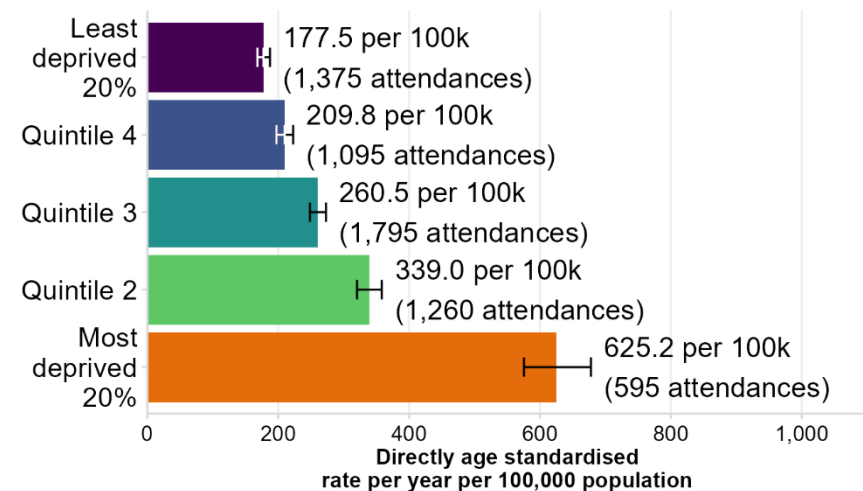
Ethnicity was not recorded for one in five attendances. Where ethnicity was known (4,925 attendances), ethnic minority groups (those which were not White British) accounted for 13% of attendances. The majority of those from minority ethnic groups were from 'White-Other' backgrounds, followed by other backgrounds (including mixed and Chinese), Asian backgrounds and Black groups. Literature specifically on the inequalities of alcohol poisoning related A&E attendances by ethnicity is sparse and so it is difficult to consider how this local picture reflects ethnic inequalities we might expect to see.

West Sussex is a relatively less deprived county, with just a few of its 505 local neighbourhoods ranked among the most deprived in England. The most deprived areas are particularly found along the coast and in Crawley. Indeed, there are almost eight times as many people living in the neighbourhoods of West Sussex designated as the 20% least deprived neighbourhoods in England (277,000) compared with the most deprived (33,000).

As such, we may expect many more attendances among those living in the least deprived quintile simply because there are so many more people rather than attendances being equally distributed amongst the quintiles. However, the number of attendances for alcohol poisoning was not eight times higher in the least deprived quintile, it was just over double with 1,375 (22.4% of attendances) among those in the least deprived quintile and 595 attendances (9.7% of attendances) among the most deprived quintile.

To compare each quintile as if they had the same population in size and age structure, we have created age standardised rates per 100,000 population. Figure 2 shows stark inequalities with the rate per 100,000 for those in the most deprived quintile more than three times higher than that of the least deprived 20%. Moreover, the rate of alcohol poisoning A&E attendances is significantly higher in each subsequently more deprived quintile.

Figure 2 Age-standardised rate of alcohol poisoning A&E attendances by deprivation quintile (nationally ranked); West Sussex; 2018/19-2020/21



It is likely that there are characteristics of those living in more deprived areas (such as age and sex, but likely others too) which explain why attendances are relatively high.

West Sussex is a diverse county in terms of the age, sex, and ethnicity of residents in different areas and so some areas may have more attendances just because there are more people with certain demographics living in the area. To compare smaller areas within the county we have created age-standardised rates per 100,000 population.

Figure 3 Age-standardised rate of alcohol poisoning A&E attendances; persons; West Sussex; 2018/19-2020/21*

Rate compared to West Sussex overall:

■ Significantly lower ■ Similar ■ Significantly higher

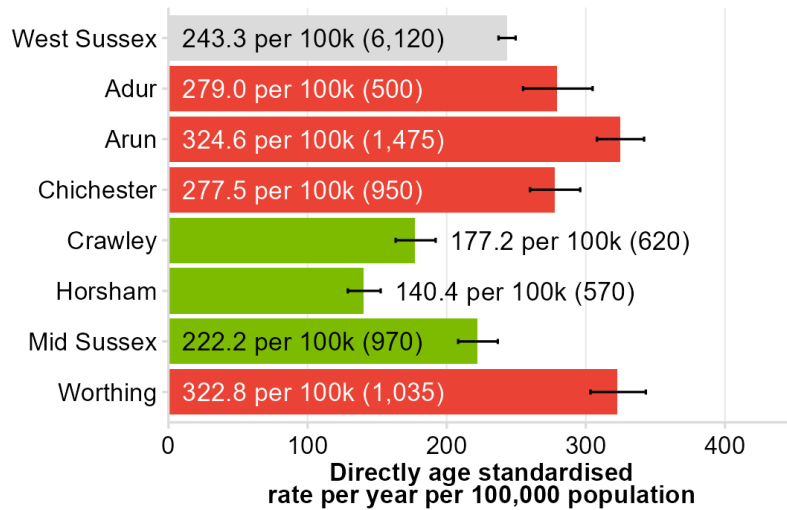
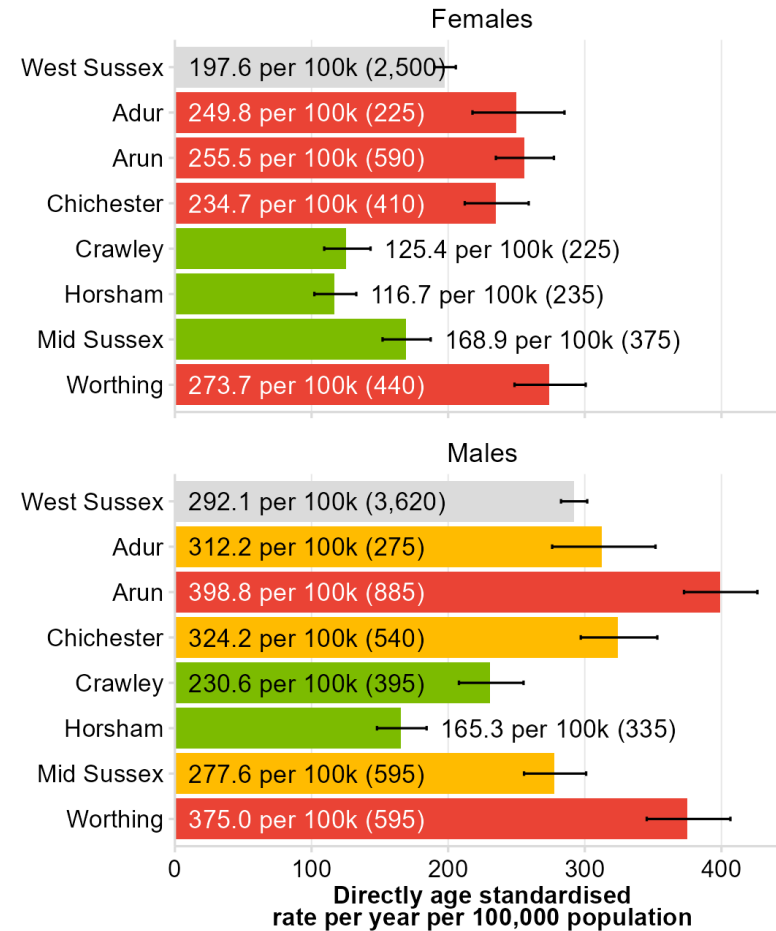


Figure 3 shows there are statistically significant differences in the age standardised rate of alcohol poisoning across West Sussex, with significantly higher rates in Adur, Arun, Chichester, and Worthing compared to the County average. There were significantly lower rates in Crawley, Horsham, and Mid Sussex. For males the rates were closer to the County average for Adur, Chichester, and Mid Sussex (figure 4).

Figure 4 Age-standardised rate of alcohol poisoning A&E attendances; by sex; West Sussex; 2018/19-2020/21*

Rate compared to West Sussex overall:

■ Significantly lower ■ Similar ■ Significantly higher



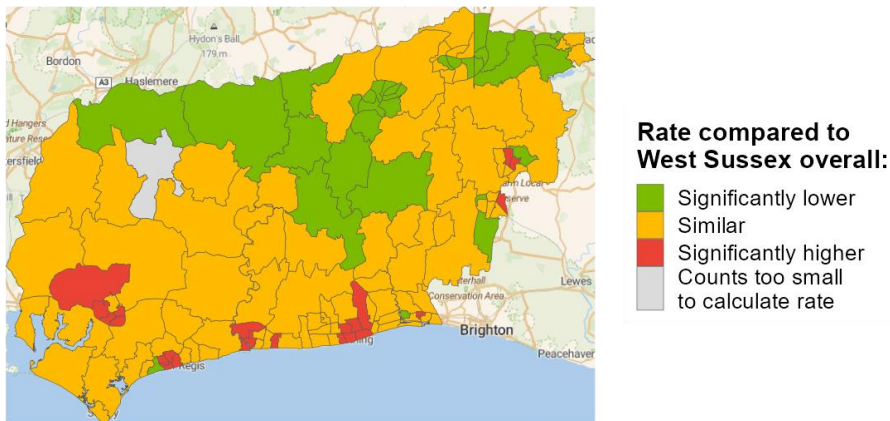
*The number of attendances are given in brackets on these plots.

The age-standardised plots told us that even when we try to account for the age and sex of different areas within West Sussex, there are clearly some parts of the county where A&E attendances are higher. We can examine these differences in more detail by exploring small area variation (by ward). We age-standardised the rate here to account for differences in the age structure of the population between wards.

As shown, there are pockets of significantly higher activity typically in the more urban parts of the county, some of which also contain LSOAs in the most deprived parts of the county (deprivation based on IMD is available at LSOA rather than ward level).

The table shows the top ten wards with highest rates of alcohol poisoning A&E attendances.

Figure 5 Age-standardised rate of alcohol poisoning A&E attendances; West Sussex Wards (2021 boundaries); persons; 2018/19-2020/21



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Table 1 Top 10 highest rates of alcohol poisoning A&E attendances per year per 100,000 population; West Sussex Wards (2021 boundaries); persons; 2018/19-2020/21

Area	Attendances	Age-standardised rate per year per 100,000
Hotham (Arun)	155	764.1 per 100k (647.1-895.9)
Burgess Hill St Andrews (Mid Sussex)	115	744.5 per 100k (612.8-895.9)
Marine (Arun)	165	680.5 per 100k (578.4-795.1)
Selden (Worthing)	160	608.5 per 100k (517.5-710.9)
Southlands (Adur)	70	585.3 per 100k (457.4-737.8)
Central (Worthing)	180	573.5 per 100k (490.8-665.9)
Chichester East (Chichester)	125	566.2 per 100k (470.3-675.8)
Chichester Central (Chichester)	25	495.0 per 100k (306.2-746.8)
River (Arun)	125	493.2 per 100k (409.8-588.3)
Pevensey (Arun)	65	485.6 per 100k (373.1-620.9)

More than half of the alcohol poisoning related A&E attendances resulted in discharge without follow up, and another 15% resulted in a planned follow up with a GP. One in five A&E attendances for alcohol poisoning resulted in a patient admission.

There were some differences in outcome by age band, with 16-24 year olds the least likely to be admitted and 65-74 year olds the most likely to be admitted. People under 25 years old were most likely to be discharged with no follow up compared to the older age bands.

In summary, there are some important differences to consider about the characteristics of those attending A&E for alcohol poisoning.

The split among males and females was modest but significantly different, with more males presenting to A&E with alcohol poisoning overall. A quarter of presentations were among those aged under 25, and the proportions of females attending A&E was significantly higher compared to males in the under 16s and 16-24 year old age groups. Conversely, presentations were significantly higher among males in the 35-44 and 44-64 year age groups.

We highlighted significantly higher age-standardised rates of alcohol poisoning A&E attendances (when controlling for the age and sex differences in populations in each area) in Adur, Arun, Chichester, and Worthing overall, with males having slightly less variation across the county but being generally higher than rates for females.

There were significantly more people in the least deprived neighbourhoods compared to the most deprived neighbourhoods, which we would expect given the relatively less deprived landscape of the county but not to the extent of the differences in the general population living in the county. This suggests that those in more deprived areas may disproportionately be more likely to attend A&E for alcohol poisoning.

However, the limitations of this dataset should be reiterated. Our access to A&E data ceased in 2021 so we do not have up to date patterns of behaviour and healthcare use (and we have not been able to account for major events such as the Covid-19 pandemic which undoubtedly had an impact on alcohol consumption, and likely hospital use as a result of intoxication).

We expect that the limited coding available in A&E attendance data in HES (ICD-10 code 144, a sub-category of poisoning (diagnosis condition code 14 in the A&E data) is likely to fall short in capturing the full extent of A&E attendances resulting from alcohol use. For example, we expect attendances for injuries or falls due to short or long term intoxication may not be captured by this code.

The ECDS surpasses A&E attendance data in terms of data quality and information provided about the treatment people receive and the reasoning for attending hospital. If this data becomes available to us in the future, we will repeat this analysis of the inequities of health care use related to alcohol in emergency departments.

Overview of inpatient admissions

Alcohol-related hospital admissions are estimated by applying alcohol-attributable fractions (AAFs) to HES admissions data based on the age and sex of the patient at the start of the admission episode.

In this report we have used the 2018 based AAFs for England from Public Health England¹⁰, (now called Office for Health Improvement and Disparities) and have analysed admissions to hospital where the primary diagnosis or any secondary diagnoses are an alcohol-specific (wholly attributable) condition (AAF = 1) which means 100% of cases are attributable to alcohol. These are called alcohol-specific conditions and there are 20 of them in the 2018 AAF, each with specific ICD-10 codes. Where an admission has two or more alcohol specific conditions recorded as causes of the admission, we use the first code which appears (this should be ordered by relevance/importance as the primary reason for being admitted).

We have used data from HES for the three-year time period 2021/22 to 2023/24, which represents an update since the publication of the first chapter in this HEA series, which only included data up to 2021/22. In updating the analysis, we are better able to consider the impact of events such as the global Covid-19 pandemic. We have captured any admission where the residence of the patient is recorded as West Sussex.

Finally, as with attendances, it should be noted that this is the number of admissions rather than the number of individuals who have had an admission. Some people may have multiple hospital admissions over time.

Good to know...

AAFs are based on epidemiological and academic studies estimating the proportion of diseases or health conditions that can be attributed to alcohol consumption.

For example, modelling from the Global Burden of Disease study indicates that approximately 50% of liver cirrhosis cases globally are attributed to alcohol use. In this simple example, if there are 10 admissions with a diagnostic cause of liver cirrhosis, we would quantify this as five alcohol related admissions. AAFs vary by country depending on consumption habits and other risk factors such as age and sex.

We have kept the focus of this analysis to alcohol specific conditions for which we can be confident that alcohol is the sole cause of the admission. However, we know that there is a much wider burden of hospital treatment need as a result of alcohol consumption that we have not covered in this report, such as cardiovascular disease, cancer, diseases of the nervous system, and unintentional injuries which can be, at least in part, related to alcohol.

In the three-year pooled period 2021/22 to 2023/24, there were 12,800 alcohol specific admissions among 6,660 West Sussex residents (table 2, overleaf). The majority of these (four out of every five alcohol-specific hospital admissions) were unplanned (also called emergency admissions).

Almost one third of people (32.6%) had at least two hospital admissions wholly attributable to alcohol during the study period.

Table 2 Number of alcohol specific admissions per patient; West Sussex: 2021/22-2023/24

Number of alcohol specific admissions	People	Proportion
1	4,485	67.4%
2	1,025	15.4%
3	460	6.9%
4	230	3.5%
5	135	2%
6	70	1.1%
7	55	0.8%
8	45	0.7%
9	25	0.4%
10 or more	120	1.8%
Total	6,660	-

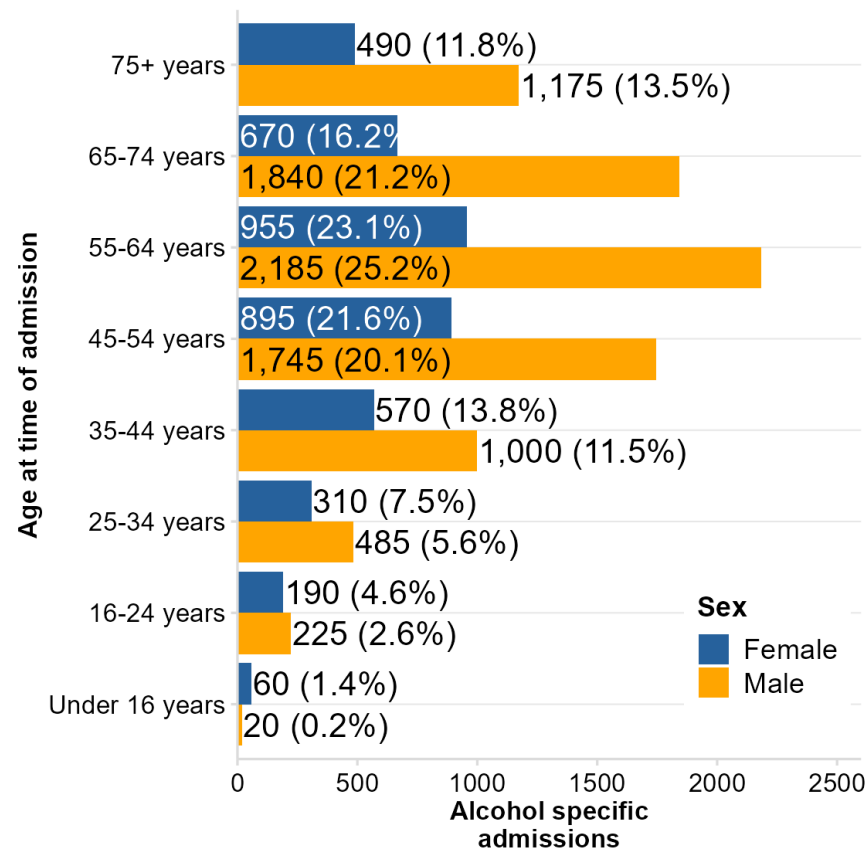
Of the 12,800 admissions, 8,670 were among males (67.7%) and 4,135 (32.3%) were among females. The proportion of males and females by the number of repeat admissions over the study period were similar, with 31.7% of females, and 33% of males having more than one alcohol specific admission over the three years.

Whereas one quarter of A&E attendances for alcohol poisoning were among under 25s, just 3.8% (490 admissions) were among those aged under 25. There were some differences by sex, with 6% of females and 2.8% of males with an alcohol specific admission under 25.

Three out of four alcohol specific admissions occurred among patients aged 45 and over, with 32.6% of admissions occurring for those aged 65+ years.

Males outnumber females two to one in almost every age band although the differences were smaller for those aged 16-34 (figure 6).

Figure 6 Number of alcohol specific admissions by age and sex; West Sussex; 2021/22-2023/24



The proportion of females in all age groups from under 16s to 35-44 year olds was significantly higher than the proportion of males. There was a significantly higher proportion of males in the 65-74 age group. For other groups aged 45+ years, there were no significant differences.

Ethnicity was missing for 18% of admissions. Table 3 shows the number of alcohol specific admissions by sex and ethnicity where ethnicity was known. Where ethnicity was known (10,525 admissions), ethnic minority groups (those which were not White British) accounted for 10% of admissions. The majority of those from minority ethnic groups were from 'White-Other' backgrounds, followed by other backgrounds (including mixed and Chinese), Asian backgrounds and Black groups.

Table 3 Number of alcohol specific admissions by sex and ethnicity; West Sussex; 2021/22-2023/24

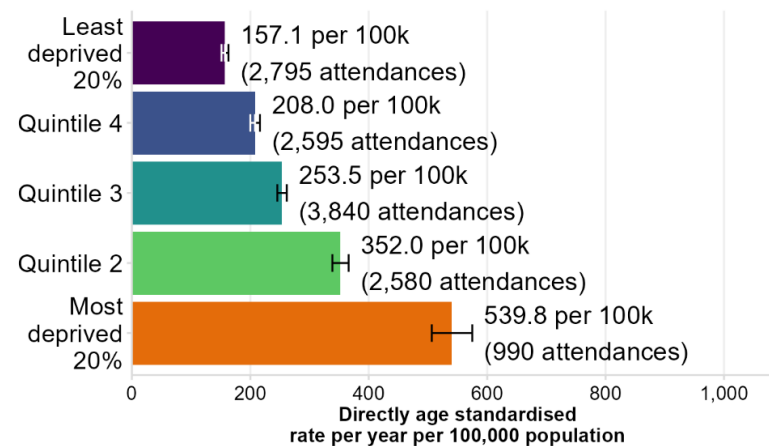
Ethnicity (broad categories)	Female	Male	Persons
White British	3,185 (91.9%)	6,245 (88.3%)	9,430 (89.6%)
White - Other	185 (5.3%)	515 (7.3%)	695 (6.6%)
Asian	25 (0.7%)	130 (1.8%)	155 (1.5%)
Black	15 (0.4%)	40 (0.6%)	50 (0.5%)
Other (including mixed and Chinese)	55 (1.6%)	140 (2%)	195 (1.9%)
Total (where ethnicity known)	3,465	7,065	10,525

Whilst numbers are small we were able to conduct statistical significance tests on the proportions of people in each ethnicity group by sex. This showed that there were significantly more males as a proportion of admissions in Asian and White Other groups compared to females. Females had a significantly higher proportion of White British admissions. There were no significant differences by sex for those with Black ethnicity groups or Other (including mixed and Chinese ethnicities).

As discussed in the previous section, West Sussex is a relatively less deprived county with eight times as many people living in the neighbourhoods of West Sussex designated as the 20% least deprived neighbourhoods in England compared with the most deprived. As a proportion, 31.9% of West Sussex residents live in the least deprived quintile whilst less than 4% of residents live in the most deprived quintile.

Figure 7 shows the age standardised rate of alcohol specific admissions and similarly to the alcohol poisoning A&E attendances, there is a clear gradient of inequality in admissions with those in the most deprived quintile having significantly higher rates of admissions than less deprived quintiles.

Figure 7 Age-standardised rate of alcohol specific admissions by deprivation quintile (nationally ranked); West Sussex; 2021/22-2023/24

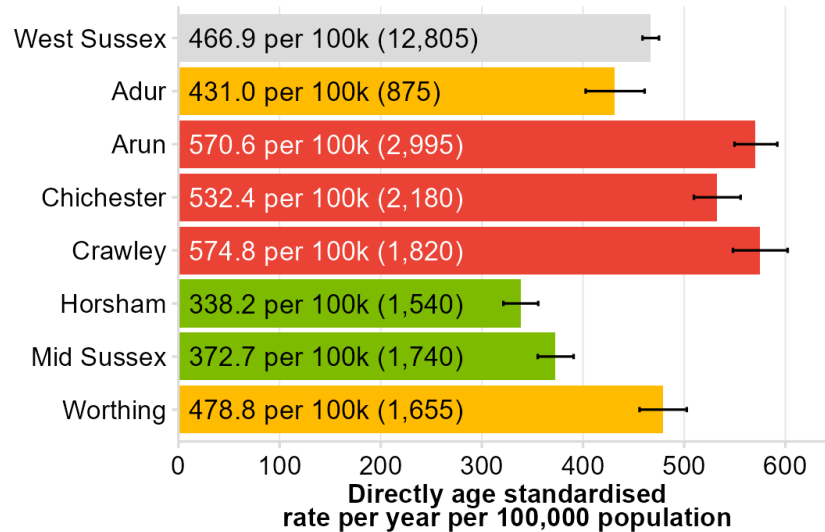


The most deprived quintile comprised 7.7% of alcohol specific admissions, twice the percentage of West Sussex residents (3.7%) thought to live in those areas of the county.

Figure 8 Age-standardised rate of alcohol specific admissions; persons; West Sussex; 2021/22-2023/24*

Rate compared to West Sussex overall:

■ Significantly lower ■ Similar ■ Significantly higher



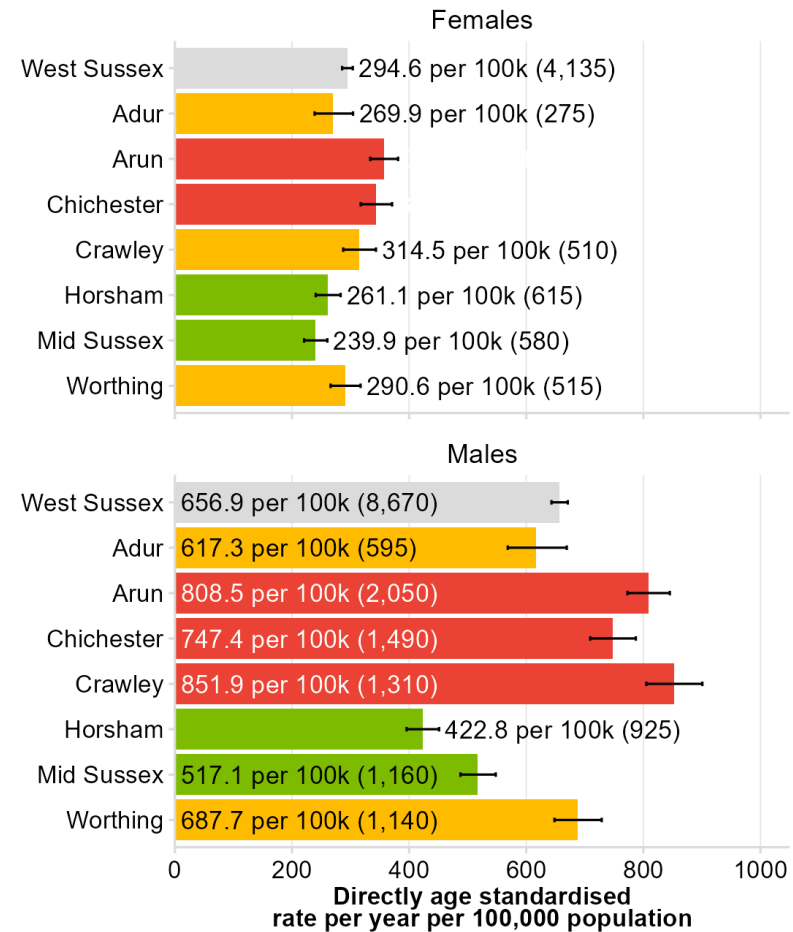
Overall, the 12,805 admissions equate to 466.9 alcohol specific admissions per year per 100,000 population in West Sussex. The rate was statistically significantly higher than this in Arun, Chichester, and Crawley with Crawley having the highest rate at 574.8 admissions per year per 100,000. Horsham had the lowest rate at 338.2 per year per 100,000 and along with Mid Sussex, these two districts had significantly lower rates compared to West Sussex.

Figure 9 shows the vast differences in rates between males and females. In every area, the rate for males was significantly higher than for females and in almost all cases was at least double.

Figure 9 Age-standardised rate of alcohol specific admissions by sex; West Sussex; 2021/22-2023/24*

Rate compared to West Sussex overall:

■ Significantly lower ■ Similar ■ Significantly higher



***The number of attendances are given in brackets on these plots.**

Good to know

We use the annual ONS mid-year population estimates as a basis for our denominators. This helps to account for changes over time, assessing if increases or decreases in attendances/admissions are simply because the population has got bigger or smaller.

For A&E attendances between 2018/19 and 2020/21, we used mid-year estimates for 2018, 2019, and 2020 to create a pooled three-year denominator. For the inpatient admissions analysis for 2021/22 to 2023/24, we used mid-year estimates for years 2021, 2022, and 2023. This data is published for districts and boroughs and West Sussex overall.

However, data for small areas (LSOAs which we used to compare Wards) are not yet available for the year 2023 and unlikely to be published until November 2025.

To simulate three years of denominators for small areas we have used the simplistic approach to repeat the estimates for 2022 twice and so our denominators include 2021, 2022, and 2022 again.

This may artificially lower the population for the three years for Wards and therefore raise the rates slightly compared to the rate calculations for West Sussex overall, but we expect the impact of this to be minimal but worth noting.

As before, we have calculated age standardised rates for Wards of West Sussex (figure 10 and table 4). This shows similar coastal and urban areas to the A&E attendances Ward map, but also highlights significantly higher rates in wards of Crawley and north of the Chichester district.

Figure 10 Age-standardised rate of alcohol specific admissions; West Sussex Wards (2021 boundaries); persons; 2021/22-2023/24

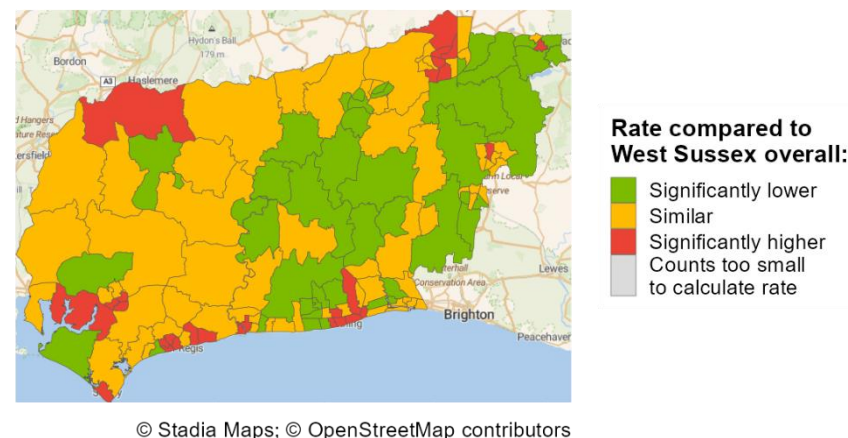


Table 4 Top 10 highest rates of alcohol specific admissions per year per 100,000 population; West Sussex Wards (2021 boundaries); persons; 2021/22-2023/24

Area	Admissions	Age-standardised rate per year per 100,000
Marine (Arun)	350	1,477.7 per 100k (1,325.2-1,642.7)
Hotham (Arun)	235	1,333.6 per 100k (1,166.5-1,517.7)
Chichester Central (Chichester)	65	1,002.2 per 100k (727.1-1,333.6)
River (Arun)	275	990.4 per 100k (875.5-1,116.1)
Orchard (Arun)	190	963.2 per 100k (829.6-1,112)
Pevensey (Arun)	125	930.7 per 100k (772.8-1,111.2)
Central (Worthing)	285	920.5 per 100k (815.3-1,035.5)
Southgate (Crawley)	230	920.0 per 100k (803.8-1,048)
Chichester East (Chichester)	195	919.9 per 100k (794-1,059.9)
Broadfield (Crawley)	210	899.1 per 100k (745.4-1,069.5)

So far, we have counted all alcohol specific conditions. However, the conditions encompass a range of diseases and disorders caused directly or indirectly by alcohol consumption. Some of these conditions cause more harm in terms of mortality, morbidity, and healthcare burden. For example, alcoholic liver disease may result in prolonged hospital stays and in severe cases of cirrhosis may result in the need for liver transplants.

It is possible that different groups of people may be prone to different conditions within the broader set of alcohol specific conditions. For the remainder of the analysis, we break down alcohol specific conditions into more detailed condition groups where the numbers are large enough to do so.

Table 4 shows a breakdown of admissions for each alcohol-specific condition by year. About two out of three alcohol-related hospital admissions were classified as resulting from mental or behavioural disorders linked to alcohol use. This includes short term effects like slurred speech, impaired coordination, disorientation, and aggression, as well as symptoms from dependence and withdrawal, such as tremors, seizures, nausea, and vomiting. Additionally, it encompasses conditions like alcohol-induced psychosis and amnesia.

One in four admissions was for alcoholic liver disease and a further 6% of admissions were for alcohol poisoning. The number and proportion of alcohol specific conditions by cause did not vary substantially across the three years, although alcohol poisoning as a proportion of all alcohol specific causes on hospital admissions did decrease from 6.5% in 2021/22 to 5.1% in 2023/24.

There were some significant differences in the causes of alcohol specific admissions based on age, sex, and deprivation quintiles.

Table 5 Number and proportion of alcohol specific admissions by year and cause (grouped causes); West Sussex; 2021/22-2023/24

First alcohol specific condition (grouped)	2021/22	2022/23	2023/24	2021/22-2023/24
Mental and behavioural disorders due to use of alcohol	3,025 (66.9%)	2,545 (63.9%)	2,825 (65.6%)	8,395 (65.6%)
Alcoholic liver disease	1,000 (22.1%)	1,025 (25.8%)	1,060 (24.6%)	3,085 (24.1%)
Alcohol poisoning*	295 (6.5%)	230 (5.8%)	220 (5.1%)	745 (5.8%)
Alcohol-induced acute/chronic pancreatitis	115 (2.5%)	110 (2.8%)	105 (2.4%)	330 (2.6%)
Other**	85 (1.9%)	70 (1.8%)	95 (2.2%)	250 (2%)

*Alcohol poisoning includes Ethanol poisoning, Methanol poisoning, Toxic effect of alcohol, unspecified, Accidental poisoning by and exposure to alcohol, Intentional self-poisoning by and exposure to alcohol, Poisoning by and exposure to alcohol, undetermined intent'.

** Other wholly attributable conditions include Alcohol-induced pseudo-Cushings syndrome, Degeneration of nervous system due to alcohol, Alcoholic polyneuropathy, Alcoholic myopathy, Alcoholic cardiomyopathy, Alcoholic gastritis, Evidence of alcohol involvement determined by blood alcohol level, Evidence of alcohol involvement determined by level of intoxication, Excess alcohol blood levels, Fetal alcohol syndrome (dysmorphic).

One in ten alcohol specific admissions among females were for alcohol poisoning (figure 11). This was significantly higher than the proportion among males (3.7%). The portion of admissions for mental and behavioural disorders due to the use of alcohol was significantly higher among males.

Alcohol poisoning admissions comprised around a third of admissions for under 25s, with the proportion significantly lower for older age groups, comprising less than 3% of admissions for over 55s.

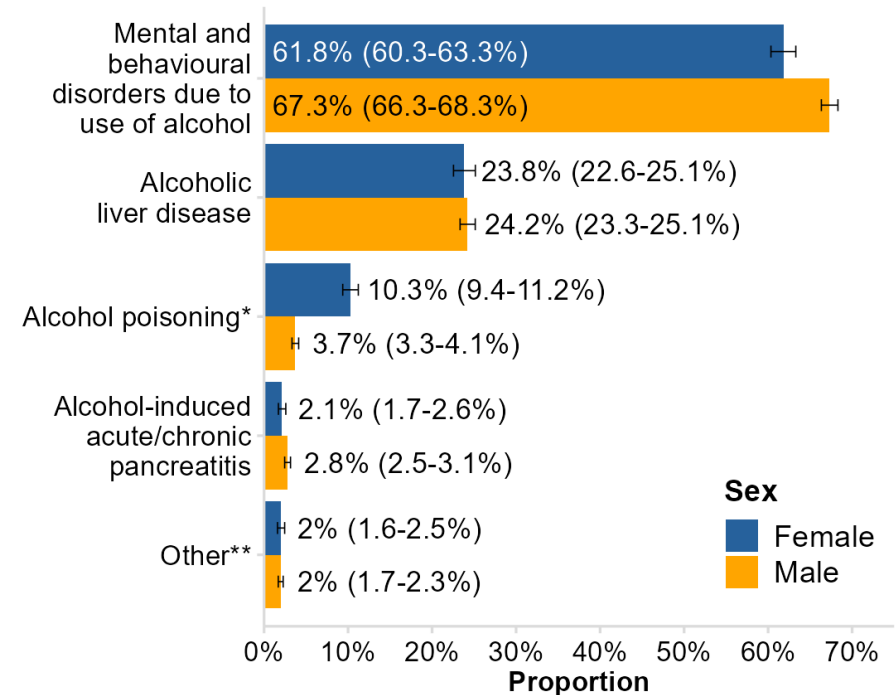
Alcoholic liver disease increased as a proportion of admissions by age from 1% of admissions among 16-24 year olds to 31.2% of admissions among those aged 45-54, after which the proportion reduces to around 25%.

Figure 12 overleaf shows that there were some significant differences across deprivation quintiles for the more detailed causes of alcohol specific admissions.

For those in the most deprived quintile with an alcohol specific admission, the proportion of admissions caused by mental and behavioural disorders due to use of alcohol was significantly higher (72%) than the proportion in the least deprived quintile (61.6%).

For alcohol poisoning the gradient was not statistically significant, likely due to small numbers. However, more people in the most deprived quintiles were admitted for alcohol poisoning (7.2%) compared to 5.1% of those in the least deprived quintiles. Alcohol induced pancreatitis (both acute and chronic combined) was significantly higher as a proportion for those in the most deprived quintile compared to the least but the gradient between these quintiles was less clear.

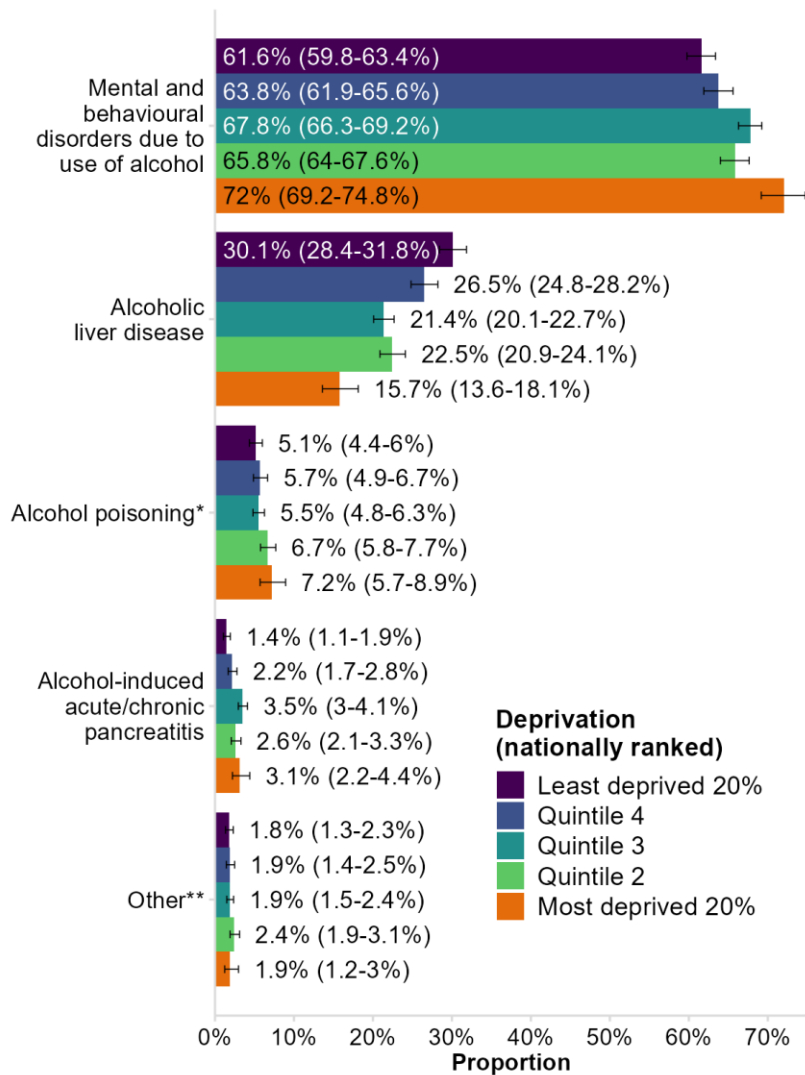
Figure 11 Proportion of alcohol specific admissions by sex and detailed cause; West Sussex; persons; 2021/22-2023/24



*Alcohol poisoning includes Ethanol poisoning, Methanol poisoning, Toxic effect of alcohol, unspecified, Accidental poisoning by and exposure to alcohol, Intentional self-poisoning by and exposure to alcohol, Poisoning by and exposure to alcohol, undetermined intent'.

** Other wholly attributable conditions include Alcohol-induced pseudo-Cushings syndrome, Degeneration of nervous system due to alcohol, Alcoholic polyneuropathy, Alcoholic myopathy, Alcoholic cardiomyopathy, Alcoholic gastritis, Evidence of alcohol involvement determined by blood alcohol level, Evidence of alcohol involvement determined by level of intoxication, Excess alcohol blood levels, Fetal alcohol syndrome (dysmorphic).

Figure 12 Proportion of alcohol specific admissions by deprivation quintile (nationally ranked) and detailed cause; West Sussex; persons; 2021/22-2023/24



Conversely, almost one in three alcohol specific admissions amongst those in the least deprived quintile (30.1%) were for alcoholic liver disease, compared to one in six admissions among those in the most deprived quintiles. This seems counterintuitive to the other causes of alcohol admissions which tend to show a gradient towards being more prevalent among those living in more deprived areas.

The analysis indicates notable differences in the types of health conditions prompting hospital admissions among demographic groups. It is possible that these are linked to distinct alcohol consumption patterns. For instance, acute alcohol poisoning is often associated with short-term, intermittent binge drinking. In contrast, alcoholic liver disease is generally the result of prolonged and regular alcohol consumption, which may be influenced by easier access to alcohol among certain groups. These varying patterns may underline the necessity for tailored support and targeted messaging that address the specific needs and risks associated with different drinking behaviours.

There may be further differences in detailed causes of alcohol admission for the other wholly attributable conditions that we grouped together (such as alcoholic cardiomyopathy) but we had to group these together due to small numbers, even when pooled across three years. Future analysis could look at the full range of the 20 alcohol specific conditions for a wider area, such as the southeast region or England to improve the confidence in detecting inequalities.

In summary, this analysis shows key differences in health harms (as measured by hospital inpatient admissions) among different groups.

Males outnumbered females two to one in terms of alcohol specific admissions between 2021/22 and 2023/24.

Overall, we saw the greatest proportion of admissions in 55-64 year olds, followed by 45-54 year olds. There were marginally higher proportions for females up to the age of 54 compared to males, with admissions for males higher in older age groups. Admissions appear to peak at 55-64 years for both females and males.

Whilst the admissions data gives no indication of the levels at which patients are consuming alcohol, if we consider the estimated population model, we expect to see the highest proportion of people drinking at probable dependent levels in 35-44 year olds for males and for females. The fact that alcohol-specific admissions peak at later ages in both groups, may reflect the cumulative effect of alcohol related harm.

It is worth noting some limitations from our analysis. Counting the number or rate of admissions, even by more detailed conditions, does not always tell us the true burden of an alcohol specific admission on the patient or the impact on hospital services. Future work could look at the length of time a person typically stays in hospital with an alcohol specific admission.

Furthermore, this analysis was limited to just those admissions which are wholly attributable to alcohol, and we have not included other partially attributable conditions such as cardiovascular disease, and cancer, which we know are strongly linked to alcohol consumption.

Mortality

In 2022, there were 120 alcohol specific deaths (wholly attributable to alcohol) in West Sussex¹¹. This is an age standardised rate of 13.2 per 100,000 population and is statistically similar to the rate in England overall (14.5 deaths per 100,000 population). The number and rate fluctuates annually, but has increased overall, in the last decade, both locally and nationally.

Deaths by cause are available in the public domain from the ONS deaths registration dataset via the nomis service¹². Table 6 shows that there were 345 deaths for alcohol specific conditions for the three-year pooled period 2021-2023. Two out of three deaths were among males. Four out of five alcohol specific deaths were due to alcoholic liver disease. It is not possible from this data to calculate rates, as it is not broken down by age.

Table 6 Number of alcohol specific deaths by cause and sex; West Sussex; 2021-2023*

Cause	Female	Male	Total
K70 Alcoholic liver disease	96	177	273
F10 Mental and behavioural disorders due to use of alcohol	18	27	43
X45 Accidental poisoning by and exposure to alcohol	-	17	19
I42.6 Alcoholic cardiomyopathy	-	5	10

* Counts of 0, 1, and 2 are rounded to 0, while counts of 3, 4, and 5 are rounded to 5. As such, row and column totals may not sum.

Analysis from the Office for National Statistics¹³ suggests that nationally there are disproportionately higher rates of alcohol specific deaths in more

deprived areas. Moreover, the rate of deaths in the UK for males (22.3 deaths per 100,000) was double that of females (11.1 deaths per 100,000).

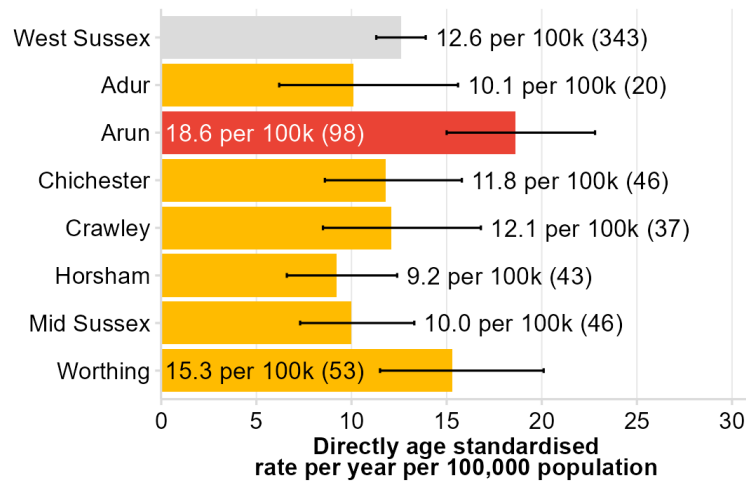
ONS provide an annual dataset of alcohol specific deaths by local authority, these are for three-year pooled time periods to account for small numbers and the latest available data is for 2020 to 2022.

The latest data indicate that West Sussex has a statistically similar rate (12.6 per 100,000) compared to England (13.8 per 100,000). District and boroughs within the county had similar rates (figure 13) except for Arun which had a statistically significantly higher rate compared to West Sussex overall.

Figure 13 Age-standardised rate of alcohol specific deaths; persons; West Sussex; 2020-2022**

Rate compared to West Sussex overall:

■ Significantly lower ■ Similar ■ Significantly higher



****The number of deaths are given in brackets on these plots.**

The small numbers of deaths means that it is not possible to consider other characteristics that might drive local inequalities in alcohol specific mortality, though there are still useful lessons to learn from national evidence and data.

As seen in table 6, alcoholic liver disease is the cause of the majority of alcohol specific deaths in West Sussex and more widely liver disease is a leading cause of premature mortality nationally and is increasing compared to other causes¹⁴. The majority of liver disease deaths occur between the ages of 45-64 and the British Liver Trust indicate that two thirds of liver disease deaths are among males, which is consistent with the local analysis outlined in this report.

OHID publish data on under 75s mortality rates due to alcoholic liver disease. This show that in recent years, both locally and nationally rates have been increasing, though the change over the last decade has not been statistically significant. In 2022, the West Sussex rate for under 75s deaths from alcoholic liver disease was 11.1 per 100,000, which is similar to England at 11.6 per 100,000.

Data are not available for smaller areas within the county, nor are West Sussex rates broken down by sex or other characteristics. The national data indicates that rates for males were almost double (15.3 per 100,000) compared to females (8.2 per 100,000) in England in 2022.

OHID also provide some analysis by deprivation decile by comparing rates at upper tier local authority by their average levels of deprivation. This indicates that premature mortality for alcoholic liver disease was 17.5 per 100,000 population in the most deprived local authorities compared to 7.5 per 100,000 in the least deprived areas.

Conclusion

This report aimed to outline local inequalities in attendances to hospitals and deaths for conditions that are wholly attributable to alcohol. It provides context for other reports in the Alcohol Health Equity Audit series which consider whether access and outcomes for commissioned services are equitable against alcohol consumption patterns and need. There were several findings that are important to note.

Overall, men were more likely to attend A&E for alcohol poisoning and to be admitted to hospital for alcohol specific causes. They were also more likely to die as a result of alcohol use. However, there was a difference in the age profiles between the sexes with proportionately younger females aged under 25 more likely than men to attend A&E for alcohol poisoning. Hospital admissions peaked for both males and females at age 55-64 years.

The age standardised rate of alcohol poisoning related A&E attendances was significantly higher in Adur, Arun, Chichester and Worthing compared to the rest of the County. For alcohol specific admissions, Arun, Chichester, and Crawley had significantly higher rates than West Sussex overall.

Significant differences were observed between the most and least deprived quintiles for all areas of our analysis, though the gradients were not always linear with middle quintiles sometimes having higher rates. This could often be described by the relatively less deprived nature of West Sussex County; there are estimated to be eight times as many people living in the nationally designated least deprived 20% of areas compared to the most deprived areas in West Sussex. Considering this distribution, hospital activity appeared disproportionately prevalent

among those living in the most deprived areas, sometimes with rates twice as high as rates for those in less deprived areas.

An important distinction was noted when considering more detailed causes of alcohol specific hospital admissions, that those in more deprived areas appeared to be admitted to hospital for different causes (such as alcohol poisoning, and mental and behavioural disorders due to alcohol use) compared to those living in the least deprived quintiles where alcoholic liver disease was much more prevalent as a proportion of admissions among those living in the least deprived quintile.

There were various limitations to the analysis of A&E and Hospital Admission Data, including limitations of clinical coding systems and variation in geographical boundaries for LSOA & Wards. Moreover, primarily due to low numbers and data availability, we were only able to consider a handful of demographic characteristics such as age, sex, ethnicity, and deprivation, as well as small area differences. We were unable to consider local inequalities amongst other minority groups (such as LGBTQ+ groups) which may have different alcohol consumption patterns and experience health harms in different ways.

With hospital attendances and admissions among younger age groups and deaths from liver disease greatest among the Under 75s, the evidence suggests an opportunity for targeted public health interventions which seek to prevent alcohol harm within certain demographics based on their age, sex, or socioeconomic status/deprivation.

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- ¹² [Nomis - Bulk Data Export - Mortality statistics - underlying cause, sex and age](#)
- ¹³ Office for National Statistics (ONS), released 15 April 2024, ONS website, statistical bulletin, Alcohol-specific deaths in the UK: registered in 2022
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