



The Public Health and Social Impact of Alcohol Availability in Dundee

Update June 2023

Key Points Summary

Alcohol-related harms

- The alcohol-specific death rate in Dundee exceeds the Scottish average. Forty six Dundee City residents died in 2021 from a cause wholly attributable to harmful alcohol use.
- Alcohol-related conditions accounted for 1069 of hospital admissions in the 2021/22 financial year.
- In 2021/22, individuals living within the most deprived areas of Dundee City were 5 times more likely to have an alcohol-related hospital stay than those living in the least deprived areas.

Alcohol sales and alcohol consumption

- There were 9.4 litres of pure alcohol sold per adult in Scotland in 2018.
- In 2021, 31% of males and 16% of females in Scotland reported consuming alcohol at hazardous or harmful levels (i.e. more than 14 units per week).
- In 2021, 54% of pupils surveyed reported never drinking alcohol, this is lower than the National response. Pupils with long term health conditions or caring responsibilities reported drinking more frequently than their peers.

Alcohol availability

- As of the 31st March 2022, there were 130 off-sale only premises licenses and 307 on-sale premises licenses in force in Dundee. This equates to approximately 36 alcohol outlets in Dundee City for every 10,000 adults aged 18 and over.
- Reducing levels of harmful alcohol use by enacting and enforcing restrictions on alcohol availability is a key component of Scotland's Alcohol Framework, and underpins the legislative basis for Licensing Boards to issue an overprovision policy statement.

Reducing alcohol related harm

- Dundee is still experiencing considerable alcohol related harm, even though the per-capita provision of off sales premises licensed to sell alcohol in Dundee is marginally below the Scottish average. The level of licensed premises across Scotland is not, however, a measure of a 'target' for licensing-Scotland as a whole has levels of alcohol related health and social harms that exceed those in comparable regions and countries and high levels of outlet density will contribute to this.
- Restricting availability of alcohol through licensing policy is just one of 3 core policy approaches to reduce population level alcohol harm, alongside reducing affordability and attractiveness. These 3 distinct approaches to reducing population level alcohol related harm should not be viewed as alternatives to each other, but work synergistically together across different population groups and patterns of drinking.

Recommendations

- Dundee City Alcohol and Drugs Partnership (ADP) commends the Licensing Board for their 2018 statement declaring an overprovision of off-sale alcohol outlets in Dundee and the subsequent impact this has had in reducing the number of new off sales licences granted. However, making significant in-roads into restricting the provision of alcohol in Dundee will take time.
- Given Dundee is still experiencing considerable alcohol related harm and the per-capita provision of off sales premises licensed to sell alcohol in Dundee exceeds the Scottish average, the ADP recommends the continued current approach of presumed rebuttal against increased off sales capacity in Dundee.
- The ADP recommends that the Board designates the whole of Dundee City as an area of over-provision in relation to off-sales, as per the existing policy and supported by the Sheriff in the Aldi ruling. There are several reasons for this:
 - Outlet density does not reflect the size or sales volume of outlets, which in itself impacts on price through competitiveness, and other issues that drive purchase-such as picking up alcohol alongside 'essential' shopping in a larger supermarket, for example. Different areas of the city will have a different structure of outlets (small corner shops, specialist off-licences, large supermarkets etc) which isn't reflected in a simple outlet density map, A pan-city approach is a more appropriate response to the evidence of widespread alcohol related harms across different population groups , and recognises the mobility of the population between areas of the City.
 - The Licensing Act does not enable us to actively reduce outlet density in small areas most heavily over-provided. Therefore, if the Board only sets an overprovision policy for certain data zones/wards/neighbourhoods, the outlet density may remain static in those but is likely to rise in other small areas where density is currently lower. Travel between these small areas is really not a barrier to accessing licensed premises, so the overall impact would likely be an increase in outlet density in those areas with lower levels of provision currently, leading to an overall increase in outlet density across the city and greater alcohol related harm.
 - There is no 'ideal' per capita level of licensed premises, so it is more important to consider levels of alcohol related harm across the population and the effective policy measures available to reduce this (addressing affordability, availability and attractiveness) and to apply those measures where there is population level harm.
- The ADP considers that there is clear evidence demonstrating that alcohol outlet density impacts on levels of alcohol related harm at the population level. The international evidence supports the application of policies that tackle accessibility, affordability and attractiveness as independent elements of an effective strategy, and not as interchangeable policy options. Whilst there is evidence for some positive impacts of MUP on alcohol related harm, we are still seeing rising levels of alcohol related deaths and referrals for support with problematic alcohol consumption so we need to maintain and strengthen other policy measures.

Contents

Key Points Summary	2
Recommendations	3
Contents	4
1. Introduction	5
2. Alcohol-related harm	6
2.1 Health impact of alcohol	6
2.2 Social impact of alcohol	12
2.3 Summary of alcohol-related harms	15
3. Alcohol sales and alcohol consumption	16
3.1 Current trends in alcohol sales	16
3.2 Self-reported alcohol consumption	17
3.3 Impact of Minimum Unit Pricing (MUP)	19
3.4 Impact of alcohol availability	20
4 Benefits of restricting alcohol availability	22
5 Conclusions	24
References	25

1. Introduction

Alcohol is a legal and socially acceptable psychoactive drug that causes significant harm to individuals, families and communities across Scotland.¹ A stark inequalities gradient exists in relation to alcohol-related harm, and the harmful use of alcohol has a wide range of detrimental consequences for population health, public services, the economy, and society as a whole.^{1,2} The ‘Rights, Respect and Recovery’ treatment strategy³ recognises that everyone in Scotland should have *‘the right to health and life – free from the harm of alcohol and drugs’*, and reducing the use of, and harm from, alcohol, tobacco and other drugs has been identified as a national public health priority.⁴

The Scottish Government implemented a co-ordinated strategic approach to ‘Changing Scotland’s Relationship with Alcohol’ in the mid-2000s following a rapid increase in levels of alcohol-related harm.⁵ The updated Alcohol Framework (2018) sets out the next steps in this strategy, and places a particular focus on preventative measures to tackle the availability, affordability and attractiveness of alcohol.² This approach aligns with recommendations from the World Health Organisation.^{2,6,7}

The passing of the Licensing (Scotland) Act 2005 increased the scope of local Licensing Boards to control the availability of alcohol within their area by setting the following five licensing objectives, which boards must seek to promote in their decision making and licensing policy-setting work:^{8,9}

1. Preventing crime and disorder
2. Securing public safety
3. Preventing public nuisance
4. Protecting children from harm
5. Protecting and improving public health

In addition, the Act placed a duty on all Licensing Boards in Scotland to assess the extent to which there is an overprovision of licensed premises (or licensed premises of a particular description) within any localities in their area.⁹ Inclusion of this duty recognises that the total number, capacity, licensed hours, and type of premises can influence levels of alcohol-related harm.⁸ Licensing Boards have the grounds to refuse an application for a premises license if it is deemed likely that failure do so would create, or would add to, an overprovision of licensed premises in the relevant local area.^{8,9}

In 2018, Dundee City Licensing Board determined that **“...the whole of its area is overprovided in relation to premises selling alcohol for consumption off the premises”**.¹⁰ The Licensing Board consequently implemented an overprovision policy statement, with the purpose of creating a rebuttable presumption against the granting of any new off-sale premises license in Dundee City.

This report is an updated version of an earlier document that was produced in 2017 prior to implementation of the City’s 2018 overprovision policy statement and before the introduction of Minimum Unit Pricing in Scotland.¹¹ This report summarises current data and evidence concerning the public health and social impact of alcohol in Scotland and Dundee City, and aims to help inform the work of the Licensing Board, particularly with regards to statements of licensing policy.

2. Alcohol-related harm

Alcohol is considered by many to be an integral and enjoyable part of Scottish life. Whilst the majority of adults in Scotland who choose to consume alcohol will do so in moderation,¹² the current overall national intake of alcohol remains at a high level and has a significant and detrimental impact on population health and wellbeing. This section will consider alcohol-related health and social harms in Scotland, and will present relevant data for Tayside and Dundee City, where these are available.

2.1 Health impact of alcohol

There is no 'safe' level of alcohol use, but the risk of alcohol resulting in harm to health is greatest for individuals who consume alcohol at levels in excess of those advised in the UK Chief Medical Officer's low-risk drinking guidelines.¹³ These guidelines advise both men and women to consume no more than 14 units of alcohol per week (spread evenly over at least three days), and to limit the total amount of alcohol consumed on any single occasion.

Excessive alcohol consumption can result in a variety of health problems. Some alcohol related adverse health effects may occur after drinking over a relatively short period of time, such as acute intoxication (drunkenness) or poisoning (toxic effect).¹⁴ Consuming too much alcohol too quickly can also lead to impaired judgement and can potentially place the drinker at an increased risk of accidents and injury, assault, or engagement in high-risk sexual behaviours.¹⁵ Other adverse health effects from alcohol may develop more gradually and may only become evident after heavy drinking over a longer period of time, for example alcohol-related damage to the liver and brain.¹⁴ Long-term excessive alcohol use is also recognised to be one of several factors that can increase the risk of conditions such as heart disease, stroke, and some types of cancer.¹⁵ In addition, excessive alcohol consumption can lead to mental health problems including alcohol dependency and depression.^{14,15}

The following subsections present data on alcohol-specific deaths and alcohol-related hospitalisation rates, which are considered to be the most reliable and robust indicators of alcohol-related health harm.¹⁶

2.1.1 Alcohol-specific deaths

Alcohol-related deaths can be measured in various ways, but this report will have a particular focus on deaths from a cause wholly attributable to alcohol use. It should be recognised, however, that in addition to these 'alcohol-specific deaths' (new National Statistics definition)¹⁷, there may also be a considerable number of additional deaths occurring each year in which the consumption of alcohol was a contributory factor.¹⁸

Alcohol-specific deaths typically occur in relation to health problems that have developed as a consequence of long-term sustained drinking at a harmful level. From a relatively low and stable baseline in the 1980s, Scotland's alcohol-specific death rate increased dramatically in the early 1990s to reach a peak in 2003 of 29.2 deaths per 100,000 adult population.¹⁹ Since this time, the alcohol-specific death rate in Scotland has generally trended downwards but this decline has stalled or even

began trending upwards again in recent years (Figure 1), and the age-standardised alcohol-specific death rate in 2021 (22 per 100,000) was around two and a half times higher than the level observed in 1981.²⁰

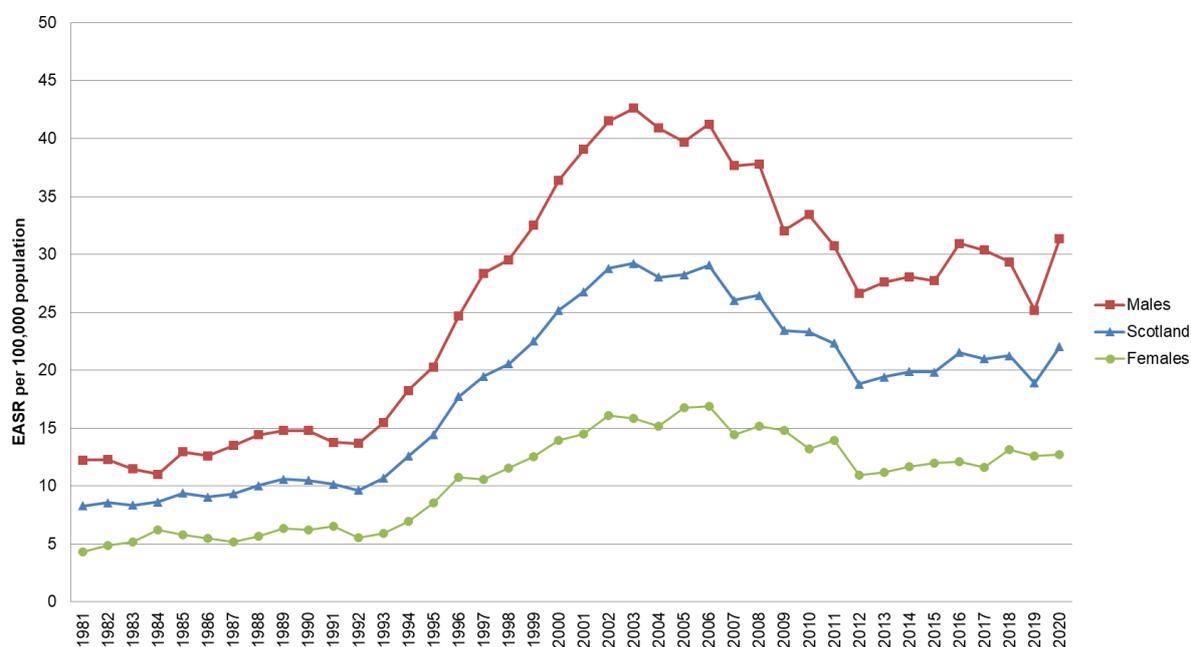


Figure 1: European age and sex standardised alcohol-specific deaths in Scotland, 1981-2020. (MESAS Monitoring Report 2022).¹⁹

Alcohol-specific death rates in Scotland are considerably higher in males than in females, and have been consistently higher than those recorded in England and Wales since the Office for National Statistics’ time-series began.¹⁹ Whilst rates fluctuated relatively little amongst females during that timeframe, there was a sharp increase in alcohol-specific deaths within the male population in 2021, compared with the previous year, with rates amongst men being more than twice as high as those amongst women (31 and 14 per 100,000 respectively).¹⁹

In 2021, there were a total of 1,245 alcohol-specific deaths recorded in Scotland. The highest number of deaths occurred in the 55-59 years age group, with an average age at death of 59.4 years.**Error! Bookmark not defined.** The three most common causes of alcohol-specific deaths in Scotland in 2021 are similar to those reported in the previous version of this report:**Error! Bookmark not defined.**

1. 267 deaths attributed to Alcoholic cirrhosis of the liver (267 deaths in 2018)
2. 230 deaths attributed to mental and behavioural disorders due to use of alcohol, dependence syndrome (230 deaths in 2018)
3. 202 deaths attributed to alcoholic liver disease, unspecified (200 deaths in 2018)

Alcohol-specific death rates are disproportionately high in areas of socioeconomic deprivation. In 2021, the alcohol-specific death rate for people living in the 20% most deprived areas in Scotland was more than five and a half times higher than the rate for those living in the 20% least deprived areas.¹⁹

Of the 1,245 individuals who died from an alcohol-specific death in Scotland in 2021, 106 were resident in the Tayside Health Board area; 46 in Dundee City (36 reported in 2018). **Error! Bookmark not defined.** Despite showing similar trends the annual number of alcohol-specific deaths has been higher in Dundee than in the other areas of Tayside since 1998 (Figure 2):

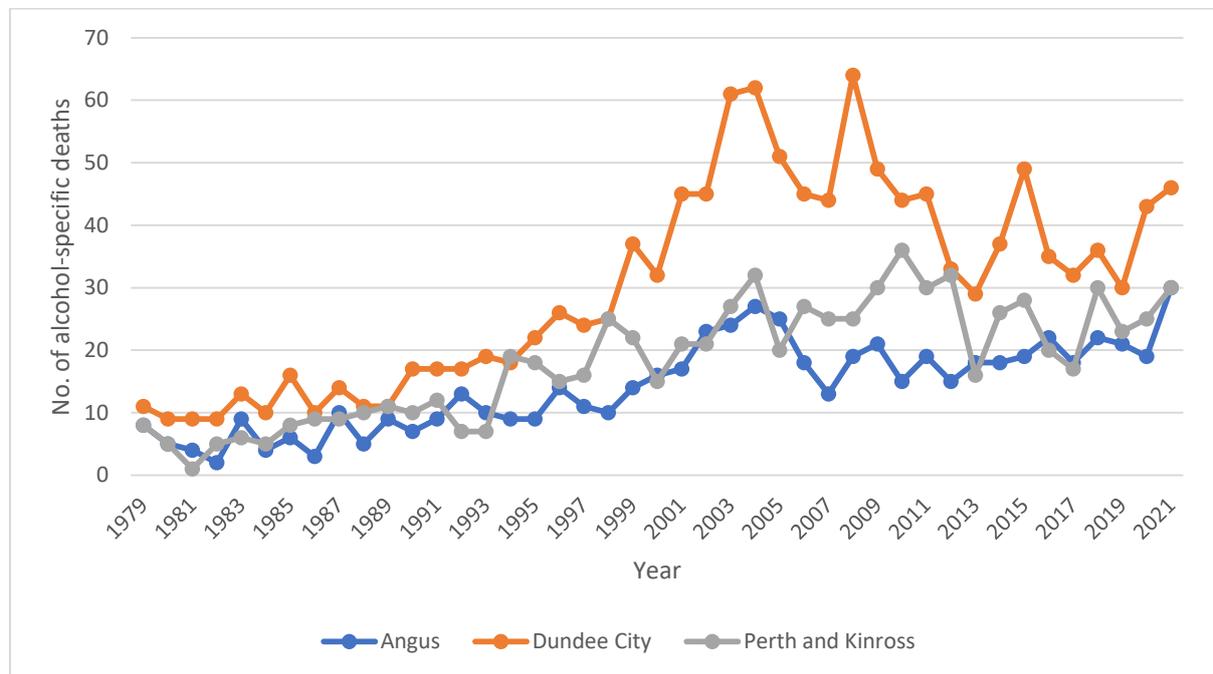


Figure 2: Number of alcohol-specific deaths in the Local Authority areas of Tayside, 1990-2018. Source: National Records of Scotland alcohol deaths statistics. **Error! Bookmark not defined.**

Over the period between 2019 and 2021, an average of 40 Dundee City residents have died each year from a cause deemed wholly attributable to alcohol use (38 between 2014-2018). **Error! Bookmark not defined.** This corresponds to an age-standardised rate of 28.2/100,000 population, compared to age-standardised rates of 28.8/100,000 in the previous reporting period of 2014-18.²¹

In Dundee, the five year average for deaths wholly attributable to alcohol use is markedly higher than in Scotland as a whole, (28.2 and 20.8 per 100,000 respectively, Figure 3), and the rate for Scotland overall is a high benchmark in comparison even to other areas of the UK.²¹ This trend has persisted in recent years, as summarised in Table 1.

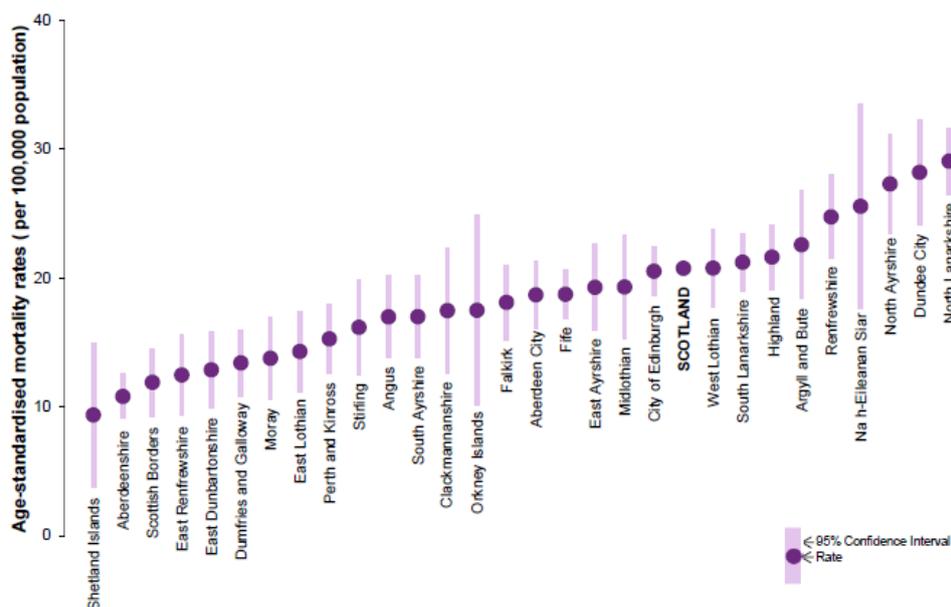


Figure 3: Age-standardised alcohol-specific death rates per 100,000 population for Scottish Council areas (five-year average 2017-2021). Source: National Records of Scotland alcohol death statistics.²⁰

	2019	2020	2021
Scotland			
Population	5463300	5466000	5479900
Total number of alcohol-specific deaths	1020	1190	1245
Alcohol-specific deaths per 100,000 population*	18.7	21.8	22.7
Dundee City			
Population	149320	148820	147720
Total number of alcohol-specific deaths	30	43	46
Alcohol-specific deaths per 100,000 population*	20.1	28.9	31.1

* crude rates i.e. not standardised for age or sex

Table 1: Alcohol-specific death rates in Scotland and Dundee City, 2019-2021. Source: National Records of Scotland alcohol-specific death statistics and mid-year population estimates.²²

2.1.2 Alcohol-related hospital admissions

The harmful use of alcohol is known to be a causal factor in over 200 diseases and injuries, many of which necessitate admissions for emergency and planned care in hospital.²³

There were 35,187 alcohol-related hospital stays in general acute hospitals in Scotland in 2021/22 (excluding attendances at Accident and Emergency departments that did not result in hospital admission).²⁴ National trends in alcohol-related general acute hospitalisation rates, which account for 94% of admissions, have over the last three decades displayed similarities to the trends observed

in alcohol-specific death rates over the same time (Figure 4). **Error! Bookmark not defined.** The remaining 6% of stays were psychiatric stays.

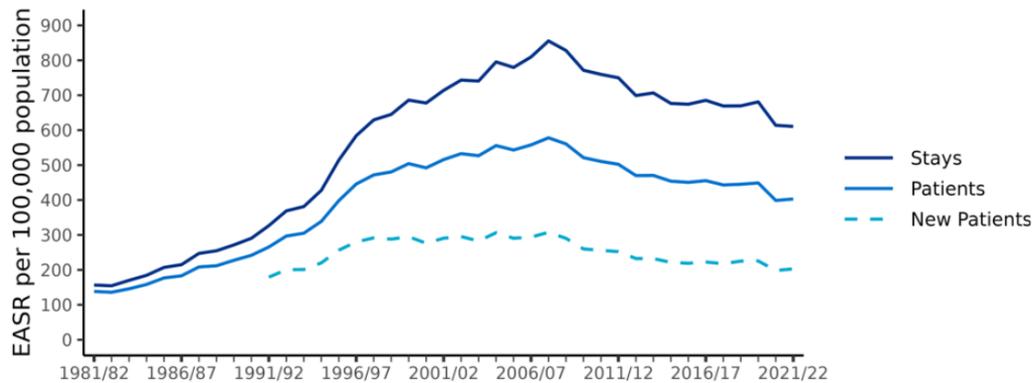


Figure 4: European age sex standardised alcohol-related hospitalisation rates for general acute hospitals, Scotland, financial years 1981/82 – 2021/22. Source: Figure reproduced from PHS document 'Alcohol-Related Hospital Statistics 2021/22'. Error! Bookmark not defined.

The number of alcohol-related general acute hospital stays in Dundee City peaked in the year 2008/09 and has fluctuated regularly since then. **Error! Bookmark not defined.** There were 1080 alcohol-related stays in general acute hospitals recorded for Dundee City residents in 2021/22, compared to 849 in the previous financial year.²⁴ Standardised rates of general acute alcohol-related hospital stays have consistently been higher in Dundee City than in the other two Local Authority areas in Tayside, and have exceeded the Scottish average for the past five consecutive financial years (Figure 5). **Error! Bookmark not defined.**

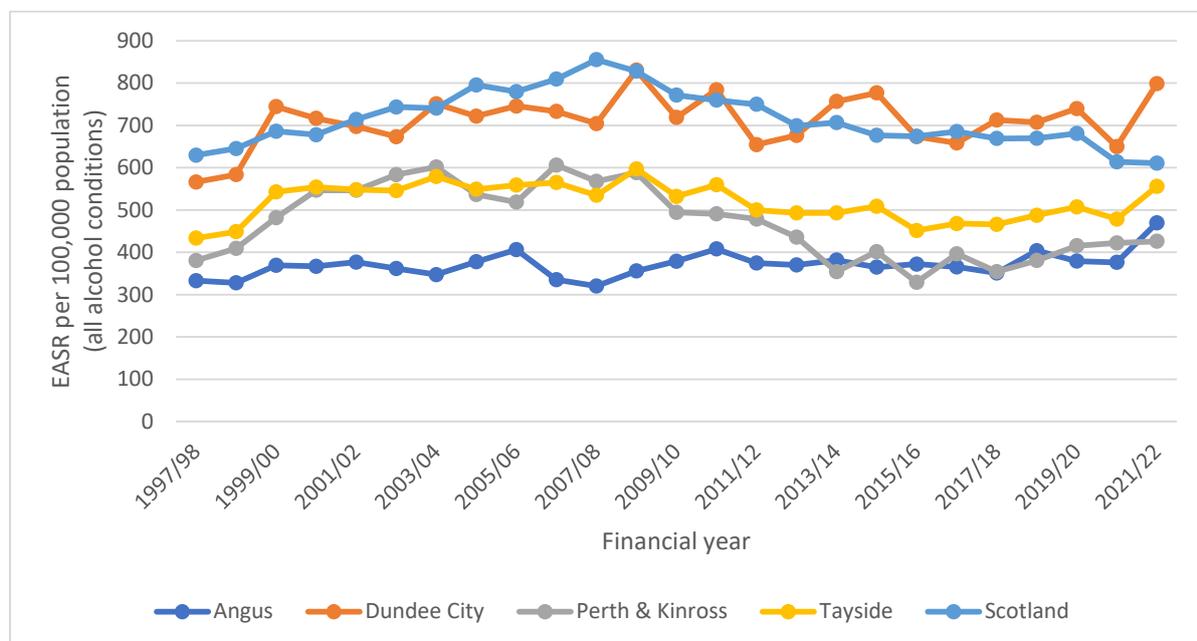


Figure 5: European age sex standardised rates of alcohol-related general acute hospital stays for all alcohol related conditions in Tayside and Scotland, financial years 1997/98 – 2021/22. Source: Public Health Scotland – Alcohol-related Hospital Statistics. Error! Bookmark not defined.

A marked inequalities gradient is apparent in the rates of alcohol-related general acute hospital stays across Scotland, demonstrating that people living in the most socioeconomically deprived areas are disproportionately affected by alcohol-related harm.**Error! Bookmark not defined.**

Published data on alcohol-related psychiatric hospital admissions in Tayside are available from 1997/98 onwards. The number of alcohol-related psychiatric hospital admissions for Dundee City residents peaked in 2009/2010, and in 2018/19, there were 162 stays recorded.**Error! Bookmark not defined.** The rate of psychiatric hospital stays for all alcohol conditions by Dundee City residents has consistently been higher than the national average over the available time-series, and the recent increases in alcohol-related psychiatric hospitalisation rates in Dundee are in contrast to trends observed in Scotland as a whole (Figure).

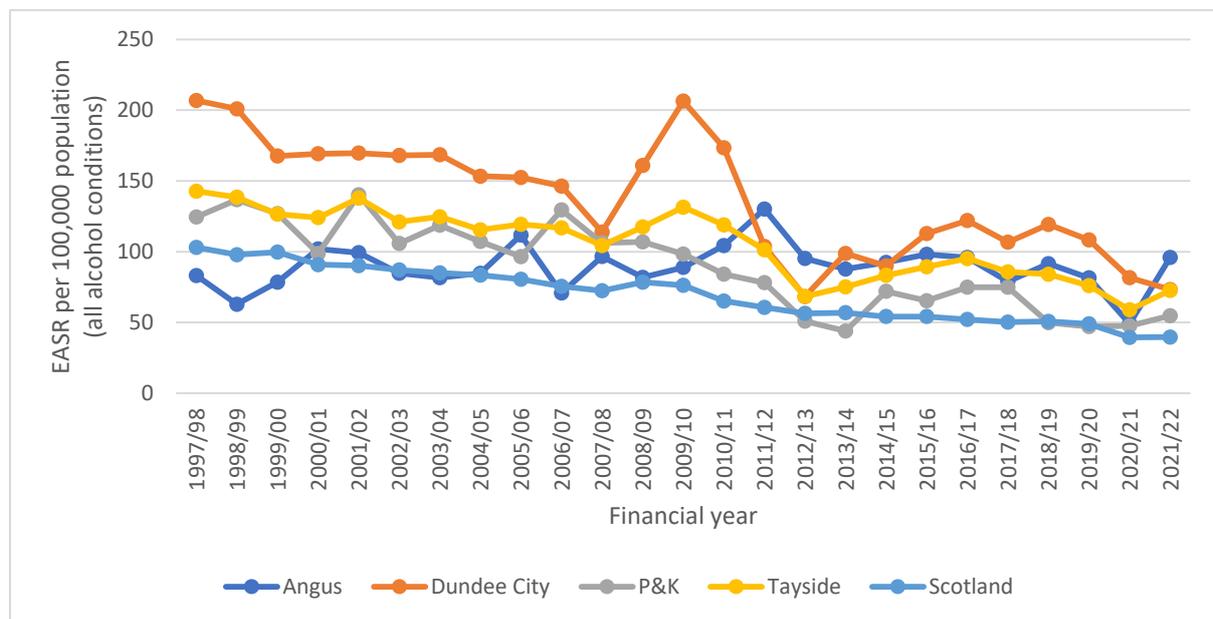


Figure 6: European age sex standardised rates of alcohol-related psychiatric hospital stays for all alcohol-related conditions in Tayside and Scotland, financial years 1997/98 – 2021/22. Source: Public Health Scotland – Alcohol-related Hospital Statistics.**Error! Bookmark not defined.**

2.1.3 Alcohol-related A&E attendances

Across Scotland, alcohol has previously been estimated to be a contributory factor in approximately 11% of attendances to A&E departments.²⁵ A more recently conducted study undertaken in an inner-city hospital in Northern England found that alcohol-related attendances accounted for 12-15% of all Emergency Department presentations, with considerably higher rates of alcohol-related attendances recorded at the weekend.²⁵

In the 2018 calendar year (most recent data at present), there were 1,618 alcohol-related A&E attendances by Dundee City residents. The number of alcohol-related A&E attendances has fluctuated in Dundee in the seven years from 2012 to 2018, with the peak over this time being 1,757

attendances in 2017. Dundee City has the highest annual number of alcohol-related A&E attendances in Tayside (Figure).

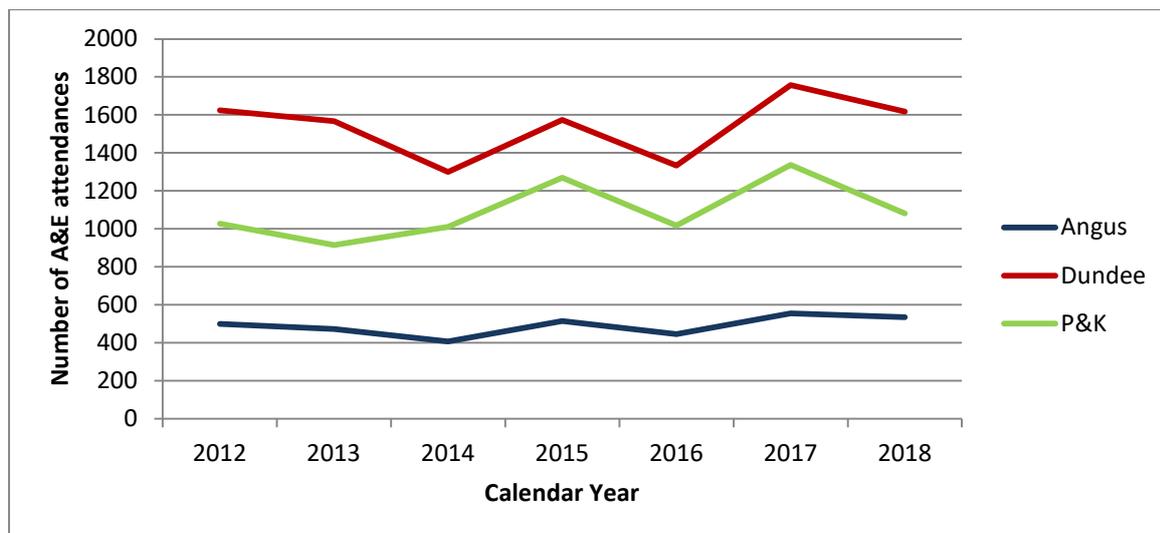


Figure 7: Alcohol-related A&E attendances in Tayside, 2012 -2018. Source: NHS Tayside Business Unit (August2019)

2.2 Social impact of alcohol

The harmful use of alcohol can have a wide range of negative consequences, not only for the individual consumer, but also for their family, friends and local community, as well as for the economy and for society as a whole. The following subsections will briefly consider public perceptions of problematic alcohol use and the social impact of alcohol on children, young people and families, as well as on the criminal justice system and on the economy.

2.2.1 Public perceptions of alcohol-related social harm

Evidence from national surveys suggests that members of the public perceive alcohol misuse to be a significant societal problem in Scotland. The most recent Scottish Social Attitudes Survey reported that more likely to view harmful alcohol use as a societal problem, rather than an individual one, with the proportion of respondents agreeing that “people with serious drinking problems have only themselves to blame” dropping from 43%, in 2013, to 17% in 2021/22.²⁵ There was strong support for supporting people experiencing harm from alcohol as 91% of respondents agreed that it was in everyone’s interest to show such support.²⁶

96% of respondents to a UK wide poll considered alcohol misuse to be a problem in Scotland, with almost three quarters (74%) perceiving it as a ‘big problem’.²⁶ The Scottish Household Survey has not recently asked directly about perceptions of alcohol-related social harms, but does collect data on respondents’ experiences of ‘rowdy behaviour’ within their neighbourhood. In the 2017 Scottish Household Survey, 13.7% of Dundee City respondents stated that rowdy behaviour was very or fairly common within their neighbourhood, compared to 9.8% across Tayside, and 11.8% in Scotland as a whole.²¹

Research undertaken in Scotland in 2013 found that 1 in 2 people stated they had experienced harm as a result of someone else's drinking, and that these individuals reported a lower life satisfaction on average.²⁷ In this study, 1 in 3 respondents reported exposure to heavy drinkers in their lives, with those who knew heavy drinkers more likely to report that the harm they experienced from others' drinking occurred in settings such as the home or private parties (i.e. as a result of another person's consumption of alcohol purchased from an off-sales premises). This research was cited in a recent rapid review published by Public Health England examining the range and magnitude of alcohol-related harm to others both in the UK and internationally.²⁸

2.2.2 The social impact of alcohol on children, young people and families

Living with a person who suffers from problematic alcohol use can place a strain on relationships, create tensions within the household, and lead to arguments and chaotic lifestyles. This can have a direct impact on children for whom there is worry, fear and uncertainty, as well as the potential for neglect or difficulties in maintaining school attendance.²⁷

Protecting children and young people from harm is one of the five licensing objectives that underpin the alcohol licensing approach in Scotland. In Dundee City, there were 15 children with parental alcohol misuse listed on the Child Protection Register in July 2018.²¹ This equates to a crude rate of 5.61 / 10,000 population, slightly higher than the Scottish average of 4.92/10,000.²¹ In a recent investigation led by the Children's Parliament on an 'alcohol free childhood', a number of the young people who shared their views described being acutely aware of the impact alcohol has on their lives, with comments including a feeling of being surrounded by alcohol and alcohol advertising, as well as a feeling of fear when encountering people who are under the influence of alcohol.²⁹ In addition, the findings from a recent survey of almost 1,000 UK parents and children (aged 10-17 years old) suggest that there is a significant association between parental alcohol consumption level and children's experiences of negative outcomes. This study reported that more than a third (35%) of children participating in the survey had experienced at least one adverse consequence as a result of parental alcohol use.³⁰

While Alcohol Focus Scotland (AFS) recognise that there is currently a distinct lack of information available about the business operations of online retailers in Scotland there is some initial evidence of the online purchasing of alcohol by young people. A survey conducted among young people by AFS, including representation from the Dundee area, has shown that 20% of participants had tried to purchase alcohol online. Practices such as leaving of online purchases in nominated safe spaces resulted in the majority of orders avoiding any age verification. In-person checks which aim to prevent young people from purchasing alcohol may be being undermined and this, and combined with a perception of reduced risk of being identified by an adult may see more young people turn to online purchases placing their health and wellbeing at risk.³¹

It is possible that a similar avoidance of social stigma may also attract some adults to the online purchasing of alcohol, potentially increasing vulnerability to harm. Thus, it is important that evidence is gathered in relation to online alcohol sales and purchasing behaviours

2.2.3 Alcohol-related crime and disorder

There are two Scottish crime indicators that are wholly attributable to alcohol use: driving under the influence and 'drunken and other disorderly conduct'.¹⁹ Rates of driving under the influence have trended downwards since the mid-2000s, and the rate of recorded offences for drunkenness has fluctuated over this time and has fallen by 4% from 8097 in 2020/21 to 7773 cases in 2021/22.³³ Alcohol is, however, likely to be a contributory factor in many other crimes, such as petty and serious assault. In the most recent Scottish Crime and Justice Survey, conducted in 2019/20, 44% of respondents who reported having previously been a victim of a violent crime, believed that the offender had been under the influence of alcohol. In addition to the direct harm caused to the victim, the impact on public services of responding to alcohol-related crime and disorder is significant. Research undertaken by the Institute of Alcohol Studies estimated that in England more than half of Police Officers' time is spent dealing with alcohol-related incidents.³²

2.2.4 The economic impact of alcohol

The harmful use of alcohol can result in direct economic costs, indirect costs and intangible costs as outlined in the examples below:³³

- **Direct costs:** cost to health, police, social and justice services incurred when managing alcohol-related impact on individuals
- **Indirect costs:** costs incurred due from lost productivity (due to e.g. absenteeism, unemployment), reduced earning potential and lost working years due to premature morbidity or death
- **Intangible costs:** costs assigned to pain and suffering and more generally to a diminished quality of life. These are costs borne not only by the person consuming hazardous or harmful quantities of alcohol, but frequently families and others linked to the individual.

There is substantial evidence that harmful alcohol use in Scotland incurs a high economic burden. The Scottish Government's most recent Alcohol Framework cites evidence from *The Societal Cost of Alcohol Misuse in Scotland for 2007*, which estimated that the excessive consumption of alcohol in Scotland costs the national economy around £3.6 billion each year, equivalent to an average of £900 for every adult in Scotland.^{2, 34, 35} In 2010/11, the total cost of alcohol harm in Dundee City each year was estimated to be in the region of £71 million. To note this figure only considers the direct and indirect costs of alcohol and does not include intangible costs (Figure 6).³⁶

DUNDEE CITY - COST OF ALCOHOL HARM BREAKDOWN

HEALTH SERVICE:	£10.58m
SOCIAL CARE:	£10.24m
CRIME:	£27.25m
PRODUCTIVE CAPACITY:	£22.99m
TOTAL COST:	£71.05m

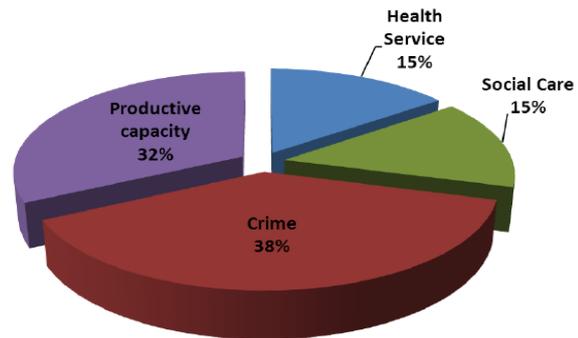


Figure 6: Estimated cost of alcohol harm in Dundee City in 2010/11. Source: Reproduced from 'The cost of alcohol in Dundee City 2010/11', Alcohol Focus Scotland.³⁶

2.3 Summary of alcohol-related harms

- Dundee reported the highest number of alcohol-specific deaths across Tayside in 2021 and despite showing similar trends the annual number of alcohol-specific deaths has been higher in Dundee compared to other areas of Tayside since 1998.
- Alcohol-specific deaths and alcohol-related hospitalisations rates in Dundee City are higher than the average rates across Scotland.
- People living in the most deprived areas experience the highest levels of alcohol-related harm.
- Alcohol use impacts more widely than just the person who is drinking at harmful levels. It can have a significant adverse impact on families and wider communities and also increases demand on healthcare, policing and social care services.
- Much of the data presented in the section relies on the recording of the contribution of alcohol in healthcare summaries. Therefore, the figures presented are likely to be an under-estimation of the true picture of the impact of alcohol-related harm in Dundee City.

3. Alcohol sales and alcohol consumption

3.1 Current trends in alcohol sales

Alcohol sales data are subject to a range of potential biases but are considered to be the most accurate and robust proxy measure of trends in alcohol consumption at the population level.^{37,38} Analysis of alcohol sales data has estimated that, in 2021, 9.4 litres of pure alcohol were sold per adult in Scotland.³⁹ After increasing throughout the 1990s and 2000s, this is the lowest per capita level of alcohol consumption recorded over the available time series, but remains worryingly high and equates to a quantity of alcohol sufficient for every member of the Scottish population aged 16 years or over to exceed the lower risk weekly drinking guidelines by approximately 30%.¹⁹

The volume of pure alcohol sold per adult in Scotland in 2021, while similar to the previous year, was 0.5 litres lower than in 2019¹⁹, and it is possible that the implementation of Minimum Unit Pricing (MUP) in May 2018 has contributed to this decrease (see section 3.3). The introduction of MUP has had a proportionally greater impact on the price of alcohol sold off-trade compared to alcohol sold on-trade.

The average price per unit of alcohol sold both through on-trade and off-trade was higher in 2021 than any previously recorded year, with prices per unit increasing by 2% and 1.6% respectively between 2020 and 2021. Since the implementation of MUP, on-trade prices per unit have increased by around a further 8%, and off-trade sales about a further 7%.²²

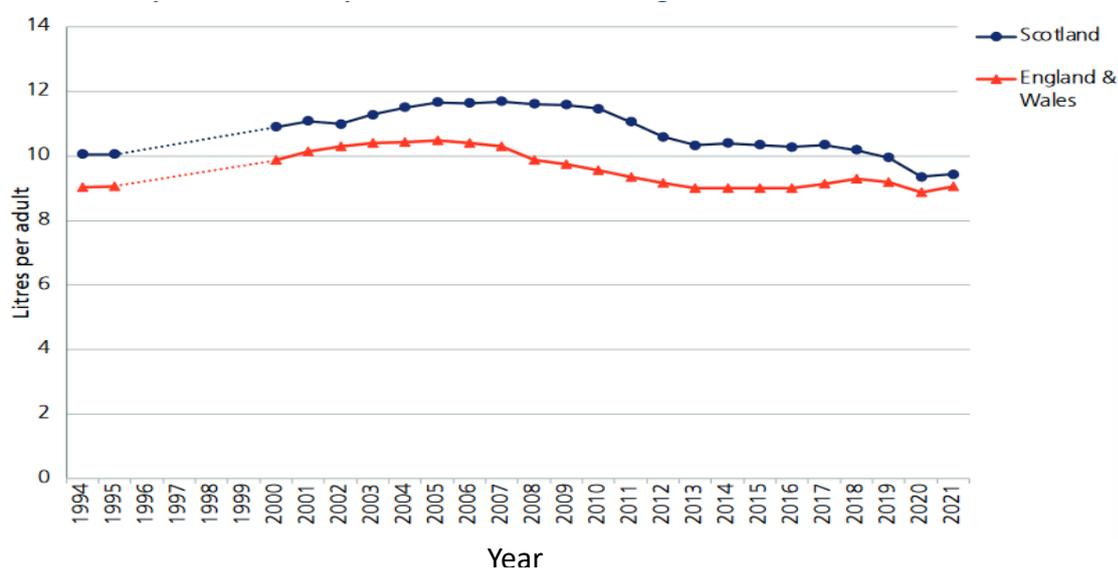


Figure 97: Litres of pure alcohol sold per adult (≥ 16 years) in Scotland and England & Wales, by market sector, 2000-2021. Source: MESAS Monitoring Report 2022.²²

Another emerging trend within the UK drinks market is the rapid growth in sales of low and no alcohol alternatives.^{40, 41} Increasing the availability of these drinks has been suggested by both industry and policy-makers as a possible strategy for reducing consumption of alcohol and alcohol-related harms.⁴¹

3.2 Self-reported alcohol consumption

Self-reported alcohol consumption is best captured through surveys, but these are subject to a range of selection and information biases, and typically result in estimates of per capita alcohol consumption that are substantially lower than those obtained through analysis of objective sales data.^{38,42} However, these data are nevertheless helpful to consider when aiming to identify changes in the patterns of alcohol use, or to detect trends within particular groups. This section references two large national surveys which collect data on self-reported alcohol consumption, with a particular focus on the levels of alcohol consumption reported by adults in and young people living in Tayside.

3.2.1 Self-reported alcohol consumption in Adults

The findings of the most recent Scottish Health Survey suggest that there is a considerable proportion of adults in Tayside who regularly consume alcohol to a level that exceeds the Chief Medical Officers' lower risk drinking guidelines of no more than 14 units per week.⁴³

According to the 2021 Scottish Health Survey:

- 16% of all adults reported themselves to be **non-drinkers**. 15% of males and 17% of females reported themselves to be non-drinkers compared to 13% and 19% respectively in 2018.
- 61% of all adults (54% of males and 67% of females) reported an alcohol intake of up to 14 units per week, and were therefore classified as **moderate drinkers**.
- 23% of all adults (31% of males and 16% of females) reported an alcohol intake in excess of 14 units per week, and were therefore classified as **hazardous or harmful drinkers**

Previous years have shown Tayside to be similar to national trends and while this survey is not split by Health Board it is likely that Dundee follows similar trends.

Alcohol consumption data collected within the Scottish Health Survey demonstrates variations in self-reported alcohol consumption by area level deprivation (Figure).¹² These data indicate that people living in the most socioeconomically deprived areas of Scotland are more likely to be non-drinkers and are less likely to drink alcohol at a hazardous or harmful level – although it is paradoxically these same groups who experience the highest burden of alcohol-related ill health and death (see Section 2). There are many possible factors that contribute to this paradox, including other adversities that are harmful to health suffered by those living in the most deprived areas, and that the highest levels consumption are reported amongst those living in the most deprived areas. Restricting alcohol availability across all communities within a local area is a strategy that aims to reduce alcohol consumption, alcohol-related harms, and alcohol-related inequalities at the population level.

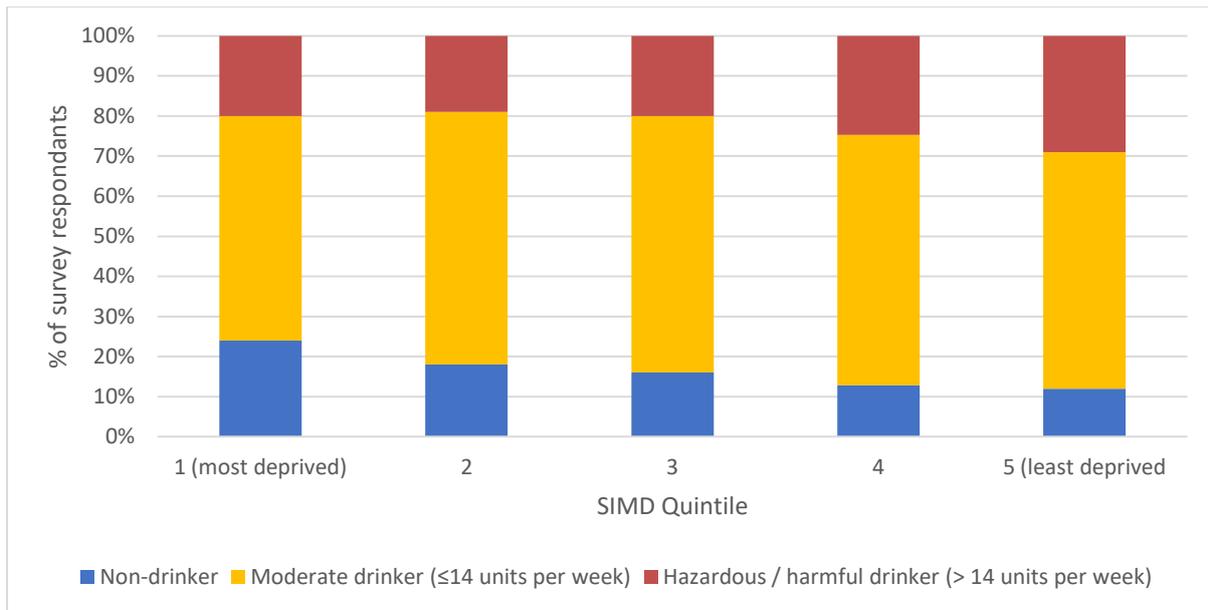


Figure 10: Estimated usual weekly alcohol consumption level (age-standardised) in Scottish adults by SIMD 2021 quintile of area-level deprivation. Source: Scottish Health Survey 2018.¹²

3.2.2 Self-reported alcohol consumption in Young People

Evidence from a recent multi-national study suggests there has been a dramatic decline in alcohol consumption among teenagers in Scotland over the last decade.⁴⁴ This finding broadly mirrors those of the Scottish Schools Adolescent Lifestyle and Substance Use Surveys (SALSUS) however, the latest available SALSUS data suggests that this downward trend may not be continuing, with findings from the 2018 survey indicating an overall increase in the proportion of pupils who have ever had an alcoholic drink, an increased frequency of drinking in the week immediately preceding survey participation in all groups apart from 15 year old girls, and an increase in the proportion of pupils in all groups reporting that they had ever been drunk, with the exception of 15 year old boys.⁴⁵

The SALSUS 2018 study showed that, in Dundee City:⁴⁶

- 37% of 13 year olds reported they had had an alcoholic drink (an increase of 5% from 2013) as did 66% of 15 year olds (an increase of 1% from 2013).
- 50% of 13 year olds and 66% of 15 year olds who had ever had a drink reported having been drunk at least once (a change from 2013 levels of +6% and -2% respectively).
- 6% of 13 year olds reported drinking alcohol in the week prior to the survey (an increase of 1% from 2013), as did 13% of 15 year olds (a fall of 1% from 2013).

The SALSUS survey has since been superseded with the Health and Wellbeing Census conducted amongst S2 and S4 pupils. (Figure 13)

Key findings from the 2021/22 HWB survey for Dundee are as follows;⁴⁷

- 1,870 students from Dundee completed the survey (7.5% of participants)

- 1.6% of participants in Dundee reported drinking at least once a week. This is slightly lower than the national response, 2%.
- Over half of respondents, 54%, reported never drinking alcohol. This is lower than the national response of 56.1%.

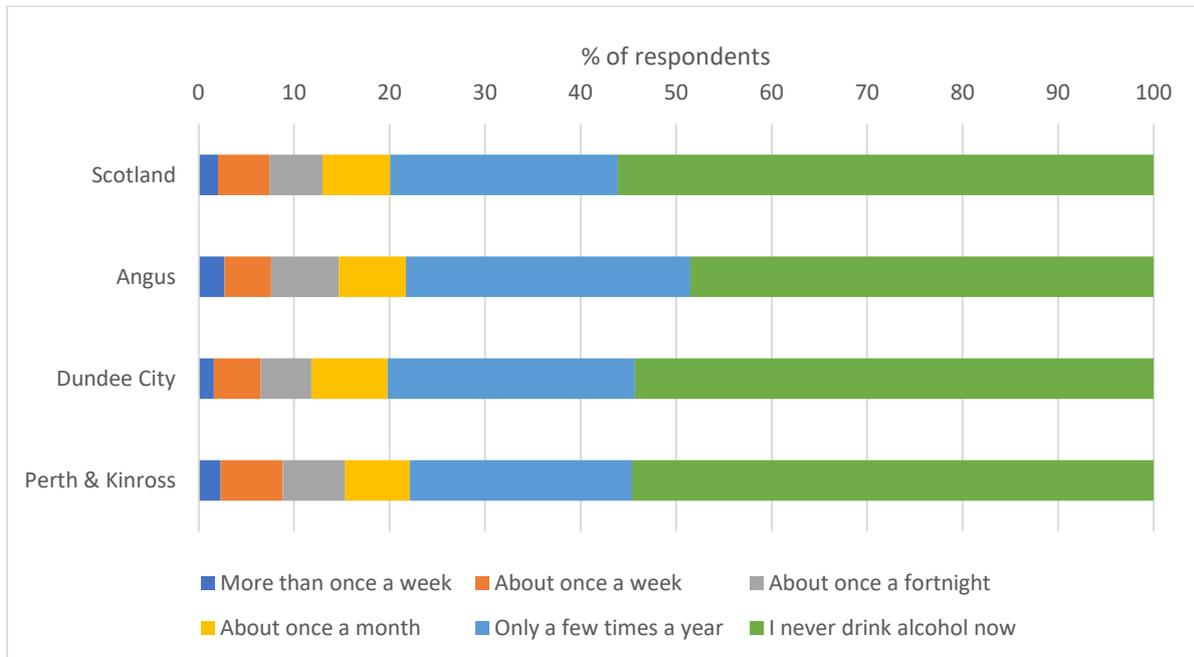


Figure 11: Proportions of alcohol consumption prevalence in S2 and S4 pupils in Scotland and Tayside's Local Authority areas, 2021/22. Source: Health and Wellbeing Census Scotland 2021/22.⁴⁹

While the data collected around caring responsibilities and long-term health conditions were not separated by health board both conditions say an increased prevalence in participants drinking alcohol more than once a week. 2.8% of those with caring responsibility drank more than once per week compared to 1.6% of those without caring responsibility. 3.8% of pupils with long term health conditions drank more than once per week compared to 1.5% of those without.

3.3 Impact of Minimum Unit Pricing (MUP)

On 1st May 2018, Scotland implemented Minimum Unit Pricing (MUP) as part of its national strategy to reduce harmful alcohol use by setting a floor price below which alcohol cannot legally be sold.¹⁹ The purpose of the policy is to reduce the affordability of alcohol, as this is recognised to be a key driver of alcohol consumption.

Analysis of alcohol sales data over the three years following MUP implementation, which used methods that adjusted for other underlying external factors that might also influence the direction of change (such as COVID-19, or effects of inflation on disposable income) found that a 3.6% reduction in alcohol sales, predominantly driven by a reduction in off-trade sales, was the result of MUP implementation. **Error! Bookmark not defined.**

Nevertheless, the volume of pure alcohol sold through off-sales in Scotland remains higher than in England and Wales (Figure 12).

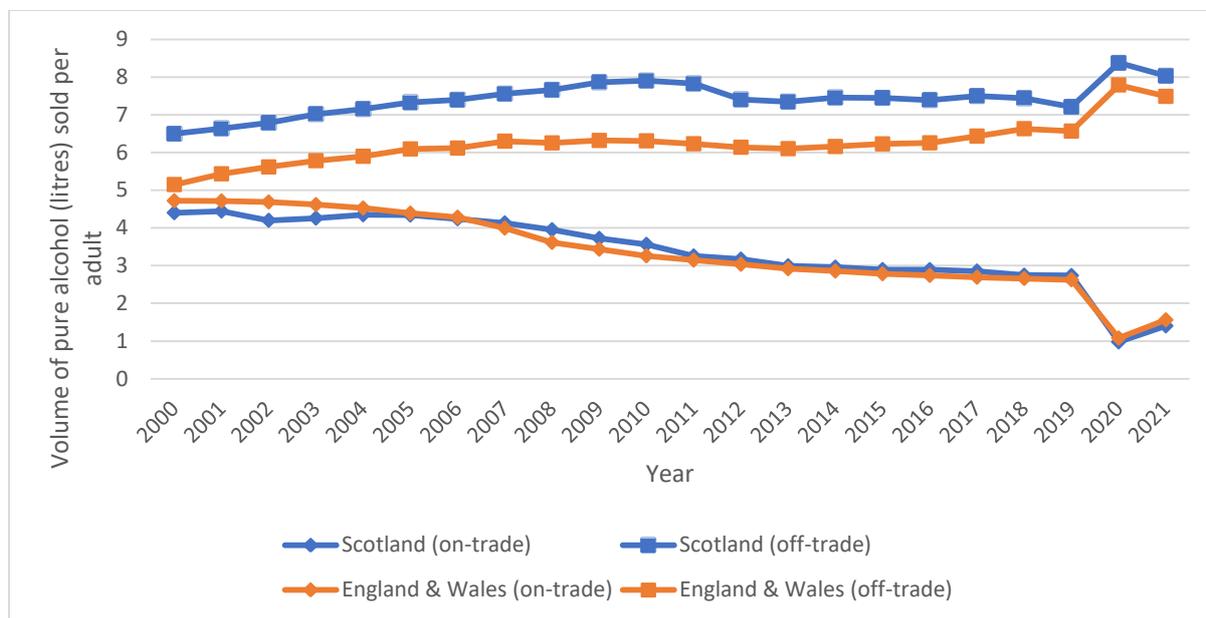


Figure 12: Volume of pure alcohol (litres) sold per adult (aged 16+ years) in Scotland and England & Wales, by market sector, 2000 - 2021. Source: Monitoring and Evaluating Scotland's Alcohol Strategy (MESAS) monitoring report 2022 ¹⁶

3.4 Impact of alcohol availability

Alcohol availability is recognised as an important environmental factor that can influence patterns of alcohol consumption.²³ There is a growing body of evidence from around the world that demonstrates ease of physical access to alcohol is associated with local population levels of alcohol consumption^{48 49 50 51} and subsequent alcohol-related harm.^{51 52 53 54 55 56 57 58} This section presents data on the physical availability of alcohol in Dundee in terms of the number and density of licensed premises. The rationale and potential public health benefits of restricting alcohol availability will also be considered.

3.4.1 Licences for the sale of alcohol

The number of licences in force in Dundee City under all categories in 2021/22 was lower than the Scottish average on a per-head of adult population basis (Table 2).²¹

Table 2: Premises licenses in force in 2021/22, per 10,000 population aged 18+ (crude rate). Source: ScotPHO Profiles²¹

Crude rate per 10,000 population aged 18+	Dundee City (21/22)	Tayside (21/22)	Scotland (21/22)
Off-trade licences	10.73	10.84	11.57
On-trade licences	25.33	28.89	25.6
Total licenses	36.06	39.72	37.17

As of the 31st March 2022, there were a total of **437** premises licensed to sell alcohol in Dundee City. **Error! Bookmark not defined.** This figure consists of **130 ‘off sale only’ licenses**, and **307 ‘on sale licenses’**, with the latter category including premises that are licensed for both on- and off-sale alcohol transactions. The total number of premises licences in force in Dundee City has decreased for both off-sale and on-sale premises since 2018/19 (85 fewer licences).

It should be noted that whether the population based rate of licensing in an area is above or below the mean for Scotland does not reflect that an area has more or fewer licences than are in the interests of good population health and wellbeing. As shown in Figure 12 in section 3.3, off sales volumes of alcohol per head of population were higher in 2020 and 2021 than at any other time since 2000, and are higher in Scotland than in other parts of the UK. This suggests that, as a country, there needs to be ongoing efforts to reduce availability of alcohol alongside addressing affordability and attractiveness.

3.4.2 Alcohol outlet density

A greater density of alcohol outlets leads not only to increased physical availability for consumers, but can also impact on affordability by creating a competitive local market with a wider variety of alcoholic products for sale.^{59 60 61} In addition, the density of alcohol outlets may have an influence on the shaping of local attitudes and social norms around the consumption of alcohol.⁵⁹

Research from Scotland has shown that neighbourhoods with higher numbers of alcohol outlets have significantly higher alcohol-related death rates and alcohol-related hospitalisation rates.⁶² Studies conducted in England⁵² and Wales⁵¹ have also found an apparent association between increased densities of various categories of alcohol outlet and higher hospital admission rates for conditions deemed wholly attributable to alcohol consumption. In Scotland, residents of neighbourhoods with the highest availability of alcohol outlets were found to be twice as likely to die from an alcohol-related cause compared to residents of neighbourhoods with the fewest outlets.⁶² Furthermore, higher densities of off-sales alcohol outlets are largely found in the most deprived

areas of Scotland, and this socioeconomic gradient in alcohol supply may be a contributing factor to the stark inequalities in alcohol-related health harms that are evident at the population level.^{59,63}

Alcohol sold through the off-sales sector accounts for approximately three-quarters of all alcohol sold in Scotland,¹⁹ and is therefore likely to have a greater overall impact in terms of alcohol-related harm compared to alcohol purchased from on-sale premises.⁵³ The reasons for this may include the cheaper (per unit) average purchase price of alcohol sold off-sale,¹⁹ the ability for large volumes of alcohol to be obtained from off-sale outlets within a short period of time, and the lack of supervised consumption that follows the purchase of alcoholic drinks from an off-sale outlet.⁶⁴

In Scotland as a whole, the number of alcohol outlets increased by almost 3% between 2012 and 2016, equating to a rise in the number of places to buy alcohol of 0.6% per head of adult population.⁶² Nationally, this increase was largely driven by a rise in the number of off-sale outlets.

Dundee has the fourth highest alcohol outlet availability in Scotland, in terms of the average number of premises licensed to sell alcohol that are located within an 800m radius (approximately a ten minute walk) of each neighbourhood population centre.⁶⁵ In Dundee in 2016, the average number of total alcohol outlets located within an 800m radius of a neighbourhood population centre was 21.1 (14.3 for on-sales outlets, and 6.8 for off-sale outlets).⁶⁵ Almost half (47%) of neighbourhoods in Dundee had an off-sale alcohol outlet availability that is higher than the Scottish average.⁶⁵

In 2018, Alcohol Focus Scotland and the Centre for Research on Environment, Society and Health (CRESH) published reports on alcohol outlet availability and alcohol-related harm for 30 local areas across Scotland, including Dundee City.⁶⁵ Key findings from this report (relating to data from the 2012-2016 period) include:

- Alcohol-related death rates were 4.9 times higher in Dundee neighbourhoods with the greatest number of alcohol outlets compared to neighbourhoods with the fewest
- Alcohol-related hospitalisation rates were 2.3 times higher in Dundee neighbourhoods with the greatest number of off-sales alcohol outlets compared to neighbourhoods with the fewest
- Crime rates in Dundee neighbourhoods with the greatest number of alcohol outlets were 5.2 times higher compared to neighbourhoods with the fewest
- The association between increased alcohol outlet availability and increased levels of health and social harm persisted even after considering other possible explanatory factors (e.g. differences in local population age, sex, rurality, or income deprivation).

4 Benefits of restricting alcohol availability

Increased population levels of alcohol consumption are associated with increased population levels of alcohol-related harm.⁶⁶ In setting out the 2018 Framework for reducing alcohol consumption and consequent alcohol-related harm, the Scottish Government places a strong focus on the importance of implementing actions relating to the 'three prevention A's' of **Affordability, Availability and**

Attractiveness.2 This approach is evidence-based and aligns with the World Health Organisation's new SAFER initiative (a package consisting of the following five high-impact strategies recommended for governments to prioritise when endeavouring to tackle harmful alcohol use):⁶⁷

- **Strengthen** restrictions on alcohol availability
- **Advance** and enforce drink driving countermeasures
- **Facilitate** access to screening, brief interventions, and treatment
- **Enforce** bans or comprehensive restrictions on alcohol advertising, sponsorship and promotion
- **Raise** prices on alcohol through excise taxes and pricing policies

Enacting and enforcing restrictions on the availability of retailed alcohol, restricting alcohol advertising, and increasing taxes on alcoholic beverages are amongst the most effective and cost-effective 'best-buy' policy options for reducing harmful alcohol use at the population level.^{7,68,69}

As outlined by the Scottish Government in the Licensing (Scotland) Act 2005, the implementation of an effective overprovision policy statement enables a strategic approach to be taken to improve the health and well-being of people in the local area through the targeted restriction of alcohol availability. Furthermore, the implementation of an effective overprovision policy has the potential to enhance community life and assist in reducing inequalities in health and social outcomes, as alcohol-related harm in Scotland (and in Dundee) disproportionately affects those living in the most disadvantaged communities. Reducing harmful alcohol consumption will lower the financial burden of alcohol-related problems, with the potential for some of the cost-savings to be redirected towards more sustainable economic development for Dundee City.

5 Conclusions

“Preventing and reducing harmful use of alcohol is often given a low priority among decision-makers despite compelling evidence of its serious public health effects.”

WHO Global strategy to reduce the harmful use of alcohol⁶

This report has provided updated information on the health and social harms relating to alcohol use in Dundee, described current trends in alcohol consumption, and outlined the relationship between alcohol availability and alcohol-related harm within a local, national, and international context.

Dundee experiences high levels of alcohol-related harm, with the damaging consequences of harmful alcohol use extending far beyond the individual level and significantly impacting on health inequalities. While the Covid 19 pandemic has not been referenced above, increasing consumption alcohol related deaths and hospital stays appear to be reversing previous trends during this time and while further data is needed to understand if these changes will continue beyond this time-frame, it is important to note that we may still be in a period of change as a result of the pandemic. Despite having lower than national number of licences Dundee still sees high levels of hospital admissions, death and harms related to alcohol and thus it is recommended that these indicators are taken into account by the Licensing Board when considering the approval of future alcohol licence applications.

Dundee City Licensing Board is to be commended for their statement declaring an overprovision of off-sale alcohol outlets in Dundee and the subsequent impact this has had in the reduction of new off sales licences granted. However, making significant in-roads into restricting the provision of alcohol in Dundee will take time, and the evidence presented in this report demonstrates that the city is still experiencing considerable alcohol related harm, and the Licensing Board has the ability to continue to contribute to improving population health and wellbeing by using its powers in relation Licensing whilst other policy measures on affordability and hopefully attractiveness are implemented alongside.

References

- ¹ Alcohol Focus Scotland. *Alcohol Information*. Available from: <https://www.alcohol-focus-scotland.org.uk/alcohol-information/> [accessed June 2023].
- ² Scottish Government. *Alcohol Framework 2018: Preventing Harm next steps on changing our relationship with alcohol*. 2018. Available from: <https://www.gov.scot/publications/alcohol-framework-2018-preventing-harm-next-steps-changing-relationship-alcohol/> [accessed June 2023].
- ³ Scottish Government. *Rights, respect and recovery: alcohol and drug treatment strategy*. 2018. Available from: <https://www.gov.scot/publications/rights-respect-recovery/pages/2/> [accessed June 2023].
- ⁴ Scottish Government & Convention of Scottish Local Authorities. *Public Health Priorities for Scotland*. 2018. Available from: <https://www.gov.scot/publications/scotlands-public-health-priorities/pages/> [accessed June 2023].
- ⁵ Scottish Government. *Changing Scotland's Relationship with Alcohol: A Framework for Action*. 2009. Available from: <https://www.webarchive.org.uk/wayback/archive/20170701194022/http://www.gov.scot/Publications/2009/03/04144703/0> [accessed June 2023].
- ⁶ World Health Organisation. *Global Strategy to reduce the harmful use of Alcohol*. 2010. Available from: https://apps.who.int/iris/bitstream/handle/10665/44395/9789241599931_%20eng.pdf;jsessionid=A1B491F8B7A91DFD51230E54B723FC29?sequence=1 [accessed June 2023].
- ⁷ World Health Organisation. *Tackling NCDs: "best buys" and other recommended interventions for the prevention and control of noncommunicable diseases*. 2017. Available from: <https://apps.who.int/iris/bitstream/handle/10665/259232/WHO-NMH-NVI-17.9-eng.pdf?sequence=1> [accessed June 2023].
- ⁸ Alcohol Focus Scotland. *Licensing Resource Pack*. 2017. Available from: <https://www.alcohol-focus-scotland.org.uk/media/291077/afs-licensing-resource-pack.pdf> [accessed June 2023].
- ⁹ *Licensing (Scotland) Act 2005*. Available from: http://www.legislation.gov.uk/asp/2005/16/pdfs/asp_20050016_en.pdf [accessed June 2023].
- ¹⁰ Dundee City Licensing Board. *Overprovision Statement 2018*. 2018. Available from: <https://www.dundee.gov.uk/licensing/liquor-licensing-applications-policies> [accessed 7th January 2020].
- ¹¹ Dundee Alcohol & Drugs Partnership. *The Public Health and Social Impact of Alcohol Availability in Dundee*. 2017. Available from: <https://dundee.gov.uk/sites/default/files/publications/317-2017.pdf> (appendix 2). [accessed June 2023].
- ¹² The Scottish Government. *Scottish health survey 2018. Tables for Chapter 3: Alcohol*. Available from: <https://www.gov.scot/publications/scottish-health-survey-2018-volume-1-main-report/> [accessed June 2023].
- ¹³ Scottish Government. *UK Chief Medical Officers' Low Risk Alcohol Guidelines Review*. Available from: <https://www2.gov.scot/Topics/Health/Services/Alcohol/safer-drinking> [accessed June 2023].
- ¹⁴ Scottish Public Health Observatory. *Alcohol: Health Harm*. www.scotpho.org.uk/risk-factors/alcohol/data/health-harm/ [accessed June 2023].
- ¹⁵ NHS. *Alcohol Misuse*. Available from: <https://www.nhs.uk/conditions/alcohol-misuse/risks/> [accessed 7th January 2020].

-
- ¹⁶ Beeston C, McAdams R, Craig N, Gordon R, Graham L, MacPherson M, McAuley A, McCartney G, Robinson M, Shipton D, Van Heelsum A. *Monitoring and Evaluating Scotland's Alcohol Strategy. Final Report*. Edinburgh: NHS Health Scotland; 2016
- ¹⁷ National Records of Scotland. *Vital Events – Deaths – Alcohol Deaths – Methodology*. Available from: <https://www.nrscotland.gov.uk/files//statistics/alcohol-deaths/2017/alcohol-deaths-17-methodology.pdf> [accessed June 2023].
- ¹⁸ Alcohol Focus Scotland. *Alcohol Deaths in Scotland. 2018*. Available from: <https://www.alcohol-focus-scotland.org.uk/media/310840/alcohol-deaths-briefing-dec-18.pdf> [accessed June 2023].
- ¹⁹ Giles L, Robinson M. *Monitoring and Evaluating Scotland's Alcohol Strategy: Monitoring Report 2019*. Edinburgh: NHS Health Scotland; 2019.
- ²⁰ National Records for Scotland. Alcohol Specific deaths 2021. [Alcohol-specific deaths, 2021, Report \(nrscotland.gov.uk\)](https://www.nrscotland.gov.uk) (accessed June 2023)
- ²¹ Scottish Public Health Observatory. ScotPHO Profiles v2.0 2018. Available from: https://scotland.shinyapps.io/ScotPHO_profiles_tool/ [accessed June 2023].
- ²² National Records for Scotland. *Mid-Year Population Estimates*. Available from: <https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates/population-estimates-time-series-data> [accessed May 2023].
- ²³ World Health Organization. *Global status report on alcohol and health 2018*. Available from: https://www.who.int/substance_abuse/publications/global_alcohol_report/en/ [accessed June 2023].
- ²⁴ Public Health Scotland. *Alcohol-related hospital statistics. Scotland financial year 2021 to 2022. 2023*. Available from: <https://publichealthscotland.scot/publications/alcohol-related-hospital-statistics/alcohol-related-hospital-statistics-scotland-financial-year-2021-to-2022/> [accessed May 2023].
- ²⁵ Scottish Government. *Scottish Social Attitudes Survey 2021/22: Public attitudes on alcohol and tobacco use and weight. 2023*. Available from: <https://www.gov.scot/publications/scottish-social-attitudes-survey-2021-22-public-attitudes-alcohol-tobacco-use-weight/pages/5/> [accessed May 2023].
- ²⁶ Scottish Government. *s2010/11 SCJS 2010-11 data tables volume 1 – main survey – demographic break*. www.gov.scot/publications/2010-11-scottish-crime-justice-survey-drug-use [accessed June 2023].
- ²⁷ Hope A, Curran J, Bell G, Platts A. *Unrecognised and under-reported: the impact of alcohol on people other than the drinker in Scotland*. Glasgow: Alcohol Focus Scotland; 2013. Available from: <https://www.alcohol-focus-scotland.org.uk/media/59866/Unrecognised-and-under-reported-full-report.pdf> [accessed June 2023].
- ²⁸ Public Health England. *The range and magnitude of alcohol's harm to others. A report delivered to the Five Nations Health Improvement Network. 2019*. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/806935/Alcohols_harms_to_others-1.pdf [accessed June 2023].
- ²⁹ Alcohol Focus Scotland and Children's Parliament. *Children's Parliament investigates: an alcohol free childhood. 2019*. Available from: <https://www.childrensparliament.org.uk/wp-content/uploads/Alcohol-free-Childhood-Online.pdf> [accessed June 2023].
- ³⁰ Bryan L, MacKintosh AM, Bauld L. *An Exploration of the Impact of Non-Dependent Parental Drinking on Children, Alcohol and Alcoholism*, agz086, <https://doi.org/10.1093/alcalc/agz086> [accessed June 2023].
- ³¹ Alcohol Focus Scotland. *Online Sales and Deliveries of Alcohol*. Available from: <https://www.alcohol-focus-scotland.org.uk/media/440154/online-sales-and-deliveries-of-alcohol.pdf> [Accessed May 2023]

-
- ³² Institute of Alcohol Studies. *Alcohol's impact on emergency services*. 2016. Available from: http://www.ias.org.uk/uploads/Alcohols_impact_on_emergency_services_full_report.pdf [accessed June 2023].
- ³³ Johnston MC, Ludbrook A, Jaffray MA. Inequalities in the Distribution of the Costs of Alcohol Misuse in Scotland: A Cost of Illness Study. *Alcohol and Alcoholism*. 2012; 47 (6): 725-731.
- ³⁴ The Scottish Government. The Societal Cost of Alcohol Misuse in Scotland for 2007. Available from: <https://www.webarchive.org.uk/wayback/archive/20170105175313/http://www.gov.scot/Publications/2009/12/29122804/0> [accessed June 2023].
- ³⁵ ScotPHO. *Alcohol: Social Harm*. www.scotpho.org.uk/risk-factors/alcohol/data/social-harm/ [accessed June 2023].
- ³⁶ Alcohol Focus Scotland. *The cost of alcohol in Dundee City 2010/11*. Available from: <http://www.alcohol-focus-scotland.org.uk/media/61453/The-Cost-of-Alcohol-Dundee-City.pdf> [accessed June 2023].
- ³⁷ Henderson A, Robinson M, McAdams R, McCartney G, Beeston C. Tracking Biases: An Update to the Validity and Reliability of Alcohol Retail Sales Data for Estimating Population Consumption in Scotland. *Alcohol*. 2016;51(3):363–366. doi:10.1093/alcalc/agg109
- ³⁸ World Health Organization. (2000) *International Guide for Monitoring Alcohol Consumption and Related Harm*. Geneva: World Health Organization. Available from: https://apps.who.int/iris/bitstream/handle/10665/66529/WHO_MSD_MSB_00.4.pdf [accessed June 2023].
- ³⁹ Public Health Scotland. *MESAS monitoring report 2022*. 2022. Available from: <https://www.publichealthscotland.scot/publications/mesas-monitoring-report-2022/> [accessed 2nd May 2023].
- ⁴⁰ Stares H. *The rise of no and low alcohol*. Nielsen Insights. <https://nielseniq.com/global/en/insights/analysis/2018/rise-of-no-and-low-alcohol/> [accessed June 2023].
- ⁴¹ Vasiljevic M, Couturier DL, Marteau T. What are the perceived target groups and occasions for wines and beers labelled with verbal and numerical descriptors of lower alcohol strength? An experimental study. *BMJ*. 2019; 9(6). Available from: <https://bmjopen.bmj.com/content/9/6/e024412#ref-5> [accessed June 2023].
- ⁴² Robinson M, Thorpe R, Beeston C, McCartney G. A review of the validity and reliability of alcohol retail sales data for monitoring population levels of alcohol consumption: a Scottish perspective. *Alcohol*. 2013;48(2):231–240. doi:10.1093/alcalc/ags098
- ⁴³ The Scottish Government. *Scottish health survey app* (interactive dashboard). 2019. Available from: <https://scotland.shinyapps.io/sg-scottish-health-survey/> [accessed 8th January 2020].
- ⁴⁴ World Health Organisation. *Adolescent alcohol-related behaviours: trends and inequalities in the WHO European Region, 2002–2014*. 2018. (online). www.who.int/europe/publications/i/item/9789289053495 [accessed June 2023].
- ⁴⁵ The Scottish Government. *Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS) 2018: Alcohol Summary Report*. Available from: <https://www.gov.scot/binaries/content/documents/govscot/publications/statistics/2019/11/scottish-schools-adolescent-lifestyle-substance-use-survey-salsus-alcohol-report-2018/documents/salsus-2018-alcohol-summary-25-october-2019/salsus-2018-alcohol-summary-25-october-2019/govscot%3Adocument/salsus-2018-alcohol-summary-25-october-2019.pdf> [accessed June 2023].
- ⁴⁶ The Scottish Government. *Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS) 2018: Summary Findings for Dundee City Council*. Available from:

<https://www.gov.scot/binaries/content/documents/govscot/publications/statistics/2019/11/scottish-schools-adolescent-lifestyle-substance-use-salsus-national-overview-2018/documents/summary-findings-dundee-city-council/summary-findings-dundee-city-council/govscot%3Adocument/summary-findings-dundee-city-council.pdf> [accessed June 2023].

⁴⁷ Scottish Government. *Health and Wellbeing Census Scotland 2021-2022: Supporting documents*. 2023. Available from: <https://www.gov.scot/publications/health-and-wellbeing-census-scotland-2021-22/documents/> [accessed May 2023].

⁴⁸ Bryden A, Roberts B, McKee M, Petticrew M. A systematic review of the influence on alcohol use of community level availability and marketing of alcohol. *Health & place*. 2012;18(2):349-57.

⁴⁹ Pulliainen M, Valtonen H. The Relationship between Alcohol Availability and Alcohol Consumption. *J Pol Sci Pub Aff* 2017; 5: 252. doi: 10.4172/2332-0761.1000252

⁵⁰ Kavanagh AM, Kelly MT, Thonton L, Krnjacki, L., Thornton, L., Jolley, D., Subramanian, S.V., Turrell, G. and Bentley, R.J. Access to alcohol outlets and harmful alcohol consumption: a multi-level study in Melbourne, Australia. *Addiction* 2011; 106(10): 1772-9. doi: 10.1111/j.1360-0443.2011.03510.x.

⁵¹ Fone D, Morgan J, Fry R, et al. 2016. *Change in alcohol outlet density and alcohol-related harm to population health (CHALICE): a comprehensive record-linked database study in Wales*. Southampton (UK): NIHR Journals Library; Available from: https://www.ncbi.nlm.nih.gov/books/NBK350758/pdf/Bookshelf_NBK350758.pdf [accessed June 2023].

⁵² Maheswaran R, Green MA, Strong M, Brindley P, Angus C, Holmes J. Alcohol outlet density and alcohol related hospital admissions in England: a national small-area level ecological study. *Addiction*. 2018;113(11):2051–2059. doi:10.1111/add.14285

⁵³ Richardson EA, Hill SE, Mitchell R, Pearce J, Shortt NK. Is local alcohol outlet density related to alcohol-related morbidity and mortality in Scottish cities?. *Health Place*. 2015;33:172–180. doi:10.1016/j.healthplace.2015.02.014

⁵⁴ Connor JL, Kypri K, Bell ML, et al Alcohol outlet density, levels of drinking and alcohol-related harm in New Zealand: a national study *J Epidemiol Community Health* 2011;65:841-846.

⁵⁵ Trangenstein PJ, Curriero FC, Webster D, et al. Outlet Type, Access to Alcohol, and Violent Crime. *Alcohol Clin Exp Res*. 2018;42(11):2234–2245. doi:10.1111/acer.13880

⁵⁶ Pereira G, Wood L, Foster S, Haggart F. Access to alcohol outlets, alcohol consumption and mental health. *PLoS One*. 2013 Jan 16;8(1):e53461.

⁵⁷ Livingston M. (2011), Alcohol outlet density and harm: Comparing the impacts on violence and chronic harms. *Drug and Alcohol Review*, 30: 515-523. doi:10.1111/j.1465-3362.2010.00251.x

⁵⁸ Morrison C, Smith K, Gruenewald PJ, Ponicki WR, Lee JP, Cameron P. Relating off-premises alcohol outlet density to intentional and unintentional injuries. *Addiction*. 2016;111(1):56–64. doi:10.1111/add.13098

⁵⁹ Shortt, N.K., Tisch, C., Pearce, J. et al. A cross-sectional analysis of the relationship between tobacco and alcohol outlet density and neighbourhood deprivation. *BMC Public Health* 15, 1014 (2015) doi:10.1186/s12889-015-2321-1

⁶⁰ Richardson EA, Shortt NK, Pearce J, Mitchell R. *Alcohol-related illness and deaths in Scottish neighbourhoods: is there a relationship with the number of alcohol outlets?* Edinburgh: Centre for Research on Environment, Society and Health and Alcohol Focus Scotland. 2014. Available from: <https://www.alcohol-focus-scotland.org.uk/media/65042/Alcohol-outlet-density-and-harm-report.pdf> [accessed 10th January 2020].

-
- ⁶¹ Treno AJ, Ponicki WR, Stockwell T, et al. Alcohol outlet densities and alcohol price: the British Columbia experiment in the partial privatization of alcohol sales off-premise. *Alcohol Clin Exp Res*. 2013;37(5):854–859. doi:10.1111/acer.12065
- ⁶² CRESH and Alcohol Focus Scotland. Alcohol outlet availability and harm in Scotland. 2018. Available from: <https://www.alcohol-focus-scotland.org.uk/media/310762/alcohol-outlet-availability-and-harm-in-scotland.pdf> (accessed June 2023).
- ⁶³ Macdonald L, Olsen JR, Shortt NK, Ellaway A. Do 'environmental bads' such as alcohol, fast food, tobacco, and gambling outlets cluster and co-locate in more deprived areas in Glasgow City, Scotland?. *Health Place*. 2018;51:224–231. doi:10.1016/j.healthplace.2018.04.008
- ⁶⁴ Forsyth AJ, Davidson N. Community off-sales provision and the presence of alcohol-related detritus in residential neighbourhoods. *Health & place*. 2010;16(2):349-58
- ⁶⁵ CRESH and Alcohol Focus Scotland. Alcohol Outlet Availability and Harm in Dundee City. 2018. <https://www.alcohol-focus-scotland.org.uk/media/310737/alcohol-outlet-availability-and-harm-in-dundee-city.pdf> [accessed June 2023].
- ⁶⁶ Beeston C, McAdams R, Craig N, Gordon R, Graham L, MacPherson M, McAuley A, McCartney G, Robinson M, Shipton D, Van Heelsum A. *Monitoring and Evaluating Scotland's Alcohol Strategy*. Final Report. Edinburgh: NHS Health Scotland; 2016.
- ⁶⁷ World Health Organisation. *The Safer Initiative, A World Free From Alcohol Related Harm*. 2018. www.who.int/initiatives/SAFER [accessed June 2023].
- ⁶⁸ Anderson P, Chisholm D, Fuhr DC. Effectiveness and cost-effectiveness of policies and programmes to reduce the harm caused by alcohol. *The Lancet*. 2009 Jul 3;373(9682):2234-46.
- ⁶⁹ Chisholm D, Moro D, Bertram M, et al. Are the “Best Buys” for Alcohol Control Still Valid? An Update on the Comparative Effectiveness of Alcohol Control Strategies at the Global Level. *Journal of Studies on Alcohol and Drugs*. 2018; 79(4): 513-522