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Key points

- In 2016, 10.5 litres (L) of pure alcohol were sold per adult in Scotland, equivalent to 20.2 units per adult per week. Per adult sales in Scotland were 17% higher than in England & Wales; this was largely due to more alcohol being sold at lower prices in the off-trade in Scotland.

- The increase in population consumption in Scotland between 2013 and 2015 did not continue, with per adult sales returning to a similar level as in 2013. This was due to a fall in the volume of alcohol sold through the off-trade.

- In 2016, the average price of alcohol sold through the off-trade in Scotland was 53 pence per unit with more than half of all off-trade alcohol (51%) being sold at below 50 pence per unit. These values have changed little since 2013. In contrast, the average price of on-trade alcohol continues to increase, reaching £1.79 per unit in 2016.

- In 2015, alcohol sold in the UK was 60% more affordable than it was in 1980 and was at its most affordable level since 2007.

- Self-reported consumption data show that 26% of adults in Scotland in 2015 exceeded the revised low-risk weekly drinking guideline for both men and women, a decline from 34% in 2003. Of those exceeding the guideline, mean weekly consumption was highest among those in the lowest income group.

- The proportion of children reporting drinking in the past week has declined considerably since the early 2000s. In 2015, 4% of 13 year olds and 17% of 15 year olds in Scotland reported drinking alcohol in the past week.

- In 2015, 1,150 people died in Scotland due to an alcohol-related cause, an average of 22 people per week. The downward trend in alcohol-related deaths (from its peak in 2003) has stalled and flattened since 2012. Alcohol-related death rates are currently 47% higher than in 1981 and 54% higher than in England & Wales.

- More than 23,400 people in Scotland were admitted to a general acute hospital with an alcohol-related diagnosis in 2015/16, with a total of 35,000 alcohol-related inpatient stays. Despite a downward trend since 2007/08, rates of alcohol-related hospital stays remain 4.2 times higher than in the early 1980s.

- Rates of alcohol-related death and alcohol-related hospital stays are more than twice as high in men as in women and are highest in the 55–64 year age group. Inequalities by area deprivation are stark: the most recent data show that in the most deprived areas of Scotland rates of alcohol-related death were six times higher than in the least deprived areas, while rates of alcohol-related hospital stays were nearly nine times higher.

- Rates of driving under the influence of alcohol have fallen over time, while rates of ‘drunkenness and other disorderly conduct’ offences have not shown a consistent trend. In 2015, 41% of prisoners reported being under the influence of alcohol at the time of their arrest, and more than half of victims of assault in 2014/15 felt that their assailant was under the influence of alcohol.
Introduction

In 2010 NHS Health Scotland was tasked by the Scottish Government to lead the monitoring and evaluation of Scotland’s alcohol strategy. This was delivered through the Monitoring and Evaluating Scotland’s Alcohol Strategy (MESAS) work programme. A key MESAS output was the annual publication of the latest analyses of alcohol retail sales and price data in Scotland and England & Wales. This was supplemented by the annual MESAS report, which also presented trends in other important alcohol-related indicators: self-reported alcohol consumption, alcohol affordability, alcohol-related deaths, alcohol-related hospitalisations, and alcohol-related social harms.

In March 2016, the final report from the first phase of the MESAS evaluation of wider alcohol policy in Scotland was published. A key recommendation of the report was that:

‘Monitoring of alcohol price, affordability, consumption and alcohol-related deaths and hospital admissions should continue. Bringing these together in an annual overview will facilitate early identification and exploration of emerging issues.’

This brief report responds to this recommendation and aims to provide the latest available information on key alcohol statistics in Scotland in a clear, concise and accessible way. It should be noted that this report does not present all data and charts that were included in previous MESAS reports. Instead, it presents the headline statistics for high-level indicators particularly relevant to the outcomes that Scotland’s alcohol strategy set out to achieve. Additional data and charts are available in the Appendices, from alternative sources highlighted throughout the report, or from accompanying spreadsheets at www.healthscotland.scot/MESAS

Information on the data sources and methods used to obtain the results presented in this report are provided in Appendix 1.
Alcohol retail sales

In 2016, a total of 46.9 million litres of pure alcohol were sold in Scotland.

- 10.5 litres (L) of pure alcohol were sold per adult in Scotland. This is equivalent to 20.2 units of alcohol per adult per week.
- Of the total volume of pure alcohol sold per adult in Scotland, beer accounted for 30%, spirits for 29%, wine for 30% and cider for 7%.
- 73% of all alcohol sold in Scotland was sold through the off-trade (supermarkets and other off-licences) compared with 27% sold through the on-trade (such as pubs, clubs and restaurants).
- 42% of all alcohol sold off-trade through larger multiple retailers (excluding discount retailers) was sold on promotion.

In 2016, 17% more alcohol was sold per adult in Scotland than in England & Wales.

- 1.5L more pure alcohol were sold per adult in Scotland (10.5L) compared with England & Wales (9.0L).
- 93% of the total difference in per adult sales between Scotland and England & Wales was due to higher off-trade sales in Scotland.
- 63% of the off-trade difference was due to higher per adult sales of spirits in Scotland.
- Vodka explained 36% of the difference in off-trade sales; per adult sales of vodka through the off-trade in Scotland were 2.1 times higher than in England & Wales.

In 2016, alcohol sales in Scotland were 4% higher than in 1994.

- After increasing over the 1990s and early 2000s, the volume of pure alcohol sold per adult in Scotland stabilised between 2005 and 2009, and then declined until 2013. This was followed by a two-year increase which has not continued in 2016, with per-adult sales returning to a similar level as in 2013.
- Analysis by market sector shows that the overall trend in alcohol sales is driven by off-trade sales, which are 47% higher than in 1994. The increase in off-trade sales in Scotland between 2014 and 2015 did not continue in 2016.
- Recent changes in the volume of pure alcohol sold per adult in the off-trade in Scotland have been driven by sales through the discount retailers (Aldi and Lidl); the volume of pure alcohol sold through the rest of the off-trade market has been stable. (Estimates of the alcohol market share of discount retailers depend on the data source used. See Appendix 1 for more details.)

Higher levels of population consumption are estimated in 2016 when sales are expressed as per adult drinker (12.5L) rather than per adult (10.5L).

- The difference between these indicators has widened over time due to an increasing prevalence of non-drinkers in Scotland.

A reference data table is available in Appendix 2. Additional alcohol sales data are available in the alcohol sales spreadsheet.
Volume of pure alcohol sold per adult in Scotland and England & Wales, 1994–2016

Source: Nielsen/CGA sales dataset (off-trade sales from 2011 onwards adjusted to account for the loss of discount retailers; see Appendix 1 for more details).

Volume of pure alcohol sold per adult in Scotland and England & Wales, by trade sector, 1994–2016

Source: Nielsen/CGA sales dataset (off-trade sales from 2011 onwards adjusted to account for the loss of discount retailers; see Appendix 1 for more details).
Alcohol price and affordability

In 2016, the average price per unit of alcohol in Scotland was 53 pence in the off-trade and £1.79 in the on-trade.

- On-trade prices have increased steadily over time, increasing by 88% between 2000 and 2016.
- Off-trade prices were flat between 2000 and 2007, increased between 2007 and 2013, and have since remained stable.

In 2016, 51% of alcohol sold through the off-trade in Scotland was sold at below 50 pence per unit (ppu).

- Although this has declined from 81% in 2008, it has changed little since 2013.
- 62% of spirits, 29% of wine, 64% of beer and 71% of cider was sold at below 50ppu.

62% of the higher off-trade sales in Scotland compared with England & Wales was due to alcohol sold at below 50ppu.

- This was driven by spirits, particularly vodka: 2.3 times more vodka was sold off-trade at below 50ppu in Scotland than in England & Wales.

Alcohol sold in the UK was 60% more affordable in 2015 than it was in 1980.

- The affordability of alcohol is a product of alcohol price and consumer spending power (disposable income).
- In 2015, disposable income increased by 6.3 percentage points, the biggest annual increase since before the economic downturn. This contributed to alcohol being at its most affordable level since 2007, when alcohol affordability peaked.

A reference data table is available in Appendix 2. Additional price and affordability data are available in the alcohol price and affordability spreadsheet.
Average price per unit of alcohol sold in Scotland and England & Wales (E&W), by trade sector, 2000–2016

Source: Nielsen/CGA sales dataset (off-trade sales from 2011 onwards adjusted to account for the loss of discount retailers; see Appendix 1 for more details).

Price distribution (%) of alcohol sold in the off-trade in Scotland, 2016

Numbers above the bars indicate cumulative percentages.

Source: Nielsen off-trade price band dataset (excluding discount retailers; see Appendix 1 for more details on methods). Individual values may not add up to 100%; this is due to rounding.
Proportion of off-trade alcohol sold at below 50 pence per unit in Scotland, 2008–2016

Source: Nielsen off-trade price band dataset (excluding discount retailers; see Appendix 1 for more details on methods).

Price distribution (L per adult) of pure alcohol sold in the off-trade in Scotland and England & Wales, 2016

Source: Nielsen off-trade price band dataset (excluding discount retailers; see Appendix 1 for more details on methods).

Self-reported alcohol consumption

Adults

Mean weekly alcohol consumption of drinkers in Scotland fell from 16.1 units in 2003 to 12.2 units in 2013. It has since remained at a similar level (12.9 units in 2015).

- The mean number of units consumed per week by men fell from 21.8 in 2003 to 15.7 in 2013, rising to 17.2 in 2015. In women, mean weekly alcohol consumption fell from 10.6 units in 2003 to 8.6 units in 2013; there has been little change between 2013 and 2015 (8.7 units).
- There has been a corresponding fall in the proportion of adults drinking more than 14 units a week (the revised low-risk weekly drinking guideline for both men and women), from 34% in 2003 to 26% in 2015.
- The proportion of adults in Scotland who reported being non-drinkers increased from 11% in 2003 to 16% in 2013 but has since remained stable (16% in 2015).
- In 2015, alcohol consumption estimates based on self-report data accounted for 52% of those based on retail sales data.

The proportion of adults drinking above three units (women) and four units (men) on their heaviest drinking day in the past week declined from 41% in 2003 to 36% in 2015.

- A similar trend was observed for ‘binge drinking’ (defined as drinking above eight units (men) or six units (women) on the heaviest drinking day in the past week); the proportion of all adults who reported binge drinking decreased from 24% in 2003 to 20% in 2015.

Self-reported alcohol consumption varies across different population subgroups.

- In 2015, 36% of men drank more than the revised low-risk weekly drinking guideline for both men and women.
- In 2015, adult drinkers aged 16–24 years and 55–64 years reported the highest mean weekly consumption (14.7 and 14.9 units respectively), while those aged 75 and over reported the lowest (8.3 units).
- As household income increases so does the proportion of adults who exceed the revised low-risk weekly drinking guideline. However, mean weekly consumption for those who exceed the guideline is highest in the lowest income group; mean weekly consumption is 49.3 units per week compared with 26.6 to 34.2 units per week in the other income groups.
- In 2014/15 (combined), the heaviest 10% of drinkers consumed 46% of all self-reported consumption in Scotland.
- In 2014/15 (combined), 18% of adults in Scotland reported problem drinking as measured by a score of eight or more on the Alcohol Use Disorders Identification Test (AUDIT). According to the AUDIT, 82% of adults in Scotland reported drinking at low risk levels or were non-drinkers, 15% reported drinking at hazardous levels, 2% at harmful levels and 1% had possible alcohol dependency.
Self-reported weekly alcohol consumption in England has continued to fall.

- In 2015 mean weekly alcohol consumption by drinkers in England was 11.9 units. Seventeen percent (17%) of adults reported that they didn’t drink at all while 23% exceeded the revised low-risk weekly drinking guideline for both men and women of 14 units.

- Comparisons between Scottish and English estimates should be treated with caution due to slight differences in the methods used by the Scottish Health Survey and the Health Survey for England.


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**Estimated average (mean) weekly alcohol consumption in Scotland, 2003–2015**

![Mean weekly consumption (units) vs Year](chart.png)

Source: Scottish Health Survey (SHeS)
Proportion of drinkers in Scotland exceeding the revised weekly drinking guideline and their estimated average (mean) weekly consumption, by household income quintile, 2015

Source: Scottish Health Survey (SHeS)
Young people

The Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS) shows that alcohol consumption among young people has been declining since the early 2000s.

- Overall, the proportion of 13 year olds reporting ever having a drink has fallen from 49% in 1990 to 28% in 2015, and for 15 year olds from 84% in 1990 to 66% in 2015.

- Large decreases in the proportion of children reporting drinking in the last week have also been seen over time. For 13 year olds this has fallen from 23% in 2002 to 4% in 2015 and for 15 year olds from 46% in 2002 to 17% in 2015.

Additional data on consumption of alcohol by young people are available at www.gov.scot/Topics/Research/by-topic/health-community-care/social-research/SALSUS

Alcohol consumption by young people aged 13 and 15 years in Scotland, 1990–2015

Source: Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS)
Alcohol-related deaths

In 2015, 1,150 people in Scotland died with alcohol recorded as the underlying cause; an average of 22 people every week.

- This equates to an age-standardised alcohol-related death rate of 21.9 deaths per 100,000 population (an alcohol-related death is a death where the cause is wholly attributable to alcohol; please see Appendix 1 for the detailed definition).
- In 2015, the alcohol-related death rate was more than twice as high in men as in women (30.0 deaths per 100,000 population in men compared with 13.8 deaths per 100,000 population in women).
- Rates of alcohol-related death vary with age; in 2015 the highest rate was in the 55–64 year age group (51.0 deaths per 100,000 population).
- In 2015, rates of alcohol-related death were six times higher in the 10% most deprived areas in Scotland than in the 10% least deprived areas.

In 2015, rates of alcohol-related death in Scotland were 47% higher than in 1981.

- From 1992 sharp increases in rates of alcohol-related death were seen in both men and women. Rates peaked in 2003 for men (at 47.7 deaths per 100,000 population) and 2006 for women (at 19.6 deaths per 100,000 population). Following this peak a relatively prolonged downward trend was seen.
- Since 2012, the downward trend in alcohol-related death rates in Scotland has stalled and flattened. However this is not true of all groups; notably rates have increased for women in each of the last 3 years. Fluctuations have also been seen in some of the older age groups (45 years and older).
- Over the last decade rates of alcohol-related death have decreased in the younger age groups (25–44 years); the changes are more apparent among men than women.

Rates of alcohol-related death in Scotland have consistently been higher in areas of greater deprivation, but the inequality is narrowing.

- In 2015, alcohol-related death rates were six times higher in the 10% most deprived areas in Scotland than in the 10% least deprived areas, compared with 12 times higher in 2002 (when rates in the most deprived areas peaked). The change is mostly down to a fall in rates in the 10% most deprived areas.
- The narrowing of inequalities in alcohol-related death rates in Scotland is supported by other absolute (Slope Index of Inequality (SII)) and relative (Relative Index of Inequality (RII)) measures of inequality. (See Appendix 1 for a definition of SII and RII).

In 2015, alcohol-related death rates were 54% higher in Scotland than in England & Wales.

- In Scotland, alcohol-related death rates were 67% higher in men and 50% higher in women compared with England & Wales.
- The difference between alcohol-related death rates in Scotland and England & Wales has reduced over time. The greatest differences were in 2002 when rates were 2.7 times higher in men in Scotland and 2.2 times higher in women.
Rates of alcohol-related death have followed different patterns in Scotland and England & Wales. Rates in Scotland rose sharply through the 1990s, particularly for men, to a peak in the early to mid-2000s and have since followed a relatively sharp downward trend. Rates in England & Wales rose steadily through the 1990s to a peak in 2008 (both men and women); rates have since flattened and fallen slightly (in men).


Alcohol-related deaths in Scotland, by sex, 1981–2015

Source: National Records of Scotland. EASR = European Age Standardised Rate.
Alcohol-related deaths in Scotland, by age group, 1981–2015

Source: National Records of Scotland. EASR = European Age Standardised Rate.

Alcohol-related deaths in Scotland and England & Wales, by sex, 1991–2015

Source: National Records of Scotland; Office for National Statistics. EASR = European Age Standardised Rate.

Source: National Records of Scotland. EASR = European Age Standardised Rate. RII = Relative Index of Inequality. SII = Slope Index of Inequality. SIMD = Scottish Index of Multiple Deprivation. SIMD1 = 10% most deprived areas of Scotland, SIMD10 = 10% least deprived areas of Scotland). See Appendix 1 for a definition of SII and RII.
Alcohol-related hospital admissions

In 2015/16 there were nearly 35,000 general acute inpatient stays with an alcohol-related diagnosis. This is equivalent to an age-standardised rate of 665 inpatient stays per 100,000 population.

- In total over 23,400 people were admitted to a general acute hospital with an alcohol-related diagnosis, meaning that some people had more than one admission throughout the year.
- In 2015/16, rates of alcohol-related hospital stays in Scotland were over 2.5 times higher among men (961 per 100,000 population) than women (368 per 100,000 population).
- Rates also differ by age: in 2015/16, the 55–64 year age group had the highest rate of alcohol-related hospital admissions at 1,120 per 100,000 population.
- In 2015/16, rates of alcohol-related stays were nearly nine times higher in the 10% most deprived areas in Scotland than in the 10% least deprived areas.

Rates of alcohol-related hospital stays in general acute hospitals in Scotland were 4.2 times higher in 2015/16 than they were in 1981/82.

- Rates of alcohol-related hospital stays rose slowly and steadily during the 1980s and early 1990s. This was followed by a steep increase through the 1990s and 2000s, reaching a peak of 856 per 100,000 population in 2007/08. Since 2007/08 the trend in alcohol-related hospital stays in Scotland has been downward.
- The rate of patients being admitted to hospital with an alcohol-related diagnosis follows a broadly similar pattern to the rate of alcohol-related stays. However, since the mid 1990s the rate of individual patients being admitted has been notably lower than the rate of stays.
- The rate of new patients (defined as patients who have not been admitted to hospital with an alcohol diagnosis within the last 10 years) remained fairly stable from the late 1990s to 2007/08 while the rate of stays and total patients increased. This indicates that the same people were being admitted multiple times in a ten-year period. Since the peak in 2007/08, the rate of new patients has fallen in line with rates of hospital stays and total patients.

Relative inequalities in alcohol-related hospital admissions in Scotland have been persistent over time.

- In 1997/98, the rate of alcohol-related hospital stays was nearly nine times higher in the 10% most deprived areas of Scotland compared with the 10% least deprived areas; the same difference as in 2015/16.
- Nonetheless, since 2007/08, the largest absolute reductions in alcohol-related stays, patients and new patient admissions have been seen in the more deprived areas, though these reductions have levelled off in recent years.
- These observed differences in alcohol-related hospital stay rates are reflected in measures of absolute (SII) and relative (RII) inequality (see Appendix 1 for a definition of SII and RII).
Rates of alcohol-related admission to psychiatric hospitals are much lower than to general acute hospitals.

- Around 90% of the alcohol-related stays in Scotland are to general acute hospitals and around 10% to psychiatric hospitals. The rate of alcohol-related psychiatric hospital stays in 2014/15 was 53 per 100,000 population.
- In 2014/15 men were more than twice as likely as women to have an alcohol-related psychiatric admission. The rate of alcohol-related psychiatric hospital stays was 75 per 100,000 population for men compared with 32 per 100,000 population for women.
- The inequality by area deprivation is more marked in alcohol-related psychiatric admissions than in general admissions: in 2014/15, rates were around 14 times higher in the most deprived decile compared with the least deprived decile.
- Rates of alcohol-related admissions to psychiatric hospitals have fallen steadily since 1997/98. In 2014/15, the stay rate (53 stays per 100,000 population) was nearly half that in 1997/98 (103 stays per 100,000 population).

A reference table is available in Appendix 4. All the data presented in this chapter are available at www.isdscotland.org/Health-Topics/Drugs-and-Alcohol-Misuse/Publications

**Alcohol-related hospital admission rates in general acute hospitals in Scotland, 1981/82 – 2015/16**

Source: Information Services Division, NHS National Services Scotland. EASR = European Age Standardised Rate.
Alcohol-related hospital stay rates in general acute hospitals in Scotland, by sex, 1997/98 – 2015/16

Source: Information Services Division, NHS National Services Scotland. EASR = European Age Standardised Rate.

Alcohol-related hospital stay rates in general acute hospitals in Scotland, by age group, 1997/98 – 2015/16

Source: Information Services Division, NHS National Services Scotland. EASR = European Age Standardised Rate.

Source: Information Services Division, NHS National Services Scotland. EASR = European Age Standardised Rate. RII = Relative Index of Inequality. SII = Stroke Index of Inequality. SIMD = Scottish Index of Multiple Deprivation. SIMD1 = 10% most deprived areas of Scotland, SIMD10 = 10% least deprived areas of Scotland. See Appendix 1 for a definition of SII and RII.
Alcohol-related social harms

Alcohol-related crime

Two Scottish crime indicators are 100% attributable to alcohol.

- Rates of driving under the influence have fallen consistently over time, from 21.8 per 10,000 population in 2004/05 to 10.2 per 10,000 population in 2015/16.

- Rates of ‘drunkenness and other disorderly conduct’ offences have not shown a consistent trend. In general an upward trend was observed between 2008/09 and 2013/14, rising from 60.2 to 80.8 per 10,000 population. Between 2013/14 and 2015/16 the rate nearly halved to 45.9 per 10,000 population, the lowest at any point in the observed period.

Alcohol use is a likely contributory factor in many crimes.

- Of the cases of homicide where the drug or alcohol status of the offender is known, alcohol is a factor in approximately two thirds of all cases. While the number of homicides in Scotland has fallen considerably since 2000/01, the proportion where alcohol is a factor has remained fairly stable over time; 2015/16 is an exception to this as 91% of offenders reported being under the influence of alcohol at the time of the offence. (It should be noted that alcohol or drug status was not known in approximately two thirds of cases; these data should be interpreted with caution.)

- In 2015, 41% of prisoners reported being under the influence of alcohol at the time of their arrest; this has fluctuated between 40% and 50% since 2005.

- Of those respondents to the Scottish Crime and Justice Survey who report being the victim of assault, more than half (57% in 2014/15) felt that the offender was under the influence of alcohol at the time of the assault. This has changed little over time.

Additional data on crime and justice in Scotland are available at www.gov.scot/Topics/Statistics/Browse/Crime-Justice

Adverse effects of alcohol for young people

The Scottish Adolescent Lifestyle and Substance Use Survey (SALSUS) collects information on the adverse effects of alcohol experienced by young people in Scotland.

- Between 2004 and 2015, the proportion of both 13 and 15 years olds reporting experiencing adverse consequences from drinking alcohol (had an argument, had a fight, was in trouble with police or stayed off school) has generally fallen.

In 2015/16, alcohol-related hospital admissions for children aged under 15 years old were at their lowest level since peaking in 1995/96.

- Rates of alcohol-related hospitalisations for children aged under 15 years old in Scotland have decreased by approximately 74% between 1997/98 and 2015/16.

Additional data on consumption of alcohol by young people are available at www.gov.scot/Topics/Research/by-topic/health-community-care/social-research/SALSUS
Additional data on alcohol-related hospitalisation are available at www.isdscotland.org/Health-Topics/Drugs-and-Alcohol-Misuse/Publications
Appendix 1

Data sources and methods

Alcohol retail sales

Data on alcohol retail sales in Scotland and England & Wales were obtained from market research specialists, Nielsen and CGA Strategy (CGA) (hereafter ‘Nielsen/CGA’), for 1994, 1995 and 2000–2016. The volume of alcohol sold (litres) was provided for the on-trade by CGA and for the off-trade by Nielsen across eight alcoholic drink categories: spirits, wine, beer, cider, ready to drink beverages (RTDs), perry, fortified wine and ‘other’. The volume of each drink category sold was converted into pure alcohol volume using a category-specific percentage alcohol by volume (ABV). The ABV used was based on the typical strength of drinks sold in that category (except for wine where the same standard ABV was applied across all years due to the complexity of the wine market) and was provided by the data suppliers. Nielsen also provided data on the volume of alcohol sold on promotion by large, multiple retailers for each drink category.

Per adult alcohol sales were calculated by dividing pure alcohol volumes (litres of pure alcohol) by the total population aged ≥16 years. Mid-year population estimates for Scotland were obtained from National Records of Scotland and for England & Wales from the Office for National Statistics. To calculate alcohol sales per adult drinker, the denominator was adjusted to account for the proportion of the population reporting non-drinking in the Scottish Health Survey (the prevalence of non-drinking in 2016 was assumed to be the same as in 2015 as 2016 SHeS data are not yet available). These data are presented in an accompanying dataset at www.healthscotland.scot/MESAS. A detailed description of the methods used by Nielsen/CGA to produce alcohol retail sales estimates is provided in an earlier MESAS report available at www.healthscotland.com/documents/5761.aspx

Weekly data on the proportion of alcohol sold on promotion were also provided by Nielsen. Data were available for large, multiple grocers (excluding discount retailers) only.

Retail sales estimates may differ slightly to those previously published as they continue to be improved retrospectively after being supplied. Consequently, the most recent data provided by Nielsen/CGA is considered the best available because it provides the most robust review of the alcohol market.

Adjustment for discount retailers

From September 2011, Nielsen was no longer able to estimate off-trade sales by discount retailers Aldi and Lidl. As such, all off-trade sales data provided since September 2011 (including estimates for the full 2011 calendar year) have been defined as ‘Off-trade excluding discount retailers’. To enable continuation of the time series presented in earlier reports, adjustment factors have been applied to off-trade sales estimates from 2011 onwards.
Method of adjustment

To date, adjustment factors have been based on the market share of Aldi and Lidl drawn from Nielsen’s ‘HomeScan’ consumer panel data. Nielsen’s ‘HomeScan’ data are collected by a panel of households (participants aged ≥18 years) who record their grocery purchases, including alcohol, using a barcode reader. Data are only collected on alcohol brought into the home and include details on the products purchased (including quantity and price) and the store of purchase. Nielsen analysts used these data to estimate the market share of discounters in Scotland and England & Wales, by drink category. Estimates based on both sales volumes and values are provided on an annual basis.

Figure A1 shows trends in the volume of pure alcohol sold per adult in Scotland and England & Wales with and without adjustment for discount retailers using HomeScan data.

Figure A1: Volume of pure alcohol sold per adult (total and off-trade) in Scotland and England & Wales (EW) with and without adjustment for discount retailers, 2011-2016

Source: Nielsen/CGA sales dataset. Note: Adjustment based on Nielsen HomeScan data.
Investigating trends in market share estimates

The overall grocery market share of Aldi and Lidl has been increasing for several years. This was reflected in the alcohol data from HomeScan, with the alcohol market share of these retailers increasing in Scotland and England & Wales between 2011 and 2015. However, in 2016 HomeScan data suggest that the market share of discount retailers declined in Scotland, contradictory to the continuation of growth in the retailers overall. A similar decline in the alcohol market share was not seen in England & Wales although the rate of growth slowed. The data providers investigated this apparent inconsistency and after a process of additional validation and robustness checking were confident that there were no anomalies with the data provided. Instead, they proposed that aggressive promotional activity in 2015 by other large multiple retailers, particularly those with a strong Northern UK bias, was the most likely explanation of the smaller discounter alcohol market share in Scotland.

Comparing HomeScan data with Kantar data

As stated in a previous MESAS report ‘consumer panel data are subject to biases inherent in other self-report surveys including underreporting and sampling bias. Thus, alternative options for monitoring alcohol sales by discounters will continue to be explored as part of the MESAS workstream.’ In an attempt to validate the HomeScan data, summary level alcohol volume market share estimates for 2011–2016 (for all alcohol only, not by drink type) were obtained from Kantar Worldpanel, another source of consumer panel data. Some differences between the data sources can be observed:

- HomeScan produces higher estimates of the alcohol market share held by discounters across the UK, but particularly in Scotland.
- HomeScan data suggest that discounters have a higher alcohol market share in Scotland than the rest of the UK; Kantar data suggest that discounters accounted for a similar proportion of the market across the UK until 2014, but accounted for a higher proportion in England & Wales in 2015 and 2016.
- HomeScan data suggest that the market share increased steadily in both Scotland and England & Wales between 2011 and 2015. In 2016, the data suggest that there was a notable decline in discounter market share in Scotland and a slowing of the rate of increase in England & Wales; Kantar data suggest that the market share of discounters in England & Wales increased steadily between 2011 and 2016, but in Scotland decreased between 2014 and 2016.

A comparison of the off-trade per adult sales estimates, adjusted using the different data sources, is presented in Figure A2.

Work will be undertaken in 2017 to further explore the difference in market share estimates produced by these different data sources and the implications this has on how per adult sales data are presented in future MESAS reports.
Figure A2: Volume of pure alcohol sold per adult (total and off-trade) in Scotland and England & Wales (EW) with adjustment for discount retailers based on either HomeScan or Kantar data, 2011–2016

Source: Nielsen/CGA sales dataset; Nielsen Homescan; Kantar Worldpanel
Alcohol price and affordability

Average (mean) sales price was calculated using Nielsen/CGA data by dividing retail sales value (£) by pure alcohol volumes for the period 2000 to 2016. Prices are expressed as price per unit of alcohol (ppu).

Annual estimates of the volume of alcohol sold off-trade in different price bands were provided by Nielsen for 2009–2016. The natural volume of each item sold was converted into units of alcohol using its percentage ABV, enabling the ppu of alcohol to be calculated. The item was then coded into one of seventeen price bands. Estimates were provided for all alcohol and by drink type. The ‘price band’ dataset excludes discount retailers. Affordability of alcohol gives a measure of the relative affordability of alcohol, by comparing the relative changes in the price of alcohol, with changes in households’ disposable income per capita over the same period (with both allowing for inflation).


To calculate the alcohol affordability index, the alcohol price index (API) is divided by the retail price index (RPI) to create a relative alcohol price index (RAPI). The RAPI is an index of change in alcohol prices relative to trends in prices in general:

\[
RAPI = \frac{\text{Alcohol price index}}{\text{Retail price index}} \times 100
\]

The alcohol affordability index (AAI) is then calculated by dividing an index of households’ real disposable income (RHDI) by the relative alcohol price index:

\[
AAI = \frac{\text{RHDI}}{\text{RAPI}} \times 100
\]

If the affordability index is above 100, then alcohol is relatively more affordable than in the base year, 1980.

The main limitation of the index is that it covers the whole of the UK and does not account for differences between countries in the variables from which the index is calculated i.e. retail prices, alcohol prices and disposable incomes.

Self-report alcohol consumption

Adults

Adult self-report alcohol consumption data are obtained from the Scottish Health Survey; data for the relevant survey years from 2003 to 2015 are presented. Data on mean weekly consumption, consumption on the heaviest drinking day in the past week, adherence to recommended drinking guidelines and score on the Alcohol Use Disorders Identification Test (AUDIT) questionnaire are presented. It should be noted that weekly drinking guidelines for men were reduced from 21 units per week to 14 units per week, in line with the recommendation for women; all affected analyses have been adjusted for this change. Analysis is presented by age, sex and socioeconomic deprivation. Where possible results are compared with England using the Health Survey for England (HSE).

More information on the Scottish Health Survey can be found at: www.gov.scot/Topics/Statistics/Browse/Health/scottish-health-survey
Young people

Data collected through the Scottish Adolescent Lifestyle and Substance Use Survey (SALSUS) were used to monitor self-reported alcohol consumption in young people. SALSUS includes second year (S2) and fourth year (S4) pupils. These are reported as 13 year olds and 15 year olds, although may include a small proportion of 14 and 16 year olds. Data analysed include children reporting ever having consumed alcohol, alcohol consumption in the last week and adverse consequences of alcohol consumption.

More information on the SALSUS can be found at:
www.gov.scot/Topics/Research/by-topic/health-community-care/social-research/SALSUS
Alcohol-related deaths

The National Records of Scotland (NRS) routinely reports national statistics on all deaths for Scotland. ICD codes are used to categorise cause(s) of death. The National Statistics definition of an alcohol-related death includes causes of death regarded as those being most directly attributable to alcohol consumption. The definition is primarily based on chronic conditions associated with long-term abuse of alcohol and, to a lesser extent, acute conditions. Apart from poisoning with alcohol, the definition excludes other external causes of death, such as road traffic and other accidents. The definition also does not include diseases that may be partially attributable to alcohol, such as cancers of the mouth, oesophagus and liver. However, all deaths from chronic liver disease and cirrhosis (excluding biliary cirrhosis) are included, even when alcohol is not specifically mentioned on the death certificate.

The full list of ICD codes included in the definition can be found in tables A1 and A2. This definition was agreed nationally by the Office for National Statistics in 2006 allowing comparisons to be made between the 4 constituent UK countries.

The term ‘alcohol-related death’ is used throughout this report; however the terms ‘alcohol-specific death’ and ‘wholly alcohol attributable deaths’ are also used elsewhere.

Table A1: ICD codes used to define an alcohol-related death, 2000–2016

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<tr>
<th>ICD-10 Code</th>
<th>Description</th>
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<tr>
<td>F10</td>
<td>Mental and behavioural disorders due to use of alcohol</td>
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<tr>
<td>G31.2</td>
<td>Degeneration of nervous system due to alcohol</td>
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<td>G62.1</td>
<td>Alcoholic polyneuropathy</td>
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<td>I42.6</td>
<td>Alcoholic cardiomyopathy</td>
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<td>K29.2</td>
<td>Alcoholic gastritis</td>
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<td>K70</td>
<td>Alcoholic liver disease</td>
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<tr>
<td>K73</td>
<td>Chronic hepatitis, not elsewhere classified</td>
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<tr>
<td>K74.0</td>
<td>Hepatic fibrosis</td>
</tr>
<tr>
<td>K74.1</td>
<td>Hepatic sclerosis</td>
</tr>
<tr>
<td>K74.2</td>
<td>Hepatic fibrosis with hepatic sclerosis</td>
</tr>
<tr>
<td>K74.6</td>
<td>Other and unspecified cirrhosis of liver</td>
</tr>
<tr>
<td>K86.0</td>
<td>Alcohol induced chronic pancreatitis</td>
</tr>
<tr>
<td>X45</td>
<td>Accidental poisoning by and exposure to alcohol</td>
</tr>
<tr>
<td>X65</td>
<td>Intentional self-poisoning by and exposure to alcohol</td>
</tr>
<tr>
<td>Y15</td>
<td>Poisoning by and exposure to alcohol, undetermined intent</td>
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</table>
Table A2: ICD codes used to define an alcohol-related death, 1979–1999

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<th>ICD-9 Code</th>
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<td>303</td>
<td>Alcohol dependence syndrome</td>
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<td>305</td>
<td>Non-dependent abuse of alcohol</td>
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<td>425.5</td>
<td>Alcoholic cardiomyopathy</td>
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<td>571</td>
<td>Alcoholic fatty liver</td>
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<td>571.1</td>
<td>Acute alcoholic hepatitis</td>
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<td>571.2</td>
<td>Alcoholic cirrhosis of liver</td>
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<td>571.3</td>
<td>Alcoholic liver damage, unspecified</td>
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<td>571.4</td>
<td>Chronic hepatitis</td>
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<td>571.5</td>
<td>Cirrhosis of liver without mention of alcohol</td>
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<td>571.8</td>
<td>Other chronic non-alcoholic liver disease</td>
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<td>571.9</td>
<td>Unspecified chronic liver disease without mention of alcohol</td>
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<td>E860</td>
<td>Accidental poisoning by alcohol</td>
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<tr>
<td>Y15</td>
<td>Poisoning by and exposure to alcohol, undetermined intent</td>
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</table>

In this publication only the underlying (primary) cause of death has been used for reporting. The number of deaths are analysed and presented as a directly European age-sex standardised rate (EASR) per 100,000 population; the EASR is calculated using the 2013 European Standard Population. Mid-year population estimates are published by NRS and have been used in the calculation of rates.

Data are presented by age, sex and socioeconomic deprivation. Where available, comparable data are presented for alcohol-related deaths for England and Wales, published by the ONS.


Alcohol-related hospital admissions

Data relating to alcohol-related admissions are taken from ‘Alcohol-related hospital statistics, Scotland 2015/16’ published by Information Services Division (ISD) (Oct 2016). Scottish hospital statistics are derived from data collected on day-case and inpatient episodes in non-obstetric and non-psychiatric hospitals in Scotland submitted to ISD as part of the Scottish Morbidity Record 01 (SMR01) data set. Additionally data is presented for hospitalisations to psychiatric hospitals from the Scottish Morbidity Record 04 (SMR04). Only records from Scottish residents are included in these analyses, determined by their postcode within the Scottish NHS Board boundaries. The number of hospitalisations are presented as European age-sex standardised rate (EASR) per 100,000 population; the EASR is calculated using the 2013 European Standard Population. Data are presented by age, sex and socioeconomic deprivation.

ISD report three types of hospital activity measures: ‘continuous inpatient stays (referred to as ‘stays’), patient counts and new patient counts. Stays are distinct alcohol-related hospital admissions which occur within a year. Counts of patients are the number of people who have had at least one alcohol-related hospital admission during a particular year. New patient counts describe how many people each year have an alcohol-related admission that have not had an alcohol-related admission in the past 10 years.’

More information on alcohol-related hospital statistics can be found at: www.isdscotland.org/Health-Topics/Drugs-and-Alcohol-Misuse/Publications

Alcohol-related social harms

Data on crimes wholly attributable to alcohol were extracted from ‘Recorded Crime in Scotland’ statistical series, published by the Scottish Government. More information on the Recorded Crime in Scotland statistics can be found at: www.gov.scot/Publications/2016/09/2960

Data on homicide, attempted murder and serious assault were extracted from ‘Homicides in Scotland’ statistical series, also published by the Scottish Government. More information on the Homicides in Scotland statistics can be found at: www.gov.scot/Topics/Statistics/Browse/Crime-Justice/PubHomicide

Descriptive analysis of data from the Scottish Crime and Justice Survey was undertaken to obtain data on prevalence of violent crime and the likelihood of alcohol involvement. More information on the Scottish Crime and Justice Survey can be found at: www.gov.scot/Topics/Statistics/Browse/Crime-Justice/crime-and-justice-survey

Data on the prison population is from the Scottish Prisoner Survey. More information on the latest Scottish Prisoner Survey can be found at: www.sps.gov.uk/Corporate/Publications/Publication-4565.aspx

Adverse effects of alcohol consumption in young people is taken from the Scottish Adolescent Lifestyle and Substance Use Survey (SALSUS) as described above. Hospital admissions for young people are taken from ‘Alcohol-related hospital statistics, Scotland 2015/16’ published by ISD, as described above.
Measures of health inequality

The Slope Index of Inequality (SII) is a measure of **absolute** inequality of a health outcome (e.g. alcohol-related death rates) in a population. It gives a measure of the difference in rates between the most and least deprived in the population whilst also taking into account the distribution of the whole population across the deprivation deciles.

The Relative Index of Inequality (RII) is a measure of **relative** inequality of a health outcome. Like SII, it is based on the rates across all levels of area deprivation, however RII compares ratios rather than absolute differences – a measure of the relative difference across the whole population.

SII and RII are considered better than measuring the absolute difference or ratio between the most and least deprived groups because they take into account the whole population not just the extremes.
## Appendix 2

### Litres and units of pure alcohol sold per adult, and average price per unit, Scotland and England & Wales, 2000–2016

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<td>0.63</td>
<td>0.61</td>
<td>0.62</td>
<td>0.62</td>
<td>0.64</td>
<td>0.66</td>
<td>0.67</td>
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<td>0.73</td>
<td>0.77</td>
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For the full dataset please see [www.healthscotland.scot/MESAS](http://www.healthscotland.scot/MESAS)
Appendix 3

Alcohol-related deaths in Scotland: European age-sex standardised rates (EASR) per 100,000 population, by sex, age and deprivation, 1996–2015

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For the full dataset please see [www.healthscotland.scot/MESAS](http://www.healthscotland.scot/MESAS)
## Appendix 4

### Alcohol-related hospital stays in Scotland: European age-sex standardised rates (EASR) per 100,000 population, by sex, age and deprivation, 1997/98–2015/16

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For the full dataset please see [www.isdscotland.org/Health-Topics/Drugs-and-Alcohol-Misuse/Publications](http://www.isdscotland.org/Health-Topics/Drugs-and-Alcohol-Misuse/Publications)