

Monitoring and Evaluating Scotland's Alcohol Strategy (MESAS)

Monitoring
Report 2018

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Contents

Key points	4
Introduction	5
Alcohol retail sales	6
Alcohol price and affordability	8
Self-reported alcohol consumption	12
Alcohol health harms	16
Alcohol social harms	25
Appendix 1	26
Data sources and methods	
Appendix 2	36
Supplementary analysis	

Key points

- In 2017, 10.2 litres (L) of pure alcohol were sold per adult in Scotland, equivalent to 19.6 units per adult per week. Per adult sales in Scotland were 14 % higher than in England & Wales; this was largely due to more alcohol being sold at lower prices in the off-trade in Scotland.
- The volume of pure alcohol sold per adult in Scotland in 2017 was at a level similar to that seen in 1994. In that time the volume of alcohol sold in the off-trade has increased by 42 % while the volume sold in the on-trade has decreased by the same proportion.
- In 2017, the average price of alcohol sold through the off-trade in Scotland was 54 pence per unit; just under half of all off-trade alcohol (47 %) was sold at below 50 pence per unit. In 2016, the corresponding figures were 52 pence and 51 % respectively; these represent the biggest year-on-year changes in average off-trade prices since 2013. The average price of on-trade alcohol in 2017 was £1.80, an increase from £1.78 in 2016, which represents the smallest annual increase in average price in this sector since 2003.
- In 2017, alcohol sold in the UK was 64 % more affordable than it was in 1980. In recent years this has been driven by increases in disposable income and a slight fall in the real price of alcohol.
- Self-reported consumption data show that 26 % of adults in Scotland in 2016 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 groups.
- 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 2016, 1,139 people died in Scotland due to a cause wholly attributable to alcohol (alcohol-specific), an average of 22 people per week. After reaching a peak in 2003, alcohol-specific deaths declined to 2012. Since 2012 the rate of death from alcohol-specific causes has risen for both men and women.
- Alcohol-specific death rates are consistently higher in Scotland than in England & Wales. In 2016, rates were more than twice as high in men and 75 % higher in women.
- More than 24,000 people in Scotland were admitted to a general acute hospital with an alcohol-related diagnosis in 2016/17, with a total of over 36,000 alcohol-related inpatient stays. Despite a downward trend since 2007/08, rates of alcohol-related hospital stays remain 4.4 times higher than in the early 1980s.
- The most recent data show that rates of alcohol-specific death and alcohol-related hospital stays were more than twice as high in men as in women and were highest in the 55–64 year age group. Inequalities by area deprivation were stark: both rates of alcohol-specific death and alcohol-related hospital stay were more than eight times higher in the most deprived areas of Scotland than in the least deprived areas.
- 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.

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 indicators of alcohol consumption and related health and 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 is the second MESAS Monitoring Report that responds to this recommendation. It 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 accompanying spreadsheets available at www.healthscotland.scot/publications/mesas-monitoring-report-2018 or from alternative sources highlighted throughout the report.

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

Alcohol retail sales

The methods used to calculate litres of pure alcohol sold per adult have changed since the last publication; please see [Appendix 1](#) for more details on this change.

In 2017, a total of 46 million litres of pure alcohol were sold in Scotland.

- 10.2 litres (L) of pure alcohol were sold per adult in Scotland. This is equivalent to 19.6 units of alcohol per adult per week.
- Of the total volume of pure alcohol sold per adult in Scotland in 2017, beer accounted for 31 %, spirits for 29 %, wine for 29 % 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).
- 39 % of all alcohol (natural volume) sold off-trade through larger multiple retailers (excluding discount retailers) was sold on promotion in Scotland; this has fallen from 55 % in 2011.

In 2017, 14% more alcohol was sold per adult in Scotland than in England & Wales.

- 1.3L more pure alcohol was sold per adult in Scotland (10.2L) compared with England & Wales (8.9L).
- 89 % of the total difference in per adult sales between Scotland and England & Wales was due to higher off-trade sales in Scotland.
- 66 % of the off-trade difference was due to higher per adult sales of spirits in Scotland.
- Vodka explained 40 % of the difference in off-trade sales; per adult sales of vodka through the off-trade in Scotland were double that in England & Wales.

In 2017, alcohol sales in Scotland were at similar levels as in 1994.

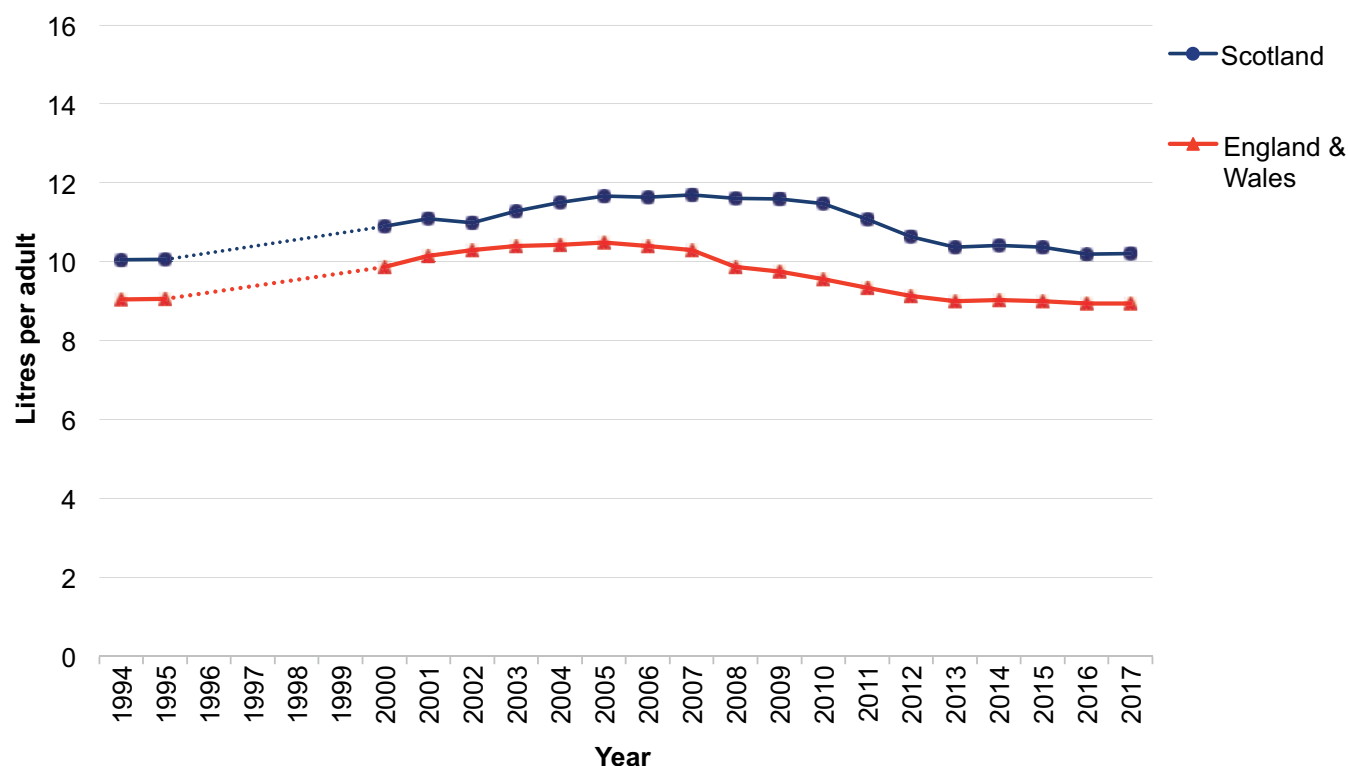
- After increasing over the 1990s and early 2000s, the volume of pure alcohol sold per adult in Scotland stabilised at around 11.6 litres per adult between 2005 and 2009. Following a period of decline to 2013, the volume of pure alcohol sold per adult has remained broadly stable and in 2017 was at a level similar to that seen in 1994.
- Analysis by market sector shows the change in where alcohol is sold in Scotland; since 1994 off-trade sales have increased by 42 % while on-trade sales have fallen by the same proportion.

Higher levels of population consumption are estimated in 2017 when sales are expressed as per adult drinker (12.2L) rather than per adult (10.2L).

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

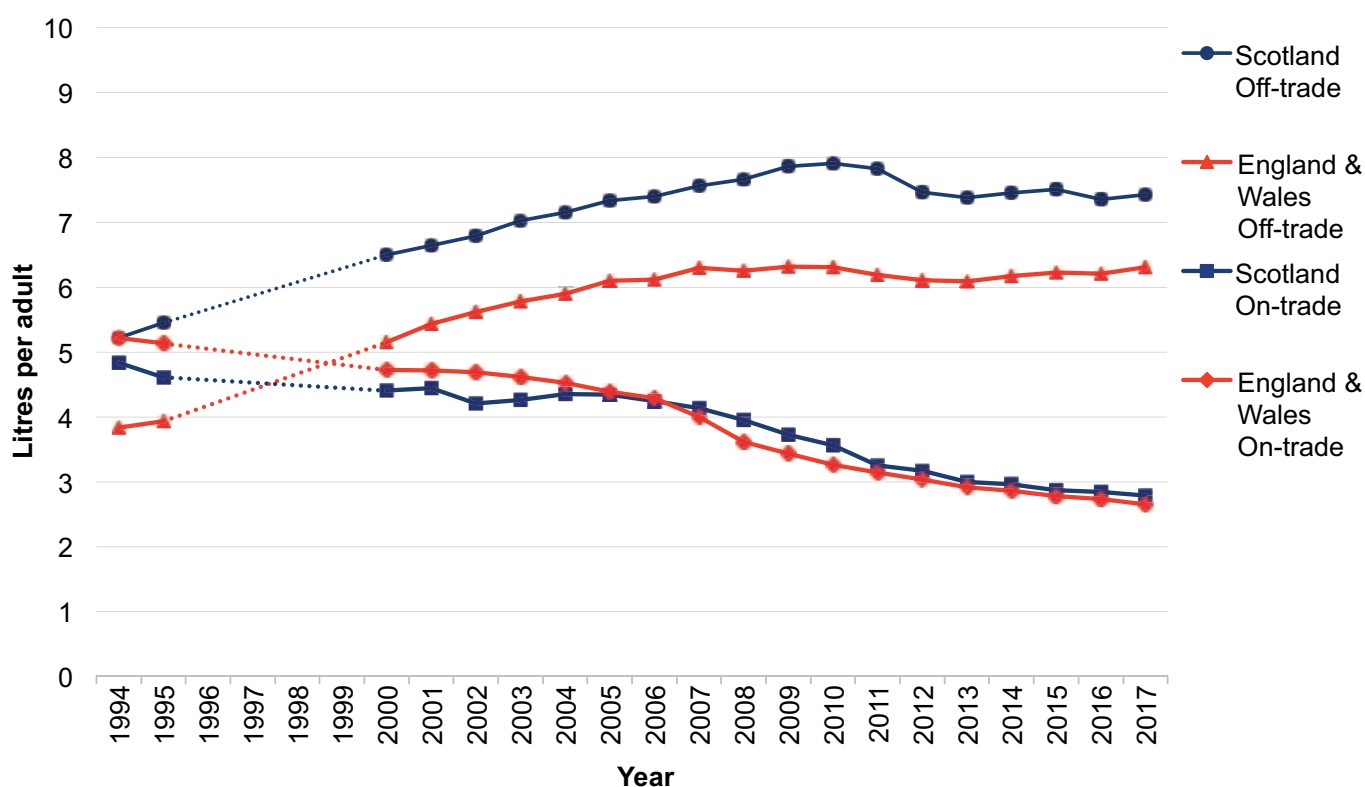
Additional alcohol sales data are available in the [alcohol sales spreadsheet](#).

Volume of pure alcohol sold per adult in Scotland and England & Wales, 1994–2017



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

Volume of pure alcohol sold per adult in Scotland and England & Wales, by trade sector, 1994–2017



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

Alcohol price and affordability

In 2017, the average price per unit of alcohol in Scotland was 54 pence in the off-trade and £1.80 in the on-trade.

- 2017 saw the first increase in the average off-trade price since 2013 from 52 to 54 pence per unit. Off-trade prices were flat between 2000 and 2007, increased between 2007 and 2013, and remained stable between 2013 and 2016.
- The average on-trade price has increased steadily over time, increasing by 89 % between 2000 and 2017. However the change seen in 2017 was the smallest annual increase in average on-trade price since 2003.

In 2017, 47% of alcohol sold through the off-trade (excluding discount retailers) in Scotland was sold at below 50 pence per unit (ppu).

- This fell four percentage points from 2016, the biggest annual change seen in the last 5 years.
- 58 % of spirits, 27 % of wine, 56 % of beer and 66 % of cider in Scotland was sold at below 50ppu.

More than half (56%) of the higher off-trade sales in Scotland compared with England & Wales was due to alcohol sold at below 50ppu.

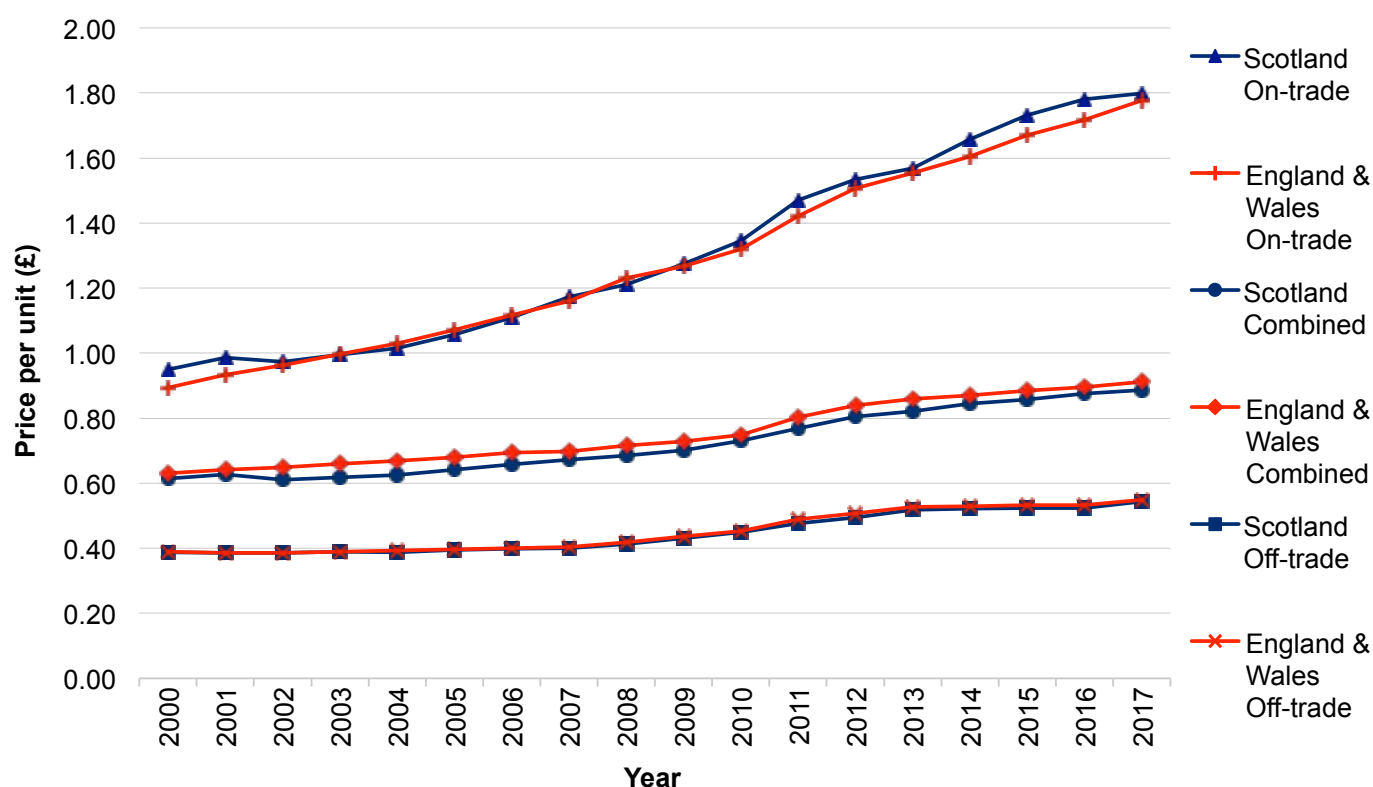
- This was driven by spirits, particularly vodka: 2.2 times more vodka was sold off-trade at below 50ppu in Scotland than in England & Wales.

Alcohol sold in the UK was 64% more affordable in 2017 than it was in 1980.

- The affordability of alcohol is a product of alcohol price and consumer spending power (disposable income).
- The affordability of alcohol rose steadily between 1980 and 2007. Between 2007 and 2011 it reduced slightly, predominantly as a result of a fall in disposable incomes. Since 2011 alcohol has become steadily more affordable as household disposable income has increased and the price of alcohol has fallen a little, relative to retail prices.

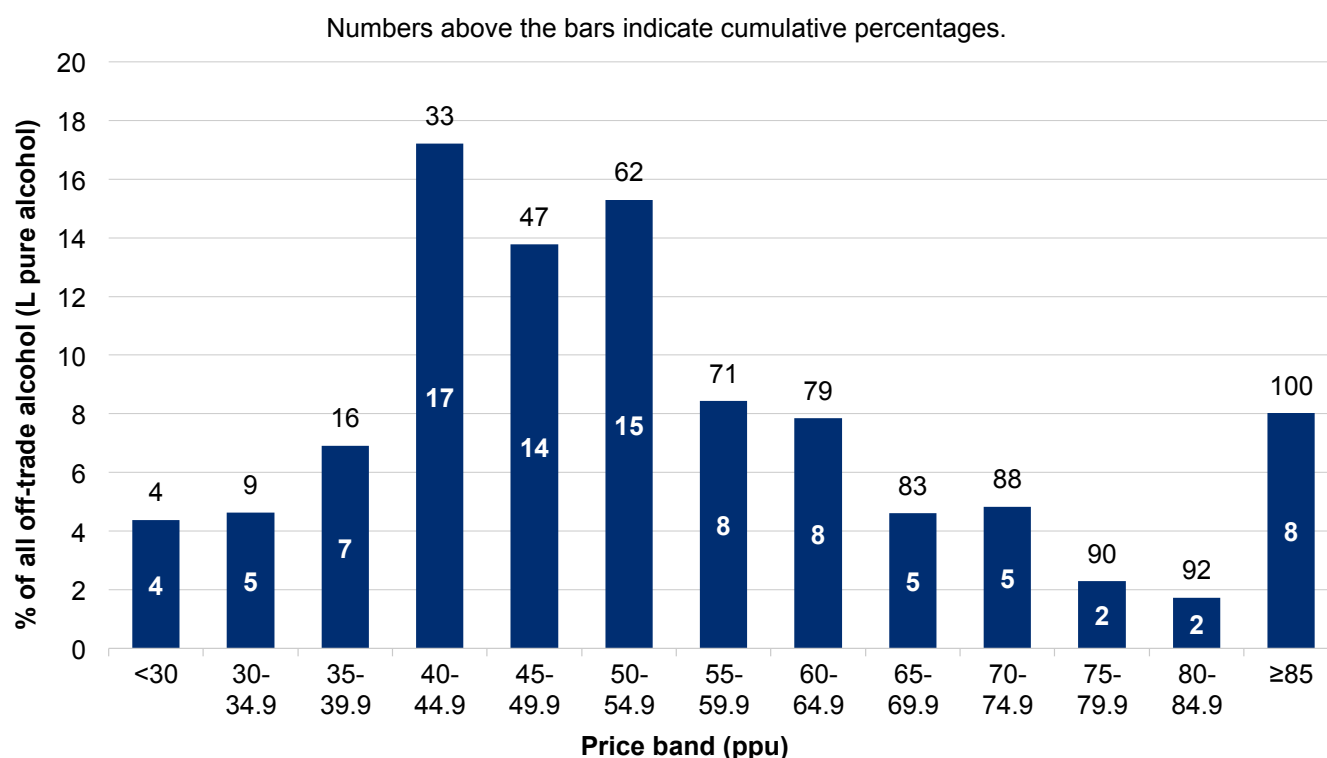
Additional price and affordability data are available in the [alcohol price and affordability spreadsheet](#).

Average price per unit of alcohol sold in Scotland and England & Wales, by trade sector, 2000–2017



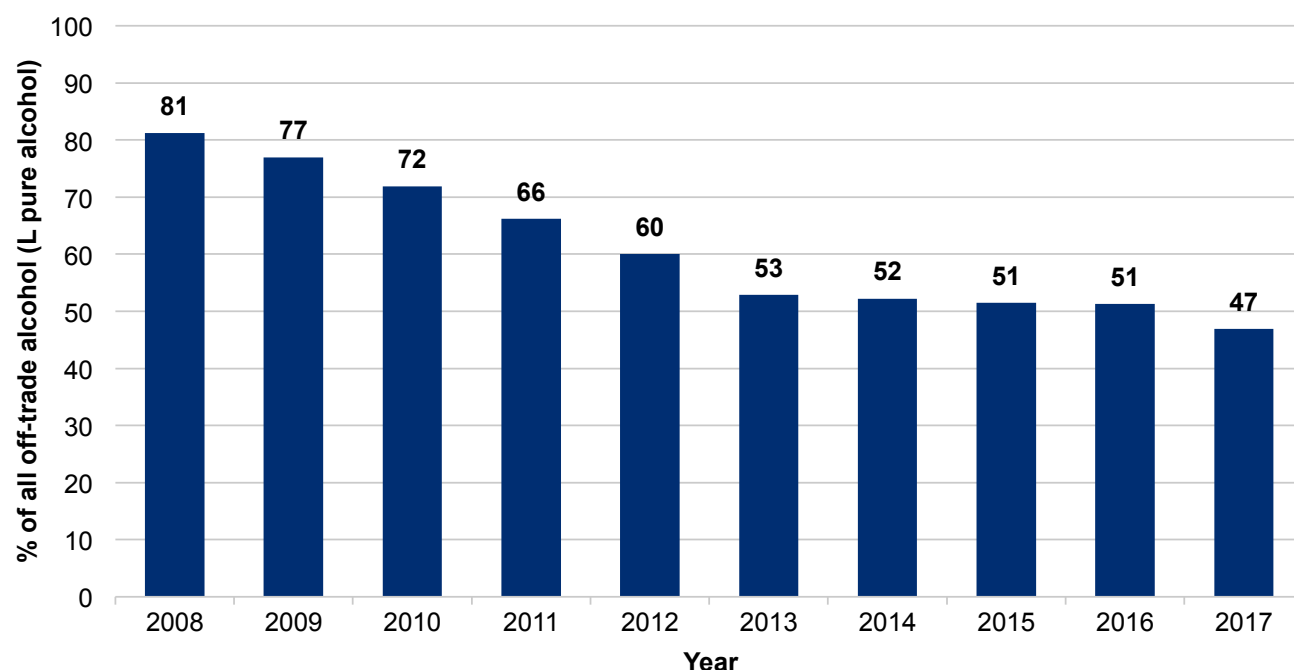
Source: Nielsen/CGA sales dataset (off-trade sales from 2011 onwards adjusted to account for the loss of data from discount retailers; see [Appendix 1](#) for more details).

Price distribution (%) of alcohol sold in the off-trade in Scotland, 2017



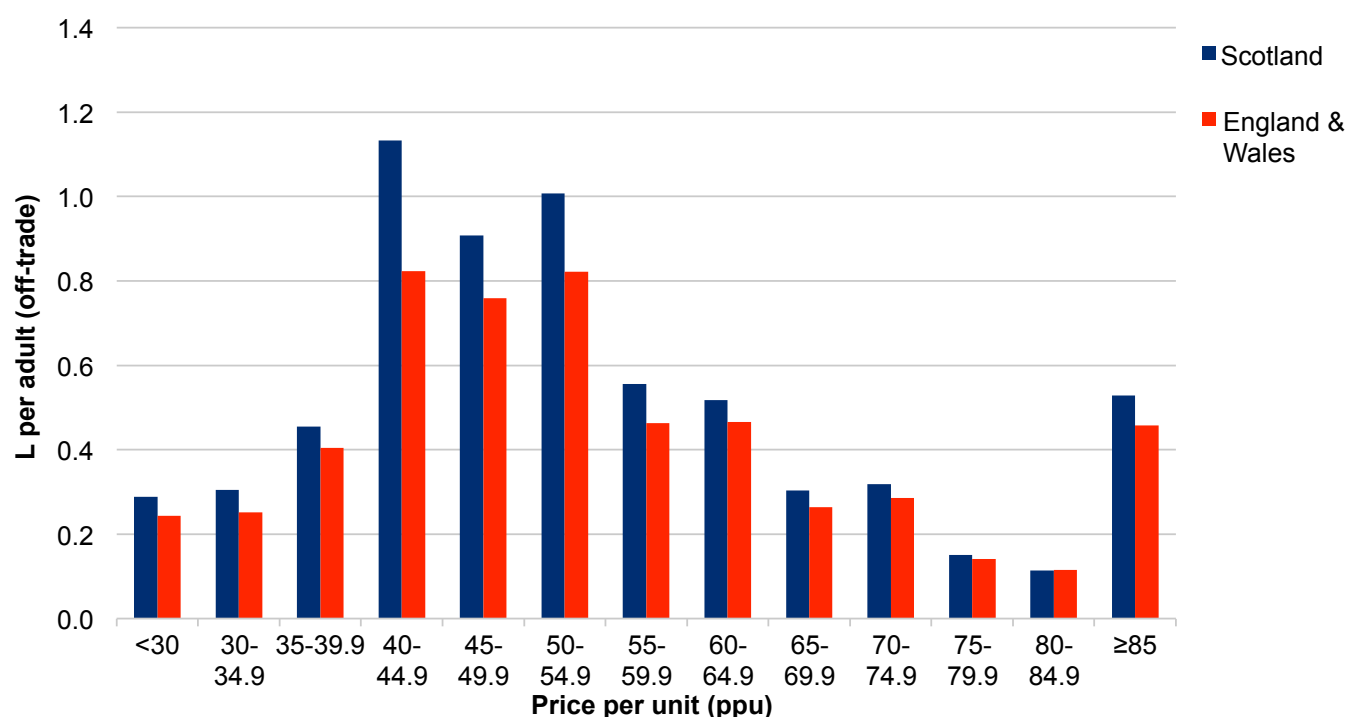
Source: Nielsen off-trade price band dataset (excluding data from discount retailers; see [Appendix 1](#) for more details on methods). Individual values may not add up to 100%; this is due to rounding.

Proportion of off-trade alcohol sold at below 50 pence per unit in Scotland, 2008–2017



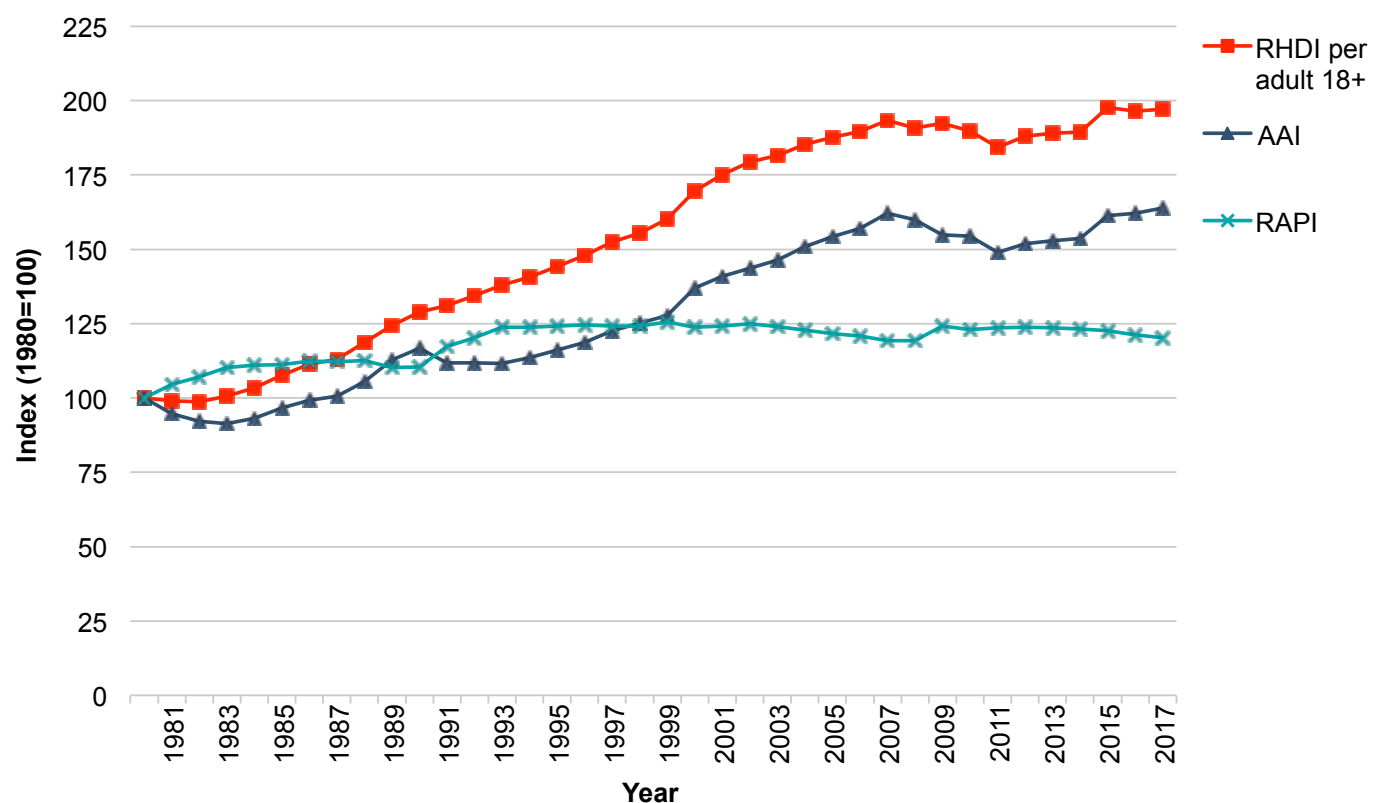
Source: Nielsen off-trade price band dataset (from 2011 the data excludes sales by discount retailers; see [Appendix 1](#) for more details on methods).

Price distribution (L per adult) of pure alcohol sold in the off-trade in Scotland and England & Wales, 2017



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

Trends in affordability of alcohol, disposable incomes and alcohol retail prices, UK, 1980–2017



Source: Statistics on Alcohol, England 2018. RHD = Real Household disposable income. AAI = Alcohol Affordability Index. RAPI = Relative Alcohol Price Index.

Self-reported alcohol consumption

Adults

Mean self-reported 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 (12.8 units in 2016).

- 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 and remaining at a similar level (16.9) in 2016. In women, mean weekly alcohol consumption fell from 10.6 units in 2003 to 8.6 units in 2013; there has been little change since 2013 with mean weekly consumption being 8.8 units for women in 2016.
- There has been a corresponding fall in the proportion of adults drinking more than 14 units a week (the low-risk weekly drinking guideline for both men and women), from 34 % in 2003 to 26 % in 2016; the proportion drinking more than 14 units per week has changed very little since 2013.
- 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 2016).
- In 2016, alcohol consumption estimates based on self-reported data accounted for 55 % 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 2016.

- 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 2016.

Self-reported alcohol consumption varies across different population subgroups.

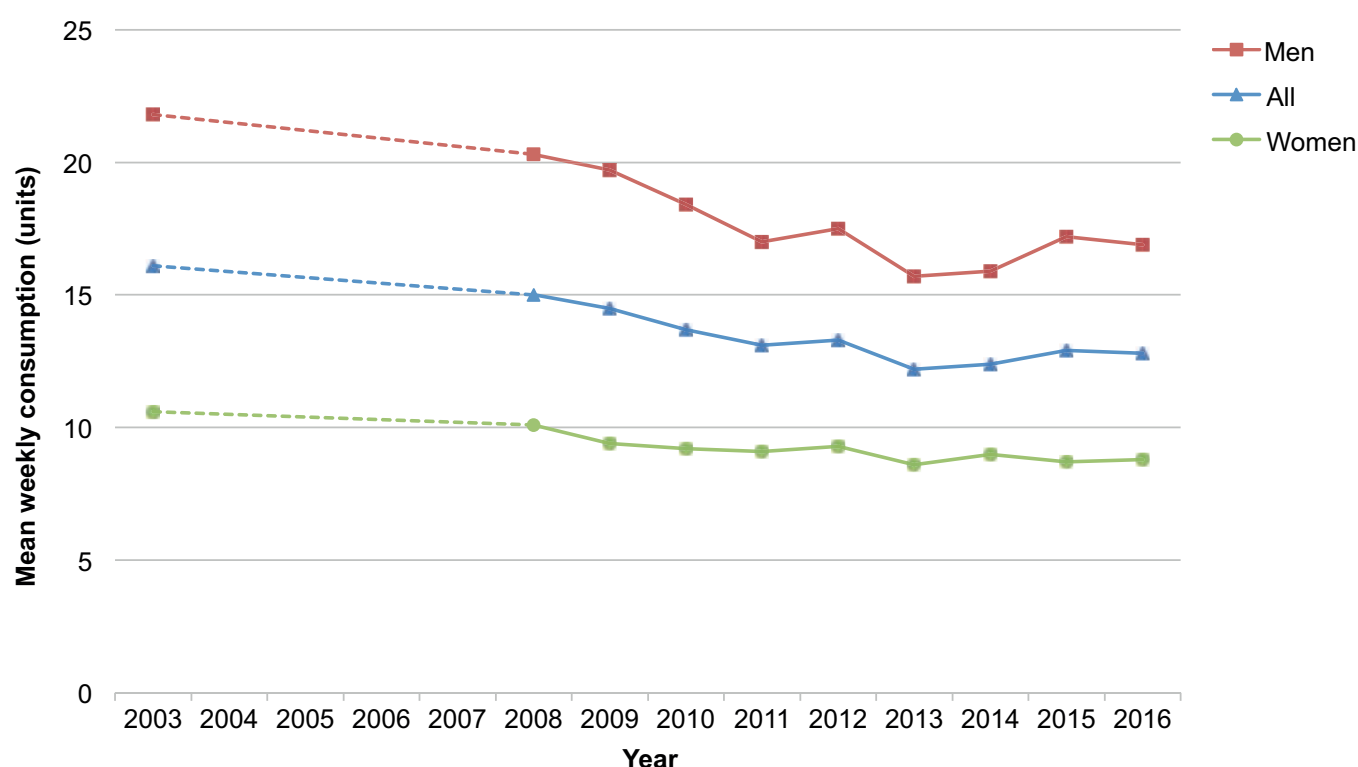
- In 2016, 35 % of men drank more than the revised low-risk weekly drinking guideline for both men and women, compared with 17 % of women.
- In 2016, adult drinkers aged 16–24 years and 55–64 years reported the highest mean weekly consumption (14.9 and 15.7 units respectively), while those aged 75 and over reported the lowest (8.6 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. In 2015/16 (combined), mean weekly consumption was 45.2 units per week compared with 27.9 units per week in the highest income group.
- In 2015/16 (combined), the heaviest 10 % of drinkers consumed 47 % of all self-reported consumption in Scotland.
- In 2015/16 (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, 16 % reported drinking at hazardous levels, 1 % at harmful levels and 1 % had possible alcohol dependency.

Self-reported weekly alcohol consumption in England has been broadly stable since 2011.

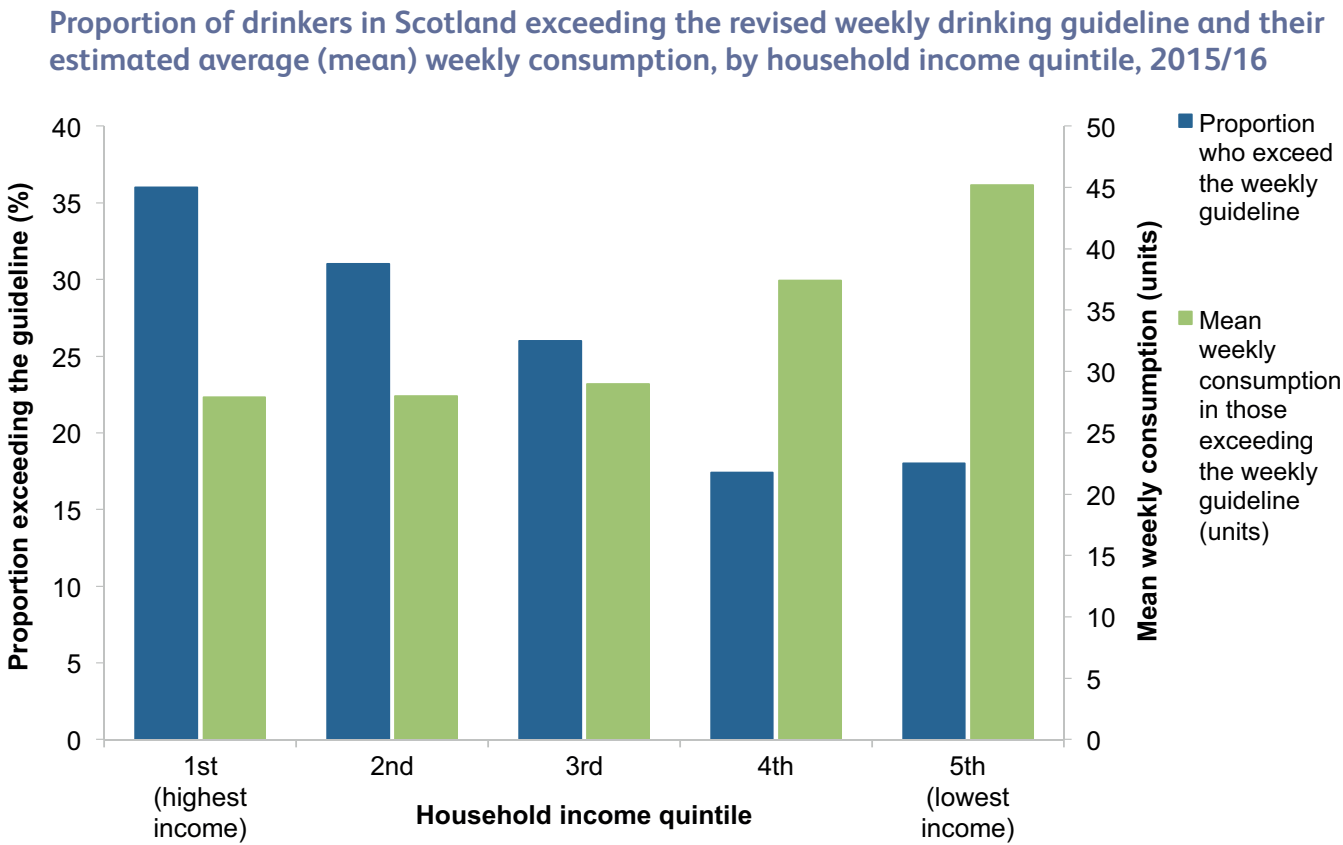
- In 2016 mean weekly alcohol consumption by drinkers in England was 12.6 units. Nineteen percent (19%) of adults reported that they didn't drink at all while 23% exceeded the low-risk weekly drinking guideline for both men and women of 14 units.
- Comparisons between Scottish and English estimates should be treated with caution due to slight differences in the methods used by the Scottish Health Survey and the Health Survey for England.

Additional adult self-report alcohol consumption data are available at

www.gov.scot/Topics/Statistics/Browse/Health/scottish-health-survey

Self-reported average (mean) weekly alcohol consumption in Scotland, 2003–2016

Source: Scottish Health Survey (SHeS)



Source: Scottish Health Survey (SHeS)

Young people

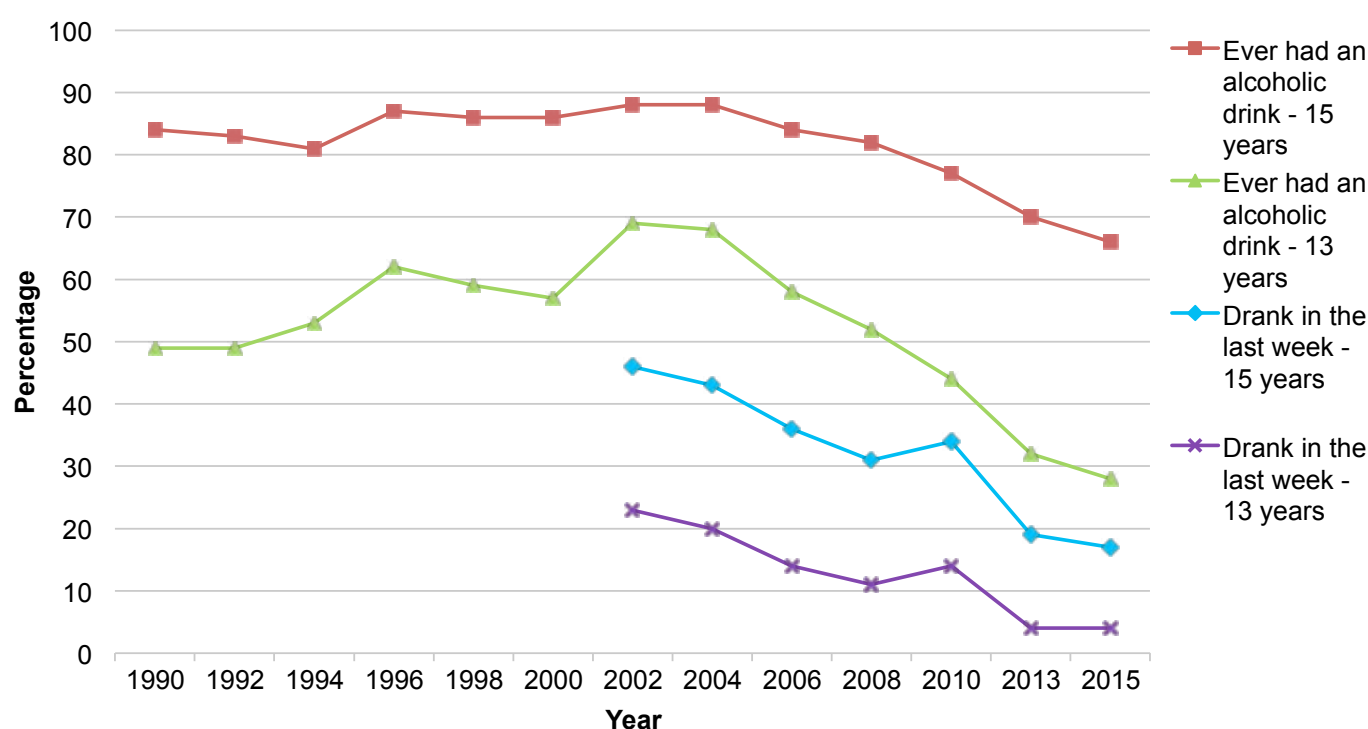
A new wave of the Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS) has not been carried out since the publication of the MESAS Monitoring Report 2017. This section has therefore not been updated.

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 health harms

The definitions used for reporting alcohol-specific deaths, alcohol-related hospital admissions and the wider impact of alcohol are different. Please see [Appendix 1](#) and the original sources for more information on the clinical codes included in each measure.

Alcohol-specific deaths

In 2017, the Office for National Statistics issued a change to the definition used to report deaths caused by alcohol; please see [Appendix 1](#) for more information on the change and how this impacts on the rates presented here.

In 2016, 1,139 people in Scotland died from a cause wholly attributable to alcohol (alcohol-specific); that is an average of 22 people every week.

- This equates to an age-standardised alcohol-specific death rate of 21.5 deaths per 100,000 population.
- In 2016, the alcohol-specific death rate was 2.5 times higher in men than in women (30.9 deaths per 100,000 population in men compared with 12.1 deaths per 100,000 population in women).
- Rates vary with age; in 2016 the highest rate was in the 55–64 year age group (52.1 deaths per 100,000 population). The rate in this group was 40 % higher than any other age group.
- In 2016, rates of alcohol-specific death were more than eight times higher in the 10 % most deprived areas in Scotland than in the 10 % least deprived areas.

In 2016, rates of alcohol-specific death in Scotland were 2.6 times higher than in 1981.

- From 1992 sharp increases in rates of alcohol-specific death were seen in both men and women. Rates peaked in 2003 for men (at 42.6 deaths per 100,000 population) and 2006 for women (at 16.9 deaths per 100,000 population). Following this peak a relatively prolonged downward trend was seen.
- Since 2012, the downward trend in alcohol-specific death rates in Scotland has stalled. Over the last 4 years the general trend has been upward for both men and women; this has been driven by increases in rates in the older age groups, particularly those aged 55 years and older.
- In the same time period, the general trend in rates of alcohol-specific death in the younger age groups (25–44 years) has been downward.

Rates of alcohol-specific death in Scotland have consistently been higher in areas of greater deprivation, but the inequality has narrowed over time.

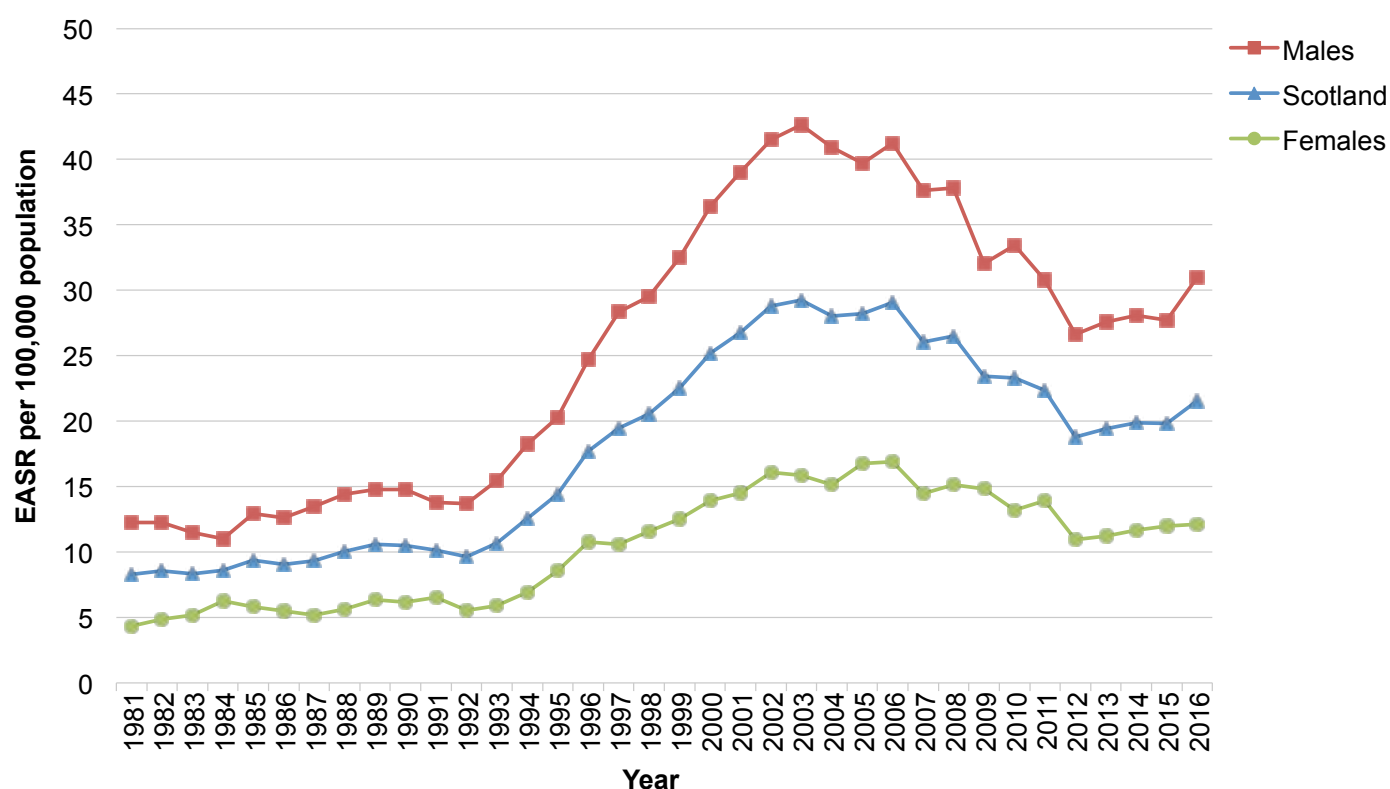
- In 2016, alcohol-specific death rates were more than eight times higher in the 10 % most deprived areas in Scotland than in the 10 % least deprived areas, compared with 13 times higher in 2002 (when rates in the most deprived areas peaked). The change is mostly down to a fall in rates in the 10 % most deprived areas.
- The narrowing of inequalities in alcohol-specific 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).

Alcohol-specific death rates are consistently higher in Scotland than in England & Wales.

- In 2016, alcohol-specific death rates were more than twice as high in men and 75 % higher in women in Scotland compared with England & Wales.
- The difference between alcohol-specific death rates in Scotland and England & Wales has reduced over time. The greatest differences were in 2002 when rates were 3.3 times higher in men in Scotland and 2.8 times higher in women.

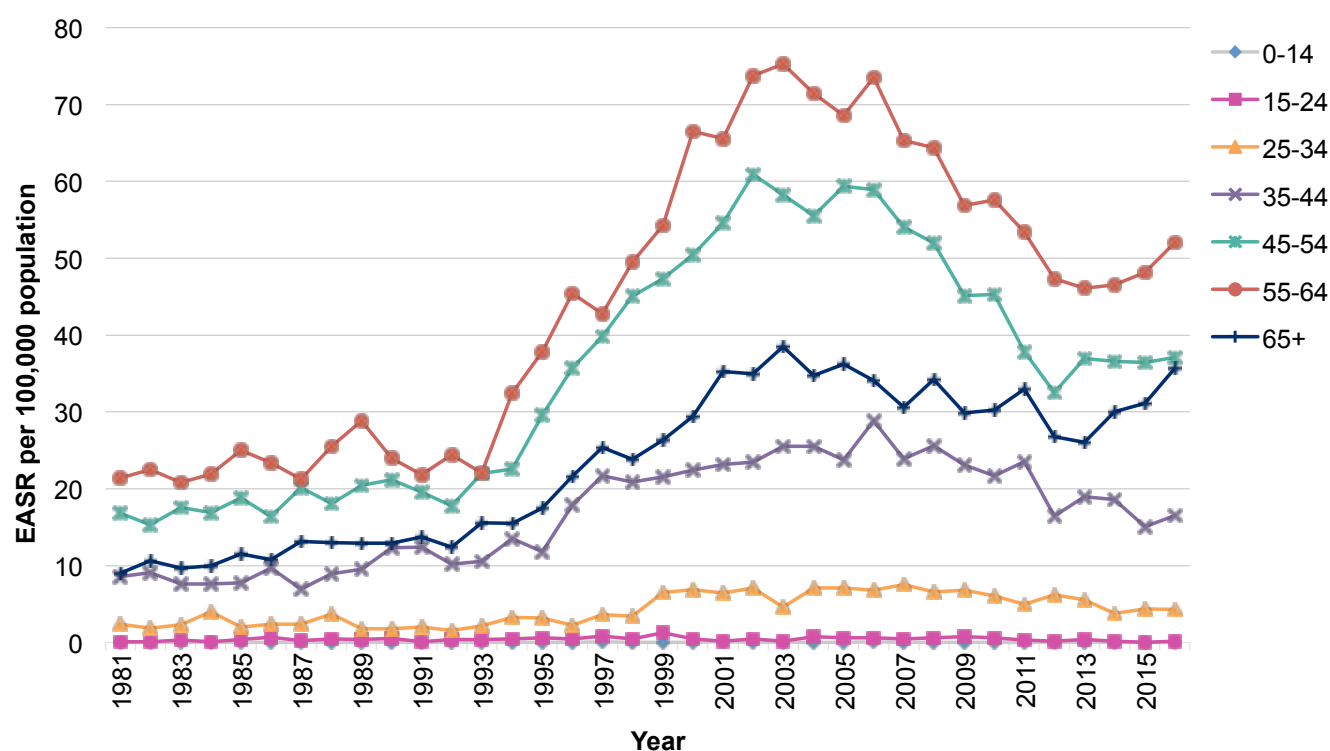
Additional alcohol-specific death data are available in the [alcohol-specific deaths spreadsheet](#) and at www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/deaths/alcohol-deaths.

Alcohol-specific deaths in Scotland, by sex, 1981–2016



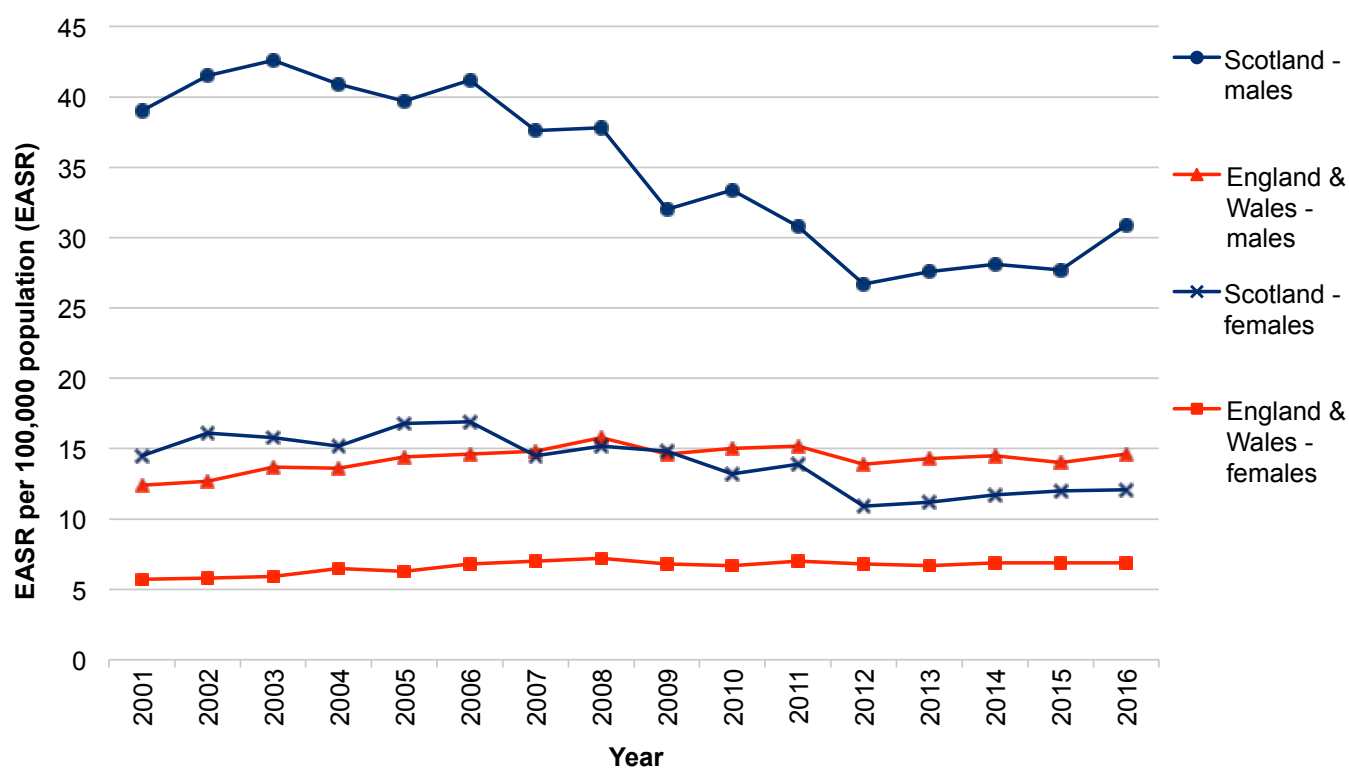
Source: National Records of Scotland. EASR = European Age Standardised Rate.

Alcohol-specific deaths in Scotland, by age group (in years), 1981–2016



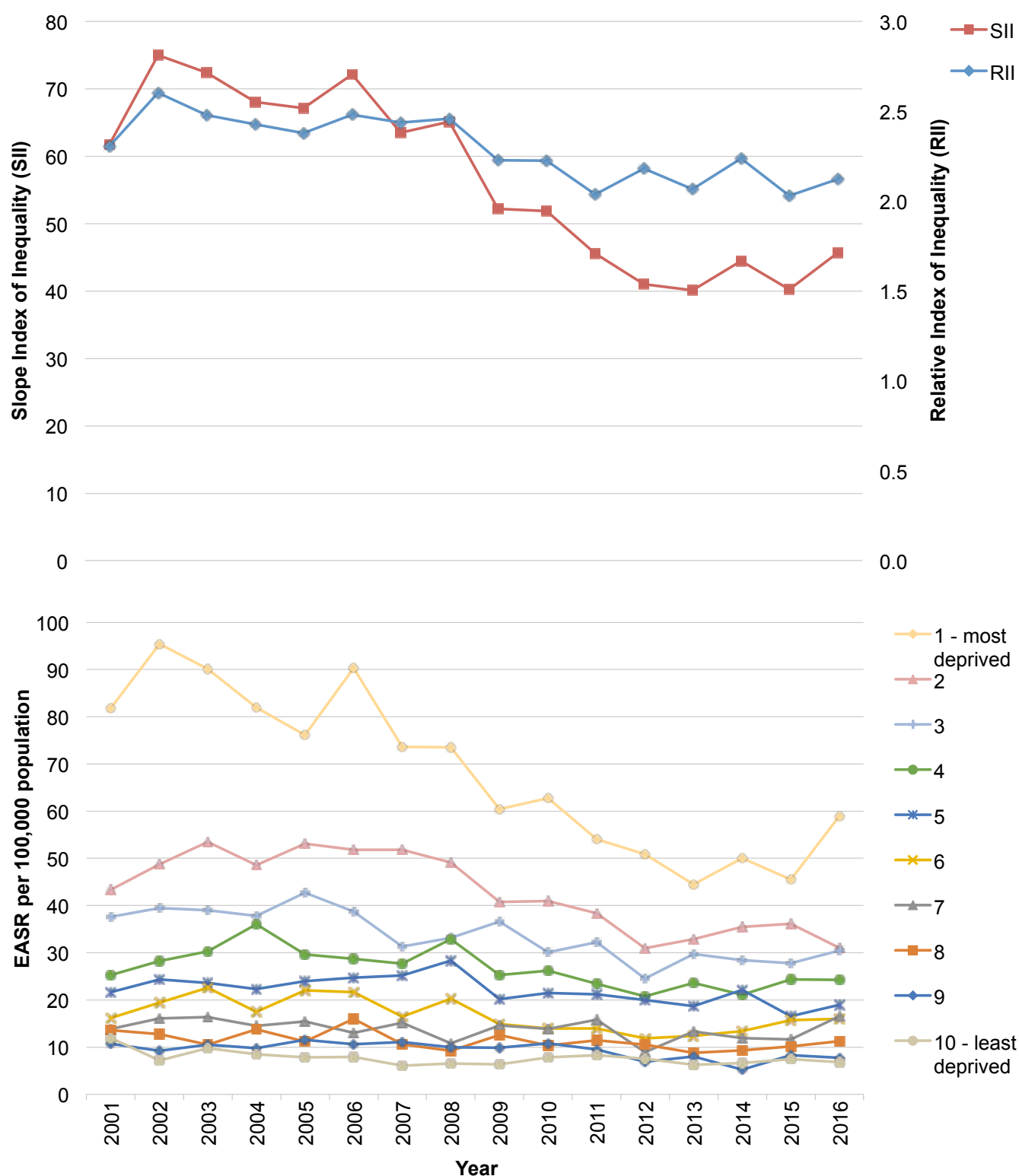
Source: National Records of Scotland. EASR = European Age Standardised Rate.

Alcohol-specific deaths in Scotland and England & Wales, by sex, 2001–2016



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

Inequalities in alcohol-specific death rates in Scotland, 2001–2016



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 2016/17 there were more than 36,000 general acute inpatient stays with an alcohol-related diagnosis. This is equivalent to an age-standardised rate of 685 inpatient stays per 100,000 population.

- In total over 24,000 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 2016/17, rates of alcohol-related hospital stays in Scotland were over 2.6 times higher among men (989 per 100,000 population) than women (381 per 100,000 population).
- Rates also differ by age: in 2016/17, the 55–64 year age group had the highest rate of alcohol-related hospital admissions at 1,175 per 100,000 population.
- In 2016/17, rates of alcohol-related stays were more than eight 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 4.4 times higher in 2016/17 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 general trend in alcohol-related hospital stays in Scotland has been downward, although this has flattened over the last 5 years.
- 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, indicating that some patients are being admitted more than once in a given time period.
- 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.

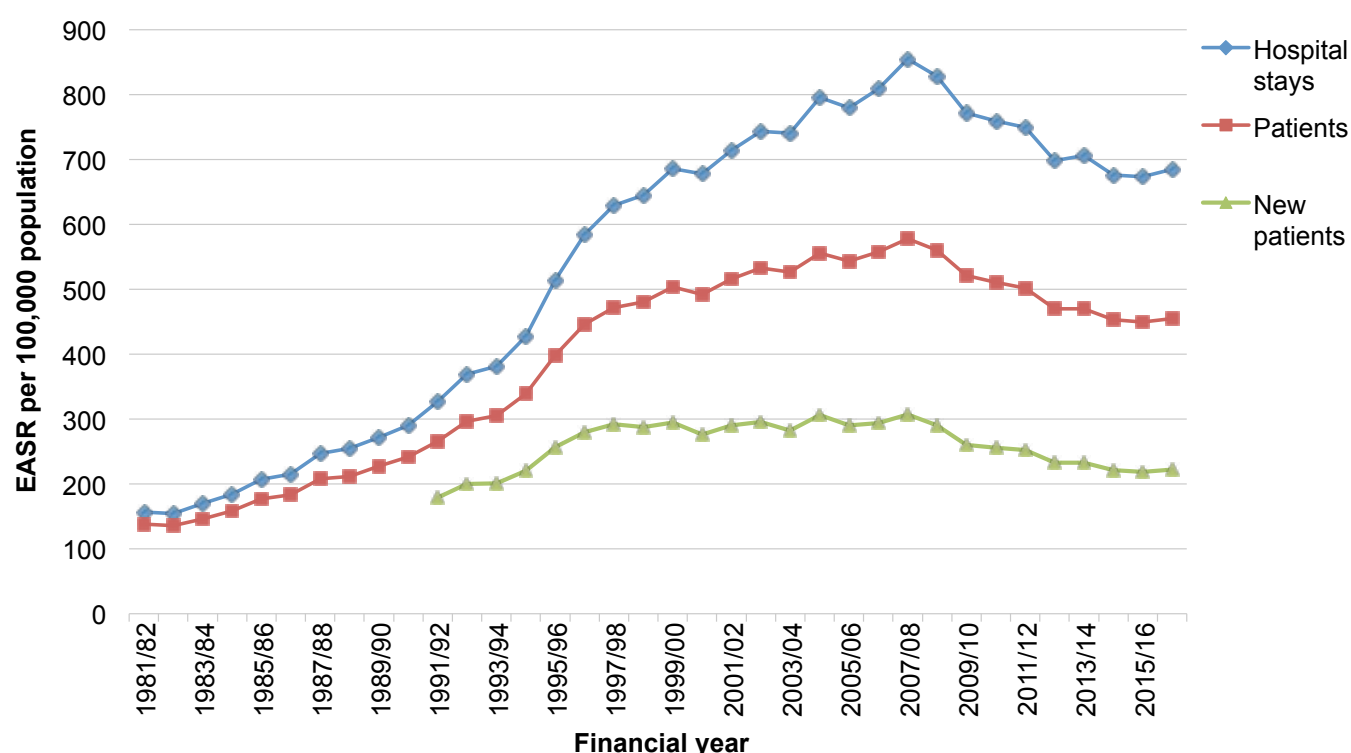
- In 2016/17, the rate of alcohol-related hospital stays was more than eight times higher in the 10% most deprived areas of Scotland compared with the 10% least deprived areas; the same difference as in 1997/98.
- Nonetheless, since 2007/08, the largest absolute reductions in alcohol-related hospital stays have been seen in the more deprived areas, though these reductions have ceased 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 93 % of the alcohol-related stays in Scotland are to general acute hospitals and around 7 % to psychiatric hospitals. The rate of alcohol-related psychiatric hospital stays in 2015/16 was 54 per 100,000 population.
- In 2015/16 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 77 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 2015/16, rates were around 16 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 2015/16, the stay rate (54 stays per 100,000 population) was nearly half that in 1997/98 (103 stays per 100,000 population).

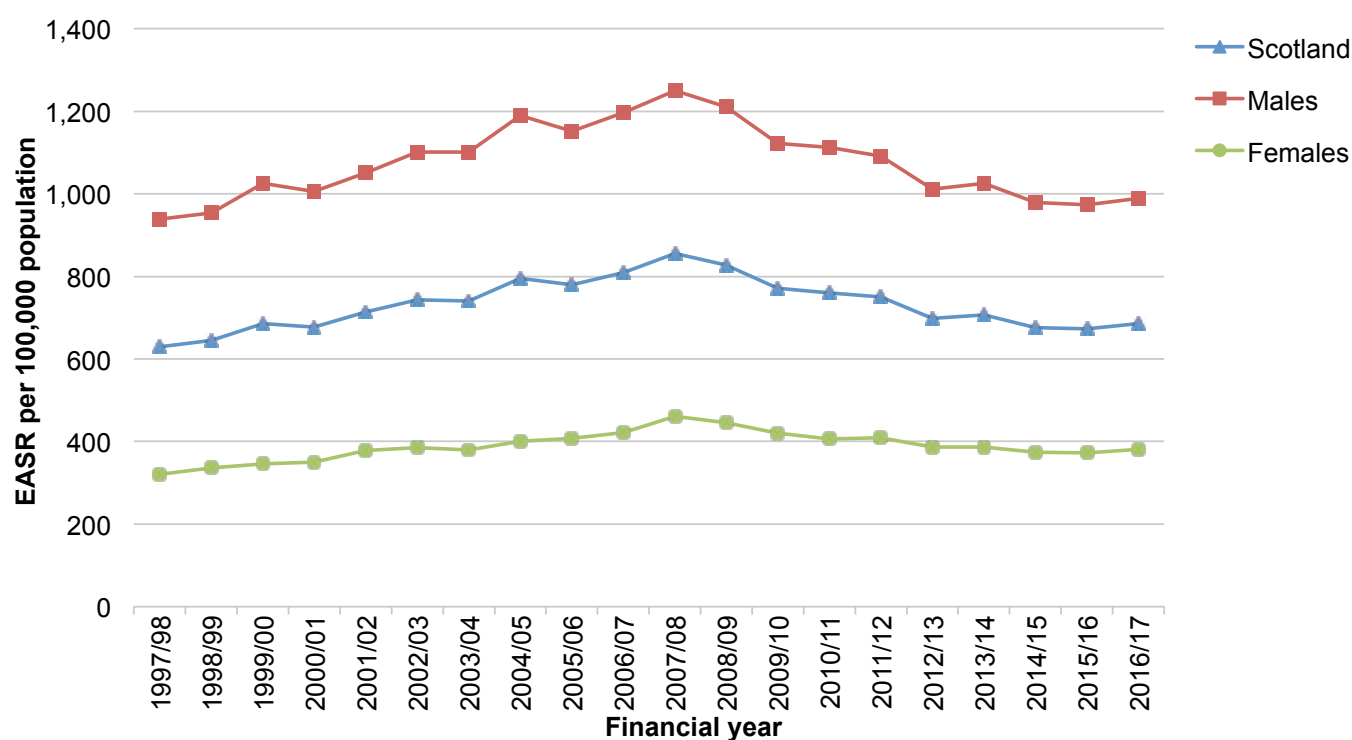
All the data presented in this chapter are available at www.isdscotland.org/Health-Topics/Drugs-and-Alcohol-Misuse/Publications

Alcohol-related hospital admission rates in general acute hospitals in Scotland, 1981/82 – 2016/17



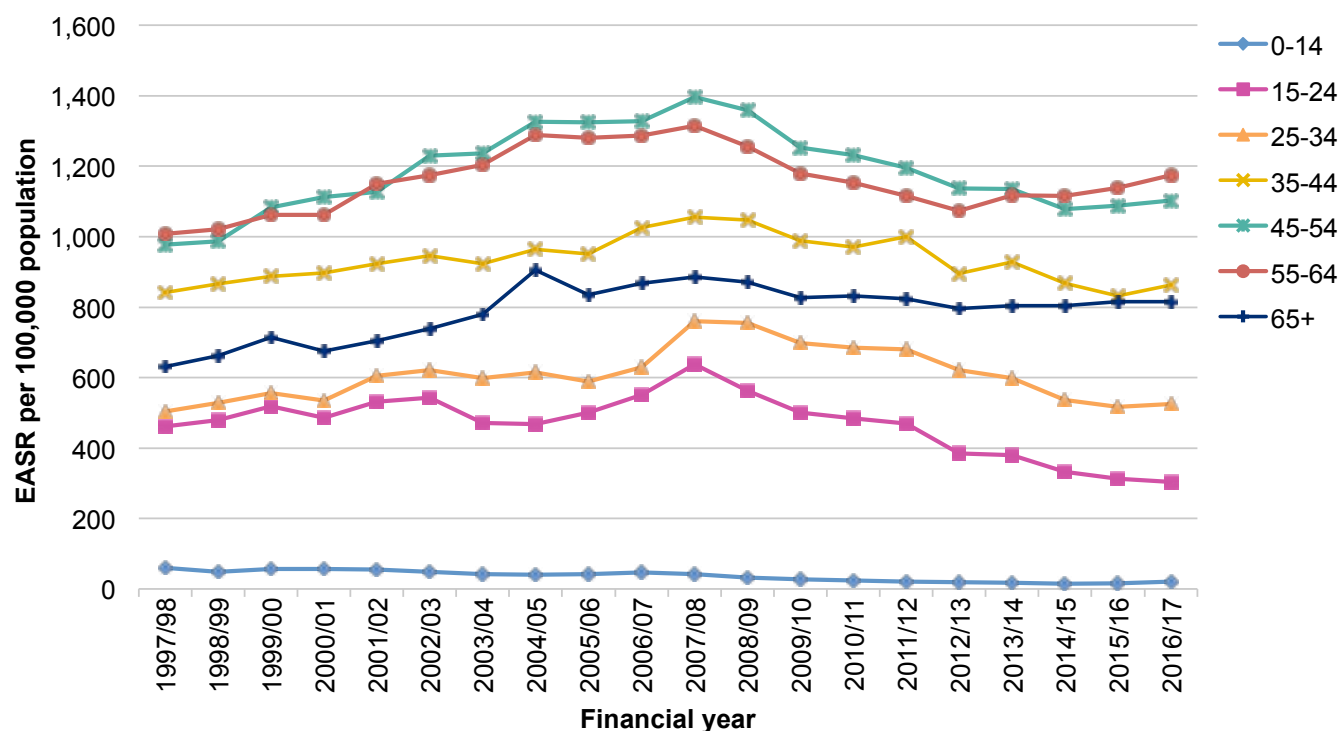
Source: Information Services Division, NHS National Services Scotland. EASR = European Age Standardised Rate.

Alcohol-related hospital stay rates in general acute hospitals in Scotland, by sex, 1997/98 – 2016/17



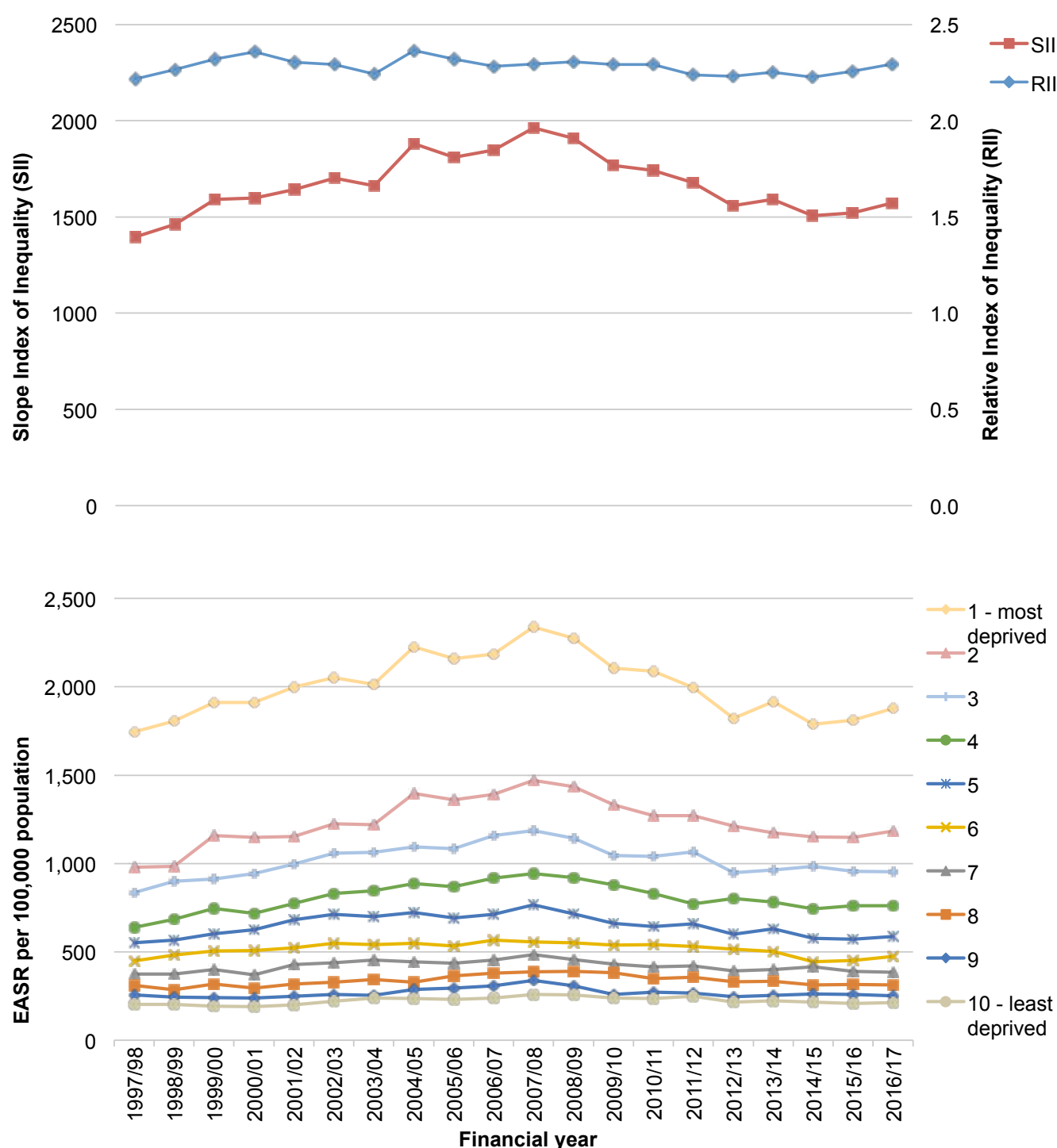
Source: Information Services Division, NHS National Services Scotland. EASR = European Age Standardised Rate.

Alcohol-related hospital stay rates in general acute hospitals in Scotland, by age group (in years), 1997/98 – 2016/17



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

Inequalities in alcohol-related hospital stay rates in general acute hospitals in Scotland, 1997/98 – 2016/17



Source: 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.

The wider impact of alcohol on health

The definitions of alcohol deaths and hospital admissions used in this report include only those conditions that are directly attributable to alcohol. However there are a wider range of conditions in which alcohol may be partially attributable, such as cardiovascular disease and a range of cancers. Recent work by the Scottish Public Health Observatory (ScotPHO)¹ using this broader definition of alcohol-related harm reported on the overall burden of disease caused by alcohol.

Deaths caused by alcohol:

- There were an estimated 3,705 deaths attributable to alcohol consumption in 2015 among adults aged 16 years and over in Scotland. This equates to 6.5 % of the total number of deaths (57,327).
- Men were almost twice as likely to die from an alcohol-attributable condition in 2015 compared with women (8.4 % and 4.7 % respectively).
- More than one in four (28 %) alcohol-attributable deaths were due to cancer.

Hospital admissions caused by alcohol:

- In 2015, a total of 41,161 adults aged 16 years and over were admitted to hospital at least once with a wholly or partially attributable condition (6.4 % of 644,574 total individuals admitted at least once in 2015).
- Men were twice as likely to be hospitalised with an alcohol-attributable condition in 2015 compared with women (8.8 % and 4.3 % respectively).
- Of the adult patients hospitalised due to alcohol in 2015, more than one in four (27 %) were admitted for an unintentional injury.

Total impact of alcohol on health:

- Alcohol consumption accounted for 8 % of the overall burden of disease in Scotland in 2015 [104,573 out of a total of 1,315,087 disease-adjusted life years (DALYs)].

¹ Hospital admissions, deaths and overall burden of disease attributable to alcohol consumption in Scotland. Tod E et al. Edinburgh: NHS Health Scotland; 2018. Data reproduced with permission of the author.

www.scotpho.org.uk/publications/reports-and-papers/hospital-admissions-deaths-and-overall-burden-of-disease-attributable-to-alcohol-consumption-in-scotland

Alcohol 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 11.0 per 10,000 population in 2016/17. However, 2016/17 saw the first increase in this indicator in the observed period.
- 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 2016/17 the rate has fallen to 29.2 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; in 2016/17, 67 % of offenders were recorded as 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.

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 2016/17, alcohol-related hospital admissions for children aged under 15 years old increased after a sustained period of decrease.

- Rates of alcohol-related hospitalisations for children aged under 15 years old in Scotland have fallen from a peak of 59.7 per 100,000 population in 1997/98 to a low of 14.8 per 100,000 in 2014/15; by 2016/17 this had risen to 21.2 per 100,000 population.

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 hospital admissions 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 2000–2017. 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 and projections 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 2017 was assumed to be the same as in 2016 as 2017 SHeS data are not yet available). These data are presented in an accompanying dataset at www.healthscotland.scot/publications/mesas-monitoring-report-2018. 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

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 use 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.

Comparing sources of market share estimates

As stated in a previous MESAS report,² '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.' To cross-check the Nielsen HomeScan data, summary level alcohol volume market share estimates for 2011–2017 (for all alcohol and by drink type) were obtained from Kantar Worldpanel, another source of consumer panel data. Kantar Worldpanel uses a similar data collection methodology to Nielsen HomeScan. Both panels use a stratified quota sampling design but the size of the sample in Kantar Worldpanel is approximately twice that of Nielsen HomeScan. There are approximately 30,000 households in the Kantar Worldpanel and approximately 15,000 in the HomeScan panel. In both cases just over 9% of those households are in Scotland; 2,800 and 1,375 households respectively. We have not examined the extent to which different biases in the sample may affect the estimates from each data source.

Table 1 shows that there are some differences between the discounter market share estimates from each data source. These are summarised below:

- HomeScan produces higher estimates of the total alcohol market share held by discounters across GB, but particularly in Scotland. In 2017, this was largely due to a greater volume share of wine in Scotland estimated by HomeScan; other drink types are estimated as having a lower share of the market in Scotland than England & Wales.
- HomeScan suggests that discounters consistently have a higher alcohol market share in Scotland than the rest of GB. Worldpanel suggests that discounters accounted for a similar proportion of the market across GB until 2014; from 2015–2017 Worldpanel suggests that the discounter share of the total alcohol market was greater in England & Wales than in Scotland.
- HomeScan suggests that the discounter market share increased steadily in both Scotland and England & Wales between 2011 and 2015. In 2016, HomeScan 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; Worldpanel suggests that the market share of discounters in England & Wales increased steadily between 2011 and 2016, but in Scotland decreased between 2014 and 2016. Both HomeScan and Worldpanel show that the market share of discounters increased in both Scotland and England & Wales in 2017.
- The discounter volume market share of wine estimated by HomeScan in Scotland is particularly high and changes markedly over time, increasing by more than 10 percentage points between 2011 and 2015 (the peak as estimated by HomeScan). Therefore the HomeScan market share estimate for wine has a significant influence on the overall market share in Scotland. Worldpanel also estimates wine to have the greatest discounter market share in Scotland, when compared to other drink types, but to a lesser extent than HomeScan.

² Giles L, Robinson M. Monitoring and Evaluating Scotland's Alcohol Strategy: Monitoring Report 2017. Edinburgh: NHS Health Scotland; 2017.

Table 1: Percentage alcohol volume market share¹, by drink type, country and data source**Scotland: HomeScan volume market share (%)**

Drink category	2011	2012	2013	2014	2015	2016	2017
Total	7.9	9.7	11.4	12.2	14.4	11.8	12.6
Beer	4.8	6.5	7.7	8.3	11.2	9.1	9.4
Wine	10.1	11.5	14.1	18.4	20.8	16.9	16.4
Spirits	6.0	7.8	8.5	6.8	10.5	10.5	10.1
Cider ²	-	-	-	-	-	-	-

Scotland: Worldpanel volume market share (%)

Drink category	2011	2012	2013	2014	2015	2016	2017
Total	7.0	7.5	8.2	9.0	8.9	8.5	10.5
Beer	4.8	5.2	5.9	7.0	7.2	6.7	8.4
Wine	8.2	8.8	10.4	11.7	12.4	11.7	14.0
Spirits	6.4	5.2	4.8	5.9	6.7	7.1	9.8
Cider	9.3	10.9	11.2	9.4	7.3	6.1	8.3

England and Wales: HomeScan volume market share (%)

Drink category	2011	2012	2013	2014	2015	2016	2017
Total	5.8	7.0	7.6	9.3	10.6	11.0	12.1
Beer	4.5	5.1	6.0	7.7	9.3	9.8	10.7
Wine	6.5	7.6	8.6	10.8	11.8	11.9	13.3
Spirits	7.5	8.9	9.9	10.2	11.5	12.0	13.0
Cider	7.1	10.6	9.8	11.3	11.4	11.4	13.0

England and Wales: Worldpanel volume market share (%)

Drink category	2011	2012	2013	2014	2015	2016	2017
Total	5.9	7.3	8.2	9.0	9.6	10.4	11.8
Beer	6.0	7.4	8.0	7.9	8.6	9.3	10.4
Wine	5.8	7.3	8.9	10.9	11.5	12.3	14.2
Spirits	5.9	6.9	7.1	8.4	9.2	9.8	11.3
Cider	5.4	7.0	8.3	9.2	9.5	10.2	12.2

¹ Market share estimates are based on natural alcohol volumes.² In Scotland, the adjustment factor for cider is based on the total volume market share and is therefore not shown separately above.

In 2017, we undertook an exercise to look at the impact of using these two different sources of discounter market share data on estimates of population alcohol consumption levels. Retail sales data were adjusted using the volume share estimates from both sources. The following observations were made:

- In Scotland, HomeScan-based estimates produced higher per adult consumption estimates than Worldpanel-based estimates. The difference is most apparent in wine but some effect is also seen in spirits.
- In England & Wales the two sources result in very similar estimates of per adult consumption.

The data sources have different strengths and limitations. As already mentioned, both sources are subject to biases inherent in self-report surveys such as sampling biases and underreporting. The greater sample size of Worldpanel is likely to result in more reliable market share estimates that are less vulnerable to sharp year-on-year changes (overall or by drink type). However, the larger discounter market share estimates in Scotland produced using HomeScan may more accurately reflect the greater number of stores per capita in Scotland compared to England & Wales³.

Following a process of consultation, it was felt that Kantar Worldpanel data provide more robust estimates of the discounter market share in Scotland and England & Wales. In this report, we have therefore opted to use Worldpanel market share estimates as the main source of data when adjusting alcohol retail sales estimates to account for the lack of data from Aldi and Lidl. This marks a change in the method used in previous MESAS reports. We have provided supplementary analyses of population level consumption using both HomeScan and Worldpanel market share estimates so as to provide a clear comparison of the impact of using these two different data sources; please see [Appendix 2](#).

We will continue to examine the market share estimates from both data sources and explore the impact of these on per adult sales data in future MESAS reports. We will endeavour to apply the most appropriate adjustment method based on the best available data to us at the time.

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 2017. 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 2008–2017. 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).

Trends in affordability are measured using the Alcohol Affordability Index (AAI) series published in 'Statistics on Alcohol: England, 2018' (<https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-alcohol/2018>).

³ Open supermarket location data obtained from Geolytix, https://geolytix.net/?retail_points. Accessed 10/04/2018.

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:

$$\text{RAPI} = (\text{Alcohol price index} / \text{Retail price index}) * 100$$

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

$$\text{AAI} = (\text{RHDI} / \text{RAPI}) * 100$$

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-reported alcohol consumption

Adults

Adult self-reported alcohol consumption data were obtained from the Scottish Health Survey; data for the relevant survey years from 2003 to 2016 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 2016, 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-specific deaths

In 2017 the Office for National Statistics (ONS), after a consultation⁴, issued a change to the definition for deaths attributable to alcohol. The new definition includes only those conditions known to be wholly attributable to alcohol. It introduces some new codes and excludes some causes included in the previous definition, which are known to be only partially attributable to alcohol. The new definition is therefore one of alcohol-specific deaths, as opposed to the old definition of alcohol-related deaths. In both cases the condition is the underlying cause of death, rather than a contributory cause. Table 2 shows the causes of death and ICD-10 codes included in the definition of alcohol-specific death (new definition) and alcohol-related death (old definition).

⁴ <https://consultations.ons.gov.uk/health-and-life-events/alcohol-mortality-definition-review/>

Table 2: Conditions included in the definition of alcohol-specific death (new definition) and alcohol-related death (old definition).

Description of condition	ICD-10 code Alcohol-specific (new) definition	ICD-10 code Alcohol-related (old) definition
Alcohol-induced pseudo-Cushing's syndrome	E24.4	
Mental and behavioural disorders due to use of alcohol	F10	F10
Degeneration of nervous system due to alcohol	G31.2	G31.2
Alcoholic polyneuropathy	G62.1	G62.1
Alcoholic myopathy	G72.1	
Alcoholic cardiomyopathy	I42.6	I42.6
Alcoholic gastritis	K29.2	K29.2
Alcoholic liver disease	K70	K70
Chronic hepatitis, not elsewhere classified		K73
Hepatic fibrosis		K74.0
Hepatic sclerosis		K74.1
Hepatic fibrosis with hepatitic sclerosis		K74.2
Other and unspecified cirrhosis of liver		K74.6
Alcohol-induced acute pancreatitis	K85.2	
Alcohol induced chronic pancreatitis	K86.0	K86.0
Fetal induced alcohol syndrome (dysmorphic)	Q86.0	
Excess alcohol blood levels	R78.0	
Accidental poisoning by and exposure to alcohol	X45	X45
Intentional self-poisoning by and exposure to alcohol	X65	X65
Poisoning by and exposure to alcohol, undetermined intent	Y15	Y15

In the consultation response, ONS highlighted that the proposed change in definition would make the available time series shorter than the current definition, starting in 2001 when ICD-10 codes began to be used (2000 in Scotland). This is due to the lack of comparable ICD-9 codes for some of the alcohol-specific codes introduced to the new definition.

In order to maintain the monitoring of alcohol-specific deaths over a longer time trend, NHS Health Scotland has conducted a mapping and consultation exercise whereby the ICD-10 codes in the new definition of alcohol-specific deaths have been mapped to equivalent ICD-9 codes that are used prior to 2000.

In the new definition there are three newly introduced codes with no ICD-9 direct match:

- E24.4 Alcohol-induced pseudo-Cushing's syndrome
- G72.1 Alcoholic myopathy
- K85.2 Alcohol-induced acute pancreatitis

However, similar issues arise in the translation of codes from ICD-10 to ICD-9 using the old definition. There is no direct match for several of the codes that are common to both the new and old definitions:

- G31.2 Degeneration of nervous system due to alcohol
- K86.0 Alcohol-induced acute pancreatitis
- X65 Intentional self-poisoning by and exposure to alcohol
- Y15 Poisoning by and exposure to alcohol, undetermined intent

Table 3 summarises these differences.

Table 3: Conditions included in the new definition of alcohol-specific deaths, overlap with the previous definition and equivalent ICD-9 codes¹

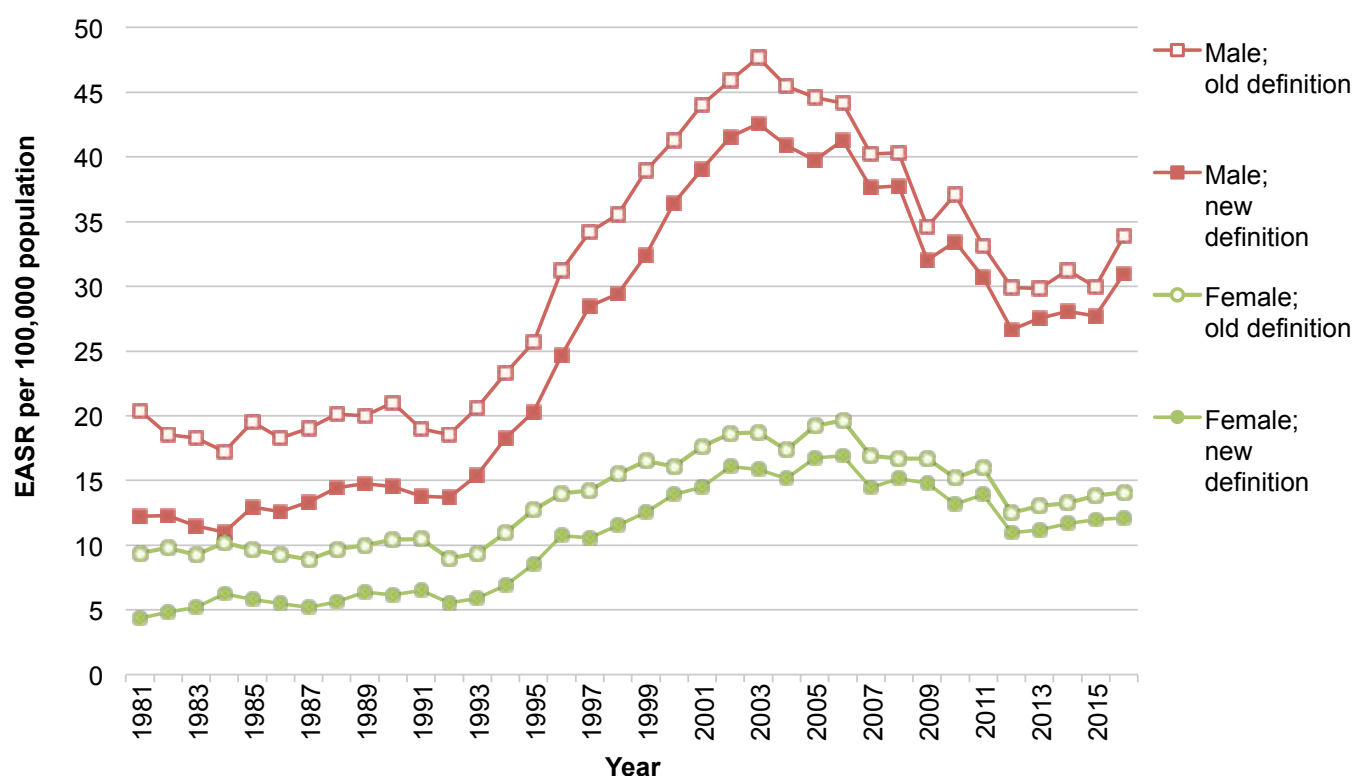
Description of condition	ICD-10 code Alcohol-specific (new) definition	ICD-10 code Alcohol-related (old) definition	ICD-9 code Alcohol-related (old) definition
Alcohol-induced pseudo-Cushing's syndrome	E24.4		no direct match
Mental and behavioural disorders due to use of alcohol	F10	F10	291, 303, 305.0
Degeneration of nervous system due to alcohol	G31.2	G31.2	no direct match
Alcoholic polyneuropathy	G62.1	G62.1	357.5
Alcoholic myopathy	G72.1		no direct match
Alcoholic cardiomyopathy	I42.6	I42.6	425.5
Alcoholic gastritis	K29.2	K29.2	535.3
Alcoholic liver disease	K70	K70	571.0, 571.1, 571.2, 571.3
Alcohol-induced acute pancreatitis	K85.2		no direct match
Alcohol induced chronic pancreatitis	K86.0	K85.2	no direct match
Fetal induced alcohol syndrome (dysmorphic)	Q86.0		760.7
Excess alcohol blood levels	R78.0	K74.2	790.3
Accidental poisoning by and exposure to alcohol	X45	X45	E860
Intentional self-poisoning by and exposure to alcohol	X65	X65	no direct match
Poisoning by and exposure to alcohol, undetermined intent	Y15	Y15	no direct match

¹ Dark shaded rows show new conditions and their equivalent ICD-9 codes, or lack of; light shaded rows show conditions present in both the new and previous definition with no direct ICD-9 match.

The new (alcohol-specific) definition results in lower counts of deaths registered in Scotland than the old (alcohol-related) definition; this is primarily a result of excluding those causes not wholly attributable to alcohol that had been in the previous definition. Using the proposed ICD-9 codes (Table 3), between 1981 and 1999 the alcohol-specific definition also results in lower counts than the previous definition. The difference between the number of deaths identified by the old and new definitions is greater; this is due to the additional impact of those ICD-10 codes with no direct ICD-9 match also not being included in the total number of deaths.

Rates using the new and previous definitions result in very similar trends over time (Figure 1); year-on-year rises and falls are similar for both men and women. However, as expected, lower rates are seen for both men and women using the new alcohol-specific definition. Using the proposed ICD-9 codes (1981–1999), the difference between the new and previous definitions is greater and increases the further back the time series goes.

Figure 1: European age-sex standardised rates (EASR) of death using new and old definitions, by sex, Scotland



The translation of the new alcohol-specific deaths definition to the equivalent ICD-9 codes proposed here offers a reasonable approach to maintaining long-term monitoring of alcohol-specific deaths in Scotland. It is recognised that the codes included prior to 2000 are not an exact match to the codes included in the definition from 2000 onwards; however this is also the case with the old definition for which longer trends were presented. Regardless, caution should be exercised when interpreting these trends over the longer time period.

Data for deaths analysis are provided by the National Records for Scotland (NRS). 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.

More information on alcohol deaths in Scotland can be found at: www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/deaths/alcohol-deaths

More information on Scottish mid-year population estimates can be found at: www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates

More information on the 2013 European Standard Population can be found at: www.isdscotland.org/Products-and-Services/GPD-Support/Population/Standard-Populations/

More information on alcohol-specific deaths in England & Wales can be found at: www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/causesofdeath/bulletins/alcoholrelateddeathsintheunitedkingdom/registeredin2016

Alcohol-related hospital admissions

Data relating to alcohol-related admissions are taken from 'Alcohol-related hospital statistics, Scotland 2016/17' published by Information Services Division (ISD) (Nov 2017). 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.' The full list of ICD codes used in the analysis of alcohol-related hospital admissions can be found at the link below.

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/Topics/Statistics/Browse/Crime-Justice/PubRecordedCrime

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

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 2016/17 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.

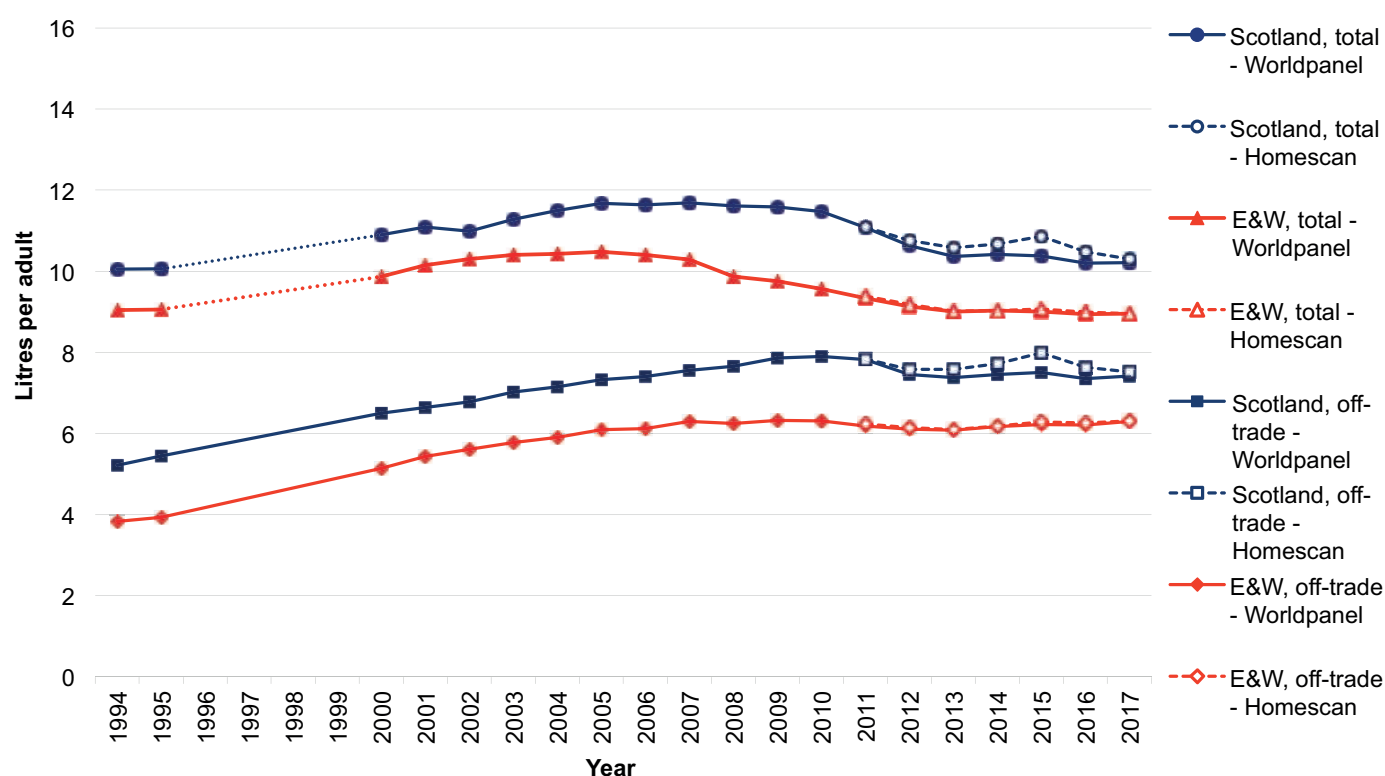
SII and RII are considered better than measuring the absolute difference or ratio between the most and least deprived groups because they take into account the whole population not just the extremes.

Appendix 2

Supplementary analysis of estimated population level alcohol consumption using different methods of adjusting for the discounter market share

As described in [Appendix 1](#), alcohol retail sales data are adjusted to account for the loss of data from the discount supermarkets Aldi and Lidl. There are two sources of data available to us that can be used to make the adjustment, namely Nielsen HomeScan and Kantar Worldpanel. The data in the main report shows the adjusted estimates of alcohol using Kantar Worldpanel data; this is a change to the methodology used in previous MESAS reports. The additional data presented here (Figure 2) shows population alcohol consumption estimates using Kantar Worldpanel and Nielsen HomeScan, our previous source of data used for adjustment.

Figure 2: Volume of pure alcohol sold, total and off-trade, per adult in Scotland and England & Wales, 1994–2017



Additional alcohol sales data are available in the [alcohol sales spreadsheet](#).

This resource may also be made available
on request in the following formats:



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