

Monitoring and Evaluating Scotland's Alcohol Strategy

Final Annual Report

March 2016

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Executive summary	3
Conclusion	5
1. Introduction and background	7
1.1 Scotland's alcohol strategy	8
1.2 The Evaluation	10
2. Trends in key outcomes	14
2.1 Trends in alcohol consumption	14
2.2 Alcohol-related harms	19
2.3 Summary	29
3. Assessing the contribution of the strategy to intermediate outcomes.....	31
3.1 The Licensing Act	31
3.2 Alcohol brief intervention (ABI) programme	32
3.3 Increased investment in alcohol treatment and care services	34
3.4 The Alcohol Act.....	37
3.5 Public alcohol-related knowledge and attitudes	39
3.6 Alcohol price and affordability	41
3.7 Summary	44
4. Assessing the contribution of external factors to trends in alcohol consumption and alcohol-related mortality	45
4.1 Income trends and deprivation.....	49
4.2 A vulnerable cohort effect in Scotland	52
4.3 Summary	53
5. Discussion	54
5.1 Outcomes: Changing alcohol consumption and related harm	54
5.2 Impact of the strategy	55
5.3 Impact of factors external to the strategy	56
5.4 Strengths and weaknesses of the evaluation approach.....	58
6. Recommendations	60
7. Conclusion	63
8. References	64

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This report was signed off by Dr Andrew Fraser (NHS Health Scotland), and Dr Colin Fischbacher (NHS National Services Scotland)

All alcohol sales and price data are copyrighted to Nielsen and CGA Strategy

Executive summary

After a period of rapidly increasing rates of alcohol-related harm in Scotland and with alcohol-related harm in Scotland at historically high levels, a comprehensive strategic approach to alcohol was put in place from 2008/2009. The strategy was evidence-based and contained the main components advocated by the World Health Organisation (WHO). It aimed to reduce alcohol consumption and related harm through a wide range of interventions implemented through new policy and legislation. This evaluation was put in place to assess the success or otherwise of the strategy.

Monitoring trends in alcohol consumption shows that population consumption has declined in recent years, although that decline may now be flattening. A downward trend in self-reported consumption appears to be driven by declining consumption and increased abstinence in young adults, and decreased consumption amongst the heaviest drinkers, especially men.

The most reliable and robust indicators of alcohol related harm are alcohol-related mortality and hospitalisation rates. In general, both of these have been declining in recent years. The decline in the alcohol-related mortality rate started from peaks in 2003 for men and in 2006 for women. Rates have not declined since 2012 for either gender. Alcohol-related hospitalisations began to decline from 2008/09 for both genders. The increase and subsequent decline in alcohol-related mortality and hospitalisations was driven in particular by men and those living in the most deprived areas. Within the context of declining overall crime, there was little evidence of a consistent trend across the indicators of alcohol related crime. Within the context of declines in the proportion of young people drinking, adverse consequences, from their own alcohol consumption, reported by 13 and 15 year olds have been declining, and are now at the lowest recorded level. Hospitalisation rates for those aged under 15 years have also declined by approximately 80% since their peak in 1995/96.

This evaluation studied the implementation and intermediate outcomes of selected components of the strategy:

- The Licensing Act has changed licensing practice. There was compliance with regulations concerning promotions in the on-trade and display of alcohol in the off-trade. Licensing standards officers, staff training and test purchasing were well received. The overprovision assessments and public health objective had influenced statements of policy, but were proving difficult to operationalise. Limitations of licensing data meant it was not possible to determine if such policy-based changes are influencing either licensing decisions or alcohol availability.
- There was evidence that the performance target, national co-ordination and increased investment for a programme of alcohol brief interventions (ABIs) successfully scaled up delivery from 2008. ABIs have since been embedded into routine NHS practice in Scotland, particularly in primary care, and the performance target was exceeded. It was estimated that ABIs have been delivered to 43% of harmful and hazardous drinkers over the seven years of the programme. There were insufficient data collected within the ABI

programme with which to assess the characteristics of those reached, uptake or impact on alcohol consumption.

- There was a tripling of investment in specialist treatment and care services. Staff perceived the increased investment, reformed planning arrangements and guidelines, to ensure quality and consistency in alcohol treatment and care services, from 2008 had improved the availability and quality of services in Scotland. Waiting times for specialist services reduced. In 2012 the ratio of prevalence of alcohol dependence to service users (the PSUR) estimated that 1 in 4 individuals in need had accessed a specialist service. This is a high level of service access by international standards. However, it is sensitive to changes in the estimate of prevalence of alcohol dependency (and the definition of need) and, given the limitations of the estimate used, is likely to be an overestimate. It was not possible to estimate the PSUR before the increase in investment, or to compare with service access in England or England & Wales.
- The Alcohol Act, which included the ban on multi-buy discounts, was introduced in October 2011 and was associated with a modest reduction in alcohol sales in the off-trade, driven by a reduction in off-trade wine sales. This does not appear to have had a measurable, short-term impact on deaths or hospitalisations entirely caused by alcohol. Its effect on wider alcohol-attributable conditions was not examined.
- Evidence of knowledge and attitude change was mixed. There was evidence that there had been no consistent change in knowledge about units or attitudes to drunkenness or the social role of drinking. However, there was evidence that harm caused by alcohol in Scotland was increasingly recognised. There was a lack of evidence on whether or not the media discourse, or the de-normalisation of alcohol implicit in many of the interventions had changed attitudes not measured in the study.
- Minimum Unit Pricing (MUP) is subject to a legal challenge and has not yet been implemented. Other than the removal of the financial incentive to buy more alcohol than intended through the ban on multi-buy promotions any change to the affordability of alcohol was due to factors external to the strategy.

Given the timing of the declines it is clear that factors external to the strategy are likely to have contributed to changes in alcohol-related mortality and hospitalisation, especially male mortality. It is likely that rising and then falling incomes, especially for the poorest groups, over the 1990s and 2000s, explain part of the rise and fall in alcohol consumption and harms in Scotland over that time period. There is some evidence that a 'vulnerable cohort', adversely affected by socio-economic policies in the 1980s, was responsible for a wave of alcohol-related mortality that increased in the 1990s and decreased from the mid-2000s as the cohort aged and died.

The report recommends that:

- The current refresh of the alcohol strategy continues to be informed by the evidence that the most effective (and cost effective) interventions to reduce alcohol consumption and related harm involve action to reduce alcohol price, availability and exposure to marketing. Consideration should be given as to how alcohol consumption and related harm can be addressed within the context of the wider socioeconomic determinants of health.
- Effort is made to improve implementation of existing components of the strategy, particularly those with the potential to reduce the availability of alcohol and to incorporate the learning on implementation facilitators when developing new interventions. Notably, the lack of implementation of MUP due to on-going legal challenge has constrained the impact of the strategy. There is a need to improve the completeness and consistency of local data collection so that how an intervention is being implemented, by whom, reaching whom and with what immediate impact is better understood. Such data are crucial for informing and assessing whether interventions are likely to be having the desired and equitable impact locally and to drive improvement. Allowing sufficient lead time to establish systems to support delivery, including data collection systems is vital.
- Monitoring of key trends in alcohol price, affordability, sales and alcohol-related mortality and morbidity continues to ensure any consistent increase in alcohol affordability, consumption or related harm is spotted early. Where possible and feasible, new interventions should be planned to enable robust evaluation before integration into policy. Better collection, collation, accessibility and use of national and local data on delivery could improve implementation.
- There are recommendations for future research. These include: strengthening the use of natural experiment designs to evaluate policy; better understanding of the differences in drinking between Scotland and England & Wales and the relationship with harm; understanding the linkages between policy intent, legislation, social attitudes and changing social norms; understanding the mechanisms underpinning a 'vulnerable cohort'; understanding the factors that facilitate initiation and continued engagement with specialist alcohol treatment and care services; and; examining the relationship between alcohol price, consumption and harm within Scotland and the rest of the UK..

Conclusion

Alcohol-related harm in Scotland has declined in recent years. There was evidence that the evidence-based interventions studied were implemented, although there were difficulties operationalising some aspects. There was evidence of impact on several of the intermediate outcomes, although lack of data and/or data limitations meant impact was not assessable for others.

Two factors external to the strategy were considered to have made a contribution to the mortality trends: falling disposable income (and hence alcohol affordability) for

people living in the most deprived areas, and a vulnerable cohort responsible for a wave of alcohol-related mortality, that increased in the 1990s and decreased from the mid-2000s as the cohort aged and died.

It was impossible to quantify precisely the impact of these external factors, nor determine the relative contribution of the external factors and the strategy to the declines. The declines in both mortality rates and hospitalisation rates have been much steeper in Scotland than England/England & Wales and, given the evidence-base, the strategy may be contributing to these improvements.

Despite these recent improvements, rates of alcohol-related mortality and morbidity in Scotland continues to be higher than in the 1980s and higher than England & Wales. Inequalities in alcohol-related harm persist, with those living in the most deprived areas, especially men, having the highest rates. There is, therefore, a continued need for action to further reduce alcohol-related harm in Scotland and to address these health inequalities. Minimum unit pricing has not been implemented and this is likely to have constrained the strategy's contribution to declining alcohol consumption and related harm. There is some evidence that the downward trends in both alcohol consumption (sales) and alcohol-related mortality may have stalled, with no decreases in 2013 and 2014. To say whether this marks the start of a longer-term change in trend requires continued monitoring.

1. Introduction and background

Between 2006 and 2010 a number of reports and journal papers revealed the scale of alcohol-related harm to individuals, families, communities and the economy in Scotland. This included:

- The growing chronic liver disease and cirrhosis mortality rates in Scotland at a time when rates in most of Western Europe were falling.^{1,2}
- One in 20 deaths in Scotland were calculated to be attributable to alcohol.³
- 50% of prisoners in Scotland reported being drunk at the time of their offence⁴, rising to 77% for young offenders.⁵
- Where the status was known, 69% of those accused of homicides in Scotland were drunk at the time of their offence⁶ and 70% of assaults requiring treatment at A&E were thought to involve alcohol.⁷
- 65,000 children were estimated to potentially be affected by parental alcohol misuse.⁸
- The cost of alcohol misuse to the Scottish economy was estimated at around £3.56 billion per year, equivalent to £900 per adult.⁹

In response, in 2009 the Scottish Government published a new 'Framework for Action' (the Framework) for reducing alcohol-related harm.¹⁰ The Framework set out important new proposals and built on policies already in place, including the 2005 Licensing Act¹¹ that had yet to be implemented. The framework contained proposals that required further legislative change and these received parliamentary approval through the Alcohol Act¹² and the Minimum Pricing Act.¹³ The term 'alcohol strategy' is therefore used in this report to refer to these four complementary strands (the Framework and associated actions, the Licensing Act, the Alcohol Act and Minimum Pricing Act) but it is recognised that the alcohol strategy continues to evolve.ⁱ NHS Health Scotland, in partnership with NHS National Services Scotland Information Services Division (NSS ISD), was tasked with the evaluation of this new strategy.

This report presents a final overview of findings from the current phase of the Monitoring and Evaluating Scotland's Alcohol Strategy (MESAS) programme. It will describe the evaluation approach (Chapter 1); trends in the key outcomes of the strategy, namely alcohol consumption and related harms (Chapter 2); key findings from our assessment of the impact of the main components of the alcohol strategy (Chapter 3); and the likely contribution of external factors thought to influence the key outcomes (Chapter 4). Chapter 5 presents a synthesis of the key findings and conclusions from the MESAS programme, which have informed a set of recommendations for future policy and research (Chapter 6).

ⁱ For example, new legislation to reduce the legal drink driving limit in Scotland was introduced in December 2014 and is the subject of a separate evaluation.

1.1 Scotland's alcohol strategy

Scotland's alcohol strategy draws heavily on the international evidence. This evidence suggests an effective alcohol policy is one that encompasses a comprehensive range of interventions (including regulatory measures and support and treatment interventions) aimed at the whole population with particular targeting for high-risk groups. The strategy consists of four components briefly described below and the main interventions of interest are summarised in Box 1.

The Licensing (Scotland) Act 2005¹¹ (**'the Licensing Act'**) (implemented in full from Sept 2009)

Much of the Licensing Act concerned the administration of licensing. Actions within the Act of interest to the MESAS programme include: restrictions on irresponsible promotions in the on-trade and the display of alcohol in the off-trade; the introduction of licensing objectives; mandatory training for Licensing Board members, licence holders and their staff; overprovision assessments and their use in decision making; the recruitment of licensing standards officers (LSOs); and measures to reduce underage selling, particularly test purchasing. The Licensing Act also included a relaxation of restrictions on opening hours, although with a presumption against 24 hour opening.

Changing Scotland's Relationship with Alcohol: A Framework for Action¹⁰ (**'the Framework'**) (published in 2009).

The Framework aimed to reduce alcohol-related harm by reducing alcohol consumption through actions directed at the whole population alongside actions targeted at high-risk groups and individuals. It included 41 actions aimed at reducing consumption; supporting families and communities; promoting positive attitudes and positive choices; and improving treatment and support. Key elements are summarised in Box 1. The wide scope of the Framework, finite resources to carry out the evaluation, and the challenges of robust study design for some elements meant it was not possible to evaluate all components. After consideration of criteria for evaluation (see below) the MESAS programme focused on: the scale-up of, and infrastructure support for, the delivery of alcohol brief interventions (ABIs); and increased investment and infrastructure support for alcohol treatment and care services. Both interventions were targeted rather than whole population approaches and were initiated in 2008 (before the publication of the Framework), although implementation took place over subsequent years.

Alcohol etc. (Scotland) Act 2010¹² (**'the Alcohol Act'**) (largely implemented in October 2011)

The Alcohol Act included a number of measures designed to reduce alcohol consumption, most notably the multi-buy discount ban in the off-trade, which prevented offers such as '3 bottles for the price of 2'.

Alcohol (Minimum Pricing) Scotland Act 2012¹³ ('the Minimum Pricing Act') (yet to be implemented)

The Minimum Pricing Act set a minimum unit price (MUP) below which alcohol cannot be sold in any licensed premises. At the time of writing the Minimum Pricing Act remains subject to a legal challenge and has not been implemented. Therefore it has not been evaluated.

Box 1: The key features of Scotland's alcohol strategy

Licensing (Scotland) Act 2005 - Implemented September 2009

- Test purchasing
- Ability to refuse new licenses in areas deemed overprovided
- Mandatory training for Licensing Board members, licence holders and staff
- Ban on irresponsible promotions in the on-trade
- Restriction on place of display in off-trade
- Licensing objectives concerning crime and disorder, public safety, public nuisance, public health and protecting children
- Licensing standard officers
- Local licensing forums
- Public right to object

Framework for Action (plus related actions) 2009 onwards

- Advice for parents and carers
- Diversionary activities for young people
- Initiatives to tackle alcohol-related violence
- Improve identification of those affected by parental substance misuse
- Education and awareness
- Routine screening and Alcohol Brief Interventions (ABIs) in the NHS, with funding,
- resources, training and a target for delivery
- Limited extension of ABIs to more settings from 2012
- Additional investment for treatment and care services
- Essential services review of specialist services
- A target for specialist alcohol treatment waiting times
- Establishment of Alcohol and Drug Partnerships with associated guidance to improve quality and consistency of approach.
- Improved identification and treatment of offenders with alcohol problems

Alcohol etc. (Scotland) Act 2010 - Implemented October 2011

- Ban on quantity discounts in off-sales
- Restrictions on alcohol display and promotions in off-sales
- Mandatory Challenge 25 age verification policy
- Powers to introduce a social responsibility levy on licence holders
- Health Boards to be notified of premises licence applications
- Annual Chief Constable reports to be provided

Alcohol (Minimum Pricing) (Scotland) Act 2012. To be implemented

- A minimum unit price for all alcohol sold through licensed premises in Scotland
- Expiry of minimum unit pricing (MUP) after 6 years of implementation unless the
- Scottish Ministers make provision for it to continue after the end of 5 years
- implementation (the sunset clause)
- A report for Scottish Parliament on the operation and effect of MUP after 5 years
- of implementation (the review clause)

1.2 The Evaluation

The approach

Policy evaluations, such as MESAS, where evaluation needs are secondary to implementation needs, are difficult. Scotland's alcohol strategy consisted of numerous interventions with implementation varying over time (Figure 1) and across the country. There was limited opportunity for either a concurrent comparison with an area where the strategy had not been implemented, or to influence data collection. These features limited the use of more traditional experimental methods for evaluation. A theory-based approach was therefore used to evaluate Scotland's alcohol strategy.

In the theory-based approach used, the conclusion that the strategy has contributed to the desired long-term outcomes is drawn if:

- There is a plausible 'theory of change' that shows how the activities in the strategy link to the outcomes identified.
- It can be demonstrated that the activities were implemented in a way likely to achieve the outcomes.
- Evidence is gathered which supports the theory of change i.e. demonstrates the sequence of expected results is being realised.
- External factors influencing outcomes have been assessed and accounted for.^{14,15}

Figure 1: Schematic of the implementation of main strategy components

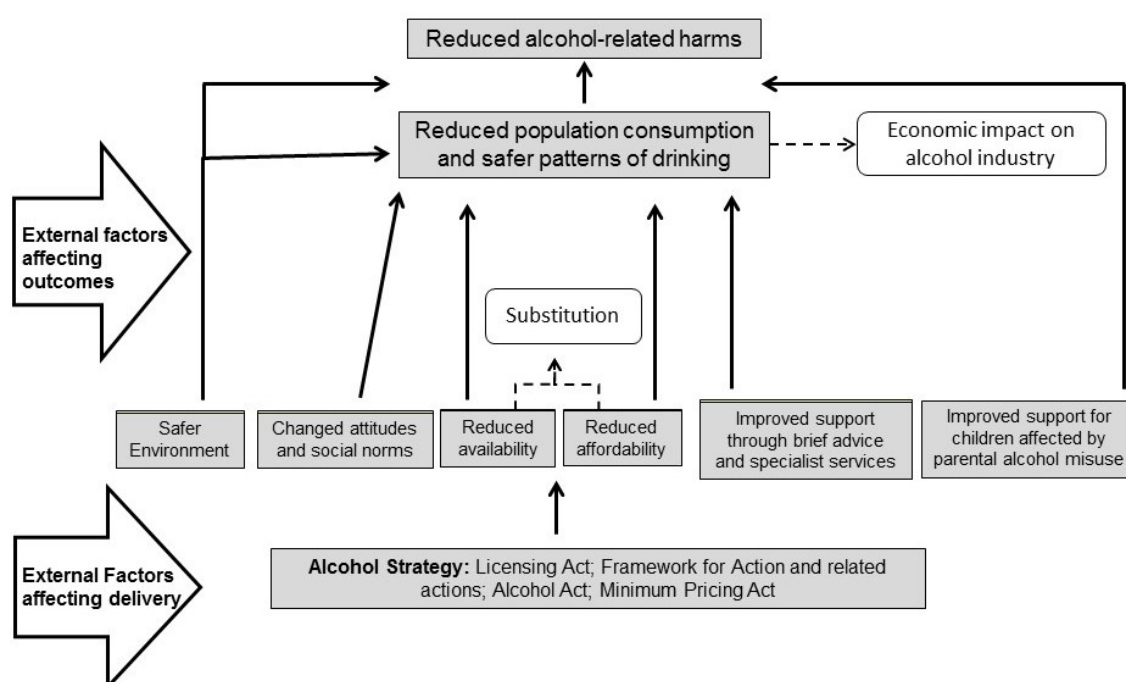


Theory of change

A theory of change was developed that described how implementation of the strategy could lead to reductions in alcohol consumption and related harms via a range of intermediate outcomes (Figure 2). The theory of change was based on well-established international evidence. It hypothesised that a reduction in alcohol harm would be achieved if individuals exhibited safer drinking patterns and if there was a reduction in population alcohol consumption. The link between changes in population alcohol consumption and levels of alcohol harms in the population is well established.¹⁶

It was theorised that changes in consumption would be influenced by a number of intermediate outcomes such as changes in the environment in which people drink or the availability of alcohol. This required action on a variety of fronts which together were intended to achieve a change in the social norm whereby alcohol would be recognised as 'no ordinary commodity'.

Figure 2: The MESAS theory of change



Within this theory of change the ultimate goal was a reduction in alcohol harms. This included harms in the domains of health, crime, child protection, and the economy. Data availability and the challenges of designing robust studies in the time and with the resources available meant that only some of these domains were included in the MESAS programme.

Some of these harms, such as alcohol-related crime and some alcohol-related health harms, may respond fairly quickly in response to changes in consumption. For others the full effect of the strategy on population consumption and alcohol harms (both wholly and partially attributable) would not be expected within the evaluation time-period. Therefore in some of the evaluations, the impact on consumption or harms was not considered. Rather, success of the strategy was judged against more immediate results, such as the implementation of a policy, delivery of a service or impact on intermediate outcomes. The discussion synthesises the results of the evaluations together and reflects on whether the strategy as a whole was likely to have had the intended impact.

The theory of change acknowledged that other factors may influence achievement of the outcomes. It also identified important and foreseeable, although unintended, consequences of MUP. Given that MUP has not yet been implemented, these were not investigated.

The MESAS programme was designed to test whether the strategy was achieving changes in alcohol consumption and related harms through the mechanisms predicted by the theory of change. Where possible, England & Wales, or England alone, was used as a comparator population in an attempt to distinguish the impact of the strategy from that of external factors, which were common across the populations of Great Britain.

Given the size and scope of the strategy, it was not feasible or justifiable to attempt a comprehensive evaluation of all its components. Decisions on what to evaluate were determined by an expert Reference Group and took account of a range of criteria including: likely impact of the intervention; availability of existing and robust data; size of the investment from Government; and feasibility, cost and value of a robust evaluation. The final MESAS programme contained studies to monitor outcomes, assess implementation and likely contribution of strategy components to outcomes, and identify and assess the contribution of external factors (Box 2).

Box 2: The MESAS programme

Monitoring intended outcomes

- Alcohol consumption: levels of population consumption and drinking patterns
- Alcohol harms: alcohol-related mortality morbidity, alcohol-related crime and adverse consequences for school children from their own drinking.

Assessing implementation and likely contribution of strategy components to intermediate outcomes

- Evaluation of the implementation of the Licensing Act
- Evaluation of the implementation of the ABI programme
- Evaluation of the impact of the Alcohol Act
- Evaluation of the implementation and impact of increased investment in alcohol treatment and care services
- Monitoring trends in alcohol-related knowledge and attitudes
- Monitoring trends in alcohol price and affordability

Identifying and assessing the contribution of external factors

- Income trends and deprivation patterns
- A 'vulnerable cohort' in Scotland
- Changing ethnic diversity
- Pre-2009 alcohol policy
- Alcohol social norms
- Alcohol market
- Pre-2009 clinical factors

2. Trends in key outcomes

This chapter summarises changes in the intended outcomes of the strategy, namely alcohol consumption and related harms. It describes the observed changes in population alcohol consumption and patterns of drinking. It then describes current trends in alcohol-related mortality, alcohol-related morbidity (proxied by hospitalisations), alcohol-related crime and harms to children from their own drinking.

2.1 Trends in alcohol consumption

Key messages

- Increasing population consumption from 1994, measured by alcohol sales, stabilised between 2005 and 2009, followed by a decline. This decline may be flattening in recent years.
- A downward trend in self-reported consumption appears to be driven by declining consumption and increased abstinence in young adults, and decreased consumption amongst the heaviest drinkers, particularly men.
- The proportion of 13-15 year olds reporting ever having a drink increased during the 1990s but has declined from the 2000s and in 2013 was the lowest ever.

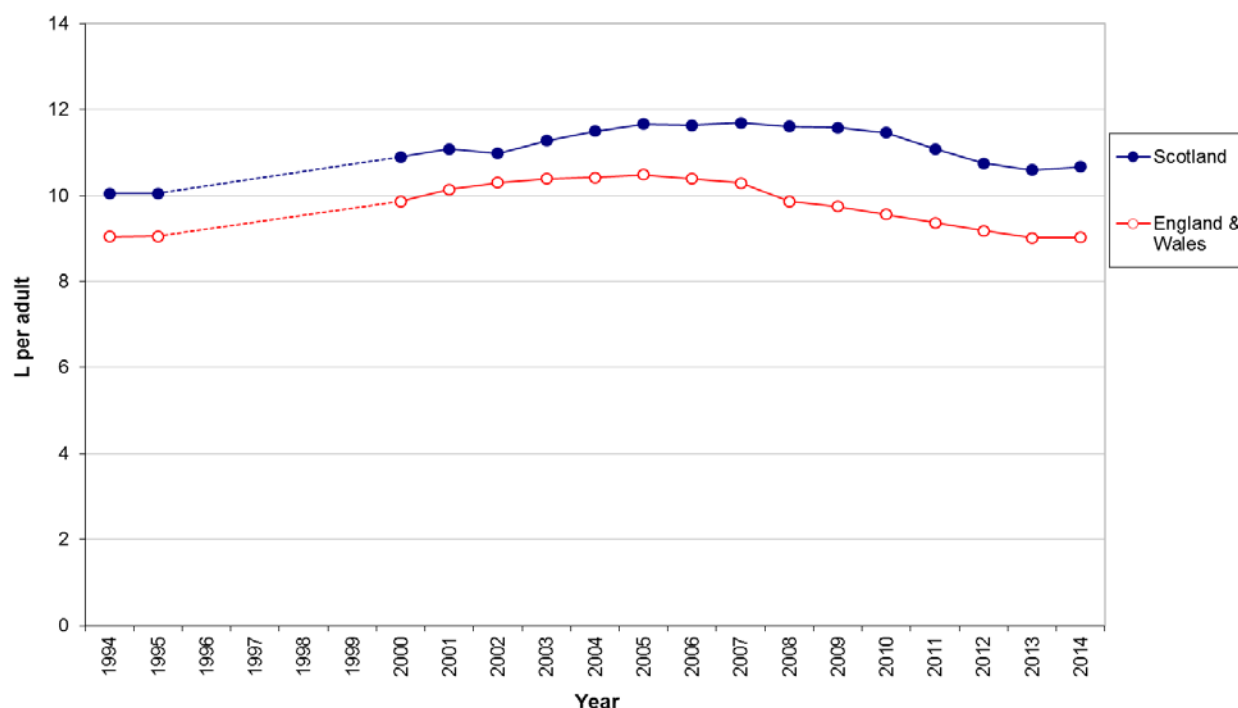
Reducing population alcohol consumption and increasing the adoption of safer drinking patterns were identified as important outcomes on the pathway to reduced alcohol-related harm. The MESAS programme used both alcohol sales data (expressed as litres of pure alcohol per adult aged 16+ years) and self-reported alcohol consumption, collected through population surveys, to monitor trends in alcohol consumption and drinking patterns in Scotland and England/England & Wales. Survey estimates of population consumption account for only around 50% of sales-based estimates and alcohol sales data are considered the more accurate measure of population consumption.¹⁷⁻¹⁹ This is because survey data are particularly prone to biases related to respondent recall, social desirability, response rates and sampling design.²⁰ However, only survey data can allow for more detailed exploration of trends and patterns in population sub-groups, interpreted bearing in mind the limitations of the data. Details of the methods and all the analyses for this section can be found in our recent publication²¹ and Appendix A.

2.1.1 Alcohol sales

Scottish trends

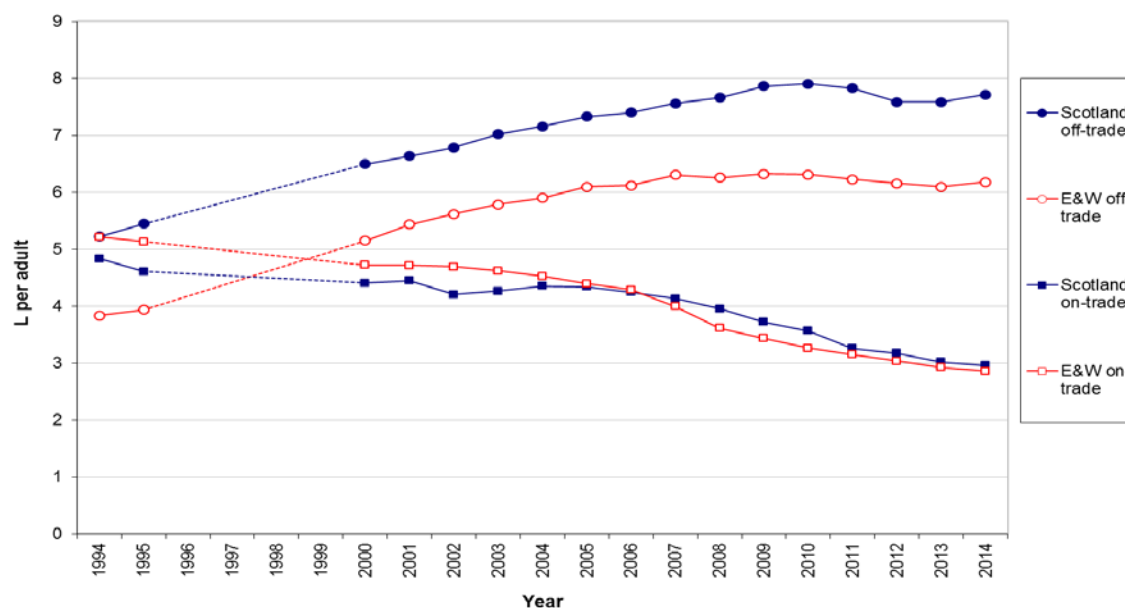
This section summarises trends in alcohol sales. More detail is provided in a recent report.²¹ After increasing over the 1990s and early 2000s, the volume of pure alcohol sold per adult in Scotland stabilised between 2005 and 2009, and declined until 2013. The most recent sales data suggest that the downward trend may be flattening. In 2014, 10.7 litres (L) of pure alcohol were sold per adult in Scotland (the equivalent of 20.5 units per adult per week) (Figure 3).²¹

Figure 3: Litres of pure alcohol sold per adult (aged ≥ 16 years) in Scotland and England & Wales, 1994-2014. [Source: Nielsen/CGA sales dataset (off-trade sales from 2011 onwards adjusted to account for the loss of discount retailers)]



Analysis by market sector shows that per adult alcohol sales in the on-trade in Scotland steadily declined since the 1990s, whereas off-trade sales increased up to 2010 before declining until 2012. In 2014 more alcohol was sold through supermarkets and off-licences compared with recent years, largely accounting for the flattening of the overall sales trend recently. The proportion of alcohol sold through the off-trade increased throughout the time period and in 2014 accounted for 72% of all alcohol sold in Scotland (Figure 4).²¹

Figure 4: Litres of pure alcohol sold per adult (aged ≥ 16 years) in Scotland and England & Wales, by market sector, 1994-2014. [Source: Nielsen/CGA sales dataset (off-trade sales from 2011 onwards adjusted to account for the loss of discount retailers)]



Comparison with England & Wales

Alcohol sales were consistently higher in Scotland than England & Wales throughout the period monitored; since 2008, per adult sales in Scotland have been 18-20% higher than in England & Wales. The majority of this difference is due to higher per adult off-trade sales in Scotland, largely accounted for by higher spirits sales. The overall pattern in trends in sales were broadly similar across the two areas, although the increasing alcohol sales trend in England & Wales stabilised and then declined earlier than in Scotland. In 2014, per adult sales in England & Wales did not decline for the first time since 2005 (Figures 3 and 4; see also previous publication²¹).

Expressing sales per adult drinker

Higher levels of per capita population consumption are estimated when sales are expressed as per adult drinker (12.7L) rather than per adult (10.7L). The difference between these indicators has widened over time due to an increasing prevalence of non-drinkers in Great Britain. In addition, the trends in both Scotland and England & Wales differ slightly when the denominator excludes non-drinkers. Nonetheless, the overall trends across the time period analysed, and differences between Scotland and England & Wales, remain broadly similar. Data on alcohol sales per adult drinker are available in Appendix A alongside key points based on their analysis.

2.1.2 Self-reported alcohol consumption

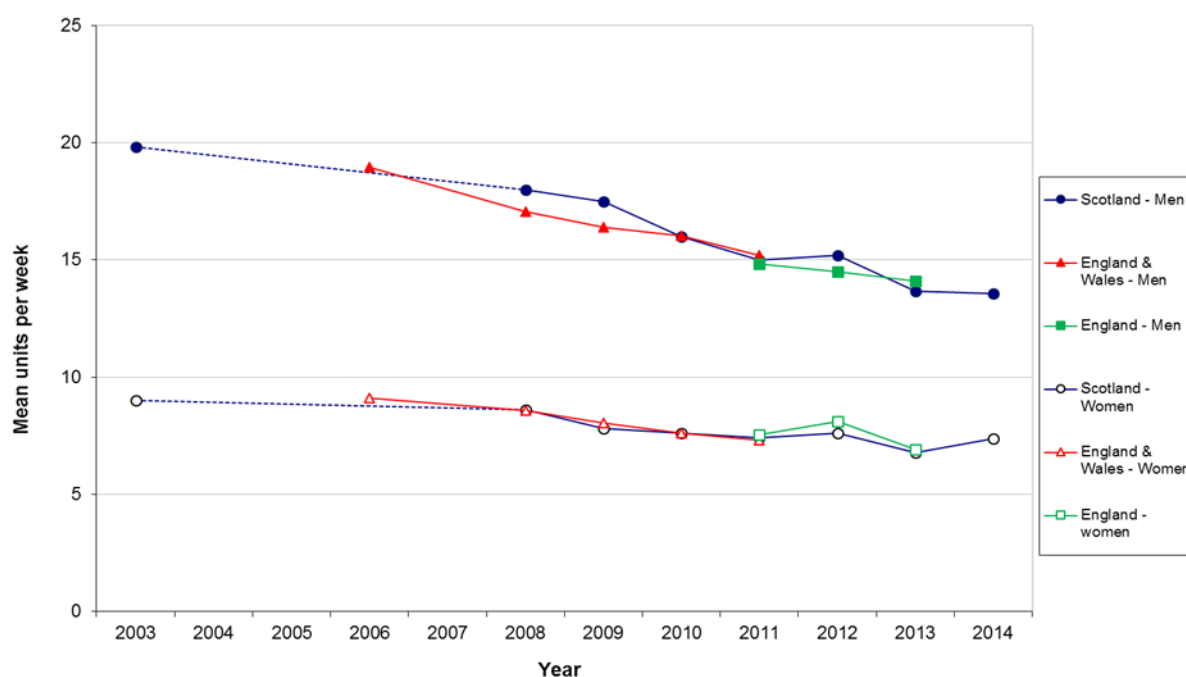
Average weekly alcohol consumption

The Scottish Health Survey (SHeS) has shown decreasing self-reported average (mean) weekly unit consumption for both genders in Scotland over the whole time trend (between 2003 and 2014). For men, reported average (mean) weekly unit consumption declined from 19.8 in 2003 to 13.6 units in 2014, and women from 9.0 to 7.4 units in the same period. There were corresponding falls in the proportion of

men and women reporting hazardous or harmful drinkingⁱⁱ (from 33% to 23% in men and from 23% to 17% in women) (Figure 5; data not shown; Appendix A).

Trends and levels of self-reported weekly alcohol consumption in England are broadly similar to those in Scotland (Figure 5).²²

Figure 5: Estimated average (mean) weekly alcohol consumption in Scotland, England and England & Wales: time trend [Source: SHeS; Health Survey for England; General Lifestyle Survey]

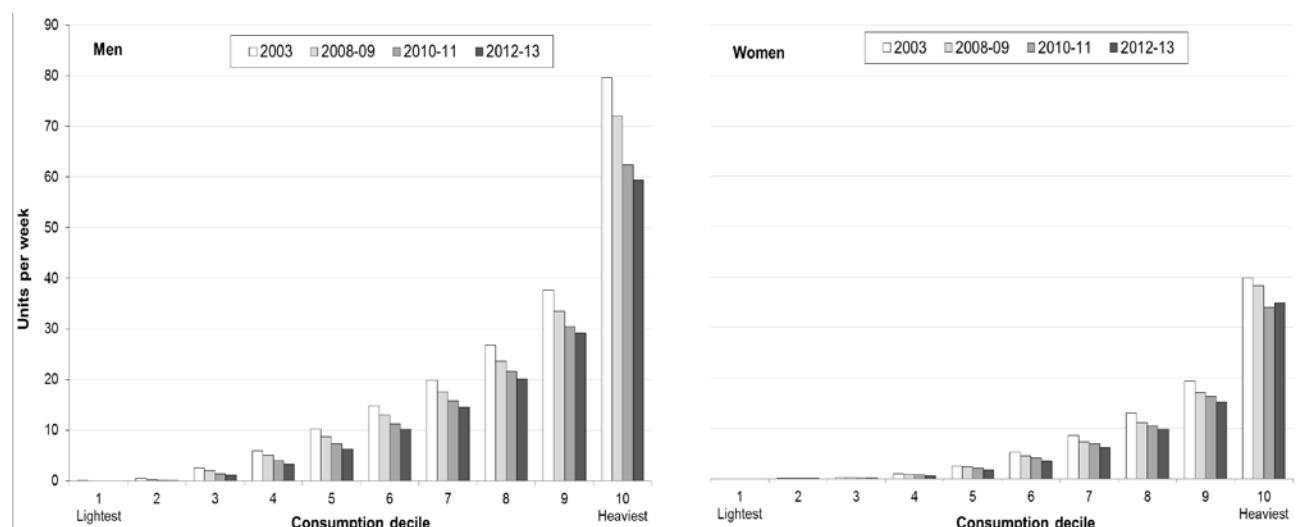


Consistent with the population-level trend, a decline in average weekly alcohol consumption in Scotland has been seen across all population subgroups. However, the overall trend has been predominantly driven by:

- a notable decrease in weekly consumption by young adults (aged 16-24 years), particularly since 2008;
- an increase in the proportion of adults who reported being non-drinkers (from 11% in 2003 to 16% in 2014);
- a large fall (in absolute terms) in the average weekly consumption among the heaviest 10% of drinkers, particularly men. In 2012/13, the heaviest 10% of drinkers consumed 46% of all alcohol consumed in Scotland (self-reported) (Figure 6 below; Appendix A).

ⁱⁱ For this analysis the following definitions were used: Hazardous (>21 units and up to 50 units per week for men; >14 units and up to 35 units per week for women); Harmful (men over 50 units per week; women over 35 units per week). In January 2016 the UK Chief Medical Officers revised the alcohol consumption guidelines, recommending a limit of 14 units a week for men and women. Applying these guidelines increases the proportion of men exceeding the weekly limits to 35%.

Figure 6: Average weekly units consumed by each consumption decile in Scotland for men and women (aged ≥16 years) [Source: SHeS]



Note: The population deciles have been calculated within each sex. For example, decile 10 in the left hand chart shows the average weekly consumption of the 10% heaviest male drinkers.

Drinking on the heaviest drinking day in the past week

The percentage of men and women in Scotland who reported exceeding the recommended alcohol consumption limit for their gender (3-4 units a day for men and 2-3 units for womenⁱⁱⁱ) fell between 2003 and 2014 (from 45% to 41% in men and 37% to 33% in women). Trends over time have been similar in England, though levels of drinking on the heaviest drinking day in the past week are consistently higher in Scotland (data not shown; Appendix A).

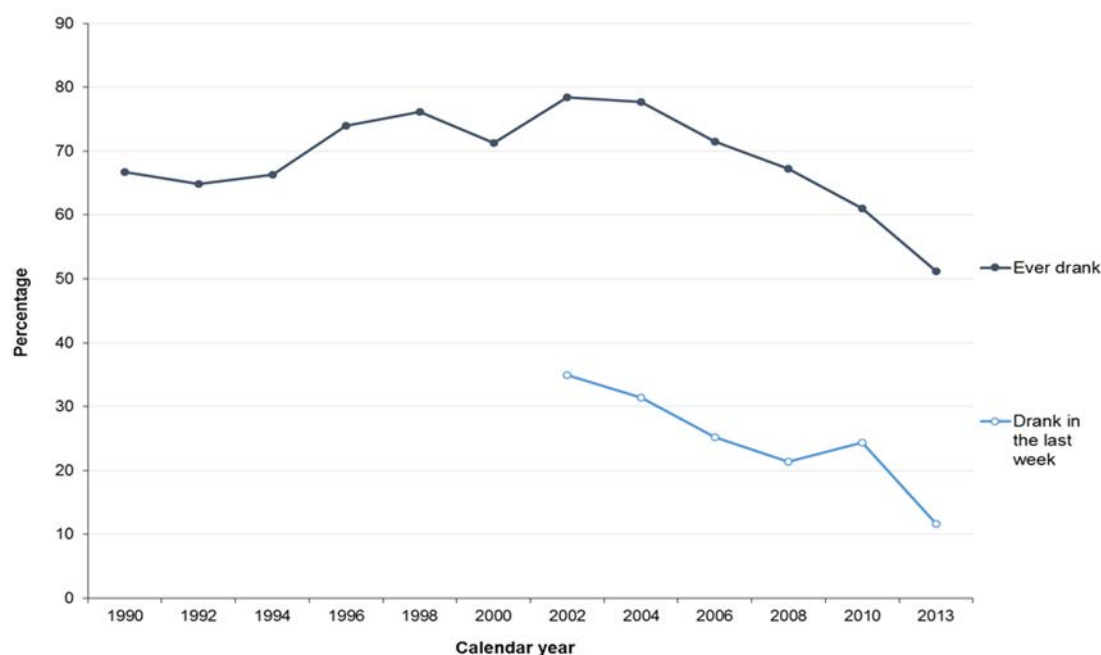
Alcohol consumption in school children

Scottish Adolescent Lifestyle and Substance Use Survey (SALSUS) data suggest that the proportion of school children aged 13 and 15 years reporting ever having consumed alcohol increased during the 1990s, but has declined from the early 2000s. In 2013, 51% of participants (aged 13 and 15 yrs combined) in Scotland reported ever having a *proper*^{iv} drink, the lowest level since records began (Figure 7). There has also been a corresponding decline in the proportion reporting alcohol consumption in the last week, from 35% in 2002 to 12% in 2013 (Figure 7). Similar trends have been seen in England, although data were not directly comparable.²²

ⁱⁱⁱ This analysis was performed using the old guidelines which set daily and weekly limits for each gender. In January 2016 the guidelines were revised to provide only weekly consumption guidance of no more than 14 units per week for both men and women.

^{iv} 'Proper drink' is the term used by the Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS) to differentiate a full drink from a sip

Figure 7: Percentage of school children aged 13 and 15 years, 1990 to 2013, who (a) reported ever having consumed alcohol and (b) reported consuming alcohol in the last week



2.2 Alcohol-related harms

Key messages

- The most reliable and robust indicators of alcohol-related harm are alcohol-related mortality and hospitalisation rates. In general, both of these have been declining in recent years.
- The decline in the alcohol-related mortality rate started from peaks in 2003 for men and in 2006 for women. Rates have not declined since 2012 for either gender. Alcohol-related hospitalisations began to decline from 2008/09 for both genders.
- The increase and subsequent decline in alcohol-related mortality and hospitalisations was driven in particular by men and those living in the most deprived areas.
- Although alcohol-related mortality and morbidity have fallen, they remain high, and higher than England & Wales.
- Within the context of declining overall crime, there was little evidence of a consistent trend across the indicators of alcohol related crime.
- Within the context of declines in the proportion of young people drinking, adverse consequences, from their own alcohol consumption, reported by 13-15 year olds have been declining, and are now at the lowest recorded level. Hospitalisation rates for those under 15 years have also declined by approximately 80% since their peak in 1995/96.

2.2.1 Alcohol-related mortality (deaths)

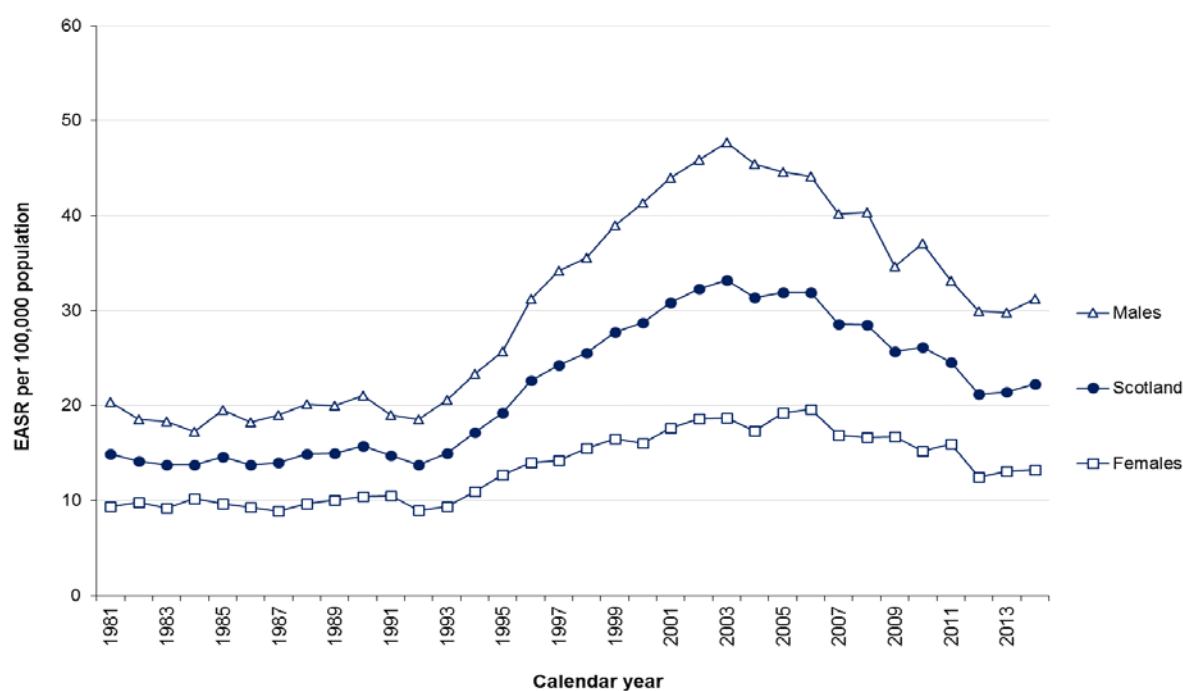
Data collected by the National Records of Scotland (NRS) on cause of death were used to monitor trends in alcohol-related mortality. Comparable data on alcohol-related mortality in England & Wales, from the Office of National Statistics (ONS), were also analysed.²³ The methods used are detailed in Appendix B. In the MESAS programme only those conditions that are wholly attributable to alcohol are used as indicators for mortality and hospitalisation, although these are likely to underestimate the total impact of alcohol on mortality and morbidity. Rates of both mortality and hospitalisations are European Age-sex standardised Rates (EASRs).

Standardisation allows rates to be compared between different geographical areas by removing the effects of different age structures in either the same population over time or in populations of different geographies. From January 2014 statistics providers in the UK started to use the new European Standard Population (ESP2013) to calculate the EASR for hospital and deaths statistics and ESP2013 is used for standardisation throughout this report.

Scottish trends: Overall and by gender

Alcohol-related mortality rates in Scotland increased from the 1990s to 2003. Since then they have fallen by 33% by 2014 (a fall of 35% for males and 29% for females). Mortality rates in men peaked in 2003. For women the peak was slightly later, in 2006. Mortality rates have not decreased since 2012 for either gender. Overall, mortality rates in 2014 were 49% higher than in 1981. Since 1981 male alcohol-related mortality has remained approximately twice the female mortality rate (Figure 8; Appendix B).

Figure 8: Alcohol-related mortality (underlying cause) overall and by gender in Scotland 1981-2014 (European Age and Sex Standardised rates) [Source: NRS]



Scottish trends by age

Alcohol-related mortality rates have been consistently highest amongst adults aged 55-64 years and the age-specific trends have generally followed the overall alcohol-related mortality trends (data not shown; Appendix B).

Scottish trends by area deprivation

Scotland has experienced persistent health inequalities in alcohol-related mortality, with large differences in alcohol-related mortality for those living in areas with different levels of deprivation seen throughout the period monitored. Absolute inequalities (measured by the Slope Index of Inequality (SII), see Box 3) increased from 1996 to around 2002 before subsequently declining. The relative inequalities (measured by the Relative Index of Inequality (RII)) increased until 2002, fluctuated until 2008 and then declined. Both of these measures were broadly consistent with the overall trends in alcohol-related mortality in Scotland whereby both relative and absolute inequalities increased and then decreased at approximately the same time as the overall rates. The increase in alcohol-related mortality between 1996 and 2003, and the subsequent decline, were largely accounted for by changes amongst those living in the most deprived areas (Figure 9 below; Appendix B). In 2014 mortality rates for those living in SIMD 1 (the most deprived 10% of areas in Scotland) were almost eight times the rate for those in SIMD 10 (the least deprived 10% of areas in Scotland) (Figure 9; Appendix B).

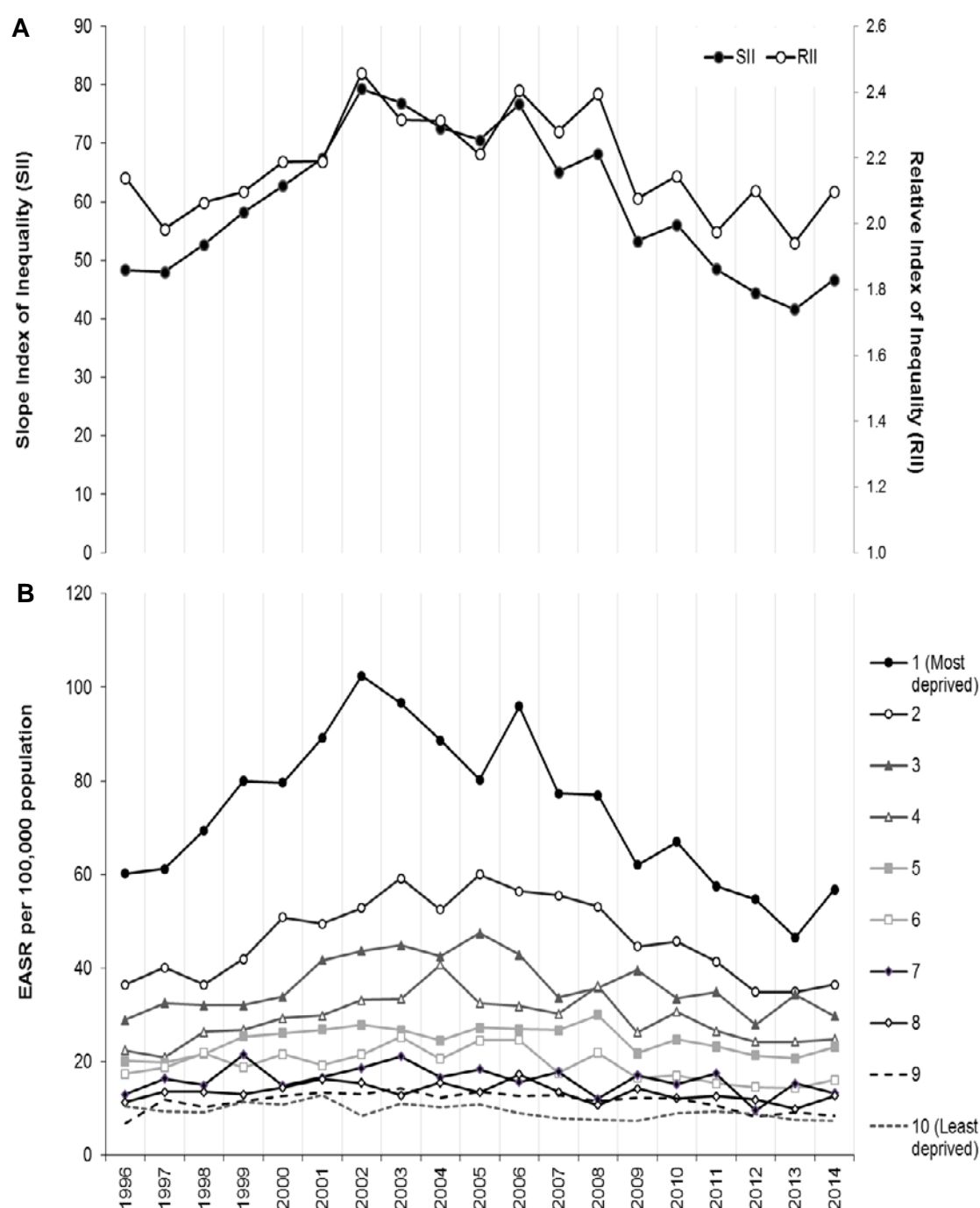
Box 3: Measures of health inequality

Slope Index of inequality (SII): is a measure of **absolute** inequality. It measures the difference in rates of alcohol-related deaths across all levels of area deprivation (i.e. not just between the most and least deprived areas)

Relative Index of Inequality (RII): is a measure of **relative** inequality. Like SII, it is based on rates of alcohol-related deaths across all levels of area deprivation, but RII compares ratios rather than absolute differences – a measure of 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 account the whole population not just the extremes.

Figure 9: Trends in alcohol-related mortality EASRs - inequalities as measured by (a) the Relative Index of Inequality and the Slope Index of Inequality and (b) by socio-economic deprivation decile (SIMD 1 = most deprived 10% of population, SIMD 10 = least deprived 10%), Scotland 1981-2014 [Source: NRS, ISD Scotland]

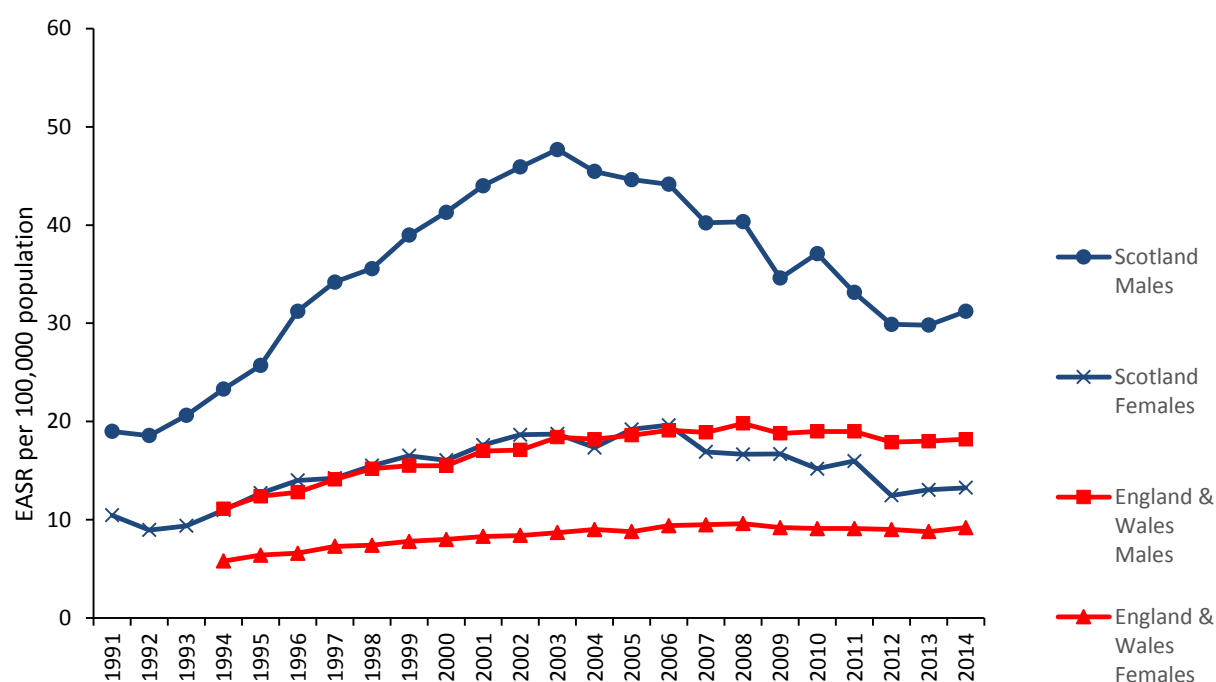


Comparison with England & Wales

Compared to England & Wales, alcohol-related mortality in Scotland has been consistently higher overall, for both genders, throughout the time period (1991-2014). Although both areas experienced mortality increases from the 1990s, the increase and subsequent decline were larger in Scotland. Scotland also observed a clear peak in mortality 2003-2006, most apparent in male mortality. Mortality rates in England & Wales rose steadily before a more gradual decline from 2008. By 2014

the male alcohol-related mortality rate in Scotland had declined by 35% since its peak in 2003. By 2014 the male rate in England & Wales had declined by around 8% since the peak in 2008 (Figure 10; Appendix B). The decline in alcohol-related mortality in England & Wales is showing signs of flattening in recent years.

Figure 10: Alcohol-related mortality, by gender, for Scotland and England and Wales, 1991-2014^v
[Source: NRS & ONS]



2.2.2 Alcohol-related morbidity (hospitalisations)

The MESAS programme monitored annual trends in alcohol-related hospitalisations as a proxy for alcohol-related morbidity.²⁴ Data for Scotland were provided by ISD and extracted from the Scottish Morbidity Records (SMR01) for the years 1981/82 to 2014/15.²⁴ Similar data were provided for England for the years 1990-2014 by the Health & Social Care Information Centre (HSCIC) and extracted from the Hospital Episode Statistics (HES).

Data were analysed descriptively using three indicators: **hospital stays** (counted as an unbroken period of time that a patient spends as an inpatient or day-case in hospital for an alcohol-related condition); **patients** (unique individuals, counted only once per financial year, who had an alcohol-related diagnosis recorded during their stay(s)); and **new patients** (patients who stayed in hospital for an alcohol-related condition during the financial year, but who had not stayed in hospital for any alcohol-related condition in the previous 10 years). This means that 'hospital stays' include any repeat admissions for the same patient. 'Patients' includes the same patient only once each year no matter how often they are admitted that year, although they might be counted in multiple years. An individual will only appear once in the 'new patients' measure, in the year they were first admitted. Further details of methods can be found in Appendix C.

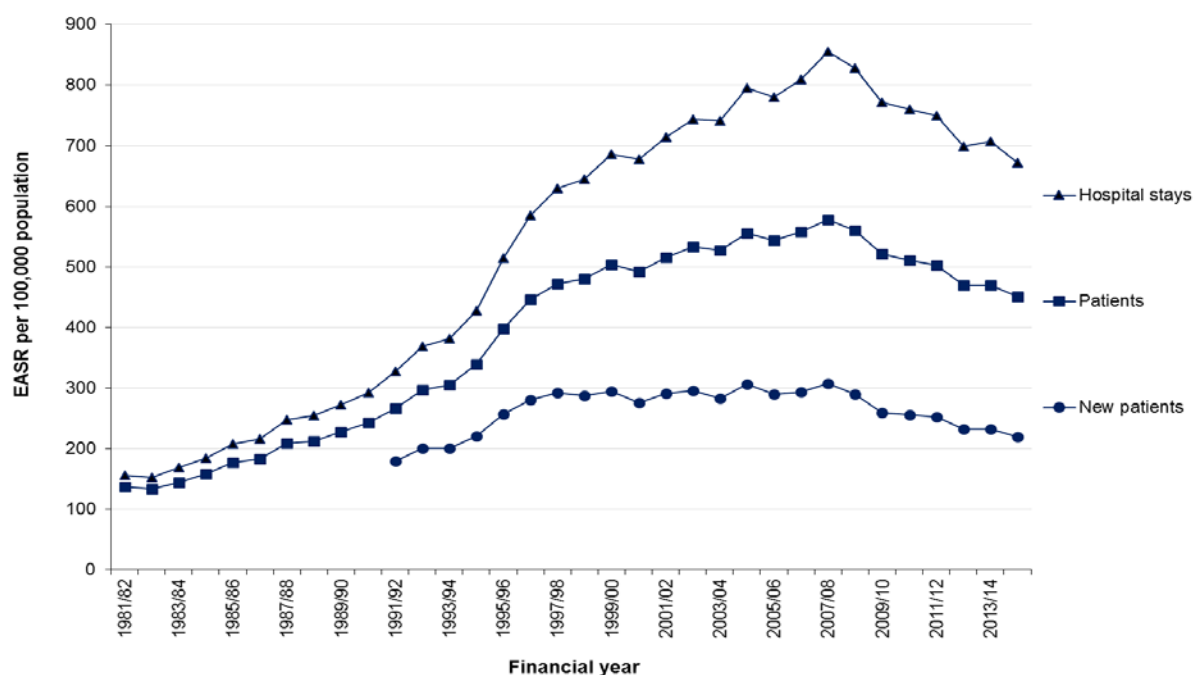
^v England & Wales data only standardised using EASP2013 back to 1994.

Hospital stays is the most appropriate indicator of the burden on services but is most susceptible to changes in clinical practice. **Patients** is the indicators most closely related to prevalence of alcohol-related morbidity, and together with hospital stays are the best way to monitor trends in those already experiencing harm. **New patients** is the indicator most closely related to incidence and that most sensitive to primary prevention policy changes. It should be noted that they are not strictly prevalence or incidence in the accepted use of those terms. Appendix C contains analyses and supporting data for all three morbidity indicators.

Scottish trends

Alcohol-related morbidity in Scotland increased rapidly during the 1990s. Alcohol-related hospitalisation rates across the three indicators (hospital stays, patients and new patients) have been declining since their peak in 2007/08. Hospital stays and patient rates increased until 2007/08, whereas the new-patient rate for alcohol-related conditions increased from 1991/92, then stabilised between 1996/97 to 2007/08 and has decreased since (Figure 11; Appendix C).

Figure 11: Alcohol-related hospitalisation rates, Scotland, 1981-2014 [Source: ISD Scotland]



Hospital stays and patient rates are much higher than the new-patient rate, and have increased (and decreased) at a far greater rate over time. In 1991/92 around half of the overall burden of alcohol-related hospitalisations was due to new patients. By 2014/15 this had decreased to around a third, with a third of all hospital stays due to readmissions within a calendar year and a third due to patients who had been hospitalised in previous years. Thus, the increase in hospital stays seen between 1996/97 and 2007/08 was driven to a large extent by repeat visits of patients with existing alcohol-related disease rather than new patients presenting to hospital (Figure 11; Appendix C).

Scottish trends by gender

Gender-specific rates of stays, patients and new-patient have followed a similar pattern to those for the population overall. Men continue to account for a larger proportion of alcohol-related hospital stays, patients and new-patients. In 2014/15 the new-patient rate for males was approximately twice the rate for females, a ratio which has decreased slightly since 1991/92 (when rates were over two and a half times higher for men) (Appendix C).

Scottish trends by age group

Hospital-stay, patient and new-patient rates increased in all age groups aged 15 years and above up to around 2007/08, and generally decreased thereafter. There are exceptions, for example rates have increased slightly for women aged 55-64 years since 2012/13. Hospital stay and patient rates have remained highest in the middle age groups, aged 45-64 years throughout the time period. Young adults (aged 15-24 years) experienced the fastest and largest increase in new-patient rates, and at times had rates higher than the middle age groups. However young adult hospitalisation rates have since dropped below those for older age groups again. A sustained downward trend in new-patient rates for children (aged under 15 years, and involving a very small number of people) began in 2000/01 (after a peak in 1995/96), much earlier than other age groups (Appendix C).

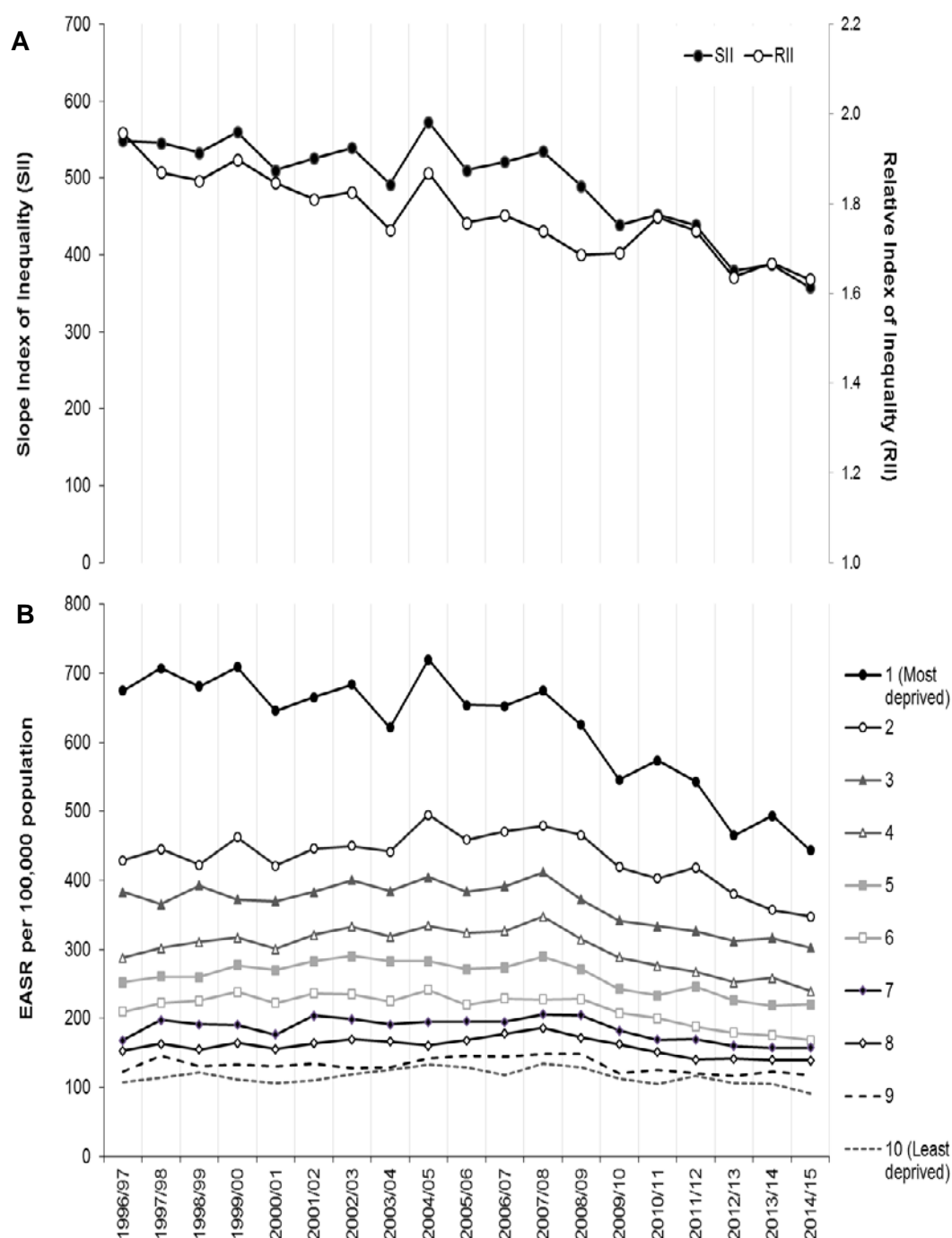
Scottish trends by area deprivation

Scotland has experienced persistent health inequalities in alcohol-related hospitalisations, with large differences in alcohol-related hospitalisations (across all three indicators) for those living in areas with different levels of deprivation throughout the period monitored. Absolute inequalities for new patients (measured using SII, see Box 2 above) have declined since 2004/05. SII for hospital stays and patients increased to a peak in 2007/08, and has been declining since. Relative inequalities for new patients (measured using RII, see Box 2 above) have also consistently declined throughout the period monitored. RII for hospital-stays and patients is now slightly lower than in 1996/97 (when data was available) (Figure 12 below; Appendix C).

When stratified by area deprivation there was little absolute change in the alcohol-related new-patient rate in the least deprived areas (SIMD deciles 9 & 10). The remaining areas (SIMD deciles 1-8) shared a similar decreasing trend in new-patient rates from 2007/08. Those living in the most deprived 10% of areas in Scotland (SIMD decile 1) experienced the largest decrease, 38% in the last decade from 2004/05 to 2014/15 (Figure 12 below; Appendix C).

Inequalities in alcohol-related morbidity persist, with those living in the most deprived 10% of Scotland (SIMD decile 1) maintaining the highest new-patient rate for alcohol-related conditions in 2014/15. In 1996/97 the new-patient rate was just over six times higher for those living in the most deprived 10% of Scotland (SIMD decile 1) compared to those in the least deprived 10% (SIMD decile 10). This reduced to less than five times higher in 2014/15. Inequalities in new-patient rates for alcohol-related conditions were wider for men than for women (Figure 12 above; Appendix C).

Figure 12: Trends in alcohol-related hospitalisation (EASRs new patients) inequalities as measured by (a) the Relative Index of Inequality and the Slope Index of Inequality and (b) by socio-economic deprivation decile (SIMD 1 = most deprived 10% of population, SIMD 10 = least deprived 10%), Scotland 1981-2014 [Source: NRS, ISD Scotland]



Comparison with England

To enable comparability of hospitalisation trends between Scotland and England hospital records data using only the 1st coding position (main diagnosis), grouped by calendar year, has been used. The data in this subsection is **not directly comparable** with the Scottish hospitalisation data presented above, which analyses

all coding positions and is reported by financial year. Further details of the methodologies and detailed analysis can be found in Appendix C.

Hospital-stay, patient and new-patient rates were consistently lower in England compared to Scotland. Both countries witnessed a rise in their alcohol-related hospital-stay rate during the 1990s and 2000s, however since 2009 the rate has fallen in Scotland, whereas in England it continued to increase. Both countries witnessed a similar increase in their patient rate during the 1990s, with a subsequent decline from the late 2000s. Similarly, both countries have witnessed decreasing new-patient rates from 2008 (the start of the time series for England). Despite these similarities the size of the recent decreases across all three indicators in Scotland has been greater (Table 1 below; Appendix C).

Inequalities in hospitalisations were wider in Scotland than in England. However, inequalities in hospitalisations have been narrowing in Scotland since 1996 for all measures: stays, patients and new patients. In England, inequalities in stays and patients have been stable over time but declined for new patients (though less markedly than in Scotland) (data not shown; Appendix C).

Table 1. A summary of trends in alcohol-related hospitalisations in Scotland and England, using 1st coding position only (further details in Appendix C)

	Scotland	Scotland	England	England
	Trends	% Change since 2008	Trends	% Change since 2008
Stays	Increased to a peak in 2008. Decreased from 2009 to 2012.	-11.8%	Increasing throughout the period	+12.3%
Patients	Increased to a peak in 2008. Decreased from 2009 to 2012.	-13.8%	Increased to a peak in 2010. Decreasing since.	+1.5% (-4.6% from 2010 peak)
New Patients	Declining since 2008 peak.	-21.1%	Declining since 2009 peak (only have data from 2008)	-7.1%

2.2.3 Alcohol-related crime

Although alcohol is a likely contributory factor in many crimes, few offences are entirely due to alcohol consumption. There are now two Scottish crime indicators, which are 100% attributable to alcohol, “driving under the influence” and “drunkenness and other disorderly conduct offences”.^{vi} These were used to monitor trends over time, although both indicators will also be affected by changes in police

^{vi} In 2013/14 the “drunkenness offences” category was amended to include other alcohol offences such as “Consumption of alcohol in designated places (local byelaws)”. These crimes were previously included in the “Other” category. This change has been retrospectively applied, with data available on this new category back to 2008/09.

practice. Survey and crime data reported by the Scottish Government were also analysed. Appendix D provides details of methodologies and analyses. No comparable data were available for England & Wales.

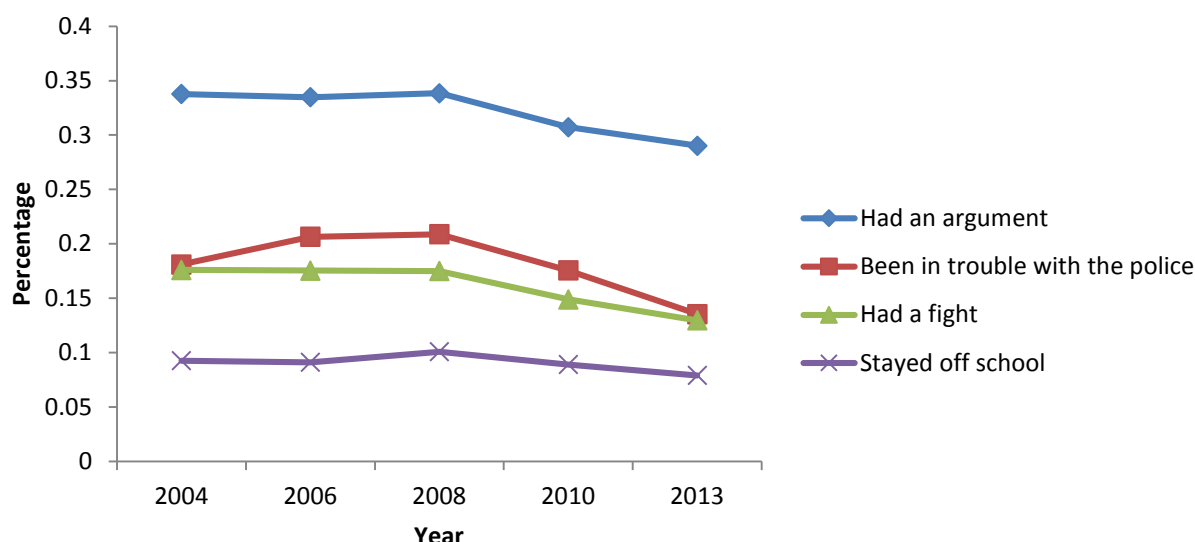
Within the context of declining overall recorded crime, there was little evidence of a consistent trend across all the crime indicators monitored. The following trends were observed:

- Rates of “driving under the influence” have consistently declined and more than halved in the last decade (from 22 per 10,000 population in 2004/05 to 10 per 10,000 population in 2014/15) (data not shown; Appendix D).
- Although absolute numbers have declined, of the homicide cases where the alcohol/drug status of the offender was known, the percentage where alcohol was implicated has remained relatively stable over time (71% of homicides recorded in 2013/14) (data not shown; Appendix D).
- Crimes of drunkenness and other disorderly conduct^{vi} increased between 2008/09 and 2013/14, then declined in 2014/15. The rate was higher in 2014/15 than in 2008/09 at the start of the trend.
- The proportion of prisoners who reported that they were drunk at the time of their offence increased between 2005 and 2009 (from 40% to 50%) and remained at 50% in 2011. However, this declined to 45% in 2013 (data not shown; Appendix D).

2.2.4 Alcohol-related harm in children

The Scottish Adolescent Lifestyle and Substance Use Survey (SALSUS) collects data on adverse consequences of alcohol consumption experienced by school children aged 13 and 15 years old.²⁵ These data have been used to monitor trends in alcohol-related harm in children. Since 2008, the proportion of participants, who reported drinking alcohol in the last 12 months, who reported a number of adverse consequences from their own alcohol consumption has been declining (Figure 13). Alcohol-related hospitalisations for children aged under 15 years old have also been declining, from a peak in 1995/96. The alcohol-related hospital-stay rate has decreased by 80% since 1995/96, the patient rate declined by 79% and new patient rate by 78%. Rates across all three indicators are now at their lowest level over the period reviewed.

Figure 13. Proportion of 13 and 15 year olds, who have consumed alcohol in the last 12 months, reporting adverse consequences of alcohol consumption. [Source: SALSUS]



2.3 Summary

The ultimate goal of the alcohol strategy was to reduce alcohol-related harm in Scotland by achieving a reduction in alcohol consumption and increased adoption of safer drinking patterns. Population alcohol consumption in Scotland, as measured by alcohol sales per adult, stabilised between 2005 and 2009, and then declined. This decline may be flattening in recent years, driven by a return to increasing sales in the off-trade. Survey data suggest that weekly alcohol consumption declined in Scotland between 2003 and 2014, driven by declines amongst the heaviest drinkers, particularly men, and those aged 16-24 years. The proportion of adults reporting being non-drinkers has also increased. It is not clear why population consumption levels based on self-reported data fell before those based on the more accurate retail sales data. Response rates of the Scottish Health Survey did fall slightly between 2003 and 2008, which may have affected representativeness. Nonetheless, reductions in self-reported consumption occurred across the entire consumption distribution and the largest fall among the heaviest drinkers was between 2008/09 and 2010/11.

Alcohol-related hospitalisations began to decline from 2008/09 and declines in alcohol-related mortality started from peaks in 2003 for men and 2006 for women. The declines in alcohol-related mortality and hospitalisations were greatest amongst men and people living in the most deprived areas. This has resulted in a reduction in health inequalities in alcohol-related harm. However, alcohol-related mortality and hospitalisations remain high and mortality rates have not declined since 2012 for either men or women, although it is too early to say whether this marks the start of a longer-term change in trend. Trends in alcohol-related crimes were less clear, with some indicators, such as driving under the influence declining, whereas others have remained stable or increased. Self-report data indicated that harm from children's own consumption of alcohol has been declining since 2008. Hospitalisation rates (hospital stay, patients and new patients) for those under 15 years have also declined since their peak in 1995/1996 and are now at their lowest level since 1981/82.

Chapter 3 discusses our assessment of the contribution of specific strategy components to these downward trends since their implementation. Given that some of the declines in harm, particularly the fall in alcohol-related mortality in men began before the strategy was introduced, factors external to the strategy have also played a role in at least the initiation of these trends. The contribution of these external factors is examined further in Chapter 4.

3. Assessing the contribution of the strategy to intermediate outcomes

Two key steps in theory-based evaluation are, first, assessing whether interventions have been implemented as intended (i.e. in a way likely to make a difference to outcomes) and, second, monitoring whether the anticipated outcomes have been realised. To assess if and how the strategy has contributed to the observed changes in the key outcomes (described in Chapter 2), the MESAS programme assessed the implementation of key strategy components and the impact of the strategy on selected intermediate outcomes outlined in the theory of change (Figure 2). The findings of these studies are summarised here.

3.1 The Licensing Act

Key messages

- The Licensing Act introduced several instruments that had the potential to contribute to improving public health through managing alcohol availability in response to local requirements.
- Some aspects of the Licensing Act were successfully implemented, such as licensing standards officers and test purchasing.
- The public health objective and the requirement to produce overprovision statements have influenced practice in terms of the statements of licensing policy and overprovision policy, but proved difficult to operationalise.
- Limitations of licensing data meant that it was not possible to determine if such policy-based changes are influencing licensing decisions or alcohol availability.

Licensing legislation concerns the regulation of alcohol availability; improving public health is not its primary purpose. However, the Licensing Act 2005 acknowledged the contribution of licensing to public health and established a set of objectives for licensing that included protecting public health alongside preventing crime and disorder; securing public safety; preventing public nuisance and protecting children from harm.

The MESAS programme theorised that the Licensing Act could contribute to controlling or reducing alcohol-related harm through two intermediate outcomes: the creation of safer drinking and wider environments and reduced availability of alcohol. It is important to note that this was a post-hoc rationalisation of how the Act might impact on the ultimate outcomes. Apart from test purchasing, that may reduce the availability of alcohol to underage drinkers, the Licensing Act could not actively reduce availability but rather was more likely to control any increase in availability.

An evaluation of the implementation of those components of the Licensing Act considered most likely to impact on safer drinker environments and availability was undertaken between 2010 and 2012.²⁶ This used qualitative interviews and focus groups with licensing standards officers, licensing board members and a number of other stakeholders, including licensed trade members, licensing board clerks and the police. The original evaluation was updated by a document review in 2015. Licensing

data were analysed to assess change in the availability of alcohol. The findings of this research are summarised here, and further details can be found in previous publications²⁶ and Appendix E.

Implementation of the Licensing Act had mixed success. There was compliance with the restriction on alcohol display in the off-trade and irresponsible alcohol promotions in the on-trade. Some elements were considered successful, notably the introduction of licensing standards officers (LSOs) and staff training. Test purchasing, to reduce selling to those underage, was also reported to have been implemented well, but, while necessary, it was not considered sufficient to reduce availability to under-age drinkers on its own.²⁶ Analysis of survey data, which reported how 13 and 15 year olds accessed alcohol from 1998 onwards, showed that there was already an established decline from 2002 in obtaining alcohol from licensed off-trade premises, accompanied by increased access to alcohol from other sources.²⁷ It was therefore difficult to determine the contribution of the Licensing Act to any reductions in the availability of alcohol to children.

Other elements of the Act proved difficult to operationalise. Licensing boards reported difficulty in defining and assessing overprovision and responding to the public health licensing objective. For licensing decisions to be able to fully incorporate the public health considerations a significant shift in how licensing boards operate is required, but there was concern by some that the legislative framework was not fully equipped to operate in this way. Local licensing forums were also felt by public health actors not to be functioning well. Inadequacies in available licensing data meant that it was not possible to monitor alcohol availability and to identify whether overprovision statements had influenced applications or decisions on applications. Given the challenges faced, it is unlikely that the public health provisions were being used to manage the availability of alcohol consistently across Scotland (previous publication²⁶; Appendix E).

3.2 Alcohol brief intervention (ABI) programme

Key messages

- A programme of evidence-based alcohol brief interventions (ABIs) was introduced in Scotland in selected NHS settings in 2008, and widened to other NHS and non-NHS settings in 2012.
- The funding, training, coordination and performance target introduced as part of this programme helped embed ABI delivery.
- Over half a million ABIs have been delivered over seven years, exceeding the performance target and reaching an estimated 43% of potential beneficiaries.
- There were insufficient data collected within the ABI programme with which to assess the characteristics of those reached, uptake or impact on alcohol consumption.

There is strong evidence of the effectiveness of alcohol brief interventions (ABIs) to reduce alcohol consumption in those drinking at hazardous or harmful levels^{vii,28,29} In Scotland an ABI is defined as a short-evidence based, structured, non-confrontational conversation about alcohol consumption.^{30,31} Scotland was the first country in the world to introduce a national and comprehensive programme of ABI delivery. In 2008 an NHS performance target (a so-called 'HEAT'^{viii} Target) for ABI delivery in primary care, accident and emergency, and antenatal care settings was established. Within the first two of these settings, screening and ABIs were to be delivered, as appropriate, to those presenting with conditions where alcohol may be relevant (e.g. poor sleep, anxiety, gastric symptoms and accidents). The target was accompanied by additional funding and investment in the infrastructure to support delivery, including the provision of training, resources and national co-ordination. The programme was extended to delivery in wider NHS and non-NHS settings as part of a revised performance standard in 2012/13. The programme as a whole was designed to increase the reach and quality of ABIs delivered to hazardous and harmful drinkers, to provide support to those who could benefit, and increase detection and referral of dependent drinkers. This study aimed to assess whether ABIs were being implemented in a way likely to achieve this increased support for individuals in need.

The evaluation of the implementation of the ABI programme included quantitative and qualitative data collection, at both strategic and operational level, through a survey, patient and practitioner interviews, and analysis of routine delivery data.³² This was supplemented by a rapid literature review in 2015 to identify emerging evidence relating to ABI implementation in Scotland (Appendix F). The lack of follow-up data for those receiving an ABI meant that it was not possible to directly assess the impact of the ABI interventions on alcohol consumption, the primary outcome of an ABI. In the MESAS Second Annual Report modelling was used to estimate the impact of the ABI programme on alcohol consumption and alcohol-related mortality and hospitalisations.³⁰ There were several known limitations of this model and it was reviewed to assess whether an updated version could inform this report. This was not possible within the evidence available.

Between 2008/09 and 2014/15 an estimated 569,792 ABIs were delivered in Scotland as part of the ABI programme. This was 145% of the combined targets set over this period. The Informing Investment to Reduce Health Inequalities (III) Tool estimated that there were approximately 1 million hazardous and harmful drinkers (n=1,004,906) in Scotland.³³ Based on the estimate from the evaluation that 25% of ABIs are repeat interventions, it was estimated that the programme reached 43% of hazardous and harmful drinkers over the 5 years (Appendix F). Delivery increased as the programme became embedded, and for the last 4 years of the time period approximately 100,000 ABIs were delivered per year across all the settings (Appendix F). Most of the ABIs were delivered in primary care, although the proportion declined over time.

^{vii} Hazardous (>21 units and up to 50 units per week for men; >14 units and up to 35 units per week for women); Harmful (men over 50 units per week; women over 35 units per week). In January 2016 the UK Chief Medical Officer's revised the recommended guidelines for alcohol consumption.

^{viii} Health improvement Efficiency, Access and Treatment targets

The MESAS study³² and supplementary literature review both concluded that the funding, training, co-ordination and the introduction of the ABI target had contributed to embedding the delivery of ABIs into routine practice in NHS settings (Box 4). All health boards had a specific programme for ABIs, with variation between board areas in terms of delivery model, payment structures and training. The evaluation also noted variation between health boards in the extent to which ABIs improved the detection and referral rates for dependent drinkers. Staff recognised the value of ABIs and perceived them to be a good use of resources, and there was little objection from patients regarding discussion of their alcohol consumption with a practitioner in primary care settings.³²

Box 4: ABI programme facilitators and barriers

Facilitators	Barriers
<ul style="list-style-type: none"> • Availability of funding • Nationally co-ordinated and locally supported training opportunities • National and health board support, and individuals within local settings acting as champions 	<ul style="list-style-type: none"> • Lack of 'lead in' time to set up organisational structures • Competing priorities • Lack of adequately trained staff • Maintaining trained staff levels • Mechanism for recording ABI delivery

There were limited data to establish the characteristics of individuals receiving screening and ABIs. Therefore little is known about to whom ABIs have been delivered and their alcohol consumption before and after the intervention. There were no data available at a national level to establish the quality of the ABIs delivered or the impact on individual alcohol consumption, but the effectiveness evidence base is strong for the impact of ABIs being delivered and recent research suggests that benefits are gained even from the simplest intervention.³⁴

3.3 Increased investment in alcohol treatment and care services

Key messages

- There has been a tripling of investment in specialist alcohol treatment and care services since 2008/09. A target to reduce waiting time for specialist alcohol and drug treatments was also introduced in 2011
- Waiting times reduced. Staff perceived the additional investment in alcohol services and reform of service planning structures to have had a positive impact in terms of availability and quality of services. Service users also reported perceived improvements in availability and quality.
- In 2012, the Prevalence-Service Utilisation Ratio (PSUR) was estimated as 1 in 4. This is a level regarded as high by international standards, although limitations with the alcohol dependency estimate meant this PSUR was believed to be an overestimate.
- Data were not available to allow this PSUR to be compared with estimates pre-strategy or with England.

It was theorised that the following elements of the alcohol strategy would increase support for individuals in need of specialist alcohol treatment: additional investment in specialist alcohol treatment and care services from 2008, aimed at increasing capacity and developing the workforce; the introduction of a target to reduce waiting time for specialist alcohol and drug treatments (HEAT target A11); the reform of local service planning structures through the introduction of Alcohol and Drug Partnerships (ADPs); and accompanying guidance, aimed at improving the quality and consistency of services.³⁵⁻³⁷

The aim of this MESAS study was to assess the impact of the additional investment and infrastructure support for specialist alcohol treatment and care services.³⁸ The need for, and use of, specialist services during 2012 was measured to develop a Prevalence-Service Utilisation Ratio (PSUR). This required an estimate of the prevalence of alcohol dependence^{ix} in Scotland (need) and the number of individuals who accessed services over a given period of time (utilisation). Data from the Scottish Health Survey (SHeS) were used to estimate the prevalence of alcohol dependence in Scotland. Data from a survey of tier 3 and 4 alcohol treatment services^x were used to estimate the number of individuals who accessed services. Interviews and focus groups, with service commissioners, providers and users were undertaken in three Alcohol and Drug Partnerships (ADP) areas to examine the barriers and facilitators to developing specialist alcohol service availability. Further details of the methods can be found in a previous publication.³⁸

Before 2008, Alcohol and Drug Action Teams (the structure before Alcohol Drug Partnerships) received approximately £12m per year funding. An additional £85million was invested in alcohol over the three years 2008/09 – 2010/11, with funding maintained at those levels for 2011/12 until 2015/16. This funding was primarily for treatment, early intervention (such as ABIs) and prevention.

Waiting times for specialist alcohol and drugs services reduced. In the period March 2012 to March 2014 the proportion of those who started alcohol or drug treatment and were seen within 3 weeks increasing from 88% to 97%.³⁹ Staff largely felt the waiting times target had a positive impact in achieving this. Commissioners and staff reported there were both facilitators and barriers to the realisation of benefits (Box 5) but they perceived that the additional investment in services and reforms had a positive impact on the availability and quality of services.³⁸

The estimated prevalence of alcohol dependency was 3.1%, giving a PSUR in Scotland in 2012 of 1 in 4. This means approximately one in four adults (aged 16+ years) with possible alcohol dependence accessed specialist treatment in 2012 in Scotland. This PSUR suggests that accessibility of services was high by international standards. The Scottish Health Survey (SHeS), used to estimate the prevalence of

^{ix} Alcohol dependence was defined as those who achieved a score of 16 or more Alcohol Use Disorders Identification Test (AUDIT).

^x Tier 3 interventions refer to structured community-based specialist drug/alcohol treatment, which includes comprehensive assessment and coordinated care-planned treatment. Tier 3 includes community substitute prescribing, care-planned counselling, day programmes and relapse prevention. Tier 4 interventions refer to drug/alcohol specialist inpatient treatment and residential rehabilitation. Tier 4 includes residential specialist drug/alcohol treatment which is care planned and care co-ordinated to ensure continuity of care and aftercare.

alcohol dependence, has known limitations.¹⁸ The SHeS prevalence figure for alcohol dependency is considered an underestimate of the true prevalence in Scotland. This prevalence figure has likely overestimated the proportion of the population in need who accessed treatment. With this in mind, sensitivity analysis was undertaken. Doubling the prevalence of alcohol dependence reduced the PSUR to 1 in 8, a figure still considered moderate by international standards.³⁸

Box 5: Facilitators and barriers to increasing service availability after increased investment.³⁸

Facilitators	Barriers
<ul style="list-style-type: none"> • Additional staff • An increased focus on recovery and preventative work • Changing referral routes and service pathways • Integration with drug treatment services • Growth of the third sector • Positive relationships between stakeholders • Increased service user involvement and peer-led recovery services 	<ul style="list-style-type: none"> • Difficulties reaching those reluctant to access support • Gaps in provision for those affected by alcohol-related brain damage • Weaknesses in needs assessment processes • Staffing issues (vacant posts and skills development needs) • Challenges of increasingly complex cases • High non-attendance rates

No comparable PSUR for alcohol services in Scotland prior to 2008, or for England & Wales^{xi} was identified. It was therefore not possible to assess whether the PSUR had changed as a result of the increased investment, or if it was higher than in England or England & Wales. It is plausible that the increased investment since 2008 contributed to improved availability of support for high-risk individuals. Impact on other outcomes was unknown.

^{xi} One estimate for the PSUR in England & Wales is 1:14. Although this uses a comparable estimate for the numerator (i.e. the in need of treatment population) England & Wales the estimate of the denominator (i.e. those in treatment) is based on administrative data and not comparable with the PSUR published in this report. There is no consensus on how to achieve comparability in this figure.³⁸

3.4 The Alcohol Act

Key messages

- The Alcohol Act introduced a ban on multi-buy discounts (e.g. 3 for the price of 2, 3 bottles for £10) in October 2011.
- This was associated with a 2.6% reduction in off-trade alcohol sales, driven by a 4% reduction in wine sales.
- There has not been a measurable, short-term impact on alcohol-related deaths or hospital admissions in Scotland (i.e. those wholly attributable to alcohol).
- The longer term impact of the Alcohol Act, and its impact on deaths and admissions partially attributable to alcohol, remains unknown.

The Alcohol Act, implemented in October 2011, introduced a range of new regulations concerning the sale and promotion of alcohol in Scotland's off-trade. This included a ban on multi-buy promotions, prohibiting offers such as '3 bottles for £10' and '3 for 2'. This component of the Alcohol Act was considered most likely to affect population consumption by removing the financial incentive for individuals to purchase more alcohol than they originally intended. While this had the potential to reduce affordability, the introduction of the ban was accompanied by a reduction in the price of single products (e.g. wine was sold at £3.33 a bottle rather than 3 bottles for £10). The impact of the Alcohol Act was evaluated in two studies. Detailed descriptions of the studies can be found in Appendix G and a previous publication.⁴⁰

The first evaluation of the Alcohol Act used time-series analysis of weekly alcohol sales data to assess the impact of the legislation on population consumption levels in Scotland. The study found that the Alcohol Act was associated with a 2.6% (95% confidence interval (CI) -5.3 to 0.2%) decrease in off-trade sales in Scotland in the 12-month period after its introduction. This was mostly driven by a 4.0% (95% CI -5.4 to -2.6%) fall in off-trade wine sales. Similar changes were not observed in England & Wales, where the legislation does not apply. In addition, change in Scotland could not be explained by other factors, such as changes in income. It was therefore concluded that the Scottish decline was due to the legislation rather than other unmeasured factors.⁴⁰

A second study used multivariable regression analysis to investigate whether the Alcohol Act had any short-term impact on alcohol-related hospital admissions or alcohol-related deaths (i.e. admissions and deaths wholly alcohol-attributable). There is good evidence to show that changes in population consumption levels are associated with changes in alcohol-related harms. It was therefore hypothesised that overall rates of alcohol-related harm would decline. However, the results suggested that it was unlikely that the Alcohol Act was associated with any substantial change in overall rates of alcohol-related deaths (incidence rate ratio (IRR^{xii}) 0.99, 95% CI

^{xii} The IRR provides a relative measure of the difference between two rates, in this case the rate in alcohol-related hospital admissions or deaths before and after the Alcohol Act legislation being implemented. To illustrate, an IRR of 0.99 (95% CI 0.91 to 1.07) can be interpreted as a best estimate

0.91 to 1.07) or hospital admissions (IRR 0.98, 95% CI 0.95 to 1.02) in Scotland (Appendix G). There are a number of potential reasons for this:

- **The study was not able to detect the intervention effect.** Only small reductions in alcohol-related harms would be expected, particularly in the short term, from a 2.6% reduction in off-trade consumption levels. The study found a best estimate of the effect of the Alcohol Act was for a 1-2% reduction in alcohol-related deaths and hospital admissions. However, the uncertainty around this estimate was too wide to enable definitive conclusions to be drawn.
- **The study was concerned with a short-term effect on harms.** The link between changes in population alcohol consumption levels and population levels of alcohol harms is well established. Although immediate effects are expected for a number of alcohol-related conditions, the full effect of changes in population consumption on changes in alcohol-related harms (both wholly and partially alcohol-attributable) would not be expected within the study time-period. It remains plausible that the reduced population consumption associated with the Alcohol Act in Scotland, if sustained, will translate into reduced levels of alcohol-related harm in Scotland over a longer time period.
- **Wine was the drink type most affected by the Alcohol Act.** Those at highest risk of an alcohol-related hospital admission or death – men, those living in more deprived areas and very heavy drinkers – are least likely to consume wine.⁴¹⁻⁴³ Wine is most likely to be consumed by population subgroups that have a relatively low risk of alcohol-related harms: women and those living in less deprived areas. Thus, reduced consumption among these subgroups is unlikely to have had a measurable impact on alcohol-related harms.
- **The study focused only on ‘alcohol-related’ deaths and hospitalisations.** Alcohol-related deaths and hospital admissions refer to those conditions wholly attributable to alcohol. It is possible that the reduced population consumption levels translated into reductions in the wider range of alcohol-attributable causes (i.e. including those for which alcohol is only a partially attributable cause, such as ischaemic heart disease). However this was not examined in the study. In addition, only those admissions with an alcohol-related condition coded as a primary diagnosis were included in the analysis. This was to enhance comparability with a control group (England), which was a priority for the study. However, this meant that admissions where alcohol was coded as a factor relevant to a patient's admission, albeit not the main factor (i.e. a secondary diagnosis), were excluded. It is therefore possible that the impact of the Alcohol Act on hospital admissions in Scotland was underestimated.

of a 1% decline in rates associated with the legislation, but with the uncertainty around this best estimate ranging from a 9% decline to a 7% increase (95 times out of 100 it would be expected to be within this range).

3.5 Public alcohol-related knowledge and attitudes

Key messages

- The strategy had the potential to influence knowledge and attitudes both directly, through specific interventions such as education initiatives, and indirectly, by challenging the normalisation of alcohol in Scotland and through the public and media discourse around the strategy and its components.
- There has been an increase in agreement with the statement that alcohol was the drug that caused most harm in Scotland.
- In 2013 more people were in support of Minimum Unit Pricing than were opposed, with support highest among those who thought alcohol caused ‘a great deal of harm’ in Scotland.
- The knowledge and attitude measure used have shown no consistent change in knowledge about alcohol units, perceptions of drunkenness or the perceived social role of drinking.
- There is evidence that 13 and 15 year olds displayed less accepting attitudes to trying alcohol and getting drunk in 2013 compared to 2010
- It was not possible to determine the extent to which the strategy as a whole had de-normalised alcohol.

Scotland's alcohol strategy had the potential to shift public knowledge and attitudes around alcohol through three mechanisms. First, some of the interventions in the strategy, such as improved educational initiatives aimed at children and parents, and workplace alcohol policies, were directly aimed at changing public knowledge and attitudes. Second, through the increased media coverage and public discourse generated by the strategy and the clear message from government and public agencies that the harm caused by alcohol is felt by individuals, families, communities and Scotland as a whole. Third, through the implicit message from interventions that raise awareness of the harm caused by alcohol and challenge the normalisation of alcohol in Scotland, such as the routine discussions about alcohol in primary care and the restrictions on the display and promotion of alcohol in the off-trade. Taken together, the package of measures in Scotland's alcohol strategy as a whole aimed to send the message that alcohol was “no ordinary commodity” and should be treated differently to other food and drink we consume.

Education programmes to increase knowledge and shift attitudes are known to have little impact on individual behaviour, but are important in terms of ensuring people have the information necessary to make informed choices about risk.⁴⁴ A selection of indicators of public alcohol-related knowledge and attitudes were measured in 2013 through an alcohol module of the cross-sectional Scottish Social Attitudes survey. Previous modules in 2004 and 2007 were used to allow assessment of changes in these indicators over the time period. The study was therefore limited by the indicators used in the 2004 and 2007 modules. This has limited the study's ability to detect change across a broader range of indicators of attitudes and social norms. Further details can be found in the study report, the findings of which are summarised below, unless indicated otherwise.⁴⁵

In 2013 approximately half of adults had a good awareness of the unit content of drinks, and two fifths were aware of the relevant drinking guidance for that time^{xiii} for their gender. There was evidence that there had been little consistent whole population change over time, in either direction, in knowledge of alcohol units or safe drinking limits. Less than 2% of those surveyed greatly overestimated the safe drinking limits (i.e. reported that it was safe to drink more than 11 units of alcohol per day).⁴⁵

Most noticeably there was an increased recognition among the population of the harm that alcohol causes in Scotland, with 60% of those surveyed in 2013 identifying it as the drug causing the most harm (up from 46% in 2004).⁴⁵ This view was not shared by those living in the most deprived communities (data not shown^{xiv}). In 2013, a new question on MUP was added. Views were contrasting, with a slightly higher percentage in support of the policy (41%) than opposing it (35%). Around one in five people (22%) were neither for nor against the idea of having a minimum price for alcohol. Support for the policy was higher among those who thought alcohol caused 'a great deal' of harm in Scotland and those who thought the amount people drink in Scotland is something we should all be concerned about.⁴⁵

There was no evidence of consistent whole population change in either direction in attitudes to drunkenness, and the perceived social role of drinking. There was evidence of a reduction in the perceived acceptability of not drinking amongst drinkers - 41% of drinkers reported they thought others would think it odd if they didn't drink in 2013, up from 31% in 2007.⁴⁵

The proportion of young adults (18-29 year olds) who agreed it was acceptable to get drunk at the weekend reduced from 53% in 2004 to 40% 2013, but for the whole population (all ages combined) there was little change in this indicator. These shifting attitudes among the young did not, however, extend to the measure 'there is nothing wrong with people my age getting drunk' with little change seen across any age groups over time.⁴⁵ Although, as described in section 3, self-report consumption data shows reduced consumption and increased abstinence in this group. Routine data from SALSUS offered some insight into changing attitudes to alcohol consumption amongst 13 and 15 year olds. Between 2010 and 2013 agreement that "it was ok for someone my age to try alcohol" fell from 82% to 77% amongst 15 year olds and from 52% to 42% amongst 13 year olds.⁴⁶

^{xiii} At the time of the surveys the weekly recommended consumption guidelines were a maximum of 21 units for men and 14 for women. In January 2016 these were revised and the recommended weekly guidance for men reduced to 14 units.

^{xiv} Scottish Social Attitudes Survey data is available from <https://www.ukdataservice.ac.uk/>

3.6 Alcohol price and affordability

Key Messages

- Minimum Unit Pricing, the strategy intervention to reduce the availability of high-strength, low-cost alcohol, has not yet been implemented.
- The recent declines in affordability have been due to external factors such as falling incomes rather than the alcohol strategy.
- The proportion of alcohol sold below 50p per unit has declined since 2009, reaching 52% in 2014. There was little or no change in the price distribution of alcohol sold in the most recent year.

The affordability of alcohol is a product of alcohol price and consumer spending power (disposable income). The introduction of minimum unit pricing (MUP) was the main mechanism by which the strategy aimed to increase alcohol price, and thus reduce the affordability of high-strength, low-cost alcohol in the off-trade sector.

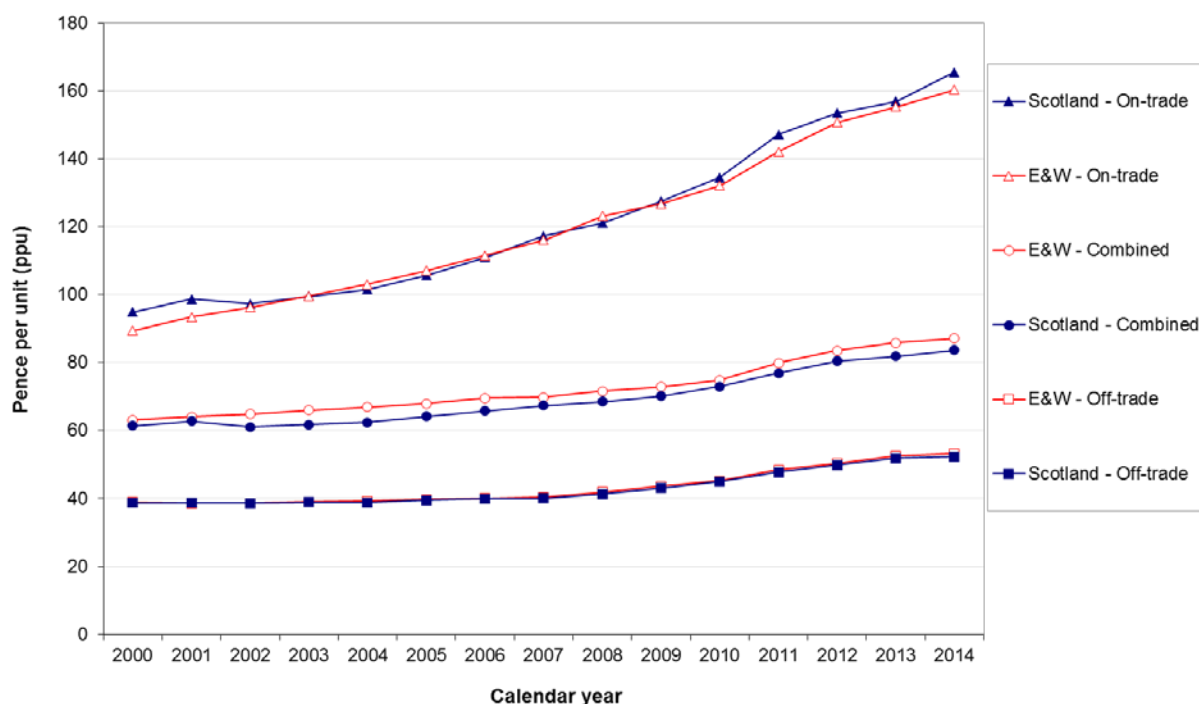
The MESAS programme has used retail sales data to monitor the average price, in pence per unit (ppu), of all alcohol, as well as the price distribution of alcohol sold in the off-trade, in Scotland and England & Wales^{xv} (further details can be found in our recent publication²¹). UK level data were also used to monitor the change in: disposable incomes per adult, using the Real Household Disposable Incomes Index (RHDI per adult); alcohol price, using the Alcohol Price Index (API); and alcohol affordability, using the Alcohol Affordability Index (AAI) (see further details in Appendix H). The aim was to monitor how alcohol price, disposable incomes and alcohol affordability changed over time and therefore understand their likely contribution to trends in alcohol consumption and harms. In the absence of MUP (due to a legal challenge) it is likely that any changes were driven by external factors.

In Scotland the average price in pence per unit (ppu) of alcohol (combined on- and off-trade sales) increased slowly from 2002, reaching 84 ppu in 2014. Throughout this period the average ppu of alcohol sold in the on-trade was higher than in the off-trade. The on-trade average (mean) ppu increased more consistently and rapidly between 2002 and 2014, whereas the off-trade average ppu only began increasing slowly between 2007 and 2013. Trends in England & Wales have followed a similar pattern^{xvi} (Figure 14; previous publication²¹).

^{xv} Note that the MESAS price and price distribution data are averages based on volume sold rather than prices charged.

^{xvi} As such, the combined on- and off-trade price is a weighted average that takes into account the different market share of the sectors in each country. The on-trade has a larger market share in E&W so this 'pulls up' the combined price.

Figure 14: Average (mean) price per unit of alcohol sold in Scotland and England & Wales, by market sector, 2000-2014. [Source: Nielsen]



Analysis of the price distribution of alcohol showed that in 2014, 52% of off-trade alcohol was sold below the proposed 50ppu MUP. This percentage declined steadily between 2009 and 2013. This decline slowed notably between 2013 and 2014 (53% and 52% respectively) (Figure 15; previous publication²¹).

Alcohol affordability in the UK increased steadily between 1980 and 2007, driven mainly by increasing average disposable incomes in the population as a whole. Alcohol affordability has since fallen. This has been largely due to falling average disposable income, linked to the 2008-2013 economic downturn. Alcohol prices also rose slightly relative to retail prices. Since 2011, income has started to rise slowly and alcohol prices also fell slightly relative to retail prices, which explains the small recent increase in affordability (Figure 16 below; Appendix H).

Figure 15: Price distribution (%) of pure alcohol sold off-trade in Scotland, 2009-2014 [Source: Nielsen]

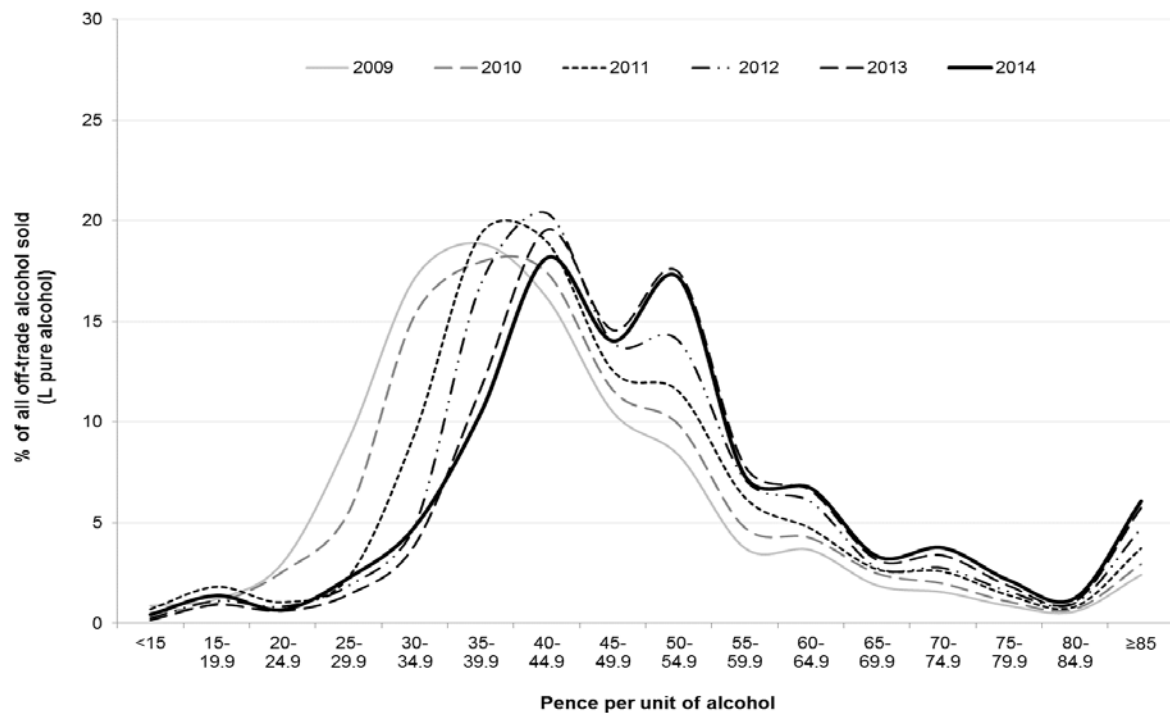
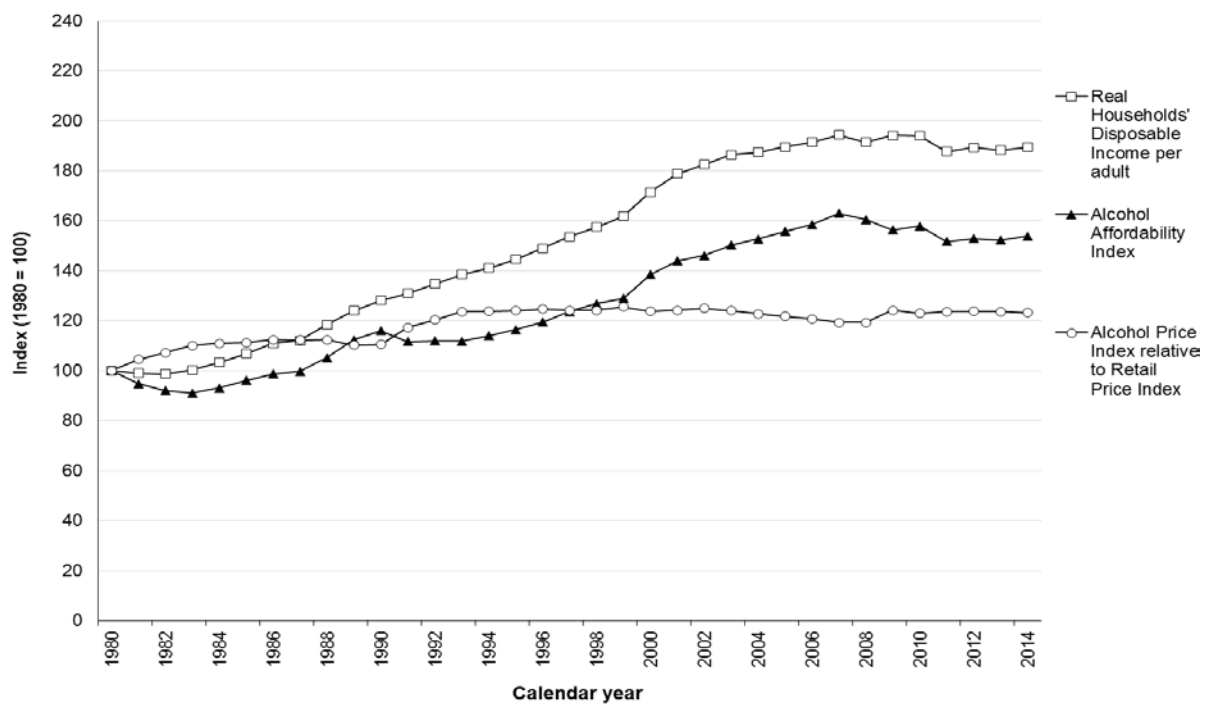


Figure 16: Trends in affordability of alcohol, disposal incomes and alcohol retail prices, UK, 1980-2014 [Source: Statistics on Alcohol, England 2014]



The contribution of trends in disposable incomes (including the divergence in trends across the population) and the impact of the wider economic context are discussed further in Chapter 4 below.

3.7 Summary

The Licensing Act has changed elements of licensing practice, although there is evidence that there was difficulty operationalising some elements. There were no data available with which to determine the impact on licensing decisions or alcohol availability. Alcohol brief interventions have been delivered to an estimated 43% of the hazardous and harmful drinkers. There were no data available with which to determine the characteristics of recipients or the impact on alcohol consumption. In specialist treatment and care services, staff reported benefits from the package of measures aimed at improving access, quality and consistency of treatment. Waiting times reduced and the ratio of alcohol dependency to services users was estimated as 1 in 4, considered high by international standards. There were no comparable data available with which to determine the change in access or in other outcomes. Taken together, ABIs and increased investment in specialist services were considered to have increased access to support for those in need. There was evidence that the ban on multi-buy discounts reduced alcohol consumption. This did not translate to a reduction in the alcohol-related harms selected within the time period of the study. Evidence of change in knowledge and attitudes was mixed. There was evidence that there had been no consistent change in adults' knowledge of units, attitudes to drunkenness and the social role of drinking. There was increased recognition of the harm caused by alcohol. There was evidence that 13 and 15 year olds in 2013 found trying alcohol or getting drunk less acceptable than their counterparts in 2010.

MUP, the component of the strategy aimed at affecting affordability, had not yet been implemented. The observed changes in affordability were therefore most likely to be due to external factors rather than the strategy.

4. Assessing the contribution of external factors to trends in alcohol consumption and alcohol-related mortality

Key messages

- The start of the decline in alcohol-related mortality in Scotland predated the alcohol strategy and therefore factors external to the strategy have influenced these trends. Several possible external factors were explored.
- Changes in disposable incomes explained some of the decline from 2003, and a smaller proportion of the earlier increase, in alcohol-related mortality in Scotland.
- There is some evidence that a 'vulnerable cohort' contributed to the rapid rise and subsequent fall in alcohol-related mortality in Scotland from the 1990s.

Important in theory-based evaluation is understanding the extent to which the outcomes of interest have been affected by factors external to the strategy. Alcohol-related mortality rates in men started to fall before the implementation of the alcohol strategy, therefore external factors must have played a part in this decline.

After an increasing trend, alcohol consumption (measured by alcohol sales) stabilised between 2005 and 2009, and then declined. The decline in alcohol-related mortality that started from 2003 followed a period of rapidly increasing rates that started in the early 1990s. Understanding the factors that contributed to the declines in consumption and alcohol-related mortality would be helped if the factors that contributed to the preceding rise in these indicators are also understood. The MESAS programme identified and assessed the contribution of plausible external factors to trends in alcohol consumption and related morbidity in Scotland observed from the 1980s (before the steep rise in mortality) to the present day. For some analyses it was necessary to focus solely on contributions to trends in alcohol-related mortality. Mixed methods were employed to assess these external factors, detailed together with the findings in other MESAS publications.^{47,48} Box 6 summarises all the external factors considered, the methods used to assess these, and each sub-study's conclusions. The two factors with the strongest supporting evidence of affecting trends in outcomes, (income trends and deprivation patterns; and a vulnerable cohort) are described in more detail below.

Box 6: Summary of the external factors study hypotheses and methods^{47,48}

Hypothesis	Methods	Conclusion
<p>Income trends and deprivation patterns:</p> <p>It was theorised that changes in incomes would impact on alcohol harms through changes in alcohol affordability and consumption. Could an interaction between income trends (particularly for the poorest groups), the prevalence of deprivation and different mortality inequality between Scotland and England & Wales account for the observed differences in the trends?</p>	<p>Levels of social deprivation, alcohol-related health inequalities and trends in disposable incomes across income groups were explored for Scotland, and Great Britain. Arithmetical modelling, accounting for distribution of deprivation and harm, was used to assess the possible impact of changes in income on alcohol-related mortality between 1991-2001 and 2001-2011 for Scotland and England & Wales. Plausible assumptions of the effect size of income change on mortality were applied.</p>	<p>Scotland was found to experience comparatively higher levels of social deprivation and alcohol-related mortality inequalities, than English & Wales. The interaction of these contextual factors in Scotland with changes in disposable incomes explained some of the decline in alcohol-related mortality from 2003, and a smaller proportion of the earlier increase.</p>
<p>A 'vulnerable' cohort in Scotland: It was theorised that economic, social and urban environment changes, between the 1950s and late 1970s, left the Scottish population vulnerable to negative impacts of the economic policies from the 1980s onwards, and that there would be a cohort of people (especially young working-class men) who would be subsequently at increased risk of alcohol-related harms (due to increased consumption and/or increased vulnerability to the effects of alcohol misuse). We therefore hypothesised that the rise and fall in alcohol-related mortality might be due to this cohort passing through the peak age of risk for alcohol harms.</p>	<p>Age-period-cohort effects in alcohol-related mortality in Scotland were explored using graphs, contour plots, and intrinsic estimator coefficients, to attempt to identify evidence of a 'vulnerable cohort' during the 1980s through to 2014.</p>	<p>There is some evidence to support the theory of a vulnerable cohort, with the increased mortality during the 1990s and 2000s in Scotland mostly due to increases amongst working-age adults, particularly in the most deprived areas, and with evidence of a period-age interaction that was more prominent in those from deprived areas.</p>

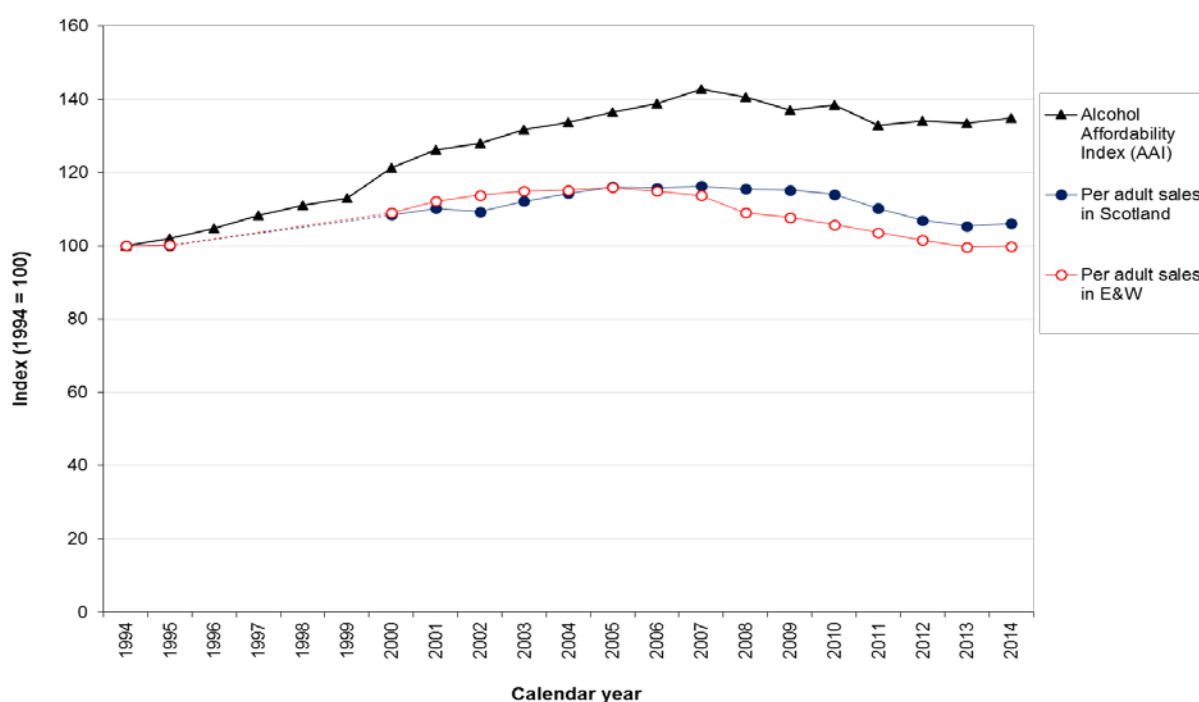
Hypothesis	Methods	Conclusion
Changing ethnic diversity: Have England & Wales experienced a greater growth than Scotland in groups who tend to abstain from alcohol for cultural or religious reasons, and did this contribute to the divergence in trends?	Trends in alcohol-related mortality were recalculated using the white population only, to make a crude estimate of the maximal impact of change in ethnic diversity in Scotland, England & Wales.	Changing ethnic diversity may potentially have made a very small contribution to the decline in mortality in Scotland and a likely greater contribution to the downward trend in England & Wales, and can therefore explain a small part of the divergence in trends and may have prevented mortality rates in England & Wales from rising more in response to similar exposures.
Pre-2009 alcohol policy: Could national alcohol policy, prior to the current policy in Scotland and England & Wales have contributed to the trends in alcohol-related mortality since the 1980s?	Alcohol policy across the Scotland and England & Wales pre-2009 was reviewed and assessed in relation to literature on effective alcohol policy.	No evidence was found of notable policy divergence pre-2009 that would have contributed to differing trends.
Alcohol social norms: Could changes in alcohol social norms, both attitudinal and behavioural, since the 1980s in Scotland and England & Wales have contributed to trends in alcohol-related mortality, by influencing alcohol consumption?	A rapid literature review to assess changes in alcohol social norms in Scotland and England & Wales and the plausible contribution to alcohol harms was undertaken.	There was some evidence of a preference for drinking at home and more concentrated drinking patterns in Scotland than in England & Wales. It is possible that these social norms, interacting with changes in socio-economic conditions and changing affordability, may have been partially responsible for the differential trends in Scotland and E&W, but this remains uncertain.
Alcohol market: Could trends in availability, in terms of alcohol outlets and capacity of outlets, have contributed to trends in alcohol consumption and therefore alcohol-related deaths? Do certain illicit drugs increase or decrease an individual's alcohol consumption, and therefore could trends in drug use influence trends in alcohol consumption, and via this mortality?	Due to a lack of data only trends in the number of outlets, a crude measure of availability, across Scotland, England & Wales could be explored. A rapid literature review to assess the potential interaction between trends in illicit drug use and alcohol consumption was undertaken.	Although per capita increases were higher in Scotland than England it is difficult to determine if this represents a difference in availability. It is unlikely that changes in use of other drugs has driven the recent decline in alcohol-related harm in Scotland. Their potential role in the increase is unknown.

Hypothesis	Methods	Conclusion
<p>Pre-2009 Clinical factors: Could differences in the effectiveness of alcohol services, in Scotland and England & Wales have contributed to differences in alcohol-related deaths? Or could change in clinical coding have created artefactual differences in alcohol-related death trends (i.e. created non-existent differences)?</p>	<p>Consultation with key informants across the three areas was undertaken to explore the possible contribution of clinical service and coding changes prior to 2009.</p>	<p>No pre-2009 clinical factors or coding factors were identified that were likely to have made a large contribution to trends in alcohol-related harm.</p>

4.1 Income trends and deprivation

Figure 17 compares the trends in alcohol affordability (presented in Chapter 3) to the sales data (presented in Chapter 2). It highlights the link between affordability and sales: population consumption (as measured by alcohol sales) in Scotland has broadly mirrored the trend in alcohol affordability. In England & Wales, the decline in sales started two years before the decline in affordability. The start of the alcohol strategy coincided with the 2008 global recession which resulted in a decrease in disposable incomes, thus reducing alcohol affordability. In both Scotland and England & Wales, the fall in sales also continued after affordability stabilised in 2011. However the downward trend in sales may now be flattening.

Figure 17: Trends in affordability and sales in Scotland and England & Wales, 1994-2014
[Source: Nielsen; Statistics on Alcohol, England 2014]



This suggests that other factors in addition to affordability, as measured at a national level by the Affordability Index, may be influencing sales, consumption and harms. Several key factors common to Scotland and England & Wales are relevant:

- The decline in alcohol related mortality was driven by falling rates in those living in the most deprived areas (Appendix B).
- Incomes in the lowest income groups started to fall before the rest of the population and before the recession.²⁷

In addition, there are several factors distinguishing Scotland and England & Wales:

- Disposable incomes fell more, in particular for the lowest income groups, in Scotland than in England & Wales during the economic downturn (2007–2013), leading to different alcohol affordability trends.²⁷

- A higher proportion of the Scottish population live in the most deprived circumstances than in England & Wales^{xvii}.⁴⁷
- In Scotland, a greater proportion of alcohol-related deaths are found in the most deprived communities than in England & Wales.⁴⁷

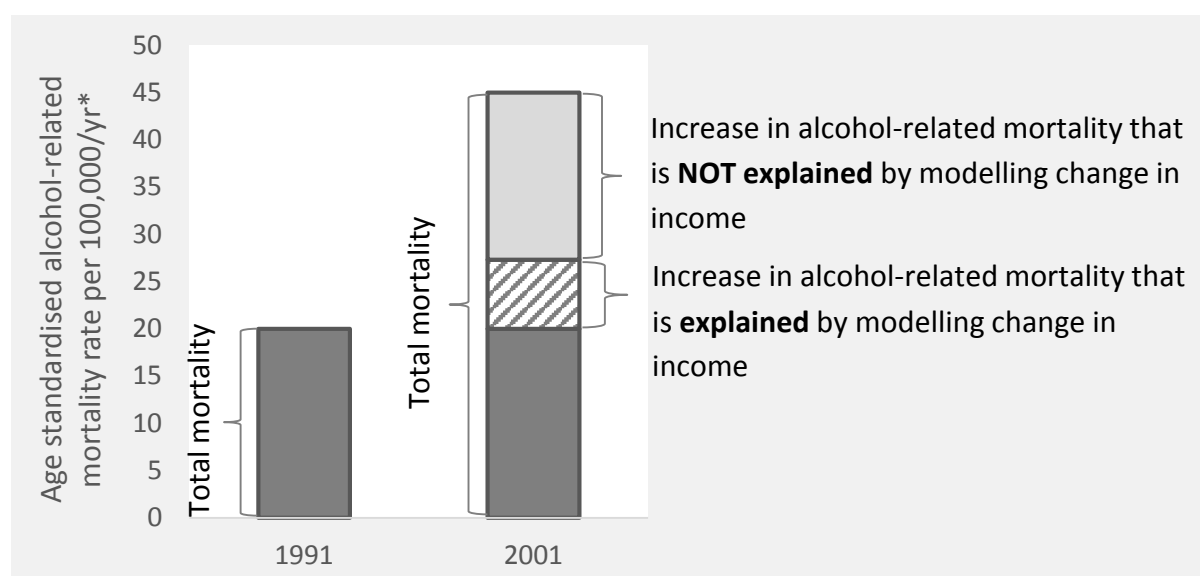
The MESAS programme hypothesised that the combined effect of these country-specific differences on alcohol affordability and consumption for particular socio-economic groups, was a potential cause of the rise and fall in alcohol-related mortality in Scotland.

Modelling of the impact of these identified country-specific differences, was used to explore the contribution of increases in income between 1991 and 2001 to the increase in alcohol-related mortality in Scotland and England & Wales. A portion of the increase in deaths between 1991 and 2001 in both Scotland and England & Wales could be predicted by income changes (Figure 18). A portion of the increased deaths could also be predicted for women in both regions. For both genders, the model predicted less of the observed rise in Scotland than that in E&W.⁴⁷

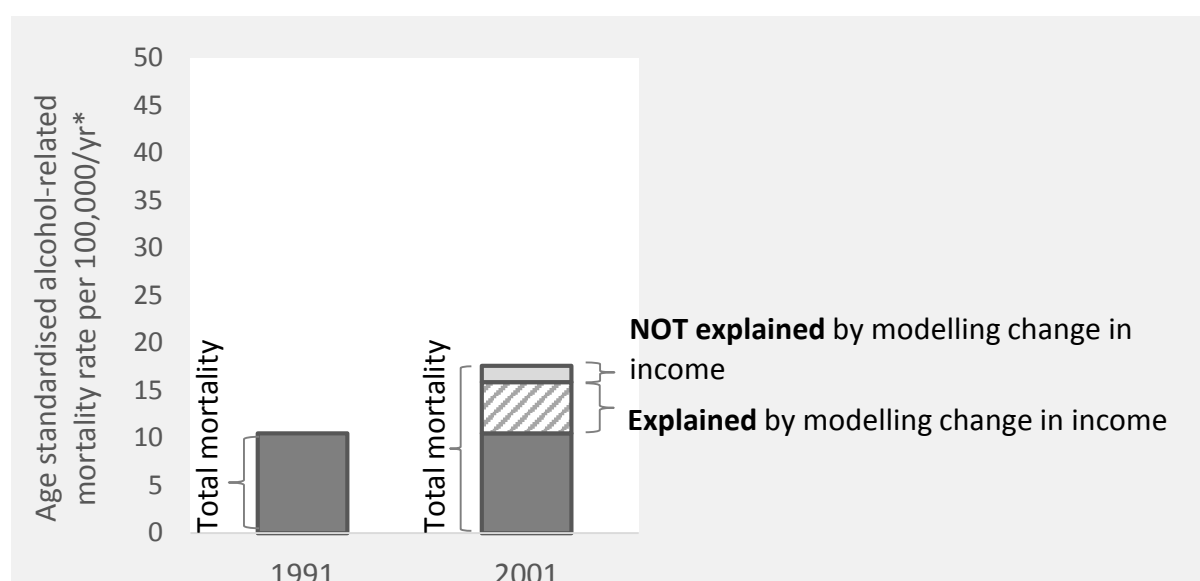
^{xvii} Deprivation is measured using the Carstairs score for Great Britain, where a larger proportion of Scotland live in the most deprived areas in GB than in England & Wales

Figure 18 – Increase in alcohol related deaths between 1991 and 2001 that is explained or unexplained by modelling increase in incomes in (A) Scotland, males and (B) England & Wales, males.

(A) Scotland, males



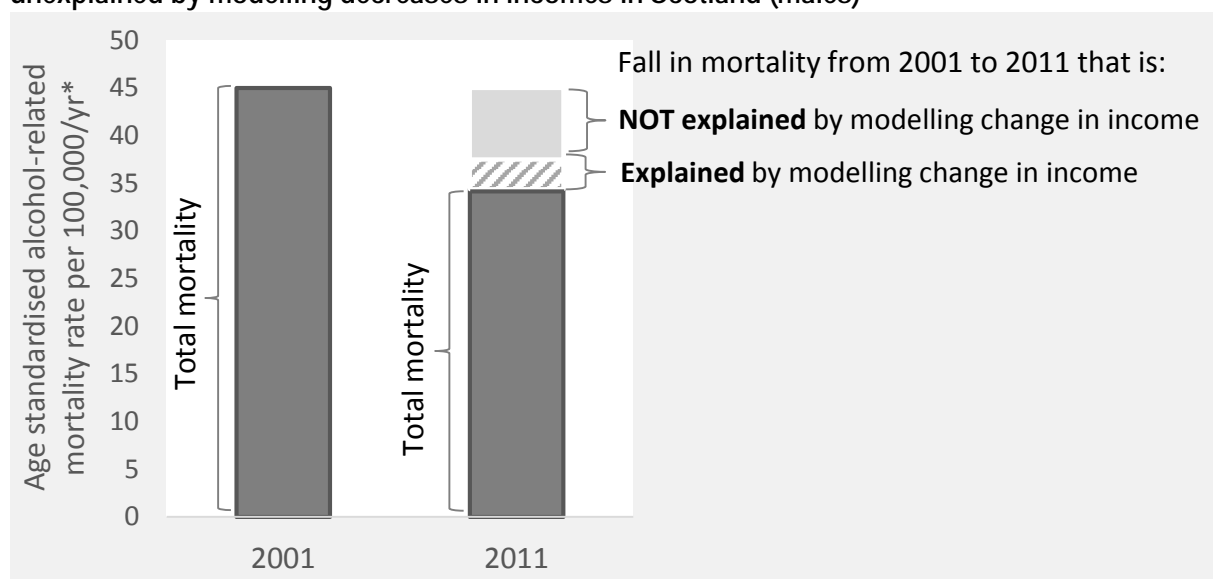
(B) England & Wales, males



*Derived from weighted Carstairs deciles

Similarly, falling incomes between 2001 and 2011 were modelled to explore the impact of changes in income on the decrease in alcohol-related mortality during this time in Scotland (alcohol related mortality in England & Wales did not fall between 2001 and 2011). One third of the decrease in deaths between 2001 and 2011 in Scotland could also be predicted by income decreases: the mortality rate (dark grey shade) fell from 2001 to 2011; with the grey lined area showing the fall that was predicted; and the light grey shaded area showing the fall that was not predicted by income changes (Figure 19). A portion of the decreased mortality could also be predicted for women in Scotland.⁴⁷

Figure 19 – Decrease in alcohol related deaths between 2001 and 2011 that is explained or unexplained by modelling decreases in incomes in Scotland (males)



*Derived from weighted Carstairs deciles

4.2 A vulnerable cohort effect in Scotland

Since at least the 1980s mortality in Scotland has been higher than in England, even after accounting for the effect of the greater levels of deprivation seen in Scotland. This is true for overall mortality and alcohol-related mortality. One potential explanation of this so called “Scottish effect” relates to the impacts of economic and social policies in the 1980s. It has been suggested that the overcrowding, selective depopulation and the de-industrialisation of the West of Scotland, and disempowerment of the affected population, rendered sections of the Scottish population more vulnerable to the economic and social policies in the 1980s and consequent adverse health outcomes.⁴⁹⁻⁵² The potential effects of economic downturns on alcohol-related harms are ambiguous. There is evidence that they may reduce consumption and harms through the impact of declining incomes (and consequent reductions in the affordability of alcohol), or they might encourage the consumption of alcohol as a means of coping with exposures related to economic downturns such as increased unemployment.^{27,53-58}

The MESAS programme therefore hypothesised that this could have created a vulnerable cohort within the Scottish population within the context of higher mean consumption in Scotland compared to England & Wales. Furthermore, although not directly comparable, previous MESAS analysis found that consumption in harmful drinkers may be higher for those in the lowest income quintile in Scotland compared with England.²⁷ This vulnerable cohort, at a time of increasing alcohol affordability at a population level, had increased levels of harmful drinking as a response to adversity and/or were exposed to multiple risks. The cumulative effect of which increased their risk of an alcohol-related death. The increasing and then decreasing alcohol-related mortality rates observed over the last 30 years would then be explained by the higher risk carried through the life course of this vulnerable cohort.

It was not possible to identify those most affected by the economic and social policies in the 1980s. Therefore an assumption was made that working age adults in

the 1980s living in the most deprived areas were the population most at risk of the adverse effects of these policies. Alcohol-related mortality across time (1974-2013) and across age groups was analysed.⁴⁷ It was hypothesized that if economic and social policies did have an adverse impact in Scotland, an increase in alcohol-related mortality would be seen following the implementation of these policies (1980 onwards) for the working age population living in deprived areas, and subsequently as they aged.

An increase in alcohol-related mortality was seen from the early 1990s to the mid-2000s, most prominently amongst middle age adults. This increase in alcohol-related deaths in middle-age adults was greater for men in the most deprived areas than for men in the least deprived areas. A similar but less pronounced pattern of alcohol-related deaths was found for females. This patterning of alcohol-related deaths across the 1980s to 2000s is consistent with the theory of a vulnerable cohort, with previous exposure to de-industrialisation and socio-economic change from the 1980s, but insufficient longitudinal datasets were available to analyse changes in these exposures and outcomes at an individual-level.⁴⁷ This theory is also consistent with the plateau in new patient hospitalisations for alcohol-related conditions between 1997 and 2009 in contrast to the continued rises in the rate of stays for these conditions (i.e. the continued rise in stays reflects the emergence of the vulnerable cohort experiencing ongoing alcohol-related harm, and resultant hospitalisation, through their life course, see Figure 11).

4.3 Summary

A number of external factors are likely to have contributed to the trends in alcohol-related mortality observed in Scotland since the 1990s, and to the higher levels observed in Scotland when compared to England & Wales.

There was some evidence that disposable incomes amongst the lowest income groups started to fall from the early 2000s. While this was not confined to Scotland, the higher proportion of the population living in the most deprived areas and of alcohol-related deaths in these areas meant that this had a disproportionate effect on alcohol-related mortality in Scotland. Changes in incomes explained more of the decline than the earlier increase in alcohol-related mortality (Section 4.1).

There was some evidence that the trends reflect a 'vulnerable cohort', negatively impacted by socio-economic setbacks they experienced during the 1980s, whose risk of alcohol-related mortality increased as a result of increased harmful drinking and/or the cumulative effect of multiple risk factors. The analyses suggest that the ageing and subsequent deaths in this cohort contributed to the rapid rise and subsequent fall in alcohol-related mortality in Scotland from the 1990s (Section 4.2).

Differences in the ethnic composition of the population may have also made a small contribution to the divergence in trends between Scotland and England & Wales. It was difficult to determine the extent to which other factors such as differences in the availability of alcohol and social norms relating to alcohol consumption explained trends and difference in alcohol-related mortality across both areas (Box 6).

5. Discussion

Key messages:

Knowledge, attitudes & social norms: There is increased awareness of alcohol-related harm but the evidence suggests little change in the knowledge or attitudes measured. The impact on attitudes and social norms not measured remains unknown.

Alcohol affordability: the key element of the strategy to affect affordability, MUP, has not been implemented. The ban on multi-buy discounts reduced the consumption of wine.

Alcohol availability: The Licensing Act has changed practice. There were difficulties operationalising the public health objective and overprovision assessments in some areas. Lack of reliable data meant it was not possible to assess changes in decision making or monitor changes in alcohol availability.

Support for those in need: The package of activities that formed the ABI programme and increased investment in services were well perceived and have increased support for those in need. The ABI programme reached an estimated 43% of potential beneficiaries. There were insufficient data collected within the ABI programme with which to assess the reach, uptake or impact on alcohol consumption. Waiting times to access specialist services reduced, and it was estimated that 1 in 4 of those with alcohol dependency accessed services in 2012. This is considered high by international standards.

Improved support for children: Limited expectation of evaluable change at outset meant this was not assessed

Safer environments: There was no evaluation of change in the safety of drinking environments.

Overall, the alcohol strategy has successfully influenced some outcomes. External factors have contributed to the declines in alcohol-related mortality and hospitalisations. On the whole, the strategy was not expected to significantly impact on these outcomes within the time scale of the evaluation.

This evaluation used a theory-based approach whereby it is assumed that the strategy has contributed to reduced alcohol consumption and related harm (i.e. the outcomes) if:

- a theory of change based on plausible links between activities and outcomes exists;
- activities are implemented in a way likely to affect outcomes;
- the expected chain of outcomes is realised and;
- the external factors that might also be impacting on outcomes are accounted for.^{14,15}

5.1 Outcomes: Changing alcohol consumption and related harm

- After increasing during the 1990s and early 2000s, population alcohol consumption stabilised between 2005 and 2009, and declined until 2013. This is likely to have been driven by declining consumption and increased abstinence in young adults and decreased consumption amongst the heaviest drinkers, particularly men.

- Alcohol-related mortality rates fell from a peak in 2003 for men and 2006 for women until 2012. Rates have not decreased for the last two years. Hospitalisations fell for both genders from a peak in 2007/08. Overall, the declines in alcohol-related mortality and hospitalisations have been driven by falling rates for men and those living in the most deprived areas in particular.

5.2 Impact of the strategy

The MESAS evaluation has studied the implementation and potential impact of selected components of the strategy on the intermediate outcomes in the theory of change. The strategy contains many of the elements of a comprehensive alcohol strategy recommended by WHO⁵⁹ and is recognised as being the most advanced alcohol strategy amongst the four nations of the UK.⁶⁰

Safer environments

Limitation of study design meant the impact of activities on the safety of drinking environments was not evaluated.

Knowledge, attitudes & social norms

The evidence suggests little change in the indicators of knowledge or attitudes to drunkenness and the social role of drinking. Awareness of the harm caused by alcohol increased. The measurement of attitudes was limited and the extent to which the strategy itself or media and public influenced attitudes and social norms was unknown.

Alcohol affordability

There has been limited impact on affordability that can be directly linked to the impact of the strategy. MUP has not yet been implemented and therefore has not been able to reduce affordability. The ban on multi-buy discounts was associated with a decline in consumption, driven largely by declines in wine. Over the time period the volume of alcohol sold cheaply continued to decline steadily until the last year. Changes to alcohol affordability have been largely driven by market and other external factors.

Alcohol availability

The Licensing Act introduced several instruments that had the potential to manage alcohol availability in response to local requirements. Some aspects of the Act were successfully implemented, such as the establishment of licensing standards officers and test purchasing. The Act has also changed practice in terms of the statements of licensing policy and overprovision policy. There were difficulties implementing the elements of the Act considered to have the most potential to affect alcohol availability, namely the public health objective and overprovision assessments. Data limitations meant that the impact of such policy-based changes on licensing decisions or alcohol availability are unknown.

Support for those in need

There has been increased investment in alcohol brief interventions and specialist alcohol treatment and care services. Performance targets were met with the support of national leadership and coordination. The introduction of Alcohol and Drug Partnerships reformed local service planning infrastructures and there was guidance aimed at improving the quality and consistency of specialist services. Alcohol Brief

Interventions have been widely delivered and were estimated to have reached 43% of harmful and hazardous drinkers. Models of delivery varied across Scotland and data limitations meant it was not possible to determine the characteristics of the beneficiaries or immediate results. There was a reduction in waiting times to access specialist treatment services. It was estimated that 1 in 4 of those with alcohol dependency accessed specialist alcohol treatment and care services in Scotland in 2012. This is considered high by international standards, although it is likely to be an overestimate. Lack of comparable data meant it was not possible to compare access with estimates pre-strategy or to England. It was also not possible to evidence the results of access to treatment.

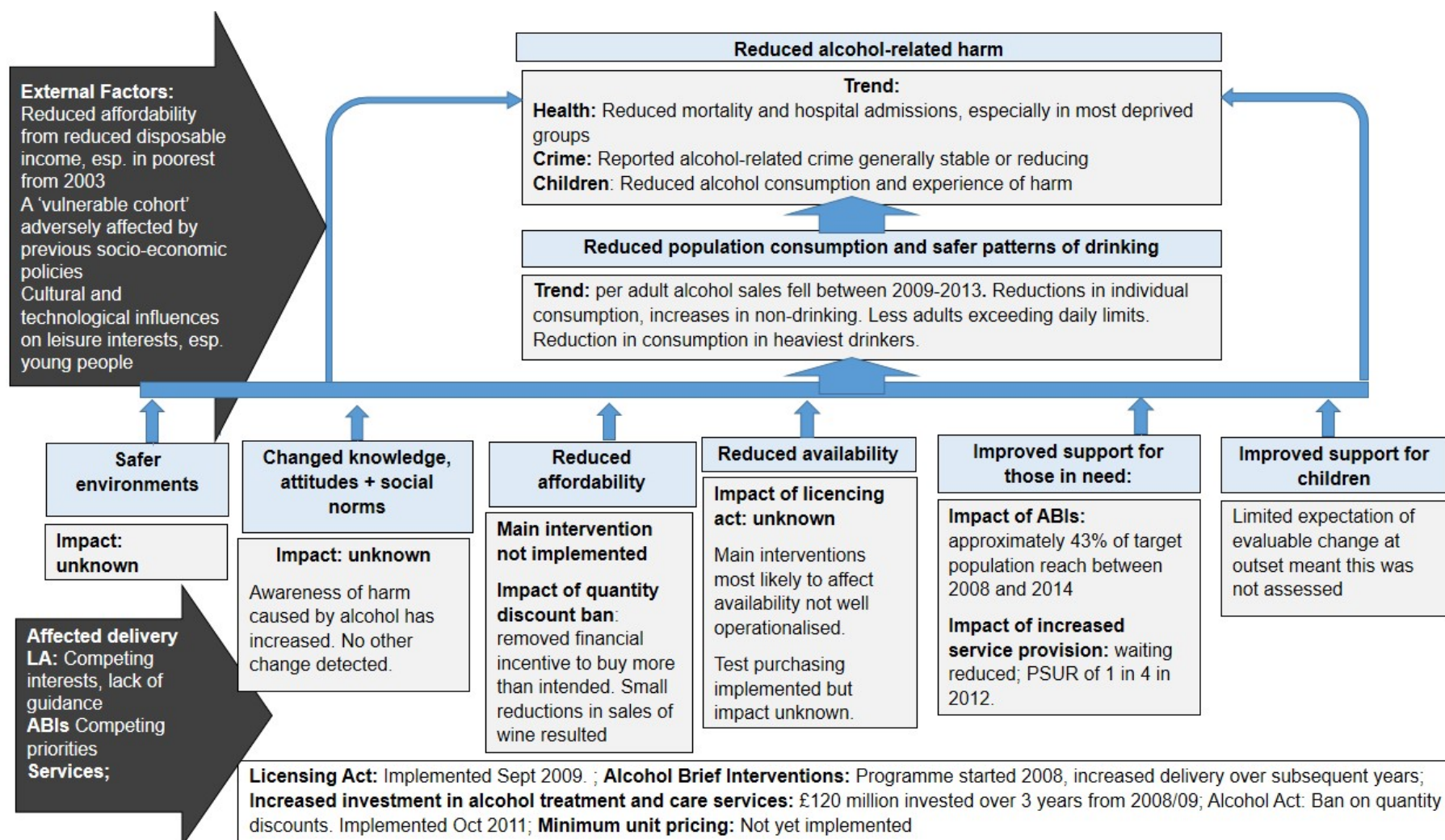
Improved support for children

Limited expectation of evaluable change at outset meant this was not assessed

5.3 Impact of factors external to the strategy

The fall in alcohol-related harm in Scotland started before the implementation of the strategy, so factors external to the strategy must have been responsible for the change in trend. Two external factors were thought to be the most likely contributors to the declines in alcohol-related harm. First the existence of a **'vulnerable cohort'**, potentially adversely affected by socio-economic policies in the 1980s (at a time when alcohol was becoming increasingly affordable and available), that contributed to the rapid rise and subsequent fall in alcohol-related mortality in Scotland from the 1990s as this cohort aged and subsequently died. Second, **declining incomes for the lowest income groups from 2003** and the interaction between income, deprivation and alcohol-related harm in Scotland. Changes in ethnic composition, which have been greater in England and Wales than in Scotland explained only a small part of the difference in alcohol-related mortality between the two regions. While it is very likely that social norms and availability will have affected trends, it was not possible to evidence the extent to which differences in social norms and availability between Scotland and England & Wales account for the different levels of alcohol-related harm. There was no evidence that alcohol policy or coding issues could fully explain the downward trend in alcohol-related mortality.

Figure 20: Summary of MESAS evaluation findings



5.4 Strengths and weaknesses of the evaluation approach

The strengths and weaknesses of each component study have been detailed in the earlier study-specific reports.^{17,27,30,36}

Strengths of the approach

- The theory-based approach drew on evidence from a range of sources to assess the contribution of the strategy and the wider context (the external factors) to changes in defined outcomes.
- The availability of robust routine data on alcohol sales and alcohol-related mortality and hospital-admission rates allowed detailed monitoring and exploration of trends so that any changes were seen within the context of long-term trends. This minimised the risk of erroneous conclusions being drawn from shorter trends and stimulated enquiry on the drivers of these long-term trends, which in turn shed light on contemporary trends.
- The use of a comparator population (England or England & Wales), where possible, allowed the study to explore and understand the contribution of both the strategy and external factors, although there were also associated limitations (see below).
- The use of quality assurance processes including: internal quality assurance processes, external peer review of MESAS publications; and a validation event in early 2015 with invited key researchers.

Weaknesses of the approach

The use of a comparison population made three implicit assumptions: that the comparator was not exposed to the key elements of the Strategy; that exposure to the external factors was the same across Scotland and the comparator populations; and that the same exposure had an equal magnitude of effect in Scotland and the comparator population. It is unlikely that all these assumptions held entirely:

- England & Wales introduced a new, integrated licensing regime in 2005 which had a number of similarities with the later Licensing Act in Scotland. Specifically, both Acts restricted irresponsible on-trade promotions, established licensing objectives (although only Scotland established a public health objective) and required some assessment of overprovision/cumulative impacts of licensed premises. Thus licensing practice has been changed in both areas, although in both regions available evidence does not suggest that licensing decisions have a public health-orientated focus as yet.⁶¹
- Financial incentives for ABI delivery in primary care were also established in England in 2008, the same year as the ABI programme in Scotland started.
- The level of population alcohol consumption is much higher in Scotland than England & Wales. Despite exposure to similar historical political and socio-economic factors and similar alcohol policy pre-2009, the underlying trends in population alcohol consumption and particularly alcohol-related mortality and hospitalisations differed. The analysis for this evaluation has shown that there were differences in exposure to deprivation and in the socioeconomic patterning of alcohol-related harm that meant that exposure to economic factors may have played out differently in the two populations. Furthermore, it is now well established that Scotland experiences higher rates of harm across

a number of health indicators even when deprivation and demography is accounted for.⁵⁰

There were constraints on the evaluation resources available which meant it was not feasible to study all elements of such a large strategy. Furthermore, existing data were found to be limited, incomplete, unavailable or inaccessible which meant that some components of the strategy could not be adequately studied. It is therefore likely that some important short-term outcomes were undetected or underreported.

Evaluating national policy, where there is no comparator and implementation is phased and inconsistent, is difficult. While adopting a theory-based approach provides a way to develop a plausible narrative on the contribution of the strategy on outcomes, these weaknesses limit the robustness of the individual studies and the approach does not allow clear-cut attribution of outcomes to possible causal factors.

The evaluation focused on individual components of the strategy on the basis of how important they were to the success of the strategy and how feasible it was to evaluate them in the time and with the resources available. These were pragmatic decisions to ensure the evaluation could be completed successfully and on time. However, it meant the contribution of less measurable but potentially important components, may have been missed. The emphasis on discrete components of the strategy makes it difficult to explore the interactions between components that might make the overall impact of the strategy greater than the sum of its parts. For example, the impact of ABIs may be enhanced by other aspects of the strategy, such as the licensing regulations or the multi-buy discount ban (and vice versa). This is a fundamental challenge when evaluating complex interventions with multiple components. However this risk is mitigated to some extent by:

- Focusing on components which evidence suggests are effective – this helps to strengthen the inference that if they have been delivered successfully, they are likely to have contributed to the intended outcomes
- Monitoring trends in consumption and alcohol harms at a population level. These trends represent the net effect of strategy, including any interactions between components of it, and of external factors. Although it remains difficult, if not impossible, to quantify precisely the impact of each of these influences on trends in outcomes, monitoring these trends helps to piece together a plausible story about what happened and why.

Finally, the evaluation was initially designed to incorporate the evaluation of MUP. The on-going legal challenge meant that MUP was not implemented within the life-span of this evaluation. There was therefore less policy difference with England & Wales than anticipated and less expectation that the remaining interventions would have a measurable impact on the alcohol mortality and hospitalisation indicators used within the time-frame. However, the methodology used in the MESAS evaluation and the use of England & Wales as a comparator has yielded learning that will be invaluable for any potential evaluation of MUP, or other policy, in the future.

6. Recommendations

1 Reviewing and refreshing the alcohol strategy

The Scottish Government has already announced a refresh of the alcohol strategy. The current strategy is well grounded in the evidence-base and this refresh should continue to be informed by the evidence of effectiveness and cost-effectiveness as well as evidence of gaps in policy to determine the priority for further action.⁵⁹ The most effective (and cost effective) interventions to reduce alcohol consumption and harm are likely to involve action to increase price (such as implementing MUP), and action to reduce availability and restrict exposure to marketing. These are also the alcohol specific interventions most likely to reduce alcohol-related health inequalities.⁶²

Given the inequalities in alcohol-related harm and the likelihood of at least some 'vulnerable cohort effect', further consideration should be given to how alcohol consumption and related harm can be addressed within the context of the wider socioeconomic determinants of health. In particular, there is a risk of further 'vulnerable cohorts' emerging in the context of the recent economic downturn and changes to the social security system. This underlines the importance of continued surveillance of alcohol-related outcomes (discussed further in point 3 below).

2 Improve implementation

The current strategy already addresses many of the components of a comprehensive alcohol strategy advocated by the World Health Organization.^{59,60} However the implementation difficulties and local variation outlined in the MESAS studies means that impact should not be assumed to be consistent or maximised. The MESAS programme has shown that there were difficulties with operationalising components of the Licensing Act, which had the potential to control alcohol availability, and there should be consideration as to how the refreshed strategy or future regulations could strengthen implementation in this area.

The strategy's impact on affordability has been similarly constrained. MUP has yet to be implemented due to an on-going legal challenge. The UK Government also ended the alcohol duty escalator that automatically raised alcohol duty above the rate of inflation, thus diminishing the potential of alcohol duty to routinely reduce affordability. Therefore, apart from the reduction of price incentives through the multi-buy discount ban, there has been little policy-driven reduction in alcohol affordability. Given the strength of the evidence of a link between price, alcohol consumption and alcohol harm, this implementation gap diminishes the potential success of the strategy, and efforts to implement MUP should continue. This evaluation also highlights the importance of keeping the level and impact of MUP under review, if and when implemented.

This evaluation generated learning to improve implementation of current and future interventions. Nurturing of local champions to provide leadership and providing national support for implementation that helped local areas implement strategy in ways appropriate for their areas was valuable. On the other hand there is a need to improve the completeness and consistency of local data collection so that how an intervention is being implemented, by whom, reaching whom and with what

immediate impacts is better understood. Such data are crucial for informing and assessing whether interventions are likely to be having the desired and equitable impact locally and to drive improvement. Allowing sufficient lead time to establish systems to support delivery, including data collection systems is vital.

3 Future monitoring and evaluation

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, including the role of marketing and industry response. At the time of publication there is evidence that the increase in the average price of off-trade alcohol sold has stalled. Following a fall in affordability during the economic downturn, there has been a small increase in affordability since 2011 due to a small fall in alcohol prices relative to retail prices and a small rise in disposable incomes. In addition, the recent decline in alcohol sales may be flattening and alcohol-related mortality is no longer decreasing. It is too early to say whether these are the start of a reversal of the downward trend but they should be monitored.

Where the evidence base is limited, interventions should be designed and implemented in a way that enables robust evaluation before integration into national policy whenever possible. This requires national and local data collection that is complete, consistent, feasible to do and capable of generating useful knowledge. The data collected should be managed in a way that facilitates application for both improvement and evaluation. Where feasible, enough time needs to be allowed to agree and establish data collection requirements and secure practitioner buy-in prior to implementation. Good quality routine data provide the most robust and least costly source of data for evaluation. Evaluation is not always required or feasible but, as already described, analysis and interpretation of robust, meaningful and proportionate monitoring data can improve implementation.

More comprehensive requirements to collate and publish licensing data would facilitate understanding of changing availability. More specifically, it would be beneficial to set up a system that classifies outlet type consistently across and between local areas; collates licensing data consistently; and is accessible to the general public, policy makers, researchers and evaluators.

More complete and consistent local data collection on ABI adoption (by practitioners) and reach (to beneficiaries) would facilitate understanding of access to this programme. Better data on the prevalence of alcohol dependency and ensuring local services provide complete reporting against consistent definitions of service provision would allow more valid and reliable monitoring of the prevalence to service user ratio and facilitate repeat measurement to track progress as resources change.

It will be important to evaluate the impact of MUP, if and when it is introduced, incorporating the learning on methodology and data collection from this phase of MESAS.

4 Future research

Alcohol policy and evaluation in Scotland could benefit from future research on:

- Developing better methods for evaluating policy using routine data in natural experiments; these could include ways to identify more valid comparator areas that better account for the impact of external factors on underlying trends in harms.
- Understanding the differences between Scotland and England & Wales in levels and patterns of drinking and in the wider contextual factors that explain these differences.
- Understanding the linkages between policy intent, legislation, social attitudes and changes in social norms.
- Understanding the mechanisms underpinning a 'vulnerable cohort' and why their risk of alcohol-related harm appears elevated, especially if monitoring indicates that a new vulnerable cohort may be emerging in the future.
- The factors that facilitate initiation and continued engagement with specialist alcohol treatment and care services in Scotland, including early identification of those with alcohol problems.
- Examining the relationship between alcohol price, consumption and harm within Scotland and the rest of the UK.

7. Conclusion

Following recognition of the high levels of alcohol harm in Scotland, a comprehensive package of measures that aimed to reduce harm through reducing alcohol consumption was introduced from 2008. Alcohol-related mortality and hospitalisation have since fallen. The evaluation of the interventions studied suggests implementation varied and evidence of contribution to the outcomes was mixed.

The programme of evidence-based ABIs and increased investment in treatment and care services were considered by the MESAS programme to have increased support for those in need, although the demographic characteristics of the beneficiaries and impact on consumption remain unknown. The Alcohol Act removed the financial incentive to buy more than intended and was associated with a decrease in alcohol consumption, particularly wine. The Licensing Act was implemented and introduced interventions such as restrictions on on-trade promotions, single area displays in the off-trade, staff training, licensing standards officers and test purchasing. However, there were difficulties implementing the public health objective and overprovision assessments and the extent to which the Licensing Act has impacted on licensing decisions to control availability remained unknown. MUP has not yet been implemented due to a legal challenge and so was not able to have the desired impact on affordability.

Given the timing of the declines it is clear that factors external to the strategy are likely to have contributed to changes in alcohol-related mortality and hospitalisation, especially male mortality. Analysis suggested the two most likely explanations of those studied: first, the fall in disposable income for the most deprived groups, which started in 2003 and affected affordability for that group; and second the presence of a vulnerable cohort responsible for a wave of alcohol-related mortality, that increased in the 1990s and decreased from the mid-2000s as the cohort aged and died.

It is impossible to quantify precisely the impact of these external factors, nor determine the relative contribution of the external factors and the strategy to the ongoing declines. The declines in both mortality rates and hospitalisation rates were much steeper in Scotland than England/England & Wales and the evidence-based strategy may be contributing to these improvements.

Despite these recent improvements, Scotland continues to experience substantially higher levels of alcohol-related mortality and morbidity compared to the 1980s and compared to England & Wales. Inequalities in alcohol-related harm persist. Those living in the most deprived areas, especially men, continue to experience the highest levels of alcohol-related morbidity and mortality. There is, therefore, a continued need for action to further reduce alcohol-related harm in Scotland and to address these health inequalities. MUP has not been implemented and this is likely to have constrained the strategy's contribution to declining alcohol consumption and related harm, and efforts to implement should continue. There was no decrease in either alcohol consumption (sales) or alcohol-related mortality in 2013 and 2014. While it is too early to say if this marks a change in trends, continued monitoring is required.

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