Monitoring and Evaluating Scotland’s Alcohol Strategy. Setting the Scene: Theory of change and baseline picture

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EXECUTIVE SUMMARY

Introduction

There is overwhelming evidence that the health and well-being of a large number of people in Scotland is being harmed, directly or indirectly, by excessive alcohol consumption, and that these harms not only affect the individual but also their families and friends, their communities and Scotland as a whole. Alcohol-related hospital admissions and death rates have quadrupled and nearly tripled respectively since the early 1980s. The enormous extent of social harms related to alcohol is also increasingly recognised. The cost of alcohol misuse to the Scottish economy has been put at around £3.56 billion per year.

In response to the growing scale of the problem, the Scottish Government published a new strategic approach to reducing alcohol related harm in ‘Changing Scotland’s Relationship with Alcohol: A Framework for Action’ (subsequently referred to as ‘the Framework’) in 2009. The strategy draws heavily on the international evidence that suggests an effective alcohol policy is one that encompasses a range of interventions (including regulatory measures, support and treatment interventions and changes in culture and attitudes) delivered via a comprehensive approach aimed at the whole population with particular targeting for high-risk groups.

The Framework set out important new proposals across four broad outcomes (reduced consumption; supporting families & communities; positive attitudes, positive choices; improved support and treatment) and built on policies already in place, in particular the Licensing (Scotland) Act 2005 which came into full force in September 2009. Those proposals in the Framework that required further legislative change, and which received parliamentary approval, are being implemented through the Alcohol etc. (Scotland) Act 2010. The term ‘alcohol strategy’ is therefore used in this report to refer to these three complementary strands (the Framework, the Licensing Act and the Alcohol Act) but it is recognised that alcohol strategy continues to evolve.

The Evaluation

In 2008 the Scottish Government tasked NHS Health Scotland to lead the development and delivery of a monitoring and evaluation plan to assess the success of the strategy in achieving its intended outcomes. The aim of the evaluation is to provide more than just a final verdict on the strategy’s overall effectiveness. Evaluation asks not just ‘did it work’ but ‘how is it working, who for and how might it work better?’ The Monitoring and Evaluating Scotland’s Alcohol Strategy (MESAS) workstream therefore has a number of key objectives:

- To track the implementation progress and reach of key actions in order to inform any necessary amendments or adjustments
- To assess the extent to which intended outcomes are achieved and are attributable to the actions currently being developed by the Scottish
Government

- To identify any unintended outcomes or displacement effects, including differential effects or outcomes which may impact on health inequalities

A ‘Theory of Change’ was developed to map out the pathways through which policies and interventions set out in the strategy are expected to achieve desired outcomes. The Theory of Change postulates that harms will reduce if consumption goes down, which in turn will occur if there are changes in the economic, physical and social environment (i.e. affordability, availability and knowledge and attitudes) in which alcohol is sold and consumed, and if there are sufficient services in place to support a large enough proportion of individuals at risk from their drinking. Timescales for change will vary with some outcomes likely to be achieved in the short-term with others changing more slowly. The Theory of Change provided the theoretical underpinning for the development of a portfolio of 7 evaluation studies to track the strategy’s progress and ultimately determine its success. A high level, simplified version of the Theory of Change is presented in Figure A.

Figure A: High level Theory of Change for the alcohol strategy

As well as studies measuring population outcomes (such as changes in alcohol-related harm), the evaluation will track the implementation progress and reach of key actions included in Licensing (Scotland) Act 2005 and the Framework for Action. The portfolio includes both commissioned studies and in-house work being taken forward by NHS Health Scotland and Information Services Division (ISD). All current MESAS studies are planned to finish and report by March 2015, when the MESAS final report will be published. However, it is anticipated that routine monitoring of long term trends will continue beyond this date.
The baseline report

The purpose of this report is to present an overview of Scotland’s alcohol strategy, describe the outcomes which the strategy aims to achieve, give an overview of the portfolio of evaluation studies and provide a baseline picture of trends in affordability, consumption and alcohol-related harm against which future progress will be measured. Data from England and Wales are used where possible to allow comparisons over time.

The report demonstrates that alcohol sales in Scotland have increased by 11% per capita between 1994 and 2009. Alcohol sales in Scotland are now over a fifth higher than in England and Wales with the gap widening in the last five years. Self reports from surveys show that considerable proportions of the population (around half of men and four in ten women) are drinking to excess and that this is not confined to particular sections of society.

There is substantial international evidence that the price of alcohol affects consumption and, in turn, the level of alcohol-related harm. The affordability of alcoholic drinks and its relationship with consumption is therefore a key measure to be tracked over time. The report finds that alcohol has become increasingly affordable in the UK since the 1980s, and while income growth has been the strongest driver of this trend it has been supported by slow growth in off-sale prices. The increased affordability of off-sale alcohol has been matched by a shift in consumption from on-sales to off-sales. Analysis of off-sale price band data shows that a significant proportion of off-sale alcohol is sold under 30p per unit, especially cider, vodka and beer.

As consumption in Scotland has increased so has alcohol-related harm: alcohol-related mortality has nearly tripled since the early 1980s (with rates around twice those in England and Wales), while alcohol-related hospital admissions have more than quadrupled over the same period. The rates for both alcohol-related mortality and hospital admissions have stabilised in the last few years, although they are still at historically high levels. Of particular concern are the social inequalities in the patterning of harm. In 2009, alcohol-related death rates were more than six times higher in the most deprived fifth of the population than in the most affluent. Alcohol-related harm is not limited to health. Half of prisoners report being drunk at the time of the offence, while around 7 in 10 assaults presenting to Emergency Departments may be alcohol-related.

Future reporting

Attempts to rebalance Scotland’s relationship with alcohol must therefore be understood in the context of the upward trends in consumption and harm over the past 20 years. Future MESAS reports will not only update trends in outcomes but will provide an assessment of the implementation of key interventions, particularly around licensing reform and the introduction of alcohol brief interventions. Interpretation of future trends will be complicated by the limitations inherent in using England & Wales for comparison and the lack of clear, consistent trends. By considering the balance of accumulating evidence and its implications there will be
an opportunity regularly to re-assess and refine the initial Theory of Change as new evidence and data become available. Future analysis of the relationships between outcomes will potentially provide new insights to be explored in further research. Over time, this will build into an integrated appraisal of the contribution that Scotland’s alcohol strategy is having in reducing alcohol-related harm.
1. BACKGROUND

Introduction

Alcohol is an integral part of Scottish culture, drunk by the majority of adults in Scotland. The production, marketing, provision and sale of alcohol constitute an important part of the Scottish economy. However, there is mounting evidence that the health and well-being of a large number of people in Scotland are being seriously harmed, directly or indirectly, by excessive alcohol consumption. Over recent decades alcohol consumption has increased, with a corresponding increase in the harm caused by alcohol misuse. These harms can damage drinkers’ health and their relationships with family and friends, communities, employers and Scotland as a whole.

In response, the Scottish Government has set out a new strategic approach to reducing alcohol related harm in Changing Scotland’s Relationship with Alcohol: A Framework for Action (referred to subsequently as ‘the Framework’). This set out significant new proposals but also built on policies and activities already in place. It is being implemented alongside alcohol licensing changes previously set out in the Licensing (Scotland) Act 2005 which came into full force in September 2009. Some proposals in the Framework required further legislative change and those agreed by the Scottish Parliament are being delivered through the Alcohol etc. (Scotland) Act 2010. The term ‘alcohol strategy’ is used in the remainder of this report to refer to these three complementary strands and the initiatives developed in line with the approach set out in the Framework (Box 1.1).

Box 1.1: Scotland’s Alcohol Strategy

Scotland’s Alcohol Strategy:
- Licensing (Scotland) Act 2005
- Framework for Action (2009) plus related actions
- Alcohol etc (Scotland) Act 2010

Developing the evaluation

In 2008, the Scottish Government tasked NHS Health Scotland to lead the development and delivery of a monitoring and evaluation plan to assess the success of the alcohol strategy. A Monitoring and Evaluation Reference Group on Alcohol (MERGA) was established with representatives from NHS Health Scotland, Scottish Government, Information Services Division (ISD) Scotland, NHS Boards, Police, Voluntary Sector and research/evaluation specialists to develop a portfolio of studies. In doing so, there was a need to prioritise potential studies based on criteria such as: importance of the intervention in terms of investment and likely impact; feasibility of a credible evaluation within available resources and timescales; potential to identify any likely and serious unintended consequences and to detect differential impact; opportunity for learning and/or adding to the evidence base; and value of the information. The resulting portfolio was peer-reviewed by experts from both the alcohol policy and evaluation fields and the final portfolio signed off by the Cabinet Secretary for Health and Wellbeing in July 2009.
As the portfolio moved from planning to delivery, MERGA was replaced by the Monitoring and Evaluating Scotland's Alcohol Strategy (MESAS) workstream led by NHS Health Scotland. NHS Health Scotland’s role is to commission, manage and deliver the portfolio of studies, with the Scottish Government’s Alcohol Evidence Group (which comprises a range of key stakeholders) providing strategic direction, advice and governance. NHS Health Scotland is responsible for overall project delivery and reporting.

The key objectives of MESAS are:

- to track the implementation progress and reach of key actions in order to inform any necessary amendments or adjustments
- to assess the extent to which intended outcomes are achieved and are attributable to the actions currently being developed by the Scottish Government
- to identify any unintended outcomes or displacement effects, including differential effects or outcomes which may impact on health inequalities

All the current MESAS studies are planned to finish and report by March 2015, when the final report will be published. It is expected that monitoring of long term trends will continue beyond this date.

The current report

This report is the first full MESAS report and presents a baseline against which future progress will be measured. It first outlines the scale and extent of alcohol harms in Scotland, the strategic approach and interventions put in place to address the issue and how they are expected to effect change. It then details the evaluation methodology and the evaluation studies to evaluate its success or otherwise. The report then presents the baseline trends for consumption, affordability, and alcohol-related harms, considering what to measure, how and the current trends. Finally, the discussion considers some of the key issues raised by this report and outlines the plans for future reporting.

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Footnote:

1 Three reports on alcohol sales and price have been published previously. See www.healthscotland.com/scotlands-health/evaluation/planning/MESAS.aspx
2. THE SCALE OF THE PROBLEM

The harms caused by alcohol are not experienced solely by the drinker but can also damage family and friends, communities, employers and Scotland as a whole. A detailed account of trends and current status regarding alcohol consumption and alcohol-related health harms in Scotland is presented in later chapters as the baseline for the evaluation. Below is a brief overview of the problem that set the context for the development of the current alcohol strategy.

Alcohol-related harms

Impacts on health
The strongest evidence of the increasing negative impact of alcohol misuse has been the steady, substantial rise since 1990 in alcohol-related deaths and hospital admissions due to heavy drinking on individual occasions and/or over many years. While rates are now stabilising, over the last 20 years Scotland has had one of the fastest growing chronic liver disease and cirrhosis mortality rates in the world at a time when rates in most of Western Europe were falling. One in 20 deaths in Scotland is attributable to alcohol. During the period 1998-2004, fifteen of the 20 local areas with the highest alcohol-related mortality rates for men in the UK were in Scotland, including all of the top five. For women, 14 of the top 20 were in Scotland. Alcohol-related harm is disproportionately experienced by individuals in the most deprived areas; individuals from these areas are more likely to have an alcohol-related hospital admission or death.

Impacts on crime and safety
The strong relationship between alcohol and crime, in particular violent crime, is increasingly being recognised. Internationally, there is a strong association between alcohol consumption and an individual’s risk of becoming a perpetrator or victim of violence. A recent systematic review confirmed a consistent and statistically significant effect of alcohol on violence and injury at even quite low levels of consumption. In Scotland, 50% of prisoners report being drunk at the time of their offence and this figure rises to 77% for young offenders. Where the status was known, 69% of those accused of homicides in Scotland were drunk at the time. Seventy percent (70%) of assaults requiring treatment at A&E are thought to involve alcohol, with the majority of these at the weekend and involving young men. Where respondents were able to say anything about the perpetrator(s), victims of crime report them to be under the influence of alcohol in 62% of violent crimes committed. Seventeen percent (17%) of deaths on British roads are the result of drink driving accidents.

Impacts on child protection and education
Alcohol misuse also impacts negatively on children and families although a lack of routine data means it is difficult to quantify or describe trends. Scottish Government figures estimated that in 2003 there were 65,000 children potentially affected by parental alcohol misuse. Children whose parents drink at problematic levels have been found to have higher levels of behavioural difficulty, school-related problems and emotional disturbance than other children.
Alcohol also disrupts children’s education through their own drinking. In 2008, 10% of 13 and 15 year olds reported that they had missed school on at least one occasion because of their drinking.17

**Impacts on productivity and the economy**  
Alcohol misuse reduces the productive capacity of the economy through poor performance, sickness absence, unemployment and premature death. In 2007, the overall cost to Scotland of alcohol misuse was estimated to be £3.5 billion (mid-point estimate) which equates to nearly £900 for each adult in the country.18 On the other hand, the production, retail and export of alcohol contributes to the economy. In 2008, alcoholic spirit and beer production in Scotland directly employed almost 9,000 people and had a turnover of £3.4 billion, the majority of which was from spirits.19 In 2009, the Scottish whisky industry contributed £3.1bn to international exports.20

**Consumption**

The average consumption of alcohol in a population is linked to alcohol-related harm in that population i.e. the more a population drinks, the more harm it will experience.21 Based on HMRC clearances, adult per capita (16+) alcohol consumption in the UK has risen substantially since the 1950s.22,23 In Scotland, self reports from surveys show that a considerable proportion of the population across age and socio-economic groups (half of men and 4 out of 10 women) exceed the sensible drinking guidelines1 despite the fact that self-report surveys underestimate consumption.24,25,26 Alcohol sales data show that 11.9 litres of pure alcohol per capita (ages16+) was sold in Scotland in 2009, enough for every person over the age of 16 years to exceed the adult male weekly guidelines every single week.27

Increasing consumption is the result of increasing affordability, availability and promotion of alcohol interacting with greater social acceptability of regular drinking and tolerance of drunkenness. These contextual factors combine with the fact that drinking alcohol can be a pleasurable, intoxicating and addictive activity making behaviour change difficult. It is against this background of high levels of consumption and related harm that Scotland’s alcohol strategy, detailed in the next chapter, was developed.
3. SCOTLAND’S ALCOHOL STRATEGY

A whole population approach

There is evidence that both the proportion of heavy drinkers and the prevalence of alcohol-related harm increase as per capita consumption in a population increases. Informed by the international evidence on the most effective approaches to tackling alcohol misuse, Scotland’s alcohol strategy now adopts a population approach alongside interventions targeted at high risk groups. The whole population approach is based on two principles:

1. Individuals differ in the extent to which they are at risk of disease rather than whether they are at risk or not. For alcohol, risk increases as consumption increases, and the risk of some cancers is elevated even at lower levels of consumption. Focusing only on the very heavy drinkers will not reach the majority of those who could potentially develop diseases related to their alcohol consumption.

2. Individuals are members of families, communities, social networks and society more generally. As such their health behaviours are shaped by their interaction with society and the social norms in that society. As already noted, survey evidence shows that a large proportion of adults (half of men and 4 in 10 women) exceed the sensible drinking guidelines. By influencing social norms, whole population approaches may encourage and make it easier for individuals to make and sustain behaviour change.

A whole population approach requires a fall in (average) per capita consumption. If the whole population approach is successful, the number of those drinking at harmful levels will fall and many individuals’ risk of alcohol-related problems will reduce.

Scotland’s alcohol strategy combines both legislative and policy changes to influence this population shift and support the most vulnerable. These are described below in chronological order and summarised in Box 3.1.

The Licensing (Scotland) Act 2005

The Licensing (Scotland) Act 2005 (referred to subsequently as ‘the Licensing Act’) came into full effect on 1 September 2009 following a transitional period. It overhauled the existing licensing arrangements and established five licensing objectives, all of which could be said to broadly relate to health and well-being. These are:

- Preventing crime and disorder
- Securing public safety
- Preventing public nuisance
- Protecting and improving public health
- Protecting children from harm
In addition to changes to simplify the licensing process are a range of actions designed to achieve these objectives by:

1. Controlling the availability of alcohol and reducing the negative impact on surrounding communities through, for example:

   - Test purchasing and enforcement of existing legislation on selling to or purchasing for those under 18 years
   - Overprovision assessments and refusal of new applications in areas deemed to be over-provided
   - Mandatory training for personal licence holders and all staff who serve alcohol
   - Ban on ‘happy hours’ and irresponsible promotions in on-sales
   - Restrictions on where alcohol can be displayed in a store
   - Removal of set licensed hours but with a presumption against 24-hour licences. Off-sales are restricted to between 10am and 10pm

2. Improving licensing decisions, transparency and adherence to the Licensing Act through, for example:

   - Mandatory training for Local Licensing Board members
   - Local Licensing Boards to produce a policy statement every three years, outlining how the Board will meet the five licensing objectives outlined above
   - Recruitment (by the Local Authority) of at least one Licensing Standards Officer (LSO) in each Licensing Board area to provide information and guidance with regard to the Licensing Act, supervise compliance and provide mediation for disputes
   - Establishment (by the Local Authority) of a Local Licensing Forum in each Licensing Board area
   - Introducing a 'public right' for anyone to object or to make representations about any application for a premises licence or a major variation of a premises licence

**A Framework for Action**

Following a period of consultation on draft proposals, the Scottish Government published ‘Changing Scotland's Relationship with Alcohol: A Framework for Action' (referred to subsequently here as ‘the Framework’) in March 2009. The framework proposed sustained action in four areas:

- Reduced alcohol consumption
- Supporting families and communities

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Irresponsible drinks promotions are defined as: a drink likely to appeal largely to under 18s; Offer free or reduced price on purchase of one or more drink; Offer free or reduced price extra measure; Offer unlimited amount for fixed charge; Encourage person to buy or consume larger measure than they had intended; Is based on the strength of the alcohol; Rewards or encourages drinking alcohol quickly; Offers alcohol as a reward, unless in a sealed container for drinking off the premises.
Positive public attitudes towards alcohol and individuals better placed to make positive choices about the role of alcohol in their lives

Improved treatment and support

A total of 41 actions were identified. Some required legislative change and these were put before Parliament in November 2009 through the Alcohol etc. (Scotland) Bill. Those passed are outlined under the Alcohol Act below.

Reduced alcohol consumption
To reduce alcohol consumption at a population level, the Framework proposed actions to address the affordability and availability of alcohol. All required legislative changes through the Alcohol Bill and those passed are outlined in the section on the Alcohol Act below. A proposal to introduce a minimum unit price per unit of alcohol at 45p per unit (ppu) was rejected by the Scottish Parliament.

Supporting Families and Communities
Initiatives aimed at supporting families and communities include: action to improve substance misuse education and provide alcohol advice to families; diversionary activities for young people; work with the third sector to tackle alcohol misuse; initiatives to tackle alcohol-related violence; work to improve the identification and assessment of those affected by parental substance misuse; a study on Fetal Alcohol Syndrome; and research on approaches to supporting drunk and incapable adults. There were additional actions that required legislative change through the Alcohol Bill and those passed are set out in the section on the Alcohol Act below.

Positive Attitudes, Positive Choices
Under this heading are those actions aimed at promoting a healthier relationship with alcohol through controlling promotion and advertising and improving knowledge and awareness. It includes working with health and industry partners to promote positive health behaviours in relation to alcohol, including through the development of workplace alcohol policies as well as working with the UK Government to improve alcohol product labelling and consider ways to further regulate alcohol advertising, including on-line advertising.

Improved Treatment and Support
The actions under this heading are intended to address the healthcare contribution to reducing alcohol misuse. To encourage delivery of evidence based alcohol brief interventions (ABIs) in NHS settings, an NHS performance management target was established. This required NHS Boards to deliver a cumulative total of 149,449 ABIs over the three-year period 2008/09 – 2010/11 and was supported by additional funding, resources and training. This target has been achieved and will be extended for a fourth year. There was a tripling of resources for alcohol treatment and care services compared to the previous spending review period, with further support to build capacity for both planning and delivery.

A key reform was changes in the way in which local areas plan and deliver services. Alcohol and Drug Partnerships (ADPs) were established to bring together health boards, local authorities, police and voluntary agencies, and are anchored in
Community Planning Partnerships. The ADPs are responsible for developing local strategies to deliver the whole population approach at a local level and commissioning services which meet the needs of local people.

Another key development stemming from the Framework was a review of essential services to ensure that effective specialist treatment services for people affected by problematic alcohol use are in place across Scotland. At the time of writing, this work has not yet reported but it is understood it will promote the need for a holistic, person-centred approach to the provision of tier 3 and 4 treatment services designed to maximise the potential for recovery. There is evidence that the longer people with drug and alcohol problems wait for treatment, the less likely they are to have successful outcomes.\textsuperscript{31} From April 2011, the existing NHS performance management target to reduce waiting times for specialist drug services will be extended to include alcohol. This sets the target that, by March 2013, 90\% of clients will wait no longer than three weeks, and no client longer than 6 weeks, from referral received to appropriate drug or alcohol treatment that supports their recovery.

The Framework also set out a commitment to undertake research to inform better identification and treatment of offenders with alcohol problems. To date progress on this has involved three complementary research strands: a prison health needs assessment for alcohol problems; a scoping study to review the plans and practice for the treatment and identification of offenders in the community; and a pilot of ABIs delivered in the criminal justice setting.\textsuperscript{iii}

**Alcohol etc. (Scotland) Act 2010**

A number of the actions proposed in the Framework required legislative change and these changes were introduced to Parliament through the Alcohol Bill in November 2009. The Alcohol etc. (Scotland) Act 2010 (referred to subsequently as the ‘Alcohol Act’) was passed in November 2010 and contained the following legislative changes:

- A ban on quantity discounts such as ‘3 for 2’ or ‘25\% off when you buy 6’ in off-sales (complementing the restrictions on irresponsible promotions in the Licensing Act)
- Restrictions on alcohol promotions and displays in off-sales
- Introducing a mandatory Challenge 25 age verification scheme for all licensed premises
- Paving the way for the introduction of a social responsibility levy on license holders
- A requirement to notify Health Boards of premises applications
- Chief Constable reports to be provided annually to Licensing Boards and Local Licensing Forums

\textsuperscript{iii} For more information see: http://www.healthscotland.com/topics/health/alcohol/offenders.aspx
Box 3.1: The key features of Scotland’s alcohol strategy

**Licensing Act**
- Test purchasing
- Refusal of new licenses in areas deemed overprovided
- Mandatory training for Licensing Board members, license holders and staff
- Ban on irresponsible promotions in the on-trade
- Restriction on place of display in off-trade
- Public health objective for licensing
- Licensing Standard Officers
- Local Licensing Forums
- Public right to object

**The Framework plus related actions**
- 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 in the NHS, with funding, resources, training and a target for delivery
- Additional investment for treatment and care services
- Essential services review of specialist services
- A target for alcohol treatment waiting times
- Establishment of Alcohol and Drug Partnerships
- Improved identification and treatment of offenders with alcohol problems

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

**Other factors influencing alcohol-related harms**

As with all policies and programmes only the inputs, activities, outputs and immediate outcomes can be directly controlled or influenced by Scotland’s alcohol strategy. The success of the alcohol strategy will not be achieved in isolation, but will be influenced by policies and activities in other related fields. Some of these external factors are outlined below.

**Other government policies**

As noted in the Framework, the level of alcohol-related harm is also influenced by other policies. Government Economic Strategy, policy statements on early years, the mental health and wellbeing strategy, and the approach to addressing health inequalities, all have a vital part to play in tackling the underlying causes of Scotland’s relationship with alcohol. Health inequalities stem from a complex mix of socio-economic and behavioural factors, and those associated with alcohol are unlikely to be eradicated by alcohol policy alone.
Regulation beyond Scottish Government control
The regulatory framework is shared between three levels of government. While some powers are devolved to the Scottish Government, powers to affect alcohol duty and taxation, regulation of weights and measures, and advertising are retained by the UK Government. Legislation for some areas such as labelling is the responsibility of the European Parliament.

The wider macro-economic climate
In terms of consumption and alcohol-related harms, the wider macro-economic climate, in particular changes to the economy, may have an independent effect. Per capita clearances of alcohol for sale have previously dipped around the time of a recession but the relationship is not consistent.\textsuperscript{22} The price of imported alcohol may be affected by changes to the exchange rate. Altered levels of disposable income are expected to affect alcohol purchasing and consumption, although the pattern of change is difficult to predict and the impact may be socially differentiated. More detailed data on the wider macro-economic climate in which the alcohol strategy is being implemented, and how this might be influencing the outcomes, will be contained in subsequent reports.

The economic success of the alcohol industry is also influenced by the wider macro-economic climate. Most alcohol made and/or consumed in Scotland is produced by large multi-nationals or their subsidiaries that manufacture and sell a range of alcohol products globally. Decisions on where production takes place are influenced by a range of factors. In the retail sector, UK-wide chains are important in both sectors, particularly the off-trade.

To summarise, the strategy is multi-faceted and multi-organisational. Its potential impacts are numerous and the external factors which may exert an influence are many and complex. Teasing out cause and effect will therefore be difficult. A testable Theory of Change is required to enable evaluation and this is described in the next chapter.
4. THE THEORY OF CHANGE

The proposed Theory of Change

During the second half of 2007, NHS Health Scotland developed a series of linked logic models to set out visually the proposed pathways of change that would be most likely to lead towards a reduction in alcohol-related harm. The range of interventions thought to be effective was identified through reviews of the existing evidence base, plausible theory and ethics. A strategic model showing the causal pathways between a set of intermediate and long-term outcomes was supported by a series of ‘nested’ logic models and evidence papers that detailed the interventions most likely to be effective. iv

The initial strategic logic model showed the hypothesised links between an improvement in alcohol-related outcomes and the National Outcomes underpinning the Scottish Government’s Purpose and Economic Strategy. For evaluation purposes, these logic models have been adapted to show only the outcomes directly attributable to reduced alcohol consumption and any important unintended (but predictable) consequences. The evaluation logic model and the nested logic models for each strand of the alcohol strategy are detailed in Appendix 4.1. A high level summary is presented in Figure 4.1.

Figure 4.1: High level Theory of Change for the alcohol strategy

Central to the Theory of Change is that there will be whole population interventions aimed at reducing per capita consumption, principally through affecting price and availability, alongside targeted action aimed at reducing consumption and promoting safer drinking patterns in individuals at risk from their drinking. The Theory of Change hypothesises that consumption change will be influenced by a

iv These can be accessed at http://www.healthscotland.com/understanding/evaluation/index.aspx
number of intermediate outcomes and requires action on a variety of fronts which together are intended to achieve a social norm change whereby alcohol is recognised as 'no ordinary commodity'.

**Success criteria**

For the strategy to be considered a success, it needs to reduce alcohol consumption and decrease alcohol-related harms.

The Theory of Change postulates that harms will reduce if consumption goes down, which in turn will occur if there are changes in the economic, physical and social environment (i.e. affordability, availability and knowledge and attitudes) in which alcohol is sold and consumed and if there are services to support a large enough proportion of individuals at risk from their drinking. Timescales for change will vary. Legislation may have an instantaneous impact on price but interventions designed to bring about a change in practice, service or social norms will take longer.

The whole population approach advocated by the alcohol strategy requires a reduction in consumption across the whole population. Changes in individual consumption and drinking patterns is required if an individual’s risk is to reduce. If consumption falls, it is reasonable to expect that this will be followed by a reduction in harms, but the timing of these impacts will vary depending on the harm. For acute conditions, particularly those wholly attributable to alcohol use such as acute intoxication and alcohol poisoning, or alcohol-related crime and disorder, a fall in consumption following a policy intervention would be expected to have a more or less immediate impact in reducing incidence rates. However, the time to achieve full benefit on chronic alcohol conditions is much more difficult to quantify. There is likely to be a time lag between reduction in consumption and reduced chronic health harms but this is expected to vary across conditions (and by individual), with limited international evidence being available. There is some evidence to suggest that some chronic conditions may actually respond to changes in consumption more quickly than previously expected. Recent modelling of the expected impact of a reduction in consumption on harm concluded that a reduction in chronic alcohol conditions may not be evident for a number of years following changes in consumption, with an average between 5-15 years and an assumed mean of 10 years.

**Risks to the Theory of Change**

The anticipated changes in outcome may not occur for three reasons: theory failure, implementation failure or the influence of external factors.

**Theory failure**

Theory failure is when the proposed Theory of Change, or elements of it, is not true. The actions may not reduce consumption, or other factors may be driving Scotland’s poor record in alcohol-related harms. Scotland’s alcohol strategy is supported by independent, scientific evidence and fits closely with the WHO alcohol strategy guidance. However, there are elements that are contested, principally those concerning price. There is strong and consistent evidence that
increased price reduces consumption and harms. Following the debates and discussions during the progression of the Alcohol Bill, there is now some acceptance in Scotland that consumption is influenced by price, but there are key stakeholders who disagree. Those that accept the link did not agree on the most effective, fairest and socially responsible mechanism to affect price. A proposal for a minimum unit price (MUP) for alcohol was rejected by Parliament on the grounds that there was a lack of evidence of its effect, that it was regressive (i.e. unfairly targeting the poorest drinkers) and that it would increase the profits of retailers rather than increase the public purse. Without it, the potential impact of the strategy on price is weakened but some policies remain that have the potential to have an effect on consumption through price by restricting irresponsible promotions in on-trade and banning quantity discounts in off-sales. Both these remove the price incentive to buy more than originally intended and may increase the price paid, although other price discounts are still permitted in both on- and off-sales.

Implementation failure
Implementation failure is when measures are not delivered as intended or with the key ingredients or dose necessary for success. In practice, the success of interventions in changing outcomes is determined by the adoption of the intervention by organisations and staff, how the intervention is implemented and maintained, and the proportion of potential beneficiaries reached (including any differential reach by age, gender or socio-economic group), as well as by the effectiveness of the intervention.

External factors
The factors beyond the control of the Scottish Government’s alcohol strategy already described (in Chapter 3) may exert a more powerful influence on the desired outcomes, positively or negatively, than the strategy itself. The Theory of Change is only one explanation for the observed changes. Other possible alternative explanations need to be identified and assessed. It is important that the evaluation recognises the impact of these external factors on success and, where possible, includes data collection to facilitate an understanding of their positive or negative contribution to the outcomes. The MESAS monitoring and evaluation plan proposes a methodology that enables a more informed judgement of the alcohol strategy’s contribution to any success in light of the factors outwith the strategy’s control. This is described in the next chapter.
5. THE EVALUATION PLAN

The evidence needed and for whom

The key evaluation questions are:

1. How and to what extent has implementing the package of measures (taken together and/or individually) contained in the new alcohol strategy contributed to reducing alcohol-related harms?
2. Are some (people and businesses) affected (positively and negatively) more than others?
3. How might the strategy be implemented differently to improve effectiveness?

There are a range of groups interested in the evidence produced from the evaluation of Scotland’s alcohol strategy. First and foremost, Scottish Ministers require a robust analysis of impact for accountability purposes and to inform future decision making. The Scottish public also have an interest in whether the Government’s strategy is working, as will delivery partners and those organisations that deal with the consequences of alcohol misuse. The alcohol industry has an interest in the effect of the strategy on their economic viability and, given employment in the alcohol industry, the Government and the public will also have an interest in the impacts on that sector of the economy. International interest is apparent from policy makers and academics who are seeking knowledge about the effectiveness of innovative mechanisms such as those designed to influence price.

Evaluation methodology

Evaluation of complex policies or programmes is difficult. There are multiple components, there is a lack of ability to control exposure, and outcomes are influenced by external factors. In such situations, having a good theoretical understanding of how the intervention causes change is important if impact is to be assessed. The MESAS monitoring and evaluation plan therefore adopts a theory-based approach to evaluation which entails setting out an expected ‘Theory of Change’ and then comparing it with the observed changes. Mayne proposes that it is reasonable to conclude that a policy/programme is contributing to/influencing the desired outcomes if:

- There is a reasoned Theory of Change
- The activities were implemented
- The Theory of Change (or key elements) is supported and confirmed by evidence and the chain of expected results occurred and has not been disproved
- Alternative explanations and other contextual factors that are known to affect the desired outcomes have been assessed and either shown not to have made a significant contribution or their relative role recognised
The Theory of Change for the alcohol strategy has been set out in the previous chapter. The plan for gathering the evidence required to support or to disprove this Theory of Change is described below. It comprises a portfolio of studies designed to evidence the Theory of Change. Some are intended to determine whether the key component interventions have been implemented sufficiently well to bring about the anticipated short-term outcomes. Others are designed to track whether there are changes in the intermediate and long-term outcomes, such as changes in alcohol consumption and alcohol-related harms. Where possible, these studies compare trends over time and between parts of the UK to assess whether there are differences in outcomes that might be attributable to the alcohol strategy. The portfolio will be complemented by monitoring external factors to assess their possible impact on observed outcomes.

**The study portfolio**

At the heart of the evaluation plans are the seven studies designed by MERGA and being implemented under MESAS. The studies assess the process of implementation, changes in intermediate and unintended outcomes, and monitor long-term outcomes. These studies are briefly described below with more detail provided in Appendix 5.1. How these studies map onto the high level Theory of Change is shown in Figure 5.1.

**Figure 5.1  Evaluation Theory of Change for Scotland’s alcohol strategy**

**Study 1:** This study will assess whether the Licensing (Scotland) Act 2005 has been implemented as intended (compliance levels) and in a way likely to achieve the licensing objectives (i.e. to control availability and price), and provide learning to inform improvement. It will present a national overview of implementation with case studies providing detail in a sample of local Licensing Board areas. The study is being extended to cover the regulations in the new Alcohol Act.
Study 2: This study will assess how alcohol brief interventions have been delivered in NHS settings across Scotland. It aims to determine to what extent the key ingredients are being delivered in a way that has been shown to work (in line with guidance) and with sufficient reach to influence outcomes, and to generate learning to improve implementation. It will present a national overview of implementation complemented by detail generated in a sample of local Health Boards.

Study 3: This study will assess the extent to which the additional investment in specialist services has impacted on access to services. The original study design required review and so the detail of this study is still to be finalised.

Study 4: This study will assess whether there have been any changes in (self-reported knowledge about, and attitudes to, alcohol and how these might influence other outcomes. It will consist of secondary analysis of trends in existing survey data using equivalent surveys in England & Wales for comparison.

Study 5: This study will assess whether alcohol consumption has changed and, if so, what is the relationship with affordability. It will describe trends in affordability, sales (including low-cost sales) and alcohol consumption in Scotland and assess the impact that the price of alcohol has on alcohol consumption. Data on the volume type, strength and price of alcohol being sold through on- and off-sales and existing national survey data on purchasing and consumption will be used, with data from England & Wales for comparison where possible. The study will be complemented by a study to assess the validity of the sales data as a measure of population consumption.

Study 6: This study was intended to assess the economic impact of the alcohol strategy on the alcohol industry in Scotland. In order to determine the feasibility of a robust, affordable study a scoping study was undertaken and published in February 2011. This concluded that the complexity of the alcohol industry; the lack of timely, routine data; the cost and difficulty of obtaining bespoke data; and the likely small impact of the strategy on the industry made a suitable design unfeasible. A decision was made not to undertake a full study at this stage but the possibility and value of monitoring routine data available on key economic variables will be considered.

Study 7: This study will assess how changes in the level of alcohol consumption and drinking patterns are influencing alcohol-related harms. It will analyse trends in routine data to examine the relationship between observed changes in alcohol consumption and changes in alcohol-related health, crime, community safety and educational outcomes. Differential impacts will be examined to assess the effect on inequalities. Data from England & Wales will be used for comparison where appropriate.

Evaluation challenges

The proposed evaluation has been and will continue to be subject to a number of inter-related challenges:
1. Strategy variation: National alcohol strategy is not static and will evolve over time. The MESAS evaluation is planned to run until 2015, but alcohol strategy by then may be very different. Such changes are outwith the control of the evaluators and the evaluation plan needs to be flexible enough to assess the effect of any changes in policy, for example by setting up new studies or assessing whether new polices affect the Theory of Change.

2. Rolling implementation: Full implementation of many of the interventions in Scotland’s alcohol strategy will occur over a period of time, as organisations and staff adopt the interventions, rather on a single fixed date.

3. Inability to control the comparison group: As a national strategy intended to be adopted across Scotland there was no opportunity to withhold implementation in any area in Scotland to provide a comparison group. The evaluation instead takes advantage of the difference in alcohol strategy between Scotland and England & Wales to use the latter as a comparison group. However, socio-economic conditions and drinking cultures in the two areas are similar but not identical. Furthermore, England has its own alcohol strategy. The UK coalition Government policy agenda is still developing but it starts from a focus on individual responsibility. There are plans to overhaul the Licensing Act and introduce a ban on the sale of alcohol below the cost of duty plus VAT in England & Wales. They have also announced UK wide proposals (which will apply to Scotland) to raise alcohol duty across the UK by 2% above inflation (RPI) each year to 2014-15, to require products taxed as cider to have minimum fruit content and introduce an additional duty on beers over 7.5% ABV. A more detailed description of England’s alcohol strategy is provided in Appendix 5.2.

4. Effect size: It is easier to establish if there has been a change when an intervention has a large effect size. Smaller effect sizes are harder to detect and, when combined with strategy variation, rolling implementation and inability to control the comparison group it becomes increasingly difficult to be confident that a change will be detected.

It was estimated that the introduction of a 45p minimum unit price had the potential to save 225 lives per year, reduce chronic and acute illnesses by 2,600 per year, reduce crimes by the same amount, and generate a harm reduction value of £721 million over the first 10 years. If it had been passed, it would have been an unambiguous policy with a clear implementation date and inherent difference from England & Wales making the evaluation more straight-forward. The combination of interventions implemented has the potential to have an effect but it is likely to be more gradual, less distinct from England & Wales and impossible to disaggregate the effect of the component interventions.

Such challenges are common to policy evaluation in the real world and not unique to this evaluation. These limitations are lessened but not eliminated by applying a theory-based approach.

\[\text{\textsuperscript{v}}\] Under this legislation, the ppu would vary by product. At Jan 2011 VAT and duty rates, this would translate into the following estimated ppus: vodka, 29ppu; whisky 29ppu; wine 22ppu; lager 21ppu; value lager 21ppu; cider 10ppu.
6. ALCOHOL CONSUMPTION

Introduction

Calculating alcohol consumption is difficult. Surveys which ask people to report their own drinking behaviour provide estimates which are substantially lower than those based on sales data. People tend to underestimate the amount of alcohol they consume in self-report surveys and heavy drinkers are underrepresented. There is also some concern that surveys in Scotland and elsewhere have become less representative over time as response rates have fallen. However, surveys can identify consumption patterns among different population groups, monitor adherence to drinking guidelines, and provide information on patterns of alcohol consumption associated with health and social risks.

The best indicator for monitoring alcohol consumption at a population level is adult per capita consumption. This is most accurately estimated using alcohol sales data based on taxation or retail sales. Taxation data in the UK are available from Her Majesty’s Revenue and Customs (HMRC) and reflect the volume of alcohol released for sale by manufacturers and wholesalers, derived from alcohol excise duty declarations. However, these data are available for the UK but not for Scotland only and, unlike surveys, they do not permit patterns within the population to be characterised. In addition, they will not include illegally obtained alcohol or alcohol obtained from abroad; on the other hand, they will include alcohol sold in the country but consumed by visitors or subsequently exported.

Market research firms collect data from alcohol retailers on the amount and type of alcohol sold across Great Britain. This provides an alternative source of sales data which, although it has many of the same limitations as taxation data, is more detailed and is available separately for Scotland. Furthermore, it provides a reliable source of data over time, which is crucial for effectively monitoring trends.

The purpose of this chapter is to provide a baseline estimate of alcohol consumption in Scotland against which any future changes can be compared. Sales data are used to describe long term trends in per capita alcohol sales, for the first time at a sub-UK level. It also draws on self-report survey data to describe patterns of alcohol consumption among adults and schoolchildren. To better understand the impact of policy in Scotland, these are compared, where possible, with data from England, or England & Wales. The information in this chapter therefore provides a comprehensive description of past and current alcohol consumption in Scotland to set the context for future evaluation.

Methods

This chapter uses data from various sources in order to provide a comprehensive description of past trends and current status of alcohol consumption in Scotland comparing, where possible, with the UK and other countries in Great Britain. A brief description of the data sources used, and indicators presented, is given below. Further information is presented in Appendix 6.1.
Alcohol duty clearances
Her Majesty’s Revenue and Customs (HMRC) data on alcohol duty clearances provides a source of information on alcohol sales in the UK. Alcohol clearance figures reflect the volume of product released for sale by manufacturers and wholesalers based upon excise duty declarations and are converted to pure alcohol volumes (litres) using estimated average strengths (percentage Alcohol by Volume; ABV) of spirits, beer, cider and wine. Alcohol clearances per adult aged 16 years and over (16+) in the UK are calculated using mid-year population estimates available from the Office for National Statistics (ONS). Figures are reported on financial years at UK level and are released annually. To provide comparison with the retail sales data, they are presented here for 1994/95 through to 2008/09.

Retail sales
Annual data (calendar year) on alcohol retail sales in Scotland and England & Wales were obtained from The Nielsen Company (Nielsen) and CGA Strategy (CGA) partnership for 1994, 1995 and 2000-2009. The volume of alcohol sold (litres) was provided for both the on- and off-trade sectors across eight alcoholic drink categories: spirits, light wine, beer, cider, ready to drink beverages (RTDs), perry, fortified wine and ‘other’. The volume of each drink category sold was converted into pure alcohol volume using a category-specific ABV. The ABV used was based on the typical strength of drinks sold in that category and was provided by the data suppliers. Per capita alcohol sales were calculated by dividing pure alcohol volumes (litres of pure alcohol) by the total population aged 16+. Mid-year population estimates for Scotland were obtained from the General Register Office for Scotland (GROS) and for England & Wales from the ONS.

Self reported alcohol intake survey estimates

Adults
Average weekly alcohol consumption, alcohol consumption on the heaviest drinking day in the last week and indicators of problem drinking among adults in Scotland were estimated by analysing original Scottish Health Survey (SHeS) datasets for 1998, 2003 and 2008. Figures for 2009 were obtained from the published annual report.

Estimates of average weekly alcohol consumption among adults in England & Wales were drawn from the General Lifestyle Survey (GLF). Results were available for 2006, 2008 and 2009 and were provided by the ONS. Figures for alcohol consumption on the heaviest drinking day in the last week in England were obtained from published Health Survey for England (HSfE) tables for 2006-2009; annual figures for England & Wales over the same time period were drawn from the GLF and provided by the ONS.

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vi Retail sales estimates in this report differ slightly to those previously published due to improved methods for estimating on-trade sales (see Appendix 6.1 for more detail). Data were not available for any other retrospective years.

vii Throughout this report, RTDs, perry, fortified wine and ‘other’ are categorised into a single ‘other’ category because they each represent a very small proportion of the total volume of alcohol sold in Scotland and England & Wales (<3% in 2009).
Although the GLF provides estimates for all of the constituent countries in GB, the SHeS and HSfE were the preferred surveys for comparing estimates in Scotland and England as they offer a more appropriate and meaningful comparison between countries. This is because:

- GLF sample sizes in Scotland are very small, particularly among people aged 16-24 who are among the heaviest drinkers. Smaller samples give less precise estimates and may be less representative of the population as a whole. If so, the larger weighting applied to the small samples can skew the overall pattern;
- The SHeS and HSfE use a very comparable sampling design (unlike the GLF which has a longitudinal component) and questionnaire within the context of similar health surveys; and
- GLF estimates of the proportion of adults in Scotland who reported that they did not drink alcohol in the past week or are current alcohol abstainers are considerably higher than estimates from the SHeS. In contrast, estimates for England are similar between the GLF and HSfE. This disparity in the estimated proportions of abstainers between surveys is likely to contribute to an underestimation of alcohol consumption among all adults in Scotland using the GLF.

Young people
The Scottish Schools’ Adolescent Lifestyle and Substance Use Survey (SALSUS) was used to estimate the percentage of secondary school pupils who drank alcohol in the last week. Average weekly alcohol consumption of those who had drunk was also determined. Figures in this report are provided for pupils aged 13-15 years and were obtained by analysis of the original 2002, 2004, 2006 and 2008 datasets.

The same alcohol-related indicators for schoolchildren in England were estimated using the Smoking, Drinking and Drug Use Among Young People (SDDUYP) survey. Annual estimates for pupils aged 13-15 years were obtained by analysis of original 2000-2008 SDDUYP datasets.

Presentation of results
All data were analysed descriptively; where statistically significant differences are denoted, these findings have been taken directly from published sources. All survey estimates have been weighted unless otherwise stated. Due to rounding, differences expressed as percentages may not exactly equal those calculated using the figures presented in this report. Results tables are provided in Appendix 6.2.

Results
The results are presented in three subsections: HMRC clearances, retail sales and self-report surveys. A final section briefly compares the estimates from all three indicators of alcohol consumption.
Alcohol duty clearances
The volume of pure alcohol cleared for sale per adult in the UK increased from 9.7L in 1994/95 to 11.8L in 2004/05, before falling to 10.7L in 2008/09. (Figure 6.1; Table 6.1)

Figure 6.1 Volume of pure alcohol (litres) cleared for sale per capita (adults aged 16+) in the UK, 1994/95 to 2008/09

Source: Her Majesty’s Revenue and Customs

Per capita alcohol retail sales

Total sales per capita
Retail sales data indicate an increase in per capita sales of pure alcohol in Scotland over the 16-year period 1994-2009. In 1994, 10.7L of pure alcohol were sold per adult compared with 11.9L in 2009, an overall increase of 11%. Most of this increase occurred between 1994 and 2005, with a broadly stable trend thereafter. In England & Wales, per capita sales increased from 9.6L in 1994 to a peak of 10.5L in 2005, decreasing slightly each year thereafter to 9.8L in 2009. Thus, in 2009, 21% more pure alcohol was sold per adult in Scotland than England & Wales, the widest gap observed over the period analysed. (Figure 6.2; Table 6.2)

Retail sales estimates in this report differ slightly to those previously published due to improved methods for estimating on-trade sales (see Appendix 6.1 for more detail).
Figure 6.2  Litres of pure alcohol sold per capita (adults aged 16+) in Scotland and England & Wales, 1994-2009

Sources: Nielsen/CGA; General Register Office for Scotland; Office for National Statistics

Per capita sales by market sector
Data relating to on- and off-trade sales of alcohol in Great Britain show a clear change in purchasing patterns over time. In Scotland the volume of pure alcohol sold per adult through the on-trade decreased by 29%, from 5.5L in 1994 to 3.9L in 2009, whereas off-trade sales increased by 53% over the same time period, from 5.2L in 1994 to 8.0L in 2009. Thus, of the total volume of pure alcohol sold in Scotland in 2009, it is estimated that about two-thirds was sold through the off-trade. (Figure 6.3; Table 6.2)

In England & Wales, 5.7L of pure alcohol were sold per adult through the on-trade in 1994, compared with off-trade sales of 3.8L. By 2009, on-trade sales decreased to 3.5L per capita (-39%), while off-trade sales increased by 66% to 6.3L per capita. Therefore, 65% of alcohol sold in England & Wales in 2009 was sold off-trade. (Figure 6.3; Table 6.2)

Although in 2009 on-trade sales of pure alcohol were slightly higher in Scotland than England & Wales, for most of the time period they were broadly comparable. However, there is a consistent pattern of higher off-trade sales in Scotland and the recent divergence of the trends in total sales is due to continuing increases in off-sales in Scotland compared to a levelling off in England & Wales. (Figure 6.2; Figure 6.3; Table 6.2)
Per capita sales by drink type

Figure 6.4 shows trends in per capita sales of pure alcohol sold as different drink types in Scotland and England & Wales. In Scotland, the volume of pure alcohol sold as beer per adult decreased steadily from 4.6L in 1994 to 3.9L in 2009 (-14%). In contrast, the volume of light wine sold more than doubled over the 16-year period from 1.4L in 1994 to 3.3L in 2009, an increase of 141%. Sales of spirits changed little over the period while per capita sales of cider dipped slightly before returning to a level similar to that observed at the start of the time series. There was also little change in ‘other’ alcoholic beverages (not shown as the values are low and the category groups together a range of drinks). The upward trend in total per capita sales of pure alcohol in Scotland between 1994 and 2009 shown in Figure 6.2 is therefore wholly driven by the sharp rise in sales of light wine, and is in fact blunted by the slight reduction in beer sales. In terms of market share in 1994, beer accounted for 43% of the total volume of pure alcohol sold in Scotland, spirits for 33%, light wine for 13% and cider for 8%. In 2009, beer accounted for 33%, spirits for 29%, light wine for 28% and cider for 6%. Thus, the market share of light wine more than doubled over the period, while the market share of beer declined by 10%. (Figure 6.4; Table 6.2)

In England & Wales, per capita beer sales fell at a faster rate than in Scotland, decreasing by a quarter (25%) over the 16-year period, from 5.3L in 1994 to 3.9L in 2009. The volume of light wine sold almost doubled (97%) over the same time period from 1.5L per head in 1994 to 3.0L in 2009, spirit sales increased slightly from 1.5L to 1.8L while sales of cider and other alcoholic beverages were broadly stable. In terms of market share, in 1994 beer accounted for 55% of the total volume of alcohol sold in England & Wales, light wine for 16%, spirits for 15% and cider for 10%. In 2009, beer accounted for 40%, light wine for 30%, spirits for 19%
and cider for 7%. The market share of light wine almost doubled over the period, while the market share of beer declined by 15%. (Figure 6.4; Table 6.2)

There are some key differences between drink-specific per capita sales trends in Scotland and England & Wales. Most notably, despite a slight narrowing of the gap in the volume of pure alcohol sold as spirits over time – due to a slight rise in England & Wales – sales of spirits in Scotland remain almost double those in England & Wales. Indeed, in 2009, this disparity accounted for 79% of the difference between areas in total sales. In addition, per capita beer sales decreased at a faster rate in England & Wales, and increases in light wine sales were slower than in Scotland. Thus, in 1994, per capita sales of alcohol were higher in England & Wales for all drink types except spirits. By 2009, both spirits and light wine were sold in greater volumes in Scotland, while sales of beer and cider were very similar to England & Wales. (Figure 6.4; Table 6.2)

Figure 6.4 Litres of pure alcohol sold per capita (adults aged 16+) in Scotland and England & Wales, by drink type, 1994-2005

Sources: Nielsen/CGA; General Register Office for Scotland; Office for National Statistics

Self-reported alcohol intake from national surveys

Adults

a) Usual weekly alcohol consumption

Self-reported estimates from the SHeS indicate that the average weekly alcohol consumption of men in Scotland has statistically significantly decreased from 20.3 units in 2003 to 17.5 units in 2009. The figures for women show a similar trend, falling from 9.1 units in 2003 to 7.8 units in 2009. The proportion of men and women exceeding UK government weekly drinking guidelines (men>21 units; women>14 units)\(^{52}\) has also significantly declined: 34% of men and 23% of women

\(^{ix}\) Note that all estimates in this section include non-drinkers in the denominator.
exceeded the limits in 2003 compared with 27% and 19%, respectively, in 2009. The observed trend in reported weekly alcohol consumption for all adults in Scotland is therefore one of decline. (Figure 6.5; Table 6.3)

In England & Wales, the direction of change is similar to that observed in Scotland. Specifically, figures from the GLF indicate that the average number of self-reported units consumed per week fell from 19.0 for men and 9.1 for women in 2006, to 16.4 and 8.0 in 2009 respectively. For both sexes combined, the decrease in mean units was from 13.7 units in 2006 to 11.9 in 2009. The proportion of men exceeding the recommended weekly guideline also declined, from 31% in 2006 to 26% in 2009, while there was little change for women (2006 = 20%, 2009 = 18%). (Figure 6.5; Table 6.4)

In 2009, adult men in Scotland reported consumption of more alcohol in an average week (17.5 units) than men in England & Wales (16.4 units), while reported consumption by women in both areas was similar (7.8 units in Scotland; 8.0 units in England & Wales). This pattern is consistent with earlier findings if comparing the 1995 SHeS and HSfE, and the 1998 SHeS and GLF (data not shown). (Figure 6.5; Table 6.3; Table 6.4)

Figure 6.5  Estimated average weekly alcohol units of adults aged 16+ in Scotland (2003, 2008, 2009) and England & Wales (2006, 2008, 2009), by sex

Sources: Scottish Health Survey; General Lifestyle Survey

b) Abstinence

The proportion of adults in Scotland who reported that they are alcohol abstainers has increased from 10.6% in 1998 to 12.8% in 2009. There has been a more marked upward trend in England & Wales, increasing from 10.2% to 15.1% between 2000 and 2009. Therefore, the decline in self-reported average weekly alcohol consumption in recent years may be partly attributable to more non-drinkers. (Figure 6.6; Table 6.5)
c) Alcohol consumption on heaviest drinking day in previous week

The SHeS suggests that there has been a small but statistically significant decline in the reported mean number of units consumed by adult men in Scotland on their heaviest drinking day in the previous week, from 6.5 in 2003 to 5.9 in 2009. Similarly, a slight but statistically significant decline was reported by women in the SHeS over the same time period, decreasing from 3.6 units in 2003 to 3.2 units in 2009. The proportion of men exceeding the recommended daily drinking guideline (>4 units) on their heaviest drinking day in the previous week did not significantly change between 2003 and 2009 (45% in 2003 and 44% in 2009). However, the proportion exceeding the binge drinking benchmark (>8 units) significantly decreased from 29% to 26%. Figures for women suggest that there were significant decreases in both the proportion exceeding the daily guideline (>3 units: 37% in 2003, 34% in 2009) and binge drinking benchmark (>6 units: 19% in 2003, 17% in 2009). Due to the uncertainty around the estimates described in this section, it will be necessary to consider 2010 estimates to confirm whether or not the reported decreases in daily alcohol consumption between 2003 and 2009 are evidence of a real downward trend.45 (Figure 6.5; Figure 6.6; Table 6.6)

In England, the HSfE indicates that the proportion of men whose reported consumption on their heaviest drinking day in the past week exceeded daily drinking guidelines remained broadly stable between 2006 and 2009: 41% drank more than 4 units in 2006 compared with 43% in 2009, while 24% drank more than 8 units in 2006 compared with 25% in 2009. A similar trend was also reported by women in England over the same period: 33% of women exceeded the recommended daily drinking guideline of 3 units on their heaviest drinking day in

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4 Aged 16-74 only
Sources: Scottish Health Survey; General Lifestyle Survey

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Note that all estimates in this section include non-drinkers in the denominator.
2006 compared with 31% in 2009, and 16% exceeded the binge drinking threshold of 6 units in 2006 compared with 15% in 2009. (Figure 6.7; Figure 6.8; Table 6.7)

Figure 6.7  Proportion of adults aged 16+ in Scotland (2003, 2008, 2009), England (2006-2009) and England & Wales (2006-2009) exceeding recommended daily drinking guidelines (men>4 units; women>3 units), by sex

Figure 6.8  Proportion of adults aged 16+ in Scotland (2003, 2008, 2009), England (2006-2009) and England & Wales (2006-2009) exceeding binge drinking benchmarks (men> 8 units; women>6 units), by sex

Sources: Scottish Health Survey; Health Survey for England; General Lifestyle Survey
A report published in 2010 compared self-reported alcohol consumption among adults in Scotland and England using data from the 2008 SHeS and HSfE, respectively. Mean daily unit consumption on the heaviest drinking day was statistically significantly higher among adult men in Scotland (6.2 units) than England (4.3 units). In addition, a slight but significantly higher percentage of men in Scotland exceeded the daily drinking guideline (44% versus 41%). A similar pattern was reported for women: women in Scotland consumed a significantly higher number of units on their heaviest drinking day (3.5 units) than women in England (2.2 units), and significantly more women in Scotland exceeded the daily guideline (36% versus 32%). In terms of binge drinking, a similar proportion of men in Scotland (27%) and England (25%) drank more than 8 units on their heaviest drinking day, while women in Scotland were slightly more likely to have had drunk more than 6 units in the past week (18% versus 15%) than those in England.

Findings from earlier SHeS and HSfE reports suggest that, although reported consumption levels for men were higher in Scotland in 1995, levels were similar between countries in 1998 and 2003. In contrast, women in Scotland reported that they drank less on their heaviest drinking day in Scotland in 1995 and 1998, but by 2003 drank more than their counterparts in England. However, the gap between Scotland and England narrowed in 2009, particularly among men. Future data will help to establish whether or not this is due to annual fluctuations inherent in survey estimates or evidence of a real difference in trends between countries. (Figure 6.7; Figure 6.8; Table 6.6; Table 6.7)

d) **Adherence to both weekly and daily drinking guidelines**

Self-report estimates from the SHeS suggest that, in 2008/09, 50% of adult men and 39% of adult women in Scotland exceeded either the daily or weekly (or both) drinking guidelines. This is higher than the proportion that exceeded the individual guidelines. (Figure 6.9; Table 6.9)

**Figure 6.9** Proportion of adults aged 16+ in Scotland exceeding recommended guidelines on alcohol drinking, 2008/09

![Figure 6.9](image)

*Source: Scottish Health Survey*  

Note that all estimates in this section include non-drinkers in the denominator.
e) Alcohol consumption by deprivation in Scotland

In 2008, results from the SHeS indicate that self-reported usual weekly alcohol consumption did not vary significantly across Scottish Index of Multiple Deprivation (SIMD) quintiles (a measure of area deprivation) for either men or women, although men in the most deprived 20% of areas in Scotland reported that they consumed more alcohol in an average week than those in other areas. The proportion of men who reported drinking more than 21 units a week was similar across SIMD quintiles, ranging from 29% to 31%. Women in the least deprived quintile were the most likely to report exceeding weekly guidelines of more than 14 units a week (25%), while those in the most deprived quintile were least likely (16%). (Figure 6.10; Table 6.10)

Figure 6.10 Proportion of adults aged 16+ in Scotland exceeding recommended weekly drinking guidelines, and mean weekly alcohol consumption (age-standardised), by SIMD quintile, 2008

Figure 6.11 shows that there were no obvious differences across SIMD quintiles in the proportion of men in Scotland who reported exceeding recommended daily limits (>4 units) on their heaviest drinking day in the past week; women in the most deprived areas were least likely to consume more than 3 units (31%). There was little difference across SIMD quintiles in terms of the proportion of men and women whose self-reported consumption exceeded binge drinking thresholds. (Figure 6.11; Table 6.11)
In 2008, men and women in the most deprived areas were most likely to have abstained from alcohol in the week before the survey (39% of men and 55% of women). Adults in the least deprived areas were least likely to have drunk no alcohol (24% of men and 29% of women). Importantly, this affects the patterning of daily alcohol consumption by area deprivation. By excluding those who reported that they did not drink alcohol in the past week, mean unit consumption (10.1 units) and binge drinking (44% exceeding 8 units) was highest among men in the most deprived areas in Scotland compared with men in the least deprived areas (7.7 units and 32%, respectively). A similar, but less pronounced, pattern existed for women. It appears, therefore, that individuals from the most deprived areas drink less regularly than those in more affluent areas although they consume more on occasions when they do drink.  

f) Problem drinking in Scotland

The proportion of men aged 16-74 who currently drink alcohol and agreed with two or more indicators of problem drinking increased from 12% in 1998 to 17% in 2008, dropping slightly to 15% in 2009. The pattern was similar for women, increasing from 5% in 1998 to 11% and 10% in 2008 and 2009, respectively. (Figure 6.13; Table 6.13)
Figure 6.12  Proportion of adults (aged 16+) in Scotland exceeding recommended daily guidelines and binge drinking benchmarks in the past week (age-standardised), excluding those who did not drink in the past week, by SIMD quintile and sex, 2008

Source: Scottish Health Survey

Figure 6.13  Proportion of adult drinkers (aged 16-74) in Scotland with two or more indicators of problem drinking by sex, 1998, 2003, 2008 and 2009

Source: Scottish Health Survey

**Young people**

The proportion of pupils in Scotland (aged 13-15) who self-reported that they had drunk alcohol in the week before the survey steadily declined, from 35% in 2002 to 22% in 2008. There was a similar, but less marked, downward trend among pupils in England. In 2008, among those pupils who had drunk alcohol in the past week, mean consumption was 2.5 units higher in Scotland (17.9 units) than England (15.1 units). (Figure 6.14; Table 6.14)
Figure 6.14  Proportion of pupils (aged 13-15) who drank alcohol in the past week in Scotland (2002-2008) and England (2000-2008)

Notes:
1. SDDUYP data are not weighted.
2. SALSUS estimates were not weighted in 2004 (for more information see SALSUS, 2004).
Sources: Scottish Schools’ Adolescent Lifestyle and Substance Use Survey; Smoking, Drinking and Drug Use Among Young People

Triangulation of HMRC alcohol clearances, retail sales and survey estimates

This section briefly compares the estimates from all three indicators of alcohol consumption:

- the volume of alcohol cleared for sale by HMRC;
- retail sales, as supplied by the Nielsen/CGA; and
- self-reported alcohol consumption from national surveys.

Figure 6.15 shows mean weekly alcohol consumption, for all adults aged 16+, based on the volume of pure alcohol cleared for sale in the UK per capita, the estimated volume of alcohol sold in GB (i.e. England, Wales and Scotland) per capita, and estimates of self-reported alcohol consumption in GB from all adult respondents (men and women combined) in the GLF. As per capita consumption estimates based on retail sales and HMRC data are for different geographies, it is not possible to compare absolute consumption levels; however, overall trends can be observed. Over the full 16-year time period, HMRC and Nielsen/CGA estimates suggest that alcohol consumption in the UK/GB increased to its highest level in the mid-2000s and has since been in decline, albeit modestly. HMRC clearances peaked in 2004/05 at 22.7 units per week, falling to 20.6 units in 2008/09; GB retail sales peaked in 2005 at 20.4 units per week, declining to 19.2 units in 2009. GB estimates from the GLF also suggest a recent decline in alcohol consumption and accounted for 62% of Nielsen/CGA sales estimates in 2009. (Figure 6.15; Table 6.15)
Of all three sources of information on alcohol consumption in Scotland, the Nielsen/CGA sales estimates are the highest, suggesting that sales of alcohol in Scotland increased from 20.5 units per person per week in 1994 to 22.8 in 2005, remaining broadly stable thereafter. Self-report estimates from the SHeS are considerably lower and suggest a small decline in weekly alcohol consumption between 2003 (14.4 units) and 2009 (12.4 units). Estimates from the GLF, which are subject to greater variability given the small Scottish sample size (1220 in 2009), are lower still and show no discernible trend between 2006 and 2009 (11.6 units in 2006 to 11.2 in 2009). (Figure 6.16; Table 6.15)

Despite the application from 2003 onwards of updated conversion factors to reflect recent increases in the size and strength of certain drinks, the gap between Scottish per capita sales estimates and SHeS estimates of alcohol consumption has recently widened. In 2003, SHeS estimates were around two thirds that of the Nielsen/CGA figures (65%). By 2008 they had fallen to 58% with a further reduction to 54% in 2009. GLF figures accounted for 49% of sales in Scotland in 2009. (Figure 6.16; Table 6.15)

In England & Wales, the Nielsen/CGA sales estimates suggest that per capita sales of alcohol increased each year in the series (for which there are data available) from 1994 to 2005 (18.4 to 20.2 units per week) and have declined each year thereafter to 18.9 units per week in 2009. Self-report estimates from the GLF also suggest a recent decline and accounted for 63% of sales estimates in 2009. (Figure 6.16; Table 6.15)
In summary, HMRC clearances and Nielsen/CGA retail sales estimates suggest that average weekly alcohol consumption among adults in England & Wales, GB and the UK increased up until the mid-2000s followed by a recent decline. Self-reported survey estimates from the GLF also show a recent downward trend in GB and England & Wales. In Scotland, retail sales estimates indicate an increase to the mid-2000s followed by broad stability over the past 5 years. The SHeS indicates a decrease in self-reported weekly alcohol consumption in recent years. Estimates from the GLF, on the other hand, suggest broad stability, but these are subject to greater variability over time due to a smaller survey sample size. (Figure 6.15; Figure 6.16; Table 6.15)

**Discussion**

In this chapter, data from various sources have been collated and analysed in order to provide a comprehensive description of past trends and current status of alcohol consumption in Scotland comparing, where possible, with data from other countries in Great Britain.

**Main findings**

**Alcohol sales data**

Using retail sales data, it was found that between 1994 and 2009, consumption increased by over one litre of pure alcohol per adult in Scotland. This was driven by a large increase in the amount of alcohol being sold off-trade and a large rise in sales of light wine.
In England & Wales, adult per capita consumption was consistently around 10% lower than in Scotland (mostly explained by higher spirits sales in Scotland), following a similar upward trend until 2005. From 2005 onwards, however, per capita consumption in England & Wales declined, while it remained stable in Scotland. This has resulted in a recent widening gap: per capita consumption was 21% higher in Scotland in 2009.

Self-reported survey data
The most robust available self-report survey data also suggest that adult men and women in Scotland consume more alcohol in an average week than their counterparts in England & Wales. In general, they are also more likely to drink higher amounts of alcohol on their heaviest drinking day in the past week and to exceed daily and binge drinking benchmarks. In 2008/09, 50% of men and 39% of women in Scotland exceeded weekly, daily and/or binge drinking benchmarks.

Variations of drinking patterns by area deprivation in Scotland depend on whether or not abstainers are included in analyses. There were no obvious differences between self-reported alcohol consumption among all adults (i.e. including abstainers) by area deprivation in Scotland, although women in the least deprived areas were most likely to consume more than 3 units on their heaviest drinking day in the past week. However, adults living in the most deprived areas of Scotland were least likely to have drunk alcohol in the past week. Taking this into account by excluding abstainers from the analysis, adults living in the most deprived areas in Scotland consumed more alcohol on their heaviest drinking day, and were more likely to exceed binge drinking thresholds, than those living in less deprived areas. There was a downward trend in the proportion of schoolchildren who reported that they had drunk in the past week in Scotland between 2002 and 2008. Young people in Scotland were less likely to have drunk alcohol in the past week compared with young people in England, although mean alcohol consumption was higher among those who did drink.

Comparison of sales and self-reported survey data
By triangulating the various sources of data, it has been shown that self-reported surveys substantially underestimate per capita consumption based on sales data in Scotland, England & Wales and Great Britain. In addition, the recent decline in self-reported alcohol consumption in Scotland, based on survey data, was not evident from sales data, which showed stability in per capita consumption over recent years.

In contrast, both sales and survey data in England & Wales and GB showed a recent decline in per capita consumption.

Strengths and limitations

Analysis of alcohol sales data
Sales data are considered the ‘gold standard’ for estimating per capita alcohol consumption. They are the preferred source for monitoring trends in population consumption as they can be used to assess the impact of policies adopting a whole population approach on changing outcomes. Furthermore, sales data enable the temporal relationship between consumption and harm to be
explored. This has been done at UK level using estimates based on taxation data. However, taxation data are not available separately for Scotland. Sales data that differentiate Scotland from England & Wales suggest that alcohol consumption differs between countries within the UK. Thus, the description of long term trends in this chapter provides an important insight into changes in per capita consumption over a period when alcohol-related harms have risen in Scotland (see Chapter 8). Analyses of retail sales data has also permitted changes in per capita consumption by market sector and drink type to be examined. Most importantly, these results provide a baseline of per capita alcohol consumption in Scotland. This, in turn, will facilitate the evaluation of the impact of the population-based interventions outlined in Scotland’s alcohol strategy over time by providing the most accurate indicator of average alcohol consumption.

The limitations of the present analyses mainly derive from those inherent in the data sources used. Estimates of per capita consumption based on retail sales data may not represent actual consumption for various reasons including spillage, tourist consumption, inclusion of non-drinkers in the denominator, and exclusion of sales data from specific retailers and/or other sources (e.g. internet, events, illicit and cross border sales not included). The impact of these factors may vary over time and between countries. The methodology used by Nielsen/CGA ensures representative estimates of retail sales (see Appendix 6.1). This is particularly the case for off-trade sales as store-census data are collected from all large multiple retailers, which represent 84% of all alcohol sold through the off-trade. In 2009, Nielsen/CGA estimates of retail sales of pure alcohol in GB were similar to HMRC clearances for the UK (Nielsen/CGA estimates were 8% lower; data not shown), providing support for their representativeness. As noted by Rehm et al, it is unlikely that much alcohol measured in sales or taxation data is not in fact consumed and the assertion that these are the best source of per capita consumption estimates therefore seems justified.

Another limitation of the present analyses was the availability of data. Additional sales data from the 1980s and 1990s would have enhanced the ability to model and interpret the relationship between consumption and harms detailed in Chapter 8. Retail sales data from Northern Ireland would also have been beneficial to more accurately measure the disparity between per capita consumption estimates from the two sources of sales data in the UK.

It has been argued that sales data are inappropriate for estimating consumption in Scotland because of its large tourist industry. However, tourism data show that visits made to Scotland and England & Wales in 2009 by foreign residents, as a proportion of the total population, was almost identical in both areas. It is likely that tourists in Scotland are more likely to purchase whisky due to the international reputation of Scotch whisky. Yet, whisky sales accounted for only 16% (0.3L per capita) of the 1.9L per capita difference in off-trade sales in 2009, while vodka accounted for 38% (0.7L per capita) and cider 16% (0.3L per capita). Furthermore, Nielsen/CGA sales estimates do not take account of the alcohol consumed by Scottish residents when visiting abroad, or the alcohol imported by Scottish residents returning from holiday, both of which are sources of underestimation. Indeed, the number of overseas visits by Scottish residents in 2009 (~3.9 million) was much higher than the number of visits to Scotland by

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overseas residents (~2.5 million). There were, however, comparatively more domestic tourism trips by UK residents to Scotland (2.4 per capita) than to England & Wales (2.0 per capita) in 2009. Nonetheless, it is very unlikely that tourism explains the higher per capita alcohol consumption in Scotland.

Another potential source of inaccuracy when using retail sales data to estimate per capita consumption in Scotland is sales to non-resident students. In 2008/09, there were approximately 65,000 students studying in Scotland’s Higher Education Institutes from other parts of the UK and overseas. Scotland has comparatively more non-resident students than England & Wales: 15 per 1000 adults in Scotland; 8 per 1000 adults in England & Wales. As such, it has been contended that this is likely to explain the relatively higher consumption of some drink types. However, the number of non-resident students in both Scotland and England & Wales represent an extremely small proportion of the overall population (1.5% and 0.8% respectively). Also, comparatively more Scottish students studied in other parts of the UK in 2008/09 compared with students domiciled in England & Wales (2.9 per 1000 adults in Scotland; 0.5 per 1000 adults in England & Wales). It is therefore implausible as an explanatory factor for the 21% difference in per capita sales.

Finally, adults in Scotland are less likely to abstain from alcohol altogether compared with their counterparts in England, based on self-report surveys (the limitations of which are detailed below). Thus, the difference in per capita consumption between Scotland and England & Wales may be attributable to retail sales data being expressed per adult, as opposed to per adult drinker. In a previous MESAS report, however, it has been shown that this has a small effect on the disparity between areas.

Detailed exploration of the strengths and limitations of sales data (retail sales and HMRC clearances) as an estimate of per capita consumption, and the impact of these on the accuracy of the data over time or between geographies is the subject of future MESAS investigation.

Analysis of self-reported survey data

The use of retail sales data in this chapter has been complemented by a detailed description of patterns of alcohol use in Scotland using data from self-report surveys. Although many of the figures presented are available elsewhere, they are typically in separate reports. Presenting them alongside sales data, as well as comparable data from surveys in other countries, offers a fresh insight into the nature of alcohol consumption in Scotland. For example, different self-report survey sources can be used to estimate alcohol consumption levels and patterns in GB, resulting in contrasting interpretations. The analyses in this chapter have enabled the extent of survey underestimation to be quantified and underestimation between surveys to be compared. Indeed, estimates of per capita consumption in Scotland based on the GLF are lower than those from the SHeS, accounting for only 49% of estimates from retail sales data. As methods resulting in higher levels of reported consumption are assumed to be more valid, it is proposed that the SHeS is the most appropriate source of self-reported alcohol consumption data in Scotland.
The limitations of survey data are well known and mostly relate to under-reporting of alcohol consumption due to poor recall, social desirability, under-sampling of heavy drinkers and inaccuracy of assumed standard drink strengths and sizes\(^{24,48}\), the latter being particularly relevant as alcohol is now mainly consumed at home. Although the SHeS uses both the quantity-frequency and recent recall methods, which enhances its ability to categorise high risk drinkers\(^ {24}\), response rates have been low and falling since 2003 (56% in 2009). This is likely to impact unfavourably on its representativeness and may explain the recent contrasting trend between sales and survey per capita estimates. Finally, due to revised conversion factors being applied to surveys to account for increasing drink strengths and sizes, interpretation of trends was based on only three or four recent data points and should be treated with caution. Accurate data from earlier surveys would have also enabled the effect of declining response rates on survey underestimation to be appraised.

Rates of alcohol-related problems in Scotland are higher in more disadvantaged areas, with much steeper gradients than for most health problems (see Chapter 8). Yet, the SHeS suggests that there is little gradient in self-reported alcohol consumption between people of different area deprivation status.\(^ {53}\) This could be due to a number of reasons. First, the SHeS has lower response rates in deprived areas and, although the analysis is weighted for non-response, the non-responders could include more heavy drinkers than the responders. Second, the SHeS does not sample from military establishments, hostels, hospitals and prisons, where disproportionately high numbers of heavy drinkers may be found.\(^ {24}\) Third, the social patterning of harm may be partially explained by a relatively small number of very heavy drinkers, most likely to be in lower income groups.\(^ {64}\) It has also been suggested that the consequences of similar drinking patterns are more severe for those with lower socioeconomic status.\(^ {65}\) As shown in this chapter, some of the apparent paradox in social patterning of harms and consumption in Scotland may also be explained by the inclusion of alcohol abstainers in the data analyses. Moreover, the association between consumption and deprivation may be subject to reverse causation where people with an alcohol consumption problem may suffer a loss of income resulting in downward social mobility and, in turn, residence in more deprived areas.\(^ {66}\)
7. AFFORDABILITY OF ALCOHOL

Introduction

There is substantial evidence that the price of alcohol affects consumption.\textsuperscript{8,67,68} As discussed in the introductory chapters, a key component of the Scottish Government’s alcohol strategy is the introduction of measures that aim to reduce consumption through controlling the availability of low price alcohol. To assess the impact of these measures and to assess whether any changes in consumption are related to any observed price changes, it is necessary to establish a baseline for the price of alcoholic drinks consumed in Scotland.

The effects of price changes on consumption are mediated by trends in consumers’ spending power. Therefore to understand the impact of price changes on consumption, it is necessary to consider changes in disposable income that occur over the same period. Change in price relative to the amount that the purchaser is able to pay is termed ‘affordability’. Changes in affordability can stem from changes in price and/or income.

Changes in affordability due to increases in income may not reflect the impact of an alcohol strategy, but understanding such trends will provide useful contextual information to help interpret evidence collected in other studies in the MESAS portfolio. For example, income-driven increases in affordability would potentially offset the impact of other interventions implemented to reduce alcohol consumption and alcohol-related harms.

Trends in the affordability of alcohol at a UK level are measured by the Affordability of Alcohol Index (AAI).\textsuperscript{69} The AAI is widely used.\textsuperscript{68} However, it cannot be replicated for countries within the UK because it is calculated using indices of general price increases, alcohol price increases and real disposable household incomes, which are not available for countries within the UK.\textsuperscript{70} Therefore, divergence between different parts of the UK, either in incomes or in policies influencing alcohol prices, could mean that affordability trends differ between countries within the UK. The ability to distinguish between these trends would provide useful comparative data to help understand the impact of policy within Scotland. However, there are a number of challenges in measuring affordability within countries in the UK. A fuller explanation of how the AAI is calculated is given in Appendix 7.1.

In addition, although area-specific prices per litre and price per unit of alcohol are available from the Nielsen/CGA sales data\textsuperscript{27}, these data represent average prices of the alcohol sold. As such, they reflect the combined effect of changes in prices charged for specific products and changes in sales patterns within and between drinks categories.\textsuperscript{xii} Even if average prices and incomes, and therefore affordability remained unchanged, a shift in sales towards cheaper drinks would lead to a fall in the average sales price.

\textsuperscript{xii} Official price indices avoid this problem by pricing a standard ‘basket’ of commodities.
Sales data are, however, useful in understanding trends in the average prices of alcohol consumed and for generating ‘price band’ data that can be used to monitor the prevalence of low price sales. Both of these variables are of interest to policy makers given that measures to affect the price of alcohol, for example, by reducing the availability of low price alcohol, are the main way in which policy can influence affordability as a means of reducing alcohol consumption.

Therefore, the baseline for monitoring changes in affordability and trends in low price sales is based on:

- trends in UK estimates of affordability
- trends in current household disposable income in Scotland and in England & Wales
- trends in average prices derived from sales data compared to trends in household incomes in Scotland and in England & Wales
- comparative price band data for 2009 in Scotland and in England & Wales

**Methods**

**UK estimates of affordability**
Trends in affordability are measured using the AAI series published in ‘Statistics on Alcohol: England, 2010’. Further details of this calculation and the data sources used are in Appendix 7.1.

**Trends in current disposable household incomes**
Current disposable household income data are derived from the Office for National Statistics (ONS) Regional Accounts for English regions, Scotland, Wales and Northern Ireland. Households’ disposable income is an index of spending power derived by subtracting from households’ total income payments such as income tax, other taxes and social insurance contributions. The most recent data available are for 2008.

Disposable household income per capita is used to take account of changes in population size over the period. The use of per capita income rather than total income for the country as a whole has recently been recommended in a review of the AAI.

**Comparative sales data**
Prices per litre in ‘natural volumes’ (actual volume of beverage sold), prices per litre of alcohol and prices per unit of alcohol were calculated from data on sales of alcohol in Scotland and England & Wales supplied by Nielsen/CGA. Aggregate (GB) data for Scotland and England & Wales combined were also provided.

More detail on the data sources, sampling procedure and methods for converting the natural volumes into litres and units of pure alcohol are provided in Chapter 6.

Average sales price data are available for the period 2000 to 2009. Prices have been expressed in terms of price per litre in natural volumes and price per unit of alcohol. The implications of these different methods are discussed further below.
Trends in current household disposable incomes per capita have also been compared with trends in average sales prices. This ratio, which avoids the need for price indices for countries within the UK, is used to approximate affordability trends although it is important to remember that this is not a direct measure of affordability because it is based on the average prices from the sales data.\textsuperscript{xiii}

Trends are presented as index numbers with base year 2000 to indicate the proportionate increase in prices and incomes since the start of the period for which data are available.

**Price band data**
NHS Health Scotland has previously published an analysis of price band data for off-sales of alcohol in Scotland in 2009 supplied by Nielsen.\textsuperscript{60} The data are calculated in 5 pence per unit of alcohol (ppu) bands above 20ppu and up to a top band of 85 ppu or more.

The price band analyses in this chapter are based on these data for Scotland and England & Wales.\textsuperscript{60,73} Data are presented on the proportion of alcohol sold at less than 30ppu to assess the prevalence of very low price sales. Thirty pence was chosen because for most categories of alcohol proportions sold at price bands of 25ppu or lower are very small and display little differences between areas. Data are also presented on the proportion sold at less than 45ppu, to indicate how much of the alcohol currently consumed would have been affected by the price proposed for the minimum price recently put to and rejected by the Scottish Parliament.

Data are presented for spirits (including sub-categories of vodka and whisky), light wine, beer and cider together with data on the percentage of all alcohol sold represented by each price band and drink category.

**Results**

**Trends in UK Affordability of Alcohol Index (AAI)**
Figure 7.1 charts trends in the AAI and the variables from which it is derived from 1987 to 2009.

By this measure, the affordability of alcohol has increased by 66% since 1987 and by 20% since 2000. The data show that the driver of the increasing affordability of alcohol has primarily been rising disposable incomes. Alcohol prices have risen 10\% more than prices in general, but real household incomes have nearly doubled over the period. Incomes have continued to drive affordability trends in recent years. Since 2000 alcohol prices have not changed relative to retail prices, but real household incomes have increased by 20%.

\textsuperscript{xiii} See Appendix 7.1 for a fuller explanation of the rationale for avoiding the use of price indices from countries within the UK.
Figure 7.1: Indices of alcohol price and affordability, 1987-2009

Seabrook has recently suggested a number or modifications to the way the AAI is calculated. The first concerns the measure of income used and the way it accounts for the wealth associated with the value of individuals' homes; the second concerns the use of real incomes and alcohol prices adjusted for inflation rather than current incomes and prices; the third concerns the use of total rather than per capita national income. Seabrook has calculated a revised AAI that takes account of these factors. The revised index suggests that affordability has hardly risen since 2000 and has actually fallen since 2003. This matches, more closely than the AAI, both a fall in alcohol clearances since 2004 indicated by HMRC data and the declining sales in England & Wales since 2005 revealed by the Nielsen/CGA retail sales data.

Although alcohol prices have risen at similar rates to prices in general since 2000, prices of specific drinks categories (by type of drink and type of sales) have increased at different rates. Off-sales prices have increased more slowly than on-sales prices and beer off-sales prices have actually fallen since 2000. Recent analysis by the Scottish Government shows that, as a result, affordability trends differ markedly between drinks categories. Increases in affordability have been largest in off-sales, particularly beer (see Figure 7.2).

Source: NHS Information Centre for Health and Social Care.

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\[xiv\] For a fuller explanation of Seabrook’s revised index see Appendix 7.1

\[xv\] Alcohol clearance data are explained in Chapter 6.
This relative price shift in favour of off-sales is consistent with the increases in off-sales of wine and beer and the overall change in sales patterns towards off-sales described in Chapter 6.

**Trends in current household disposable income and average prices in Scotland and in England & Wales**

Figure 7.3 compares trends in prices and household per capita incomes in England & Wales relative to Scotland.

The average price of alcohol consumed has increased slightly more quickly in England & Wales than Scotland. Price per litre in natural volumes has increased by 29% over the period 2000-2009 in England & Wales and 24% in Scotland. There is no difference between Scotland and England & Wales in the rate of increase in price per unit of alcohol.

Prices per unit of alcohol have increased more slowly than prices per litre in natural volumes, reflecting a shift in sales towards wine and away from beer. A divergence between prices in natural volumes and prices per unit of alcohol would also happen if the data were picking up the increasing strength of beer and wine but the conversion factors in the Nielsen/CGA data do not reflect these changes in drink strength. Not accounting for the increasing strength of drink would tend to underestimate the increase in affordability of alcohol per se as opposed to the affordability of alcoholic drinks.

Disposable household per capita incomes have increased more quickly in Scotland since 2000: 38% in Scotland compared to 33% in England & Wales. Income levels per capita remained higher in England than in either Scotland or Wales in 2008.
These trends mean that the ratio of current disposable per capita incomes to average prices from the Nielsen/CGA sales data has increased more in Scotland than in England. The ratio of the index of income growth to price increases is 23% for Scotland, 17% for England & Wales and just over 17% for GB if based on prices per unit of alcohol, and 14% for Scotland, 6% for England & Wales and 6% for GB if based on prices per litre in natural volumes. The UK AAI increased by 20% over the same period.

The higher rate of increase of the AAI is partly explained by the fact that it is calculated using aggregate rather than per capita disposable household income. Incomes per capita have not increased as quickly between 2000 and 2008 as aggregate income for the country as a whole; 38% compared to 41% in Scotland; 33% compared to 39% in England & Wales. However, as mentioned earlier, there has also been a shift in consumption away from beer towards wine, which would tend to increase average prices and which illustrates the limitations of using sales data in affordability calculations discussed above.

As stated earlier, the data suggest that increased incomes have been a more powerful driver of affordability than trends in prices. However, the data also suggest that the relative trends in on- and off-sales prices and a shift (in relative and absolute terms) from on- to off-sales (see Chapter 6) have strongly influenced the average prices of alcohol purchased. Figure 7.4 suggests that for much of the period, current average off-sale prices of alcohol purchased in Scotland and in England & Wales hardly increased at all and, for the period as a whole, increased much more slowly than the average sales price of on-sale alcohol. These data correspond closely to the product-specific and sales type affordability data in Figure 7.2.
In general, the area-specific analyses of the ratio of current household disposable per capita incomes and prices derived from the Nielsen/CGA sales data are consistent with the findings from the UK affordability calculations, suggesting that disposable incomes have risen more quickly than average sales prices. The area-specific analyses also show that the ratio of current household disposable per capita incomes to average sales prices has increased more quickly in Scotland than England & Wales.

However, as noted earlier, average price trends derived from the Nielsen/CGA data reflect the impact of both trends in prices charged and changes in sales patterns. Table 7.1 therefore compares the price trends implied by the Nielsen/CGA data to the commodity-specific retail price indices for alcohol as a whole and for on- and off-sale beer produced by the ONS. Wine and spirits price trends cannot be directly compared because the ONS retail price data include a combined index for wine and spirits.

The alcoholic drink retail price index for the UK in the ONS data increased by nearly 26% between 2000 and 2009. By comparison, in the Nielsen/CGA data, average sales prices expressed in natural volumes increased by 23% in Scotland, 29% in England & Wales, and 28% in GB as a whole. The corresponding figures for prices per unit of alcohol are 15% for Scotland, England & Wales, and GB as a whole.

### Table 7.1: Price increases in Nielsen/CGA Sales and ONS RPI Data, 2000-2009

<table>
<thead>
<tr>
<th>Drinks Category</th>
<th>Area</th>
<th>Percentage price increases 2000-2009</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nielsen/CGA</td>
<td>ONS RPI data</td>
</tr>
<tr>
<td></td>
<td>Sales Data</td>
<td></td>
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<tr>
<td></td>
<td>Per litre</td>
<td>Per unit of alcohol</td>
</tr>
<tr>
<td></td>
<td>Natural vol</td>
<td></td>
</tr>
<tr>
<td>All alcoholic drinks</td>
<td>Scotland</td>
<td>23.5%</td>
</tr>
<tr>
<td></td>
<td>England &amp; Wales</td>
<td>28.7%</td>
</tr>
</tbody>
</table>
ONS data indicate that on-sale beer prices increased by just over one third between 2000 and 2009. Nielsen/CGA data suggest that the average price of on-sale beer sales increased by nearly 38% in Scotland and nearly 42% in England & Wales for prices per litre in natural volumes and around 39% in Scotland and nearly 41% in England & Wales for prices per unit of alcohol.

For beer off-sales, ONS retail price data indicate that prices decreased by 4.5% between 2000 and 2009. The Nielsen data suggest they increased by 5.3% in Scotland and 4.2% in England & Wales for prices per litre in natural volumes and 3.9% and 3.6% respectively for prices per unit of alcohol.

Overall, the price increases suggested by the Nielsen/CGA data are greater than indicated in the ONS price data and the ratios of income growth to increases in average sales prices correspondingly lower. This is consistent with the possibility that there has been a shift to sales of more expensive drinks as incomes have increased. However, the evidence on whether the differences between countries are caused by differences in the changes that have occurred between categories of sales and between product types is mixed.

For example, the decrease in on-sales in relative and absolute terms (see Chapter 6) has been more marked in England & Wales than in Scotland. This would tend to reduce the growth in average sales prices and increase the ratio of income to average sales price in England & Wales relative to Scotland.

In contrast, Chapter 6 shows that the shift away from beer towards wine has been more marked in England & Wales than in Scotland. This would tend to increase average sales prices and reduce the ratio of income to average price in England & Wales relative to Scotland because wine is more expensive (in natural volumes) and its price has increased more quickly than the price of beer, in particular off-sale beer.

**Price band data for off-sales, Scotland and England & Wales, 2009**

Figure 7.5 shows the price band distribution of all alcohol off-sales in Scotland compared to England & Wales. For off-sale alcohol as a whole, the distributions are similar in the two areas, although there are some differences within specific price bands. For example, Scotland has higher proportions of off-sales in the 25-29.9, 30-34.9 and 35-39.9ppu categories. Both illustrate substantial proportions of off-sale alcohol sold for less than 30ppu of alcohol and less than 45ppu. For example, around two thirds of all off-sale alcohol is sold at less than 45ppu.
For particular drinks categories, however, there are differences in the proportions of low price off-sales and some marked differences between Scotland and England & Wales in the price band distributions. Table 7.2 illustrates some of these differences, showing the proportions of various off-sale alcoholic drinks sold at less than 30ppu and less than 45ppu of alcohol. The figures in brackets are the proportions of all alcohol sold represented by each drink type and price band.

Cider has the highest rates of very low price off-sales. In Scotland in 2009, 48% of off-sale cider was sold at under 30ppu; 84% was sold at under 45ppu. These are lower percentages than in England & Wales, where 53% was sold at less than 30ppu and 86% at less than 45ppu. However, cheap cider represents a higher proportion of all off-sale alcohol sold in Scotland: 3.4% of all off-sale alcohol is cider sold at under 30ppu in Scotland compared to 1.6% in England & Wales; 5.7% is cider sold at under 45ppu in Scotland compared to 2.7% in England & Wales.

A higher proportion of off-sale vodka is sold at under 45ppu in Scotland compared with England & Wales (89% compared to 84%). Low price vodka represents a substantially higher proportion of all off-sale alcohol sold in Scotland: 3.3% of all off-sale alcohol in Scotland is vodka sold at under 30ppu compared to 1.2% in England & Wales; 13.3% is vodka sold at under 45ppu compared to 5.0% in England & Wales.


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xvi Substantial volumes of cider (26% of all off-sale cider in Scotland, 35% in England) were sold at under 20 pence per unit.
<table>
<thead>
<tr>
<th></th>
<th>Scotland</th>
<th></th>
<th>England &amp; Wales</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% sold under 30ppu (% of all off-sale alcohol sold)</td>
<td>% sold under 45ppu (% of all off-sale alcohol sold)</td>
<td>% sold under 30ppu (% of all off-sale alcohol sold)</td>
<td>% sold under 45ppu (% of all off-sale alcohol sold)</td>
</tr>
<tr>
<td>Spirits:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All</td>
<td>16 (5.4)</td>
<td>77 (25.4)</td>
<td>17 (3.5)</td>
<td>75 (16.5)</td>
</tr>
<tr>
<td>Vodka</td>
<td>24 (3.3)</td>
<td>89 (13.3)</td>
<td>24 (1.2)</td>
<td>84 (5.0)</td>
</tr>
<tr>
<td>Whisky</td>
<td>5 (0.4)</td>
<td>69 (7.4)</td>
<td>6 (0.5)</td>
<td>73 (6.3)</td>
</tr>
<tr>
<td>Light Wine</td>
<td>5 (1.5)</td>
<td>57 (17.5)</td>
<td>7 (2.8)</td>
<td>57 (23.8)</td>
</tr>
<tr>
<td>Beer</td>
<td>20 (4.6)</td>
<td>67 (16.6)</td>
<td>18 (4.8)</td>
<td>67 (18.8)</td>
</tr>
<tr>
<td>Cider</td>
<td>48 (3.4)</td>
<td>84 (5.7)</td>
<td>53 (1.6)</td>
<td>86 (2.7)</td>
</tr>
<tr>
<td>All alcohol</td>
<td>16 (16.0)</td>
<td>67 (67.0)</td>
<td>16 (16.0)</td>
<td>65 (65.0)</td>
</tr>
</tbody>
</table>

Source: Nielsen

Discussion

Country-specific analyses of affordability have not been replicated here, primarily because price data for a standard basket of alcoholic goods for the different countries in the UK are not available. A baseline has therefore been drawn using a mixture of UK-level affordability data and average price and price band data derived from sales information for Scotland and for England & Wales combined.

As discussed earlier, average price and price band data from alcohol sales data do not provide a direct measure of affordability. However, for policy purposes they are useful because, of the two drivers of affordability - i.e. price and incomes - price is more amenable to policy intervention in the context of alcohol strategy in Scotland. Therefore using sales data to measure the extent to which consumers can and do access lower price alcohol is of direct interest to policy makers in Scotland seeking to influence affordability through price measures.

The alternative to using sales data would be to try and acquire product-specific price data from Nielsen/CGA with which to estimate price changes for a constant ‘basket’ of drinks. Preliminary discussions with Nielsen/CGA suggest this would be possible although retrospective analyses would be limited as the ‘raw’ data from which the sales and price band analyses are derived are only retained for three years. The cost of this and the cost of ongoing analysis over time were considered not to be worthwhile in light of the marginal value of the additional information to be gained over average price and price band data, given that affordability differences between countries are likely to be small.

The analyses have produced the following key messages regarding the affordability baseline:

1. Affordability of alcoholic drinks has increased in the UK since the 1980s. Income growth has been the strongest driver of this trend, supported by slow growth in off-sales prices and off-sales beer prices in particular. The scale of the increase in recent years is uncertain due to methodological concerns regarding the measurement of income. An alternative method recently proposed\(^72\) shows a decline in affordability since 2003 which matches a fall in alcohol clearances since 2004 and a fall in sales in England & Wales since 2005.
2. Average prices of off-sales have increased more slowly than on-sale prices and there has been a proportionate shift from on-sales to off-sales. This shift has been bigger in England & Wales than Scotland.

3. The ratio of per capita income growth to price increases is higher when calculated in prices per unit of alcohol compared to prices per litre in natural volumes. This appears to be due to the shift of sales from beer to wine, the latter having a higher alcohol content.

4. The ratio of incomes to average prices of alcohol consumed appears to have increased more quickly in Scotland than in England & Wales due to both faster income growth and slower growth in the average price of alcoholic drinks consumed.

5. The prevalence of low price off-sales is similar between countries but with notable differences for cider and vodka and within particular price bands. The prevalence of low price off-sales, as measured by the proportions of off-sale alcohol sold at less than 30ppu and less than 45ppu, is high. The prevalence of low price off-sales will continue to be monitored using price band data over the MESAS study period.
8. ALCOHOL-RELATED HARM

Introduction

As stated in Chapter 2, the average consumption of alcohol in a population is directly linked to the amount of alcohol-related harm. The strength of the relationship can vary between countries. In general, however, the more a population drinks the more harm it will experience. Conversely, the less a population drinks, the less harm is experienced. Harm can either be to an individual’s health, such as liver disease or brain damage, or result in wider adverse social consequences such as offending, unemployment or missing school. These harms are not only experienced by the person consuming alcohol but can result in harm to others, such as victims of alcohol-related violence.

Based on HMRC clearances, adult per capita (16+) alcohol consumption in the UK has risen substantially since the 1950’s. Chapter 6 sets out levels and trends in alcohol consumption in recent years for Scotland, reporting on and triangulating different data sources and drawing comparisons with England & Wales. Data from alcohol sales show that in Scotland there was an 11% rise in per capita consumption of pure alcohol between 1994 and 2009. Self reports from surveys show that considerable proportions of the population are drinking above sensible drinking guidelines. This is not confined to particular sections of society but is common across different age and socio-economic groups. Sales data in 2009 suggest levels of alcohol consumption in Scotland are higher than those in England & Wales, also supported by some self-report surveys.

As alcohol consumption in Scotland has been rising, so has alcohol-related harm, to individuals, their families and communities and wider society. In 2007, the overall cost to Scotland of alcohol misuse was estimated to be £3.5 billion (mid point estimate) with costs to healthcare of £268 million. This chapter provides a descriptive analysis of recent trends in key indicators of alcohol-related health and social harms in Scotland and by specific sub-groups. Where data permit, comparisons are made with England & Wales to determine whether these trends are Scotland-specific or part of wider UK trends, both in nature and scale. These indicators constitute a basis for future monitoring and evaluation of alcohol consumption and related harms for MESAS reporting.

Methods

Descriptive analysis is used to illustrate the changes in a selection of key indicators of alcohol-related harms in Scotland over recent time. These indicators will be monitored in future reporting for MESAS. Key indicators measure aspects of alcohol-related morbidity (alcohol-related hospital discharges and selected adverse health consequences for children), alcohol-related mortality (alcohol-related deaths) and indicators of wider social harm.
Alcohol-related hospital discharges
ISD routinely collates information on hospital discharges from the submission of Scottish Morbidity Records (SMR01) from Health Boards. These data are available from 1981 to the present. Each SMR collects information on a patient’s diagnosis (or diagnoses) using International Classification of Disease Codes (ICD codes). Alcohol-related hospital discharges have been defined as per ISD routine reporting (see Appendix 8.2 for ICD codes). This indicator has been selected as it is robust, has long term trend data available and is 100% attributable to alcohol. Substantial change to service delivery for alcohol problems (such a shift to more delivery of care in the community setting) would have the potential to affect this indicator for future reporting.

Each SMR01 record has space to record up to six different diagnoses. Analysis was carried out to determine if any of the six spaces had an alcohol-related code but with each discharge (a continuous inpatient episode) only being counted once. In 1996 ISD moved from using the 9th revision to the 10th revision of ICD codes. The change introduced a number of new alcohol-related ICD codes. However, mapping of codes from ICD9 to ICD10 is not exact and so caution must be used when interpreting trends over longer timeframes.

Trends in alcohol-related hospital discharge rates from 1982/83 to 2009/10 have been analysed, broken down by age groups, gender and selected diagnoses of Alcoholic Liver Disease and Alcohol Psychosis. These two diagnoses were chosen as being robust (including over time) and are indicative of long term damage from alcohol consumption. The more acute (short term) diagnoses such as acute intoxication are less robust over time due to changes from ICD9 to ICD10 coding. Alcohol-related hospital discharge rates were also explored by deprivation category, with deprivation defined by the Scottish Index of Multiple Deprivation (SIMD). Due to alternative measures of deprivation prior to 2000, which are not directly compatible, longer-term trends cannot be described.

Alcohol-related mortality
The General Register Office for Scotland (GROS) routinely reports national statistics on all deaths for Scotland. As with acute hospital discharges, ICD codes are used to categorise cause(s) of death. Using the UK definition of an alcohol-related death, analysis has been undertaken on the underlying causes of death only. Trends in alcohol-related mortality rates from 1982-2009 are described, broken down by age group, gender, deprivation (SIMD) and the diagnosis of Alcoholic Liver Disease.

Comparable data are presented for alcohol-related deaths for England & Wales published by the Office of National Statistics (ONS).

Adverse Consequences for Children
A selection of indicators of adverse consequences for children following their own alcohol consumption was selected from the Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS). The survey publishes information on

xvii Population data only available from 1982
smoking, drinking and drug use among 13-15 year olds in Scotland every two years with data available from 2002.

**Crime**
Although alcohol is a likely contributory factor in many crimes, few offences are entirely due to alcohol consumption. Two crime indicators which are 100% attributable are the offences of drunkenness and drink driving. It should be noted that changes in police practice as well as broader social norms may affect these indicators over time (for example, a change in legislation to enable random breath testing or change in acceptability of drink driving). Time trends for these two offences are reported from 2000-2009, taken from the Recorded Crime in Scotland statistical bulletin. 

Alcohol is reported as a known factor in homicides. Annual figures from 2000 are given, taken from Homicides in Scotland.

The Scottish Crime and Justice Survey and the Prisoners Survey both regularly collect self report information on aspects of alcohol and crime. The Scottish Crime and Justice Survey publishes information on victims whose criminal incident involved a perpetrator under the influence of alcohol. It should be noted that this indicator is based on the perception of the victim rather than any objective measurement. The annual Scottish Prisoner Survey provides self-reported data on proportions of prisoners who were drunk at the time of their offence (data from 2005).

Another key indicator is the number of probation orders with alcohol treatment/education as a requirement. This indicator may be subject to other drivers of change such as capacity of alcohol treatment services to which offenders may be referred for an order requirement. Trends from 2000 are described, with data drawn from the Criminal Justice and Social Work Statistics.

**Consumption and Harm Modelling**
The relationship between key indicators of alcohol-related hospital discharge rates and mortality rates (all alcohol-related conditions and Alcoholic Liver Disease) and alcohol consumption (as measured by per capita consumption of pure alcohol based on alcohol sales data) was explored using auto-regression modelling. This statistical method assessed the direction and strength of the relationship between the indicators and alcohol consumption for Scotland. The aim was to assess the robustness of these models as a basis for on-going assessment of the relationship between consumption and alcohol-related harms.

**Results**

**Alcohol-Related Acute Hospital Discharges**
In Scotland for 2009/10, the alcohol-related acute hospital discharge rate (European Age Standardised Rate or EASR) was 709/100,000 population, with rates for men more than double those for women (1035/100,000 population and 407/100,000 population respectively). Rates were highest in the 45-54 age group (1,249/100,000 population).
Alcohol-related acute hospital discharge rates have more than quadrupled since the early 1980’s (from 167/100,000 population in 1982/83). Over this time, rates for men rose by more than those for women (by a factor of 4.4 compared to 3.9). The 55-64 age group showed the greatest increase in rates over time with a near five-fold increase. Overall, rates have fallen slightly in the last two years though this cannot yet be said to be an established trend. The fall is seen for both men and women and across all age groups (Table 8.1 and Figure 8.1).

Figure 8.1  General acute inpatient discharge rates (EASR) with an alcohol-related diagnosis in any position, by gender, 1982/83 - 2009/10

In 2000/01, alcohol-related discharge rates in the most deprived quintile (as measured by the Scottish Index of Multiple Deprivation (SIMD)) was nearly seven times (6.8) higher than in the least deprived quintile (1,401/100,000 population compared with 205/100,000 population respectively). By 2009/10, this difference was 7.5 times greater (1,608/100,000 population compared with 214/100,000 population) with rates having risen much more in the more deprived quintiles (Table 8.2 and Figure 8.2).
In 2009/10 acute hospital discharge rates for Alcoholic Liver Disease were 118/100,000 population. Rates for men were double those for women (162/100,000 population compared with 78/100,000 population). Rates were highest in the 55-64 age category (313/100,000 population). Since 1982/83, overall rates have risen more than five fold (from 23/100,000 population) with rates for women rising slightly more than those for men (5.7 times compared to 5.0) from 14/100,000 population for women and 32/100,000 population for men. Overall, rates for Alcoholic Liver Disease have fallen slightly in the last two years although this fall has only been seen for men, with rates for women continuing to rise. Rates fell across all age groups, excepting the 35-44 year and 55-64 year groups (Table 8.3 and Figure 8.3).

In 2009/10, acute hospital discharge rates for Alcohol Psychosis were 94/100,000 population. Rates for men were nearly four times greater than for women (152/100,000 population compared to 39/100,000 population). Rates were highest in the 45-54 age group (207/100,000 population). From 1982/83, overall rates for Alcohol Psychosis rose ten-fold (from 9/100,000 population). The rates of increase were similar for both men and women (from 15/100,000 population and 4/100,000 respectively). Although rates in 2009/10 for men showed a slight fall from the preceding year, this was not the case for women. For both sexes combined, rates in the age groups 35-44 years and 45-54 years have shown slight rises in the last year (Table 8.4 and Figure 8.3).
Adverse alcohol-related health consequences for children
In 2008, the SALSUS survey reported that among 13 and 15 year old Scottish schoolchildren, 66% reported having ever drunk alcohol. Of these, 33.8% had vomited; 5.5% had an injury that needed to be seen by a doctor; 3.9% had visited an A&E department and 2.8% had been admitted to hospital overnight. Trends over time (from 2002) show a slight fall in percentage of those reporting vomiting (from 40.8%); similar proportions for those with an injury needing seen by a doctor (from 5.2%); a slight rise in those visiting an A&E department (from 2.9%) and little change in those having been admitted to hospital (from 2.2%) (data not shown).

Alcohol-Related Deaths
In Scotland in 2009, the alcohol-related mortality rate was 22/100,000 population. Rates for men were double those for women (30/100,000 population compared to 15/100,000 population). Rates were highest in the 55-64 age group (60/100,000 population). Overall, rates have nearly trebled since 1982 (from 8/100,000 population) with similar rises in rates for both men and women (from 11/100,000 population and 5/100,000 population respectively). Rates relatively increased the most in younger age groups (15-24 years and 25-34 years) though numbers in these age groups are small (data not shown). Overall rates have fallen from a peak in 2003. Rates for men have fallen by 26% from a peak in 2003 whereas rates for women have fallen by 16% from a peak in 2006. Rates have fallen in all age groups in the past 5 years with the exception of the 15-24 year age group (although caution should be used in interpretation given small numbers) (Table 8.4 and Figure 8.4).
In 2001 alcohol-related mortality rates in the most deprived SIMD category were over 5 times higher than in the least deprived category (56/100,000 population compared to 10/100,000 population). By 2009, this difference was 6-fold (48/100,000 population compared to 7/100,000 population) despite a fall in rates in each quintile. There was no distinct gradient for percentage falls across the deprivation quintiles between 2001 and 2009 but rates fell by 23% in the least deprived quintile compared to a 13% fall in the most deprived quintile (Table 8.6 and Figure 8.5).
In 2009, mortality rates for Alcoholic Liver Disease were 14/100,000 population. Rates for men were over double those for women (19/100,000 population compared to 10/100,000 population). Rates were highest in the 55-64 age group (39/100,000 population). Overall, Alcoholic Liver Disease mortality rates had more than quadrupled since 1982 (from 3/100,000 population). Mortality rates for women had risen more than five times (from 2/100,000 population) whereas rates for men had risen by nearly four times (from 5/100,000 population). Overall, mortality rates have fallen from a peak in 2006. Mortality rates for men have fallen by 26% from a peak in 2003 whereas rates for women continue to fluctuate and fell by 17% from 2005. Rates are generally falling across all age groups although the rate of decrease is less in younger age groups (Table 8.5 and Figure 8.6).
In 2009 in England & Wales, the alcohol-related mortality rate for men was 16/100,000 population, double those for women (8/100,000 population). Rates for men have doubled since 1991 (from 8/100,000 population), with a smaller rise for women (from 5/100,000 population). Rates were highest in the middle year age groups for both men and women (data not shown). In 2009, rates for both men and women fell slightly from the previous year (from 17/100,000 population and 8/100,000 population respectively) although this is not an established trend (Figure 8.7).

In 2009, alcohol-related mortality rates for men in Scotland were nearly double those for men in England & Wales (30/100,000 population compared to 16/100,000 population). A similar pattern was seen for women, with alcohol-related mortality rates for women in Scotland almost double those for women in England & Wales (15/100,000 population compared to 8/100,000 population). Mortality rates for women in Scotland are now marginally less than those for men in England & Wales, although they have been higher in recent years (Figure 8.7).
Alcohol and social harm
Over the past decade, rates of the offences of drink driving and drunkenness have followed a similar pattern, with rates remaining more or less constant until a slight fall in recent years (Figure 8.8).

Source: Recorded Crime in Scotland, Scottish Government
In 2009/10, alcohol was a known factor in more than two thirds of homicides (69%) where the drink/drug status was known. This proportion has remained relatively stable over the last decade (Figure 8.9).

Figure 8.9: Alcohol status (where known) of those accused of homicide, Scotland 2000/01 to 2009/10

Source: Homicides in Scotland, Scottish Government

In 2009, 50% of prisoners claimed they were drunk at the time of their offence. This has risen steadily from 40% in 2005 when reporting began (data not shown).

In 2008/09, nearly 1 in 10 (9.9%) probation orders had alcohol treatment/education as a condition. Over the last decade this proportion has increased from 6.8% in 1999/00 (data not shown).

The 2009/10 Scottish Crime and Justice Survey reported that in two thirds (62%) of incidents of violent crime, victims reported that they believed their attacker was under the influence of alcohol. This was more likely for incidents involving male than female victims (69% compared with 48%). This also varied by age with younger victims more likely to believe their attacker under the influence of alcohol (68% of 16-24 year olds compared with 43% of over 45s). The proportion of incidents with victims who were under the influence of alcohol was less than for incidents involving offenders under the influence but showed a similar age pattern, with higher proportions in younger age groups (Figure 8.10).
In 2008, the SALSUS reported that, of children who had ever drunk alcohol, 33.5% had had an argument; 20.8% had been in trouble with the police; 17.2% had been in a fight and 10.5% had stayed off school. There has been little change in these proportions over time (data not shown).

The Relationship between Alcohol Consumption and Health Harm

After exploring the use of auto regression modelling, it was concluded that insufficient years of data (data points) were available to produce adequately robust models. The data collected between the years 2001 and 2009 produced 8 data points to put into the regression model. A minimum of 40 data points would be required to produce a reliable model using the recommended Box Jenkins time trend analysis. While the model can be created with only 8 data points the power it has to detect subtle changes is minimal. Moreover there is a known lag time from the changes in consumption of alcohol to morbidity and mortality. When these lag terms are introduced into the model the number of data points is reduced further. As more data become available, either through future years or more frequent reporting, this approach will be re-visited for MESAS.

Discussion

A number of key indicators show that alcohol-related morbidity and mortality in Scotland have risen considerably over the past thirty years, for example with an almost three-fold rise in alcohol-related mortality rates and a four fold rise in alcohol-related hospital discharge rates. This has coincided with a rise in alcohol consumption. In recent years, these rising trends in alcohol-related harm appear to be levelling off or indeed falling, although levels of harm remain high. This pattern
has mirrored some indicators which show a levelling of alcohol consumption (such as from alcohol sales data). This lends support to wider international evidence of a direct relationship with a population’s alcohol consumption and levels of alcohol-related harm.\textsuperscript{21}

Consistently over the past thirty years, rates of alcohol-related harm have been greater among men than women, with male morbidity and mortality rates being generally two times higher. Although alcohol-related mortality rates have fallen for both men and women in recent years, they are falling more slowly for women. Alcohol-related hospital discharge rates for both men and women are beginning to show early signs of a fall although a clear trend has yet to be established. However, hospital discharge rates for Alcoholic Liver Disease for women have continued to rise in contrast to those for men and the fall in mortality rates from this diagnosis is less so for women than men. Although hospital discharge rates for Alcoholic Psychosis for men are markedly higher than for women (by a factor of four), discharge rates for men are beginning to fall whereas those for women continue to rise. This merits further investigation (such as analysis by deprivation) and close monitoring in forthcoming years.

For all alcohol-related hospital discharges and deaths overall, rates are highest in the middle year groups (45-54 and 55-64 years). For hospital discharges, these age groups have also shown the greatest relative rise in rates over time. By contrast, death rates have increased the most in the younger age groups (15-24 years and 25-34 years). Overall mortality rates for Alcoholic Liver Disease have shown the greatest relative rise in the 45-54 year age group. Although overall mortality rates for Alcoholic Liver Disease have been falling since 2006, rates in the 25-34 year age group have risen slightly, in contrast to all other age groups. This may reflect previous years of high alcohol consumption levels in younger people. The pattern in this young age group of Alcoholic Liver Disease is of particular concern as this disease is the consequence of many years of heavy drinking. It will be important to continue to monitor alcohol-related harm by age in future reporting.

Alcohol-related harm is disproportionately experienced by those from more deprived areas for both morbidity and mortality, differences which are not reflected in self-reported consumption patterns. Over the past decade the gap in alcohol-related harm between the most and least deprived quintiles has widened. Hospital discharge rates have had the greatest relative rise in the most deprived quintile. Although alcohol-related mortality rates have been falling in recent years, the rate of fall was less in the most deprived quintile. Thus, improvements in population health may occur at the same time as a widening of inequalities within the population.

Alcohol-related mortality rates in Scotland are double those in England & Wales, with rates for men and women in Scotland having risen faster than in England & Wales. The difference in harm may be at least partially explained by differences in alcohol consumption levels. Of note is that double the amount of spirits is consumed in Scotland compared to England & Wales, a finding which may merit further investigation. The relationship between alcohol consumption and harm is
less convincing with regard to England & Wales, where falling alcohol consumption has not shown an associated fall in alcohol-related mortality in recent years.

The proportion of schoolchildren (13 and 15 year olds) self-reporting drinking alcohol in the previous week has fallen in recent years although there are no long term trends for levels of consumption of those who drink. Concurrent trends in adverse health related consequences have generally shown little change.

It is more difficult to be precise about the association between the increase in alcohol consumption in Scotland and wider harms to society. Although alcohol is a contributory factor in many crimes, there is no standardised approach to measurement of the proportion of offences due to alcohol. Additionally, there is less information available to track longer term trends, particularly over the period when alcohol consumption and other alcohol-related harm indicators were rising most rapidly (in the 1980s and 1990s).

The two alcohol-specific offences of drink driving and drunkenness have fallen slightly over the past ten years. However, these two indicators are subject to changing policy and practice, for example regarding the decision not to arrest someone who is drunk, or to charge them with another offence such as breach of the peace. Homicides, whilst rare, are accurately reported and alcohol status, where known, has been a factor in almost two thirds of cases consistently over the last decade. In incidents of violent crime, two thirds of victims perceived the perpetrator to be under the influence of alcohol at the time of the offence, with higher proportions in younger age groups (those most likely to consume alcohol and to excess). There is some evidence for a rise in alcohol-related offending from self reports by prisoners, who report an increase in being drunk at the time of their offence. By contrast, there has been little change in wider adverse social consequences for children in the past eight years.

It would appear that as alcohol consumption has risen in Scotland, so has alcohol-related harm. As consumption in Scotland appears to be flattening, health harm indicators are similarly beginning to show downward trends. However, levels of harm remain unacceptably high. Moreover, in certain sub-groups of the population alcohol-related harm appears not to be improving as rapidly for some as for others. Indeed, for certain sub-groups it may be worsening. Although alcohol sales data suggest that alcohol consumption levels for Scotland are 21% higher than those in England & Wales, alcohol-related mortality rates for both men and women are double those in England & Wales. Possible explanatory factors might include type of beverage; differing patterns of drinking; co-morbidities and sub-groups of very heavy drinkers. Future monitoring through MESAS and routine statistics alongside further epidemiological investigations should help to explain these differences.
9. DISCUSSION

Introduction

This report set out to establish the baseline for monitoring and evaluating Scotland’s alcohol strategy, against which success or otherwise will be judged in the coming years. Through developing a Theory of Change, the report has postulated what outcomes are expected to change and why, identified some of the risks to this Theory of Change, and outlined the plan for evaluating the effects of the strategy. For three of the main outcomes of interest (affordability, consumption and harms) a description of the data sources, indicators and the baseline against which progress will be assessed has been presented. Subsequent MESAS reports will establish a baseline for the remaining main outcomes. The baseline presented has some implications for:

1) The Theory of Change
2) The evaluation

Implications for the Theory of Change

The Affordability → Consumption relationship

This analysis has described how the affordability of alcohol as measured by the Affordability of Alcohol Index (AAI) increased in the UK. This increase in affordability was matched by increased per capita consumption in the UK (HMRC figures) and GB (Nielsen/CGA sales figures) and is consistent with the evidence regarding the link between affordability and consumption. Since 2004/05, the trends in UK affordability and UK sales have diverged as sales declined despite a continued increase in affordability (Figure 9.1).

Figure 9.1: Trends in affordability and alcohol clearances for sale in UK 1987-2009

Sources: British Beer and Pub Association86; HM Revenue and Customs
However, the UK sales trend masks differences between countries, with only England & Wales exhibiting declining sales whilst sales in Scotland have stabilised. This means that, in all parts of the UK, increasing alcohol affordability has not been associated with increased alcohol sales in recent years. Two possible explanations for this are:

1. There are limitations in the current measure of affordability which mean that it is not accurately measuring recent affordability trends
2. Other drivers of consumption have exerted a stronger influence than affordability in recent years

As described in Chapter 7, Seabrook (2010) has recently raised the possibility that the current measure of affordability has limitations and has proposed a new method for estimating alcohol affordability at UK level. Data based on this method suggest that UK alcohol affordability has fallen since 2003, consistent with the decline in UK consumption in recent years. MESAS will contribute to and consider any subsequent debate on the suitability of the revised method and apply any revisions to future affordability calculations accordingly.

A further methodological limitation highlighted by this analysis concerns the use of a UK measure of alcohol affordability when there may be variation by country in the components of the calculation. While the absence of country-specific price indices means that it has not been possible to determine the affordability trend for Scotland, the analysis shows that since 2000 Scotland has seen a slower growth in the average sales price of alcohol drinks and, since 2005, a faster per capita income growth compared to England. This suggests that the affordability of alcohol may have been increasing more quickly in Scotland than in England. The differences in growth in average prices and income are small and may not be important, but they are consistent with the evidence that per capita sales of pure alcohol have fallen in England & Wales since 2005 whereas in Scotland they have shown little change. MESAS will continue to study this relationship.

The analysis presented also highlights a further potential limitation of the current AAI in that it does not take account of drink strength. Whilst analysis of the Neilsen/CGA sales data suggests that that the average price of pure alcohol has increased more slowly than the average price of alcoholic drinks (natural volumes), this is largely due to changes in the pattern of alcohol sales with a substantial shift from beer to wine. The effect of changing strength of particular drinks categories cannot be assessed with the Neilsen/CGA data because the conversion factors may not fully reflect the changes in the average strength of beer and wine. Both have increased since 1994, which mean that both the AAI and the average price from the sales data may underestimate the increase in affordability of alcohol, the former by assuming that the product consumed has remained unchanged, the latter by underestimating the units consumed, and therefore overestimating the growth in average price per unit.

While it is possible that methodological limitations contribute to the apparent diverging relationship between affordability and consumption, it is important to remember that affordability is only one factor affecting levels of alcohol consumption. The evidence base suggests that availability and social norms also
exert an influence, and this is reflected in the postulated Theory of Change. Given
the multitude of influences, there is always the possibility that the individual
relationships within the Theory of Change do not behave as predicted. It is to be
expected that the price relationship will at times be moderated by the other key
drivers of consumption, namely physical availability and social norms, and this may
be particularly true when affordability is high. In the real world, none of these
relationships are constant and all will influence each other. This is why Scotland’s
alcohol strategy contains action on a number of strands. Future MESAS reports
will consider the baseline trends for availability and attitudes/social norms and then
monitor these over time to contribute to the understanding of how the interactions
may impact on consumption.

The Consumption → Harm relationship
The dramatic increase in morbidity and mortality which occurred in the 1990s
followed a rise in population consumption in the UK as a whole, as measured by
HMRC clearances. Estimates of alcohol sales suggest that per capita
consumption of pure alcohol in Scotland has been notably higher than England &
Wales throughout this period. Alcohol-related morbidity and mortality in Scotland
have also been consistently higher than in England & Wales. This is consistent
with evidence from elsewhere that suggests that as a population’s average
consumption rises, so does its level of alcohol-related harm. The evidence that
rates of mortality and morbidity have stabilised in Scotland and may be beginning
to fall is consistent with sales data suggesting that per capita consumption has
stabilised in recent years. However, while the trend in harms is at least partially
consistent with the trend in alcohol sales, the different relationships between
consumption and harms in Scotland and England & Wales suggest that harms are
not fully explained by per capita estimates of consumption. The evaluation will help
gain a better understanding of the time-lag between reduced population alcohol
consumption and changes in population levels of harm, which in turn will help
evaluate the impact of the strategy. Drinking preference, co-morbidity and/or the
presence of other lifestyle, socio-economic or genetic risk factors may be important
in understanding the consumption/harm relationship. The purpose of MESAS is to
evaluate Scotland’s alcohol strategy and in doing so contribute to the
understanding of the inter-relationship between these factors.

Implications for the evaluation
Some of the difficulties inherent in monitoring and evaluating Scotland’s alcohol
strategy were explored in Chapter 5. Having described the baseline it is clear that
the recent trends are neither clear nor consistent and this will provide an additional
difficulty when interpreting future trends.

There are multiple indicators of alcohol consumption available and all provide
different absolute values for consumption and in some cases suggest divergent
trends. A new method for assessing affordability has been proposed which, as
discussed above, provides a different interpretation of the relationship between
affordability and consumption in recent years. The measures for health harm are
relatively clear. Routine data on all hospital discharges and deaths, coded by
cause, have been consistently collected and collated for a number of years
providing good indicators and historical trends of alcohol-related morbidity and
mortality. However, there appears to be a recent divergence in trend between Scotland and England & Wales. While the rate of alcohol-related deaths in Scotland is still historically high, the dramatic increase that started in the 1990s has stabilised and is showing evidence of a reduction for men. Rates are lower in England & Wales, and the increase during the 1990s more moderate, but to date there is no sustained evidence of a similar change in trend. Determining robust indicators of alcohol-related social harm is more problematic due to lack of data or consistency in collection methods and there are limited opportunities for comparison over time or with England & Wales.

This report demonstrates that consumption and harm have increased in recent decades and provides important evidence on the scale of the problem. It sets a baseline for affordability, consumption and alcohol-related harm against which to measure the impact of Scotland’s alcohol strategy. Given their importance in the Theory of Change, the baselines for availability, attitudes/social norms and the wider socio-economic factors that are likely to affect alcohol consumption will be explored in subsequent reports. Future reports will also provide an assessment of the implementation of the key interventions and an update on trends in outcomes. By considering the balance of accumulating evidence and its implications there will be an opportunity to regularly re-assess and refine the initial Theory of Change as new evidence and data become available. Future analysis of the relationships between outcomes will potentially provide new insights to be explored in further research. Over time, this will build into an integrated appraisal of the contribution that Scotland’s alcohol strategy is having on observed changes in alcohol consumption and alcohol-related harms.
REFERENCES

All web links were verified as working on 04.03.2011


21 Norstrom, T. Per capita consumption and all-cause mortality in 14 European countries. Addiction. 2001; 96 (Supplement 1), S113-S128

22 Figures supplied by HMRC


Available from the UK data archive www.data-archive.ac.uk/


NHS Health Scotland analysis of data on Students in Higher Education at Scottish Institutions. Available from: www.scotland.gov.uk/Publications/2010/03/18144043/0


Mäkelä P, Paljärvi T. Do consequences of a given pattern of drinking vary by socioeconomic status? A mortality and hospitalisation follow-up for alcohol-


70 Oguz S, Knight J. Regional economic indicators with a focus on gross disposable household income. Economic and Labour Market Review, May 2010.


Scottish Adolescent Lifestyle and Substance Use Survey, ISD Scotland
http://www.isdscotland.org/isd/4872.html
http://www.drugmisuse.isdscotland.org/publications/abstracts/salsus.htm

Statistical Bulletin: Crime and Justice Series, Recorded Crime in Scotland,
http://www.drugmisuse.isdscotland.org/publications/abstracts/recorded_crime09_10.htm


http://www.scotland.gov.uk/News/Releases/2010/02/09103846
