ScotPHO Alcohol and Drugs Profiles 2013

NHS Board and ADP-level

(release September 2013)

Technical Report

Introduction

The Alcohol and Drugs Profiles are produced by Information Services Division (ISD) and published by Scottish Public Health Observatory (ScotPHO) using a new purpose-built on-line profiling tool. These profiles are part of the series of specialist profiles covering a range of public health topics, for example, Smoking and Diabetes. The On-line Profiling Tool (OPT) is designed to replace previous paper reports and Excel-based outputs, such as the Health & Wellbeing profiles 2010, allowing more flexibility for users and making it easier to keep the information in the tool up-to-date.

The first release of the Alcohol and Drugs Profiles in September 2013 contains 25 indicators for Alcohol and 16 indicators for Drugs. The indicators are grouped in the seven Core Outcome areas (Health; Prevalence; Recovery; Children affected by Parent's Substance Misuse/Families; Community Safety; Local Environment and Services) that Alcohol and Drug Partnerships (ADPs) use to track progress in delivering the core outcomes agreed in their local delivery plans, plus an additional Data Quality grouping (for the Drugs profile only). This document provides technical information to supplement the information provided in the Overview Report that was released alongside the Profiles. It includes extra detail on the indicators, their derivation, descriptions of statistics and methods and caveats about the information.

Interpreting the spine charts

Spine charts are commonly used in public health profiles to illustrate graphically a range of complex information in a way which it is intended will be quickly and easily understood. The Spine Chart view in this tool allows selection of the time period and of the comparator. The chart shows all the indicators against a comparator, which by default is the Scottish mean value but can be changed to another NHS Board or ADP. The "period" column shows the latest year for which data is available depending on the selected time period. The "number" column shows the numerator used to calculate the indicator value (which is normally a rate or percentage). The indicator value is shown in the "measure" column and what type of indicator it is in the column "type". The right-hand column shows the value of the comparator; depending on the comparator used this will be the national average, or another ADP or Board value.

The "number" column in the spine chart shows whether any data for the area are suppressed due to disclosure, or there simply are no data available. Throughout these profiles values (numerators) lower than 5 are suppressed.

- Suppressed data may still show as a point in the spine chart (e.g. when the number is disclosive but the rate isn't, for example when the rate is age-sex standardised); hovering over the point will show up a 'suppressed' box. However, if suppressed data was not submitted to the tool no point will be shown at all. In both cases, the grey bar will still be charted. Details of our suppression rules are given in the technical report.

- If data is unavailable because it was not collected at the particular geographical level, this is shown in the Definition box (available by hovering over the "i" button).

- If data was unavailable because it wasn't collected in that particular area, despite being collected in other areas at the same geographical level, this will typically be shown as 'n/a' in

the Number field and blank in the Measure field, but the grey bar showing values for the areas for which data are available is still charted.

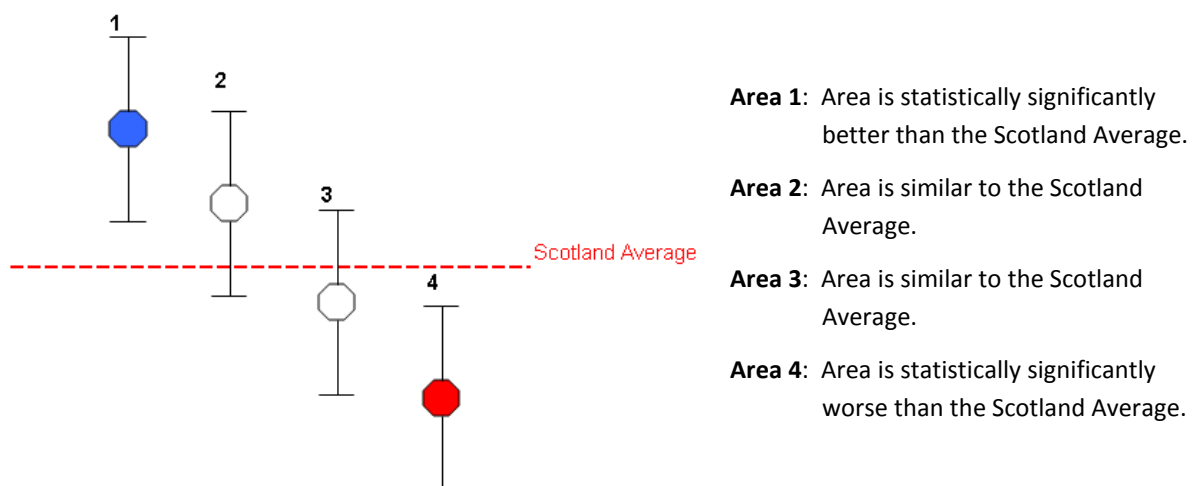Note that if the measure was zero, it will be shown as such in the tool.

The grey bars on the spine chart show the range for all areas in Scotland for which data are available at that area level (irrespective of the comparator used). The dark grey area (between the 25th and 75th percentile) includes the 50% of the ADP (or Board) values that are closest to the mean, whereas both light and dark grey areas combined (between the 5th and 95th percentile) show the 90% of the measurements closest to the mean. If the amount of light grey shading is much bigger at one side than at the other side, then the data are skewed. For example, the rates may be much more widely spaced at the higher ('worse') end than the lower ('better') end. Note that the bars are scaled for each indicator individually to give the clearest representation in the chart.

The comparator is shown as a red line in the spine chart. A modified 'traffic light' system has been applied to identify areas which are statistically significantly 'better' (blue) or 'worse' (red) than the Scottish average, or not significantly different from the Scottish average (white). Where an area is significantly different from the comparator, but no judgement as to 'better' or 'worse' is appropriate (as this would require a range of local factors to be taken into account) the marker is shown as orange. If it was not possible to calculate significance the marker in the spine chart is shown as a triangle rather than as a dot. The 95% level of significance is used throughout.

Statistical significance of differences

When comparing the indicator value of a particular area with the Scottish average, it will be shown as significantly 'better' or 'worse' if the 95% confidence interval of the indicator value does not include the point value of the Scottish average; i.e. the Scotland value is treated as an exact reference value. However, if the indicator value of a particular area is compared to that of another area at the same geographical level (e.g. another ADP if looking at ADP profiles, or another Board if looking at NHS Board profiles), the difference is regarded as significant if the 95% confidence intervals of both areas do not overlap.

The example below shows how significance of the difference compared to the Scottish average is assessed:

Area 1: Area is statistically significantly better than the Scotland Average.

Area 2: Area is similar to the Scotland Average.

Area 3: Area is similar to the Scotland Average.

Area 4: Area is statistically significantly worse than the Scotland Average.

When the comparator is changed from the Scotland Average to another area, the comparator is no longer treated as an exact reference value but instead the confidence intervals are compared:
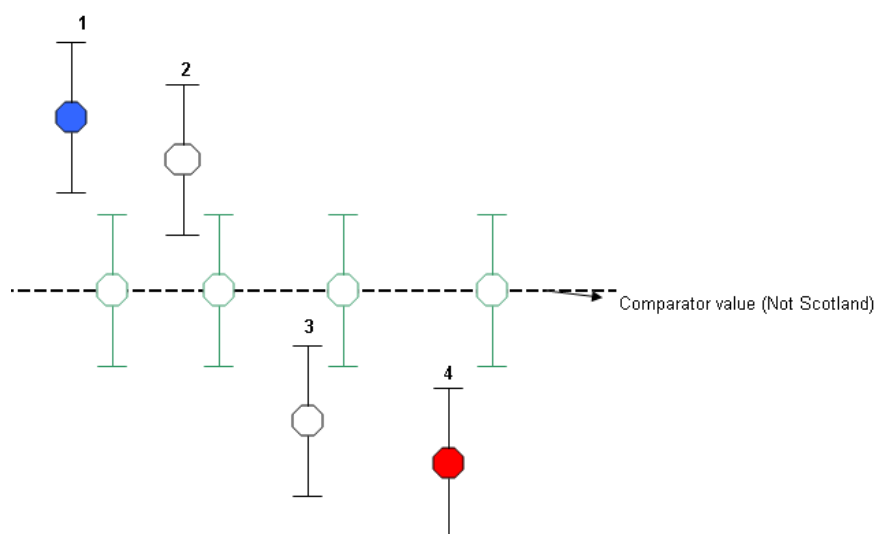
Area 1: Area is statistically significantly better than the Comparator value.
Area 2: Area is similar to the Comparator value.
Area 3: Area is similar to the Comparator value.
Area 4: Area is statistically significantly worse than the Comparator value.

It is possible for two areas to have the same value for a particular indicator, but for this to show as statistically significantly 'better' or 'worse' than the comparator for one and not statistically significantly different from the comparator for the other. This is because statistical significance is calculated on the basis of population size and the number of records to which the value relates, and this may be different for the two areas.

Calculating confidence intervals

A confidence interval is a range of values that is describes the uncertainty around a point estimate of a quantity, for example a mortality rate. In the case of indicators based on a sample of the population, uncertainty arises from random differences between the sample and the population itself. The stated value should therefore be considered as only an estimate of the true or 'underlying' value. Confidence intervals quantify the uncertainty in this estimate and, generally speaking, describe how different the point estimate could have been if the underlying conditions stayed the same, but chance had led to a different set of data. The wider the confidence interval, the greater the uncertainty of the estimate. Confidence intervals are given with a stated probability level; in the case of these profiles a 95% probability level has been used. This means that if we were to re-sample the data many times, we expect 95% of the resulting values to be within the lower and upper limits of the confidence interval.

Confidence intervals are calculated in different ways depending on the distribution of the indicator. Proportions are typically assumed to have a binomial distribution, because individuals counted to determine the proportion are each either 'in' or 'out'. Following the recommendations of the

Association of Public Health Observatories (APHO) Technical Briefing ("Commonly used public health statistics and their confidence intervals"), we have used the Wilson Score method[1], which has been evaluated and recommended by Newcombe and Altman[2]. The briefing states that it can be used with any data values and does not fail to give an interval when the numerator count, and therefore the proportion, is zero.

Some of the indicators in these profiles are rates; for example the number of hospital discharges per 100,000 people in Scotland. There is no explicit upper limit to a rate (as opposed to a proportion that can never be larger than 100%), although we often would expect most values to be clustered to the left of the average. Provided the rate is low and the denominator 'at risk' (for example, the population in Scotland) is large, the variability in the number of observations (eg discharges) is described by the Poisson distribution. The abovementioned APHO Technical Briefing recommends Byar's approximation as the preferred method of calculating confidence intervals in this case, because it gives very accurate approximations to the exact Poisson probabilities even for small counts[3].

A specific type of rate is the directly (age-sex) standardised rate. This is a weighted sum of the independent age-sex specific rates, and hence its variance is a weighted sum of the variances of each of those age-sex specific rates. Standardisation is carried out to make the rates comparable to other populations that may have a different make-up and in these profiles standardisation is to the European standard population. The APHO Technical Briefing recommends the method described by Dobson[4] for calculating appropriate confidence intervals for standardised rates. In this method the exact interval is found for the crude count (as described above) and then weighted and scaled to give the interval for the directly standardised rate. The weight used is the ratio of the standard error of the directly standardised rate to the standard error of the crude count.

Geographies

The September 2013 release of the Alcohol and Drugs Profiles includes indicators for the 14 NHS Boards and for the 30 ADP areas, although not all indicators can be shown at both geographical levels. ADP areas were taken to be equivalent to council (local authority (LA)) areas, with the exception of Lanarkshire ADP and Mid & East Lothian DAP (MELDAP), which were defined as aggregates of two council areas (North Lanarkshire LA and South Lanarkshire LA; and Midlothian LA and East Lothian LA, respectively). Where possible, data was collected for exact Board and ADP areas defined by patient home postcode. This means that ADP areas do not necessarily nest within NHS Board areas because currently the borders of some Board areas (in particular NHS Glasgow and NHS Lanarkshire) do not align with council area borders. In April 2014 the NHS Board areas will be re-defined so that council and ADP areas will nest within Boards. For some indicators an alternative approach had to be used though; for waiting times data, for example, Board areas are assumed to be

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[1] Wilson EB. Probable inference, the law of succession, and statistical inference. J Am Stat Assoc 1927;22:209-12

[2] Newcombe RG. Two-sided confidence intervals for the single proportion: comparison of seven methods. Stat Med 1998; 17:857-72.
Newcombe RG, Altman DG. Proportions and their differences. In Altman DG et al. (eds). Statistics with confidence (2nd edn). London: BMJ Books; 2000:46-8.

[3] Breslow NE, Day NE. Statistical methods in cancer research, volume II: The design and analysis of cohort studies. Lyon: International Agency for Research on Cancer, World Health Organization; 1987: 69.

[4] Dobson A et al. Confidence intervals for weighted sums of Poisson parameters. Stat Med 1991; 10:457-62.

aggregates of ADP areas. Currently we have only been able to present information for the Glasgow City ADP, but because of its large size it is intended to provide data for the three sectors within the ADP - Glasgow North East, Glasgow North West and Glasgow South - in a future update.

Details on individual indicators

In this section more background information is provided on the source of the indicators, how these are derived and anything that should be kept in mind when interpreting the results. If the same data set is used as source for both an alcohol and a drug indicator, then these are grouped together in this section, because consequently the issues are typically the same. Otherwise the list starts with alcohol indicators followed by the drug indicators, broadly in the same order as shown in the Profiles.

Alcohol– and Drug-related hospital discharges

The indicator shown here is the European age-standardised rate (EASR) of general acute inpatient & day case discharges with (depending on the indicator) either an alcohol- or drug-related diagnosis (in any position) for Scotland. Standardised rates are used to allow comparisons across geographical areas by controlling for differences in the age structure of local populations. They give the number of discharges (per 100,000 in this case) that would occur in a standard population if that population had the age-specific rates of the area being investigated. The rates are standardised to the European Standard population (ESP) as defined in 1976. The ESP defines the size of each age group assuming equal distribution over both genders.

Hospital activity data are collected across the NHS in Scotland and are based on nationally available information routinely drawn from hospital administrative systems across the country. The principal data source for general acute inpatient & day case discharges is the SMR01 (Scottish Morbidity Record 01) dataset. SMR01 is an episode based patient record relating to all inpatient and day cases discharged from specialities other than mental health, maternity, neonatal and geriatric long stay specialities in NHS Scotland. A record is generated for each inpatient and day case episode, of which there are about 1,200,000 each year. Attendances at Accident and Emergency that do not result in an admission are not included. Each individual patient may have more than one stay and hence the number of people discharged within a year will be less than the total number of discharges. The SMR01 basic data set encompasses patient identification and demographic information, episode management information and general clinical information. Items such as waiting time for inpatient or day case admission and length of stay may be derived from the episode management information. When figures are broken down by geographical area or age the numbers in some categories can be very small, particularly for drugs. In these cases both differences between categories and trends over time should be interpreted with caution because they may be misleading.

Up to six diagnoses are recorded per admission, and episodes with either a main or a supplementary diagnosis of alcohol or drug misuse are included. Alcohol and Drug misuse is recorded using the International Classification of Diseases 10th Revision (ICD10) Codes. The codes used for Alcohol and Drug misuse can be found in Appendix I. Note that some caution is necessary when using these data as alcohol (or drugs) misuse may only be suspected and may not always be recorded by the hospital. The figures presented here are based on all alcohol/drugs-related diagnoses throughout the hospital stay and will reflect prevalence in the catchment area as well as local policy with regard to hospital

admission and discharge. For this indicator the discharge date refers to the end of the patient's continuous hospital stay, which can be made up of a number of records depending if the patient has been transferred from one hospital to another or from one speciality to another during the stay.

Alcohol-related mortality

Similar to the alcohol-related discharges indicator, this indicator is also a European age-standardised rate (EASR). The rates are standardised to the European Standard population (ESP) as defined in 1976. Alcohol-related mortality is extracted from a dataset of all deaths reported to the National Registry of Scotland (formerly General Register Office for Scotland) based on information collected on the medical certificate of cause of death together with any additional information provided subsequently by the certifying doctor. Cases counted for this indicator are these where the 'underlying cause' of death is alcohol, ie the disease or injury which initiated the chain of morbid events leading directly to death. This definition is generally used for reporting high level trends in mortality data for national and international statistics. However, it does not include deaths where an alcohol-related condition was recorded as a contributory factor but was not selected as the underlying cause. The codes included to define alcohol as an underlying cause of death are shown in Appendix II.

Alcohol consumption figures from the Scottish Health Survey

The Scottish Health Survey (SHS) was designed to provide data, at both national and Health Board level, about the population living in private households in Scotland. It began running as a continuous survey in 2008 with each single year of the survey being designed to provide estimates at the national level, and to produce a large enough sample to allow NHS Board analysis every four years. The publication of the 2011 data provided the first opportunity since 2003, to publish results for all fourteen NHS Boards in Scotland. The indicators in these profiles are based on the first four years of continuous data (2008-2011).

The survey used a multi-stage stratified probability sampling design, with data zones (or groups of data zones) selected at the first stage and addresses (delivery points) at the second. Two samples were selected for the survey: a general population (main) sample in which all adults and up to two children were eligible to be interviewed in each household; and a child boost sample in which up to two children were eligible to be interviewed but adults were not. The sample of addresses was selected from the small user Postcode Address File (PAF). This is a list of nearly all the residential addresses in Scotland and is maintained by The Royal Mail. The population surveyed was therefore people living in private households in Scotland. Homeless people, or people living in institutions, which are likely to be older and, on average, in poorer health than those in private households, were not covered. This should be considered when interpreting the survey estimates. The very small proportion of households living at addresses not on PAF (less than 1%) was not covered. More information can be found in the 2011 Report.

The three indicators included in the Alcohol Profiles derived from the SHS are:

- Proportion of individuals drinking above daily/weekly limit
- Proportion of population 'binge' drinking
- Proportion of population problem drinking

The estimates of alcohol consumption used for these indicators are based on self-reported data. However, it is important to note that surveys often obtain lower estimates of consumption than implied by alcohol sales data. The most recently available estimates of alcohol sales in Scotland show that 11.2 litres of pure alcohol per person aged 16 and over were sold in 2011 (the equivalent figure for England and Wales was 9.3 litres; see MESAS report "An update of alcohol sales and price band analyses"). This volume is sufficient for every adult aged 16 and over in Scotland to exceed the weekly recommended maximum consumption for men of 21 units. Although survey estimates are typically lower than sales estimates, surveys can provide information about the social patterning of individuals' alcohol consumption which sales data cannot. For example, the evaluation of the implementation of minimum pricing will use evidence from the SHS to help assess the impact on consumption patterns across different social groups.

Alcohol consumption and illicit drug use figures from SALSUS

The Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS) is a continuation of a long established series of national surveys on smoking, drinking and drug use. These were carried out jointly in Scotland and England between 1982 and 2000, to provide a national picture of young peoples' smoking, drinking, and drug use behaviours within the context of other lifestyle, health and social factors. Since 2002 Scotland has developed its own more tailored survey known as SALSUS. SALSUS measures progress towards Scottish Government targets for smoking and drug use, and the results are used to inform the Scottish Government priority for addressing harmful drinking among young people. In the Alcohol and Drugs Profiles four indicators are derived from SALSUS:

- Percentage of 15-year old pupils drinking on a weekly basis
- Percentage of 15-year old pupils who used illicit drugs in the last month
- Percentage of 15-year old pupils who used illicit drugs in the last year
- Percentage of 15-year old pupils who have ever been offered drugs

SALSUS surveys S2 and S4 pupils (mainly 13 and 15 year olds), with the primary sampling unit being the class. In each selected class, every pupil was invited to participate. All secondary schools (state and independent) in every local authority were eligible to have classes sampled. The pupils completed the questionnaire in class time under examination-style conditions to encourage honest responses. They could choose not to complete all the survey questions, and could stop at any point if they did not wish to continue with the questionnaire, but item non-response was low for most questions.

The accuracy of survey estimates is affected by a number of factors. One of these is the sampling error, which can be calculated using information about the proportion of people giving the response and the number of people in the sample (or sub-sample). The sampling error can be expressed as a confidence interval, which gives a range within which it is fairly certain that the true value lies. Other factors not reflected in the confidence interval include response bias and over or under-reporting, which are difficult to quantify.

The sample design of SALSUS is complex, involving stratification by local authority and school type as well as clustering within schools. Clustering reduces the precision compared with a simple random sample, whereas stratification can increase precision. Weighting can also reduce the precision of estimates. The extent to which precision is modified by the sample design is known as the Design Effect, and the square root of this is referred to as the Design Factor (Deft). If the Deft is larger than

1.0 the confidence interval is wider than it would be with random sampling. Variance calculations for many of the questions in the survey showed the Deft was on average about 1.2 in 2010. This factor has been applied in the confidence interval calculations in the Profiles for the 2010 data as well as for the 2006 data.

Child protection cases with parental alcohol and/or drug use

Child protection aims to protect children from further abuse or neglect where this has already taken place, or to protect children in cases where a likelihood of harm or neglect has been identified. The risk of harm or neglect will be considered at a Child Protection Case Conference. Where a child is believed to be at risk of significant harm, their name will be added to the child protection register. The number of Child Protection Case Conferences is published by reason in the Children's Social Work Statistics 2011-12 (as published in March 2013). The indicators in the Profiles are based on concerns identified at the case conferences of children who were on the child protection register at 31 July 2012, by local authority. The three indicators shown are all numbers of cases expressed as rate per 10,000 population aged under 18:

1. where parental alcohol abuse was recorded;
2. where parental drug misuse was recorded;
3. where parental substance misuse was recorded; this can be either alcohol or drugs or both (and therefore this figure does not equal the sum of the above two indicators).

Anti-social behaviour offences commonly associated with alcohol consumption

A number of anti-social behaviour offences are quite commonly associated with alcohol consumption, and for these Profiles four offences are shown: Serious assault, Common assault, Vandalism, and Breach of the Peace. Rates are reported per 10,000 population, as published in the Scottish Government Recorded Crime in Scotland series. The definition of Breach of the Peace changed in 2011 and therefore consistent figures are only available for 2011/12 and 2012/13; for the other three offences figures are shown for 2009/10 and 2010/11 as well. Note that in Scotland, assault is a common law offence and police forces define an assault as 'serious' when the victim sustains injuries resulting in hospital admission as inpatient, or when the injury is a fracture, internal injury, severe concussion, loss of consciousness, lacerations requiring sutures that may lead to impairment or disfigurement, or any other injury that may lead to impairment or disfigurement. Figures are shown as crude rates per 10,000 population, using the mid-year population estimates.

Perceptions of alcohol and drug abuse in neighbourhood from Scottish Household Survey

The Scottish Household Survey started in 1999 and was set up to provide effective evaluation of policy and development of policy advice based on good quality information on the composition, characteristics, attitudes and behaviour of households and individuals at national and sub-national level. The survey was designed so that the interviews from each quarter would provide results which are representative of Scotland as a whole. Statistically reliable results are available for larger local authorities on an annual basis and for all Local Authorities, regardless of size, every 2 years (up to 2009/2010). From January 2012, a new survey went in to the field which had a substantially restructured sample design but though improvements to efficiency of the survey design it should still be possible to publish LA estimates on an annual basis where analysis permits.

For the two ADPs consisting of two council areas each, the indicator value was calculated by dividing the sum of the back-calculated numerators with the sum of the base values. The confidence interval

was then constructed using the Wilson Score method for proportions based on the back-calculated numerators.

Licenses in force

Licences in force on 31 March 2012 as obtained from [publicly available reports](#) showing annual returns submitted by local authority licensing boards to Scottish Government Justice Analytical Services.

- This information is derived from live management information systems. While the figures are subject to quality assurance processes as far as is possible, they will be subject to the types of errors inherent in any such system and may be subject to on-going revision. Most local authority licensing boards have put in place new IT systems to manage the implementation of the 2005 Act and there may be issues of comparability until a longer run of data becomes available. At this stage, it is difficult to meaningfully compare these figures over time due to changes in the way licences are being administered under current licensing arrangements (for instance, single licences for premises which were previously subject to multiple licences, and registered clubs coming under the responsibility of licensing boards rather than sheriff courts).
- The on licence category includes licences which allowed for both on sales transactions and off sales transactions.
- These figures take into account the revised figures supplied in April 2013 for Argyll & Bute, Glasgow City, and Perth & Kinross for the number of personal licenses in force at 31 March 2012. For Stirling revised figures were supplied for all categories.

Alcohol Brief Interventions delivered as percentage of target

An Alcohol Brief Intervention (ABI) is as a short, evidence-based, structured, and non-confrontational conversation about alcohol consumption. An ABI seeks to motivate and support an individual to think about and plan changes in their drinking behaviour in order to reduce their consumption and their risk of harm. The delivery of ABIs has been a [HEAT standard](#) since 2012/13 and was introduced as an [A4: HEAT target](#) in 2008. To comply with the standard, in 2014/15 NHS Boards and Alcohol and Drug Partnerships (ADPs) are expected to sustain and embed ABIs in the three priority settings (primary care, A&E, antenatal), in accordance with the SIGN74 Guideline. In addition, they are expected to continue to develop delivery of ABIs in wider settings. It is anticipated that 2014-15 will be the final year of the HEAT standard. NHS Boards and ADPs should use this year to fully embed ABI delivery into routine practice. ABIs are intended as an early intervention for those individuals (over the age of 16) who are drinking at hazardous and harmful levels to moderate their level of drinking and thereby reducing their risk of developing more serious alcohol-related problems. The number of ABIs delivered is recorded at NHS Board level, broken down by setting.

The target number of ABIs to be delivered was set based on the number of people expected to be 'at risk', based on an estimated 19% of patients presenting in primary care with (potentially) alcohol-related conditions. Of these, 25% were expected to screen positive (drink at harmful or hazardous level) and should therefore be offered an ABI, and the cumulative target was set to offer 75% of these an ABI by 2010/11 (or 149,449 in the three priority settings over the three years). Given that the target was set to be cumulative, there was no requirement to deliver the ABIs in equal numbers in each year, which needs to be kept in mind when interpreting the trend data. The target was

extended for 2011/12 with a target number to be delivered of 61,081 nationally over the year. This number was kept the same for each of the subsequent years when the target had become a standard. There is some evidence (see MESAS Annual Report of November 2012) that some patients may receive an ABI more than once a year, so figures presented in these Profiles are not equivalent to unique patients.

With the change from HEAT target to HEAT standard, ABI providers were allowed to count ABIs delivered in 'wider settings' (other than the three priority settings) towards the total number as well, as long as the number did not exceed 10% of the total number of ABIs. Because ABIs delivered in wider settings were not previously reported by ISD, the total number of ABIs recorded in 2012/13 is not strictly comparable with these shown for previous years. The indicator in these Profiles is shown as a percentage of ABIs delivered as part of the target number. Given that the target numbers are based on the size of the (adult) population this gives some indication of relative performance of Boards. Because there is no requirement for figures to be returned at lower geographical levels, percentages are shown by NHS Board only.

Alcohol and Drugs Treatment Waiting Times

The Scottish Government set a target that by March 2013, 90% of people who need help with their drug or alcohol problem will wait no longer than three weeks for treatment that supports their recovery. This is one of the national HEAT (Health improvement, Efficiency, Access, Treatment) targets, number A11. This target was achieved in March 2013 and has now become a standard. The indicator shown in these Profiles reflects the non-compliance with the Waiting Times standard as it shows the percentage of clients waiting for more than 3 weeks between referral to a specialist alcohol service and start of treatment.

Figures used in these Profiles are derived from the ISD Drug and Alcohol Treatment Waiting Times Database and are accurate as of 06/08/13. They include only waiting times for clients who have started first treatment (ie for completed waits) and do not include data for the prison population. Data at NHS Board level is based on aggregated council area data and may not reflect the exact population in this board, where board and council boundaries differ. This is thought to be only an issue for Lanarkshire and Greater Glasgow & Clyde. The geographical areas are based on addresses of the treatment providers, and not on the addresses of the patients treated. Patients may opt for treatment in a neighbouring area to where they live, creating increased demand in the neighbouring area. Therefore in some areas service levels may be driven largely by outside demand. In some Alcohol and Drug Partnership (ADP) areas, the impact of a single specialised service – for example, a crisis management centre – may dramatically alter the distribution of waiting times in that ADP.

Percentage of injecting drug users testing positive for Hepatitis C antibodies

The aim of the Needle Exchange Surveillance Initiative (NESI) is to measure and monitor the prevalence of the Hepatitis C virus (HCV) and injecting risk behaviours among people who inject drugs (PWID) in Scotland. It involved a cross-sectional voluntary anonymous survey among people using selected agencies and pharmacies that provide injecting equipment, although these settings may also provide other harm reduction services such as prescribed methadone. Participants completed a short interviewer-administered questionnaire and then provided a voluntary blood spot sample for anonymous testing for HCV antibodies and RNA. The survey covered 11 mainland Scottish NHS Boards and was carried out by the University of the West of Scotland in collaboration with HPS,

the University of Strathclyde and West of Scotland Specialist Virology Centre. The criterion for inclusion in the survey was that someone has ever injected in the past. Note that not all participants in the survey may therefore be current injecting drug users; although the design ensured that approximately 75% to 80% of the sample were current injectors. Therefore in practice the difference in prevalence rates between all, or just current PWID, will be minimal (as can be seen by comparing the two in the 2010 survey). Also, the nature of injecting is very transitional, in that someone who was a 'former' PWID, can quite quickly become a current PWID again.

The NHS Board and local authority area figures will not necessarily reconcile, because NESI is not designed to report at local authority level. To calculate prevalence by local authority a somewhat arbitrary fix was required; an individual in NESI is allocated to a local authority based on the first part of their postcode (ie district). However, a first part postcode may map to multiple local authorities - for example, AB1 postcodes exist in both Aberdeen City and Aberdeenshire. Thus, a NESI respondent with postcode AB1 would be counted in both of these local authorities. Consequently, there is a level of inaccuracy in the local authority prevalence rates, and the sum of all council areas is (much) larger than the total number in the survey. In any case, the precision is also poor, as is shown by the confidence intervals.

Board-level figures shown in these Profiles are derived from published reports. However these did not have confidence intervals as required for the Profiles, so these were calculated using the Wilson Score method. Figures for Highlands and Borders were published as a single figure; therefore these have been replaced by Council area figures sent to ISD by HPS. However, allocation of patients to council areas is unreliable given that only postcode sector is used, and therefore the sum of council areas is (much) larger than the joint Highlands & Borders figure in the Board report. For these two areas the confidence interval is also calculated using the Wilson Score method, to be consistent within geography.

Lanarkshire ADP and MELDAP were calculated from merging South & North Lanarkshire, and Mid & East Lothian council areas, respectively. It is likely that this will mean some double-counting of patients whose postcode sector straddles both areas within the merger. Confidence intervals for ADP-level figures were based on the figures provided by HPS, apart from the two merged areas, for which the Wilson Score method was used.

The Island Boards (Orkney, Shetland and Western Isles) were not included in the survey and hence no figures are available for these either on Board or ADP level.

Prevalence of problem drug use
The prevalence figures are derived from reports published by the University of Glasgow Centre for Drug Misuse Research (based on 2006 data) and by ISD Scotland (based on 2009/10 data) describing the results of a study aiming to provide estimates of the prevalence of problem drug misuse in Scotland. Problem drug use was defined for the purposes of this study as misuse of opiate and/or benzodiazepine. The study used the capture-recapture method and focussed on those aged 15-64 years old. For 2006 the figures by gender were not in the main report but were taken from the Technical Report. This did not report confidence intervals and hence these were calculated using the Wilson Score method. The population size (denominator) required for this was back-calculated from the estimated prevalence percentage and the estimated number of users (numerator). The same approach was used for the ADPs that were not reported in the council area tables, i.e. where ADPs

are mergers of two council areas. The 2009/10 figures by gender were in the main report but again without confidence intervals, so the same approach was used as described above. In 2006 no figures were published for NHS Boards for genders separately.

Rate of maternities recording drug misuse

Because of the small numbers involved, figures shown in these Profiles are aggregates over three years expressed as a rate per 1,000 maternities. The figures exclude home births and births at non-NHS hospitals. A maternity is defined as a pregnancy that results in a live or stillbirth; multiple pregnancies are counted only once. Care should be taken when comparing numbers over time as there has been an improvement in drug misuse recording over the last five years, relating to the recording of drug misuse items becoming mandatory as of April 2011. However, differing levels of data completeness across hospitals is still thought to contribute to the variation between Boards in the rate of maternities recording drug misuse.

Scottish Drug Misuse Database (SDMD) initial completeness

This indicator is calculated as the number of new cases recorded in SDMD divided by the number of new waits recorded in the Drug & Alcohol Treatment Waiting Times database (DATWT). DATWT is generally thought to be more complete because drug treatment waiting times are recorded as part of a HEAT standard. To group the information for this indicator in ADP areas, the centre of treatment as recorded on SDMD is used. Unfortunately the referring centre and the centre where treatment is delivered (rather than recorded) are not recorded on SDMD and patient-level linkage is not possible. Hence linking up the two databases for the purposes of this calculation needs to be done geographically and this can lead to some anomalies. Patients are not necessarily treated by the same centre that records their treatment on SDMD, and neither of these centres are necessarily the same as the centre submitting their wait to the DATWT database. Where numerous 'waiting times' centres in one or more (other) ADP areas refer patients to a single treatment centre (based on knowledge provided by the Data Management team), all the waiting time cases are arbitrarily assigned to the treatment centre that treats the most cases, even if these 'waiting times' centres are in a different ADP area. This will be correct in most cases but there are obvious anomalies that cannot be rectified given the limited information recorded in SDMD. For example some MELDAP centres provide their own waiting times figures to the DATWT database but treatment records are submitted by the central service in Edinburgh, resulting in all their waiting times records to be grouped with the Edinburgh ADP records. This is known to be an issue within the Lothian health board area, but also in the Ayrshire & Arran, Tayside and the Greater Glasgow & Clyde health board area. Therefore, the SDMD completeness percentages by ADP area are likely to be less accurate than these by NHS Board area.

 Note that confidence intervals could not be calculated because the indicator is not a true proportion, so no information is shown on the significance of the differences.

Scottish Drug Misuse Database (SDMD) follow-up completeness

This indicator measures the percentage of patients with an initial assessment recorded in the SDMD who also have a follow-up assessment 10-14 weeks later in the SDMD, so gives an indication of completeness of follow-up data. There was wide variation across the ADPs that may be explained by local knowledge; for example in some ADPs follow-up may not be in the 10-14 week window and therefore their follow-up percentage would appear low. This indicator is not affected by linkage

problems because within SDMD patients can be uniquely identified. There are a number of known issues with SMR25 returns (used to feed into the Scottish Drug Misuse Database), which are explained in more detail in the [Scottish Drug Misuse Database (SDMD) Report on People in Treatment 2011/12](). This report describes very large variation between NHS Boards in 3-month follow-up but also in follow-up at any time. The same large variation is shown in these Profiles.

Appendix I

ICD-10 codes used to count the number of alcohol-related discharges

ICD10 code	Description
F10	Mental & behavioural disorders due to use of alcohol
K70	Alcoholic liver disease
X45	Accidental poisoning by and exposure to alcohol
X65	Intentional self-poisoning by and exposure to alcohol
Y15	Poisoning by and exposure to alcohol undetermined intent
Y90	Evidence of alcohol involvement determined by blood alcohol level
Y91	Evidence of alcohol involvement determined by level intoxication
E24.4	Alcohol induced Pseudo-Cushing's syndrome
E51.2	Wernicke's Encephalopathy
G31.2	Degeneration of nervous system due to alcohol
G62.1	Alcoholic polyneuropathy
G72.1	Alcoholic myopathy
I42.6	Alcoholic cardiomyopathy
K29.2	Alcoholic gastritis
K86.0	Alcohol-induced chronic pancreatitis
O35.4	Maternal care for (suspected) damage to foetus from alcohol
P04.3	Foetus and newborn affected by maternal use of alcohol
Q86.0	Fetal alcohol syndrome (dysmorphic)
R78.0	Finding of alcohol in blood
T51.0	Toxic effect of ethanol
T51.1	Toxic effect of methanol
T51.9	Toxic effect of alcohol, unspecified
Y57.3	Alcohol deterrents
Z50.2	Alcohol rehabilitation
Z71.4	Alcohol abuse counselling and surveillance
Z72.1	Alcohol Use

ICD-10 codes used to count the number of drug-related discharges

ICD-10 Code	Description
F11	Mental and behavioural disorders due to use of opoids
F12	Mental and behavioural disorders due to use of cannabinoids
F13	Mental and behavioural disorders due to use of sedatives or hypnotics
F14	Mental and behavioural disorders due to use of cocaine
F15	Mental and behavioural disorders due to use of other stimulants, including caffeine
F16	Mental and behavioural disorders due to use of hallucinogens
F18	Mental and behavioural disorders due to use of volatile solvents
F19	Mental and behavioural disorders due to multiple drug use and use of other psychoactive substances

Appendix I

Appendix II

ICD-10 codes used to count the number of alcohol-related deaths (underlying cause); as also used by the National Records of Scotland (NRS).

ICD-10 code	Description
F10	Mental & behavioural disorders due to use of alcohol
K70	Alcoholic liver disease
K73	Chronic hepatitis, not elsewhere classified
X45	Accidental poisoning by and exposure to alcohol
X65	Intentional self-poisoning by and exposure to alcohol
Y15	Poisoning by and exposure to alcohol undetermined intent
G31.2	Degeneration of nervous system due to alcohol
G62.1	Alcoholic polyneuropathy
I42.6	Alcoholic cardiomyopathy
K29.2	Alcoholic gastritis
K74.0	Hepatic fibrosis
K74.1	Hepatic sclerosis
K74.2	Hepatic fibrosis with hepatic sclerosis
K74.6	Other and unspecified cirrhosis of liver
K86.0	Alcohol-induced chronic pancreatitis

ICD-9 code	Description
291	Alcoholic psychoses
303	Alcohol dependence syndrome
3050	Nondependent abuse of drugs - Alcohol
4255	Alcoholic cardiomyopathy
5710	Alcoholic fatty liver
5711	Acute alcoholic hepatitis
5712	Alcoholic cirrhosis of liver
5713	Alcoholic liver damage
5714	Chronic hepatitis
5715	Cirrhosis of liver without mention of alcohol
5718	Other chronic non-alcoholic liver disease
5719	Unspecified chronic liver disease without mention of alcohol
E860	Accidental poisoning by alcohol, not elsewhere classified