National Records of Scotland

Drug-related deaths in Scotland in 2012

Statistics of drug-related deaths in 2012 and earlier years, broken down by age, sex, selected drugs reported, underlying cause of death and NHS Board and Council areas

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Main Points

The main findings from this report include the following:

- Based on the definition used for these statistics, 581 drug-related deaths were registered in Scotland in 2012, three (0.5 per cent) fewer than in 2011. This was the second highest number ever recorded, and 199 (52 per cent) more than in 2002.
- Males accounted for 72 per cent of the drug-related deaths in 2012.
- In 2012, there were 199 drug-related deaths of people aged 35-44 (34 per cent of all drug-related deaths) and 171 drug-related deaths of 25-34 year olds (29 per cent).
- The NHS Board areas which accounted for most of the 581 drug-related deaths in 2012 were:
    - Greater Glasgow & Clyde - 193 (33 per cent);
    - Lothian - 90 (15 per cent);
    - Lanarkshire - 61 (10 per cent); and
    - Tayside - 55 (9 per cent).

Using the annual average for 2008-2012, to reduce the effect on the figures of year-to-year fluctuations:

- for Scotland as a whole, the average of 554 drug-related deaths per year represented a death rate of 0.11 per 1,000 population;
- the NHS Board area with the highest rate was Greater Glasgow & Clyde (0.16);
- the next highest rates were for Ayrshire & Arran (0.11) and Tayside (0.11).

However, the death rates of the more populous areas differ less markedly when they are calculated using the estimated numbers of problem drug users:

- for Scotland as a whole, the average of 554 drug-related deaths per year represented a death rate of 9.3 per 1,000 problem drug users;
- the NHS Board area with the highest rate was Fife (10.7);
- the figure for Greater Glasgow & Clyde (9.1) was lower than for Scotland as a whole.

Comparing the annual average for 2008-2012 with that for 1998-2002:

- the percentage increase in the number of drug-related deaths was greater for females (136 per cent) than for males (65 per cent);
- the largest increase was for 35-44 year olds, the largest percentage increase was for people aged 45-54, and there was a fall in the number of drug-related deaths of people aged under 25; and
- the NHS Board areas with the largest increases in the number of drug-related deaths were Greater Glasgow & Clyde (up by 61), Lothian (up by 41) and Tayside (up by 29).

The standard basis for the figures for individual drugs for 2008 and subsequent years is ‘drugs which were implicated in, or which potentially contributed to, the cause of death’. Of the 581 drug-related deaths in 2012:

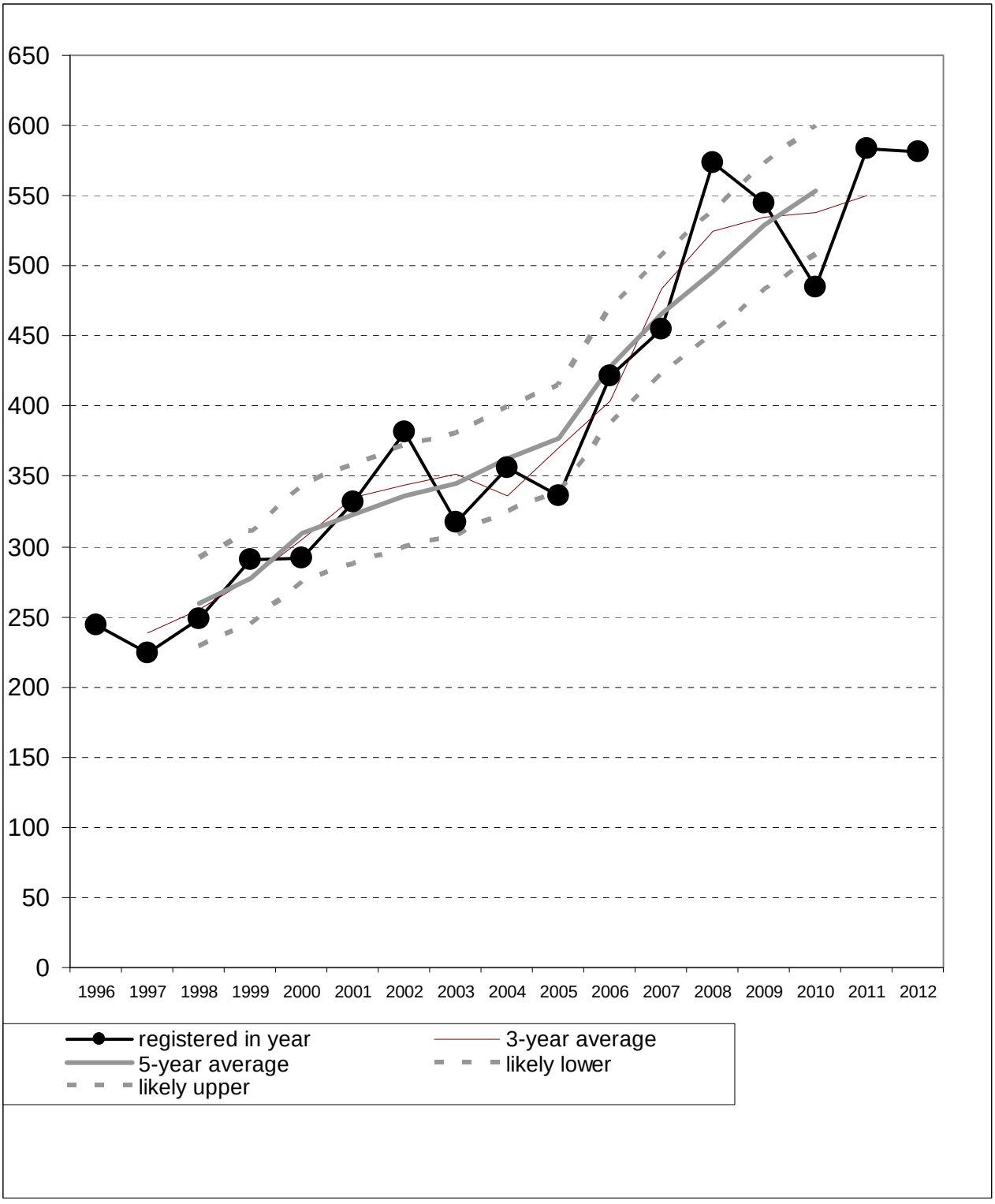
- heroin and/or morphine were implicated in, or potentially contributed to, the cause of 221 deaths (38 per cent of the total);

- methadone was implicated in, or potentially contributed to, 237 deaths (41 per cent);
- benzodiazepines (e.g. diazepam) were implicated in, or potentially contributed to, 196 deaths (34 per cent);
- cocaine, ecstasy and amphetamines were implicated in, or potentially contributed to, 31, 9 and 18 deaths respectively; and
- alcohol was implicated in, or potentially contributed to, 111 of the drug-related deaths.

(The percentages add up to more than 100 because more than one drug was implicated in, or contributed to, many of the deaths.)

In 2012, heroin and/or morphine were implicated in, or potentially contributed to, more deaths than in 2011, but the number was markedly below the level of 2008 and 2009. However, the corresponding figure for methadone fell in 2012, but represented a large increase compared with 2008 to 2010. There were also more deaths in which benzodiazepines were implicated or to which they potentially contributed. Because of a change in the method used to collect information about the substances that were found in the body (which is described in Section 2), 'individual drugs' figures for 2008 onwards cannot be produced on the same basis as those for earlier years.

Figure 1: Drug-related deaths in Scotland, 3- and 5-year moving averages, and likely range of values around 5-year moving average



1. Introduction

1.1 This annual publication provides statistics of drug-related deaths which were registered in Scotland over the period from 1996. The figures were produced using a definition of 'drug-related deaths' which was introduced in 2001 for the 'baseline' figures for the UK Drugs Strategy. This definition was agreed by a working party set up following the publication, by the Advisory Council on the Misuse of Drugs, of a report on 'Reducing drug related deaths'. The Office for National Statistics has also prepared data on drug-related deaths in England and Wales using this definition. These statistics are used in the development of policy by the Scottish Government, to inform the discussions and recommendations of its National Forum on Drug-related Deaths, and by a number of other interested parties such as NHS Boards and local Alcohol and Drug Partnerships.

1.2 Section 2 gives some background on the collection of information on drug-related deaths in Scotland. Section 3 describes the figures for Scotland, Section 4 covers the statistics for NHS Board areas, and Section 5 refers to the figures for Council areas and the potential problems that may affect the figures for these and smaller areas. Annex A sets out the definition of drug-related deaths used in this publication, Annex B refers to some other definitions of drug-related deaths, and gives figures for them and for deaths from some other causes that may be associated with present or past drug misuse. Annex C provides some References and Annex D contains the questionnaire used to collect further information about drug-related deaths with effect from 2008. Annex E covers so-called New Psychoactive Substances. The tables and charts can be grouped as follows:

- Tables 1 to 9, Figure 1 - statistics for Scotland;
- Tables HB1 to HB5, Figure 2 - statistics for NHS Board areas;
- Tables C1 to C5, Figure 3 - statistics for Council areas; and
- Tables X, Y and Z, Figure 4 - statistics which are not on the standard basis.

In the tables, '..' indicates 'not available' or 'not applicable'. There may be slight discrepancies between some of the figures in different tables for some of the years from 2000 to 2006, due to the use of a new database (as explained in paragraph A4 of Annex A).

1.3 The following improvements have been made for this edition:

- Section 3.5, Tables 9, HB5 and C5, and Figures 2 and 3 have been added, providing information about the estimated numbers of problem drug users and their drug-death rates for Scotland, NHS Board areas and Council areas.
- Annex E has been added and Table Z has been expanded to provide information about deaths involving so-called New Psychoactive Substances.
- annual averages for 1996 to 2000 have been added to Tables 2 and 4.

1.4 Users of the statistics are reminded that, with effect from the 2009 edition of this publication, the standard basis of the figures for individual drugs for 2008 and subsequent years is 'drugs which were implicated in, or which potentially contributed to, the cause of death'.

Section 2 of the 2009 edition included an explanation of why there was a change from the basis which was used before then ('all drugs which were [reported as having been] found present in the body'), which did not actually cover all drugs in all cases. Some information about this is given in paragraphs 2.3 to 2.5 of this edition.

1.5 Table 6 allows users of the statistics to compare the figures for 2012 on the two bases, and also shows how the numbers on the two bases for 2012 break down by sex and by age-group. In addition, alternative versions of Tables HB3 and C3 are available on this website (via links from the pages which give access to the editions for 2008 to 2012), providing figures for NHS Boards and Councils on the following bases:

- for 2008 on the standard basis ('drugs which were implicated in, or which potentially contributed to, the cause of death'); and
- for 2009 to 2012 on the basis which was used in the editions of the publication for 2008 and earlier years ('all drugs which were [reported as having been] found present in the body').

1.6 More detailed statistical information about the nature and circumstances of people whose deaths were drug-related is available in the reports from the NHS's National Drug Related Deaths Database, which are described briefly in paragraph B9 of Annex B.

2. Data sources

2.1 The National Records of Scotland (NRS) holds details of all deaths which are registered in Scotland. By convention, deaths are counted on the basis of the calendar year in which they are registered rather than the year of occurrence (as the latter might not be known). NRS closes its statistical database for a calendar year about five or six months after the end of the calendar year. The statistics for 2012 are based upon the information which NRS had obtained by mid-June 2013. NRS classifies the underlying cause of each death using International Statistical Classification of Diseases and Related Health Problems (ICD) codes, based on what appears in the medical certificate of the cause of death together with any additional information which is provided subsequently by (e.g.) certifying doctors, pathologists and Procurators Fiscal.

2.2 Drug-related deaths are identified using details from the death registrations supplemented by information from a specially-designed questionnaire, which is completed by forensic pathologists and lists the drugs and solvents that were found. NRS requests this information for all deaths involving drugs or persons known, or suspected, to be drug-dependent. Additionally, NRS follows up all cases of deaths of people where the information on the death certificate is vague or suggests that there might be a background of drug abuse. This enhancement to the data collection system was described in a paper published by NRS in June 1995 (which is referred to in Annex C). A copy of the questionnaire used with effect from 2008 is in Annex D. In the case of deaths which involved drugs which are available on prescription, NRS does not know whether those drugs had been prescribed to the deceased: such information is not collected by the death registration process nor by the pathologists' questionnaires. Therefore, NRS does not know how many of the deaths which involved (say) methadone were of people who had been prescribed the drug (some information about this is available from the NHS reports referred to in paragraph B9 of Annex B).

2.3 The questionnaire was revised for 2008, in order to collect more complete information about the substances present in the body. This caused a break in the series of figures for 'drugs reported' because:

- pre-2008, the form asked about the 'principal drug or solvent found in a fatal dose' and about 'any other drugs or solvents involved in this death' - so some pathologists reported only the substances which, they believed, contributed directly to each death; and
- the form now asks about the drugs or solvents 'implicated in, or which potentially contributed to, the cause of death' and about 'any other[s] which were present, but which were not considered to have had any direct contribution to this death'- so some pathologists now report substances which they would not have mentioned previously.

2.4 NRS's data from the questionnaires for 2008 onwards distinguish between (a) drugs which were implicated in, or which potentially contributed to, the cause of death and (b) any other drugs which were present, but which were not considered to have had any direct contribution to the death. As a result, NRS can produce figures for 2008 onwards:

- on the 'drugs which were implicated in, or which potentially contributed to, the cause of death' basis - i.e. counting only drugs which were reported under (a); and
- on the 'all drugs which were found to be present in the body' basis - i.e. covering drugs which were reported under either (a) or (b).

Following consultation with the National Forum on Drug-related Deaths, 'drugs which were implicated in, or which potentially contributed to, the cause of death' became the standard basis for the figures for 2008 onwards that NRS produces for individual drugs, with effect from the 2009 edition.

2.5 It should be noted that, although the old questionnaire referred to the 'principal drug …' and 'other drugs … involved', the figures for 2007 and earlier years are not directly comparable to the figures for 2008 onwards on the new standard basis. This is because, in 2007 and earlier years, some pathologists reported, in the old questionnaire, all the drugs that they found (i.e. not just the drugs that they believed were implicated in, or contributed to, the cause of death) - so they provided information on the 'all drugs which were found to be present in the body' basis (i.e. not on the new standard basis). More information about the change (including why NRS cannot produce figures on the standard basis for 2007 or earlier years) is available in the 2009 edition.

2.6 At the start of 2011, NRS implemented a number of World Health Organisation (WHO) updates to the ICD rules for identifying the underlying cause of death. This caused a break in the series of figures for the underlying cause of death. 'Drug abuse' deaths from 'acute intoxication', which would previously have been counted under 'mental and behavioural disorders due to psychoactive substance use', are now counted under the appropriate 'poisoning' category. Examples are the deaths of known or suspected habitual drug abusers, for whom the cause of death was certified as 'adverse effects of heroin', 'methadone toxicity' or 'morphine intoxication'. Under the old coding rules, the underlying cause of those deaths would have been 'mental and behavioural disorders due to use of opioids' (unless NRS had been informed that the deaths were due to intentional self-harm, or assault, in which case the underlying cause would have been 'intentional self-poisoning …' or 'assault by drugs …', whichever was appropriate).

2.7 Under the new coding rules, the underlying cause of such deaths is the appropriate type of poisoning. For example, if NRS is informed that the overdose is believed to have been accidental, the underlying cause will be coded as 'accidental poisoning by and exposure to narcotics and psychodysleptics (hallucinogens)'. A note on the changes to the way in which NRS has coded the underlying cause of death with effect from the start of 2011 is available within the Death Certificates and Coding Cause of Death section of its website. NRS has estimated what the figures for 2011 onwards would have been, had the data been coded using the old rules. This makes it possible to see the changes between 2010 and 2011, and the longer-term trends, without a break in the series. NRS hopes to continue to estimate the breakdown by underlying cause of death on the basis of the old coding rules for at least a few more years.

2.8 The overall total number of drug-related deaths has not been affected by the changes to (i) the basis of the figures for individual drugs and (ii) how the underlying cause of death is coded. The first change has just reduced the number of drugs that are counted, for the purpose of the standard figures, for some deaths; the second has just altered the categories for the underlying cause of death against which many deaths are counted.

2.9 The statistics of drug-related deaths may be affected by other differences, between years and/or between areas, in the way in which the information was produced. For example:

- technical advances may enable the detection of small quantities of substances that could not have been found in the post-mortems that were performed several years ago;
- the range of substances for which tests are conducted may change - e.g. for a number of years, a laboratory did not routinely test for the presence of cannabis (because the view was that, in general, it did not contribute to causing deaths), but now does so more often, because Procurators Fiscal are now more likely to want to know whether the deceased had been using it. More generally, advice is that there is a demand to obtain more complete and thorough toxicology on all cases tested for drugs, which includes fuller examinations for, and hence a greater possibility of finding, more drugs;
- if pathologists in one area report any findings of benzodiazepines by referring to that group of drugs unless they are sure that only one particular benzodiazepine (e.g. diazepam) was used, the areas which they serve will appear to have low proportions of deaths for which diazepam is mentioned (compared to areas where diazepam is more likely to be named specifically, and where there are proportionately fewer reports of benzodiazepines as a group); and
- there may be cases where different pathologists could have different views on whether a particular drug should be described as 'implicated in, or potentially contributing to, a death' - for example, because they have different views on what would have been a fatal dose of the drug for the person concerned, or (if the person had also taken one or more other substances) on the level of harm that would be caused by the combination of the drug and one or more of the other substances taken.

3. Drug-related deaths: trends, causes of death, drugs reported, sex and age

3.1 Overall numbers

3.1.1 Based on the definition used for these statistics, there were 581 drug-related deaths in 2012, three (0.5 per cent) fewer than in 2011. This was the second highest number recorded since the series of figures began in 1996, and was 199 (52 per cent) more than in 2002.

3.1.2 The figures in Table 1 show that the past ten years have had five rises and five falls in the number of drug-related deaths. However, the rises have tended to be greater than the falls, so the trend in the number of drug-related deaths has been upwards. Because the statistics show some year to year fluctuations, moving annual averages are likely to provide a better guide to the long-term trend than the change between any two individual years. Figure 1 illustrates this:

- the black dots show the figures for each year;
- the continuous grey lines show two moving annual averages - a 3-year average (thin grey line) and a 5-year average (thick grey line). The latter should provide a better indication of the overall long-term trend; and
- the broken grey lines show the likely range of random statistical variation around the 5-year moving average. Statistical theory suggests that, if the number of deaths can be represented as the result of a Poisson process, for which the underlying rate at which the events (deaths) occur is given by the 5-year moving average, then random year to year variation would result in only about one year in 20 having a figure outwith this range (which is a '95% confidence interval', calculated thus: the underlying rate of occurrence plus or minus 1.96 times its standard deviation; for a Poisson process, the standard deviation is the square root of the underlying rate of occurrence).

3.1.3 Looking at the chart, it is clear that, for many years, the individual years' figures tended to fluctuate around a long-term upward trend, and were generally within the likely range for random statistical year to year variation about the trend. It also appears that:

- the figure for 2008 was unusually high (being above the upper end of the likely range of random statistical variation around the 5-year moving average);
- the figure for 2009 was broadly in line with the long-term trend (being close to the 5-year moving average value for 2009);
- the figure for 2010 was unusually low, relative to the long-term trend (being below the lower end of the likely range of random statistical variation); and
- the figures for 2011 and 2012 are broadly in line with the long-term trend: they are both not far from what one would expect the 5-year moving average to be, if it were extrapolated to those years.

The rise in the 5-year moving average suggests that there is still a long-term upward trend, and that the figure for 2010 appears unusually low relative to that long-term trend. On the other hand, the pattern of rises and falls in recent years means that there has not been much change lately in the 3-year moving average

(its latest four values are 525, 535, 538 and 550, suggesting at most only a slight upward trend). Therefore, it could be argued that the annual number of deaths might be 'levelling off' - and, if so, that the large increase between 2010 and 2011 was just a year-to-year fluctuation around the fairly steady annual level that is suggested by the latest four values of the 3-year moving average.

3.2 Underlying causes of death

3.2.1 As explained in paragraph 2.6, NRS implemented WHO updates to the coding rules at the start of 2011. This changed the classification of the underlying cause of many drug-related deaths. However, NRS has estimated what the figures for 2011 onwards would have been, had the data been coded using the old rules.

3.2.2 Table 2 shows the number of drug-related deaths categorised by the underlying cause, defined in terms of groupings of the ICD codes. The final row gives the figures for 2012 that were produced by applying the new coding rules: the majority of drug-related deaths (365, or 63 per cent) were coded to 'accidental poisoning'. This covers the relevant categories within the ICD's section for 'Accidental poisoning by and exposure to noxious substances' (for example, it includes ICD-10 code X42 which is defined as 'Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens] not elsewhere classified'). Most of the other drug-related deaths in 2012 (125, or 22 per cent of the total) were counted as 'undetermined intent', which covers a number of ICD categories whose titles are along these lines: 'poisoning by and exposure to [name/type of substance], undetermined intent'.

3.2.3 Table 2 also provides NRS's estimates of the figures that would have been produced for 2011 onwards, had the old coding rules been used. On that basis, the underlying cause for the majority of drug-related deaths (381, or 66 per cent) would have been 'drug abuse', which covers the relevant categories within the ICD's section for 'Mental and behavioural disorders due to psychoactive substance use'.

3.2.4 Because some of the figures can fluctuate markedly from year-to-year, a better indication of the longer-term changes should be obtained from a comparison of the averages for 5-year periods. These show increases in deaths for which the underlying cause (on the basis of the old coding rules) was 'drug abuse' (from an average of 227 per year in 1998-2002 to an average of 372 in 2008-2012), 'accidental poisoning' (from an average of 15 to an average of 63), and 'undetermined intent' (from an average of 38 to an average of 80). There was not as much change in deaths caused by intentional self-poisoning (averages of 30 per year in 1998-2002 and 39 per year in 2008-2012).

3.3 Selected drugs reported

3.3.1 The NRS database records a wide range of drug combinations (e.g. in 2006, diazepam was mentioned in almost a fifth of the deaths for which heroin or morphine were reported; and heroin, morphine or methadone were mentioned in over half of the deaths for which cocaine was reported). A complete list of all the substances which were reported to NRS for every death from poisoning (including deaths which are not counted as 'drug-related' for the purpose of these statistics) can be found in Table 6.12 of the Vital Events Reference Tables, which are available on the NRS website. 'Unspecified drug(s)' is recorded in only a small proportion of drug-related deaths (on average, under 3 per cent per year). Table 3, Table 6 and Table 7 give information on the frequency of reporting of selected drugs, whether alone or in combination with other substances. The drugs listed in

these tables are reported in the majority of drug-related deaths (for example, not counting alcohol, at least one of them was reported in 91 per cent of the drug-related deaths in 2000, and in 87 per cent of cases in 2012). The tables show a combined figure for ‘heroin/morphine’ because it is believed that, in the overwhelming majority of cases where morphine has been identified in post-mortem toxicological tests, its presence is a result of heroin use.

3.3.2 Since these tables record individual mentions of particular drugs, there will be multiple-counting of some deaths (e.g. if both heroin and diazepam were implicated in, or potentially contributed to, the cause of a death in 2012, that death will be counted in three of the 'drug' columns of Table 3: ‘heroin/morphine’, ‘benzodiazepines’ and ‘diazepam’). Therefore, these tables do not give the numbers of deaths that are attributable to each of the drugs mentioned. When more than one drug was reported for a particular death, it may not be possible to deduce, from the information held in the NRS database, which (if any) of them was thought to be the (main) cause of the death, except to the extent that, for 2008 onwards, the database distinguishes between (a) drugs which were implicated in, or which potentially contributed to, the cause of death and (b) any other drugs which were present, but which were not considered to have had any direct contribution to the death. NRS's database has no information about the amounts of each drug that were found, or the possible consequences of taking particular combinations of drugs.

3.3.3 For 2008 onwards, the standard basis for figures for individual drugs is ‘drugs which were implicated in, or which potentially contributed to, the cause of death’ (further information about this is given in Section 2). Table 3 shows that heroin/morphine was implicated in, or potentially contributed to, the cause of 221 (38 per cent) of the 581 deaths in 2012; methadone was implicated in, or potentially contributed to, 237 (41 per cent); and benzodiazepines were implicated in, or potentially contributed to, 196 (34 per cent). Cocaine, ecstasy and amphetamines were implicated in, or potentially contributed to, 31, 9 and 18 deaths respectively. Alcohol was implicated in, or potentially contributed to, the cause of 111 of the 581 drug-related deaths in 2012.

3.3.4 Table 3 also shows that there were more cases in 2012 (compared with 2011), but far fewer than in 2008 or 2009, where heroin and/or morphine were implicated in, or potentially contributed to, the death: 221 in 2012 compared with 324 in 2008, 322 in 2009, 254 in 2010 and 206 in 2011. However, for methadone, there was a fall (compared with 2011) but a large increase (compared with 2008 to 2010) in cases where it was implicated in, or potentially contributed to, the cause of death: 237 in 2012, compared with 169 in 2008, 173 in 2009, 174 in 2010 and 275 in 2011. Benzodiazepines were implicated in, or potentially contributed to, more deaths in 2012: 196, compared with 149 in 2008, 154 in 2009, 122 in 2010 and 185 in 2011. There was little change in the number of deaths for which cocaine was implicated, or to which it potentially contributed (31 in 2012; 36, 32, 33 and 36 in the previous four years), and some large percentage year-to-year fluctuations in the relatively small numbers for ecstasy and amphetamines.

3.3.5 It is not possible to make a direct comparison with the figures for earlier years because there is a break in the series between 2007 and 2008, due to the revision of the questionnaire which collects information about the drugs found in the body (as explained in paragraphs 2.3 to 2.5). The statistics may also be affected by other differences, between years or between areas, in the reporting of drugs found in the body (examples of which are given in paragraph 2.8). Therefore, apparent changes in the numbers of deaths for which particular drugs were reported must be

interpreted with caution, and with the knowledge that there is a clear break in the figures between 2007 and 2008. The change in the method of data collection may have contributed to the apparent large percentage increases, between 2007 and 2008, in the figures for methadone, benzodiazepines generally and diazepam specifically.

3.3.6 Because some of the figures can fluctuate markedly from year to year, the main changes over time are best identified by comparing the averages for 1996-2000 and 2003-2007 (the latter being the final 5-year period before the break in the series). These show that there were marked increases in the numbers of deaths for which there were reports of:

- heroin and/or morphine - from an average of 128 per year in 1996-2000 to an average of 229 in 2003-2007;
- cocaine - from an average of 6 to an average of 38; and
- alcohol - from an average of 91 to an average of 129.

There was not much change in the numbers of deaths for which there were reports of:

- methadone (averages of 74 and 90);
- diazepam (averages of 116 and 103); and
- ecstasy (averages of 7 and 13).

There was a marked fall in the number of deaths for which temazepam was reported (from an average of 47 per year in 1996-2000 to an average of 12 in 2003-2007).

3.3.7 However, while comparing 5-year averages should reduce the effect of year-to-year fluctuations, it will not necessarily give the full picture. In this case, it does not reveal some marked changes during the period:

- the number of deaths for which diazepam was reported rose from under 100 in 1996 and 1997 to over 200 in 2002 and then fell back to under 100 in 2005, 2006 and 2007; and
- the number of deaths for which methadone was reported appeared to fall in the late 1990s, but then rose to 114 in 2007 - above the level recorded in 1996 (100).

3.3.8 As mentioned in Section 2, NRS can also produce, for 2008 onwards, figures on the basis of ‘all drugs which were found to be present in the body’, including any other drugs which were present, but which were not considered to have had any direct contribution to the death. The lower half of Table 6 shows figures for 2012 on this basis. The main differences between the two halves of the table are in the figures for benzodiazepines (and diazepam in particular): benzodiazepines were found to be present in the body in the case of 419 of the drug-related deaths in 2012, but had been implicated in, or potentially contributed to, only 196 of those deaths (for diazepam, the equivalent figures are 386 and 160). There are also large percentage differences between the figures in the two halves of the table for cocaine (found present in 48 cases; implicated in, or potentially contributed to, 31 deaths), amphetamines (for which the numbers are 25 and 18, respectively) and alcohol (241 and 111). The figures for heroin/morphine and methadone do not differ much between the two halves of the table, these drugs were believed to be implicated in, or to have contributed to, the death in almost every case in which they were found.

3.3.9 Most drug-related deaths are of people who took more than one drug. In such cases, it may not be possible to say which particular drug caused the death. Table 7 shows the numbers of drug-related deaths for which only one drug was reported, which are the minimum numbers of deaths which may be wholly attributable to the specified drugs. The top half of the table shows deaths for which only one drug (and, perhaps, alcohol) was found to be present in the body: all these deaths must be wholly attributable to the specified drug (or, perhaps, to that drug in combination with alcohol). These numbers are all small, when compared to the total number of drug-related deaths: there were 14 deaths for which the only drug reported was heroin/morphine; 12 deaths for which only methadone was mentioned; and 5 deaths for which only a benzodiazepine was reported. In total, there were 25 deaths for which alcohol was mentioned along with only one drug.

3.3.10 The lower half of Table 7 shows deaths for which only one drug (and, perhaps, alcohol) was implicated in, or potentially contributed to, the death. The numbers here are larger, because this part of the table includes deaths for which other drugs were mentioned as being present but were not considered to have had any direct contribution to the death. So, for example, the figures for methadone are the numbers of deaths for which only methadone (and, perhaps, alcohol) was implicated in, or potentially contributed to, the death - any other drugs (such as diazepam) which were found to be present in the body were not considered to have had any direct contribution to the death. There were 76 deaths for which heroin/morphine was the only drug which was believed to have been implicated in, or to have contributed to, the death; 68 deaths for which methadone was the only such drug; and 49 deaths for which alcohol was implicated in, or potentially contributed to, the cause of death, along with one drug. The numbers for each of the other drugs shown are all in single figures, so there were very few deaths which were believed to be due solely to one of those drugs alone.

3.3.11 In the lower half of Table 7, the sum of the figures for heroin/morphine, methadone, benzodiazepines, cocaine, ecstasy and amphetamines is 161, or 28 per cent of the total of 581 drug-related deaths in 2012. This means that one of these drugs was the only drug which was implicated in, or potentially contributed to, the cause of over a quarter of all drug-related deaths in 2012. Information from NRS's database (which does not appear in any of the tables) shows that there were also 66 deaths for which a drug which is not shown in the table was the only drug which was implicated in, or potentially contributed to, the cause of death (including 24 cases where the only drug was dihydrocodeine; 7 cases where it was codeine; 7 cases where it was oxycodone; and 12 cases where it was ‘unspecified drug’ - in some of these cases, alcohol was also implicated). Therefore, there was a total of 227 cases (39 per cent of all drug-related deaths) where only one drug was believed to have been implicated in, or potentially contributed to, the cause of death.

3.4 Sex and age

3.4.1 Table 4 shows that males accounted for the vast majority (416, or 72 per cent) of the drug-related deaths in 2012. This was the case throughout the past decade, although the precise balance between the sexes has varied from year to year. For example, between 2008 and 2012, the number of male drug-related deaths dropped (from 461 to 416) whereas the number of female deaths rose (from 113 to 165) so the male percentage fell from 80 per cent to 72 per cent. Comparing the averages for 1998-2002 and 2008-2012, to reduce the effects of year-to-year fluctuations on the figures, the percentage increase in the number of drug-related deaths was greater for females (136 per cent) than for males (65 per cent).

3.4.2 In recent years, of the age-groups shown, the largest number of drug-related deaths have been among 25-34 and 35-44 year olds: using the averages for 2008-2012, 181 out of 554 deaths (33 per cent) were of 25-34 year olds and slightly more were in the 35-44 age-group (186, or 34 per cent). In 2012, there were 199 drug-related deaths of people aged 35-44 (representing 34 per cent of all drug-related deaths) and 171 among 25-34 year olds (29 per cent). In addition, 46 people aged under 25 died (8 per cent), as did 115 who were aged 45-54 (20 per cent) and 50 people aged 55 and over (9 per cent). The table shows that the number of deaths in a particular age-group can fluctuate markedly over the years (for example, the number of under 25s who died was 100 in 2002, 48 in 2005, 94 in 2007 and 65 in 2010). However, some clear trends can be seen. Comparing the averages for 1998-2002 and 2008-2012 (to reduce the effects of year-to-year fluctuations on the figures), there have been large percentage increases in the number of deaths of 35-44 year olds (from an average of 66 per year in 1998-2002 to an average of 186 in 2008-2012) and people aged 45-54 (from an average of 19 to an average of 87); the number of deaths of 25-34 year olds rose less markedly (from an average of 128 to an average of 181), as did deaths of people aged 55 and over (from an average of 10 to an average of 33); and there was a fall in the number of people aged under 25 who died (from an average of 87 to an average of 66).

3.4.3 Changes in the ages of drug-related deaths can also be seen from the values of the lower quartile age at death (a quarter of drug-related deaths were of people of this age or under), the median age at death (half the deaths were of people of this age or under) and the upper quartile age at death (a quarter of the deaths were of people of this age or older), which appear in the table:

- the lower quartile age at death rose from 22 years in 1996 to 31 years in 2012;
- the median age at death increased from 28 years in 1996 to 38 years in 2012; and
- the upper quartile age at death rose from 34 years in 1996 to 46 years in 2012.

The median is used (rather than the average) because it should be affected less by any unusually high (or low) values.

3.4.4 The lower part of Table 5 shows that, when the underlying cause of death is determined using the old coding rules, 297 (71 per cent) of the male deaths in 2012 were of known or suspected drug abusers compared to 84 (51 per cent) of the female deaths. Of the 50 deaths aged 55 and over, only 5 (10 per cent) were of people who were known, or suspected, to be drug-dependent. The table also provides a more detailed breakdown of the numbers by age-group for each sex.

3.4.5 Table 6 provides information about the ages and sexes of people who died having taken various drugs (perhaps more than one of the substances listed in the table, and maybe other drugs as well). The top half of the table provides figures on the standard basis: ‘drugs which were implicated in, or potentially contributed to, the cause of death’. As mentioned earlier, men accounted for 72 per cent of all drug-related deaths in 2012.

However, where the drugs listed below were implicated in, or potentially contributed to, the cause of death, men accounted for the following percentages of the deaths:

- cocaine - 90 per cent (28 out of 31);
- alcohol - 84 per cent (93 out of 111);
- heroin/morphine - 81 per cent (178 out of 221); and
- methadone - 76 per cent (179 out of 237).

There was one particularly marked difference between the distributions by age of people for whom heroin/morphine, methadone, benzodiazepines, cocaine or alcohol were implicated in, or potentially contributed to, the cause of their deaths: in the case of cocaine, 65 per cent of those who died were aged under 35, compared with only 37 per cent of all drug-related deaths. The under 25s accounted for 23 per cent of deaths in which cocaine was implicated, or to which it potentially contributed, compared with only 8 per cent of all drug-related deaths; for people aged 25-34, the corresponding figures were 42 per cent ('cocaine' deaths) and 29 per cent (all drug-related deaths).

3.4.6 The lower part of Table 6 provides figures for all drugs which were found present in the body, including those which were not considered to have had any direct contribution to the death. Women accounted for 28 per cent of all drug-related deaths in 2012, but for only 21 per cent of the deaths for which heroin/morphine were found, and only 21 per cent of deaths for which alcohol was found. Again, the main difference between the distributions by age of the people who died having taken the different drugs was that 58 per cent of those who died after taking cocaine were aged under 35 compared with 37 per cent of all drug-related deaths. People aged under 25 accounted for 19 per cent of deaths following the use of cocaine compared with 8 per cent of all drug-related deaths; for 25 to 34 year olds the corresponding figures were 40 per cent ('cocaine' deaths) and 29 per cent (all drug-related deaths).

3.4.7 The top half of Table 7 gives the numbers of deaths for which only one drug (and, perhaps, alcohol) was found to be present in the body: all these deaths must be wholly attributable to the specified drug (or, perhaps, to that drug in combination with alcohol). The numbers are all relatively small, so there is little that can be said about the ages and sexes of the people involved. The bottom half of the table shows deaths for which only one drug (and, perhaps, alcohol) was implicated in, or potentially contributed to, the death. Paragraph 3.3.10 explained why these numbers are larger. However, only for heroin/morphine (76 deaths) and methadone (68 deaths) are the figures large enough for analysis of the ages and sexes of the people involved. The main points to note are that females accounted for only 20 per cent (15 out of 76) of the deaths for which heroin/morphine (and, perhaps, alcohol) was the only drug which was implicated in, or potentially contributed to, the cause of death, and for 24 per cent (16 out of 68) of the deaths for which methadone (and, perhaps, alcohol) was the only drug which was implicated in, or potentially contributed to, the cause of death, compared with 28 per cent of all drug-related deaths in 2012. The distributions by age were similar to that of all drug-related deaths.

3.4.8 Table 8 provides, for a number of age-groups for Scotland as a whole, drug-related death rates per 1,000 population, and shows how these have changed, from 2000 to 2012. For all but the latest two years, the drug-related death rate per 1,000 population was highest for people aged 25-34 (it averaged 0.27 over the five years

from 2008 to 2012). The rate for 35-44 year olds was higher in 2011 (0.30 per 1,000 population, compared with 0.27 for 25-34 year olds) and 2012 (0.28 compared with 0.25), and had a latest 5-year average of 0.26. For both the 15-24 and 45-54 age-groups, the rate per 1,000 population has been much lower: for 15-24 year olds, it was 0.07 in 2012 and averaged 0.10 over the latest five years; for 45-54 year olds, it was 0.14 in 2012 with a latest 5-year average of 0.11. The rate for 55-64 year olds is no more than 0.05 per 1,000 population. Since 2000, there have been increases in the rates for all the age-groups apart from 15-24 year olds, whose rates have tended to decline.

3.5 Death rates for problem drug users

3.5.1 The drug-related death rates per 1,000 population (shown in Table 8) are based on the size of the whole population of each age-group, the vast majority of whom do not use drugs. Therefore, those figures do not indicate the likely death rate for people who use drugs. Drug-related death rates for the part of the population whose put their lives at risk by using drugs can be calculated using the numbers of problem drug users (age 15-64) that are estimated by the Information Services Division (ISD) of NHS National Services Scotland. The latest such estimates, for the 2009/10 financial year, are available via the Drug Misuse Information Scotland website. For the purpose of ISD's estimates, 'problem drug use' is defined as the problematic use of opiates (including illicit and prescribed methadone use) and/or the illicit use of benzodiazepines, and implies routine and prolonged use (as opposed to recreational and occasional use). It follows that ISD's estimates will be smaller than the total number of people who used illicit drugs at some time during the year.

3.5.2 Table 9 shows the annual average number of drug-related deaths for 2008-2012 and ISD's estimates of the number of problem drug users in 2009/10. The first two figures on the first row show that Scotland had 554 drug-related deaths (of all ages) per year (on average) between 2008 and 2012, and an estimated 59,600 problem drug users (aged 15-64) in 2009/10. Using those two figures gives an estimate of an annual average of 9.3 drug-related deaths per 1,000 problem drug users. The difference between the coverage of the two figures ('all ages' for deaths; '15-64' for problem drug users) should not matter much, as there are very few drug-related deaths of people aged 0-14 or 65+.

3.5.3 Using ISD's estimates of the numbers of problem drug users by age and by sex in the same way, it appears that the annual average drug-death rate (per 1,000 problem drug users) is higher for males (9.9) than for females (7.9), and increases with age (5.9 for problem drug users who are aged 15-24, 7.8 for 25-34 year olds, and 11.8 for those aged 35-64). For males, the death rate clearly rises with age; for females, the figures suggest that it is about the same for 15-24 year olds and those aged 25-34 but that may not actually be the case, as ISD did not consider the estimated numbers of female problem drug users broken down by age to be sufficiently reliable for publication.

3.5.4 The ISD publication explains that the estimates are produced by combining data from a number of sources, and provides '95% confidence intervals' to indicate the likely margins of error in some of the figures. For the estimated total number of problem drug users for 2009/10, the 95% confidence interval is from 58,300 to 61,000 (or roughly +/- 2%). The values of the lower and upper ends of the confidence intervals can be used to calculate a likely range for the drug-related death rate. Dividing the annual average of 554 drug-related deaths by the value at the upper end (61,000 problem drug users) givers a minimum for the drug-death

rate of 9.1 per 1,000 problem drug users; dividing by the value at the lower end (58,300 problem drug users) gives a maximum for the drug-death rate of 9.5 per 1,000 problem drug users.

3.5.5 ISD did not calculate 95% confidence intervals for its estimates of problem drug users broken down by age and sex, but one would expect them to be wider (in percentage terms) for the smaller sub-groups of the population (that is generally the case for the 95% confidence intervals for NHS Board and Council areas in Tables HB5 and C5).

4. NHS Board areas: trends, causes, drugs reported, and death rates by age-group and relative to the estimated number of problem drug users

4.1 Deaths are normally classified by geographical area on the basis of the usual place of residence of the deceased (or, if that is not known, or is outwith Scotland, on the basis of the location of the place of death). Table HB1 shows the numbers of drug-related deaths for each NHS Board area. Of the 581 deaths in 2012, 193 (33 per cent) were counted against the Greater Glasgow & Clyde NHS Board area. Lothian, with 90 (15 per cent), had the next highest total followed by Lanarkshire (61 or 10 per cent), Tayside (55 or 9 per cent) and Ayrshire & Arran (43 or 7 per cent).

4.2 Because of the generally small numbers involved, particularly for some NHS Board areas, great care should be taken when assessing any apparent trends shown in the table. Year-to-year variation in the figures could result in apparently large percentage changes. This is more likely for the areas with smaller populations, but can also be seen sometimes in the figures for the more populous areas (e.g. Greater Glasgow & Clyde: 151 in 2004; 111 in 2005; 162 in 2006). Therefore, using 5-year moving annual averages should ‘smooth out’ the effects of any fluctuations, and so provide a better indication of the longer-term trends. The areas with the largest increases between their annual averages for 1998-2002 and 2008-2012 were Greater Glasgow & Clyde (up by 61, from 129 to 190), Lothian (up by 41, from 41 to 82), Tayside (up by 29, from 17 to 46), Lanarkshire (up by 24, from 27 to 51), Fife (up by 24, from 11 to 35) and Ayrshire & Arran (up by 19, from 21 to 40).

4.3 The table also shows the population of each NHS Board area, and what its average number of drug-related deaths per year (for 2008-2012) represented per 1,000 population (using the population in the middle of the 5-year period as a proxy for the average population over the whole period). For Scotland as a whole, the average of 554 drug-related deaths per year represented a rate of 0.11 per 1,000 population. The area with the highest rate was Greater Glasgow & Clyde (0.16), the next highest rates were for Ayrshire & Arran and Tayside (both 0.11), and Fife and Lothian had rates of 0.10.

4.4 Table HB2 gives a breakdown by cause of death for each NHS Board area for 2011. Table HB3 shows some geographical differences in the reporting of certain drugs: figures which should be used with particular care, in the light of the points mentioned in sections 2 and 3.3, the effects of which could be proportionately greater on the figures of some of the areas with lower populations. Note also that the figures given in Table HB3 are on the standard basis (drugs implicated in, or which potentially contributed to, the cause of death), and so are not comparable to

figures (in the editions for 2008 and earlier years) on the basis of 'all drugs which were [reported as having been] found to be present in the body'. As mentioned earlier, this website has versions of Table HB3 which give (i) figures for 2008 on the standard basis and (ii) figures for 2009 to 2012 on the 'all drugs which were found to be present in the body' basis.

4.5 Table HB3 shows the drugs reported for NHS Board areas. Overall, heroin/morphine was believed to have been implicated in, or to have potentially contributed to, 38 per cent of the total number of drug-related deaths in 2012 - but for noticeably above-average proportions in Forth Valley (16 out of 31) and Tayside (29 out of 55) and for particularly low proportions in Fife (11 out of 38), Grampian (9 out of 31) and Lothian (18 out of 90). Methadone was implicated in, or potentially contributed to, 41 per cent of drug-related deaths overall; with unusually high proportions in Ayrshire & Arran (26 out of 43) and Lothian (46 out of 90) and rather low proportions in Highland (4 out of 22) and Lanarkshire (15 out of 61). The table also shows that benzodiazepines were implicated in, or potentially contributed to, high proportions of drug-related deaths in Fife (21 out of 38), Grampian (21 out of 31) and Tayside (42 out of 55), and low proportions in Greater Glasgow & Clyde (29 out of 193) and Lanarkshire (9 out of 61), compared to 34 per cent for Scotland as a whole - although this comparison might be affected by the differences in reporting practices which are mentioned in section 2. Cocaine accounted for a relatively high proportion of the drug-related deaths in Grampian (6 out of 31), compared to 5 per cent for Scotland as a whole.

4.6 Table HB4 provides, for each NHS Board area, for a number of age-groups, the drug-related death rate per 1,000 population. As with the overall rates in Table HB1, the figures were calculated using the average number of drug-related deaths per year (for 2008-2012), by taking the population in the middle of the 5-year period as a proxy for the average population over the whole period. Even though the figures are five-year averages, they must still be used with caution for the less populated areas (e.g. when the annual averages for 2007 to 2011 were calculated, just three 15-24 year old drug-related deaths in Shetland caused it to have a rate for that age-group which was double that of Scotland as a whole). Of the more populous areas, Greater Glasgow & Clyde had the highest drug-related death rates: 0.34 for 25-34 year olds and 0.43 for the 35-44 age-group; both well above the overall average rates for Scotland as a whole for the same 5-year period (0.27 and 0.26, respectively). Ayrshire & Arran, Fife and Tayside had rates for 25-34 year olds which were above-average (0.32, 0.32 and 0.34, respectively), but their rates for the 35-44 age-group did not stand out as much. Greater Glasgow & Clyde's death rate for 45-54 year olds was 0.19, well above the overall level of 0.11. However, the pattern was less clear for the 15-24 age-group, for which several areas had death rates which were above the overall average level for Scotland for the five years.

4.7 As mentioned in Section 3.5, ISD has estimated the numbers of problem drug users (aged 15-64) for parts of Scotland. Table HB5 provides those figures for NHS Board areas, with their '95% confidence intervals', each area's estimated drug-related death rate per 1,000 problem drug users, and the likely range of values for that figure; Figure 2 shows the rates and their confidence intervals (Section 3.5 gives more information about 95% confidence intervals and the calculation of the likely range of values; ISD did not publish an estimate for Orkney 'due to the potential risk of disclosure and to help maintain patient confidentiality').

For example, for Scotland as a whole, it is estimated that (between 2008 and 2012) there were, on average, 9.3 drug-related deaths per year per 1,000 problem drug users. The difference between the coverage of the two figures ('all ages' for deaths; '15-64' for problem drug users) should not matter much, as there are very few drug-related deaths of people aged 0-14 or 65+.

4.8 Among the more populous areas, this rate was lowest in Ayrshire & Arran (7.8) and highest in Fife (10.7); the figure for Greater Glasgow & Clyde (9.1) was almost the same as that for Scotland as a whole (9.3). The table shows wide (in percentage terms) confidence intervals for some areas, particularly for the ones with relatively small populations. As a result, some areas have wide likely ranges of values for their death rates, including some of the more populous areas (for example, for Fife, the likely range of values for the drug-related death rate is from 9.8 to 11.4 per 1,000 problem drug users).

4.9 There is much less variation between NHS Board areas when drug-related death rates are calculated on this basis (which takes account of the number of people who put their lives at risk) than when they are calculated per 1,000 population (see Table HB4). For example, the lowest drug-related death rate per 1,000 problem drug users was 6.3 (Dumfries & Galloway), and the highest was 12.4 (Borders), so the highest figure was less than twice the lowest one. In contrast, the lowest drug-related death rate per 1,000 population was 0.04 (Orkney), and the highest was 0.16 (Greater Glasgow & Clyde), so the highest figure was roughly four times the lowest one.

5. Council areas (trends, causes, drugs reported and death rates by age-group) and areas with smaller populations

5.1 Tables C1 to C5 provide figures for individual council areas, and Figure 3 shows their death rate per 1,000 problem drug users. Again, because of the relatively small numbers involved, particularly for some areas, great care should be taken when using these figures. Even the numbers for the most populous areas may be subject to large percentage year-to-year fluctuations (e.g. Glasgow's figures from 2004 to 2008 were as follows: 106, 75, 113, 90, 121; Edinburgh's from 2003 to 2009 were: 26, 17, 41, 30, 43, 66, 45). Again, the points mentioned in sections 2 and 3.3 may have a proportionately greater effect on the numbers for some of the areas with smaller populations. Again, the figures given in Table C3 are on the standard basis (drugs implicated in, or which potentially contributed to, the cause of death), and so are not comparable to figures (in the editions for 2008 and earlier years) on the basis of 'all drugs which were [reported as having been] found to be present in the body'. As mentioned earlier, the web site has versions of Table C3 which give (i) figures for 2008 on the standard basis and (ii) figures for 2009 to 2012 on the 'all drugs which were found to be present in the body' basis.

5.2 As the numbers of drug-related death for areas with smaller populations will be lower, and may be subject to proportionately larger year-to-year fluctuations, it is unlikely that much useful information could be obtained from looking at the figures for small areas for a single year, or for a few years taken together. There could also be concerns about the sensitivity of data relating to small areas, as it might be possible, in some circumstances, to infer something about identifiable individuals from such data. Therefore, one should only look at such figures for several years taken together. Even then, the smaller the areas are, the more (in percentage terms) their figures may be influenced by how NRS allocates deaths to areas, based upon the details that are collected by the registration process. Information about the basis of NRS's statistics about deaths, and examples of the fluctuations

in and possible unreliability of figures for small areas, are available from the Vital Events – General Background Information and the Deaths – Background Information pages within the vital events section of the website.

5.3 An example of the scale of the numbers for small areas is given by an analysis for the National Forum on Drug-related Deaths, which used data for postal districts for the eight years from 2000 to 2007 (inclusive). This was done in response to a request, at a Forum meeting in September 2008, to 'identify any geographical concentrations of drug-related deaths'. Postal districts are not normally used for statistical analysis, but in this case they provided a convenient way to describe the extent to which the numbers of drug-related deaths were concentrated in certain parts of Scotland, by using a geography that would be more meaningful to Forum members than, say, the Datazones or Intermediate Zones that are used in Scottish Neighbourhood Statistics. The database had records for 2,893 drug-related deaths (on the basis of the standard definition) in Scotland in the specified eight years (paragraph A4 of Annex A explains why there is a slight difference from the total of the published figures for those years). Of the postal districts, 'G21' had the largest number (67 - an average of 8.4 per year). Four other postal districts had totals of 50 or more drug-related deaths for that period: 'G33' (54); 'G20' (53); 'G32' (51); and 'AB24' (50). Figures were not provided for every individual postal district, because of the numbers involved. There were 25 postal districts which each had 29 or more drug-related deaths over the eight years: each of them accounted for more than 1% of the total for Scotland for that period. Taken together, these 25 postal districts accounted for about a third of all drug-related deaths in Scotland between 2000 and 2007. The remaining two-thirds of drug-related deaths in that period were deaths of residents of postal districts which had, at most, 28 such deaths over the eight years - i.e. areas which had, on average, at most 3½ drug-related deaths per year (many averaged fewer than one drug-related death per year). It follows that, while some postal districts have markedly more drug-related deaths than others, the problem is clearly a very widespread one, with most deaths being of people who had been living in areas which had relatively few drug-related deaths.

Annex A – The definition of drug-related deaths used for these statistics (the National Records of Scotland (NRS) implementation of the 'baseline' definition for the UK Drugs Strategy)

A1. The definition of a 'drug-related death' is not straightforward. Useful discussions on definitional problems may be found in articles in the Office for National Statistics publication 'Population Trends' and in the journal 'Drugs and Alcohol Today' (please go to References in Annex C). A report by the Advisory Council on the Misuse of Drugs (ACMD), which is mentioned in the References, considered (what were, at that time) the current systems used in the United Kingdom to collect and analyse data on drug related deaths. In its report, the ACMD recommended that 'a short life technical working group should be brought together to reach agreement on a consistent coding framework to be used in future across England, Wales, Scotland and Northern Ireland'. National Records of Scotland (NRS), formerly General Register Office for Scotland (GROS), was represented on this group, and this publication presents information on drug-related deaths using the approach that was agreed, on the basis of the definition as it was implemented by GROS and, now, NRS.

A2. The 'baseline' definition for the UK Drugs Strategy covers the following cause of death categories (the relevant codes from the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision [ICD10], are given in brackets):

a) deaths where the underlying cause of death has been coded to the following sub-categories of 'mental and behavioural disorders due to psychoactive substance use':

   (i) opioids (F11);

   (ii) cannabinoids (F12);

   (iii) sedatives or hypnotics (F13);

   (iv) cocaine (F14);

   (v) other stimulants, including caffeine (F15);

   (vi) hallucinogens (F16); and

   (vii) multiple drug use and use of other psychoactive substances (F19).

b) deaths coded to the following categories and where a drug listed under the Misuse of Drugs Act (1971) was known to be present in the body at the time of death:

   (i) accidental poisoning (X40 – X44);

   (ii) intentional self-poisoning by drugs, medicaments and biological substances (X60 – X64);

   (iii) assault by drugs, medicaments and biological substances (X85); and

   (iv) event of undetermined intent, poisoning (Y10 – Y14).

Note:
If a drug's legal status changes, NRS aims to count it on the basis of its classification on the day the person died (as NRS does not know when the drug was taken). For example, mephedrone was banned under the Misuse of Drugs Act with effect from 00.01 on 16 April 2010. Therefore, if mephedrone was the only drug found to be present in the body, a death coded to one of the categories listed under (b) would not be counted in NRS's implementation of the 'baseline' definition if it occurred before 16 April 2010.

A3. A number of categories of what may be regarded as 'drug-related' deaths are excluded from the definition because the underlying cause of death was not coded to one of the ICD10 codes listed above. Examples of deaths which are not counted for this reason are:

- deaths coded to mental and behavioural disorders due to the use of alcohol (ICD10 code: F10), tobacco (F17) and volatile substances (F18);
- deaths from AIDS where the risk factor was believed to be the sharing of needles;
- deaths from drowning, falls, road traffic and other accidents (except the inhalation of gastric contents, or choking on food) which occurred under the influence of drugs; and
- deaths due to assault by a person who was under the influence of drugs, or as a result of being involved in drug-related criminal activities.

Also excluded from the GROS/NRS implementation of the definition are a small proportion of the deaths which were coded to one of the ICD10 codes listed in paragraph A2, specifically:

- deaths coded to drug abuse where the direct cause of death was secondary infections or related complications. These include deaths which were due to clostridium novyi infection that was the result of the injection of contaminated heroin (Annex A of 'Drug-related Deaths in Scotland in 2000' explained that 22 such cases had been identified when the 2000 deaths data file was closed in May 2001, adding that it was not clear whether additional deaths had subsequently been identified). Similarly, these figures exclude the 13 deaths which were caused by the outbreak of anthrax that was associated with contaminated heroin and started in December 2009. Also excluded from the statistics are deaths caused by bronchopneumonia, organ failure and other later complications of drug use, in cases where drug misuse was not the direct and immediate cause of death (even though it may have damaged greatly the person's health). However, it should be noted that deaths for which the cause was given as (e.g.) 'bronchopneumonia, heroin intoxication" are included in these statistics because it is assumed that the medical condition is an immediate consequence of the drug toxicity;
- deaths where a drug listed under the Misuse of Drugs Act was present as part of a compound analgesic or cold remedy. These deaths are excluded in order that deaths from overdoses of legally prescribed non-controlled drugs are not counted as 'drug-related'. Examples of such combinations include:
    - co-proxamol (paracetamol and dextropropoxyphene);
    - co-dydramol (paracetamol and dihydrocodeine); and
    - co-codamol (paracetamol and codeine sulphate).

All three of these compound analgesics, particularly co-proxamol, have commonly been used in suicidal overdoses. As it is believed that dextropropoxyphene has rarely, if ever, been available other than as a constituent of a paracetamol compound, deaths caused by dextropropoxyphene have been excluded even if there is no mention of a compound analgesic or paracetamol. However, deaths for which codeine or dihydrocodeine were reported without any mention of paracetamol have been included, as these drugs are available on their own and are known to be abused in that form.

A4. From time to time, there may be minor discrepancies between the figures for 2006 and earlier years that were published previously and those which are produced now. This is due to a change in the way in which 'drug-related' deaths are identified using the data held by NRS. This process has two stages:

- first, extract all the records of deaths which satisfy the 'wide' definition (Annex B). The method used for this stage has not been changed; and
- second, scrutinise the extracted records and identify the ones which should be counted under NRS's implementation of the 'baseline' definition. The method used for this stage was changed with effect from June 2008.

Previously, the data were examined by the former GROS Vital Events Statistician, who had considerable knowledge and experience of dealing with information about drug-related deaths. He used Excel's facilities to set a number of indicators, and so identified the cases which should be counted under GROS's implementation of the 'baseline' definition. This method clearly relied greatly on the Statistician's personal expertise. He retired in Spring 2008.

Now, most of this work is done by SAS computer programs, using a look-up table to identify particular types of drugs (John Corkery of the National Programme on Substance Abuse Deaths supplied most of the content of the look-up table).

The new method was tested by using it to prepare figures for each year for 2000 to 2006, inclusive. The results were the same as, or within just 1-2 of, the figures which had been published previously. After examining the cases which were being counted differently by the old and the new methods, it was concluded that any flaws in the new method were not significant, and that it should be used henceforth. However, to avoid confusing users of these statistics, the tables which appeared in editions of this publication which were produced before the method was changed give figures for 2006 and earlier years which were extracted from the database produced by the old method, and so are as published previously. However, new analyses of the data for 2000 onwards now use the database produced by the new method, and so may include some totals or sub-totals (for the years from 2000 to 2006, inclusive) that differ slightly from the figures which were published previously, because the new method was used to produce the database of relevant cases for those years.

Annex B – Some other definitions of drug-related deaths

B1. Other bodies may use other definitions for other purposes: this annex gives some examples. It then discusses how some deaths from certain other causes might be counted as well, to obtain a wider view of mortality arising from drug misuse.

B2. First, there is a ‘wide’ definition which is used by the Office for National Statistics (ONS) to provide figures for deaths from drug poisoning. It covers the following cause of death categories (the relevant codes from the International Classification of Diseases, Tenth Revision [ICD10], are given in brackets):

(a) deaths where the underlying cause of death has been coded to the following sub-categories of ‘mental and behavioural disorders due to psychoactive substance use’:

- opioids (F11);
- cannabinoids (F12);
- sedatives or hypnotics (F13);
- cocaine (F14);
- other stimulants, including caffeine (F15);
- hallucinogens (F16);
- volatile solvents (F18); and
- multiple drug use and use of other psychoactive substances (F19).

(b) deaths coded to the following categories:

- accidental poisoning (X40 – X44);
- intentional self-poisoning by drugs, medicaments and biological substances (X60 – X64);
- assault by drugs, medicaments and biological substances (X85); and
- event of undetermined intent, poisoning (Y10 – Y14).

The main differences between this ‘wide’ definition and the one used to produce the statistics given in this publication (the ‘baseline’ definition for the UK Drugs Strategy) are:

- the first part also includes deaths coded to ‘volatile substances’ (F18); and
- the second part is not restricted to cases where a drug listed under the Misuse of Drugs Act (1971) was known to be present in the body at the time of death.

Therefore, the ‘wide’ definition's figures are markedly higher.

B3. Second, there is the definition used by the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) for its ‘general mortality register’. The rules for this definition refer to particular codes for the underlying causes and the types of substance involved, and (in some cases) specify the combinations that must occur for a death to be counted under this definition. It produces figures which are broadly

similar to those of the UK Drug Strategy definition, but which cover deaths which involved the use of a different (albeit overlapping) range of drugs: so some deaths which are counted under the EMCDDA definition are not counted under the UK Drug Strategy definition, and vice versa.

B4. Because National Records of Scotland (NRS) has details of all the deaths which were registered in Scotland, it can produce figures using the ONS 'wide' definition and the EMCDDA 'general mortality register' definition, as well as using the definition of the 'baseline' for the UK Drug Strategy. These are given in Table X. As the table and Figure 4 show, the numbers produced using the three definitions tend to rise and fall in broadly similar ways, and so all three definitions give similar impressions of the long-term trend, although they differ regarding the numbers of deaths in each year.

B5. As explained above, the ONS 'wide' definition includes all deaths coded to accidental poisoning, and to intentional self-poisoning by drugs, medicaments and biological substances, whether or not a drug listed under the Misuse of Drugs Act was present in the body. Table Y shows the numbers of deaths (on this basis) in each year for 2000 onwards for which a range of drugs (including anti-depressants, anti-psychotics, paracetamol or a compound, and tramadol) were reported: for example, the number of deaths for which anti-depressants were reported tended to be in the range 70-90 per year between 2000 and 2007, whereas for paracetamol or a compound the number fell from around 120 to about 60. Section 2 explains why there is a break in the series between 2007 and 2008.

B6. The former Scottish Crime and Drug Enforcement Agency (SCDEA) used a different definition. In Autumn 2007, the then General Register Office for Scotland (GROS) compared some of the details of the drug-related deaths (in terms of the 'baseline' UK Drug Strategy definition) in 2006 that were held by GROS and the deaths that were recorded in an SCDEA database of drug-related deaths. The results may be summarised as follows:

- 321 deaths were counted by both GROS and SCDEA;
- 100 deaths were counted by GROS but not by SCDEA. These included:
  - 14 deaths occurring in December 2005 which were not registered until 2006;
  - 28 definite suicides;
  - 19 probable suicides (classified as 'events of undetermined intent');
  - 8 cases coded to 'accidental overdose'; and
  - 29 cases coded to 'drug abuse'.
- 53 cases were counted by SCDEA but not by GROS. These comprised:
  - 13 deaths occurring in December 2006 which were not registered until 2007 - most (if not all) of which will be included in the GROS figures for 2007;
  - 21 deaths for which drugs (whether named or unspecified) were recorded in the GROS database - but either the drugs mentioned were not covered by the 'baseline' definition or the deaths were coded to causes other than drug abuse or drug overdose;

- 19 deaths which had no mention of drugs in the GROS database (13 were coded to ‘unascertained’ cause of death). Returns from Procurators Fiscal were still outstanding for several of these when the GROS database for 2006 was closed at the end of June 2007. SCDEA recorded the involvement of heroin or methadone in 15 deaths, so it is likely that some of them would have been counted in GROS's figures for drug-related deaths had all the relevant information been available before its database for 2006 closed.

B7. Because the numbers involved are smaller, and because there may be differences in the way in which cases are counted against geographical areas, there may be larger (in percentage terms) differences between NRS and other bodies in their figures for parts of Scotland. For example, in September 2010, the then Grampian Police investigated the difference between its figure of 43 and the then GROS's figure of 52 for the number of drug-deaths in the Grampian area in 2009. The Police's results may be summarised as follows:

- 39 deaths were counted by both the then GROS and the Police;
- 13 deaths were counted by the then GROS but not by the Police. These comprised of:
  - nine cases of suicide, or suspected suicide (the Police did not include suicides which involve drugs in their figures for ‘drug-related’ deaths);
  - two deaths which had been registered in 2009 but had actually occurred in 2008 (and so were not in the Police figures for 2009). As mentioned in paragraph 2.1, NRS counts events on the basis of the date of registration, since the date of occurrence may not be known;
  - the death of someone from Grampian who had been living elsewhere in Scotland for 3 months. As explained in the information about the geographical basis of the Vital Events statistics (available via the vital events general background information section of the website), NRS normally counts someone who had been living at an address for less than a year on the basis of the previous address. The Grampian Police had not known about this death, so could not have counted it; and
  - a death from an overdose of prescribed medication. The Police had not counted this death as ‘drug-related’ because the controlled substances which caused the death had been obtained legitimately, being medication which had been prescribed to the deceased.
- 4 deaths were counted by the Police but not by NRS (formerly GROS). These comprised of:
  - two deaths which occurred in December 2009 but which had not been registered until 2010 (and so were not in the GROS figures for 2009);
  - a death caused by a medical condition upon which the consumption of controlled drugs had a bearing (GROS had counted this death as being due to the medical condition rather than as being drug-related); and
  - the death in Grampian of someone who had been living elsewhere. (GROS counted this in its statistics for the other part of Scotland, because NRS's figures are based on its understanding of the area of residence of the deceased, if that was within Scotland).

Grampian Police also looked at the statistics for individual local authority areas, and found further differences between its figures and those of the then GROS. These were due to different practices for counting deaths against geographical areas. For example, the Police figures for Aberdeen City included deaths, which had occurred in Aberdeen, of people who had lived in Aberdeenshire or Moray. GROS counted such cases on the basis of its understanding of the area of residence of the deceased.

B8. It follows that there will inevitably be differences between NRS's figures and those of other bodies, because different organisations may use different definitions, perhaps because their reasons for compiling their figures differ because they need to use them for different purposes. For example, the Police did not include suicides in their drug-related death figures because their need for such figures was to monitor the numbers of cases where people have died accidentally after taking controlled drugs, as they have a duty to investigate any potential criminal activity involved in the supply of controlled drugs to the deceased. The Police investigate suicides in a different way (for which it does not matter what method was used, such as legal or illegal drugs, hanging, or falling from a height), and therefore did not include suicides involving drugs in their drug-related death figures. In addition, NRS and other bodies may hold different information in some cases (e.g. when registering a young person's death, a parent may say that the person's usual place of residence was the family's home address, whereas the Police records may hold a different address). This may sometimes lead to differences in the direction of the year-to-year change shown by NRS's and another body's statistics (e.g. one set of data might suggest a slight rise, the other a slight fall). However, such differences between NRS's and other bodies' figures should not be a cause for concern, because they can be explained by the kinds of reasons given above. In addition, as mentioned in sections 4 and 5, the figures for any given part of Scotland may be subject to year-to-year fluctuations: using 5-year moving averages should provide a better indication of the level and any long-term trend than looking only at (say) the figure for the latest year and the change from the previous year.

B9. Other organisations may interpret the term ‘drug-related deaths’ in other ways. Drug-related deaths which were known to be suicides were excluded from the National Drug-Related Deaths Database (Scotland) Report 2009, which was prepared by the Information Services Division (ISD) of NHS National Services Scotland, and is available (along with the corresponding reports for 2010 and 2011) on the ISD website. ISD's database was established to collect detailed information, from a range of local data sources, on the nature and circumstances of people who had died a drug-related death - for example, including data on the person's social circumstances, medical and drug use history, and previous contact with health and criminal justice services. The ISD publication for 2009 included sections on Socio-demographics, Drug Use History, Medical and Psychiatric History and Adverse Life Events, the Death, Toxicology and Substance Prescribing, and Contact With Services. It also had an appendix on the reasons for differences between ISD's figures and those given here, which include some differences in coverage and definitions (such as ISD's exclusion of confirmed suicides) and the fact that their local contacts did not provide data for some drug-related deaths.

B10. Among the recommendations made by the National Forum on Drug-related Deaths in its annual report for 2009/10 was one which relates to this publication:

‘In recognition of the expanding range of causes of drug related deaths, and in keeping with the aims of the Advisory Committee on Misuse of Drugs report on Drug Related Deaths (published in 2000) to include a wider view of mortality caused by drug misuse, the forum recommends:

- that GROS include a table within their annual drug related deaths report that reflects deaths from ‘some causes which may be associated with present or past drug misuse’;
- that in the coming year, this includes detail on deaths caused by Hepatitis C and HIV; and
- that the forum and GROS explore the possibility of including violence, trauma and road traffic accidents in future reports.’

As a result, Table Z was added to the previous edition of this publication, and has been expanded in this edition.

B11. The top part of Table Z gives the numbers of deaths which are counted as ‘drug-related’ (on the basis of the ‘wide’ definition), with separate figures for:

- the basis used for the statistics in this publication (i.e. the Drug Strategy ‘baseline’ definition, as implemented by NRS);
- deaths which are within the ‘baseline’ definition but are excluded from the figures produced by GROS/NRS for reasons which are given in paragraph A3 of Annex A;
- all other deaths which are counted as ‘drug-related’ in terms of the ‘wide’ definition.

B12. The remainder of Table Z gives some information which was requested by members of the National Forum, starting with the numbers of deaths from some causes which may be associated with present or past drug misuse. At present, this shows only the following two causes of death:

- Hepatitis C - the virus may be transmitted through sharing needles when injecting recreational drugs. It has been estimated that nearly 40% of intravenous drug users have the infection and around 35% of people with the virus will have contracted it this way (source: www.bbc.co.uk, 27 July 2010). However, the infection can be transmitted in other ways, such as through a tattoo or body piercing with equipment that has not been properly sterilised, or a blood transfusion or medical treatment in a country where blood screening for hepatitis C is not routine, or where medical equipment is reused but not adequately sterilised. Therefore, only a proportion of deaths caused by Hepatitis C will be due to drug misuse.
- HIV - using a needle or syringe that has already been used by someone who is infected is one of the two main ways to become infected, the other being unprotected sexual intercourse with an infected person. Therefore, only a proportion of deaths caused by HIV will be due to drug misuse.

B13. The next part of Table Z shows the number of volatile substance abuse deaths in Scotland, as published by the International Centre for Drug Policy (ICDP) at St George's, University of London. For the purposes of ICDP's statistics:

- volatile substance abuse is the deliberate abuse of a volatile substance to achieve a change in mental state; and
- a volatile substance abuse death is one which would not have occurred if the deceased had not been abusing a volatile substance.

A few deaths per year may be counted as both 'drug-related' and 'volatile substance abuse' (an example might be a case where the cause of death was reported as 'combined toxic effects of methadone and butane'). ICDP produces its figures for Scotland using information from NRS, the Crown Office and Procurator Fiscal Service, and other sources. However, ICDP's statistics relate to the year of death (whereas NRS's are for the year of registration), and may be revised later, if ICDP obtains further information on some deaths. More details of ICDP's figures are given in its Volatile Substance Abuse Mortality Report, which can be found within the news and publication section of the St George's University website.

B14. The final part of Table Z provides information about so-called New Psychoactive Substances (NPSs), which are the subject of Annex E.

Annex C – References

Arrundale J and Cole S K	**Collection of information on drug related deaths by the General Register Office for Scotland**	General Register Office for Scotland 1995
Christophersen O, Rooney C and Kelly S	**Drug related mortality: methods and trends**	'Population Trends' 93, Office for National Statistics, 1998
Corkery, J	**UK drug-related mortality – issues in definition and classification**	'Drugs and Alcohol Today' volume 8 issue 2, Pavilion Journals, 2008
The Advisory Council on the Misuse of Drugs	**Reducing drug related deaths**	Home Office, 2000

Annex D – The questionnaire used to obtain further information about drug-related deaths, with effect from 2008

NB: A different questionnaire was used for 2007 and earlier years. Following consultation with members of the Pathologists sub-group of the National Forum on Drug-related Deaths, the current version was introduced for use with effect from 2008.

Confidential **Form ME4**
General Register Office for Scotland *Crown Office*

DEATHS INVOLVING OR RESULTING FROM ABUSE OF CONTROLLED SUBSTANCES

Please return to: Vital Events Branch, GROS, Ladywell House, Ladywell Road, Edinburgh EH12 7TF

Name of deceased: ……

Date of birth (*dd/mm/yyyy*)**:** / / **Date of death:** (*dd/mm/yyyy*)**:** / /

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1. Was the deceased a known or suspected **habitual** drug/solvent abuser? Yes ☐ No ☐

2. Was the death the result of overdose / intoxication? Yes ☐ No ☐

3. Was the death due to a complication of drug abuse? Yes ☐ No ☐
(e.g. acute infection or cocaine-related cardiac arrhythmia
- but ***not*** chronic infections or diseases, such as Hepatitis C or HIV)

If 'Yes', please specify ……..

4(i) Based on the available evidence, what were the main drugs or solvents you believe were implicated in, or which potentially contributed to, the cause of death? (If possible, list in **descending** order of importance in relation to the cause of death):

a. …… ..... d. …… ……

b. …… e. ……

c. …….. f. ……

4(ii) Please specify any other drug(s)/ solvent(s) which were present, but which were not considered to have had any direct contribution to this death:

a. ……..... c. ……

b. …… d. ……

5. Was alcohol present at the time of death? Yes ☐ No ☐

If 'Yes', was it implicated in the cause of death Yes ☐ No ☐

6. Pathologist's view of cause of death *(full details - as would appear on a medical certificate of cause of death) :*

I **(a)** …… …… ……..
(b) …… …… ……..
(c) …… …… ……..
(d) …… …… ……..
II …… …… ……..

7. Any other comments or information which may help in coding this death?

…… …… ……

…… ……

Annex E – So-called ‘New Psychoactive Substances’

E1 The term ‘New Psychoactive Substances’ (NPSs) is meant to cover the kinds of substances that people have, in recent years, begun to use for intoxicating purposes. NPSs include so-called ‘legal highs’ (by which is meant substances which were legally available at the time of the death, whether or not they have since become controlled). In general, when an NPS first became available, it would not have been a controlled substance under the Misuse of Drugs Act 1971. Some NPSs may still not be controlled under the Act. The definition of NPSs therefore includes current so-called ‘legal highs’, and also substances which used to be described as ‘legal highs’ but are now controlled.

E2 The final part of Table Z shows the numbers of deaths involving NPSs. The main points from those figures are set out in paragraph E8 onwards, but first we must say something about the kinds of statistics that are available and which drugs are counted as NPSs. The table distinguishes between deaths for which NPSs:

(a) were implicated in, or potentially contributed to the death; and
(b) were present but not considered to have contributed to the death.

In each case, the figures are sub-divided into:

(i) deaths which fall within the definition of ‘drug-related deaths’ used to produce the statistics given in this report (whether because the NPS was controlled at the time, or because the person had also used a controlled substance, like heroin or methadone); and
(ii) deaths not counted in this report's statistics (e.g. cases where the deceased person appears to have used only an NPS that was not controlled at that time).

In addition, the figures under (a) are further sub-divided, in order to show the extent to which deaths appear to have been due to the use of one (or more) NPSs alone or due to the use of combination of them and other types of substance.

E3 Deaths involving a particular substance may be counted in different ways at different times, because the classification of that substance may have changed. For example, mephedrone is an NPS. It was a ‘legal high’ until 15 April 2010, because it was not a controlled substance until it became a Class B drug with effect from 00.01 on 16 April 2010. Therefore, a death which was due solely to mephedrone, with no other substance found to be present in the body, would be counted as follows:

- if it occurred up to 15 April 2010, it would not be included in this publication's statistics of drug-related deaths, because the death did not involve any substance that was controlled at the time of the death. However, it would be counted in the section of Table Z that gives figures for deaths involving NPSs, in the first line of part (a) (ii) of that table.
- if it occurred after 15 April 2010, it would be included in this publication's statistics of drug-related deaths, because the death involved a substance that was controlled at the time of death. It would also be counted in the section of Table Z that gives figures for deaths involving NPSs, in the first line of part (a) (i) of that table.

NB: NRS uses the date of death to determine how to count a drug because the information that NRS has does not include when the person used the drug.

E4. The next three paragraphs list the NPSs which are counted for the purpose of statistics of deaths registered in Scotland up to the end of 2012, distinguishing between:

- NPSs which were already controlled substances at the start of 2009 (as that was the first year in which deaths involving NPSs were registered in Scotland);
- NPSs which became controlled substances between the start of 2009 and the end of 2012 (i.e. whose classification changed during the period covered by these figures for deaths involving NPSs); and
- NPSs which were not controlled substances at the end of 2012 (some of which have since become controlled substances).

Note that these are not comprehensive lists of NPSs. These lists cover only the NPSs which were involved in deaths which were registered in Scotland by the end of 2012, plus a few other NPSs whose names were added to the look-up table that NRS uses to identify the types of substance that are involved in drug-related deaths.

E5 The following NPSs were already controlled substances at the start of 2009:

- cathinone
- PMMA

A death due solely to one of these drugs would be counted in this publication's statistics of drug-related deaths. It would also be counted in Table Z's figures for deaths involving NPSs.

E6 The following NPSs became controlled substances between the start of 2009 and the end of 2012.

Substance	Controlled with effect from:
BZP / Benzylpiperazine	23 December 2009
CPP / Chlorophenylpiperazine	23 December 2009
GBL / Gammabutyrolactone	23 December 2009
TFMPP / Trifluoromethylphenlpiperazine	23 December 2009
1,4-Butanediol	23 December 2009
Butylone / Beta-keto-N-methylbenzodioxyolylropylamine	16 April 2010
MDPV / Methylenedioxypyrovalerone	16 April 2010
Mephedrone / 4-Methylmethcathinone	16 April 2010
4-MEC / Methylethcathinone/	16 April 2010
Naphyrone	23 July 2010
Phenazepam	13 June 2012

A death due solely to one of these drugs would not be counted in this publication's statistics of drug-related deaths if it occurred before the relevant date, because it would not have involved a drug that was controlled at the time. However, it would be counted in Table Z's figures for deaths involving NPSs.

A death due solely to one of these drugs would be counted in this publication's statistics of drug-related deaths if the person died on or after the specified date. It would also be counted in Table Z's figures for deaths involving NPSs.

E7 The following NPSs had not become controlled substances by the end of 2012:

- AMT / Alphamethyltryptamine
- APB / 2-aminopropyl-benzofuran/ 5 APB / 6 APB (NB: subject to a temporary class order with effect from 10 June 2013)
- API / 5-API / 5-IT / 5-(2-aminopropyl) indole - APB (NB: subject to a temporary class order with effect from 10 June 2013)
- etizolam
- khat
- methiopropamine
- 5-MEO-DALT

A death involving only these substances would not be counted in this publication's statistics of drug-related deaths because it would not have involved a drug that was controlled at the time. However, it would be counted in Table Z's figures for deaths involving NPSs.

E8 The figures which are given in final part of Table Z show that NPSs were involved in 47 of the deaths which were registered in Scotland in 2012, and that NPSs were implicated in, or potentially contributed to, 32 of those deaths. Almost all of the latter (30 out of the 32) are included in this report's statistics of drug-related deaths. Other substances were also implicated in, or potentially contributed to, almost all of those deaths (27 out of the 30). For example, pathologists reported that they believed that such deaths were due to, say, AMT and cocaine, or phenazepam and methadone.

E9 Table Z also shows that there were 15 deaths registered in 2012 for which NPSs were present but not considered to have contributed to the death. All those deaths are included in this report's statistics of drug-related deaths. Examples are deaths which pathologists believed to be caused by heroin, methadone or other drugs, but for which an NPS (usually phenazepam) was found to be present in the body.

E10 In total, this report's statistics of drug-related deaths included 45 out of the 47 deaths registered in 2012 for which NPSs were reported. NPSs were the only substances implicated in, or which potentially contributed to, five of those 47 deaths.

E11 It appears that the first Scottish deaths involving NPSs were registered in 2009. Of course, it is possible that NPSs were involved in some deaths in Scotland in earlier years, but their presence was not identified (e.g. perhaps because other drugs were found, and it appeared to the investigators that those other drugs had caused the deaths) - but all the data can tell us its that none of the deaths that were registered in Scotland in 2008 or earlier years were reported to involve NPSs. There were 4 deaths involving NPSs registered in 2009, 12 in 2010, 47 in 2011 and 47 in 2012).

E12 This report's statistics of drug-related deaths for each year include almost all the deaths which involved NPSs (3 out of 4 such deaths in 2009, 8 out of 12 in 2010, 45 out of 47 in 2011, and 45 out of 47 in 2012). Of the deaths which involved NPSs, the proportion that were ones for which NPSs were the only substances implicated in, or potentially contributing to, the death was 0 out of 4 in 2009, 8 out of 12 in 2010, 1 out of 47 in 2011, and 5 out of 47 in 2012 - so the proportion was small in every year apart from 2010. The main reason for 2010 being the exception is that there were several deaths in that year for which mephedrone was the only substance that was implicated in the death.

Table 1: Drug-related deaths in Scotland, 1996 – 2012

Year	Drug-related deaths registered in year	Annual moving averages		Likely range of values around 5-year average [1]	
		3-year average	5-year average	likely lower	likely upper
1996	244				
1997	224	239			
1998	249	255	260	228	292
1999	291	277	278	245	310
2000	292	305	309	275	344
2001	332	335	323	288	358
2002	382	344	336	300	372
2003	317	352	345	308	381
2004	356	336	362	325	400
2005	336	371	377	339	415
2006	421	404	428	388	469
2007	455	483	466	424	509
2008	574	525	496	452	540
2009	545	535	529	484	574
2010	485	538	554	508	600
2011	584	550			
2012	581				

Footnote

1) More information can be found in paragraph 3.1.2 of the commentary.

Table 2: Drug-related deaths by underlying cause of death[1], Scotland, 1996 – 2012

Year	All causes of death	Underlying cause of death (ICD10 codes)				
		Drug abuse (F11-F16, F19)	Accidental poisoning (X40-X44)	Intentional self-poisoning (X60-X64)	Assault by drugs, etc. (X85)	Undetermined intent (Y10-Y14)
annual averages:						
1996-2000	260	189	13	34	0	25
1998-2002	309	227	15	30	0	38
1996	244	175	10	41	0	18
1997	224	142	14	42	0	26
1998	249	179	16	32	0	22
1999	291	227	12	19	1	32
2000	292	220	11	34	0	27
2001	332	227	19	34	0	52
2002	382	280	17	30	0	55
2003	317	216	15	40	0	46
2004	356	232	32	32	0	60
2005	336	204	31	43	0	58
2006	421	280	51	40	0	50
2007	455	299	39	27	0	90
2008	574	370	59	34	0	111
2009	545	380	60	34	0	71
2010	485	312	67	28	0	78
old rules - 2011	584	417	56	36	0	75
old rules - 2012	581	381	72	65	0	63
2008-2012 average (old coding rules)	554	372	63	39	0	80
new coding rules						
2011	584	12	346	36	0	190
2012	581	26	365	65	0	125

Footnote

1) The coding rules were changed with effect from the start of 2011, as explained in paragraph 2.6 of the commentary.

Briefly, 'drug abuse' deaths from 'acute intoxication' were previously counted under 'mental and behavioural disorders due to psychoactive substance use' (unless they were known to be due to intentional self-harm or assault). They are now counted under the appropriate 'poisoning' category.

For example, if the cause of death of a known drug abuser was given as 'adverse effects of heroin' (and it was not intentional self-harm or assault), the underlying cause of death would be coded as follows:

(a) up to 2010 - as 'F11 - mental and behavioural disorders due to use of opioids'

(b) from 2011 - the appropriate 'poisoning' category, such as 'X42 - accidental poisoning by and exposure to narcotics and psychodysleptics (hallucinogens) not elsewhere classified'

National Records of Scotland has estimated what the figures for 2011 onwards would have been, had the data been coded using the old rules.

Table 3: Drug-related deaths by selected drugs reported[1], Scotland, 1996 – 2012

Year	All drug-related deaths	Heroin / morphine [2]	Methadone	Benzodiazepines			Cocaine	Ecstasy	Amphet-amines	Alcohol
				Any benzo-diazepine	of which: Diazepam	of which: Temaz-epam				
annual averages:										
1996-2000	260	128	74	..	116	47	6	7	..	91
1998-2002	309	190	70	..	154	38	14	12	..	119
1996	244	84	100	..	84	48	3	9	..	87
1997	224	74	86	..	93	33	5	2	..	70
1998	249	121	64	..	113	58	4	3	..	86
1999	291	167	63	..	142	56	12	8	..	89
2000	292	196	55	164	146	39	4	11	3	123
2001	332	216	69	182	156	20	19	20	5	140
2002	382	248	98	245	214	16	31	20	13	156
2003	317	175	87	186	153	35	29	14	10	128
2004	356	225	80	140	113	5	38	17	10	116
2005	336	194	72	110	90	7	44	10	11	114
2006	421	260	97	94	78	10	33	13	11	131
2007	455	289	114	109	79	4	47	11	11	157
2008	574	324	169	149	115	7	36	5	11	167
2009	545	322	173	154	116	9	32	2	6	165
2010	485	254	174	122	93	3	33	0	3	127
2011	584	206	275	185	123	8	36	8	24	129
2012	581	221	237	196	160	6	31	9	18	111
annual averages:										
2003-2007	377	229	90	128	103	12	38	13	11	129
2008-2012	554	265	206	161	121	7	34	5	12	140

Footnotes

1) More than one drug may be reported per death. These are mentions of each drug, and should not be added to give total deaths. Up to 2007, some pathologists reported only those drugs which they thought caused, or contributed to, the death. From 2008, they report separately:

(a) drugs which were implicated in, or which potentially contributed to the cause of death; and

(b) other drugs which were present but which were not considered to have had any direct contribution to the death.

The figures for 2008 onwards are on the first basis - i.e. basis (a) - which is now the standard basis for figures for individual drugs. The figures for 2008 have been revised from those published in Drug-related Deaths in Scotland in 2008'.

There may be other differences between years and/or areas in the way in which the information was produced - more information can be found in Section 2 of the commentary.

2) More information can be found in paragraph 3.3.1 of the commentary.

Table 4: Drug-related deaths by sex and age, Scotland, 1996 – 2012

Year	Drug-related deaths	Sex		Age-group [1]					Age		
		Male	Female	under 25	25 - 34	35 - 44	45 - 54	55 & over	Lower quartile	Median	Upper quartile
annual averages:											
1996-2000	260	207	53	83	108	46	12	10	..	..	..
1998-2002	309	252	58	87	128	66	19	10	..	..	..
1996	244	185	59	86	103	32	13	10	22	28	34
1997	224	179	45	76	89	31	14	14	23	29	35
1998	249	194	55	88	103	37	9	12	23	27	34
1999	291	237	54	94	118	62	10	7	23	28	35
2000	292	239	53	73	126	69	16	8	25	30	36
2001	332	267	65	80	140	70	31	12	25	31	38
2002	382	321	61	100	153	92	27	10	24	30	37
2003	317	256	61	78	123	81	20	17	25	31	37
2004	356	289	67	81	138	92	35	10	25	31	38
2005	336	259	77	48	104	126	37	21	28	36	41
2006	421	334	87	69	154	127	54	16	27	34	40
2007	455	393	62	94	149	149	45	18	26	34	41
2008	574	461	113	92	211	174	71	26	27	34	41
2009	545	413	132	71	178	189	78	29	28	35	43
2010	485	363	122	65	161	158	76	25	28	35	43
2011	584	429	155	58	184	212	94	36	30	37	43
2012	581	416	165	46	171	199	115	50	31	38	46
2008-2012 average	554	416	137	66	181	186	87	33	..	..	..

Footnote

1) For 2001, 2003 and 2006, there are differences of one or two between the overall total for the year and the sum of the figures for the individual age-groups. This is due to the use of a new database - further information can be found in Annex A, paragraph A4.

Table 5: Drug-related deaths by sex, age and underlying cause of death[1], Scotland, 2012

	All causes of death	Underlying cause of death (ICD10 codes)				
		Drug abuse (F11-F16, F19)	Accidental poisoning (X40-X44)	Intentional self-poisoning (X60-X64)	Assault by drugs, etc. (X85)	Undetermined intent (Y10-Y14)
(a) New coding rules						
All deaths	**581**	26	365	65	0	125
Males	**416**	19	280	31	0	86
Females	**165**	7	85	34	0	39
Under 25	**46**	4	28	3	0	11
25-34	**171**	10	116	14	0	31
35-44	**199**	11	137	13	0	38
45-54	**115**	1	64	19	0	31
55 and over	**50**	0	20	16	0	14
Males						
Under 25	**33**	4	18	2	0	9
25-34	**136**	8	97	8	0	23
35-44	**148**	7	109	7	0	25
45-54	**72**	0	45	6	0	21
55 and over	**27**	0	11	8	0	8
Females						
Under 25	**13**	0	10	1	0	2
25-34	**35**	2	19	6	0	8
35-44	**51**	4	28	6	0	13
45-54	**43**	1	19	13	0	10
55 and over	**23**	0	9	8	0	6
(b) Old coding rules						
All deaths	**581**	381	72	65	0	63
Males	**416**	297	48	31	0	40
Females	**165**	84	24	34	0	23
Under 25	**46**	33	5	3	0	5
25-34	**171**	126	18	14	0	13
35-44	**199**	156	17	13	0	13
45-54	**115**	61	17	19	0	18
55 and over	**50**	5	15	16	0	14
Males						
Under 25	**33**	22	4	2	0	5
25-34	**136**	105	15	8	0	8
35-44	**148**	120	13	7	0	8
45-54	**72**	46	9	6	0	11
55 and over	**27**	4	7	8	0	8
Females						
Under 25	**13**	11	1	1	0	0
25-34	**35**	21	3	6	0	5
35-44	**51**	36	4	6	0	5
45-54	**43**	15	8	13	0	7
55 and over	**23**	1	8	8	0	6

Footnote

1) The coding rules were changed with effect from the start of 2011, as explained in paragraph 2.6 of the commentary.

Briefly, 'drug abuse' deaths from 'acute intoxication' were previously counted under 'mental and behavioural disorders due to psychoactive substance use' (unless they were known to be due to intentional self-harm or assault). They are now counted under the appropriate 'poisoning' category.

For example, if the cause of death of a known drug abuser was given as 'adverse effects of heroin' (and it was not intentional self-harm or assault), the underlying cause of death would be coded as follows:

(a) up to 2010 - as 'F11 - mental and behavioural disorders due to use of opioids'

(b) from 2011 - the appropriate 'poisoning' category, such as 'X42 - accidental poisoning by and exposure to narcotics and psychodysleptics (hallucinogens) not elsewhere classified'

National Records of Scotland has estimated what the figures for 2011 onwards would have been, had the data been coded using the old rules.

Table 6: Drug-related deaths by sex, age and selected drugs reported[1], Scotland, 2012

	All drug-related deaths	Heroin / morphine [2]	Methadone	Benzodiazepines			Cocaine	Ecstasy	Amphet-amines	Alcohol
				Any benzo-diazepine	of which: Diazepam	of which: Temazepam				
(a) drugs which were implicated in, or which potentially contributed to, the cause of death										
All deaths	**581**	**221**	**237**	**196**	**160**	**6**	**31**	**9**	**18**	**111**
Males	**416**	178	179	143	120	4	28	6	13	93
Females	**165**	43	58	53	40	2	3	3	5	18
Under 25	**46**	14	16	19	17	0	7	4	0	10
25-34	**171**	83	67	70	62	1	13	3	5	36
35-44	**199**	77	98	68	61	0	7	2	11	38
45-54	**115**	37	48	26	16	2	2	0	2	20
55 and over	**50**	10	8	13	4	3	2	0	0	7
Males										
Under 25	**33**	10	10	12	10	0	5	3	0	7
25-34	**136**	67	56	55	47	1	13	2	3	33
35-44	**148**	65	71	52	50	0	6	1	9	34
45-54	**72**	29	35	17	10	1	2	0	1	13
55 and over	**27**	7	7	7	3	2	2	0	0	6
Females										
Under 25	**13**	4	6	7	7	0	2	1	0	3
25-34	**35**	16	11	15	15	0	0	1	2	3
35-44	**51**	12	27	16	11	0	1	1	2	4
45-54	**43**	8	13	9	6	1	0	0	1	7
55 and over	**23**	3	1	6	1	1	0	0	0	1
(b) all drugs which were found to be present in the body										
All deaths	**581**	**243**	**253**	**419**	**386**	**15**	**48**	**9**	**25**	**241**
Males	**416**	191	187	313	292	12	37	6	18	190
Females	**165**	52	66	106	94	3	11	3	7	51
Under 25	**46**	15	16	31	29	0	9	4	0	18
25-34	**171**	89	73	140	134	3	19	3	10	76
35-44	**199**	85	108	156	150	6	14	2	12	87
45-54	**115**	44	48	75	65	2	4	0	3	51
55 and over	**50**	10	8	17	8	4	2	0	0	9
Males										
Under 25	**33**	10	10	19	17	0	6	3	0	13
25-34	**136**	71	58	116	110	3	17	2	6	65
35-44	**148**	71	77	118	115	5	9	1	10	71
45-54	**72**	32	35	50	44	1	3	0	2	35
55 and over	**27**	7	7	10	6	3	2	0	0	6
Females										
Under 25	**13**	5	6	12	12	0	3	1	0	5
25-34	**35**	18	15	24	24	0	2	1	4	11
35-44	**51**	14	31	38	35	1	5	1	2	16
45-54	**43**	12	13	25	21	1	1	0	1	16
55 and over	**23**	3	1	7	2	1	0	0	0	3

Footnotes

1) More than one drug may be reported per death. These are mentions of each drug, and should not be added to give total deaths.

Part (a) counts only drugs which, the pathologist believed, were implicated in, or potentially contributed to, the cause of death

Part (b) counts all the drugs which the pathologist found to be present in the body, including those which the pathologist did not consider to have had any direct contribution to the death.

2) More information can be found in paragraph 3.3.1 of the commentary.

Table 7: Drug-related deaths involving only one drug by sex, age and selected drugs reported[1], Scotland, 2012

	Heroin / morphine [2]	Methadone	Benzodiazepines			Cocaine	Ecstasy	Amphet-amines	Alcohol (with only one drug - more information can be found in footnotes)
			Any benzo-diazepine	of which: Diazepam	Temaz-epam				
(a) only one drug (and, perhaps, alcohol) was found to be present in the body									
(i.e. only one drug, and perhaps alcohol, was implicated in the death - no other drugs were reported as being present)									
All such deaths	**14**	**12**	**5**	**1**	**1**	**3**	**0**	**3**	**25**
Males	9	11	3	1	1	3	0	2	22
Females	5	1	2	0	0	0	0	1	3
Under 25	0	0	0	0	0	0	0	0	1
25-34	1	1	0	0	0	3	0	2	2
35-44	4	4	1	1	0	0	0	0	10
45-54	2	4	2	0	0	0	0	1	9
55 and over	7	3	2	0	1	0	0	0	3
Males									
Under 25	0	0	0	0	0	0	0	0	1
25-34	0	1	0	0	0	3	0	1	2
35-44	3	3	1	1	0	0	0	0	9
45-54	1	4	1	0	0	0	0	1	8
55 and over	5	3	1	0	1	0	0	0	2
Females									
Under 25	0	0	0	0	0	0	0	0	0
25-34	1	0	0	0	0	0	0	1	0
35-44	1	1	0	0	0	0	0	0	1
45-54	1	0	1	0	0	0	0	0	1
55 and over	2	0	1	0	0	0	0	0	1
(b) only one drug (and, perhaps, alcohol) was implicated in, or potentially contributed to the cause									
(other drugs may have been reported as being present, but were not considered to have had any direct contribution to the death)									
All such deaths	**76**	**68**	**8**	**1**	**1**	**4**	**0**	**5**	**49**
Males	61	52	6	1	1	4	0	3	42
Females	15	16	2	0	0	0	0	2	7
Under 25	3	5	0	0	0	0	0	0	3
25-34	25	17	3	0	0	4	0	2	12
35-44	26	27	1	1	0	0	0	2	19
45-54	15	14	2	0	0	0	0	1	12
55 and over	7	5	2	0	1	0	0	0	3
Males									
Under 25	2	2	0	0	0	0	0	0	2
25-34	21	16	3	0	0	4	0	1	12
35-44	21	19	1	1	0	0	0	1	17
45-54	12	10	1	0	0	0	0	1	9
55 and over	5	5	1	0	1	0	0	0	2
Females									
Under 25	1	3	0	0	0	0	0	0	1
25-34	4	1	0	0	0	0	0	1	0
35-44	5	8	0	0	0	0	0	1	2
45-54	3	4	1	0	0	0	0	0	3
55 and over	2	0	1	0	0	0	0	0	1

Footnotes

1) Part (a) of this table gives the number of deaths for which each of the specified drugs was the only drug which was found to be present in the body. For example, a death for which:

(a) both cocaine and alcohol were implicated would be counted twice: once under 'cocaine' and once under 'alcohol';

(b) both cocaine and alcohol were implicated, and methadone was found to be present in the body but was not considered to have had any direct contribution to the death, would not be counted at all in the upper part of the table.

The final column of part (a) gives the number of drug-related deaths for which alcohol was found to be present in the body together with only one drug.

Part (b) of this table gives the number of deaths for which each of the specified drugs was the only drug which was considered to have been implicated in, or potentially contributed, to the cause of death. The pathologist may have reported that other drugs were present in the body - but, if so, the pathologist did not consider that they had any direct contribution to the death.

The final column of part (b) gives the number of drug-related deaths for which alcohol was thought, by the pathologist, to be implicated in the cause of death together with only one drug. For example, a death for which:

(a) both cocaine and alcohol were implicated would be counted twice: once under 'cocaine' and once under 'alcohol'.

(b) both cocaine and alcohol were implicated, and methadone was found to be present in the body but was not considered to have had any direct contribution to the death, would also be counted under 'cocaine' and 'alcohol' (but not under methadone').

(c) cocaine, methadone and alcohol were all implicated would not be counted at all in this table.

2) More information can be found in paragraph 3.3.1 of the commentary.

Table 8 Drug-related deaths per 1,000 population, Scotland, 2000 to 2012

	Age-group						
	15 - 24 [1]	25 - 34	35 - 44	45 - 54	55 - 64 [2]	Ages 15 - 64	All ages [3]
2000	0.12	0.18	0.09	0.02	0.01	0.09	0.06
2001	0.12	0.20	0.09	0.04	0.01	0.10	0.07
2002	0.16	0.23	0.12	0.04	0.01	0.11	0.08
2003	0.12	0.19	0.10	0.03	0.02	0.09	0.06
2004	0.12	0.22	0.12	0.05	0.00	0.10	0.07
2005	0.07	0.17	0.16	0.05	0.02	0.10	0.07
2006	0.10	0.25	0.16	0.08	0.02	0.12	0.08
2007	0.14	0.24	0.19	0.06	0.02	0.13	0.09
2008	0.13	0.33	0.23	0.10	0.03	0.16	0.11
2009	0.10	0.28	0.25	0.10	0.03	0.15	0.10
2010	0.09	0.24	0.22	0.10	0.03	0.14	0.09
2011	0.08	0.27	0.30	0.12	0.04	0.16	0.11
2012 [4]	0.07	0.25	0.28	0.14	0.05	0.16	0.11
average of rates for latest five years (2008 to 2012)	0.10	0.27	0.26	0.11	0.04	0.16	0.11

Footnotes

1) Some other tables which provide figures by age-group give the number of drug-related deaths of people who were aged under 25. However, this column's figures are for ages 15-24, inclusive, as there are very few drug-related deaths of people aged 0-14.

2) Some other tables which provide figures by age-group give the number of drug-related deaths of people who were aged 55 and over. However, this column's figures are for ages 55-64, inclusive, as there are few drug-related deaths of people aged 65 and over.

3) Including ages 0-14 and 65+.

4) Figures for 2012 were calculated using the mid-2012 population estimates, which take account of the results of the 2011 Census. The figures for 2002 to 2011 were calculated using the original estimates for those years, which are based on the 2001 Census and subsequent births, migration and deaths. In the next edition, the figures for 2002 to 2011 will be recalculated using "rebased" estimates of the mid-year population which will take account of the results of the 2011 Census. (The rebased estimates for 2002 to 2010 had not been produced at the time this publication was prepared.)

Table 9 Drug-related deaths by sex and age-group: average for 2008 to 2012, and relative to the estimated number of problem drug users

	2008-2012 average number of drug-related deaths per year	Problem drug users (aged 15-64) in 2009/10 [1]				Annual average drug-deaths: 2008-2012 per 1,000 problem drug users in 2009/10 [4]		
		Estimate	95% Confidence Interval [2] Lower end	Upper end	+ / - [3]	Estimate	Likely range of values from [5]	to [5]
All	**554**	**59,600**	**58,300**	**61,000**	**2%**	**9.3**	**9.1**	**9.5**
Males	416	42,000	..	..	..	9.9	..	..
Females	137	17,300	..	..	..	7.9	..	..
15 to 24	66	11,100	..	..	..	5.9	..	..
25 to 34	181	23,100	..	..	..	7.8	..	..
35 to 64	297	25,200	..	..	..	11.8	..	..
Males								
15 to 24	50	7,900	..	..	..	6.3	..	..
25 to 34	144	16,000	..	..	..	9.0	..	..
35 to 64	218	18,200	..	..	..	12.0	..	..
Females [6]								
15 to 24	16	3,200	..	..	..	5.1	..	..
25 to 34	37	7,100	..	..	..	5.3	..	..
35 to 64	79	7,000	..	..	..	11.3	..	..

Footnotes

1) estimates of problem drug users aged 15 to 64, as published by the Information Services Division (ISD) of NHS National Services Scotland. ISD's estimates by sex and by age-group exclude problem drug users in Orkney, Shetland and Western Isles / Eilean Siar, because ISD was unable to estimate the numbers of problem drug users of each sex in those areas.
2) The 95% Confidence Intervals are the range within which it is expected that the true value will lie. On the basis of statistical theory, there is only a 5% chance that a 95% Confidence Interval will not include the (unknown) true value of the quantity which is being estimated - so, on average, one would expect that 19 out of 20 of all 95% Confidence Intervals will include the (unknown) true values. ISD did not publish confidence intervals for the numbers for each sex or for each age-group
3) the average of the percentage differences between (a) the estimate and the lower end of the 95% Confidence Interval and (b) the estimate and the upper end of the 95% Confidence Interval. It is calculated using the rounded values of the estimate and the two ends
4) these death rates are broad indications only, as (e.g.) the estimated numbers of problem drug users may be subject to wide confidence intervals.
5) the "from" value in the range for the rate is calculated using the upper end of the 95% Confidence Interval for the estimated number of problem drug users, and the "to" value in the range for the rate is calculated using the lower end of the 95% Confidence Interval for the estimated number of problem drug users,
6) the "female" figure for each age-group has been estimated by subtracting the corresponding "male" figure from the total for the age-group. ISD did not publish estimates of the number of female problem drug users broken down by age-group because of their potential unreliability.

Table HB1: Drug-related deaths by NHS Board area, 2002 - 2012 (with averages for 1998-2002 and 2008-2012)

NHS Board area	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Annual averages 1998 to 2002	Annual averages 2008 to 2012	Population in 2010	2008-2012 average deaths per 1,000 population [1]
Scotland	**382**	**317**	**356**	**336**	**421**	**455**	**574**	**545**	**485**	**584**	**581**	**309**	**554**	**5,222,100**	**0.11**
Ayrshire & Arran	33	19	20	15	25	36	40	39	31	47	43	21	40	366,860	0.11
Borders	0	2	2	7	2	4	7	5	9	8	7	1	7	112,870	0.06
Dumfries & Galloway	9	9	7	7	5	10	9	8	6	12	6	7	8	148,190	0.06
Fife	12	12	17	21	19	28	37	32	35	34	38	11	35	364,945	0.10
Forth Valley	24	12	16	14	24	26	23	14	18	26	31	9	22	293,386	0.08
Grampian	47	37	39	23	47	45	41	52	44	58	31	38	45	550,620	0.08
Greater Glasgow & Clyde [2]	152	131	151	111	162	157	197	200	167	192	193	129	190	1,203,870	0.16
Highland [2]	13	10	12	13	12	16	24	21	10	33	22	7	22	310,830	0.07
Lanarkshire	37	25	33	40	40	48	44	47	53	52	61	27	51	562,477	0.09
Lothian	39	40	36	57	46	54	94	81	73	73	90	41	82	836,711	0.10
Orkney	0	0	0	0	1	0	1	0	2	0	1	0	1	20,110	0.04
Shetland	1	0	0	1	2	2	1	0	2	3	2	1	2	22,400	0.07
Tayside	14	19	23	26	35	29	53	44	34	45	55	17	46	402,641	0.11
Western Isles	1	1	0	1	1	0	3	2	1	1	1	1	2	26,190	0.06
Argyll & Clyde [3]	31	27	35	29	36	..	..	..	..	..	..	..	..	..	..
Greater Glasgow & Clyde pt.	26	24	31	26	35	..	..	..	..	..	..	..	..	..	..
Highland pt.	5	3	4	3	1	..	..	..	..	..	..	..	..	..	..
Greater Glasgow [3]	126	107	120	85	127	..	..	..	..	..	..	..	..	..	..
Highland [3]	8	7	8	10	11	..	..	..	..	..	..	..	..	..	..

Footnotes

1) Using the population in the middle of the 5-year period as a proxy for the average population over the whole period.
2) New NHS Board areas including parts of former Argyll & Clyde.
3) Former NHS Board areas (before dissolution of Argyll & Clyde on 1 April 2006).

Table HB2: Drug-related deaths by underlying cause of death[1] and NHS Board area, 2012

NHS Board area	All causes of death	Underlying cause of death (ICD10 codes)				
		Drug abuse (F11-F16, F19)	Accidental poisoning (X40-X44)	Intentional self-poisoning (X60-X64)	Assault by drugs, etc. (X85)	Undetermined intent (Y10-Y14)
(a) New coding rules						
Scotland	**581**	**26**	**365**	**65**	**0**	**125**
Ayrshire & Arran	43	1	36	4	0	2
Borders	7	0	1	4	0	2
Dumfries & Galloway	6	0	3	1	0	2
Fife	38	5	9	3	0	21
Forth Valley	31	1	10	6	0	14
Grampian	31	0	25	3	0	3
Greater Glasgow & Clyde	193	8	138	21	0	26
Highland	22	0	14	3	0	5
Lanarkshire	61	3	41	4	0	13
Lothian	90	3	38	13	0	36
Orkney	1	0	1	0	0	0
Shetland	2	0	1	0	0	1
Tayside	55	5	48	2	0	0
Western Isles	1	0	0	1	0	0
(b) Old coding rules						
Scotland	**581**	**381**	**72**	**65**	**0**	**63**
Ayrshire & Arran	43	28	10	4	0	1
Borders	7	1	0	4	0	2
Dumfries & Galloway	6	4	0	1	0	1
Fife	38	27	2	3	0	6
Forth Valley	31	19	3	6	0	3
Grampian	31	23	2	3	0	3
Greater Glasgow & Clyde	193	129	26	21	0	17
Highland	22	12	4	3	0	3
Lanarkshire	61	37	12	4	0	8
Lothian	90	52	7	13	0	18
Orkney	1	0	1	0	0	0
Shetland	2	1	0	0	0	1
Tayside	55	48	5	2	0	0
Western Isles	1	0	0	1	0	0

Footnote

1) The coding rules were changed with effect from the start of 2011, as explained in paragraph 2.6 of the commentary.

Briefly, 'drug abuse' deaths from 'acute intoxication' were previously counted under 'mental and behavioural disorders due to psychoactive substance use' (unless they were known to be due to intentional self-harm or assault). They are now counted under the appropriate 'poisoning' category.

For example, if the cause of death of a known drug abuser was given as 'adverse effects of heroin' (and it was not intentional self-harm or assault), the underlying cause of death would be coded as follows:

(a) up to 2010 - as 'F11 - mental and behavioural disorders due to use of opioids'

(b) from 2011 - the appropriate 'poisoning' category, such as 'X42 - accidental poisoning by and exposure to narcotics and psychodysleptics (hallucinogens) not elsewhere classified'.

National Records of Scotland has estimated what the figures for 2012 would have been, had the data been coded using the old rules.

Table HB3: Drug-related deaths by selected drugs reported[1] and NHS Board area, 2012

NHS Board area	All drug-related deaths	Heroin / morphine [2]	Methadone	Benzodiazepines			Cocaine	Ecstasy	Amphet-amines	Alcohol
				Any benzo-diazepine	of which: Diazepam	of which: Temazepam				
Scotland	**581**	**221**	**237**	**196**	**160**	**6**	**31**	**9**	**18**	**111**
Ayrshire & Arran	43	19	26	13	11	0	4	0	2	6
Borders	7	2	0	1	1	0	1	0	1	0
Dumfries & Galloway	6	4	4	0	0	0	0	1	0	1
Fife	38	11	14	21	20	0	2	1	2	4
Forth Valley	31	16	9	14	12	0	2	1	1	9
Grampian	31	9	15	21	18	0	6	2	0	4
Greater Glasgow & Clyde	193	82	80	29	18	2	7	1	6	36
Highland	22	9	4	10	3	0	0	0	0	5
Lanarkshire	61	22	15	9	4	1	6	1	0	18
Lothian	90	18	46	35	31	3	2	1	4	14
Orkney	1	0	0	0	0	0	0	0	0	0
Shetland	2	0	1	1	1	0	0	0	0	1
Tayside	55	29	23	42	41	0	1	1	2	13
Western Isles	1	0	0	0	0	0	0	0	0	0

Footnotes

1) More than one drug may be reported per death. These are mentions of each drug, and should not be added to give total deaths. Up to 2007, some pathologists reported only those drugs which they thought caused, or contributed to, the death. With effect from 2008, pathologists report separately (a) drugs which were implicated in, or which potentially contributed to, the cause of death and (b) other drugs which were present but which were not considered to have had any direct contribution to the death.
The figures in this table are on the first basis - i.e. basis (a) - which is now the standard basis for figures for individual drugs. They are on a different basis from those published in Table HB3 of 'Drug-related Deaths in Scotland in 2008' and earlier editions.
There may be other differences between years and/or areas in the way in which the information was produced - more information can be found in Section 2 of the commentary.
2) More information can found in paragraph 3.3.1 of the commentary.

Table HB4: Drug-related deaths per 1,000 population, NHS Board areas, annual averages for 2008 to 2012[1]

	Age-group						
	15 - 24 [2]	25 - 34	35 - 44	45 - 54	55 - 64 [3]	Ages 15 - 64	All ages [4]
Scotland	**0.10**	**0.27**	**0.26**	**0.11**	**0.04**	**0.16**	**0.11**
Ayrshire & Arran	0.12	0.32	0.29	0.12	0.04	0.17	0.11
Borders	0.07	0.21	0.17	0.06	0.01	0.09	0.06
Dumfries & Galloway	0.09	0.25	0.11	0.04	0.02	0.09	0.06
Fife	0.11	0.32	0.23	0.09	0.01	0.15	0.10
Forth Valley	0.10	0.21	0.15	0.09	0.03	0.11	0.08
Grampian	0.08	0.25	0.18	0.08	0.02	0.12	0.08
Greater Glasgow & Clyde	0.09	0.34	0.43	0.19	0.06	0.23	0.16
Highland	0.12	0.19	0.17	0.05	0.03	0.10	0.07
Lanarkshire	0.07	0.27	0.20	0.11	0.02	0.14	0.09
Lothian	0.09	0.20	0.20	0.11	0.06	0.14	0.10
Orkney	0.18	0.10	0.07	0.00	0.00	0.06	0.04
Shetland	0.16	0.16	0.19	0.00	0.06	0.11	0.07
Tayside	0.12	0.34	0.32	0.09	0.02	0.17	0.11
Western Isles	0.23	0.25	0.00	0.10	0.00	0.10	0.06

Footnotes

1) Calculated by dividing the average number of drug-related deaths per year over the specified 5-year period by the estimated population in the middle of the 5-year period (which is a proxy for the average population over the whole of the period).

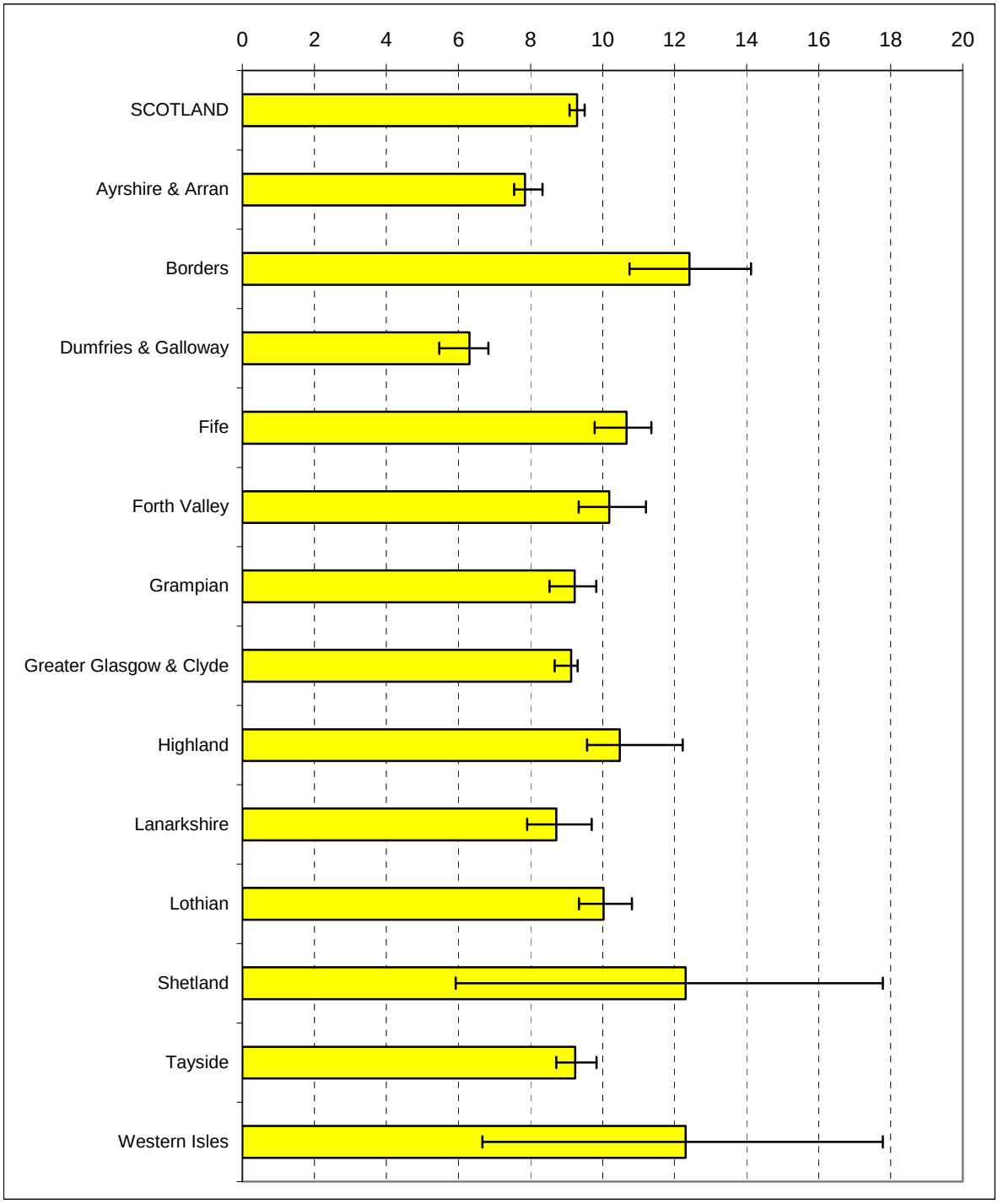
2) Some other tables which provide figures by age-group give the number of drug-related deaths of people who were aged under 25. However, this column's figures are for ages 15-24, inclusive, as there are very few drug-related deaths of people aged 0-14.

3) Some other tables which provide figures by age-group give the number of drug-related deaths of people who were aged 55 and over. However, this column's figures are for ages 55-64, inclusive, as there are few drug-related deaths of people aged 65 and over.

4) Including ages 0-14 and 65+.

Figure 2: Drug-related deaths per 1,000 problem drug users - NHS Board areas

NB: these figures were calculated using the annual average number of drug-deaths for 2008-2012 and the estimated numbers of problem drug users for 2009/10
The "error bars" indicate the likely ranges of values - see the text



NB: figures for Orkney are not available - see Table HB5 and paragraph 4.7

Table HB5: Drug-related deaths by NHS Board area: average for 2008 to 2012, and relative to the estimated number of problem drug users

	2008-2012 annual average drug-deaths (all ages)	Problem drug users (aged 15-64) in 2009/10 [1]				Annual average drug-deaths: 2008-2012 per 1,000 problem drug users in 2009/10 [4]		
			95% Confidence Interval [2]				Likely range of values	
		Estimate	Lower end	Upper end	+ / - [3]	Estimate	from [5]	to [5]
Scotland	**554**	**59,600**	**58,300**	**61,000**	**2%**	**9.3**	**9.1**	**9.5**
Ayrshire & Arran	40	5,100	4,800	5,300	5%	7.8	7.5	8.3
Borders	7	580	510	670	14%	12.4	10.7	14.1
Dumfries & Galloway	8	1,300	1,200	1,500	12%	6.3	5.5	6.8
Fife	35	3,300	3,100	3,600	8%	10.7	9.8	11.4
Forth Valley	22	2,200	2,000	2,400	9%	10.2	9.3	11.2
Grampian	45	4,900	4,600	5,300	7%	9.2	8.5	9.8
Greater Glasgow & Clyde	190	20,800	20,400	21,900	4%	9.1	8.7	9.3
Highland	22	2,100	1,800	2,300	12%	10.5	9.6	12.2
Lanarkshire	51	5,900	5,300	6,500	10%	8.7	7.9	9.7
Lothian	82	8,200	7,600	8,800	7%	10.0	9.3	10.8
Orkney	1	n-a	n-a	n-a	n-a	n-a	n-a	n-a
Shetland	2	130	90	270	69%	12.3	5.9	17.8
Tayside	46	5,000	4,700	5,300	6%	9.2	8.7	9.8
Western Isles	2	130	90	240	58%	12.3	6.7	17.8

Footnotes

1) estimates of problem drug users aged 15 to 64, as published by the Information Services Division (ISD) of NHS National Services Scotland. Some of the estimates are subject to potentially large percentage margins of error, as indicated by the 95% Confidence Intervals.

2) The 95% Confidence Intervals are the range within which it is expected that the true value will lie. On the basis of statistical theory, there is only a 5% chance that a 95% Confidence Interval will not include the (unknown) true value of the quantity which is being estimated - so, on average, one would expect that 19 out of 20 of all 95% Confidence Intervals will include the (unknown) true values.

3) the average of the percentage differences between (a) the estimate and the lower end of the 95% Confidence Interval and (b) the estimate and the upper end of the 95% Confidence Interval. It is calculated using the rounded values of the estimate and the two ends

4) these death rates are broad indications only, as (e.g.) the estimated numbers of problem drug users may be subject to wide confidence intervals.

5) the "from" value in the range for the rate is calculated using the upper end of the 95% Confidence Interval for the estimated number of problem drug users, and the "to" value in the range for the rate is calculated using the lower end of the 95% Confidence Interval for the estimated number of problem drug users,

Table C1: Drug-related deaths by Council area, 2002 - 2012 (with averages for 1998-2002 and 2008-2012)

Council area	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Annual averages 1998 to 2002	Annual averages 2008 to 2012	Population in 2010	2008-2012 average deaths per 1,000 population
Scotland	**382**	**317**	**356**	**336**	**421**	**455**	**574**	**545**	**485**	**584**	**581**	**309**	**554**	**5,222,100**	**0.11**
Aberdeen City	34	21	27	11	26	23	27	27	31	29	16	26	26	217,120	0.12
Aberdeenshire	9	13	8	10	16	17	11	18	10	19	9	9	13	245,780	0.05
Angus	4	5	8	8	11	3	8	9	9	8	8	3	8	110,570	0.08
Argyll & Bute	5	3	4	3	1	9	4	7	4	12	7	2	7	89,200	0.08
Clackmannanshire	7	2	5	3	7	5	4	3	1	6	11	2	5	50,630	0.10
Dumfries & Galloway	9	9	7	7	5	10	9	8	6	12	6	7	8	148,190	0.06
Dundee City	6	9	11	11	16	23	29	30	22	32	39	10	30	144,290	0.21
East Ayrshire	12	3	4	4	9	13	13	12	11	17	15	7	14	120,240	0.11
East Dunbartonshire	1	6	5	1	2	7	6	5	6	2	4	3	5	104,580	0.04
East Lothian	6	4	2	5	3	4	7	6	7	8	6	2	7	97,500	0.07
East Renfrewshire	5	3	5	1	3	3	6	7	4	3	4	4	5	89,540	0.05
Edinburgh, City of	27	26	17	41	30	43	66	45	47	48	57	30	53	486,120	0.11
Eilean Siar	1	1	0	1	1	0	3	2	1	1	1	1	2	26,190	0.06
Falkirk	8	6	7	8	10	15	10	5	10	11	14	4	10	153,280	0.07
Fife	12	12	17	21	19	28	37	32	35	34	38	11	35	365,020	0.10
Glasgow City	111	93	106	75	113	90	121	135	94	117	121	93	118	592,820	0.20
Highland	8	7	8	10	11	7	20	14	6	21	15	4	15	221,630	0.07
Inverclyde	8	7	9	7	9	10	5	7	17	20	13	10	12	79,770	0.16
Midlothian	2	3	5	5	6	1	6	9	7	4	8	4	7	81,140	0.08
Moray	4	3	4	2	5	5	3	7	3	10	6	2	6	87,720	0.07
North Ayrshire	14	9	13	6	11	18	15	19	12	16	19	9	16	135,180	0.12
North Lanarkshire	28	22	20	25	24	27	30	35	36	27	38	16	33	326,360	0.10
Orkney Islands	0	0	0	0	1	0	1	0	2	0	1	0	1	20,110	0.04
Perth & Kinross	4	5	4	7	8	3	16	5	3	5	8	4	7	147,780	0.05
Renfrewshire	9	11	14	10	17	21	27	26	19	24	26	9	24	170,250	0.14
Scottish Borders	0	2	2	7	2	4	7	5	9	8	7	1	7	112,870	0.06
Shetland Islands	1	0	0	1	2	2	1	0	2	3	2	1	2	22,400	0.07
South Ayrshire	7	7	3	5	5	5	12	8	8	14	9	5	10	111,440	0.09
South Lanarkshire	14	8	17	16	22	31	23	19	26	34	29	14	26	311,880	0.08
Stirling	9	4	4	3	7	6	9	6	7	9	6	3	7	89,850	0.08
West Dunbartonshire	13	6	8	15	12	16	23	13	18	17	19	6	18	90,570	0.20
West Lothian	4	7	12	7	7	6	15	21	12	13	19	6	16	172,080	0.09

Table C2: Drug-related deaths by underlying cause[1] and Council area, 2012

Council area	All causes of death	Underlying cause of death (ICD10 codes)				
		Drug abuse (F11-F16, F19)	Accidental poisoning (X40-X44)	Intentional self-poisoning (X60-X64)	Assault by drugs, etc. (X85)	Undetermined intent (Y10-Y14)
(a) New coding rules						
Scotland	**581**	**26**	**365**	**65**	**0**	**125**
Aberdeen City	16	0	13	2	0	1
Aberdeenshire	9	0	6	1	0	2
Angus	8	1	7	0	0	0
Argyll & Bute	7	0	4	1	0	2
Clackmannanshire	11	0	2	3	0	6
Dumfries & Galloway	6	0	3	1	0	2
Dundee City	39	4	33	2	0	0
East Ayrshire	15	0	13	2	0	0
East Dunbartonshire	4	0	1	1	0	2
East Lothian	6	0	3	2	0	1
East Renfrewshire	4	0	3	0	0	1
Edinburgh, City of	57	2	26	8	0	21
Eilean Siar	1	0	0	1	0	0
Falkirk	14	1	5	3	0	5
Fife	38	5	9	3	0	21
Glasgow City	121	8	85	16	0	12
Highland	15	0	10	2	0	3
Inverclyde	13	0	8	2	0	3
Midlothian	8	1	3	0	0	4
Moray	6	0	6	0	0	0
North Ayrshire	19	0	15	2	0	2
North Lanarkshire	38	3	25	3	0	7
Orkney Islands	1	0	1	0	0	0
Perth & Kinross	8	0	8	0	0	0
Renfrewshire	26	0	19	2	0	5
Scottish Borders	7	0	1	4	0	2
Shetland Islands	2	0	1	0	0	1
South Ayrshire	9	1	8	0	0	0
South Lanarkshire	29	0	20	1	0	8
Stirling	6	0	3	0	0	3
West Dunbartonshire	19	0	18	0	0	1
West Lothian	19	0	6	3	0	10
(b) Old coding rules						
Scotland	**581**	**381**	**72**	**65**	**0**	**63**
Aberdeen City	16	11	2	2	0	1
Aberdeenshire	9	6	0	1	0	2
Angus	8	7	1	0	0	0
Argyll & Bute	7	5	1	1	0	0
Clackmannanshire	11	5	1	3	0	2
Dumfries & Galloway	6	4	0	1	0	1
Dundee City	39	34	3	2	0	0
East Ayrshire	15	9	4	2	0	0
East Dunbartonshire	4	3	0	1	0	0
East Lothian	6	3	0	2	0	1
East Renfrewshire	4	2	1	0	0	1
Edinburgh, City of	57	30	7	8	0	12
Eilean Siar	1	0	0	1	0	0
Falkirk	14	9	1	3	0	1
Fife	38	27	2	3	0	6
Glasgow City	121	78	18	16	0	9
Highland	15	7	3	2	0	3
Inverclyde	13	8	1	2	0	2
Midlothian	8	7	0	0	0	1
Moray	6	6	0	0	0	0
North Ayrshire	19	12	4	2	0	1
North Lanarkshire	38	20	9	3	0	6
Orkney Islands	1	0	1	0	0	0
Perth & Kinross	8	7	1	0	0	0
Renfrewshire	26	19	3	2	0	2
Scottish Borders	7	1	0	4	0	2
Shetland Islands	2	1	0	0	0	1
South Ayrshire	9	7	2	0	0	0
South Lanarkshire	29	20	4	1	0	4
Stirling	6	5	1	0	0	0
West Dunbartonshire	19	16	2	0	0	1
West Lothian	19	12	0	3	0	4

Footnote

1) The coding rules were changed with effect from the start of 2011, as explained in paragraph 2.6 of the commentary.

Briefly, 'drug abuse' deaths from 'acute intoxication' were previously counted under 'mental and behavioural disorders due to psychoactive substance use' (unless they were known to be due to intentional self-harm or assault). They are now counted under the appropriate 'poisoning' category.

For example, if the cause of death of a known drug abuser was given as 'adverse effects of heroin' (and it was not intentional self-harm or assault), the underlying cause of death would be coded as follows:

(a) up to 2010 - as 'F11 - mental and behavioural disorders due to use of opioids'

(b) from 2011 - the appropriate 'poisoning' category, such as 'X42 - accidental poisoning by and exposure to narcotics and psychodysleptics (hallucinogens) not elsewhere classified'

National Records of Scotland has estimated what the figures for 2012 would have been, had the data been coded using the old rules.

Table C3: Drug-related deaths by selected drugs reported[1] and Council area, 2012

Council area	All drug-related deaths	Heroin / morphine [2]	Meth-adone	Benzodiazepines			Cocaine	Ecstasy	Amphet-amines	Alcohol
				Any benzo-diazepine	of which: Diazepam	of which: Temaz-epam				
Scotland	**581**	**221**	**237**	**196**	**160**	**6**	**31**	**9**	**18**	**111**
Aberdeen City	16	3	8	10	8	0	4	1	0	4
Aberdeenshire	9	3	4	6	5	0	2	1	0	0
Angus	8	5	2	5	5	0	0	0	1	4
Argyll & Bute	7	4	1	2	1	0	0	0	0	2
Clackmannanshire	11	4	4	5	5	0	0	0	1	2
Dumfries & Galloway	6	4	4	0	0	0	0	1	0	1
Dundee City	39	20	19	30	29	0	1	1	1	6
East Ayrshire	15	6	9	4	3	0	1	0	1	0
East Dunbartonshire	4	1	1	1	0	1	1	0	0	1
East Lothian	6	2	3	2	2	0	0	0	1	2
East Renfrewshire	4	2	1	0	0	0	0	0	1	2
Edinburgh, City of	57	11	26	18	15	1	1	1	1	9
Eilean Siar	1	0	0	0	0	0	0	0	0	0
Falkirk	14	8	3	7	5	0	2	1	0	5
Fife	38	11	14	21	20	0	2	1	2	4
Glasgow City	121	50	45	18	9	1	5	1	5	21
Highland	15	5	3	8	2	0	0	0	0	3
Inverclyde	13	7	6	4	4	0	1	0	0	2
Midlothian	8	0	6	5	5	0	0	0	1	2
Moray	6	3	3	5	5	0	0	0	0	0
North Ayrshire	19	9	11	5	4	0	2	0	0	4
North Lanarkshire	38	13	8	7	3	1	3	0	0	11
Orkney Islands	1	0	0	0	0	0	0	0	0	0
Perth & Kinross	8	4	2	7	7	0	0	0	0	3
Renfrewshire	26	13	14	0	0	0	0	0	0	3
Scottish Borders	7	2	0	1	1	0	1	0	1	0
Shetland Islands	2	0	1	1	1	0	0	0	0	1
South Ayrshire	9	4	6	4	4	0	1	0	1	2
South Lanarkshire	29	11	9	3	1	0	3	1	0	8
Stirling	6	4	2	2	2	0	0	0	0	2
West Dunbartonshire	19	7	11	5	5	0	0	0	0	6
West Lothian	19	5	11	10	9	2	1	0	1	1

Footnotes

1) More than one drug may be reported per death. These are mentions of each drug, and should not be added to give total deaths. Up to 2007, some pathologists reported only those drugs which they thought caused, or contributed to, the death. With effect from 2008, pathologists report separately (a) drugs which were implicated in, or which potentially contributed to, the cause of death and (b) other drugs which were present but which were not considered to have had any direct contribution to the death.
The figures in this table are on the first basis - i.e. basis (a) which is now the standard basis for the figures for individual drugs. They are on a different basis from those published in Table C3 of 'Drug-related Deaths in Scotland in 2008' and earlier editions.

There may be other differences between years and/or areas in the way in which the information was produced - more information can be found in Section 2 of the commentary.

2) More information can be found in paragraph 3.3.1 of the commentary.

Table C4: Drug-related deaths per 1,000 population, Council areas, annual averages for 2008 to 2012[1]

	Age-group						
	15 - 24 [2]	25 - 34	35 - 44	45 - 54	55 - 64 [3]	Ages 15 - 64	All ages [4]
Scotland	**0.10**	**0.27**	**0.26**	**0.11**	**0.04**	**0.16**	**0.11**
Aberdeen City	0.07	0.29	0.28	0.14	0.02	0.17	0.12
Aberdeenshire	0.07	0.17	0.13	0.03	0.03	0.08	0.05
Angus	0.10	0.39	0.10	0.08	0.03	0.12	0.08
Argyll + Bute	0.14	0.26	0.14	0.07	0.01	0.11	0.08
Clackmannanshire	0.09	0.29	0.19	0.13	0.06	0.15	0.10
Dumfries + Galloway	0.09	0.25	0.11	0.04	0.02	0.09	0.06
Dundee City	0.19	0.47	0.71	0.18	0.04	0.31	0.21
East Ayrshire	0.13	0.41	0.23	0.11	0.02	0.17	0.11
East Dunbartonshire	0.00	0.27	0.08	0.02	0.01	0.06	0.04
East Lothian	0.10	0.32	0.13	0.05	0.02	0.11	0.07
East Renfrewshire	0.02	0.28	0.09	0.08	0.02	0.08	0.05
Edinburgh City	0.09	0.16	0.23	0.15	0.09	0.15	0.11
Eilean Siar	0.23	0.25	0.00	0.10	0.00	0.10	0.06
Falkirk	0.10	0.18	0.14	0.04	0.02	0.09	0.07
Fife	0.11	0.32	0.23	0.09	0.01	0.15	0.10
Glasgow City	0.09	0.31	0.57	0.26	0.10	0.28	0.20
Highland	0.12	0.17	0.18	0.04	0.04	0.10	0.07
Inverclyde	0.18	0.39	0.40	0.19	0.02	0.23	0.16
Midlothian	0.06	0.29	0.19	0.07	0.04	0.12	0.08
Moray	0.13	0.30	0.08	0.06	0.00	0.10	0.07
North Ayrshire	0.12	0.32	0.40	0.10	0.03	0.19	0.12
North Lanarkshire	0.08	0.30	0.20	0.14	0.02	0.15	0.10
Orkney Islands	0.18	0.10	0.07	0.00	0.00	0.06	0.04
Perth + Kinross	0.05	0.16	0.15	0.02	0.01	0.07	0.05
Renfrewshire	0.17	0.40	0.36	0.11	0.03	0.21	0.14
Scottish Borders	0.07	0.21	0.17	0.06	0.01	0.09	0.06
Shetland Islands	0.16	0.16	0.19	0.00	0.06	0.11	0.07
South Ayrshire	0.11	0.23	0.23	0.14	0.05	0.14	0.09
South Lanarkshire	0.06	0.25	0.23	0.07	0.02	0.12	0.08
Stirling	0.11	0.23	0.13	0.15	0.02	0.12	0.08
West Dunbartonshire	0.12	0.58	0.41	0.29	0.07	0.29	0.20
West Lothian	0.09	0.27	0.17	0.09	0.03	0.13	0.09

Footnotes

1) Some other tables which provide figures by age-group give the number of drug-related deaths of people who were aged under 25. However, this column's figures are for ages 15-24, inclusive, as there are very few drug-related deaths of people aged 0-14.

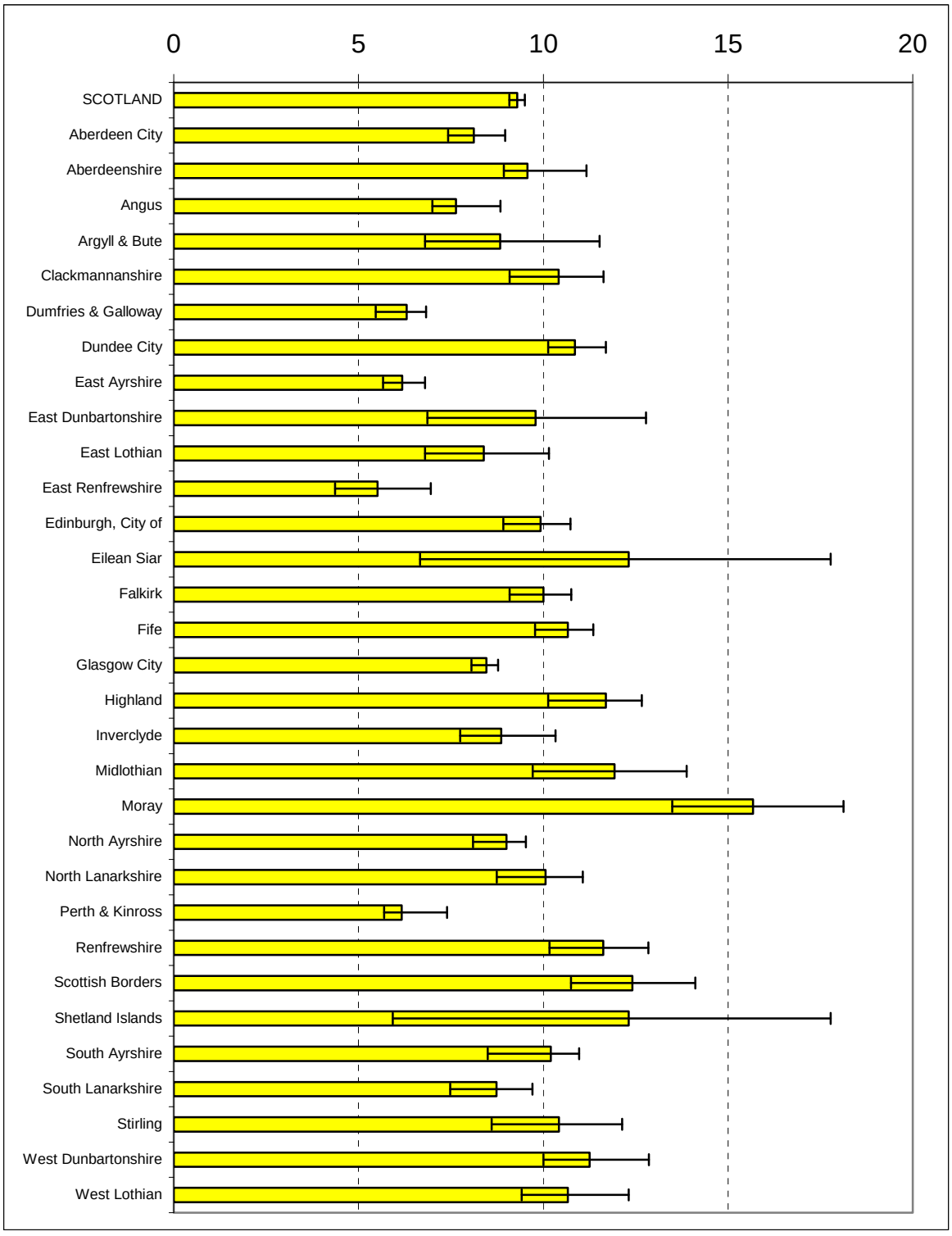
2) Some other tables which provide figures by age-group give the number of drug-related deaths of people who were aged 55 and over. However, this column's figures are for ages 55-64, inclusive, as there are few drug-related deaths of people aged 65 and over.

3) Including ages 0-14 and 65+.

4) Calculated by dividing the average number of drug-related deaths per year over the specified 5-year period by the estimated population in the middle of the 5-year period (which is a proxy for the average population over the whole of the period).

Figure 3: Drug-related deaths per 1,000 problem drug users - Council areas

NB: these figures were calculated using the annual average number of drug-deaths for 2008-2012 and the estimated numbers of problem drug users for 2009/10
The "error bars" indicate the likely ranges of values - see the text



NB: figures for Orkney are not available - see Table HB5 and paragraph 4.7

Table C5: Drug-related deaths by Council area: average for 2008 to 2012, and relative to estimated problem drug user numbers

	2008-2012 average drug-deaths per year (all ages)	Problem drug users (aged 15-64) in 2009/10 [1]				Annual average drug-deaths: 2008-2012 per 1,000 problem drug users in 2009/10 [4]		
			95% Confidence Interval [2]				Likely range of values	
		Estimate	Lower end	Upper end	+ / - [3]	Estimate	from [5]	to [5]
Scotland	**554**	**59,600**	**58,300**	**61,000**	**2%**	**9.3**	**9.1**	**9.5**
Aberdeen City	26	3,200	2,900	3,500	9%	8.1	7.4	9.0
Aberdeenshire	13	1,400	1,200	1,500	11%	9.6	8.9	11.2
Angus	8	1,100	950	1,200	11%	7.6	7.0	8.8
Argyll & Bute	7	770	590	1,000	27%	8.8	6.8	11.5
Clackmannanshire	5	480	430	550	13%	10.4	9.1	11.6
Dumfries & Galloway	8	1,300	1,200	1,500	12%	6.3	5.5	6.8
Dundee City	30	2,800	2,600	3,000	7%	10.9	10.1	11.7
East Ayrshire	14	2,200	2,000	2,400	9%	6.2	5.7	6.8
East Dunbartonshire	5	470	360	670	33%	9.8	6.9	12.8
East Lothian	7	810	670	1,000	20%	8.4	6.8	10.1
East Renfrewshire	5	870	690	1,100	24%	5.5	4.4	7.0
Edinburgh, City of	53	5,300	4,900	5,900	9%	9.9	8.9	10.7
Eilean Siar	2	130	90	240	58%	12.3	6.7	17.8
Falkirk	10	1,000	930	1,100	9%	10.0	9.1	10.8
Fife	35	3,300	3,100	3,600	8%	10.7	9.8	11.4
Glasgow City	118	13,900	13,400	14,600	4%	8.5	8.1	8.8
Highland	15	1,300	1,200	1,500	12%	11.7	10.1	12.7
Inverclyde	12	1,400	1,200	1,600	14%	8.9	7.8	10.3
Midlothian	7	570	490	700	18%	11.9	9.7	13.9
Moray	6	370	320	430	15%	15.7	13.5	18.1
North Ayrshire	16	1,800	1,700	2,000	8%	9.0	8.1	9.5
North Lanarkshire	33	3,300	3,000	3,800	12%	10.1	8.7	11.1
Orkney Islands	1	n-a	n-a	n-a	n-a	n-a	n-a	n-a
Perth & Kinross	7	1,200	1,000	1,300	13%	6.2	5.7	7.4
Renfrewshire	24	2,100	1,900	2,400	12%	11.6	10.2	12.8
Scottish Borders	7	580	510	670	14%	12.4	10.7	14.1
Shetland Islands	2	130	90	270	69%	12.3	5.9	17.8
South Ayrshire	10	1,000	930	1,200	14%	10.2	8.5	11.0
South Lanarkshire	26	3,000	2,700	3,500	13%	8.7	7.5	9.7
Stirling	7	710	610	860	18%	10.4	8.6	12.1
West Dunbartonshire	18	1,600	1,400	1,800	13%	11.3	10.0	12.9
West Lothian	16	1,500	1,300	1,700	13%	10.7	9.4	12.3

Footnotes

1) to 5) see the corresponding footnotes to Table HB5

Table X: Drug-related deaths in Scotland - different definitions[1], 1996 – 2012

Year	this paper (based on UK Drug Strategy 'baseline' definition)	Office for National Statistics 'wide' definition	European Monitoring Centre for Drugs and Drug Addiction 'general mortality register' definition
1996	244	460	208
1997	224	447	188
1998	249	449	230
1999	291	492	272
2000	292	495	318
2001	332	551	376
2002	382	566	417
2003	317	493	331
2004	356	546	387
2005	336	480	352
2006	421	577	416
2007	455	630	450
2008	574	737	556
2009	545	716	532
2010	485	692	479
2011	584	749	556
2012	581	734	548

Footnotes

1) See Annex B for information about the other definitions

Figure 4: Drug-related deaths in Scotland - different definitions

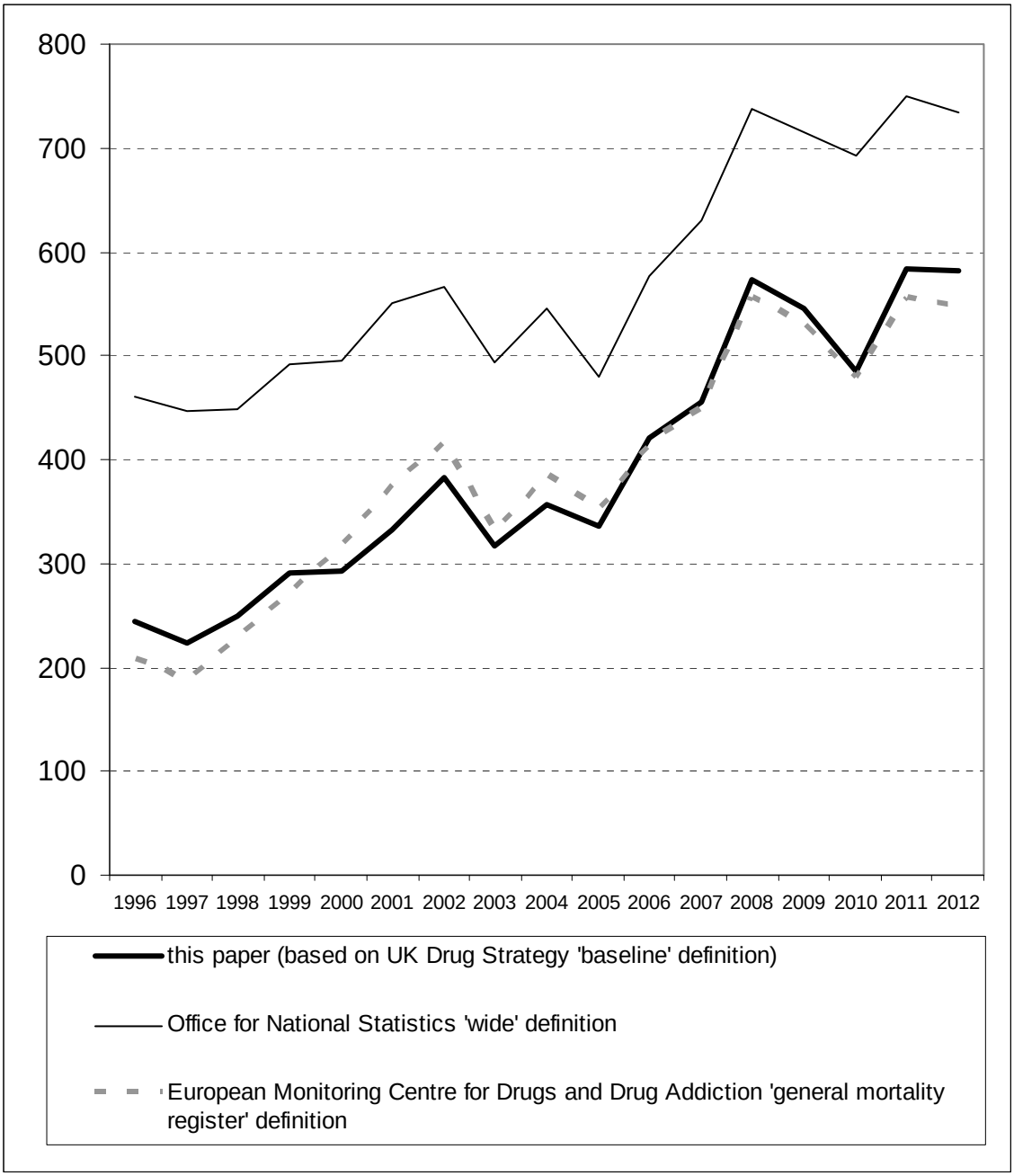


Table Y: Drug-related deaths, on the basis of the Office for National Statistics (ONS) 'wide' definition, by selected drugs reported, 2002 – 2012

Drugs [1, 2]	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All drug-related deaths (on the 'wide' definition)	**566**	**493**	**546**	**480**	**577**	**630**	**737**	**716**	**692**	**749**	**734**
Amphetamines	13	10	10	11	11	12	12	7	3	24	18
Anti-depressants [3]	82	83	86	67	93	84	101	97	123	116	121
Anti-psychotics [4]	8	8	11	5	21	26	25	19	21	32	35
Benzodiazepines [5]	248	189	140	110	94	109	150	158	124	187	198
Cannabis	35	21	5	6	3	8	1	0	0	0	0
Cocaine	31	30	38	44	33	47	41	33	34	36	31
Diazepam	217	154	113	90	78	79	116	120	94	124	161
Ecstasy-type	20	15	17	10	12	12	5	2	0	9	9
Heroin/diamorphine or Morphine [6]	250	176	226	194	260	291	327	326	256	207	222
Methadone	100	91	80	71	96	115	171	177	177	275	241
Paracetamol or a compound [7]	117	85	107	62	53	56	55	43	48	45	37
Temazepam	16	37	5	7	9	4	7	9	3	8	6
Tramadol	6	15	11	16	17	26	32	40	40	34	48
Alcohol	190	168	145	134	151	181	196	187	151	148	136

Footnotes

1) More than one drug may be reported per death. These are mentions of each drug, so do not add up to the overall total. Up to 2007, some pathologists reported only those drugs which they thought caused, or contributed to, the death. With effect from 2008, pathologists report separately:

(a) drugs which were implicated in, or which potentially contributed to, the cause of death; and

(b) other drugs which were present but which were not considered to have had any direct contribution to the death.

The figures for 2008 onwards are on the first basis - i.e. basis (a) - which is now the standard basis for figures for individual drugs. The figures for 2008 have been revised from those published in the 2008 edition.

There may be other differences between years and/or areas in the way in which the information was produced - more information can be found in Section 2 of the commentary.

2) The figures for some of the 'controlled' drugs may differ slightly from those given in earlier tables for two reasons. First, they were produced from what was the then General Register Office for Scotland's new database, rather than the old database (more information can be found in paragraph A4). Second, a small proportion of the deaths which involved controlled drugs were excluded from the figures which appear in the earlier tables, for reasons such as those given in paragraph A3.

3) e.g. amitriptyline, citalopram, dothiepin, fluoexetine, prothaiaden.

4) e.g. chlorpromazine, clozapine, olanzapine.

5) Including diazepam and temazepam (which appear separately b

6) More information can be found in paragraph 3.3.1 of the commentary.

7) e.g. co-codamol or co-proxamol, or mention of dextropropoxyphene or propoxyphene (even if there is no mention of paracetamol or a compound analgesic).

Table Z: Drug-related deaths, on the basis of the Office for National Statistics (ONS) 'wide' definition, by how they relate to the Drug Strategy 'baseline' definition, deaths from some causes which may be associated with present or past drug misuse, volatile substance abuse deaths, and deaths which involved New Psychoactive Substances, 2002 – 2012

Cause of death	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
All drug-related deaths (on the 'wide' definition)	566	493	546	480	577	630	737	716	692	749	734
of which:											
on the basis used for this report's statistics (i.e. the Drug Strategy 'baseline' definition, as implemented by National Records of Scotland (NRS))	**382**	**317**	**356**	**336**	**421**	**455**	**574**	**545**	**485**	**584**	**581**
deaths within the Drug Strategy 'baseline' definition, but excluded from this report's statistics because: [1]											
(a) cause of death was a secondary infection or a related complication [2]	10	9	6	12	13	10	23	22	33	16	14
(b) controlled substance was present only as part of a compound analgesic or a cold remedy	6	0	0	1	2	8	10	3	5	4	1
other deaths counted as 'drug-related' by the 'wide' definition - but not on the basis used for this report [3]	168	167	184	131	141	157	130	146	169	145	138
Deaths from some causes which may be associated with present or past drug misuse [4]											
Underlying cause of death, with its ICD10 [5] code(s):											
Hepatitis C (B18.2)	3	5	5	10	14	12	18	21	19	25	22
HIV (B20-24)	33	33	16	31	19	21	18	17	21	16	18
Total all deaths from the specified causes	36	38	21	41	33	33	36	38	40	41	40
Volatile Substance Abuse deaths											
Deaths in Scotland - International Centre for Drugs Policy (ICDP) figures [6]	8	6	1	4	9	10	3	4	17	..	..
Deaths which involved so-called "New Psychoactive Substances" [7]	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**12**	**47**	**47**
of which:											
(a) deaths for which one (or more) New Psychoactive Substances was implicated in, or potentially contributed, to the death	0	0	0	0	0	0	0	3	10	28	32
(i) included in this report's statistics	0	0	0	0	0	0	0	2	6	26	30
of which:											
NPS the only substance(s) implicated in the death [8]	0	0	0	0	0	0	0	0	4	0	3
Other substance(s) also implicated in the death [9]	0	0	0	0	0	0	0	2	2	26	27
(ii) not included in this report's statistics	0	0	0	0	0	0	0	1	4	2	2
of which:											
NPS the only substance(s) implicated in the death [10]	0	0	0	0	0	0	0	0	4	1	2
Other substance(s) also implicated in the death [11]	0	0	0	0	0	0	0	1	0	1	0
(b) deaths for which one (or more) New Psychoactive Substances was present but not considered to have contributed to the death	0	0	0	0	0	0	0	1	2	19	15
of which:											
(i) included in this report's statistics [12]	0	0	0	0	0	0	0	1	2	19	15
(ii) not included in this report's statistics [13]	0	0	0	0	0	0	0	0	0	0	0

Footnotes

1) Paragraph A3 in Annex A explains why these kinds of deaths are excluded from the standard definition of 'drug-related death' figures produced by NRS.

2) Including (e.g.) deaths caused by infections that resulted from the use of heroin which was contaminated by, say, anthrax.

3) Including (e.g.) accidental deaths which were caused by the use of drugs which were not controlled at the time, such as those before 16 April 2010 which resulted from using mephedrone (assuming that no controlled drugs were found in the body).

4) Only a proportion of deaths from these causes can be attributed to drug misuse - more information can be found in paragraph B8 of Annex B.

5) 'ICD10' is the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision

6) More information can be found in paragraph B13 of Annex B about the statistics that it produces. A few deaths per year may be counted both in the 'ICDP' figures and in the standard drug-related death statistics

7) The substances which are counted (for the purpose of these figures) as "New Psychoactive Substances" are described in Annex E

8) e.g. the death was after 15 April 2010, the cause of death was certified as "mephedrone intoxication", and no other substance was said to have been found

9) e.g. the cause of death was certified as "adverse effects of methadone and mephedrone". (The date of death is not a factor, because methadone has "always" been controlled.)

10) e.g. the death occurred up to 15 April 2010, the cause of death was certified as "mephedrone intoxication", and no other substance was said to have been found

11) e.g. the death occurred up to 15 April 2010, and both mephedrone and an uncontrolled volatile substance were said to be implicated in, or potentially contributed, to the death

12) e.g. the cause of death was given as "heroin, alcohol and diazepam toxicity", and BZP and TFMPP were also present

13) an artificial example would be a death which occurred up to 15 April 2010, co-codamol was said to be implicated in, or potentially contributed, to the death; mephedrone was said to be present but did not contribute to

6. Notes on statistical publications

National Statistics

The United Kingdom Statistics Authority (UKSA) has designated these statistics as National Statistics, in line with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Official Statistics (available on the UK Statistics Authority website).

This can be broadly interpreted to mean that the statistics:

- meet identified needs of users;
- are well explained and readily accessible;
- are produced according to reliable methods, and
- are managed in a fair, independent and unbiased way in the public interest.

Once statistics have been designated as National Statistics, the Code of Practice for Official Statistics must continue to be followed.

National Records of Scotland

We, the National Records of Scotland, are a non-ministerial department of the Scottish Government. Our aim is to provide relevant and reliable information, analysis and advice that meets the needs of government, business and the people of Scotland. We do this by:

- Preserving the past – We look after Scotland's national archives so that they are available for current and future generations, and we make available important information for family history.
- Recording the present – At our network of local offices, we register births, marriages, civil partnerships, deaths, divorces and adoptions in Scotland.
- Informing the future – We are responsible for the Census of Population in Scotland which we use, with other sources of information, to produce statistics on the population and households.

You can get other detailed statistics that we have produced from the Statistics section of our website. Statistics from the 2001 Census are on Scotland's Census Results On-Line (SCROL) website and the 2011 Census results are held on the Scotland's Census website.

We provide information about future publications on our website. If you would like us to tell you about future statistical publications, you can register your interest on the Scottish Government ScotStat website

Enquiries and suggestions

Please visit our enquiries page if you need any further information.
Email: customer@gro-scotland.gsi.gov.uk

If you have comments or suggestions that would help us improve our standards of service, please contact:

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7. Related organisations

Organisation	Contact
The Scottish Government (SG) forms the bulk of the devolved Scottish Administration. The aim of the statistical service in the SG is to provide relevant and reliable statistical information, analysis and advice that meets the needs of government, business and the people of Scotland.	Office of the Chief Statistician Scottish Government 3WR, St Andrews House Edinburgh EH1 3DG Phone: 0131 244 0442 Email: statistics.enquiries@scotland.gsi.gov.uk Website: www.scotland.gov.uk/Topics/Statistics
The Office for National Statistics (ONS) is responsible for producing a wide range of economic and social statistics. It also carries out the Census of Population for England and Wales	Customer Contact Centre Office for National Statistics Room 1.101 Government Buildings Cardiff Road Newport NP10 8XG Phone: 0845 601 3034 Minicom: 01633 815044 Email: info@statistics.gsi.gov.uk Website: www.ons.gov.uk/
The Northern Ireland Statistics and Research Agency (NISRA) is Northern Ireland's official statistics organisation. The agency is also responsible for registering births, marriages, adoptions and deaths in Northern Ireland, and the Census of Population.	Northern Ireland Statistics and Research Agency McAuley House 2-14 Castle Street Belfast BT1 1SA Phone: 028 9034 8100 Email: info.nisra@dfpni.gov.uk Website: www.nisra.gov.uk