

# Drug-related deaths in Scotland in 2016

**Statistics of drug-related deaths in 2016 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, 867 drug-related deaths were registered in Scotland in 2016, 161 (23%) more than in 2015. This was the largest number ever recorded, and 446 (106%) higher than the figure for 2006, which was 421 ([paragraph 3.1.1](#)).
- Males accounted for 68% of the drug-related deaths in 2016 ([paragraph 3.4.1](#)).
- In 2016, there were 327 drug-related deaths of people aged 35-44 (38% of all drug-related deaths), 213 in the 45-54 age-group (25%), and 199 drug-related deaths of 25-34 year olds (23%). There were 42 drug-related deaths at ages 15-24 (5%), and 66 of 55-64 year olds (8%) ([paragraph 3.4.2](#)).
- The NHS Board areas which accounted for most of the 867 drug-related deaths in 2016 were:
  - Greater Glasgow & Clyde - 257 (30%);
  - Lothian - 128 (15%);
  - Lanarkshire - 113 (13%); and
  - Ayrshire & Arran - 85 (10%) ([paragraph 4.1](#)).

Using the annual average for 2012-2016, to reduce the effect on the figures of year-to-year fluctuations:

- for Scotland as a whole, the average of 659 drug-related deaths per year represented a death rate of 0.12 per 1,000 population;
- the NHS Board area with the highest rate was Greater Glasgow & Clyde (0.17);
- the next highest rate was for Ayrshire & Arran and Tayside (both 0.13) ([paragraph 4.3](#)).

However, there is a narrower (in percentage terms) range of values when death rates are calculated using the estimated numbers of problem drug users ([paragraph 4.9](#)).

Comparing the annual average for 2012-2016 with that for 2002-2006:

- the percentage increase in the number of drug-related deaths was greater for females (169%) than for males (60%) ([paragraph 3.4.1](#));
- the largest increase in numbers was for 35-44 year olds, the next largest was for people aged 45-54, and there was a fall in the number of drug-related deaths of people aged under 25 ([paragraph 3.4.2](#)); 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 59) and Lanarkshire (up by 40) ([paragraph 4.2](#)).

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 867 drug-related deaths in 2016:

- heroin and/or morphine were implicated in, or potentially contributed to, the cause of 473 deaths (55% of the total);

- methadone was implicated in, or potentially contributed to, 362 deaths (42%);
- one or more opiates or opioids (including heroin/morphine and methadone) were implicated in, or potentially contributed to, 765 deaths (88%);
- benzodiazepines (for example diazepam, diclazepam and etizolam) were implicated in, or potentially contributed to, 426 deaths (49%);
- cocaine, ecstasy-type drugs and amphetamines were implicated in, or potentially contributed to, 123 deaths (14%), 28 deaths (3%) and 25 (3%) deaths, respectively; and
- alcohol was implicated in, or potentially contributed to, 112 of the drug-related deaths (13%) ([paragraph 3.3.3](#)).

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

In 2016, heroin and/or morphine were implicated in, or potentially contributed to, more deaths than in any previous year (hitherto, the largest figure had been 345 in 2015). The number for methadone was also above its previous peak (275 in 2011), as was the case for opiates or opioids (including heroin/morphine and methadone) as a group (previous highest figure 606 in 2015) and for benzodiazepines as a group (previous highest levels of 196 in 2012, and - on the basis used before 2008 - 245 in 2002) ([paragraph 3.3.4](#)).

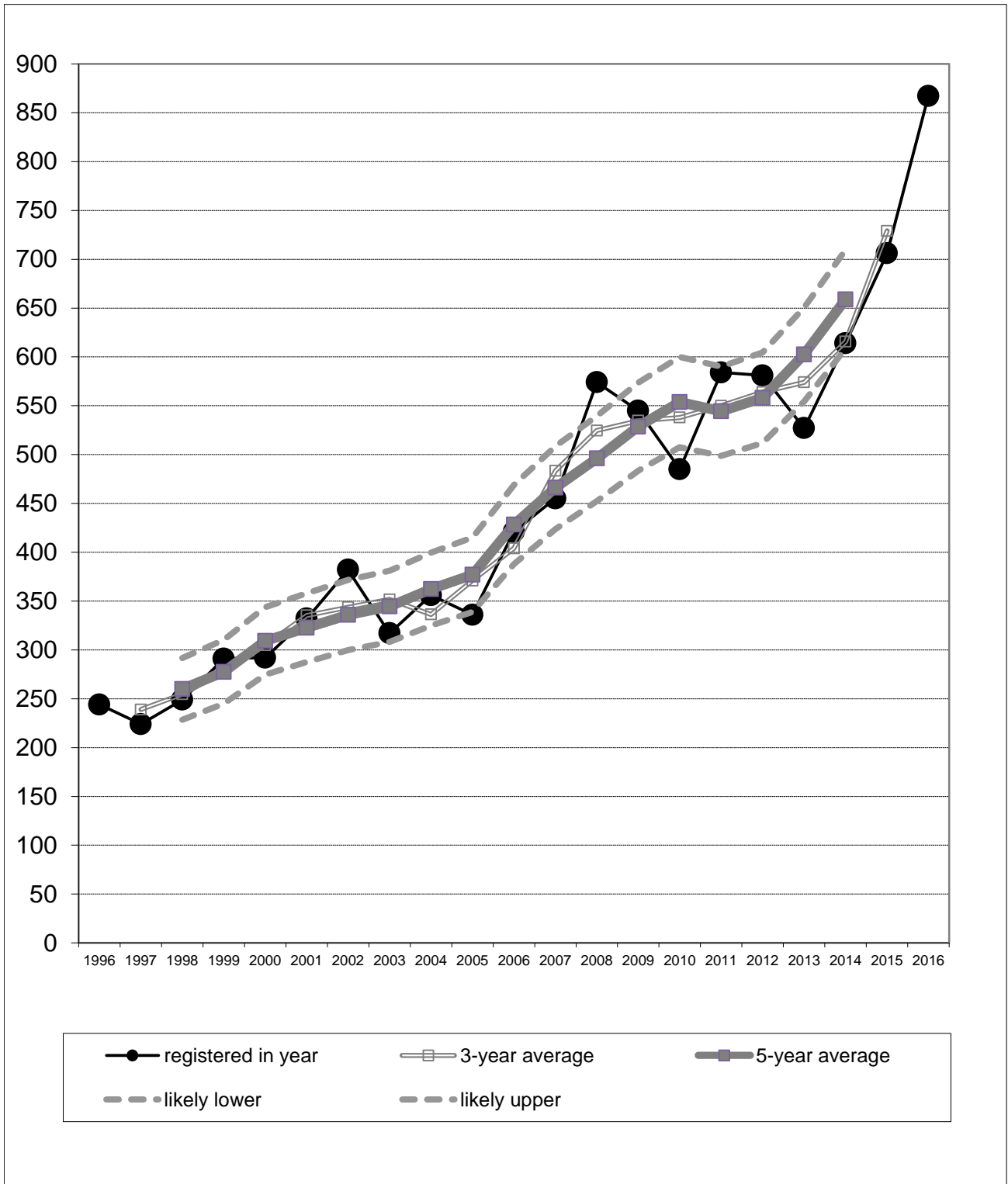
Most drug-related deaths are of people who took more than one substance. Of the 867 drug-related deaths in 2016, there were just 66 for which only one drug (and, perhaps, alcohol) was found to be present in the body. There were 187 cases where only one drug (and, perhaps, alcohol) was believed to have been implicated in, or potentially contributed to, the cause of the death. The latter figure covers both the 'only one drug found' deaths and cases where one drug was implicated and the other drugs present were not considered to have had any direct contribution to the death ([paragraph 3.3.9](#) to [3.3.11](#))

[Annex E](#) of this publication provides information about deaths which involved so-called 'New Psychoactive Substances' (NPSs). The definition used for the purpose of those figures is set out in first half of that Annex. On that basis, in 2016:

- there were 286 deaths for which NPSs were implicated in, or potentially contributed to the cause of death. In 277 cases, the only NPSs present were benzodiazepines (usually etizolam, but sometimes – for example - diclazepam or phenazepam); in eight cases, other types of NPS were present (for example PMA, PMMA and MXP); there was one death for which both benzodiazepine NPSs and other types of NPS were present. Almost all of these deaths (281 out of 286) fall within the definition of 'drug-related deaths' that is used to produce the main statistics in this report – this means they are included in the 867 drug-related deaths. In only a small proportion (4 out of the 286 deaths) were NPSs the only substances implicated in the death. ([paragraph E9](#))
- there were 60 deaths for which NPSs were present but were not considered to have contributed to the death. In all cases, the only NPSs present were benzodiazepines; almost all of the deaths (59 out of 60) are included in the 867 drug-related deaths ([paragraph E11](#)).

Scotland's drug-death rate (relative to the number of people aged 15 to 64) is higher than those reported for all the EU countries (though there are issues of coding, coverage and under-reporting in some countries), and Scotland's drug-death rate (per head of population) is roughly two and a half times that of the UK as a whole ([Annex G](#)).

**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 and by a number of other interested parties such as NHS Boards and local Alcohol and Drug Partnerships. The Scottish Government has worked with other interested parties to develop new arrangements for advice on drug-related matters, and the Partnership for Action on Drugs in Scotland was established in January 2016.

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 here, [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 2014. [Annex E](#) covers so-called New Psychoactive Substances, [Annex F](#) explains the basis of the consistent series of drug-related death numbers, and [Annex G](#) provides some information about how Scotland's figures compare with those of various other European countries. 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 to Z, NPS1 to NPS3, CS1 and CS2, EMCDDA, 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:

- a new Annex G and Table EMCDDA provide some international comparisons;
- Table 4 has been expanded to provide time-series of the numbers of deaths by age-group for each sex;
- Tables HB1 and C1 have been expanded to provide the numbers of deaths of each sex in the first and last of the years that are covered by the table; and
- Table Y has been expanded to show 12 more substances.

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 the latest year on the two bases, and also shows how the numbers on the two bases for the latest year break down by sex and by age-group. In addition, alternative versions of Tables HB3 and C3 are available on this web site (via links from the pages which give access to the editions for 2008 onwards), 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 onwards 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](#).
- 1.7 Some of the figures for 2013 to 2015 that were published in the previous edition have been revised slightly, following corrections to the drug name 'look-up table' that is used to determine (for example) whether each drug that has been reported as being found in a body is one that should be counted as a controlled substance for the purpose of the standard definition that is used to produce these statistics (refer to paragraph A4 of [Annex A](#)). An error in the look-up table entry for one drug led to one death wrongly not being counted as drug related. Correcting the error has raised the total number of drug-related deaths registered in 2014 from 613 to 614. Some of the other figures (for example the number of males, the number aged 55-64) have also increased as result. An error in the look-up table entry for another drug led to some deaths wrongly being counted as ones for which diazepam was implicated in, or contributed to, the cause of the death (one death in 2013, two in 2014 and seven in 2015), and as ones for which diazepam was found to be present in the body. The latter error did not affect the number of drug-related deaths, or any of the other figures for those years.

## 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 2016 are based upon the information which NRS had obtained by late May 2017. 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 (for example) 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 that was used from 2008 to 2013 appears in those years' editions of this publication. A new version of the questionnaire was introduced at the start of 2014, a copy of which is in [Annex D](#). The new questionnaire did not change greatly what was collected in respect of each death, but covers a wider range of deaths than before. This does not change the definition of drug-related deaths used for these statistics, but will allow NRS to produce information about a wider range of deaths than that covered by the standard definition. It should be noted that, 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 – this is counting only drugs which were reported under (a); and
- on the 'all drugs which were found to be present in the body' basis – this is 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 (this is 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 (this is 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 However, the total number of drug-related deaths has been affected by changes in the list of drugs which are controlled under the Misuse of Drugs Act. [Annex F](#) explains that the ‘coverage’ of NRS’s standard definition ‘widens’ every time another drug is added to the list of controlled substances, because all subsequent deaths from poisoning by that drug will be counted as drug-related. In practice, changes in the classification of drugs that occurred in the years up to and including 2013 had little effect on the figures (refer to paragraph F4 of Annex F), but the change in the classification of tramadol and zopiclone in 2014 could have caused a noticeable break in the continuity of NRS’s figures (as explained in paragraph F5 of Annex F). Therefore, in order to give more accurate indications of changes and trends, NRS

developed a 'consistent series' of numbers of drug-related deaths in previous years, which is based on the classification of each substance at the end of the latest year covered by the publication.

2.10 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 – for example 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 (for example 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);
- pathologists may decide not to describe a drug as being 'implicated in, or potentially contributing to, the cause of death' if it is found at what they would regard as within the levels that one might expect for the therapeutic use of a drug, and may change what they regard as the minimum level for reporting a substance. For example, in one part of Scotland, diazepam used to be reported if its level was at least 0.4 mg/litre, but the 'cut-off' was raised to about 1 mg/litre. All else being equal, the area would then have fewer deaths in which diazepam was implicated, because cases with levels of between 0.4 and 1 mg/litre would no longer be counted; 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 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 867 drug-related deaths in 2016, 161 (23%) more than in 2015. This was the highest number recorded since the series of figures began in 1996, and was 446 (106%) more than in 2006, when there were 421 such deaths. The 'underlying' increase since

2006 is only slightly smaller when account is taken of the effect on the statistics of changes in the classification of drugs – refer to paragraphs 3.1.4 to 3.1.6.

3.1.2 The figures on the left-hand side of [Table 1](#) show that the past ten years have had six rises and four falls in the number of drug-related deaths. The rises have tended to be greater than the falls, and 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 hollow grey line) and a 5-year average (thick solid 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, up to (and including) 2007, 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 figures for 2010 and 2013 were unusually low, relative to the long-term trend (the figures for both years being below the lower end of the likely range of random statistical variation);
- the figures for 2009, 2011, 2012, 2014 and 2015 were all broadly in line with the long-term trend: they were all either close to the 5-year moving average value or were not far from what one would expect the 5-year moving average to be, if the trend over the previous decade were extrapolated to those years;
- the figure for 2016 may be higher than what one would expect from an extrapolation of the trend over the previous decade.

The chart and the table show that the 5-year moving average rose for many years, suggesting that there was a clear long-term upward trend, and that the figure for 2010 had been unusually low relative to that long-term trend. When the figure for 2013 was obtained, there was a slight fall in the 5-year moving average (from 554 for 2008 to 2012, to 544 for 2009 to 2013), because there were fewer deaths in the year which had entered the calculation (2013, with 527 deaths) than in the year which had dropped out of the calculation (2008, with

574 deaths). However, with 614 deaths in 2014, 706 in 2015 and 867 in 2016, the 5-year moving average has increased again, to 602 for 2011 to 2015, and to 659 for 2012 to 2016. The pattern of rises and falls in recent years meant that there was not much change in the 3-year moving average for several years: its values were 525 (for 2007 to 2009), 535, 538, 550, 564 and 574 (for 2012 to 2014), suggesting at most only a slight upward trend (compared to much more rapid growth in earlier years). Therefore, there was a possibility that the large year-to-year increases and decreases in the period from 2010 to 2014 were fluctuations around the general level of the much more stable 3-year moving average. However, the large rises to 706 deaths in 2015 and 867 deaths in 2016 have increased the 3-year moving average to 616 (for 2013 to 2015) and 729 (for 2014 to 2016), so the trend appears to be clearly upwards.

- 3.1.4 As mentioned in paragraph 2.9 (and explained in detail in [Annex F](#)) the 'coverage' of NRS's standard definition of a drug-related death 'widens' every time another drug is added to the list of substances which are controlled under the Misuse of Drugs Act, because all subsequent deaths from poisoning by that drug will be counted as drug-related. Therefore, in order to give more accurate indications of changes and trends, NRS has developed a 'consistent series' which is based on the classification of drugs at the end of the latest year covered by the publication. The rightmost three columns of Table 1 show the consistent series' number of drug-related deaths, and the 'extra' deaths (number and percentage) that would be counted as drug-related on that basis.
- 3.1.5 As will be seen from Table 1, the consistent series' figures have never been as much as 6% above the number of drug-related deaths on the standard definition (they were 5.6% higher in 2010, and 5.7% more in 2013). It follows that the changes in the classification of drugs have not had a great effect on the overall total number of drug-related deaths. The year-to-year variation in the number of 'extra' deaths has not been large, so the consistent series' patterns (of rises and falls, and of 'peaks' and 'troughs') are similar to those of the numbers produced by the standard definition.
- 3.1.6 The most noticeable break in the continuity of the number of drug-related deaths was caused by the change to the classification of tramadol and zopiclone in 2014. The relevant numbers and changes from 2013 are as follows:
- standard definition: 614 deaths in 2014, compared with 527 in 2013 – implying a rise of 87 or 17%; and
  - consistent series: 620 deaths in 2014, compared with 557 in 2013 – implying a rise of 63 or 11%

Using the consistent series, the increase between 2006 and 2016 is 438, or 102%: only slightly smaller than the rise of 446 or 106% calculated using the standard definition.

## 3.2 Underlying causes of death

- 3.2.1 As explained in [paragraph 2.6](#), National Records of Scotland (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 penultimate row gives the figures for 2016 that were produced by applying the new coding rules: the majority of drug-related deaths (729, or 84%) 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').
- 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 2016's drug-related deaths (663, or 76%) 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 large percentage increases in deaths for which the underlying cause (on the basis of the old coding rules) was 'drug abuse' (from an average of 242 per year in 2002-2006 to an average of 465 per year in 2012-2016) and 'accidental poisoning' (from an average of 29 to an average of 101). There was not as much change in deaths caused by intentional self-poisoning (averages of 37 per year in 2002-2006 and 52 per year in 2012-2016) and 'undetermined intent' (from an average of 54 to an average of 40).

### 3.3 Selected drugs reported

- 3.3.1 The NRS database records a wide range of drug combinations (for example 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 annual [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, only a couple of 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 96% of the drug-related deaths in 2000, and in 97% of cases in 2016). 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. With effect from the '... in 2014' edition, the tables and text refer to 'ecstasy-type drugs' (rather than to 'ecstasy' alone), to make clearer what it is that those figures cover: the numbers for 2013 and earlier years are the same as those that were given in earlier editions, but are now described more precisely.
- 3.3.2 Since these tables record individual mentions of particular drugs, there will be multiple-counting of some deaths (for example if both heroin and diazepam were

implicated in, or potentially contributed to, the cause of a death in the latest year, that death will be counted in five of the 'drug' columns of [Table 3](#): 'heroin/morphine', 'heroin/morphine, methadone or buprenorphine', 'any opiate or opioid', 'any benzodiazepine' 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 473 (55%) of the 867 deaths in 2016; methadone was implicated in, or potentially contributed to, 362 (42%); one or more opiates or opioids (including heroin/morphine and methadone) were implicated in, or potentially contributed to, 765 deaths (88%); and benzodiazepines were implicated in, or potentially contributed to, 426 (49%). Cocaine, ecstasy-type drugs and amphetamines were implicated in, or potentially contributed to, 123 deaths (14%), 28 deaths (3%) and 25 deaths (3%), respectively. Alcohol was implicated in, or potentially contributed to, the cause of 112 (13%) of the 867 drug-related deaths in 2016.

3.3.4 From [Table 3](#), one can also see that most of the drugs shown have larger figures in 2016 than in any previous year for which the numbers can be compared. The following numbers of deaths for which the specified drugs were implicated in, or potentially contributed to, the cause in 2016 are examples of this:

- 473 for heroin and/or morphine was 128 more than the previous largest number, which was 345 in 2015;
- 362 for methadone was 87 more than its previous peak of 275 in 2011;
- 765 for any opiate or opioid was 159 more than its previous largest number, which was 606 in 2015;
- 426 for any benzodiazepine was 230 more than its most recent peak of 196 in 2012 (and also well above the figure of 245 for 2002, which is not directly comparable – see the next paragraph);
- 123 for cocaine was 30 more than its previous largest number, which was 93 in 2015.

Although the figure for benzodiazepines more than doubled (from 191 in 2015 to 426 in 2016), the increase in the number for diazepam (which had previously been the benzodiazepine that was most often implicated in deaths) was far less: from 121 in 2015 to 154 in 2016. Most of the rise in the figure for benzodiazepines was due to 'new' ones, particularly etizolam and diclazepam, which were implicated in, or potentially contributed to, the cause of death for (respectively) 223 and 72 of the overall 'benzodiazepine' figure of 426 such cases in 2016. Etizolam and diclazepam (and some other 'new'



benzodiazepines) were not controlled under the Misuse of Drugs Act until 31 May 2017, but were subject to the Psychoactive Substances Act when it came into force on 26 May 2016. They are not shown in Table 3 because each was implicated in only single-figure numbers of deaths (if any) before 2014 (etizolam) and 2016 (diclazepam), as can be seen from the slightly larger figures for them (on the ONS/'wide' basis) that are given in Table Y. Finally, it should be noted that the relatively small numbers for ecstasy-type drugs and amphetamines have had some large percentage year-to-year fluctuations.

3.3.5 It is not possible to make a direct comparison with the figures for 2007 and 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 before 2008 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-type (averages of 7 and 13).

It may also be noted that Table 3 in the editions of this publication for 2013 and some earlier years showed that 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 2016 on this basis. There are large percentage differences between the two halves of the table in the figures for benzodiazepines (and diazepam in particular): benzodiazepines were found to be present in the body in the case of 632 of the drug-related deaths in 2016, but had been implicated in, or potentially contributed to, only 426 of those deaths (for diazepam, the equivalent figures are 365 and 154). There are also notable percentage differences between the figures in the two halves of the table for codeine (or a codeine-containing compound), which was found in 80 deaths but was believed to have been implicated in, or to have contributed to, only 43 of them; for dihydrocodeine or a compound thereof (for which the numbers are 150 and 114, respectively) and for alcohol (330 and 112). The figures for heroin/morphine and methadone do not differ much (in percentage terms) 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 that there were 66 deaths for which only one drug (and, perhaps, alcohol) was found to be present in the body: with a few possible exceptions (the footnote to the table gives further details), these deaths will 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; four deaths for which only methadone was mentioned; one for which only codeine (or a codeine-containing compound) was reported, four for which dihydrocodeine (or a dihydrocodeine-containing compound) was reported, three deaths for which only a benzodiazepine was reported; five deaths for which only cocaine was reported; six deaths for which only an ecstasy-type drug was reported; and three death for which only amphetamines were reported. Information from NRS's database (which does not appear in any of the tables) shows that 10 of the 14 remaining 'only one drug (and, perhaps, alcohol)' deaths were due to 'unspecified drug'; in case of the other deaths, the only substances reported were pentobarbitone (two deaths) and zopiclone (two deaths). In total, there were 16 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 77 deaths for which

heroin/morphine was the only drug which was believed to have been implicated in, or to have contributed to, the death; 23 deaths for which methadone was the only such drug; 11 deaths for which dihydrocodeine (or a dihydrocodeine-containing compound) was the only such drug, 19 deaths for which cocaine was the only such drug, and 35 deaths for which alcohol was implicated in, or potentially contributed to, the cause of death, along with one drug. Apart from 'heroin/morphine, methadone or buprenorphine', 'any opiate or opioid' and 'any other drug', the numbers for each of the other individual drugs that are shown in the table are all in single figures, so there were very few deaths which were believed to be due solely to one of those particular drugs alone.

3.3.11 In the lower half of [Table 7](#), the sum of the figures for 'any opiate or opioid' (which includes heroin/morphine, methadone, buprenorphine, codeine, dihydrocodeine and compounds containing them), benzodiazepines, cocaine, ecstasy-type drugs and amphetamines is 167, or 19% of the total of 867 drug-related deaths in 2016. This means that one of these drugs was the only drug which was implicated in, or potentially contributed to, the cause of almost a fifth of all drug-related deaths in 2016. There were also 20 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. Information from NRS's database (which does not appear in any of the tables) shows that they included four cases where that drug was pentobarbitone, two cases where it was zopiclone, four cases where it was a drug that was responsible for only one such death (the substances reported being amitriptyline, fluoxetine, MXP and quetiapine), and 10 cases where it was 'unspecified drug' (alcohol was also implicated in some of these deaths). Therefore, there was a total of 187 cases (22% of all drug-related deaths) where only one drug (plus, perhaps, alcohol) 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 majority (592, or 68%) of the drug-related deaths in 2016. This was the case throughout the past two decades, although the precise balance between the sexes has varied from year to year. For example, between 2008 and 2013, the number of male drug-related deaths dropped (from 461 to 393, having been as low as 363 in 2010) whereas the number of female deaths rose (from 113 to 134, having fallen back slightly from 165 in 2012) so the male percentage fell from 80% to 75%. Comparing the averages for 2002-2006 and 2012-2016, 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 (169%) than for males (60%).

3.4.2 From 2003 to 2014, of the age-groups shown, the largest number of drug-related deaths were among 25-34 and 35-44 year olds: using the averages for 2012-2016, 166 out of 659 deaths (25%) were of 25-34 year olds and even more were in the 35-44 age-group (234, or 36%). However, recent years have seen large percentage increases in drug-related deaths in the 45-54 age-group. In 2016, there were 327 drug-related deaths of people aged 35-44 (representing 38% of that year's total number of drug-related deaths), 213 of 45-54 year olds (25%) and 199 in the 25-34 age-group (23% of the total). In addition, 42 people aged 15 to 24 died (5%), as did 66 in the 55 to 64 age-group (8%) and 20 people who were 65 or over (2%). There are very few drug-related deaths aged 14 and under. The table shows that the number of deaths in a particular

age-group can fluctuate markedly over the years (for example, the number of 15 to 24 year olds who died was 100 in 2002, 47 in 2005, 94 in 2007, 65 in 2010, 32 in 2013, 46 in 2014 and 30 in 2015). However, some clear trends can be seen. Comparing the averages for 2002-2006 and 2012-2016 (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 104 per year in 2002-2006 to an average of 234 in 2012-2016) and people aged 45-54 (from an average of 35 to an average of 157); the number of deaths of 25-34 year olds rose less markedly (from an average of 134 to an average of 166). Deaths of people aged 55 to 64 rose (from an average of 9 to an average of 47), and there was a fall in the number of people aged under 25 who died (from an average of 75 to an average of 39).

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 34 years in 2016;
- the median age at death increased from 28 years in 1996 to 41 years in 2016; and
- the upper quartile age at death rose from 34 years in 1996 to 47 years in 2016 (having been 49 years in 2015).

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, 481 (81%) of the male deaths in 2016 were of known or suspected drug abusers compared to 182 (66%) of the female deaths. Of the 86 deaths aged 55 and over, only 32 (37%) 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 68% of all drug-related deaths in 2016. 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:

- ecstasy-type drugs – 89% (25 out of 28);
- cocaine - 78% (96 out of 123);
- amphetamines – 76% (19 out of 25);
- alcohol - 75% (84 out of 112);
- heroin/morphine - 73% (345 out of 473);
- benzodiazepines - 69% (292 out of 426);

- methadone - 65% (237 out of 362);
- dihydrocodeine (or a dihydrocodeine-containing compound) - 57% (65 out of 114); and
- codeine (or a codeine-containing compound) - 47% (20 out of 43).

There were some differences between the distributions by age of people for whom the drugs listed in Table 6 were implicated in, or potentially contributed to, the cause of their deaths. For example, the under 25s accounted for 36% of (the relatively small number of) deaths in which an ecstasy-type drug was implicated, or to which it potentially contributed, compared with only 5% of all drug-related deaths. In addition, 29% of the 123 'cocaine' deaths were of people who were aged 25-34, compared with 23% of all drug-related deaths. About 50% of the 114 'dihydrocodeine' deaths were of people aged 45 and over, compared with 34% of 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 32% of all drug-related deaths in 2016, but for only 27% of the deaths for which heroin/morphine were found, just 22% of deaths for which cocaine was found, and only 10% of the 30 deaths for which ecstasy-type drugs were found.
- 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. 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 (77 deaths) might the figures for a particular drug be large enough for analysis of the ages and sexes of the people involved. The main point to note is that females accounted for 24% of all deaths in 2016 for which only one drug (and, perhaps, alcohol) was implicated in, or potentially contributed to, the cause of death, but for only 17% (13 out of 77) of the cases where heroin/morphine (and, perhaps, alcohol) was the only drug which was implicated in, or potentially contributed to, the cause of death.
- 3.4.8 [Table 8](#) provides drug-related death rates per 1,000 population for a number of age-groups, and shows how these have changed, from 2000 to 2016. For much of that period, the drug-related death rate per 1,000 population was highest for people aged 25-34: it was 0.27 in 2016 and averaged 0.24 over the latest five years (from 2012 to 2016). However, the rate for 35-44 year olds was higher in 2011 and every year since, was 0.49 per 1,000 population in 2016, and its latest 5-year average was 0.35. In recent years, there has been a large percentage increase in the rate for 45-54 year olds: it was 0.27 in 2016 and had a latest 5-year average of 0.20. For the 15-24 age-group, the rate per 1,000 population has latterly been much lower: it was 0.06 in 2016 and averaged 0.06 over the latest five years. The rate for 55-64 year olds has never been more than 0.10 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 (with some year-to-year fluctuations).

### 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 2012/13 financial year, are [available from the ISD web-site](#) . 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 ISD's estimates of the number of problem drug users in 2012/13 along with the annual average number of drug-related deaths for 2011-2015 (rather than the annual averages for 2012-2016, because they would be less comparable with ISD's estimates for 2012/13). The first two figures on the first row show that Scotland had 602 drug-related deaths (of all ages) per year (on average) between 2011 and 2015, and an estimated 61,500 problem drug users (aged 15-64) in 2012/13. Combining those figures gives an annual average of 9.8 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 [Table 4](#) showed that there are relatively 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 (10.0) than for females (9.2), and increases with age (4.0 for problem drug users who are aged 15-24, 7.6 for 25-34 year olds, and 13.0 for those aged 35-64). For each sex, the death rate clearly rises with age, though it should be noted that 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 2012/13, the 95% confidence interval is from 59,900 to 63,300 (or roughly +/- 3%). 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 602 drug-related deaths by the value at the upper end (63,300 problem drug users) gives a minimum for the drug-death rate of 9.5 per 1,000 problem drug users; dividing by the value at the lower end (59,900 problem drug users) gives a maximum for the drug-death rate of 10.1 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). In this publication, the statistics for each NHS Board's area are based on the boundaries which apply with effect from 1 April 2014. The figures for earlier years show what the numbers would have been, had the new boundaries applied in those years. [Table HB1](#) shows the numbers of drug-related deaths for each NHS Board area. Of the 867 deaths in 2016, 257 (30%) were in the Greater Glasgow & Clyde NHS Board area. Lothian, with 128 (15%), had the next highest total followed by Lanarkshire (113 or 13%), Ayrshire & Arran (85 or 10%), Grampian (68 or 8%), Tayside (62 or 7%), Forth Valley (50 or 6%) and Fife (45 or 5%).
- 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 (for example some previous editions of this publication showed that Greater Glasgow & Clyde had 147 deaths in 2004, 109 in 2005 and 156 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 2002-2006 and 2012-2016 were Greater Glasgow & Clyde (up by 61, from 137 to 198), Lothian (up by 59, from 44 to 103), Lanarkshire (up by 40, from 39 to 79), Tayside (up by 30, from 23 to 53), Ayrshire & Arran (up by 28, from 22 to 50), Fife (up by 26, from 16 to 42), Forth Valley (up by 14, from 18 to 32), Highland (up by 14, from 12 to 26), and Grampian (up by 12, from 39 to 51).
- 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 2012-2016) 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 659 drug-related deaths per year represented a rate of 0.12 per 1,000 population. The area with the highest rate was Greater Glasgow & Clyde (0.17); next highest were Ayrshire & Arran and Tayside, both with rates of 0.13. Finally, the lower part of the table shows the number of 'extra' deaths that would be counted, for each area, in the consistent series (refer to paragraph 2.9 and Annex F). As all the figures are relatively small, it is clear that the use of the consistent series would not change markedly the level of, or the trend in, the number of drug-related deaths for any area.
- 4.4 [Table HB2](#) gives a breakdown by cause of death for each NHS Board area for 2016. [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 onwards 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, 55% of the total number of drug-related deaths in 2016, and the figures for most of the most populous areas were not too far from this level: broadly speaking, around 45-65%, with the exception of Highland (8 out of 29, or 28%). Methadone was implicated in, or potentially contributed to, 42% of drug-related deaths overall; with an unusually high proportion in Ayrshire & Arran (49 out of 85, or 58%) and a rather low one in Highland (5 out of 29, or 17%). The table also shows that dihydrocodeine (or a compound containing it) was implicated in, or potentially contributed to, 13% of drug-related deaths overall, but the figure for Grampian was 25% (17 out of 68). Benzodiazepines were implicated in, or potentially contributed to, a high proportion of drug-related deaths in Fife (29 out of 45, or 64%), and a low proportion in Highland (8 out of 29, or 28%), compared to 49% for Scotland as a whole - although this comparison might be affected by the differences in reporting practices which are mentioned in [section 2](#).
- 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 2012-2016), 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 (for example 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 for the three oldest of the five age-groups for which figures are provided: 0.53 for 35-44 year olds, 0.32 for the 45-54 age-group, and 0.12 for the 55-64 age-group; all well above the overall average rates for Scotland as a whole for the same 5-year period (0.35, 0.20 and 0.07 respectively). Fife and Tayside had rates for 25-34 year olds which were clearly above-average (0.32 and 0.35, respectively, compared with 0.24 for Scotland as a whole); no area had an unusually high rate for 15-24 year olds when compared with 0.06 for Scotland as a whole
- 4.7 As mentioned in [Section 3.5](#), Information Services Division (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, and [Section 3.5](#) gives more information about the basis of the figures. For Scotland as a whole, it is estimated that (between 2011 and 2015) there were, on average, 9.8 drug-related deaths per year per 1,000 problem drug users.
- 4.8 Among the more populous areas, this rate was lowest in Forth Valley and Greater Glasgow & Clyde (both 8.8) and highest in Fife (13.9) and Highland (13.3). 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 11.8 to 15.5 per 1,000 problem drug users).
- 4.9 There is a narrower (in percentage terms) range of values for the 'mainland' 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. For example, [Table HB5](#) shows that the lowest



'mainland' drug-related death rate per 1,000 problem drug users was 8.0 (Dumfries & Galloway), and the highest was 13.9 (Fife), so the highest figure was less than twice the lowest one. In contrast, in [Table HB4](#), the lowest 'mainland' drug-related death rate per 1,000 population was 0.08 (for both Dumfries & Galloway and Highland), and the highest was 0.17 (Greater Glasgow & Clyde), so the highest figure was more than double the lowest one. (The 'island' areas are excluded from such comparisons because their relatively small numbers may lead to large percentage fluctuations in their rates.)

## 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 (for example 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 onwards on the 'all drugs which were found to be present in the body' basis.
- 5.2 As the numbers of drug-related deaths 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 National Records of Scotland (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 NRS 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 data zones 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 – this is areas which had, on average, at most three and a half 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 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 (even if the pathologist did not consider the drug to have had any direct contribution to the 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, choking on food or deaths from hypothermia) 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 any kind of pneumonia (for example bronchopneumonia, lobar pneumonia or bilateral pneumonia), 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, the statistics include some deaths for which the cause refers to both medical problems and the immediate effects of drugs (for example 'intoxication', 'poisoning', 'toxicity', 'overdose' or 'adverse effects of'), and which were coded to one of the ICD10 codes listed in paragraph A2. For example, deaths for which the cause was given as 'bronchopneumonia, heroin intoxication' or 'hypoxic brain injury, morphine and methadone intoxication' would be included in these statistics. It would be assumed that either the person was killed by the effects of the drugs (rather than by the medical condition) or that the medical condition was an immediate

consequence of the drug-taking. In such cases, references such as 'suspected drug overdose' and 'possible opiate intoxication' are usually sufficient for a death to be counted in the statistics.

- 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 University of Hertfordshire and, prior to that, the Programme Manager 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. In the ‘... in 2015’ edition, the EMCDDA figures for some of the years from 2000 to 2014 were revised slightly from those published previously, following advice, from Public Health England (which co-ordinates the provision of figures for the UK to the EMCDDA) that deaths satisfying some other criteria should be counted in the EMCDDA definition.

- 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. Figures based on the ONS ‘wide’ definition have been provided for 1979 onwards, but numbers based on the other two definitions are only available for 1996 and later years. A separate note, [‘Figures for drug-related deaths for Scotland for 1995 and earlier years’](#) is available on the NRS website, explains why NRS cannot produce figures for drug-related deaths for 1995 and earlier years on the basis of the standard definition, comments on the potential reliability of the numbers on the basis of the ONS ‘wide’ definition for 1979 to 1999, and explains why it is not possible to produce reliable figures for drug-related deaths on that basis for 1978 or earlier years.
- 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 the latest year, and over the previous ten years, for which a range of drugs (including anti-depressants, anti-psychotics, paracetamol or a compound, and tramadol) were reported. [Section 2](#) explains why there is a break in the series between 2007 and 2008. In some of the earlier editions of this publication, the table showed that, 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. The table also shows recent years’ rises in the numbers of deaths involving certain drugs, such as diclazepam, etizolam, gabapentin and pregabalin.
- 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 NRS 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 (for example 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 (for example 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. For example, 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 later years) on the [ISD website](#). However, that definition of drug-related deaths was changed to include confirmed suicides for the first time in the ISD database for 2012. 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 Sociodemographics, 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 the exclusion of confirmed

suicides for the years before 2012) and the fact that ISD's 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 a previous edition of this publication.

B11. The top part of [Table Z](#) gives the numbers of deaths counted as 'drug-related' on the basis of the 'wide' definition, with separate figures for:

- the basis used for the statistics in this publication (this is the Drug Strategy 'baseline' definition, as implemented by GROS/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](http://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 final part of [Table Z](#) shows the number of volatile substance abuse deaths in Scotland, which used to be produced and 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 could be counted as both 'drug-related' and 'volatile substance abuse' (for example if the cause was 'combined toxic effects of methadone and butane'). ICDP produced its figures for Scotland using information from NRS, the Crown Office and Procurator Fiscal Service, and other sources.

However, ICDP's statistics related to the year of death (rather than the year of registration). More details of the figures that ICDP used to produce are given in its Volatile Substance Abuse Mortality Report, available via the [news and publication](#) section of the St George's website.

## Annex C: References

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

## Annex D: The questionnaire used to obtain further information about drug-related deaths, with effect from 2014

Note: Different questionnaires were used for 2007 and earlier years, and for 2008 to 2013. Copies of those questionnaires can be found in the relevant editions of this publication. Following consultation with members of the Pathologists sub-group of the National Forum on Drug-related Deaths, the version shown here was used with effect from 2014.

**Confidential**  
*National Records of Scotland*

**Form ME4** (deaths reg'd 2014 on)  
*Crown Office*

**Deaths (i) involving or resulting from the use of drugs or solvents (e.g. illicit drugs, controlled substances that had been prescribed, or new psychoactive substances) or (ii) from other causes (e.g. from medical conditions, suicides, accidents, etc) in those cases where the deceased was a known or suspected drug/solvent abuser**

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

**Name of deceased:** .....

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

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

2. Did the death involve or result from the use of drugs/solvents?     Yes   
No  ==> if "No", go to Question 5

3. Was the death the result of drug/solvent overdose / intoxication?     Yes  No

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?

- |         |         |
|---------|---------|
| 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 NRS to classify correctly 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. 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 that Act: if so, they will be covered by the Psychoactive Substances Act, which came into force on 26 May 2016. The definition of NPSs therefore includes substances which some people have described as ‘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 under the Misuse of Drugs Act or become subject to the Psychoactive Substances Act).
- E2 [Tables NPS1](#) to [NPS3](#) show 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 tables distinguish between deaths for which NPSs:
- were implicated in, or potentially contributed to the death; and
  - were present but not considered to have contributed to the death.

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

- deaths which fall within the definition of ‘drug-related deaths’ that is used to produce the statistics that are given in the main body of 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
- deaths not counted in the statistics in the main body of this report (for example 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 hours 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 figures for deaths involving NPSs (for example, in the first line of part (a) (ii) of [Table NPS2](#)).
  - 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 figures for deaths involving NPSs (for example, in the first line of part (a) (i) of [Table NPS2](#)).
- Note: National Records of Scotland (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 2016, 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 2016 (these are 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 2016 (some of which may have since become controlled substances).

Note that these are not comprehensive lists of NPSs: they cover only the NPSs which were involved in deaths which were registered in Scotland by the end of 2016. (They do not include a few other NPSs whose names are in 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:
- acetyl fentanyl
  - cathinone
  - PMA / paramethoxyamphetamine
  - PMMA / paramethoxymethamphetamine

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 the figures for deaths involving NPSs.

- E6 The following NPSs became controlled substances between the start of 2009 and the end of 2016.

Substance	Controlled with effect from:
BZP / Benzylpiperazine	23 December 2009
CPP / Chlorophenylpiperazine	23 December 2009
TFMPP / Trifluoromethylphenylpiperazine	23 December 2009
Chloromethcathinone	16 April 2010
MDPV / Methylenedioxypropylvalerone	16 April 2010
Mephedrone / 4-Methylmethcathinone	16 April 2010
4-MEC / Methylethcathinone	16 April 2010
Methylone	16 April 2010
PVP	16 April 2010
Naphyrone	23 July 2010
Phenazepam	13 June 2012
APB / 2-aminopropyl-benzofuran/ 5 APB / 6 APB	10 June 2013 (Temporary Class Drug Order); 10 June 2014 (Class B drug)
API / 5-API / 5-IT / 5-(2-aminopropyl)indole - APB	10 June 2013 (Temporary Class Drug Order); 10 June 2014 (Class B drug)
AMT / Alphamethyltryptamine	7 January 2015
5-MEO-DALT	7 January 2015
4-4'DMAR	11 March 2015
Ethylphenidate	10 April 2015 (Temporary Class Drug Order); 31 May 2017 (Class B drug)
MPA / Methylthienylpropamine / Methiopropamine	27 November 2015 (Temporary Class Drug Order)

AKB48	14 December 2016
MDMB-CHMICA	14 December 2016
5F-PB-22	14 December 2016

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 the 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 the figures for deaths involving NPSs.

E7 The following are among the NPSs that had not become controlled substances by the end of 2016:

- Camfetamine
- Diclazepam (Note: this has been a Class C drug with effect from 31 May 2017)
- Diphenidine
- Etizolam (Note: this has been a Class C drug with effect from 31 May 2017)
- Flubromazepam (Note: this has been a Class C drug with effect from 31 May 2017)
- Flubromazolam (Note: this has been a Class C drug with effect from 31 May 2017)
- Kratom
- Mexedrone
- Mitragynine
- MXP
- Pyrazolam (Note: this has been a Class C drug with effect from 31 May 2017)
- 4F-EPH

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 the figures for deaths involving NPSs.

E8 [Table NPS1](#) provides the numbers of deaths involving NPSs which were registered in Scotland in 2016. The figures are broken down as described in paragraph E2, and also by the type(s) of NPS that were involved, distinguishing between cases where:

- benzodiazepine-type NPSs were present, with no other types of NPS present;
- other types of NPS were present, with no benzodiazepine-type NPS present; and
- both benzodiazepine-type NPSs and other types of NPS were present.

The figures in [Table NPS1](#) may be understood better by looking also at [Table NPS3](#), which lists all the substances that were reported to NRS for every death, registered in Scotland in 2016, which involved NPSs (Note: because of its size, this table is not included here. It is available via the publication's 'List of Tables and Figures', which can be found via its [home page](#) on the NRS website.). From [Table NPS3](#), one can observe which NPSs were found in the body in each case, whether the person had taken more than one NPS, and whether other substances (such as heroin, methadone and/or other 'traditional' drugs) were also present.

E9. The top half of part (i) of [Table NPS1](#) shows that there were 286 deaths in 2016 for which one or more NPSs were implicated in, or potentially contributed to, the cause of death. In 277 cases, the only NPSs present were benzodiazepines (usually etizolam, but sometimes another, such as diclazepam or phenazepam); in 8 cases, other types of NPS were present (for example PMA, PMMA, MXP); and there was one death for which both benzodiazepine NPSs and other types of NPS were present. Almost all of

these deaths (281 out of 286) fall within the definition of 'drug-related deaths' that is used to produce the statistics given in the main body of this report – this is 281 out of 286 are included in the 867 drug-related deaths that were registered in 2016. In only a small proportion of cases (4 out of 286) were NPSs the only substances that were implicated in the death. This can be seen from part (i) of Table NPS3: its lists of the substances which were reported for each death show that, in most cases, 'traditional' drugs (such as heroin and methadone) were also implicated in these deaths.

- E10. The lower half of part (i) of [Table NPS1](#) provides a breakdown of the 286 deaths (in which one or more NPSs were implicated in, or potentially contributed to, the cause of death) by the deceased's person's age (for example there were 84 aged 25-34, 118 were in the 35-44 age-group, and 60 were 45-54 year olds) and sex (191 were men).
- E11. Part (ii) of [Table NPS1](#) shows that there were 60 deaths in 2016 for which NPSs were present but were not considered to have contributed to the death. In all cases the only NPSs present were benzodiazepines; and almost all of the deaths (59 out of 60) were counted in the statistics in the main body of this report – this is 59 out of 60 are included in the 867 drug-related deaths that were registered in 2016. The table shows that most of these deaths were of people who were aged 25-34 (18), 35-44 (18) or 45-54 (16), and most were men (46). In Table NPS3, part (ii) lists the substances which were reported for such deaths: it shows that 'traditional' drugs (such as heroin and methadone) were usually implicated in these deaths.
- E12. [Table NPS2](#) provides a summary of the numbers of deaths which have involved NPSs in recent years. 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 (for example, 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 is that none of the deaths that were registered in Scotland in 2008 or earlier years were reported to involve NPSs.
- E13. The number of deaths involving NPSs increased rapidly between 2009 and 2013, was almost unchanged in 2014 and 2015, then more than trebled between 2015 and 2016: 4 were registered in 2009, 11 in 2010, 47 in 2011, 47 in 2012, 113 in 2013, 114 in 2014, 112 in 2015 and 346 in 2016. The sub-totals at the foot of Table NPS2 show that 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 11 in 2010, 45 out of 47 in 2011, 45 out of 47 in 2012, 110 out of 113 in 2013, 107 out of 114 in 2014, 108 out of 112 in 2015, and 340 out of 346 in 2016 ).
- E14. Table NPS2 also shows that deaths for which NPSs were the only substances implicated in, or potentially contributing to, the death, generally represented only a small proportion of deaths which involved NPSs. The relevant numbers are 0 out of 4 in 2009, 7 out of 11 in 2010, 1 out of 47 in 2011, 5 out of 47 in 2012, 6 out of 113 in 2013, 7 out of 114 in 2014, 3 out of 112 in 2015, and 4 out of 346 in 2016: 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.



## **Annex F: A consistent series of drug-related death numbers, based on the classification at the end of the latest year covered by the publication**

- F1. The standard definition of a drug-related death that National Records of Scotland (NRS) uses for its statistics is set out in paragraph A2 of Annex A. Simplifying slightly, NRS counts a death as 'drug-related' if:
- either (a) the underlying cause of death was coded to one of certain specified categories of mental and behavioural disorders due to psychoactive substance use
  - or (b) the underlying cause was coded to one of certain specified categories of poisoning (or self-poisoning) and a drug listed under the Misuse of Drugs Act (1971) was known to be present in the body at the time of death.
- F2. Following the definition, a note at the end of paragraph A2 adds that:  
If a drug's legal status changes, NRS aims to count it on the basis of its classification on the day the person died ... . 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. (Other notes explain why a few deaths in the specified categories are excluded.)
- F3. As the 'mephedrone' example indicates, the requirement that a drug listed under the Misuse of Drugs Act must be present for a death to be counted as drug-related (under part [b] of the standard definition) means that whether NRS will count as drug-related a death from poisoning by a drug which is now controlled depends on when the death occurred: pre- or post-control. So the 'coverage' of NRS's standard definition 'widens' every time another drug is added to the list of controlled substances, because all subsequent deaths from poisoning by that drug will be counted as drug-related. In theory, this could cause a break in the continuity of NRS's figures for drug-related deaths (using the standard definition) every time that another drug becomes controlled.
- F4. In practice, changes in the classification of drugs that occurred in the years up to and including 2013 had little effect on the figures: in that period, almost all the deaths which involved substances that were uncontrolled then, but are now controlled, also involved drugs that were already controlled, and so were counted as drug-related (in terms of the standard definition). For example, the foot of Table NPS2 (in the '... in 2013' edition of this publication) showed that almost all the deaths which involved New Psychoactive Substances (as defined for the purposes of that publication) were included in NRS's standard figures for drug-related deaths (in total, over the five years from 2009 to 2013, only 11 'NPS' deaths were not included in the standard figures). This is because (for example) there were few 'mephedrone only' deaths before it was controlled; any deaths from (say) 'mephedrone and diazepam intoxication' were counted as drug-related because (say) diazepam was present.
- F5. However, changes in the classification of drugs that occurred in 2014 could have caused a noticeable break in the continuity of NRS's figures (based on the standard definition). Tramadol became a controlled substance with effect from 10 June 2014, along with some other substances. In 2013, there were over two dozen 'poisoning' deaths which involved only tramadol, or only tramadol and one or more other substances which were not controlled at that time. Using NRS's standard definition, such deaths (and those like them in the first part of 2014) are not counted as

drug-related, but their equivalents from 10 June 2014 are counted as drug-related. So tramadol being controlled with effect from 10 June 2014 could have increased the number of deaths in 2014 counted as drug-related by a few percent (compared to what would have happened without that change), and there could, in due course, have been a similar effect on the figure for 2015 (because that was the first year for which tramadol was controlled throughout). It follows that NRS's standard figures could give a misleading impression of changes and any trends in drug-related deaths between 2013 and 2014, and between 2014 and 2015.

- F6. Therefore, in order to give more accurate indications of changes and trends, NRS developed a 'consistent series' of numbers of drug-related deaths in previous years, which is based upon the classification of each substance at the end of the latest year covered by the publication. This 'consistent series' includes all the deaths involving tramadol, mephedrone and the other substances which have become controlled in recent years, regardless of their status at the time of death. It should show changes and trends which would be unaffected by the reclassification of substances. The consistent series goes back to 2000, as that is the first year of NRS's current drug-related deaths database.
- F7. For simplicity, the consistent series is based on the classification of drugs at the end of the latest year covered by the publication (rather than, say, at the time the publication was prepared), so it does not take account of any reclassifications after the final year for which the publication gives figures. The basis of the consistent series is therefore 'as at 31 December 2014' for the 'in 2014' edition, 'as at 31 December 2015' for the 'in 2015' edition, 'as at 31 December 2016' for the 'in 2016' edition, and so on. In consequence, the consistent series' figures for previous years may be revised retrospectively every year, following more substances becoming controlled, if those substances had been involved in deaths (registered in earlier years) which had not been counted in the consistent series before because none of the substances involved were controlled at the end of the previous year.
- F8. The consistent series appears in Table 1 in order to show the underlying trends for Scotland (comments on those figures can be found in Section 3.1). In addition, Tables CS1 and CS2 provide the consistent series' numbers of 'extra' deaths in each year (i.e. the deaths which have been added retrospectively to the numbers that were originally produced using the standard definition), broken down by the names of the relevant drugs (i.e. the drugs for which the change in classification has caused deaths which were not counted as drug-related at the time to be included in the consistent series) and by sex and age-group. Finally, the numbers of 'extra' deaths counted in the consistent series for NHS Board areas appear in Table HB1, in order to show their scale (comments on those figures can be found in Section 4). The consistent series and the numbers of 'extra' deaths do not appear in any other tables, because a proliferation of additional figures could cause confusion – especially as the consistent series figures may, in theory, be revised every year (for the reason given in the previous paragraph).
- F9. [Table CS1](#) shows how the number of 'extra' deaths, based on the classification of drugs at the end of the latest year covered by this edition, varied from year to year. It should be noted that the total number of 'extra' deaths could be less than the sum of the figures for the individual drugs, due to deaths which involved more than one of the drugs. For example, a death in (say) 2013 for which the cause was given as 'tramadol and zopiclone intoxication' would be counted in the figures for both of those drugs, but only once in the total number of 'extra' deaths.

- F10. The number of 'extra' deaths for 2014 (6) is not on the same basis as the figure for 2013 (30), because the figure for 2014 includes (e.g.) 'tramadol only' deaths only for the period up to 9 June 2014 whereas the figure for 2013 includes such deaths for the whole of the year. 'Tramadol only' deaths in the rest of 2014 are included in the standard definition (and are therefore not counted as 'extra' deaths) because tramadol became a controlled substance with effect from 10 June 2014.
- F11. The fact that the consistent series has only six 'extra' deaths for 2014 indicates that the drug classification changes in 2014 (and later years) had less effect on the figures than one would have expected from the previous years' numbers of (e.g.) 'tramadol only' deaths. With between 22 and 30 'extra' deaths (involving any of the substances) in each of the previous five years, one would have expected a dozen or so between 1 January and 9 June 2014 (assuming that, say, 'tramadol only' deaths continued at the same rate, a dozen or so would be the 'pro rata' number for the part of 2014 for which they would not be counted in the standard definition). However, as it turned out, 1 January to 9 June 2014 had few (e.g.) 'tramadol only' deaths, so the consistent series has only six 'extra' deaths for 2014. (It will be seen from [Table Y](#) that tramadol was implicated in, or potentially contributed to, the cause of 38 deaths in 2014: markedly fewer than the 64 in 2013. Note: these figures cover both 'tramadol only' deaths and those for which tramadol and one or more other drugs were implicated in, or potentially contributed to, the cause of death.)
- F12. The table shows that a majority of the 'extra' deaths involved tramadol, and most of the rest involved zopiclone (which has also been controlled from 10 June 2014). Three 'extra' deaths involved mephedrone, with none after 2010 because it has been controlled from 16 April 2010; similarly, there were no 'extra' deaths involving phenazepam after it became controlled on 13 June 2012. A few of the 'extra' deaths involved other substances, not controlled at the time, which were controlled by the end of the period covered by this edition, but none of tramadol, zopiclone, mephedrone or phenazepam.
- F13. It can be seen, from [Table CS2](#) that women tend to account for a higher proportion of the 'extra' deaths than of the deaths which are counted in the standard definition: in some years, there were more 'extra' deaths of women than of men. The table also shows the number of 'extra' deaths in each of five age-groups: in some of the years, this has tended to be highest for the '55 and over' age-group (in contrast to the standard figures for drug-related deaths, which are much higher for '25-34', '35-44' and '45-54' than for '55 and over' – see [Table 4](#)).
- F14. NRS data for the years 2000 to 2013 combined (which do not appear in a table) show that the vast majority of the 'extra' deaths which involved tramadol were of people who were aged 35 and over, and that, of all the age-groups, 55+ was the one which had the largest number (around a third) of the 'extra' deaths which involved tramadol. This was the case for both males and females. The position was broadly similar for the 'extra' deaths which involved zopiclone. The numbers of extra deaths involving other substances were too small for such analysis.

## Annex G: Drug-related Deaths – comparison with other countries

- G1. This Annex uses figures for the latest year (at the time of writing) for which other countries' statistics were available from a European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) report. It explains that Scotland's drug-related death figures imply a drug-death rate (relative to the number of people aged 15 to 64, inclusive) which is higher than those that have been reported by all the EU countries (although a footnote in the EMCDDA's table states that caution is required when comparing drug-induced deaths due to issues of coding, coverage and under-reporting in some countries). This Annex concludes by showing that the normally-published figures for Scotland imply a drug-death rate (relative to the size of the population of all ages) roughly two and a half times that of the UK as a whole.
- G2. When using the EMCDDA's figures for other countries, it must be remembered that the EMCDDA stated that  
difference in the national practices of coding the causes of deaths implies that direct comparisons between countries in the numbers or rates of DRDs should be made with caution  
(in the ['Limitations'](#) section of its note on 'Methods and Definitions', which is available on the EMCDDA's website).
- G3. That note gives some examples of differences between countries, such as (Note: the points in square brackets have been added by NRS):
- ... differences in which codes are applied. In particular, in some countries 'T' codes [which, for deaths from poisoning, identify the types of substances that were involved] are never or rarely used, whereas in others they are more frequently used. Where 'T' codes are not applied, the number of drug-induced deaths [refer to paragraph G5] would be an underestimate;
  - ... differences between countries in procedures for recording cases, and in the frequency of post-mortem toxicological investigations; and
  - information exchange between General Mortality Registers [GMRs, such as NRS] and Special Registers (forensic or police) is insufficient or lacking in some countries, which may compromise the completeness of the information.
- G4. It has been suggested that better identification and recording of such deaths may be a reason for the drug-death rate appearing to be higher in the UK (and, hence, Scotland) than in several other countries. For example:
- NRS normally allocates a 'T' code for every substance that was reported as being present in the deceased's body - so there should be very little (if any) under-estimation in the figures for Scotland. NRS understands that the UK's other GMRs also make good use of 'T' codes, so the UK's figures should not be underestimates;
  - Scotland has a good exchange of information, as forensic pathologists provide NRS with details of many drug-deaths (using the form which is shown in Annex D) - so the data for Scotland should be more-or-less complete. NRS understands that the UK's other GMRs are usually told, by coroners, which drugs caused each death, so (again) the UK's figures should not be underestimates.
- G5. Table EMCDDA gives the number of 'drug-induced' deaths aged 15 to 64 inclusive, and the resulting rate per million population of that age, for various countries. These numbers were copied from Table A6 of the EMCDDA's ['European Drug Report 2017'](#), available on the EMCDDA website. 'Drug-induced deaths' is the EMCDDA's term for deaths directly caused by illegal drugs, which it defines in terms of particular codes for the underlying causes of death, in some cases in combination with certain codes for

the types of substance involved. The EU countries are listed in order of the native language versions of their names - for example, Germany appears between Denmark and Estonia; and Austria is between Netherlands and Poland. Although the report refers to the latest statistics being for 2015, some countries' data are for earlier years, and Public Health England (which supplies the EMCDDA with the statistics for the UK) has confirmed that the UK's figure in the EMCDDA's Table A6 is (broadly speaking) the number of such deaths which occurred in 2014. (The Scottish component of the UK figure is the number of such deaths that were registered in Scotland in that year. Because deaths in Scotland are normally registered within a few days, the number that were registered in Scotland in any given year will be similar to the number that occurred in Scotland in that year.)

- G6. The corresponding figures for Scotland for 2014 have been added at the foot of the table. They were produced as follows:
- 563 drug-induced deaths (using the EMCDDA definition) aged 15 to 64 inclusive were registered in that year – extracted from NRS's drug-related deaths database. This is slightly fewer than the 574 deaths on the basis of the EMCDDA 'general mortality register' definition (shown in Table X), because the latter figure includes deaths at ages 0-14 and 65+;
  - the drug-induced death rate (aged 15-64) per million population was then calculated by dividing the 563 drug-induced deaths aged 15-64 by the corresponding mid-year population estimate, of 3,526,673.
- G7. The resulting drug-induced death rate (aged 15-64) for Scotland is 160 per million population. This appears to be higher than for any of the countries shown in the EMCDDA table. The next highest rates are for Estonia (103 per million) and Sweden (100 per million). Scotland's drug-induced death rate is much higher than that of the UK as a whole (60 per million) – but that is what one would expect, given Scotland's share of the UK's drug-related/'misuse' deaths (refer to paragraphs G9 and G10, below).
- G8. It must be remembered that the figures for some countries may not be truly comparable with those for Scotland (or the UK as a whole), for reasons like those given in paragraphs G2 to G4. Table A6 in the the EMCDDA's 'European Drug Report 2017' includes the following footnote:
- Caution is required when comparing drug-induced deaths due to issues of coding, coverage and under-reporting in some countries
- Because some countries' figures may be affected by (say) under-reporting, one cannot say that Scotland has a drug-induced death rate (aged 15-64) which is definitely 'X' times the level for the EU as a whole, or higher than that of exactly 'Y' EU countries. However, it appears certain that Scotland's rate is well above the level of most (if not all) of the EU countries.
- G9. Scotland's drug-related death rate is also seen to be much higher than that of the UK as a whole when the comparison uses the kind of drug-death figures that are normally published for Scotland, England and Wales, and Northern Ireland. As an example, in terms of the definition that is used for most of the statistics in this report (that introduced in 2001 for the 'baseline' figures for the UK Drugs Strategy), the following numbers of drug-related deaths were registered in 2014:
- 614 in Scotland – the 'standard definition' figure in Table 1;
  - 2,248 in England and Wales – 'drug misuse' deaths (that being ONS's term for the number of deaths based on the 'Drug Strategy' definition) – more information

can be found in the [deaths related to drug misuse](#) section on the ONS website; and

- 88 in Northern Ireland – also referred to as ‘drug misuse’ deaths – more information can be found in the [Drug Related and Drug Misuse Deaths 2004-2014](#) section of the NISRA website.

So, the UK had a total of 2,950 drug-related/‘misuse’ deaths registered in 2014, of which around 21% were registered in Scotland. As Scotland accounts for only about 8% of the population of the UK, Scotland’s drug-death rate (per head of population) appeared to be roughly two and a half times that of the UK as a whole.

G10. It should be noted that how information about drug-related/‘misuse’ deaths is collected differs between Scotland and other parts of the UK. In particular:

- in England and Wales, almost all drug-related deaths are certified by a coroner following an inquest, and cannot be registered until that is completed. As a result, about half of their drug-related deaths registered in (say) 2014 occurred in a previous year – more information can be found in the [Impact of registration delays on drug-related deaths](#) section of the ONS website. Very crudely, the England and Wales figures for (say) 2014 can be thought of as representing the deaths which occurred between (say) mid-2013 and mid-2014, so are less ‘up to date’ than Scottish figures for 2014, which can be thought of as representing the deaths which occurred in the whole of that year (as almost all Scottish deaths are registered within a few days of occurring);
- there is no English equivalent of the form (shown in Annex D) which is used by forensic pathologists in Scotland to provide details of deaths to NRS.
  - The UK’s other GMRs are usually told, by coroners, which drugs caused each death, but not about all the substances that were found in the body. It follows that some deaths could (in theory) be counted differently in, say, Scotland and England. For example, a death from intentional self-poisoning by an uncontrolled substance would be counted in Scotland (but not in England) if a controlled substance was present in the body but was not believed to have contributed to the death (because the presence of the controlled substance would not be recorded in the data for England)
  - NRS is more likely than ONS to be told which drugs caused a death. In Spring 2017, ONS said that:
    - in around 1 in 8 cases, it receives only a very generic description of the death, such as ‘drug overdose’ or ‘drug-related death’. In contrast, Scotland had only about 8 drug-deaths per year (on average, from 2008 to 2015) for which NRS was not told which drugs caused them.
    - in around 10% of opiate deaths, ONS is not told which opiate was involved. In contrast, Scotland had an average of only about 4 drug-deaths per year caused by opiates (possibly in combination with other substances) for which NRS was not told which particular opiates were involved.

Such differences may affect the comparability of drug-death rates for Scotland and the UK as a whole, but are unlikely to account for the majority of the difference between those rates. For example:

- if the numbers of drug-related deaths were rising at 10% per year, their being registered (on average) six months earlier in Scotland than in England would increase the Scottish drug-death rate by only 5% (relative to the English one), all else being equal (because one would be comparing the Scottish number of deaths which occurred, broadly speaking, in [say] 2014 with the English number of deaths which occurred, broadly speaking, between [say] mid-2013 and mid-2014 – a period when drug-death rates were lower).

- on average, Scotland had only around 3 deaths per year from intentional self-poisoning by an uncontrolled substance for which a controlled substance was present in the body but was not believed to have contributed to the death. Such deaths are included in the drug-related death figures for Scotland, but not for England – but are too few in number to have much effect on the comparability of drug-death rates.
- ‘drug overdose’ and ‘opiate’ deaths in England are counted as drug-related/’misuse’ deaths, so the lack of information about which drugs were involved does not affect the comparability of the overall drug-death rates. (However, it could have a noticeable effect on any comparison of figures for deaths which were caused by particular drugs, of course.)

It follows that the Scottish rate could well be at least double that of the UK as a whole even if there were no methodological differences.

**Table 1: Drug-related deaths in Scotland, 1996 – 2016**

Year	Drug-related deaths registered in year	Annual moving averages		Likely range of values around 5-year average <sup>1</sup>		Drug-related deaths: consistent series <sup>2</sup>	"Extra" deaths counted in consistent series <sup>3</sup>	
		3-year average	5-year average	likely lower	likely upper		number	percent <sup>4</sup>
1996	244							
1997	224	239						
1998	249	255	260	228	292			
1999	291	277	278	245	310			
2000	292	305	309	275	344	293	1	0.3%
2001	332	335	323	288	358	339	7	2.1%
2002	382	344	336	300	372	388	6	1.6%
2003	317	352	345	308	381	330	13	4.1%
2004	356	336	362	325	400	365	9	2.5%
2005	336	371	377	339	415	346	10	3.0%
2006	421	404	428	388	469	430	9	2.1%
2007	455	483	466	424	509	474	19	4.2%
2008	574	525	496	452	540	590	16	2.8%
2009	545	535	529	484	574	570	25	4.6%
2010	485	538	554	508	600	512	27	5.6%
2011	584	550	544	499	590	606	22	3.8%
2012	581	564	558	512	605	604	23	4.0%
2013	527	574	602	554	651	557	30	5.7%
2014	614	616	659	609	709	620	6	1.0%
2015	706	729				707	1	0.1%
2016	867					868	1	0.1%

**Footnote**

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

2) broadly speaking, counting deaths on the basis of the classification of the drugs at the end of the latest year which is covered by the publication (rather than on the standard definition basis of the classification at the time of the death). See Annex F for the full definition. The year 2000 is the first for which a "consistent series" figure is available, because that is the first year in NRS's current drug-related deaths database.

3) i.e. deaths which are counted in the consistent series but are not counted in the standard definition

4) percentage of the total number of drug-related deaths on the basis of the standard definition



**Table 2: Drug-related deaths by underlying cause of death<sup>1</sup>, Scotland, 1996 – 2016**

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)
<b>annual averages:</b>						
1996-2000	260	189	13	34	0	25
2002-2006	362	242	29	37	0	54
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
old rules - 2013	527	359	74	50	1	43
old rules - 2014	614	429	109	45	0	31
old rules - 2015	706	495	123	54	0	34
old rules - 2016	867	663	129	48	0	27
2012-2016 average (old coding rules)	659	465	101	52	0	40
<b>new coding rules</b>						
2011	584	12	346	36	0	190
2012	581	26	365	65	0	125
2013	527	22	366	50	1	88
2014	614	32	471	45	0	66
2015	706	49	553	54	0	50
2016	867	32	729	48	0	58
2012-2016 average (new coding rules)	659	32	497	52	0	77

**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<sup>1</sup>, Scotland, 1996 – 2016**

Year	All drug-related deaths	Heroin / morphine <sup>2</sup>	Methadone	Heroin / morphine, Methadone or Buprenorphine	Codeine or a codeine-containing compound	Dihydro-codeine or a d.h.c.-containing compound	Any opiate or opioid	Benzodiazepines		Cocaine	Ecstasy-type	Amphetamines	Alcohol
								Any benzo-diazepine	of which: Diazepam				
<b>annual averages:</b>													
1996-2000	260	128	74	..	..	..	..	..	116	6	7	..	91
2002-2006	362	220	87	279	18	48	320	155	130	35	15	11	129
1996	244	84	100	..	..	..	..	..	84	3	9	..	87
1997	224	74	86	..	..	..	..	..	93	5	2	..	70
1998	249	121	64	..	..	..	..	..	113	4	3	..	86
1999	291	167	63	..	..	..	..	..	142	12	8	..	89
2000	292	196	55	232	17	32	263	164	146	4	11	3	123
2001	332	216	69	253	9	51	301	182	156	19	20	5	140
2002	382	248	98	309	11	55	339	245	214	31	20	13	156
2003	317	175	87	239	18	51	285	186	153	29	14	10	128
2004	356	225	80	275	25	41	324	140	113	38	17	10	116
2005	336	194	72	246	12	49	288	110	90	44	10	11	114
2006	421	260	97	328	25	42	366	94	78	33	13	11	131
2007	455	289	114	370	15	50	409	109	79	47	11	11	157
2008	574	324	169	445	24	67	507	149	115	36	5	11	167
2009	545	322	173	432	33	64	498	154	116	32	2	6	165
2010	485	254	174	395	11	58	442	122	93	33	0	3	127
2011	584	206	275	430	32	85	524	185	123	36	8	24	129
2012	581	221	237	399	33	84	499	196	160	31	9	18	111
2013	527	221	216	383	33	81	461	149	106	45	17	27	103
2014	614	309	214	449	38	69	536	121	84	45	14	22	106
2015	706	345	251	493	31	94	606	191	121	93	15	17	107
2016	867	473	362	650	43	114	765	426	154	123	28	25	112
<b>annual averages:</b>													
2003-2007	377	229	90	292	19	47	334	128	103	38	13	11	129
2008-2012	554	265	206	420	27	72	494	161	121	34	5	12	140
2012-2016	659	314	256	475	36	88	573	217	125	67	17	22	108

**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 became the standard basis for figures for individual drugs with effect from "Drug-related Deaths in Scotland in 2009".

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 – 2016**

Year	Drug-related deaths	Sex		Age-group <sup>1</sup>							Age		
		Male	Female	14 and under	15 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 and over	Lower quartile	Median	Upper quartile
<b>annual averages:</b>													
1996-2000	260	207	53	83		108	46	12	10		..	..	..
2002-2006	362	292	71	0	75	134	104	35	9	6	..	..	..
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	0	73	126	69	16	3	5	25	30	36
2001	332	267	65	1	79	140	70	31	8	4	25	31	38
2002	382	321	61	0	100	153	92	27	7	3	24	30	37
2003	317	256	61	0	78	123	81	20	11	6	25	31	37
2004	356	289	67	0	81	138	92	35	2	8	25	31	38
2005	336	259	77	1	47	104	126	37	11	10	28	36	41
2006	421	334	87	0	69	154	127	54	15	1	27	34	40
2007	455	393	62	0	94	149	149	45	11	7	26	34	41
2008	574	461	113	0	92	211	174	71	17	9	27	34	41
2009	545	413	132	2	69	178	189	78	20	9	28	35	43
2010	485	363	122	0	65	161	158	76	20	5	28	35	43
2011	584	429	155	0	58	184	212	94	26	10	30	37	43
2012	581	416	165	0	46	171	199	115	34	16	31	38	46
2013	527	393	134	0	32	138	184	125	39	9	32	40	47
2014	614	453	161	1	46	157	213	148	37	12	32	40	47
2015	706	484	222	0	30	163	249	183	61	20	34	41	49
2016	867	592	275	0	42	199	327	213	66	20	34	41	47
2012-2016 average	659	468	191	0	39	166	234	157	47	15	..	..	..

	Males						Females					
	All ages	24 and under	25 - 34	35 - 44	45 - 54	55 and over	All ages	24 and under	25 - 34	35 - 44	45 - 54	55 and over
2002-2006 average	292	64	113	82	24	9	71	11	22	21	10	6
2000	239	58	104	60	12	5	53	15	22	9	4	3
2001	267	65	115	58	24	5	66	15	25	12	7	7
2002	321	85	131	78	21	6	61	15	22	14	6	4
2003	256	65	106	64	11	11	61	13	17	17	9	6
2004	289	72	114	75	24	4	67	9	24	17	11	6
2005	259	36	89	98	26	10	77	12	15	28	11	11
2006	334	61	123	97	40	12	87	8	31	30	14	4
2007	393	80	138	125	39	11	62	14	11	24	6	7
2008	461	68	178	145	56	14	113	24	33	29	15	12
2009	413	52	136	146	56	23	132	19	42	43	22	6
2010	363	49	124	126	50	14	122	16	37	32	26	11
2011	429	47	144	160	59	19	155	11	40	52	35	17
2012	416	33	136	148	72	27	165	13	35	51	43	23
2013	393	28	107	141	87	30	134	4	31	43	38	18
2014	453	37	117	161	110	28	161	10	40	52	38	21
2015	484	24	118	170	122	50	222	6	45	79	61	31
2016	592	25	151	237	131	48	275	17	48	90	82	38
2012-2016 average	468	29	126	171	104	37	191	10	40	63	52	26

**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<sup>1</sup>, Scotland, 2016**

	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)
<b>(i) New coding rules</b>						
<b>All deaths</b>	<b>867</b>	32	729	48	0	58
Males	<b>592</b>	23	516	18	0	35
Females	<b>275</b>	9	213	30	0	23
Under 25	<b>42</b>	1	32	4	0	5
25-34	<b>199</b>	5	178	6	0	10
35-44	<b>327</b>	18	285	6	0	18
45-54	<b>213</b>	7	178	12	0	16
55 and over	<b>86</b>	1	56	20	0	9
<b>Males</b>						
Under 25	<b>25</b>	1	18	2	0	4
25-34	<b>151</b>	3	138	4	0	6
35-44	<b>237</b>	15	208	2	0	12
45-54	<b>131</b>	4	112	6	0	9
55 and over	<b>48</b>	0	40	4	0	4
<b>Females</b>						
Under 25	<b>17</b>	0	14	2	0	1
25-34	<b>48</b>	2	40	2	0	4
35-44	<b>90</b>	3	77	4	0	6
45-54	<b>82</b>	3	66	6	0	7
55 and over	<b>38</b>	1	16	16	0	5
<b>(ii) Old coding rules</b>						
<b>All deaths</b>	<b>867</b>	663	129	48	0	27
Males	<b>592</b>	481	79	18	0	14
Females	<b>275</b>	182	50	30	0	13
Under 25	<b>42</b>	30	6	4	0	2
25-34	<b>199</b>	167	23	6	0	3
35-44	<b>327</b>	269	45	6	0	7
45-54	<b>213</b>	165	28	12	0	8
55 and over	<b>86</b>	32	27	20	0	7
<b>Males</b>						
Under 25	<b>25</b>	19	2	2	0	2
25-34	<b>151</b>	128	17	4	0	2
35-44	<b>237</b>	197	34	2	0	4
45-54	<b>131</b>	109	12	6	0	4
55 and over	<b>48</b>	28	14	4	0	2
<b>Females</b>						
Under 25	<b>17</b>	11	4	2	0	0
25-34	<b>48</b>	39	6	2	0	1
35-44	<b>90</b>	72	11	4	0	3
45-54	<b>82</b>	56	16	6	0	4
55 and over	<b>38</b>	4	13	16	0	5

**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 2016 would have been, had the data been coded using the old rules.

**Table 6: Drug-related deaths by sex, age and selected drugs reported<sup>1</sup>, Scotland, 2016**

	All drug-related deaths	Heroin / morphine <sup>2</sup>	Methadone	Heroin / morphine, Methadone or Buprenorphine	Codeine or a codeine-containing compound	Dihydro-codeine or a d.h.c.-containing compound	Any opiate or opioid	Benzodiazepines		Cocaine	Ecstasy-type	Amphetamines	Alcohol
								Any benzo-diazepine	of which: Diazepam				
<b>(i) drugs which were implicated in, or which potentially contributed to, the cause of death</b>													
<b>All deaths</b>	<b>867</b>	<b>473</b>	<b>362</b>	<b>650</b>	<b>43</b>	<b>114</b>	<b>765</b>	<b>426</b>	<b>154</b>	<b>123</b>	<b>28</b>	<b>25</b>	<b>112</b>
Males	592	345	237	455	20	65	510	292	111	96	25	19	84
Females	275	128	125	195	23	49	255	134	43	27	3	6	28
Under 25	42	16	7	20	4	6	26	16	6	8	10	2	2
25-34	199	122	74	152	3	19	173	118	38	36	8	3	29
35-44	327	184	154	261	20	32	289	182	66	46	6	11	39
45-54	213	108	109	168	7	36	195	94	37	29	4	9	30
55 and over	86	43	18	49	9	21	82	16	7	4	0	0	12
<b>Males</b>													
Under 25	25	11	4	12	3	4	15	10	6	5	7	0	1
25-34	151	94	47	114	1	11	127	88	28	32	8	2	21
35-44	237	140	103	187	11	24	206	127	49	36	6	9	30
45-54	131	70	65	106	1	19	115	52	22	19	4	8	22
55 and over	48	30	18	36	4	7	47	15	6	4	0	0	10
<b>Females</b>													
Under 25	17	5	3	8	1	2	11	6	0	3	3	2	1
25-34	48	28	27	38	2	8	46	30	10	4	0	1	8
35-44	90	44	51	74	9	8	83	55	17	10	0	2	9
45-54	82	38	44	62	6	17	80	42	15	10	0	1	8
55 and over	38	13	0	13	5	14	35	1	1	0	0	0	2
<b>(ii) all drugs which were found to be present in the body</b>													
<b>All deaths</b>	<b>867</b>	<b>483</b>	<b>375</b>	<b>662</b>	<b>80</b>	<b>150</b>	<b>779</b>	<b>632</b>	<b>365</b>	<b>145</b>	<b>30</b>	<b>30</b>	<b>330</b>
Males	592	354	247	464	42	93	520	442	260	113	27	23	239
Females	275	129	128	198	38	57	259	190	105	32	3	7	91
Under 25	42	16	7	20	5	7	26	22	11	10	10	2	12
25-34	199	124	75	154	12	33	176	163	79	44	10	3	74
35-44	327	188	163	267	34	42	296	249	147	55	6	14	127
45-54	213	111	112	172	17	44	198	156	100	32	4	11	84
55 and over	86	44	18	49	12	24	83	42	28	4	0	0	33
<b>Males</b>													
Under 25	25	11	4	12	3	4	15	13	8	7	7	0	7
25-34	151	96	47	115	8	24	129	120	59	38	10	2	56
35-44	237	144	112	193	20	31	212	182	110	43	6	12	97
45-54	131	72	66	108	5	24	117	93	62	21	4	9	56
55 and over	48	31	18	36	6	10	47	34	21	4	0	0	23
<b>Females</b>													
Under 25	17	5	3	8	2	3	11	9	3	3	3	2	5
25-34	48	28	28	39	4	9	47	43	20	6	0	1	18
35-44	90	44	51	74	14	11	84	67	37	12	0	2	30
45-54	82	39	46	64	12	20	81	63	38	11	0	2	28
55 and over	38	13	0	13	6	14	36	8	7	0	0	0	10

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

Part (ii) 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<sup>1</sup>, Scotland, 2016**

	Any drug: all such deaths	Heroin / morphine <sup>2</sup>	Methadone	Heroin / morphine, Methadone or Buprenorphine	Codeine or a codeine-containing compound	Dihydrocodeine or a d.h.c.-containing compound	Any opiate or opioid	Benzodiazepines					Any other drug <sup>3</sup>	Alcohol (with only one drug - see the examples given in footnote 1)
								of which:	Any benzodiazepine	Diazepam	Cocaine	Ecstasy-type		
<b>(i) only one drug (and, perhaps, alcohol) was found to be present in the body</b>														
All such deaths	66	14	4	18	1	4	35	3	0	5	6	3	14	16
Males	43	10	3	13	1	1	18	3	0	4	5	3	10	12
Females	23	4	1	5	0	3	17	0	0	1	1	0	4	4
Under 25	6	0	0	0	0	0	0	0	0	2	4	0	0	1
25-34	5	0	0	0	0	1	1	0	0	2	0	0	2	1
35-44	28	8	2	10	0	1	14	3	0	1	2	1	7	9
45-54	11	3	2	5	0	0	7	0	0	0	0	2	2	4
55 and over	16	3	0	3	1	2	13	0	0	0	0	0	3	1
<b>Males</b>														
Under 25	4	0	0	0	0	0	0	0	0	1	3	0	0	0
25-34	4	0	0	0	0	0	0	0	0	2	0	0	2	0
35-44	22	6	1	7	0	1	10	3	0	1	2	1	5	7
45-54	8	2	2	4	0	0	4	0	0	0	0	2	2	4
55 and over	5	2	0	2	1	0	4	0	0	0	0	0	1	1
<b>Females</b>														
Under 25	2	0	0	0	0	0	0	0	0	1	1	0	0	1
25-34	1	0	0	0	0	1	1	0	0	0	0	0	0	1
35-44	6	2	1	3	0	0	4	0	0	0	0	0	2	2
45-54	3	1	0	1	0	0	3	0	0	0	0	0	0	0
55 and over	11	1	0	1	0	2	9	0	0	0	0	0	2	0
<b>(ii) only one drug (and, perhaps, alcohol) was implicated in, or potentially contributed to, the cause of death</b> <i>(other drugs may have been reported as being present, but were not considered to have had any direct contribution to the death)</i>														
All such deaths	187	77	23	100	2	11	131	4	0	19	8	5	20	35
Males	143	64	16	80	1	7	96	4	0	18	7	5	13	25
Females	44	13	7	20	1	4	35	0	0	1	1	0	7	10
Under 25	12	3	0	3	0	1	4	0	0	3	5	0	0	1
25-34	31	17	3	20	1	1	23	0	0	6	0	0	2	7
35-44	71	29	9	38	0	3	46	4	0	7	3	1	10	13
45-54	44	19	9	28	0	2	33	0	0	3	0	4	4	10
55 and over	29	9	2	11	1	4	25	0	0	0	0	0	4	4
<b>Males</b>														
Under 25	8	1	0	1	0	1	2	0	0	2	4	0	0	0
25-34	25	15	1	16	0	0	17	0	0	6	0	0	2	3
35-44	60	25	7	32	0	3	39	4	0	7	3	1	6	10
45-54	36	17	6	23	0	2	25	0	0	3	0	4	4	8
55 and over	14	6	2	8	1	1	13	0	0	0	0	0	1	4
<b>Females</b>														
Under 25	4	2	0	2	0	0	2	0	0	1	1	0	0	1
25-34	6	2	2	4	1	1	6	0	0	0	0	0	0	4
35-44	11	4	2	6	0	0	7	0	0	0	0	0	4	3
45-54	8	2	3	5	0	0	8	0	0	0	0	0	0	2
55 and over	15	3	0	3	0	3	12	0	0	0	0	0	3	0

**Footnotes**

1) Part (i) 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 (i) gives the number of drug-related deaths for which alcohol was found to be present in the body together with only one drug.

Part (ii) 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 (ii) 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 it would not be counted under 'methadone').

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

NB: almost all the deaths which are counted in part (i) of the table are also counted in part (ii) of the table.

**However, there may be a few exceptions:**

a drug-related death for which National Records of Scotland (NRS) was told that only one drug (and, perhaps, alcohol) was found to be present, and for which NRS was not told that it was considered to have been implicated in (or potentially contributed to) the cause of the death, will be counted in part (i) of the table but not in part (ii).

As a result, an occasional figure in part (i) of the table may be larger than the corresponding figure in part (ii) of the table.

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

3) i.e. any kind of drug other than an opiate or opioid, a benzodiazepine, cocaine, an ecstasy-type drug or an amphetamine.

**Table 8: Drug-related deaths per 1,000 population, Scotland, 2000 to 2016**

	Age-group					Ages 15 - 64	All ages <sup>3</sup>
	15 - 24 <sup>1</sup>	25 - 34	35 - 44	45 - 54	55 - 64 <sup>2</sup>		
average of rates for 2000 to 2004	0.13	0.20	0.10	0.04	0.01	0.10	0.07
average of rates for 2002 to 2006	0.12	0.21	0.13	0.05	0.02	0.11	0.07
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	0.16	0.16	0.05	0.02	0.10	0.07
2006	0.10	0.24	0.16	0.08	0.02	0.12	0.08
2007	0.14	0.23	0.19	0.06	0.02	0.13	0.09
2008	0.14	0.33	0.22	0.09	0.03	0.16	0.11
2009	0.10	0.27	0.25	0.10	0.03	0.15	0.10
2010	0.09	0.24	0.21	0.10	0.03	0.14	0.09
2011	0.08	0.27	0.29	0.12	0.04	0.16	0.11
2012	0.07	0.25	0.28	0.14	0.05	0.16	0.11
2013	0.05	0.20	0.27	0.16	0.06	0.15	0.10
2014	0.07	0.22	0.32	0.18	0.06	0.17	0.11
2015	0.04	0.23	0.37	0.23	0.09	0.19	0.13
2016	0.06	0.27	0.49	0.27	0.10	0.24	0.16
average of rates for 2012 to 2016	0.06	0.24	0.35	0.20	0.07	0.18	0.12

**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 relatively few drug-related deaths of people aged 65 and over.

3) Including ages 0-14 and 65+.

**Table 9: Drug-related deaths by sex and age-group: average for 2011 to 2015, and relative to the estimated number of problem drug users in 2012/13**

	2011-2015 average number of drug-related deaths per year	<u>Problem drug users (aged 15-64) in 2012/13 <sup>1</sup></u>				<u>Annual average drug-deaths: 2011-2015 per 1,000 problem drug users in 2012/13 <sup>4</sup></u>		
		<u>95% Confidence Interval <sup>2</sup></u>				<u>Likely range of values</u>		
		Estimate	Lower end	Upper end	+ / - <sup>3</sup>	Estimate	from <sup>5</sup>	to <sup>5</sup>
<b>All</b>	<b>602</b>	<b>61,500</b>	<b>59,900</b>	<b>63,300</b>	<b>3%</b>	<b>9.8</b>	<b>9.5</b>	<b>10.1</b>
Males	435	43,300	..	..	..	10.0	..	..
Females	167	18,200	..	..	..	9.2	..	..
15 to 24	42	10,500	..	..	..	4.0	..	..
25 to 34	163	21,500	..	..	..	7.6	..	..
35 to 64	384	29,500	..	..	..	13.0	..	..
<b>Males</b>								
15 to 24	34	6,400	..	..	..	5.3	..	..
25 to 34	124	14,700	..	..	..	8.5	..	..
35 to 64	268	22,200	..	..	..	12.1	..	..
<b>Females <sup>6</sup></b>								
15 to 24	9	4,100	..	..	..	2.1	..	..
25 to 34	38	6,800	..	..	..	5.6	..	..
35 to 64	115	7,300	..	..	..	15.8	..	..

**Footnotes**

1) Estimates of problem drug users aged 15 to 64, as published by the Information Services Division (ISD) of NHS National Services Scotland - REVISED estimates, as published by ISD on 4 March 2016.

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, 2006 - 2016 (with averages for 2002-2006 and 2012-2016)**

NHS Board area <sup>2</sup>												Annual averages		Population in 2014	2012-2016 average deaths per 1,000 population <sup>1</sup>	Males		Females	
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2002 to 2006	2012 to 2016			2006	2016	2006	2016
<b>(a) Drug-related deaths - standard definition</b>																			
<b>Scotland</b>	<b>421</b>	<b>455</b>	<b>574</b>	<b>545</b>	<b>485</b>	<b>584</b>	<b>581</b>	<b>527</b>	<b>614</b>	<b>706</b>	<b>867</b>	<b>362</b>	<b>659</b>	<b>5,347,600</b>	<b>0.12</b>	<b>333</b>	<b>592</b>	<b>87</b>	<b>275</b>
Ayrshire & Arran	25	36	40	39	31	47	43	36	43	43	85	22	50	371,140	0.13	18	59	7	26
Borders	2	4	7	5	9	8	7	8	11	13	10	3	10	114,040	0.09	1	8	1	2
Dumfries & Galloway	5	10	9	8	6	12	6	9	14	11	17	7	11	149,960	0.08	4	10	1	7
Fife	18	28	37	32	35	34	38	39	46	44	45	16	42	367,250	0.12	17	28	1	17
Forth Valley	24	26	23	14	18	26	31	24	25	31	50	18	32	300,400	0.11	22	37	2	13
Grampian	47	45	41	52	44	58	31	50	36	69	68	39	51	584,220	0.09	38	41	9	27
Greater Glasgow & Clyde <sup>3</sup>	156	147	188	193	158	183	187	138	189	221	257	137	198	1,142,590	0.17	118	174	38	83
Highland <sup>3</sup>	12	16	24	21	10	33	22	18	25	35	29	12	26	320,730	0.08	10	20	2	9
Lanarkshire	46	58	53	54	62	61	67	75	67	73	113	39	79	653,300	0.12	37	78	9	35
Lothian	46	54	94	81	73	73	90	90	105	100	128	44	103	858,120	0.12	37	93	9	35
Orkney	1	0	1	0	2	0	1	1	0	1	1	0	1	21,580	0.04	1	0	0	1
Shetland	2	2	1	0	2	3	2	0	4	1	1	1	2	23,220	0.07	1	1	1	0
Tayside	35	29	53	44	34	45	55	37	48	63	62	23	53	413,800	0.13	28	42	7	20
Western Isles	1	0	3	2	1	1	1	2	1	1	1	1	1	27,250	0.04	1	1	0	0
<b>(b) extra deaths counted in the consistent series <sup>4</sup></b>																			
<b>Scotland</b>	<b>9</b>	<b>19</b>	<b>16</b>	<b>25</b>	<b>27</b>	<b>22</b>	<b>23</b>	<b>30</b>	<b>6</b>	<b>1</b>	<b>1</b>								
Ayrshire & Arran	2	3	0	1	2	2	1	1	2	0	0								
Borders	0	0	0	0	0	2	0	0	0	0	0								
Dumfries & Galloway	1	0	0	1	0	1	0	1	0	0	0								
Fife	0	2	0	2	3	2	3	1	0	0	0								
Forth Valley	1	0	1	1	0	0	1	0	0	0	0								
Grampian	1	1	2	5	3	1	1	3	1	0	0								
Greater Glasgow & Clyde <sup>3</sup>	3	8	3	4	7	6	7	6	1	0	0								
Highland <sup>3</sup>	0	0	0	1	3	3	2	1	0	0	0								
Lanarkshire	1	2	2	5	3	2	6	5	0	0	0								
Lothian	0	1	4	3	2	0	2	6	1	0	1								
Orkney	0	0	0	0	0	1	0	0	0	0	0								
Shetland	0	0	0	0	0	0	0	0	0	0	0								
Tayside	0	2	4	2	4	2	0	5	1	1	0								
Western Isles	0	0	0	0	0	0	0	1	0	0	0								

**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) The statistics for each area are based on the boundaries that apply with effect from 1st April 2014. Earlier years' figures show what the numbers would have been had the new boundaries applied in those years. 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 areas. This is due to the use of a new database - further information can be found in Annex A, paragraph A4.
- 3) Including the relevant parts of the former Argyll & Clyde Board area.
- 4) broadly speaking, the additional deaths which would be counted on the basis of the classification of the drugs at the end of the latest year which is covered by the publication (rather than on the standard definition basis of the classification at the time of the death). See Annex F for the full definition.

**Table HB2: Drug-related deaths by underlying cause of death<sup>1</sup> and NHS Board area, 2016**

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)
<b>(i) New coding rules</b>						
<b>Scotland</b>	<b>867</b>	<b>32</b>	<b>729</b>	<b>48</b>	<b>0</b>	<b>58</b>
Ayrshire & Arran	85	1	82	1	0	1
Borders	10	0	8	1	0	1
Dumfries & Galloway	17	1	14	1	0	1
Fife	45	1	34	3	0	7
Forth Valley	50	0	35	7	0	8
Grampian	68	3	56	5	0	4
Greater Glasgow & Clyde	257	13	233	6	0	5
Highland	29	1	18	2	0	8
Lanarkshire	113	1	107	1	0	4
Lothian	128	8	88	15	0	17
Orkney	1	0	0	1	0	0
Shetland	1	0	1	0	0	0
Tayside	62	3	53	5	0	1
Western Isles	1	0	0	0	0	1
<b>(ii) Old coding rules</b>						
<b>Scotland</b>	<b>867</b>	<b>663</b>	<b>129</b>	<b>48</b>	<b>0</b>	<b>27</b>
Ayrshire & Arran	85	73	11	1	0	0
Borders	10	8	1	1	0	0
Dumfries & Galloway	17	10	5	1	0	1
Fife	45	36	4	3	0	2
Forth Valley	50	36	4	7	0	3
Grampian	68	54	6	5	0	3
Greater Glasgow & Clyde	257	203	45	6	0	3
Highland	29	14	6	2	0	7
Lanarkshire	113	87	21	1	0	4
Lothian	128	96	14	15	0	3
Orkney	1	0	0	1	0	0
Shetland	1	1	0	0	0	0
Tayside	62	44	12	5	0	1
Western Isles	1	1	0	0	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 2016 would have been, had the data been coded using the old rules.

**Table HB3: Drug-related deaths by selected drugs reported<sup>1</sup> and NHS Board area, 2016**

NHS Board area	All drug-related deaths	Heroin / morphine <sup>2</sup>	Methadone	Heroin / morphine, Methadone or Buprenorphine	Codeine or a codeine-containing compound	Dihydro-codeine or a d.h.c.-containing compound	Any opiate or opioid	Benzodiazepines		Cocaine	Ecstasy-type	Amphetamines	Alcohol
								Any benzodiazepine	of which: Diazepam				
<b>Scotland</b>	<b>867</b>	<b>473</b>	<b>362</b>	<b>650</b>	<b>43</b>	<b>114</b>	<b>765</b>	<b>426</b>	<b>154</b>	<b>123</b>	<b>28</b>	<b>25</b>	<b>112</b>
Ayrshire & Arran	85	53	49	71	2	13	76	43	5	10	0	3	9
Borders	10	6	2	7	0	2	9	3	2	1	1	1	2
Dumfries & Galloway	17	9	6	11	2	2	15	1	1	0	2	0	2
Fife	45	30	19	33	0	6	41	29	22	2	0	4	1
Forth Valley	50	29	15	37	4	7	46	25	10	7	1	1	9
Grampian	68	34	28	50	3	17	59	41	34	17	1	2	3
Greater Glasgow & Clyde	257	131	114	195	10	21	225	138	11	41	9	5	30
Highland	29	8	5	13	0	3	21	8	5	4	4	1	2
Lanarkshire	113	68	42	85	5	11	99	50	7	25	3	3	18
Lothian	128	63	51	92	12	23	112	49	37	15	6	5	29
Orkney	1	1	0	1	0	0	1	0	0	0	0	0	0
Shetland	1	1	0	1	0	0	1	1	1	0	0	0	0
Tayside	62	40	31	54	5	8	59	38	19	1	1	0	7
Western Isles	1	0	0	0	0	1	1	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 has been the standard basis for figures for individual drugs with effect from "Drug-related Deaths in Scotland in 2009".

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 HB4: Drug-related deaths per 1,000 population, NHS Board areas, annual averages for 2012 to 2016 <sup>1</sup>**

	Age-group						Ages 15 - 64	All ages <sup>4</sup>
	15 - 24 <sup>2</sup>	25 - 34	35 - 44	45 - 54	55 - 64 <sup>3</sup>			
<b>Scotland <sup>5</sup></b>	<b>0.06</b>	<b>0.24</b>	<b>0.35</b>	<b>0.20</b>	<b>0.07</b>	<b>0.18</b>	<b>0.12</b>	
Ayrshire & Arran	0.06	0.37	0.46	0.19	0.04	0.21	0.13	
Borders	0.09	0.22	0.23	0.13	0.02	0.13	0.09	
Dumfries & Galloway	0.06	0.23	0.24	0.09	0.05	0.12	0.08	
Fife	0.06	0.32	0.33	0.16	0.02	0.18	0.12	
Forth Valley	0.07	0.24	0.28	0.14	0.07	0.16	0.11	
Grampian	0.05	0.13	0.24	0.15	0.05	0.12	0.09	
Greater Glasgow & Clyde	0.06	0.23	0.53	0.32	0.12	0.25	0.17	
Highland	0.06	0.20	0.15	0.14	0.06	0.12	0.08	
Lanarkshire	0.07	0.30	0.33	0.15	0.07	0.18	0.12	
Lothian	0.05	0.18	0.29	0.22	0.09	0.17	0.12	
Orkney	0.00	0.18	0.08	0.00	0.07	0.06	0.04	
Shetland	0.00	0.07	0.33	0.00	0.13	0.11	0.07	
Tayside	0.05	0.35	0.39	0.17	0.06	0.20	0.13	
Western Isles	0.00	0.08	0.06	0.14	0.05	0.07	0.04	

**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 relatively few drug-related deaths of people aged 65 and over.

4) Including ages 0-14 and 65+.

5) An occasional figure for Scotland may differ slightly from the corresponding 5-year average in Table 8, because the latter was calculated simply by taking the average of the figures for Scotland for each of the five individual years (rather than by applying the method described in footnote 1 to the figures for Scotland)

**NB:** The figures for each area are based on the Board boundaries that apply with effect from 1st April 2014.

The figures that have been used for earlier years are the numbers that would have been seen had the new boundaries applied in those years.

**Table HB5: Drug-related deaths by NHS Board area: average for 2011 to 2015, and relative to the estimated number of problem drug users in 2012/13**

	2011-2015 annual average drug-deaths (all ages)	<u>Problem drug users (aged 15-64) in 2012/13 <sup>1</sup></u>				<u>Annual average drug-deaths: 2011-2015 per 1,000 problem drug users in 2012/13 <sup>4</sup></u>		
		<u>95% Confidence Interval <sup>2</sup></u>			<u>+ / - <sup>3</sup></u>	<u>Likely range of values</u>		
		<u>Estimate</u>	<u>Lower end</u>	<u>Upper end</u>		<u>Estimate</u>	<u>from <sup>5</sup></u>	<u>to <sup>5</sup></u>
<b>Scotland</b>	<b>602</b>	<b>61,500</b>	<b>59,900</b>	<b>63,300</b>	<b>3%</b>	<b>9.8</b>	<b>9.5</b>	<b>10.1</b>
Ayrshire & Arran	42	4,100	3,800	4,500	9%	10.3	9.4	11.2
Borders	9	710	610	860	18%	13.2	10.9	15.4
Dumfries & Galloway	10	1,300	1,100	1,600	19%	8.0	6.5	9.5
Fife	40	2,900	2,600	3,400	14%	13.9	11.8	15.5
Forth Valley	27	3,100	2,800	3,500	11%	8.8	7.8	9.8
Grampian	49	4,600	4,100	5,000	10%	10.6	9.8	11.9
Greater Glasgow & Clyde	184	20,900	20,100	21,800	4%	8.8	8.4	9.1
Highland	27	2,000	1,800	2,300	13%	13.3	11.6	14.8
Lanarkshire	69	6,900	6,400	7,400	7%	9.9	9.3	10.7
Lothian	92	9,800	8,900	10,900	10%	9.3	8.4	10.3
Orkney	1	30	20	110	150%	20.0	5.5	30.0
Shetland	2	340	130	1,300	172%	5.9	1.5	15.4
Tayside	50	4,600	4,300	5,000	8%	10.8	9.9	11.5
Western Isles	1	110	70	240	77%	10.9	5.0	17.1

**Footnotes**

1) Estimates of problem drug users aged 15 to 64, as published by the Information Services Division (ISD) of NHS National Services Scotland - REVISED estimates, as published by ISD on 4 March 2016. 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.

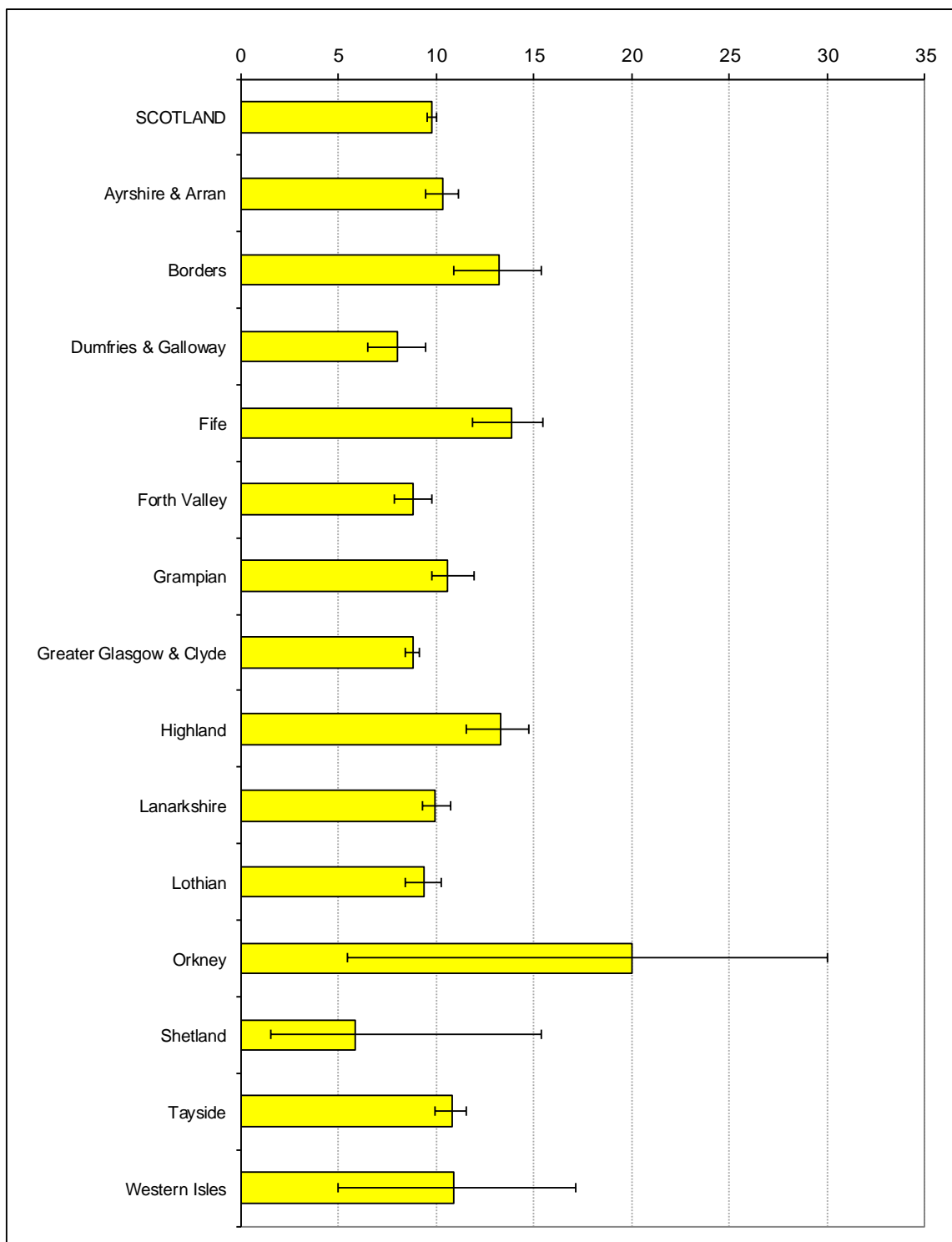
NB: The numbers of drug-related deaths for each area are based on the Board boundaries that apply with effect from 1st April 2014.

The figures that have been used for earlier years are the numbers that would have been seen had the new boundaries applied in those years.

The estimated numbers of problem drug users are also based on the Board boundaries that applied with effect from April 2014

**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 2011-2015 and the estimated numbers of problem drug users for 2012/13. The 'error bars' indicate the likely ranges of values - see the text.



**Table C1: Drug-related deaths by council area, 2006 - 2016 (with averages for 2002-2006 and 2012-2016)**

Council area <sup>1</sup>													Annual averages		Population in 2014	2012-2016 average deaths per 1,000 population	Males		Females	
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2002 to 2006	2012 to 2016	2006			2016	2006	2016	
<b>Scotland</b>	<b>421</b>	<b>455</b>	<b>574</b>	<b>545</b>	<b>485</b>	<b>584</b>	<b>581</b>	<b>527</b>	<b>614</b>	<b>706</b>	<b>867</b>	<b>362</b>	<b>659</b>	<b>5,347,600</b>	<b>0.12</b>	<b>333</b>	<b>592</b>	<b>87</b>	<b>275</b>	
Aberdeen City	26	23	27	27	31	29	16	24	26	45	46	24	31	228,920	0.14	20	25	6	21	
Aberdeenshire	16	17	11	18	10	19	9	21	8	14	12	11	13	260,530	0.05	14	7	2	5	
Angus	11	3	8	9	9	8	8	10	8	17	13	7	11	116,740	0.10	10	9	1	4	
Argyll & Bute	1	9	4	7	4	12	7	5	8	11	10	3	8	87,650	0.09	1	8	0	2	
City of Edinburgh	30	43	66	45	47	48	57	64	71	69	90	28	70	492,610	0.14	23	71	7	19	
Clackmannanshire	7	5	4	3	1	6	11	7	6	7	12	5	9	51,190	0.17	6	10	1	2	
Dumfries & Galloway	5	10	9	8	6	12	6	9	14	11	17	7	11	149,960	0.08	4	10	1	7	
Dundee City	16	23	29	30	22	32	39	24	31	36	38	11	34	148,130	0.23	13	27	3	11	
East Ayrshire	9	13	13	12	11	17	15	12	17	14	29	6	17	122,130	0.14	7	19	2	10	
East Dunbartonshire	2	7	6	5	6	2	4	1	4	9	7	3	5	106,710	0.05	2	5	0	2	
East Lothian	3	4	7	6	7	8	6	8	11	10	11	4	9	102,090	0.09	3	7	0	4	
East Renfrewshire	3	3	6	7	4	3	4	3	5	8	5	3	5	92,410	0.05	3	4	0	1	
Falkirk	10	15	10	5	10	11	14	11	9	14	29	8	15	157,690	0.10	10	20	0	9	
Fife	19	28	37	32	35	34	38	39	46	44	45	16	42	367,250	0.12	17	28	1	17	
Glasgow City	113	90	121	135	94	117	121	103	114	157	170	100	133	599,640	0.22	80	117	33	53	
Highland	11	7	20	14	6	21	15	13	17	24	19	9	18	233,080	0.08	9	12	2	7	
Inverclyde	9	10	5	7	17	20	13	10	17	16	20	8	15	79,890	0.19	7	11	2	9	
Midlothian	6	1	6	9	7	4	8	8	7	6	8	4	7	86,220	0.09	5	4	1	4	
Moray	5	5	3	7	3	10	6	5	2	10	10	4	7	94,770	0.07	4	9	1	1	
Na h-Eileanan Siar	1	0	3	2	1	1	1	2	1	1	1	1	1	27,250	0.04	1	1	0	0	
North Ayrshire	11	18	15	19	12	16	19	11	15	15	32	11	18	136,480	0.13	9	25	2	7	
North Lanarkshire	24	27	30	35	36	27	38	38	33	42	49	24	40	338,000	0.12	19	35	5	14	
Orkney Islands	1	0	1	0	2	0	1	1	0	1	1	0	1	21,580	0.04	1	0	0	1	
Perth & Kinross	8	3	16	5	3	5	8	3	9	10	11	6	8	148,930	0.06	5	6	3	5	
Renfrewshire	17	21	27	26	19	24	26	13	30	19	42	12	26	174,230	0.15	15	30	2	12	
Scottish Borders	2	4	7	5	9	8	7	8	11	13	10	3	10	114,040	0.09	1	8	1	2	
Shetland Islands	2	2	1	0	2	3	2	0	4	1	1	1	2	23,220	0.07	1	1	1	0	
South Ayrshire	5	5	12	8	8	14	9	13	11	14	24	5	14	112,530	0.13	2	15	3	9	
South Lanarkshire	22	31	23	19	26	34	29	37	34	31	64	15	39	315,300	0.12	18	43	4	21	
Stirling	7	6	9	6	7	9	6	6	10	10	9	5	8	91,520	0.09	6	7	1	2	
West Dunbartonshire	12	16	23	13	18	17	19	8	19	12	13	11	14	89,710	0.16	11	7	1	6	
West Lothian	7	6	15	21	12	13	19	10	16	15	19	7	16	177,200	0.09	6	11	1	8	

**Footnote**

1) The alphabetical order of the councils has changed due to the adoption of the preferred forms of reference for the Edinburgh and Western Isles areas. Previous versions of this table used the forms 'Edinburgh, City of' and 'Eilean Siar'.

**Table C2: Drug-related deaths by underlying cause<sup>1</sup> and council area, 2016**

Council area <sup>2</sup>	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)
<b>(i) New coding rules</b>						
<b>Scotland</b>	<b>867</b>	<b>32</b>	<b>729</b>	<b>48</b>	<b>0</b>	<b>58</b>
Aberdeen City	46	2	40	2	0	2
Aberdeenshire	12	1	11	0	0	0
Angus	13	0	11	2	0	0
Argyll & Bute	10	1	9	0	0	0
City of Edinburgh	90	8	60	10	0	12
Clackmannanshire	12	0	10	0	0	2
Dumfries & Galloway	17	1	14	1	0	1
Dundee City	38	2	34	1	0	1
East Ayrshire	29	0	28	1	0	0
East Dunbartonshire	7	0	7	0	0	0
East Lothian	11	0	9	1	0	1
East Renfrewshire	5	0	5	0	0	0
Falkirk	29	0	18	6	0	5
Fife	45	1	34	3	0	7
Glasgow City	170	8	155	3	0	4
Highland	19	0	9	2	0	8
Inverclyde	20	2	18	0	0	0
Midlothian	8	0	5	3	0	0
Moray	10	0	5	3	0	2
Na h-Eileanan Siar	1	0	0	0	0	1
North Ayrshire	32	0	32	0	0	0
North Lanarkshire	49	0	46	0	0	3
Orkney Islands	1	0	0	1	0	0
Perth & Kinross	11	1	8	2	0	0
Renfrewshire	42	3	36	3	0	0
Scottish Borders	10	0	8	1	0	1
Shetland Islands	1	0	1	0	0	0
South Ayrshire	24	1	22	0	0	1
South Lanarkshire	64	1	61	1	0	1
Stirling	9	0	7	1	0	1
West Dunbartonshire	13	0	12	0	0	1
West Lothian	19	0	14	1	0	4
<b>(ii) Old coding rules</b>						
<b>Scotland</b>	<b>867</b>	<b>663</b>	<b>129</b>	<b>48</b>	<b>0</b>	<b>27</b>
Aberdeen City	46	39	3	2	0	2
Aberdeenshire	12	9	3	0	0	0
Angus	13	8	3	2	0	0
Argyll & Bute	10	7	3	0	0	0
City of Edinburgh	90	70	8	10	0	2
Clackmannanshire	12	11	0	0	0	1
Dumfries & Galloway	17	10	5	1	0	1
Dundee City	38	31	5	1	0	1
East Ayrshire	29	25	3	1	0	0
East Dunbartonshire	7	4	3	0	0	0
East Lothian	11	9	1	1	0	0
East Renfrewshire	5	4	1	0	0	0
Falkirk	29	20	2	6	0	1
Fife	45	36	4	3	0	2
Glasgow City	170	134	31	3	0	2
Highland	19	7	3	2	0	7
Inverclyde	20	18	2	0	0	0
Midlothian	8	2	3	3	0	0
Moray	10	6	0	3	0	1
Na h-Eileanan Siar	1	1	0	0	0	0
North Ayrshire	32	25	7	0	0	0
North Lanarkshire	49	37	9	0	0	3
Orkney Islands	1	0	0	1	0	0
Perth & Kinross	11	5	4	2	0	0
Renfrewshire	42	35	4	3	0	0
Scottish Borders	10	8	1	1	0	0
Shetland Islands	1	1	0	0	0	0
South Ayrshire	24	23	1	0	0	0
South Lanarkshire	64	50	12	1	0	1
Stirling	9	5	2	1	0	1
West Dunbartonshire	13	8	4	0	0	1
West Lothian	19	15	2	1	0	1

**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 2016 would have been, had the data been coded using the old rules.

2) The alphabetical order of the councils has changed due to the adoption of the preferred forms of reference for the Edinburgh and Western Isles areas. Previous versions of this table used the forms 'Edinburgh, City of' and 'Eilean Siar'.



**Table C3: Drug-related deaths by selected drugs reported<sup>1</sup> and council area, 2016**

Council area <sup>3</sup>	All drug-related deaths	Heroin / morphine <sup>2</sup>	Methadone	Heroin / morphine, Methadone or Buprenorphine	Codeine or a codeine-containing compound	Dihydro-codeine or a d.h.c.-containing compound	Any opiate or opioid	Benzodiazepines		Cocaine	Ecstasy-type	Amphetamines	Alcohol
								Any benzodiazepine	of which: Diazepam				
<b>Scotland</b>	<b>867</b>	<b>473</b>	<b>362</b>	<b>650</b>	<b>43</b>	<b>114</b>	<b>765</b>	<b>426</b>	<b>154</b>	<b>123</b>	<b>28</b>	<b>25</b>	<b>112</b>
Aberdeen City	46	22	24	37	3	11	41	32	27	13	0	2	1
Aberdeenshire	12	8	3	8	0	3	11	6	5	2	0	0	1
Angus	13	11	4	11	2	2	13	8	6	0	0	0	3
Argyll & Bute	10	4	2	6	0	1	7	2	1	2	3	1	0
City of Edinburgh	90	43	36	65	6	14	79	38	29	11	2	2	24
Clackmannanshire	12	8	5	10	0	1	11	7	4	1	0	1	2
Dumfries & Galloway	17	9	6	11	2	2	15	1	1	0	2	0	2
Dundee City	38	21	24	35	2	5	37	27	12	1	0	0	3
East Ayrshire	29	19	17	24	0	5	25	18	3	4	0	2	2
East Dunbartonshire	7	5	1	5	1	1	7	2	2	1	0	0	0
East Lothian	11	6	9	10	1	3	10	5	5	2	0	0	1
East Renfrewshire	5	2	2	4	0	1	5	4	0	0	0	0	1
Falkirk	29	15	8	21	3	6	27	14	6	6	1	0	5
Fife	45	30	19	33	0	6	41	29	22	2	0	4	1
Glasgow City	170	83	80	130	7	15	149	90	7	32	5	4	23
Highland	19	4	3	7	0	2	14	6	4	2	1	0	2
Inverclyde	20	8	14	16	0	0	18	12	1	3	1	0	1
Midlothian	8	2	1	3	3	2	7	1	0	0	1	0	0
Moray	10	4	1	5	0	3	7	3	2	2	1	0	1
Na h-Eileanan Siar	1	0	0	0	0	1	1	0	0	0	0	0	0
North Ayrshire	32	20	18	26	1	5	29	16	1	5	0	1	5
North Lanarkshire	49	32	18	36	3	3	41	18	2	13	2	0	9
Orkney Islands	1	1	0	1	0	0	1	0	0	0	0	0	0
Perth & Kinross	11	8	3	8	1	1	9	3	1	0	1	0	1
Renfrewshire	42	24	16	30	1	3	35	25	1	4	2	1	3
Scottish Borders	10	6	2	7	0	2	9	3	2	1	1	1	2
Shetland Islands	1	1	0	1	0	0	1	1	1	0	0	0	0
South Ayrshire	24	14	14	21	1	3	22	9	1	1	0	0	2
South Lanarkshire	64	36	24	49	2	8	58	32	5	12	1	3	9
Stirling	9	6	2	6	1	0	8	4	0	0	0	0	2
West Dunbartonshire	13	9	1	10	1	1	11	5	0	1	1	0	2
West Lothian	19	12	5	14	2	4	16	5	3	2	3	3	4

**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 has been the standard basis for the figures for individual drugs with effect from "Drug-related Deaths in Scotland in 2009"

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.

3) The alphabetical order of the councils has changed due to the adoption of the preferred forms of reference for the Edinburgh and Western Isles areas. Previous versions of this table used the forms 'Edinburgh, City of' and 'Eilean Siar'.

**Table C4: Drug-related deaths per 1,000 population, council areas, annual averages for 2012 to 2016 <sup>1</sup>**

Council area <sup>6</sup>	Age-group						Ages 15 - 64	All ages <sup>4</sup>
	15 - 24 <sup>2</sup>	25 - 34	35 - 44	45 - 54	55 - 64 <sup>3</sup>			
<b>Scotland <sup>5</sup></b>	<b>0.06</b>	<b>0.24</b>	<b>0.35</b>	<b>0.20</b>	<b>0.07</b>	<b>0.18</b>	<b>0.12</b>	
Aberdeen City	0.04	0.18	0.39	0.28	0.06	0.19	0.14	
Aberdeenshire	0.04	0.05	0.16	0.06	0.03	0.07	0.05	
Angus	0.05	0.31	0.22	0.18	0.03	0.15	0.10	
Argyll + Bute	0.06	0.26	0.13	0.18	0.08	0.14	0.09	
City of Edinburgh	0.04	0.16	0.36	0.29	0.12	0.19	0.14	
Clackmannanshire	0.00	0.45	0.58	0.19	0.06	0.25	0.17	
Dumfries + Galloway	0.06	0.23	0.24	0.09	0.05	0.12	0.08	
Dundee City	0.04	0.50	0.82	0.30	0.12	0.33	0.23	
East Ayrshire	0.07	0.38	0.42	0.21	0.04	0.22	0.14	
East Dunbartonshire	0.06	0.06	0.18	0.04	0.04	0.07	0.05	
East Lothian	0.05	0.27	0.23	0.13	0.02	0.14	0.09	
East Renfrewshire	0.00	0.20	0.21	0.04	0.03	0.09	0.05	
Falkirk	0.09	0.23	0.25	0.09	0.07	0.15	0.10	
Fife	0.06	0.32	0.33	0.16	0.02	0.18	0.12	
Glasgow City	0.06	0.21	0.64	0.48	0.18	0.31	0.22	
Highland	0.06	0.18	0.16	0.13	0.05	0.12	0.08	
Inverclyde	0.06	0.46	0.64	0.24	0.11	0.29	0.19	
Midlothian	0.10	0.14	0.18	0.09	0.13	0.13	0.09	
Moray	0.07	0.19	0.10	0.11	0.06	0.11	0.07	
Na h-Eileanan Siar	0.00	0.08	0.06	0.14	0.05	0.07	0.04	
North Ayrshire	0.05	0.28	0.50	0.21	0.06	0.21	0.13	
North Lanarkshire	0.08	0.31	0.27	0.14	0.08	0.18	0.12	
Orkney Islands	0.00	0.18	0.08	0.00	0.07	0.06	0.04	
Perth + Kinross	0.07	0.16	0.13	0.05	0.04	0.09	0.06	
Renfrewshire	0.07	0.25	0.45	0.23	0.07	0.21	0.15	
Scottish Borders	0.09	0.22	0.23	0.13	0.02	0.13	0.09	
Shetland Islands	0.00	0.07	0.33	0.00	0.13	0.11	0.07	
South Ayrshire	0.05	0.48	0.44	0.13	0.02	0.20	0.13	
South Lanarkshire	0.06	0.28	0.39	0.15	0.06	0.19	0.12	
Stirling	0.09	0.12	0.18	0.22	0.07	0.14	0.09	
West Dunbartonshire	0.09	0.32	0.52	0.21	0.08	0.24	0.16	
West Lothian	0.05	0.24	0.17	0.15	0.04	0.13	0.09	

**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 relatively few drug-related deaths of people aged 65 and over.

4) Including ages 0-14 and 65+.

5) An occasional figure for Scotland may differ slightly from the corresponding 5-year average in Table 8, because the latter was calculated simply by taking the average of the figures for Scotland for each of the five individual years (rather than by applying the method described in footnote 1 to the figures for Scotland).

6) The alphabetical order of the councils has changed due to the adoption of the preferred forms of reference for the Edinburgh and Western Isles areas. Previous versions of this table used the forms 'Edinburgh, City of' and 'Eilean Siar'.

**Table C5: Drug-related deaths by council area: average for 2011 to 2015, and relative to estimated problem drug user numbers in 2012/13**

Council area <sup>6</sup>	2011-2015 average drug- deaths per year (all ages)	<u>Problem drug users (aged 15-64) in 2012/13 <sup>1</sup></u>				+ / - <sup>3</sup>	<u>Annual average drug-deaths: 2011-2015 per 1,000 problem drug users in 2012/13 <sup>4</sup></u>		
		Estimate	<u>95% Confidence Interval <sup>2</sup></u>		Estimate		<u>Likely range of values</u>		
			Lower end	Upper end			from <sup>5</sup>	to <sup>5</sup>	
<b>Scotland</b>	<b>602</b>	<b>61,500</b>	<b>59,900</b>	<b>63,300</b>	<b>3%</b>	<b>9.8</b>	<b>9.5</b>	<b>10.1</b>	
Aberdeen City	28	3,100	2,700	3,500	13%	9.0	8.0	10.4	
Aberdeenshire	14	1,100	970	1,300	15%	12.9	10.9	14.6	
Angus	10	700	590	860	19%	14.6	11.9	17.3	
Argyll & Bute	9	710	590	900	22%	12.1	9.6	14.6	
City of Edinburgh	62	6,600	5,900	7,500	12%	9.4	8.2	10.5	
Clackmannanshire	7	630	550	740	15%	11.7	10.0	13.5	
Dumfries & Galloway	10	1,300	1,100	1,600	19%	8.0	6.5	9.5	
Dundee City	32	2,800	2,500	3,100	11%	11.6	10.5	13.0	
East Ayrshire	15	1,600	1,400	1,800	13%	9.4	8.3	10.7	
East Dunbartonshire	4	390	300	530	29%	10.3	7.5	13.3	
East Lothian	9	880	640	1,300	38%	9.8	6.6	13.4	
East Renfrewshire	5	900	770	1,100	18%	5.1	4.2	6.0	
Falkirk	12	1,700	1,400	2,100	21%	6.9	5.6	8.4	
Fife	40	2,900	2,600	3,400	14%	13.9	11.8	15.5	
Glasgow City	122	13,600	13,000	14,500	6%	9.0	8.4	9.4	
Highland	18	1,300	1,200	1,500	12%	13.8	12.0	15.0	
Inverclyde	15	1,700	1,500	1,900	12%	8.9	8.0	10.1	
Midlothian	7	920	620	1,500	48%	7.2	4.4	10.6	
Moray	7	350	260	510	36%	18.9	12.9	25.4	
Na h-Eileanan Siar	1	110	70	240	77%	10.9	5.0	17.1	
North Ayrshire	15	1,800	1,600	2,100	14%	8.4	7.2	9.5	
North Lanarkshire	36	3,700	3,400	4,100	9%	9.6	8.7	10.5	
Orkney Islands	1	30	20	110	150%	20.0	5.5	30.0	
Perth & Kinross	7	1,100	920	1,400	22%	6.4	5.0	7.6	
Renfrewshire	22	2,800	2,500	3,200	13%	8.0	7.0	9.0	
Scottish Borders	9	710	610	860	18%	13.2	10.9	15.4	
Shetland Islands	2	340	130	1,300	172%	5.9	1.5	15.4	
South Ayrshire	12	780	670	930	17%	15.6	13.1	18.2	
South Lanarkshire	33	3,200	2,800	3,600	13%	10.3	9.2	11.8	
Stirling	8	820	710	970	16%	10.0	8.5	11.5	
West Dunbartonshire	15	1,500	1,300	1,800	17%	10.0	8.3	11.5	
West Lothian	15	1,400	1,200	1,700	18%	10.4	8.6	12.2	

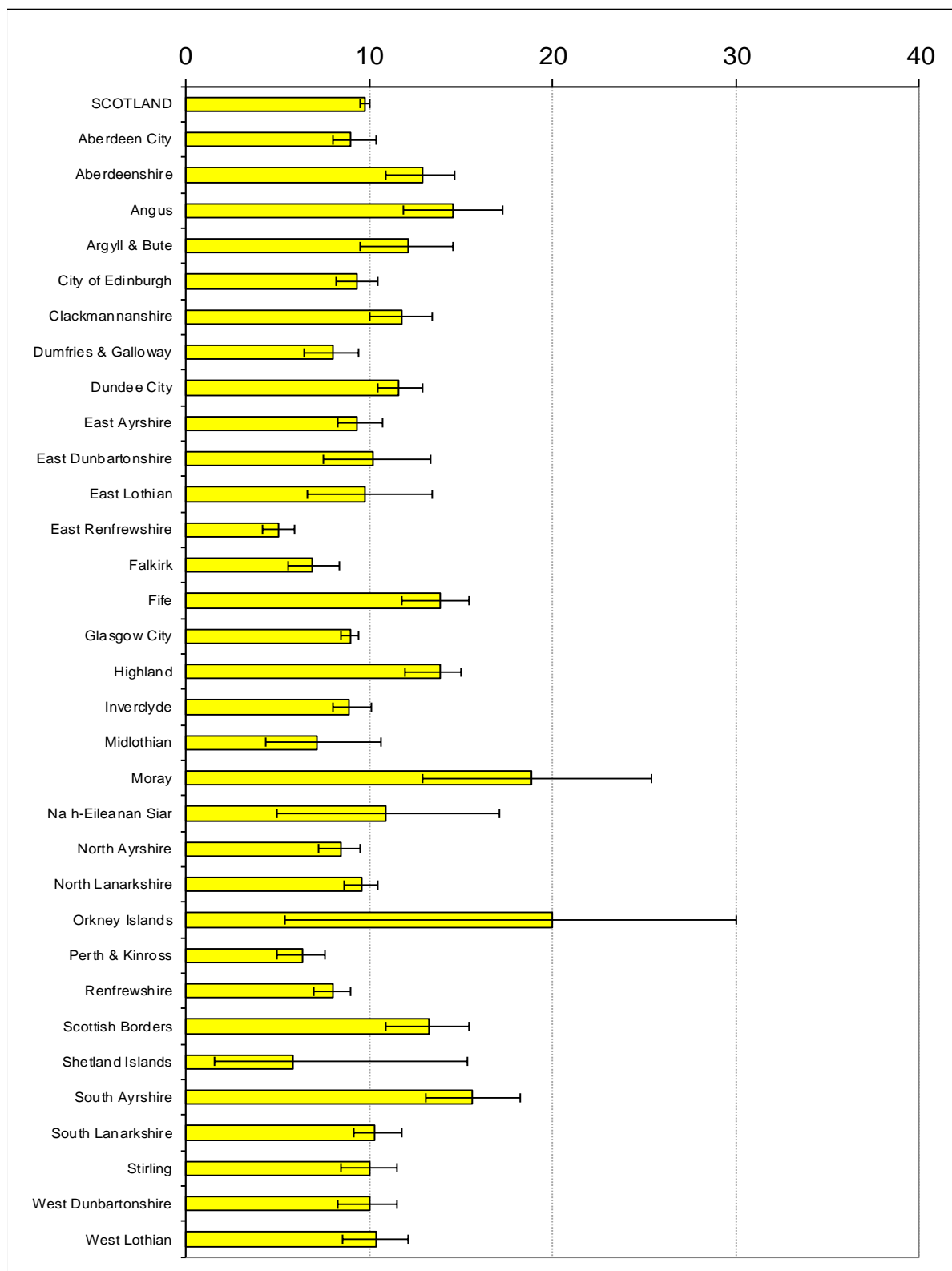
**Footnotes**

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

6) The alphabetical order of the councils has changed due to the adoption of the preferred forms of reference for the Edinburgh and Western Isles areas. Previous versions of this table used the forms 'Edinburgh, City of' and 'Eilean Siar'.

**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 2011-2015 and the estimated numbers of problem drug users for 2012/13. The 'error bars' indicate the likely ranges of values - see the text.



**Table X: Drug-related deaths in Scotland - different definitions<sup>1</sup>, 1979 – 2016**

Year	Number of drug-related deaths, on the basis of:			Population	Drug-deaths per million population		
	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 <sup>2</sup>		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 <sup>2</sup>
1979		339		5,203,600			65.1
1980		306		5,193,900			58.9
1981		307		5,180,200			59.3
1982		265		5,164,540			51.3
1983		212		5,148,120			41.2
1984		201		5,138,880			39.1
1985		242		5,127,890			47.2
1986		223		5,111,760			43.6
1987		250		5,099,020			49.0
1988		238		5,077,440			46.9
1989		264		5,078,190			52.0
1990		275		5,081,270			54.1
1991		275		5,083,330			54.1
1992		311		5,085,620			61.2
1993		372		5,092,460			73.0
1994		422		5,102,210			82.7
1995		426		5,103,690			83.5
1996	244	460	208	5,092,190	47.9	90.3	40.8
1997	224	447	188	5,083,340	44.1	87.9	37.0
1998	249	449	230	5,077,070	49.0	88.4	45.3
1999	291	492	272	5,071,950	57.4	97.0	53.6
2000	292	495	320	5,062,940	57.7	97.8	63.2
2001	332	551	378	5,064,200	65.6	108.8	74.6
2002	382	566	417	5,066,000	75.4	111.7	82.3
2003	317	493	331	5,068,500	62.5	97.3	65.3
2004	356	546	387	5,084,300	70.0	107.4	76.1
2005	336	480	352	5,110,200	65.8	93.9	68.9
2006	421	577	415	5,133,100	82.0	112.4	80.8
2007	455	630	450	5,170,000	88.0	121.9	87.0
2008	574	737	559	5,202,900	110.3	141.7	107.4
2009	545	716	534	5,231,900	104.2	136.9	102.1
2010	485	692	482	5,262,200	92.2	131.5	91.6
2011	584	749	558	5,299,900	110.2	141.3	105.3
2012	581	734	549	5,313,600	109.3	138.1	103.3
2013	527	685	516	5,327,700	98.9	128.6	96.9
2014	614	743	574	5,347,600	114.8	138.9	107.3
2015	706	813	637	5,373,000	131.4	151.3	118.6
2016	867	997	772	5,404,700	160.4	184.5	142.8

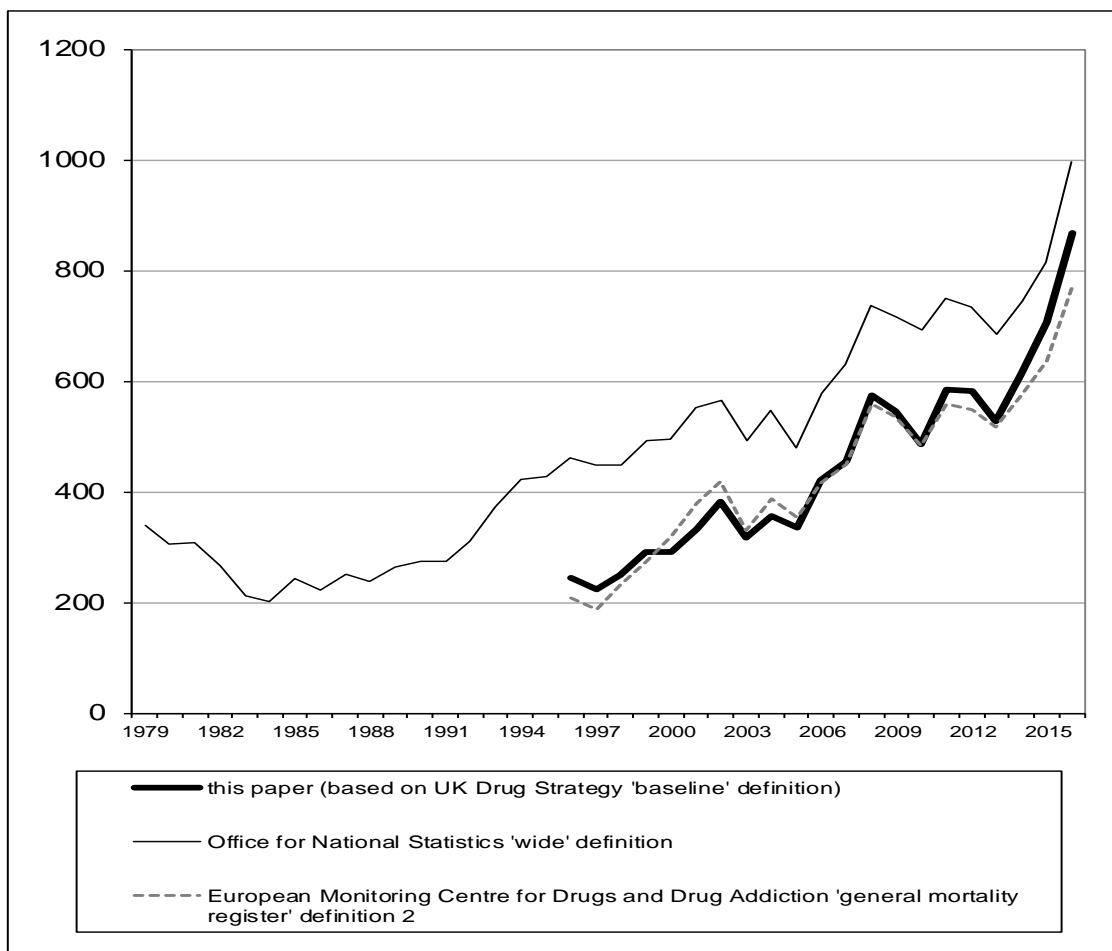
**Footnote**

1) Refer to Annex B for information about the other definitions.

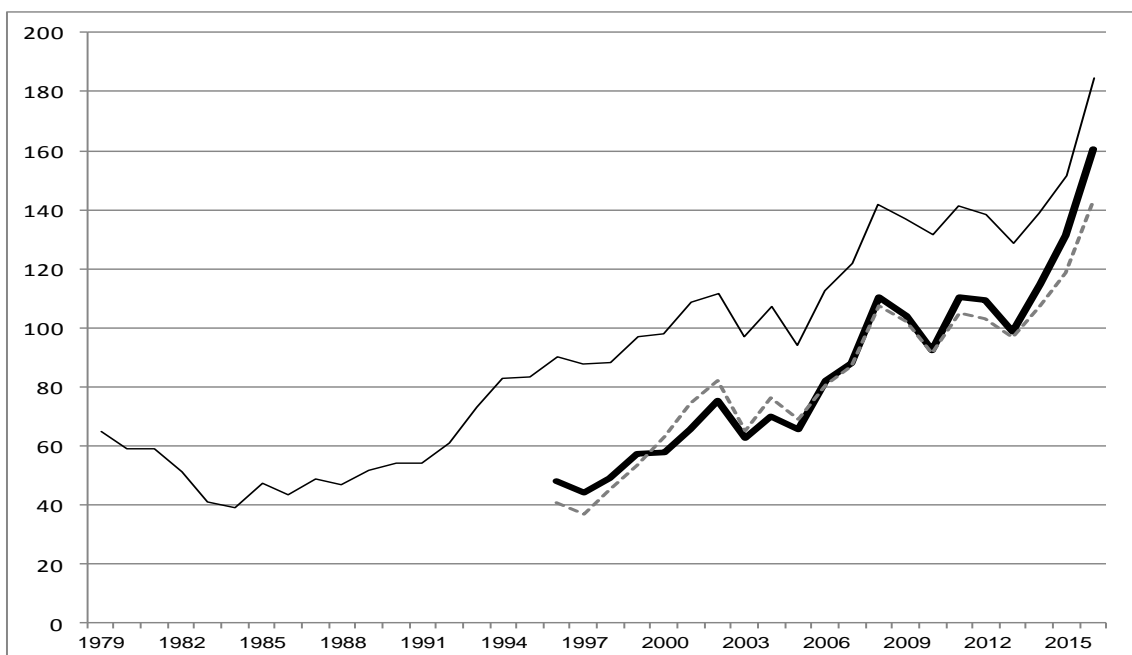
2) the figures for some of the years from 2000 to 2014 have been revised slightly from those that were published in "Drug-related Deaths in Scotland in 2014"

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

*numbers*



*per million population*



**Table Y: Drug-related deaths, on the basis of the Office for National Statistics (ONS) 'wide' definition, by selected drugs reported, 2006 – 2016**

Drugs <sup>1, 2</sup>	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>All drug-related deaths</b> (on the 'wide' definition)	<b>577</b>	<b>630</b>	<b>737</b>	<b>716</b>	<b>692</b>	<b>749</b>	<b>734</b>	<b>685</b>	<b>743</b>	<b>813</b>	<b>997</b>
Alprazolam	0	0	1	1	0	1	0	0	0	2	24
Amitriptyline	29	24	41	32	41	37	44	60	41	47	54
Amphetamines	11	12	12	7	3	24	18	27	22	17	26
Anti-depressants <sup>3</sup>	93	84	101	97	123	116	121	120	103	132	130
Anti-psychotics <sup>4</sup>	21	26	25	19	21	32	35	29	23	30	29
Benzodiazepines <sup>5</sup>	94	109	150	158	124	187	198	149	125	192	431
Buprenorphine	0	2	0	2	4	10	8	11	29	25	40
Cannabis	3	8	1	0	0	0	0	0	2	7	5
Citalopram	25	22	19	20	26	22	18	13	11	18	11
Cocaine	33	47	41	33	34	36	31	45	45	94	123
Codeine or a compound thereof <sup>6</sup>	38	30	40	46	20	48	41	46	45	40	45
Delorazepam	0	0	0	0	0	0	0	0	0	1	21
Dihydrocodeine or a compound thereof <sup>7</sup>	45	55	74	65	65	87	86	81	72	95	115
Diazepam	78	79	116	120	94	124	161	106	85	122	154
Diclozepam	0	0	0	0	0	0	0	1	6	9	75
Ecstasy-type	12	12	5	2	0	9	9	17	14	15	29
Etizolam	0	0	0	0	0	0	1	8	37	43	225
Fluoxetine	8	11	6	7	16	11	13	9	10	11	16
Gabapentin	0	0	3	2	4	10	24	51	67	102	154
Heroin/diamorphine or Morphine <sup>8</sup>	260	291	327	326	256	207	222	221	312	349	477
Heroin / morphine, Methadone or Buprenorphine <sup>9</sup>	328	372	449	440	400	431	403	383	454	497	656
Methadone	96	115	171	177	177	275	241	216	216	252	366
Mirtazepine	5	8	12	14	9	18	24	26	20	39	35
Olanzapine	5	10	8	6	7	9	14	8	5	11	11
Opiate or opioid <sup>10</sup>	403	451	550	540	480	558	531	499	553	619	776
Oxycodone	0	1	8	6	3	12	11	9	7	12	17
Paracetamol or a compound <sup>11</sup>	53	56	55	43	48	45	37	38	43	36	41
Phenazepam	0	0	0	0	0	14	20	34	6	8	8
Pregabalin	0	0	0	0	1	1	5	12	26	42	71
Propranolol	4	8	4	9	5	11	15	18	17	13	15
Sertraline	5	2	4	2	6	3	6	7	11	13	16
Temazepam	9	4	7	9	3	8	6	4	4	8	8
Tramadol	17	26	32	40	40	34	48	64	38	53	64
Zopiclone	1	4	5	9	12	14	16	16	9	20	22
Alcohol	151	181	196	187	151	148	136	129	116	123	135

**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 has been the standard basis for figures for individual drugs with effect from the "... in 2009" 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, fluoxetine, prothiaden.

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

5) e.g. diazepam and temazepam

6) e.g. co-codamol

7) e.g. co-dydramol

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

9) i.e. one or more of heroin/diamorphine, morphine, methadone and buprenorphine

10) any opiate or opioid, including (e.g.) co-codamol, codeine, dihydrocodeine, heroin, methadone, morphine, oxycodone and tramadol.

11) 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, and volatile substance abuse deaths, 2006 – 2016**

Cause of death	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>All drug-related deaths (on the 'wide' definition)</b>	577	630	737	716	692	749	734	685	743	813	997
of which:											
<b>on the basis used for this report's statistics (i.e. the Drug Strategy 'baseline' definition, as implemented by National Records of Scotland (NRS))</b>	421	455	574	545	485	584	581	527	614	706	867
deaths within the Drug Strategy 'baseline' definition, but excluded from this report's statistics because: <sup>1</sup>											
(a) cause of death was a secondary infection or a related complication <sup>2</sup>	13	10	23	22	33	16	14	22	22	23	27
(b) controlled substance was present only as part of a compound analgesic or a cold remedy	2	8	10	3	5	4	1	4	5	4	3
other deaths counted as 'drug-related' by the 'wide' definition - but not on the basis used for this report <sup>3</sup>	141	157	130	146	169	145	138	132	102	80	100
<b>Deaths from some causes which may be associated with present or past drug misuse <sup>4</sup></b>											
Underlying cause of death, with its ICD10 <sup>5</sup> code(s):											
Hepatitis C (B18.2)	14	12	18	21	19	25	22	23	18	45	25
HIV (B20-24)	19	21	18	17	21	16	18	14	14	12	24
Total all deaths from the specified causes	33	33	36	38	40	41	40	37	32	57	49
<b>Volatile Substance Abuse deaths</b>											
Deaths in Scotland - International Centre for Drugs Policy (ICDP) figures <sup>6</sup>	9	10	3	4	17	..	..	..	..	..	..

**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 produced by NRS.



**Table NPS1: Drug-related deaths, on the basis of the Office for National Statistics (ONS) 'wide' definition, which involved New Psychoactive Substances, 2016**

**(i) Deaths for which one or more NPSs was implicated in, or potentially contributed to, the death**

	Type(s) of NPS that were present			All type(s) of NPS
	Benzodiazepine-type NPS present; no other types of NPS	Other types of NPS present; no Benzodiazepine-type NPS	Both benzodiazepine-type NPS and other types of NPS	
Included in this report's statistics <sup>2</sup>				
NPS the only substance(s)* implicated in the death	1	1	0	2
Other substance(s)** implicated in the death	272	6	1	279
All	273	7	1	281
NOT included in this report's statistics				
NPS the only substance(s)* implicated in the death	1	1	0	2
Other substance(s)** implicated in the death	3	0	0	3
All	4	1	0	5
All deaths for which one or more NPSs was implicated in, or potentially contributed to, the death				
NPS the only substance(s)* implicated in the death	2	2	0	4
Other substance(s)** implicated in the death	275	6	1	282
All	277	8	1	286

	Age at Death					All	Sex	
	under 25	25 to 34	35 to 44	45 to 54	55 & over		Male	Female
Included in this report's statistics <sup>2</sup>								
Benzodiazepine-type NPS present; no other types of NPS	12	78	115	58	10	273	181	92
Other types of NPS present; no Benzodiazepine-type NPS	2	1	2	2	0	7	5	2
Both Benzodiazepine-type NPS and other types of NPS present	0	1	0	0	0	1	1	0
All	14	80	117	60	10	281	187	94
NOT included in this report's statistics								
Benzodiazepine-type NPS present; no other types of NPS	0	3	1	0	0	4	3	1
Other types of NPS present; no Benzodiazepine-type NPS	0	1	0	0	0	1	1	0
Both Benzodiazepine-type NPS and other types of NPS present	0	0	0	0	0	0	0	0
All	0	4	1	0	0	5	4	1
All deaths for which one or more NPSs was implicated in, or potentially contributed to, the death								
Benzodiazepine-type NPS present; no other types of NPS	12	81	116	58	10	277	184	93
Other types of NPS present; no Benzodiazepine-type NPS	2	2	2	2	0	8	6	2
Both Benzodiazepine-type NPS and other types of NPS present	0	1	0	0	0	1	1	0
All	14	84	118	60	10	286	191	95

**(ii) Deaths for which NPSs were present but were NOT considered to have contributed to the death**

	Age at Death					All	Sex	
	under 25	25 to 34	35 to 44	45 to 54	55 & over		Male	Female
Included in this report's statistics <sup>2</sup>								
Benzodiazepine-type NPS present; no other types of NPS	1	18	18	15	7	59	45	14
Other types of NPS present; no Benzodiazepine-type NPS	0	0	0	0	0	0	0	0
Both Benzodiazepine-type NPS and other types of NPS present	0	0	0	0	0	0	0	0
All	1	18	18	15	7	59	45	14
NOT included in this report's statistics								
Benzodiazepine-type NPS present; no other types of NPS	0	0	0	1	0	1	1	0
Other types of NPS present; no Benzodiazepine-type NPS	0	0	0	0	0	0	0	0
Both Benzodiazepine-type NPS and other types of NPS present	0	0	0	0	0	0	0	0
All	0	0	0	1	0	1	1	0
All deaths for which NPSs were present but were not considered to have contributed to the death								
Benzodiazepine-type NPS present; no other types of NPS	1	18	18	16	7	60	46	14
Other types of NPS present; no Benzodiazepine-type NPS	0	0	0	0	0	0	0	0
Both Benzodiazepine-type NPS and other types of NPS present	0	0	0	0	0	0	0	0
All	1	18	18	16	7	60	46	14

**Footnotes**

- 1) The substances which are counted (for the purpose of these figures) as New Psychoactive Substances are described in Annex E.  
 2) i.e. within the Drug Strategy 'baseline' definition, as implemented by National Records of Scotland  
 \* apart, perhaps, from alcohol. For example, a death for which mephedrone and alcohol were the only substances that were implicated in the death would be counted under 'NPS the only substance(s) implicated in the death'.  
 \*\* apart, perhaps, from alcohol.

**Table NPS2: Drug-related deaths, on the basis of the Office for National Statistics (ONS) 'wide' definition, which involved New Psychoactive Substances, 2006 to 2016**

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>All drug-related deaths (on the 'wide' definition)</b>	577	630	737	716	692	749	734	685	743	813	997
<b>Deaths which involved 'New Psychoactive Substances' <sup>1</sup></b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>11</b>	<b>47</b>	<b>47</b>	<b>113</b>	<b>114</b>	<b>112</b>	<b>346</b>
<i>of which:</i>											
(a) deaths for which one (or more) New Psychoactive Substances was implicated in, or potentially contributed, to the death	0	0	0	3	9	28	32	60	62	74	286
(i) included in this report's statistics (i.e. in the Drug Strategy "baseline" definition, as implemented by NRS)	0	0	0	2	6	26	30	58	56	72	281
<i>of which:</i>											
NPS the only substance(s)* implicated in the death <sup>2</sup>	0	0	0	0	4	0	3	4	3	2	2
Other substance(s)** also implicated in the death <sup>3</sup>	0	0	0	2	2	26	27	54	53	70	279
(ii) <u>not</u> included in this report's statistics	0	0	0	1	3	2	2	2	6	2	5
<i>of which:</i>											
NPS the only substance(s)* implicated in the death <sup>4</sup>	0	0	0	0	3	1	2	2	4	1	2
Other substance(s)** also implicated in the death <sup>5</sup>	0	0	0	1	0	1	0	0	2	1	3
(iii) total of (i) + (ii):											
NPS the only substance(s)* implicated in the death	0	0	0	0	7	1	5	6	7	3	4
Other substance(s)** also implicated in the death	0	0	0	3	2	27	27	54	55	71	282
(b) deaths for which one (or more) New Psychoactive Substances was present but <u>not</u> considered to have contributed to the death	0	0	0	1	2	19	15	53	52	38	60
<i>of which:</i>											
(i) included in this report's statistics <sup>6</sup>	0	0	0	1	2	19	15	52	51	36	59
(ii) <u>not</u> included in this report's statistics <sup>7</sup>	0	0	0	0	0	0	0	1	1	2	1
<b>Total: all deaths which involved New Psychoactive Substances</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>11</b>	<b>47</b>	<b>47</b>	<b>113</b>	<b>114</b>	<b>112</b>	<b>346</b>
<i>of which:</i>											
(i) included in this report's statistics	0	0	0	3	8	45	45	110	107	108	340
(ii) <u>not</u> included in this report's statistics	0	0	0	1	3	2	2	3	7	4	6

**Footnotes**

- 1) The substances which are counted (for the purpose of these figures) as 'New Psychoactive Substances' are described in Annex E.
  - 2) 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.
  - 3) e.g. the cause of death was certified as 'adverse effects of methadone and mephedrone'. Note that the date of death is not a factor, because methadone has 'always' been controlled.
  - 4) 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.
  - 5) 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.
  - 6) e.g. the cause of death was given as 'heroin, alcohol and diazepam toxicity', and BZP and TFMP were also present.
  - 7) 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 the death.
- \* apart, perhaps, from alcohol.  
 \*\* apart, perhaps, from alcohol.

**Table NPS3: Drug-related deaths, on the basis of the Office for National Statistics (ONS) 'wide' definition, which involved New Psychoactive Substances, 2016**

Note: because of its size, this table is not included here. It is available via the publication's 'List of Tables and Figures', which can be found via its [home page](#) on the NRS website.

**Table CS1: Consistent series of drug-related deaths – ‘extra’ deaths and which of the drugs that were present for each of the ‘extra’ deaths meant that they were counted in the consistent series: 2000 to 2016**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Drug-related deaths: consistent series <sup>1</sup></b>	293	339	388	330	365	346	430	474	590	570	512	606	604	557	620	707	868
<b>Drug-related deaths: standard definition <sup>2</sup></b>	292	332	382	317	356	336	421	455	574	545	485	584	581	527	614	706	867
<b>"Extra" deaths counted in the consistent series <sup>3</sup></b>	1	7	6	13	9	10	9	19	16	25	27	22	23	30	6	1	1
<i>of which:</i>																	
Mephedrone <sup>4</sup> present	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
Phenazepam <sup>5</sup> present	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
Tramadol <sup>6</sup> present	0	5	2	12	8	9	9	16	14	19	17	12	17	27	3	0	0
Zopiclone <sup>6</sup> present	1	2	4	1	1	1	0	4	2	6	7	9	7	1	0	0	0
None of the above, but one or more other substances which are now controlled were present <sup>7</sup>	0	0	0	0	0	0	0	0	0	1	0	0	1	2	3	1	1

**Footnotes**

- 1) broadly speaking, counting deaths on the basis of the classification of the drugs at the end of the latest year which is covered by the publication. See Annex F for the full definition.
- 2) broadly speaking, counting deaths on the basis of the classification of the drugs at the time of death. See Annex A for the full definition.
- 3) i.e. deaths which are counted in the consistent series but are not counted in the standard definition
- 4) mephedrone has been a controlled substance with effect from 16 April 2010, so subsequent deaths involving it are counted in the "standard definition" figures (and not "extra" deaths)
- 5) phenazepam has been a controlled substance with effect from 13 June 2012, so subsequent deaths involving it are counted in the "standard definition" figures (and not "extra" deaths)
- 6) tramadol and zopiclone have been controlled substances with effect from 10 June 2014, so subsequent deaths involving either (or both) of them are counted in the "standard definition" figures (and not "extra" deaths)
- 7) e.g. one or more of APB, API and BZP were present

**Table CS2: Consistent series of drug-related deaths – ‘extra’ deaths by sex and age: 2000 to 2016**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Drug-related deaths: consistent series <sup>1</sup></b>	293	339	388	330	365	346	430	474	590	570	512	606	604	557	620	707	868
<b>Drug-related deaths: standard definition <sup>2</sup></b>	292	332	382	317	356	336	421	455	574	545	485	584	581	527	614	706	867
<b>"Extra" deaths counted in the consistent series <sup>3</sup></b>	1	7	6	13	9	10	9	19	16	25	27	22	23	30	6	1	1
<i>of which:</i>																	
Male	0	3	3	6	2	6	7	6	10	13	16	12	15	19	4	0	1
Female	1	4	3	7	7	4	2	13	6	12	11	10	8	11	2	1	0
under 25	0	0	0	2	0	0	2	0	2	1	3	0	0	3	1	0	0
25 to 34	0	0	1	2	2	1	2	0	2	2	0	2	3	4	0	0	1
35 to 44	0	3	2	3	2	2	2	4	4	7	8	6	2	8	3	1	0
45 to 54	1	3	1	0	2	4	3	6	1	6	7	9	7	4	0	0	0
55 and over	0	1	2	6	3	3	0	9	7	9	9	5	11	11	2	0	0
<b>Males</b>																	
under 25	0	0	0	0	0	0	2	0	2	1	3	0	0	1	0	0	0
25 to 34	0	0	0	1	1	0	1	0	1	2	0	0	2	3	0	0	1
35 to 44	0	2	0	2	0	2	1	1	3	3	4	6	2	5	3	0	0
45 to 54	0	1	1	0	0	1	3	2	1	2	4	4	4	4	0	0	0
55 and over	0	0	2	3	1	3	0	3	3	5	5	2	7	6	1	0	0
<b>Females</b>																	
under 25	0	0	0	2	0	0	0	0	0	0	0	0	0	2	1	0	0
25 to 34	0	0	1	1	1	1	1	0	1	0	0	2	1	1	0	0	0
35 to 44	0	1	2	1	2	0	1	3	1	4	4	0	0	3	0	1	0
45 to 54	1	2	0	0	2	3	0	4	0	4	3	5	3	0	0	0	0
55 and over	0	1	0	3	2	0	0	6	4	4	4	3	4	5	1	0	0

**Footnotes**

- 1) broadly speaking, counting deaths on the basis of the classification of the drugs at the end of the latest year which is covered by the publication. See Annex F for the full definition.
- 2) broadly speaking, counting deaths on the basis of the classification of the drugs at the time of death. See Annex A for the full definition.
- 3) i.e. deaths which are counted in the consistent series but are not counted in the standard definition

**Table EMCDDA: ‘Drug-induced’ deaths aged 15-64: reported number and rate per million population, latest year’s figures**

<b>"Drug-induced" deaths<sup>1</sup> aged 15-64</b>		
	<b>Number reported for latest year<sup>2</sup></b>	<b>per million population<sup>2</sup></b>
Belgium	67	9
Bulgaria	17	4
Czech Republic	39	6
Denmark	210	58
Germany	1,185	22
Estonia	88	103
Ireland	213	71
Greece	..	..
Spain	455	15
France	294	7
Croatia	54	19
Italy	304	8
Cyprus	9	15
Latvia	18	14
Lithuania	115	59
Luxembourg	12	31
Hungary	25	4
Malta	8	28
Netherlands	182	16
Austria	152	26
Poland	249	9
Portugal	39	6
Romania	21	2
Slovenia	30	22
Slovakia	27	7
Finland	150	43
Sweden	618	100
United Kingdom <sup>3</sup>	2,528	60
European Union	7,109	21.3
.....		
Scotland <sup>3</sup>	563	160

**Footnotes**

1) as defined by the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA)

2) for all countries apart from Scotland, the figures are taken from Table A6 of the EMCDDA's "European Drug Report 2017", which is available from:

<http://www.emcdda.europa.eu/publications/edr/trends-developments/2017>

Most countries' figures are for 2015, but some are for 2014 or earlier years

The EMCDDA's Table A6 includes the following footnote:

Caution is required when comparing drug-induced deaths due to issues of coding, coverage and under-reporting in some countries.

3) Public Health England advised NRS that the figures for the UK are for 2014 - so, for consistency, NRS has used Scotland's figures for that year

## 6. Notes on statistical publications

### National Statistics

The UK Statistics Authority 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).

National Statistics status means that official statistics meet the highest standards of trustworthiness, quality and public value.

All official statistics should comply with all aspects of the Code of Practice for Official Statistics. They are awarded National Statistics status following an assessment by the Authority's regulatory arm. The Authority considers whether the statistics meet the highest standards of Code compliance, including the value they add to public decisions and debate.

It is National Records of Scotland's responsibility to maintain compliance with the standards expected of National Statistics. If we become concerned about whether these statistics are still meeting the appropriate standards, we will discuss any concerns with the Authority promptly. National Statistics status can be removed at any point when the highest standards are not maintained, and reinstated when standards are restored.

### Information on background and source data

Further details on data source(s), timeframe of data and timeliness, continuity of data, accuracy, etc can be found in the About this Publication document that is published alongside this publication on the NRS website.

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- 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. Scottish Census statistics are available on the [Scotland's Census](#) website.

We also 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](#).

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We, the National Records of Scotland, label any revisions and corrections that we have applied to any of our statistics. These revisions and corrections are clearly marked on the webpage of the publication as well on our [revisions and corrections](#) page available on the NRS website.

Where applicable, revisions will also be carried out in accordance with the [revisions policy for population, migration and life events](#) statistics available on the ONS website.

## **Enquiries and suggestions**

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## 7. Related organisations

Organisation	Contact
<p>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.</p>	<p>Office of the Chief Statistician and Strategic Analysis            Scottish Government            2W, St Andrews House            Edinburgh            EH1 3DG</p> <p>Phone: 0131 244 0442</p> <p>Email: <a href="mailto:statistics.enquiries@gov.scot">statistics.enquiries@gov.scot</a></p> <p>Website: <a href="http://www.gov.scot/Topics/Statistics">http://www.gov.scot/Topics/Statistics</a></p>
<p>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</p>	<p>Customer Contact Centre            Office for National Statistics            Room 1.101            Government Buildings            Cardiff Road            Newport            NP10 8XG</p> <p>Phone: 0845 601 3034            Minicom: 01633 815044</p> <p>Email: <a href="mailto:info@statistics.gsi.gov.uk">info@statistics.gsi.gov.uk</a></p> <p>Website: <a href="http://www.ons.gov.uk/">www.ons.gov.uk/</a></p>
<p>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.</p>	<p>Northern Ireland Statistics and Research Agency            McAuley House            2-14 Castle Street            Belfast            BT1 1SA</p> <p>Phone: 028 9034 8100</p> <p>Email: <a href="mailto:info.nisra@dfpni.gov.uk">info.nisra@dfpni.gov.uk</a></p> <p>Website: <a href="http://www.nisra.gov.uk">www.nisra.gov.uk</a></p>

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