

# Figures for drug-related deaths for Scotland for 1995 and earlier years

## 1. Introduction

- 1.1 This note provides information about the availability (or not) of figures for drug-related deaths for Scotland for 1995 and some earlier years. It is structured as follows:
- Section 2 explains why National Records of Scotland (NRS) cannot produce figures for drug-related deaths for 1995 and earlier years on the basis of its standard definition;
  - Section 3 provides figures for each year from 1979 to 1999, on the basis of the ONS / 'wide' definition. (ONS is the Office for National Statistics, which publishes figures for England and Wales, and for the UK as a whole);
  - Section 4 comments on the potential reliability of the numbers of drug-related deaths, on the basis of the ONS / 'wide' definition, for 1979 to 1999;
  - Section 5 explains why it is not possible to produce reliable figures for drug-related deaths on that basis for 1978 or earlier years.

## 2. Why NRS cannot produce figures for drug-related deaths, on the basis of its standard definition, for 1995 and earlier years

- 2.1 The current standard definition of drug-related deaths, for the purpose of NRS's statistics, is sometimes referred to as the 'Drug Strategy' definition. It is described in paragraph A2 of Annex A of recent editions of ['Drug-related Deaths in Scotland'](#). That explains how the deaths to be counted are identified on the basis of the underlying cause of death having been coded to particular categories of the World Health Organisation (WHO) International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10). It also explains that, if poisoning was the underlying cause of death, whether the death is counted as drug-related (in terms of the standard definition) depends on whether a drug listed under the Misuse of Drugs Act was known to be present in the body. The latter information may not be available from the ICD codes for the death, because the WHO's classification is not designed to indicate whether or not any drugs are listed under the UK's Misuse of Drugs Act. A particular ICD code could be used for some substances which are listed under the Act, and for some substances which are not. It follows that the ICD codes alone do not provide all the information that is needed to determine whether a death should be counted as drug-related (in terms of the standard definition).
- 2.2 As indicated in the [deaths background information](#) section on the NRS website, NRS's statistical computer system was improved greatly for deaths which were registered from the start of 1996. They are the first deaths for which NRS's statistical database holds the text description of the cause of death, and also the names of any substances of which NRS was informed. So, from 1996, for 'poisoning' deaths, NRS can use

the substance names to determine whether a drug listed under the Misuse of Drugs Act was present in the body, and hence whether the death should be counted as drug-related (in terms of the standard definition). NRS cannot do that for deaths registered in 1995 or earlier years, because its 'death statistics' database does not hold any substance names for them. Therefore, NRS cannot determine how many deaths registered in 1995 and earlier years should be counted as drug-related (in terms of the standard definition).

### 3. Figures for 1979 to 1999, on the basis of the ONS / 'wide' definition

- 3.1 The ONS / 'wide' definition is described in paragraph B2 of Annex B of recent editions of ['Drug-related Deaths in Scotland'](#). That explains how the deaths to be counted are identified solely on the basis of the ICD code for the underlying cause of the death. For the purpose of this definition, it does not matter whether or not a drug listed under the Misuse of Drugs Act was present - so NRS can produce figures on the basis of this definition even for years for which its database does not hold the names of the substances that were present. Therefore, NRS can produce figures for 1995 and some earlier years based on the ONS / 'wide' definition.
- 3.2 ONS describes the figures that are produced using this definition as 'deaths related to drug poisoning'. The table that follows sets out the ICD-9 and ICD-10 codes that are used to identify each category of such deaths.

#### **International Classification of Diseases, Ninth Revision (ICD-9) and Tenth Revision (ICD-10) codes used to define deaths related to drug poisoning**

| Description  | ICD-9 Codes           | ICD-10 Codes     |
|--|-----------------------|------------------|
| Mental and behavioural disorders due to drug use (excluding alcohol and tobacco) | 292, 304, 305.2–305.9 | F11–F16, F18–F19 |
| Accidental poisoning by drugs, medicaments and biological substances             | E850–E858             | X40–X44          |
| Intentional self-poisoning by drugs, medicaments and biological substances       | E950.0–E950.5         | X60–X64          |
| Assault by drugs, medicaments and biological substances                          | E962.0                | X85              |
| Poisoning by drugs, medicaments and biological substances, undetermined intent   | E980.0–E980.5         | Y10–Y14          |

Note: copied from Background Note 4 in ONS's publication [Deaths Related to Drug Poisoning in England and Wales: 2014 registrations](#) on the ONS website.

3.3 NRS's 'death statistics' database has an individual record for each death registered in Scotland since 1974. NRS's predecessor, the General Register Office for Scotland (GROS), used ICD-9 codes for deaths registered from 1979 to 1999, and ICD-10 codes for deaths registered with effect from 2000. Therefore, NRS can produce figures for 1979 onwards, on the basis of the ONS / 'wide' definition, by selecting those 'death statistics' records which have the relevant ICD-9 or ICD-10 codes for the underlying cause of death.

3.4 NRS used the definition given in the table in paragraph 3.2 to produce the numbers of drug-related deaths for Scotland, on the ONS / 'wide' basis, for each year from 1979 to 1999. The totals for each year are as follows:

|      |     |
|------|-----|
| 1979 | 339 |
| 1980 | 306 |
| 1981 | 307 |
| 1982 | 265 |
| 1983 | 212 |
| 1984 | 201 |
| 1985 | 242 |
| 1986 | 223 |
| 1987 | 250 |
| 1988 | 238 |
| 1989 | 264 |
| 1990 | 275 |
| 1991 | 275 |
| 1992 | 311 |
| 1993 | 372 |
| 1994 | 422 |
| 1995 | 426 |
| 1996 | 460 |
| 1997 | 447 |
| 1998 | 449 |
| 1999 | 492 |

3.5 The numbers for 1996 to 1999 that appear above are the same as the ONS / 'wide' definition figures for those years which are published in Table X of '[Drug-related Deaths in Scotland](#)'. That table shows, for 1996 onwards, the numbers of drug-related deaths that are produced when three different definitions are used: the NRS standard ('Drug Strategy') definition; the ONS / 'wide' definition; and the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) 'general mortality register' definition. In the publication, a chart illustrates how all three series tend to rise at the same time and fall at the same time, how the ONS / 'wide' definition numbers are much higher than those which are produced using the other two definitions, and how there is usually little difference between 'NRS' and 'EMCDDA' definition figures.

#### 4. The reliability of the numbers of drug-related deaths, on the basis of the ONS / 'wide' definition, for 1979 to 1999

- 4.1 Drug-death figures for 1979 to 1999 may be affected by a break in the series between 1993 and 1994. As was mentioned in some of the earlier 'drug-death' publications (such as the [Drug-Related Deaths in Scotland in 1997](#) report on the NRS website).

In its enquiry in 1993 into drug abuse in Scotland, the House of Commons Select Committee on Scottish Affairs expressed concern about the quality of available information on deaths resulting from drug abuse. In response to the Select Committee's concern an improved system for collecting information on drug-related deaths in Scotland was introduced in 1994. A paper published in June 1995 by the Registrar General for Scotland described this revised system. The paper outlined the definitions used and presented data for 1992, 1993 and 1994.

- 4.2 What happened in 1994 is described in paragraphs 9 to 11 of the paper that was published in June 1995 ('Collection of information on drug-related deaths by the General Register Office for Scotland', by J Arrundale and Dr S K Cole; not on the NRS website). This explained that, from the beginning of 1994, forensic pathologists conducting post mortems were asked to pay particular attention to deaths which might be drug-related, and GROS followed up all cases of deaths of young people in which the information on the death certificate was vague or suggested that there may be a drug abuse background. An initial pilot scheme involved the main university departments of forensic medicine. For Aberdeen, Dundee and Edinburgh, GROS sent a questionnaire in the case of all drug-related or possible drug-related deaths. A different procedure was used for Glasgow, which supplied GROS with extracts from reports for such deaths issued by the Procurator Fiscal. After the pilot had run for about six months, GROS, the university forensic departments, the Crown Office and the then Scottish Office agreed that henceforth the university forensic departments would complete and return a (modified) questionnaire in respect of every death involving drugs or a person who was known or suspected to be drug-dependent. So 1995 was the first year for which the new arrangements applied across Scotland for the whole year.
- 4.3 Some information on the likely effects of the introduction of the new arrangements is given in paragraphs 15 to 17 of the 'June 1995' (or 'Arrundale and Cole') paper. It appears that the main benefit was to provide more information on deaths which were already known to involve drugs, thus improving the categorisation of types of drug-death, with little effect on the total number. For example, paragraph 15 referred to "... a movement from the vaguer categories, both in terms of the type of drug involved and on whether the deceased was known or suspected to be drug dependent. This is certainly due to the better information obtained by the new system....". Collecting more

information may also have led to a small proportion of cases being identified as drug-deaths which would not have been counted as such under the previous arrangements. Paragraph 16 of the paper refers to looking at “those deaths which, under the old collection system, would be less likely to have been identified as drug-related. These would be deaths certified to certain causes (e.g. pulmonary oedema and congestion) occurring outside hospital where the deceased was under 45 years of age”. Changing the collection system “would seem to have had only a slight effect on the total number of deaths”. From figures given in paragraph 16, NRS now estimates that the introduction of the new arrangements might have added around five per cent (probably between three per cent and seven per cent) to the overall total number of drug-deaths (using the definition of the time, which was not the same as either NRS’s standard definition or the ONS / ‘wide’ definition). However, there were much larger percentage changes for the numbers in some categories: for example, the new arrangements identified a much higher percentage as being the deaths of people who were drug-dependent, using information from pathologists which would not be available from the death certificate.

4.4 Further minor changes were made to the collection system in 1995, according to the first paragraph of the paper on the figures for 1995 (‘Drug-related Deaths in Scotland in 1995’; also not on the NRS website). Paragraph 2 says that much of the rise in the number of deaths of known or suspected drug addicts “is likely to have resulted from a further improvement in the information received by GROS”, since there was a more-or-less equal fall in the figure for deaths involving ‘opiates’ among those not known or suspected to be drug addicts; there was very little change in the overall total number of drug-deaths (in terms of the definition used at that time).

4.5 In summary, it is thought that the effects of:

- trialling two different ways of collecting more data in the first part of 1994;
- introducing new arrangements across Scotland during 1994; and
- making minor changes to the collection system in 1995;

on the total number of drug-related deaths (as defined at that time) were:

- a slight break in the series between 1993 and 1994 (the latter was around five per cent higher than it would have been without the new data collection system); and
- very little (if any) break in the series between 1994 and 1995, or between 1995 and 1996.

However, over those years, there were some significant changes in how many of the drug-related deaths were counted against each category of death, and therefore significant breaks in the series for some categories (see paragraph 4.7).

4.6 The papers referred to above did not give any figures for 1991 or earlier years, so there is no readily available assessment from that time of whether or not there are any breaks in the continuity of the statistics for earlier years. However, it seems likely that there are no 'major' breaks, as the figures in Section 3 have a generally downward trend from 1979 to 1984, and then a generally upward trend (at first slow, then more rapid, and finally slower) from 1984 to 1999. While there are some apparent year-to-year fluctuations around those overall trends, there do not seem to be any 'very big' rises or falls between one year and the next, of the kind that might be seen if there were a 'major' break in the continuity of the statistics. Therefore, it appears reasonable to regard these numbers as giving a good indication of what happened between 1979 and 1999, with (at worst) only relatively small breaks in the series, which should have little effect on the 'big picture' shown by the figures.

4.7 NRS has also produced figures for the different categories of drug-related deaths, on the ONS / 'wide' basis, for 1979 to 1999. These are not being published because of the breaks in their series between 1993 and 1994, due to the improved categorisation that became possible when extra information was available, with effect from 1994, from the new system for collecting data about drug-related deaths. Those breaks meant that it is not advisable to try to identify any change in the numbers in the different categories of drug-related death between 1979 and 1996. (For 1996 onwards, one can use the figures that are published in 'Drug-related Deaths'). The unpublished figures for the different categories do not seem to have any 'large' breaks in their series between 1979 and 1993, but do have year-to-year fluctuations in the figures for certain categories.

## **5. Why NRS cannot produce 'drug-death' figures, on the ONS / 'wide' basis, for 1978 and earlier years**

5.1 GROS used ICD-8 codes for deaths registered from 1968 to 1978 (but NRS's 'death statistics' database has individual records available only for 1974 onwards). Unfortunately, NRS cannot produce figures for 1974 to 1978 on the basis of the ONS / 'wide' definition, because there does not seem to be a set of ICD-8 codes which will identify the same kinds of deaths as the ICD-9 codes specified in the table in paragraph 3.2. The notes below describe the ICD-8 codes that might be used for each category of drug-related death (on the ONS / 'wide' basis), and explain why (in general) they do not correspond to the ICD-9 codes that define those categories.

5.2 Mental and behavioural disorders due to drug use (excluding alcohol and tobacco)

- definition in terms of ICD-9 codes: 292, 304, 305.2–305.9
- ICD-8 codes that might correspond to those codes:
  - ICD-9 code 292, 'drug psychoses' – no equivalent ICD-8 code. ICD-8 code '292' is for 'psychosis associated with

intracranial infection'. ICD-8 has a code '294.3' for 'psychosis associated with other physical conditions - drug or poison intoxication'. However, that does not appear to correspond to the whole of ICD-9 code 292, 'drug psychoses', because the latter has sub-categories for 'drug withdrawal syndrome' (292.0), 'paranoid and/or hallucinatory states induced by drugs' (292.1), 'pathological drug intoxication' (292.2), 'other' (292.8) and 'unspecified' (292.9).

- ICD-9 code 304, 'drug dependence' – equivalent ICD-8 code appears to be 304, 'drug dependence'
- ICD-9 codes 305.2 to 305.9, which form part of ICD-9 code 305, 'nondependent abuse of drugs' (codes 305.0 and 305.1 are for alcohol and tobacco abuse) – no equivalent ICD-8 code. ICD-8 code 305 covers 'physical disorders of presumably psychogenic origin' (e.g. 305.0 is for 'skin'). ICD-8 does not seem to have a code for the nondependent abuse of drugs (alcohol abuse comes under ICD-8 code 303 'alcoholism').
- conclusion: it is not possible to produce reliable figures for this category from data with ICD-8 codes, because ICD-8 does not seem to have codes which cover the same kinds of causes of death as ICD-9 codes 292 and 305.2 to 305.9

### 5.3 Accidental poisoning by drugs, medicaments and biological substances

- definition in terms of ICD-9 codes: E850–E858, 'accidental poisoning by drugs, medicaments and biological'
- ICD-8 codes that might correspond to those codes: E850-E859, 'accidental poisoning by drugs and medicaments'.
  - The substances that are covered by each code differ between the two classifications – for example, in ICD-8, 'E850' is 'accidental poisoning by antibiotics and other anti-infectives', whereas in ICD-9 it is 'accidental poisoning by analgesics, antipyretics, antirheumatics'.
  - ICD-9 has a separate set of codes for 'drugs, medicaments and biological substances causing adverse effects in therapeutic use': E930 to E949. These include E930 'antibiotics', E931 'other anti-infectives', etc.
  - In contrast, ICD-8's section on 'surgical and medical complications and misadventures' (E930-E936) states that it excludes 'overdose of drug and wrong drug given in error (E850-E859)'
  - Therefore, only a few of the ICD-8 codes in E850-E859 correspond exactly to particular ICD-9 codes in E850-E858. For example, ICD-8 code E854.0, 'accidental poisoning by other sedatives and hypnotics – barbiturates', appears to correspond to ICD-9 code E851, 'accidental poisoning by barbiturates'. However, some deaths coded E854.0 in ICD-8 could be given ICD-9 code E937.0, '... therapeutic use ... barbiturates'.

- conclusion: it is not possible to produce reliable figures for this category from data with ICD-8 codes, because the ICD-8 codes which might be used do not correspond to the ICD-9 codes

#### 5.4 Intentional self-poisoning by drugs, medicaments and biological substances

- definition in terms of ICD-9 codes: E950.0–E950.5, which form part of ICD-9 code E950, ‘suicide and self-inflicted poisoning by solid or liquid substances’
- ICD-8 code that might correspond to those codes: E950, ‘suicide and self-inflicted poisoning by solid or liquid substances’.
  - There are ICD-9 codes for different types of substance - for example, ‘E950.0’ is ‘analgesics, antipyretics and antirheumatics’ and ‘E950.5’ is ‘unspecified drug or medicament’.
  - ICD-8 has only one code (‘E950’, with no subdivisions) for all types of substance, some of which are covered by other ICD-9 codes. For example, ICD-8 code E950 will include deaths from agricultural chemicals, corrosive substances and arsenic, which in ICD-9 are included in codes E950.6, E950.7 and E950.8 (respectively).
- conclusion: it is not possible to produce reliable figures for this category from data with ICD-8 codes, because the ICD-8 code which might be used covers far more causes of death than the specified ICD-9 codes

#### 5.5 Assault by drugs, medicaments and biological substances

- definition in terms of ICD-9 codes: E962.0, which forms part of ICD-9 code E962, ‘assault by poisoning’
- ICD-8 code that might correspond to those codes: E962, ‘assault by poisoning’.
  - There are ICD-9 codes for different types of substance - for example, ‘E962.0’ is ‘drugs and medicaments’ and ‘E962.1’ is ‘other solid and liquid substances’.
  - ICD-8 has only one code (‘E962’, with no subdivisions) for all types of substance, some of which are covered by other ICD-9 codes. For example, ICD-8 code E962 will include deaths from poisoning by ‘other gases and vapours’, which in ICD-9 are coded E962.2.
- conclusion: it is not possible to produce reliable figures for this category from data with ICD-8 codes, because the ICD-8 code which might be used covers far more causes of death than the specified ICD-9 code

#### 5.6 Poisoning by drugs, medicaments and biological substances, undetermined intent

- definition in terms of ICD-9 codes: E980.0–E980.5, which form part of ICD-9 code E980, ‘poisoning by solid or liquid substances, undetermined whether accidentally or purposefully inflicted’



- ICD-8 code that might correspond to those codes: E980, 'poisoning by solid or liquid substances, undetermined whether accidentally or purposefully inflicted'.
  - There are ICD-9 codes for different types of substance - for example, 'E980.0' is 'analgesics, antipyretics and antirheumatics' and 'E980.5' is 'unspecified drug or medicament'.
  - ICD-8 has only one code ('E980', with no subdivisions) for all types of substance, some of which are covered by other ICD-9 codes. For example, ICD-8 code E980 will include deaths from corrosive substances, agricultural chemicals and arsenic, which in ICD-9 are included in codes E950.6, E950.7, E950.8 (respectively).
- conclusion: it is not possible to produce reliable figures for this sub-category from data with ICD-8 codes, because the ICD-8 code which might be used covers far more causes of death than the specified ICD-9 codes

5.7 It is assumed that the ICD-8 codes are less suitable than the ICD-9 codes for determining the numbers of drug-related deaths because there were far fewer drug-related health problems in the period leading up to the finalisation of ICD-8 in 1965 than in the subsequent decade (ICD-9 was finalised in 1975) - and therefore ICD-8 did not need to have the more detailed drug-related codes that were added in ICD-9.