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**Drug-Related Deaths in Scotland in 2000**

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This paper describes the system by which the Registrar General for Scotland collects information on drug-related deaths and the measures which have been taken to improve the quality and coverage of this system.

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## DRUG-RELATED DEATHS IN SCOTLAND IN 2000

### *Summary*

1. This paper gives information about drug-related deaths in Scotland over the period 1996-2000 using a new definition for the baseline figures. The new definition was agreed by a working party set up following the publication, by the Advisory Council on the Misuse of Drugs (ACMD), of a report<sup>1</sup> on 'Reducing drug-related deaths'. It will also be used elsewhere in the United Kingdom. To assist the transition to the new definition, several tables contain data for 1996-1999 based on the new approach.
2. Under the new, more restricted, definition there were 292 drug-related deaths in 2000 and 291 in 1999, some 10-15 per cent fewer than under the old definition. **Annex B** contains figures for 1996-2000 based on the old definition used in earlier papers covering Scotland published by the General Register Office for Scotland (GROS).

### *Background*

3. 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<sup>2</sup> published in June 1995 by GROS described this revised system, outlined the definitions used, and presented data for 1992, 1993 and 1994. Further short papers, covering data up to 1999, were published in subsequent years.
4. The system introduced in 1994 uses a specially designed questionnaire, completed by forensic pathologists, for all deaths involving drugs or persons known or suspected to be drug-dependent. Additionally, GROS follows up all cases of deaths of young people where the information on the death certificate is vague or suggests that there might be a background of drug abuse. A copy of the questionnaire currently used is attached (**Annex C**).
5. The definition of a 'drug-related death' is not straightforward. A useful discussion on the definitional problems may be found in an article in the Office for National Statistics publication *Population Trends*<sup>3</sup>. More recently, a report<sup>1</sup> by the Advisory Council on the Misuse of Drugs (ACMD) considered 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*'. GROS was represented on this group and this paper presents information on drug-related deaths using the approach agreed.

### *The new baseline definition*

6. Whilst the new definition draws on data from the same sources, i.e. details from death registrations supplemented by the information described above in paragraph 4, it differs in two significant ways from the earlier definition used by GROS. First, for deaths where habitual drug abuse was not known or suspected, it limits inclusion to those where particular drugs are known to have been involved. Second, it includes deaths from intentional self-harm (suicides).

7. The new baseline 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':
    - (i) opioids (F11);
    - (ii) cannabinoids (F12);
    - (iii) sedatives or hypnotics (F13);
    - (iv) cocaine (F14);
    - (v) other stimulants, including caffeine (F15);
    - (vi) hallucinogens (F16); and
    - (vii) multiple drug use and use of other psychoactive substances (F19).
  - b) deaths coded to the following categories and where a drug listed under the Misuse of Drugs Act (1971) was known to be present in the body at the time of death:
    - (i) accidental poisoning (X40–X44);
    - (ii) intentional self-poisoning by drugs, medicaments and biological substances (X60–X64);
    - (iii) assault by drugs, medicaments and biological substances (X85);
    - (iv) event of undetermined intent, poisoning (Y10–Y14).

Notes:

1. Deaths coded to mental and behavioural disorders due to the use of alcohol (F10), tobacco (F17), and volatile substances (F18) have been excluded.
2. Deaths coded to opioid abuse (F11) which resulted from the injection of contaminated heroin have been excluded (more details are given in **Annex A**). Also excluded are deaths from AIDS where the risk factor was believed to be the sharing of needles and road traffic and other accidents which occurred under the influence of drugs.
3. Specific rules were adopted for dealing with compound analgesics which contain relatively small quantities of drugs listed under the Misuse of Drugs Act e.g. *co-proxamol* which contains dextropropoxyphene (more details are given in **Annex A**).

***Summary of results using the new baseline***

***Recent trends (Table 1)***

8. The number of drug-related deaths in 2000 was 292, one more than in 1999 and 48 (20 per cent) more than in 1996. Within these totals, the number of deaths of known or suspected drug addicts fell from 227 in 1999 to 220 in 2000. However, this was still about a quarter more than in 1996 (175). (Figures for 1996-2000 using the old definition are given in **Annex B**.)

***Health board areas (Tables 2 and 3)***

9. Of the 292 deaths in 2000, 104 (36 per cent) occurred in the Greater Glasgow Health Board area. Lothian, with 37, Grampian and Argyll & Clyde, both with 31, and Lanarkshire, with 29, had the next highest totals. Over the period 1996-2000, **Table 2** shows sizeable increases in several of the health board areas in Western Scotland contrasting with decreases in Lothian and Tayside.

10. Because of the relatively small numbers involved, particularly for some health board areas, and the possibility that more complete information has been reported in recent years, care should be taken when assessing the trends shown in **Tables 1** and **2**.

#### *Age groups and sex (Table 4)*

11. Most deaths (92 per cent) were to persons aged under 45, with a quarter (25 per cent) aged under 25. Of the 24 cases aged 45 and over, only 6 were known, or suspected, to be drug-dependent. Men accounted for more than four out of five (82 per cent) of the 292 drug-related deaths in 2000.

#### *Types of drug involved (Tables 5 and 6)*

12. **Tables 5** and **6** give information on the involvement of selected drugs, either alone or, more commonly, in combination with other drugs. Since the tables record individual mentions of particular drugs they involve double counting of some deaths. It is believed that for the overwhelming majority of cases where morphine has been identified in post-mortem toxicological tests its presence is a result of heroin use. The tables therefore show a combined figure for 'heroin/morphine'.
13. In 2000, the drugs listed were known to be involved in 259 of the 292 deaths. Heroin/morphine was involved in 196 (67 per cent) of the deaths; diazepam was involved in 146 (50 per cent) of the deaths; and methadone was involved in 55 (19 per cent) of the deaths. A wide range of drug combinations was recorded. Of particular note was the fact that diazepam was also mentioned in over half (104) of the 196 deaths involving heroin/morphine. The presence of alcohol was mentioned for 123 of the 292 drug-related deaths in 2000. The blood-alcohol level was not given for all cases but, where mentioned, it was often at a relatively low level.
14. **Table 5** shows that there has been marked increase in the involvement of heroin/morphine, and to a lesser extent diazepam, between 1996 and 2000. However, over the same period there has been a significant reduction in the involvement of methadone.
15. **Table 6** shows some geographical differences in the reported involvement of certain drugs. For example heroin/morphine was mentioned in a much larger proportion (85 out of 104) of the deaths in Greater Glasgow than in Lothian (15 out of 37). Of the benzodiazepines, diazepam was involved in many deaths throughout Scotland but temazepam was involved mainly in the West.

#### *References*

1. The Advisory Council on the Misuse of Drugs. Reducing drug-related deaths. Home Office, 2000.
2. Arrundale J and Cole S K. Collection of information on drug-related deaths by the General Register Office for Scotland. GROS, 1995.
3. Christophersen O, Rooney C and Kelly S. Drug-related mortality: methods and trends. Population Trends 93, ONS, 1998.

**Table 1: Drug-related deaths, Scotland, 1996-2000**

Year	Total	Cause of death category (ICD10 codes)				
		Drug abuse (F11-F16, F19)	Accidental poisoning (X40-X44)	Intentional self-poisoning (X60-X64)	Assault by drugs, etc. (X85)	Undetermined (Y10-Y14)
1996	244	175	10	41	-	18
1997	224	142	14	42	-	26
1998	249	179	16	32	-	22
1999	291	227	12	19	1	32
2000	292	220	11	34	-	27

**Table 2: Drug-related deaths, by health board area, 1996 - 2000**

Health board area	1996	1997	1998	1999	2000
<b>Scotland</b>	<b>244</b>	<b>224</b>	<b>249</b>	<b>291</b>	<b>292</b>
Argyll & Clyde	18	16	23	30	31
Ayrshire & Arran	3	6	4	15	20
Borders	2	1	1	-	1
Dumfries & Galloway	4	7	4	7	7
Fife	3	8	13	9	12
Forth Valley	-	4	2	8	4
Grampian	29	22	26	38	31
Greater Glasgow	90	67	93	100	104
Highland	2	3	1	7	1
Lanarkshire	11	12	21	23	29
Lothian	58	48	37	39	37
Orkney	-	-	-	-	-
Shetland	-	-	1	-	1
Tayside	24	30	23	14	14
Western Isles	-	-	-	1	-

**Table 3: Drug-related deaths, by health board area, 2000**

Health board area	Total	Cause of death category (ICD10 codes)				
		Drug abuse (F11-F16, F19)	Accidental poisoning (X40-X44)	Intentional self-poisoning (X60-X64)	Assault by drugs, etc. (X85)	Undetermined (Y10-Y14)
<b>Scotland</b>	<b>292</b>	<b>220</b>	<b>11</b>	<b>34</b>	<b>-</b>	<b>27</b>
Argyll & Clyde	31	26	1	2	-	2
Ayrshire & Arran	20	13	-	6	-	1
Borders	1	1	-	-	-	-
Dumfries & Galloway	7	4	-	-	-	3
Fife	12	8	-	2	-	2
Forth Valley	4	1	1	1	-	1
Grampian	31	23	-	4	-	4
Greater Glasgow	104	91	3	6	-	4
Highland	1	1	-	-	-	-
Lanarkshire	29	19	3	3	-	4
Lothian	37	25	2	8	-	2
Orkney	-	-	-	-	-	-
Shetland	1	-	-	-	-	1
Tayside	14	8	1	2	-	3
Western Isles	-	-	-	-	-	-

**Table 4: Drug-related deaths, by age and by sex, Scotland, 2000**

	Total	Cause of death category (ICD10 codes)				Undetermined (Y10-Y14)
		Drug abuse (F11-F16, F19)	Accidental poisoning (X40-X44)	Intentional self-poisoning (X60-X64)	Assault by drugs, etc. (X85)	
<b>All deaths</b>	<b>292</b>	<b>220</b>	<b>11</b>	<b>34</b>	-	<b>27</b>
Under 25	73	58	3	4	-	8
25-34	126	106	4	11	-	5
35-44	69	50	3	6	-	10
45 and over	24	6	1	13	-	4
Males	239	185	10	22	-	22
Females	53	35	1	12	-	5

**Table 5: Drug-related deaths; selected drugs involved<sup>1</sup>, Scotland, 1996 - 2000**

	Heroin/ morphine <sup>2</sup>	Diazepam	Methadone	Temazepam	Ecstasy	Cocaine
<b>1996</b>	84	84	100	48	9	3
<b>1997</b>	74	93	86	33	2	5
<b>1998</b>	121	113	64	58	3	4
<b>1999</b>	167	142	63	56	8	12
<b>2000</b>	196	146	55	39	11	4

<sup>1</sup> Individual deaths often involved more than one of these drugs. The numbers given are mentions of the drug and should not be added to give total deaths.

<sup>2</sup> See paragraph 12 of commentary.

**Table 6: Drug-related deaths; selected drugs involved<sup>1</sup>, by health board area, 2000**

Health board area	Heroin/ morphine <sup>2</sup>	Diazepam	Methadone	Temazepam	Ecstasy	Cocaine
<b>Scotland</b>	<b>196</b>	<b>146</b>	<b>55</b>	<b>39</b>	<b>11</b>	<b>4</b>
Argyll & Clyde	26	20	7	4	1	-
Ayrshire & Arran	14	11	1	6	-	-
Borders	1	-	-	-	-	-
Dumfries & Galloway	4	4	1	1	-	-
Fife	4	2	5	1	1	-
Forth Valley	4	1	-	1	-	-
Grampian	18	14	8	2	2	-
Greater Glasgow	85	55	14	17	3	3
Highland	-	-	-	-	-	-
Lanarkshire	20	11	2	3	2	1
Lothian	15	17	9	2	1	-
Orkney	-	-	-	-	-	-
Shetland	-	-	1	-	1	-
Tayside	5	11	7	2	-	-
Western Isles	-	-	-	-	-	-

<sup>1</sup> Individual deaths often involved more than one of these drugs. The numbers given are mentions of the drug and should not be added to give total deaths.

<sup>2</sup> See paragraph 12 of commentary.

*Additional notes on the new baseline definition*

1. *Compound analgesics*: Where a drug listed under the Misuse of Drugs Act was present because it was part of a compound analgesic or cold remedy it has been ignored. Specific examples are:

Co-proxamol:                      paracetamol, dextropropoxyphene

Co-dydramol:                      paracetamol, dihydrocodeine

Co-codamol:                      paracetamol, codeine sulphate

All three of these compound analgesics, but particularly Co-proxamol, are commonly used in suicidal overdoses.

As it is believed that dextropropoxyphene is rarely if ever available other than as a constituent of a paracetamol compound, it has been ignored on all occasions (even if there is no mention of a compound analgesic or paracetamol). However deaths involving codeine or dihydrocodeine without mention of paracetamol have been included in the baseline as these drugs are routinely available on their own and known to be abused in this form.

2. *Contaminated heroin*: Deaths resulting from the injection of contaminated heroin have been excluded. It had originally been intended to include such deaths in the baseline but there are possible problems of coverage. In Scotland GROS tried to identify all the cases associated with the outbreak in 2000 caused by clostridium novyi infection; 22 cases had been identified when the 2000 deaths file was closed in May 2001, but it is not clear whether additional deaths have subsequently been identified as part of this outbreak which is now the subject of a public inquiry. Moreover it is not clear whether sporadic cases, either in the past or in the future, could be readily identified. The geographical distribution of the 22 cases identified on the GROS database was as follows:

Greater Glasgow, 18; Grampian, 2; Fife, 1; Lanarkshire, 1.

*The old GROS definition*

1. In previous years the analyses of drug-related deaths prepared by GROS covered the following categories (the relevant codes from the International Classification of Diseases, Ninth Revision (ICD9), are given in brackets):
  - i Drug dependence (ICD9 304), excluding solvent abuse (ICD9 304.6);
  - ii Accidental poisoning by drugs, medicaments and biologicals (ICD9 E850-E858); and
  - iii Poisoning by solid or liquid substances, undetermined whether accidentally or purposely inflicted (ICD9 E980).

All known suicides were excluded, as were road traffic and other accidents that occurred under the influence of drugs and deaths from AIDS where the risk factor was believed to be the sharing of needles. The categories selected included deaths from occasional or experimental misuse of drugs and accidental overdoses of prescribed medicine as well as some unrecognised suicides. There was no selection based on the type of drug involved. However, to aid interpretation of the figures, tables categorised deaths according to whether drug dependence was known (or strongly suspected) or not known and, for the latter category, sub-groups based on the types of drug(s) involved.

2. Data for 2000 classified according to the old definition are presented in the table below. Note that the figures for ‘persons known or suspected to be drug-dependent’ are directly comparable with the figures for ‘drug abuse’ in **Table 1** of the main paper.

Drug-related deaths, 1996-2000, old definition

Year	Total	Persons known or suspected to be drug-dependent	Persons not known or suspected to be drug-dependent			
			Opiates etc.	2+ drugs	1 drug	Drug not stated
1996 <sup>1</sup>	270	175	15	9	38	33
1997	263	142	32	18	45	26
1998	276	179	30	7	37	23
1999	340	227	30	7	45	31
2000 <sup>2</sup>	325	220	27	12	55	11

<sup>1</sup> Revised<sup>2</sup> Excludes deaths associated with contaminated heroin



## General Register Office for Scotland

## Crown Office

**Confidential form to be completed in all deaths involving drugs, solvents or poisons**

This information is essential for the correct coding and monitoring of drug-related deaths.

If you have any queries about the form or its completion, please contact Graham Jackson, telephone 0131 314 4229.

Please complete the form and return it, in the pre-paid addressed envelope provided, to:

Vital Events & NHS Branch  
General Register Office for Scotland  
Ladywell House  
Ladywell Road  
Edinburgh EH12 7TF

Name of deceased

Date of birth

Date of death

Place of death

Usual residence

Questions

(please tick)

- 1 Was alcohol involved in this death? Yes  No  Not known   
If "Yes" what was the blood/alcohol level in mg/100ml?
- 2 If any other drugs or solvents were involved in this death, please specify the principal drug or solvent found in a fatal dose:- **IF NONE GO TO QUESTION 9**
- 3 Please specify any other drugs or solvents involved in this death.
- 4 Was the deceased a known or suspected habitual drug or solvent abuser? Yes  No  Not known   
**IF YES GO TO QUESTION 7**
- 5 Was the deceased a novice or experimenting drug or solvent abuser? Yes  No  Not known   
**IF YES GO TO QUESTION 7**
- 6 Was there any evidence from the police report or autopsy of a long-standing drug or solvent-abusing history?  
Yes  No  Not Known  N/A
- 7 Do you believe this overdose to have been:-  
accidental   
suicidal   
homicidal   
or unknown/uncertain?
- 8 Were the drugs prescribed to the deceased? Yes  No  Not Known  N/A
- 9 Any other comments or information which may help in coding this death?

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