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Drug-related Deaths in Scotland in 2006

This paper describes the system by which the Registrar General for Scotland collects information on drug-related deaths in Scotland and presents selected statistical information covering the period 1996 to 2006.

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A National Statistics publication

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Note: NHS Board areas

From 1 April 2006 responsibility for NHS Argyll & Clyde was split between NHS Greater Glasgow (now renamed Greater Glasgow and Clyde) and NHS Highland. Tables 2, 3, and 6 present information for the new NHS Board areas. To assist users the tables also present data for the former NHS Argyll & Clyde, Greater Glasgow and Highland areas.

Introduction

1. This paper gives information about drug-related deaths in Scotland over the period 1996 – 2006, using the definition for baseline figures introduced in 2001. This 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 ¹ 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.
2. Paragraph 3 below gives some background on the collection of information on drug-related deaths in Scotland; paragraphs 4 – 11 summarise the main points arising from the information for 2006 and earlier years presented in Tables 1 – 6; and **Annex A** discusses the definition of drug-related deaths and gives a detailed description of the definition used in this paper.

Data sources

3. Drug-related deaths are identified using details from death registrations supplemented by information from a specially designed questionnaire, completed by forensic pathologists, for all deaths involving drugs or persons known or suspected to be drug-dependent. Additionally, the General Register Office for Scotland (GROS) 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. A copy of the questionnaire currently used is attached (**Annex B**). A paper ² published in June 1995 by GROS described this enhancement to the data collection system.

Summary of results

Recent trends (Table 1)

4. There were 421 drug-related deaths in 2006, 85 (25 per cent) more than in 2005 and 39 (10 per cent) more than the previous highest recorded total of 382 in 2002. Within these totals, the number of deaths of known or suspected habitual drug abusers rose from 204 in 2005 to 280 in 2006, the same as in in 2002. **Table 1** also shows that there was an increase in the number of drug-related deaths coded to 'accidental poisoning', from 31 in 2005 to 51 in 2006.

Table 1: Drug-related deaths, Scotland, 1996-2006

Year	All categories	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 intent (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
2001	332	227	19	34	-	52
2002	382	280	17	30	-	55
2003	317	216	15	40	-	46
2004	356	232	32	32	-	60
2005	336	204	31	43	-	58
2006	421	280	51	40	-	50

NHS Board areas (Tables 2 and 3)

5. Of the 421 deaths in 2006, 162 (38 per cent) occurred in the Greater Glasgow & Clyde NHS Board area. Grampian, with 47 (11 per cent), had the next highest total followed by Lothian, with 46 (11 per cent). The Greater Glasgow & Clyde total showed an increase of 51 since 2005 and there was also a substantial increase (24) in Grampian. However, there was a decrease of 11 in Lothian.

6. Because of the relatively small numbers involved, particularly for some NHS 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 **Table 1** and **Table 2**.

Table 2: Drug-related deaths, by NHS Board area, 1996 – 2006

NHS Board area	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Scotland	244	224	249	291	292	332	382	317	356	336	421
Ayrshire & Arran	3	6	4	15	20	35	33	19	20	15	25
Borders	2	1	1	-	1	1	-	2	2	7	2
Dumfries & Galloway	4	7	4	7	7	8	9	9	7	7	5
Fife	3	8	13	9	12	11	12	12	17	21	19
Forth Valley	-	4	2	8	4	9	24	12	16	14	24
Grampian	29	22	26	38	31	46	47	37	39	23	47
Greater Glasgow & Clyde ¹	107	83	115	129	132	117	152	131	151	111	162
Highland ¹	3	3	2	8	4	6	13	10	12	13	12
Lanarkshire	11	12	21	23	29	24	37	25	33	40	40
Lothian	58	48	37	39	37	54	39	40	36	57	46
Orkney	-	-	-	-	-	-	-	-	-	-	1
Shetland	-	-	1	-	1	1	1	-	-	1	2
Tayside	24	30	23	14	14	19	14	19	23	26	35
Western Isles	-	-	-	1	-	1	1	1	-	1	1
Argyll & Clyde ²	18	16	23	30	31	22	31	27	35	29	36
Greater Glasgow & Clyde pt.	17	16	22	29	28	21	26	24	31	26	35
Highland pt.	1	-	1	1	3	1	5	3	4	3	1
Greater Glasgow ²	90	67	93	100	104	96	126	107	120	85	127
Highland ²	2	3	1	7	1	5	8	7	8	10	11

1. New NHS Board areas including parts of former Argyll & Clyde

2. Former NHS Board areas (before dissolution of Argyll & Clyde on 1 April 2006).

Table 3: Drug-related deaths, by NHS Board area, 2006

NHS Board area	All categories	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 intent (Y10-Y14)
Scotland	421	280	51	40	-	50
Ayrshire & Arran	25	11	4	4	-	6
Borders	2	1	-	1	-	-
Dumfries & Galloway	5	2	-	1	-	2
Fife	19	12	5	2	-	-
Forth Valley	24	16	6	-	-	2
Grampian	47	44	2	-	-	1
Greater Glasgow & Clyde ¹	162	108	17	12	-	25
Highland ¹	12	9	-	3	-	-
Lanarkshire	40	22	5	3	-	10
Lothian	46	33	3	6	-	4
Orkney	1	-	-	1	-	-
Shetland	2	1	-	1	-	-
Tayside	35	20	9	6	-	-
Western Isles	1	1	-	-	-	-
Argyll & Clyde ²	36	24	1	3	-	8
Greater Glasgow & Clyde pt.	35	23	1	3	-	8
Highland pt.	1	1	-	-	-	-
Greater Glasgow ²	127	85	16	9	-	17
Highland ²	11	8	-	3	-	-

1. New NHS Board areas including parts of former Argyll & Clyde

2. Former NHS Board areas (before dissolution of Argyll & Clyde on 1 April 2006).

Age groups and sex (Table 4)

7. Most deaths (83 per cent) were to persons aged under 45. However, only 16 per cent were under 25 compared to 14 per cent in 2005 and 23 per cent in 2004. Of the 70 cases aged 45 and over, only 34 were known, or suspected, to be drug-dependent. Men accounted for 334 (79 per cent) of the 421 drug-related deaths in 2006. The number of female deaths increased from 77 in 2005 to 87 in 2006. Two-thirds (67 per cent) of the male deaths were of known or suspected drug abusers compared to 63 per cent of the female deaths.

Table 4: Drug-related deaths, by age and by sex, Scotland, 2006

	All categories	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 intent (Y10-Y14)
All ages	421	280	51	40	-	50
Under 25	69	47	14	1	-	7
25-34	154	111	14	17	-	12
35-44	128	88	15	11	-	14
45 and over	70	34	8	11	-	17
Males	334	225	45	28	-	36
Females	87	55	6	12	-	14

Types of drug involved (Tables 5 and 6)

8. **Table 5** and **Table 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'.

9. In 2006, the drugs listed in the Tables were known to be involved in 364 (86 per cent) of the 421 deaths. Heroin/morphine was involved in 260 (62 per cent) of the deaths; methadone was involved in 97 (23 per cent) of the deaths; and diazepam was involved in 78 (19 per cent) of the deaths. Cocaine and ecstasy were involved in 33 and 13 cases respectively. A wide range of drug combinations was recorded. For example, diazepam was also mentioned in 50 (19 per cent) of the 260 deaths involving heroin/morphine; and 19 of the 33 deaths involving cocaine also involved heroin/morphine or methadone.. The presence of alcohol was mentioned for 131 of the 421 drug-related deaths in 2006. The blood-alcohol level was not given for all cases but, where mentioned, it was sometimes at a relatively low level.

10. **Table 5** shows that, since 1996, there has been a significant increase in the involvement of heroin/morphine. Though recent years showed a limited reduction from a peak of 248 recorded in 2002, a new peak of 260 was recorded in 2006. Despite a fall in the late 1990s, the number of deaths involving methadone (97) is once again close to the level recorded in 1996 (100). The number of deaths involving diazepam peaked in 2002, and it has now dropped below the 1996 level. The table also shows the dramatic fall in the number of deaths involving temazepam since the late 1990s. Over the period there have also been marked changes in the numbers involving cocaine and ecstasy. The number of deaths involving cocaine increased to a high of 44 in 2005 but has dropped back by a quarter, to 33, in 2006. Ecstasy was involved in 13 deaths in 2006.

Whilst this total is higher than in the late 1990s, it is down on the peak figure of 20 recorded in 2001 and 2002.

Table 5: Drug-related deaths; selected drugs involved¹, Scotland, 1996 - 2006

Year	Heroin/ morphine ²	Methadone	Diazepam	Cocaine	Ecstasy	Temazepam	Alcohol
1996	84	100	84	3	9	48	87
1997	74	86	93	5	2	33	70
1998	121	64	113	4	3	58	86
1999	167	63	142	12	8	56	89
2000	196	55	146	4	11	39	123
2001	216	69	156	19	20	20	140
2002	248	98	214	31	20	16	156
2003	175	87	153	29	14	35	128
2004	225	80	113	38	17	5	116
2005	194	72	90	44	10	7	114
2006	260	97	78	33	13	10	131

1. 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.

2. See paragraph 8 of commentary.

11. **Table 6** shows some geographical differences in the reported involvement of certain drugs. For most NHS Board areas, heroin/morphine was involved in a majority of the deaths e.g. 97 out of 162 in Greater Glasgow & Clyde, 42 out of 47 in Grampian, and 27 out of 35 in Tayside. However, a much lower proportion was observed in Lothian (12 out of 46). Greater Glasgow & Clyde (58 out of 162) showed a relatively high proportion involving methadone. This contrasts with the lower proportions recorded in Grampian (4 out of 47) and Lothian (9 out of 46). The table also shows that diazepam was involved in around two-fifths of the deaths in Lothian (16 out of 40) and Grampian (18 out of 47) but in only a small proportion (9 out of 162) in Greater Glasgow & Clyde.

Table 6: Drug-related deaths; selected drugs involved¹, by NHS Board area, 2006

NHS Board area	Heroin/ morphine ²	Methadone	Diazepam ³	Cocaine	Ecstasy	Temazepam ³	Alcohol
Scotland	260	97	78	33	13	10	131
Ayrshire & Arran	12	9	5	1	-	-	8
Borders	-	-	1	-	-	1	1
Dumfries & Galloway	3	-	2	-	-	-	3
Fife	15	3	2	-	1	1	3
Forth Valley	17	1	9	-	4	1	6
Grampian	42	4	18	10	1	2	19
Greater Glasgow & Clyde ⁴	97	58	9	11	3	2	45
Highland ⁴	6	2	4	1	-	1	3
Lanarkshire	26	7	3	6	3	-	14
Lothian	12	9	16	4	1	1	21
Orkney	-	-	-	-	-	-	-
Shetland	2	-	1	-	-	-	1
Tayside	27	4	8	-	-	1	7
Western Isles	1	-	-	-	-	-	-
Argyll & Clyde ⁵	25	12	5	2	1	-	13
Greater Glasgow & Clyde pt.	24	12	5	2	1	-	12
Highland pt.	1	-	-	-	-	-	1
Greater Glasgow ⁵	73	46	4	9	2	2	33
Highland ⁵	5	2	4	1	-	1	2

1. 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.

2. See paragraph 8 of commentary.

3. Each year there are also a small number of mentions of unspecified benzodiazepines.

4. New NHS Board areas including parts of former Argyll & Clyde

5. Former NHS Board areas (before dissolution of Argyll & Clyde on 1 April 2006).

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.

Annex A - Notes on the definition of 'drug-related' deaths

1. 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 ³. More recently, a report ¹ 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.

2. The 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); and
- (iv) event of undetermined intent, poisoning (Y10 – Y14).

3. Categories of death excluded:

- a) deaths coded to mental and behavioural disorders due to the use of alcohol (F10), tobacco (F17) and volatile substances (F18);
- b) deaths coded to drug abuse which were caused by secondary infections and related complications (for example the 20 or so deaths in 2000 caused by clostridium novyi infection);
- c) deaths from AIDS where the risk factor was believed to be the sharing of needles;
- d) deaths from road traffic and other accidents which occurred under the influence of drugs; and
- e) deaths where a drug listed under the Misuse of Drugs Act was present because it was part of a compound analgesic or cold remedy: 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, have commonly been used in suicidal overdoses.

Note: As it is believed that dextropropoxyphene has rarely if ever been 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.

Annex B - Questionnaire

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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