Drug-related deaths in the UK

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national programme on Substance Abuse Deaths (*np*-SAD)

Drug-related deaths reported by Coroners in England, Wales, Northern Ireland, Guernsey, Jersey and the Isle of Man; Police forces in Scotland; & the Northern Ireland Statistics and Research Agency

Annual Report January-December 2009

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Preface

The Annual Report on drug-related deaths in the United Kingdom published by the *national programme* on Substance Abuse Deaths (*np*-SAD) is used by the UK Government, national and international agencies, academics, and commissioners and service providers as an indicator of the extent and nature of drug misuse, and makes a contribution towards the prevention of substance abuse problems.

The Programme could not achieve its goals and objectives without the invaluable voluntary collaboration and co-operation of coroners and their officers across England, Wales, Northern Ireland, Guernsey, Jersey, and the Isle of Man. Scottish drug–related deaths data is provided by the Scottish Crime and Drug Enforcement Agency. Additional data is provided by the Northern Ireland Statistics and Research Agency on drug-related poisonings from the General Mortality Register. The contributions from all are important as it enables the Programme to maintain a UK-wide reporting and surveillance system. We thank them all for their active participation and support.

The findings show an increase in deaths in 2009 reported directly to *np*-SAD by coroners from England, Wales, Northern Ireland and the Islands when compared to the number reported in last year's report. Deaths in Scotland have remained stable. The *np*-SAD has an on-going programme of visits to a representative sample of coroner areas to monitor the quality, accuracy and comprehensiveness of the data received on drug-related death.

As in previous years, the statistics in this report are intended to inform authorities at the local, regional and national levels, as well as health professionals and the general public, about the serious consequences of drug abuse, especially polydrug use. This year's report provides a more detailed analysis for 'drug misuse' deaths for England and looks in particular at differences between age-groups, the mortality of drug users aged over 40, and polysubstance implication in death.

The report also provides a number of indications of changes in patterns of drug abuse, trends over time, and emerging issues from our surveillance activities so that appropriate and timely action can be taken.

The Programme would like to express their thanks to the Department of Health for its support for this very important programme.

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Acknowledgements

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K S Wiseman, Southampton & New Forest

We would like to give a special thanks to our ICDP colleague Christine Goodair for her editorial guidance and advice in this report.

Executive summary

This eleventh annual report presents information on drug-related deaths that occurred during 2009 and for which Coronial inquests and similar formal investigations have been completed. The main purpose of the Annual Report from the national programme on Substance Abuse Deaths (*np*-SAD) is to inform the Government's monitoring of this important public health issue. The Programme's principal function is to provide high-quality and consistent surveillance, and to detect and identify emerging trends and issues in respect of this phenomenon. In this way, it contributes to the reduction and prevention of drug-related deaths in the UK due to the misuse of both licit and illicit drugs.

As in previous years, the data and analysis in this report is intended also to inform authorities at the local, regional, and national country levels, as well as health professionals and the general public, about the serious consequences of drug abuse. The report provides also a number of indicators of drug abuse patterns, trends, and early warnings on emerging drug problems so that appropriate and timely action can be taken.

Key findings for the UK and Islands

There were 2,182 notifications of drug-related deaths occurring in 2009 in the UK and Islands, this represents an increase of 230 (11.8%) over the same reporting period in 2008. Data were provided by 105 of the 115 coroners' jurisdictions in England & Wales; a response rate of about 92%.

The highest rates of drug-related deaths per 100,000 population aged 16 and over in 2009 were in the following areas: Brighton & Hove (23.6); East Lancashire (14.0); North Tyneside (13.0); Tayside (12.0); Liverpool (11.7); Swansea (11.7); and Strathclyde (11.1).

The principal demographic characteristics of those dying have remained consistent with previous reports. The majority of cases were males (78%), under the age of 45 years (74%), and White (95%). Most deaths (75%) occurred at a private residential address.

The main underlying cause(s) of death were: accidental poisoning (72%); intentional self-poisoning (9%); and poisoning of undetermined intent (9%). This pattern represents an increase in accidental overdoses in the previous year (64%) with consequent falls in other types of overdose deaths.

Accidental poisoning still remains the most frequent underlying cause of death amongst all age-groups, and older females are more likely to die of intentional self-poisoning than males.

The overall pattern in the types of psychoactive drugs implicated in death has remained similar to previous years. Heroin/morphine continues to be the principal substance implicated in death in the UK and Islands. The proportions of deaths involving this and methadone showed small increase, and the actual number of deaths in which they were implicated rose substantially.

The proportion of cases in which hypnotics/sedatives (mainly the benzodiazepines, diazepam and temazepam) and alcohol-in-combination with other substances remained stable, but the actual number of deaths in which they were implicated increased.

The increasing involvement of multiple substances in death demonstrated in this report for England, a trend found across the UK as a whole, underlines the risks associated the co-ingestion of substances, especially central nervous system depressants such as opiates/opioids, alcohol and benzodiazepines.

There has been a decline in deaths reported in 2009 from stimulants (cocaine, amphetamines, and ecstasy-type drugs). This is true both in terms of the proportion of all deaths in which stimulants were implicated, as well as the actual number of deaths.

The number of deaths involving piperazines and GBL/GHB continued to increase during 2009. The first death involving mephedrone (a methcathinone) was also reported to *np*-SAD; this fatality happened towards the end of 2009. Others have occurred in 2010 and will be included in next year's report.

np-SAD

Regional key findings

England

A total of 1,524 deaths were reported for 2009 (1374 in 2008). The demographic and drug profiles remained stable. The most common prescribed medications implicated in death were anti-depressants (54%) followed by hypnotics/sedatives (41%). There was an increase in the number of deaths persons of Black ethnicity, from 14 in 2008 to 31 in 2009.

Wales

Notifications of 102 deaths were reported for 2009 (62 in 2008); there was improved compliance during the past year. The demographic and drug profiles remained stable. There was a higher ratio of male to female drug-related deaths in Wales during 2009 than in other countries within the UK;

Scotland

The number of deaths reported to police in Scotland remained stable in 2009 (n = 479). Opiates play a larger role in Scottish deaths than in other regions. Alcohol-in-combination with other substances and hypnotics/sedatives (mostly diazepam and temazepam) also feature prominently.

Northern Ireland

The number of cases reported was 65 (30 in 2008); this increase is due mostly to improved case identification methods and reporting arrangements. The male to female ratio is more equal than in other parts of the UK. The drug profile remained similar to recent years; heroin/morphine and methadone are less prominent than elsewhere.

The Islands

Seven deaths occurred on the Isle of Man, 5 on Jersey, but none on Guernsey during 2009. The general demographic profile of cases in the Islands is in line with the pattern in the UK as a whole. There are proportionately fewer deaths involving cocaine and methadone; but there is a greater role played by other opiate/opioid analgesics; heroin/morphine; and anti-depressants.

Key messages

Whilst there have been no major changes during the past in the principal illicit drugs and prescribed medications implicated in drug-related deaths, some shifts in direction can be observed. Opiates and opioids continue to increase their role in causing premature mortality, but towards the end of 2009 there was a noticeable decline in the number and proportion of cases involving stimulants.

Substances such as piperazines, ketamine and GBL which at the time of last year's report were 'legal highs' but are now controlled drugs, continue to be present in post-mortem toxicology reports - although possibly stabilising. However, towards the end of 2009 new substances, chiefly methcathinones such as mephedrone started to appear in reports to *np*-SAD. The speed with which these and other new substances are replacing established recreational drugs appears to accelerating. It is therefore important that surveillance and monitoring of the situation continues.

Introduction

This eleventh annual report continues the series of reports published by the national programme on Substance Abuse Deaths (*np*-SAD). It covers deaths occurring between January and December 2009 reported to the Programme, as well as presenting information on emerging trends, and seeking to identify future potential issues that need monitoring.

There is a chapter for each constituent part of the UK (England, Wales, Scotland, Northern Ireland and Guernsey, Jersey and Isle of Man) with data tables. Chapter 1 provides a substantive description of the situation regarding drug-related deaths in England during 2009, including data tables for a detailed breakdown of areas within England. Chapters 2 to 5 cover the other parts of the UK and Islands, with Chapter 6 presenting findings for the UK as a whole. A commentary and emerging issues is given in Chapter 7. Chapter 8 describes the role of drugs in death and has been written to assist coroners, pathologists, toxicologists and clinicians and others involved in investigating suspected drug-related deaths.

The appendices provide information on the Programme (Appendix 1), drug-related death definitions (Appendix 2), the areas reporting, (Appendix 3), and the Programme's data collection form (Appendix 4).

Quality Assurance of Data

The Programme has given consideration as to how it can ensure the quality, accuracy and comprehensiveness of the data collected in order to improve both the quality of information collected and to establish if all relevant cases are being identified and notified. Following a pilot phase in 2008-9, a continuous rolling programme of visits to a sample of geographically representative coroners' areas in England and Wales was undertaken in 2009-10.

The on-going survey helps to establish the extent to which cases are being correctly identified. This makes it possible to extrapolate from the deaths notified by participating areas to the expected number of cases if all coroners were reporting all cases, thereby providing a much more precise estimate of drug-related deaths (DRDs) for policy and intervention planning.

This activity also provides insights into the quality and accuracy of the information submitted to the Programme, and has provided a firm basis for a continuous process of audit in the future, thereby ensuring the consistent validation of the Programme's surveillance's work. This work also facilitates the drawing up of detailed guidance for coroners and their staff in identifying and reporting relevant cases to *np*-SAD.

The methodology used for this study was to select and examine completed inquests for deaths, available in coroners' offices, occurring in 2008. A statistically representative sample of 150 DRDs reported to the Programme was drawn for the quality assurance aspect based on cases reported by coroners in England and Wales.

To ascertain the accuracy of case identification and reporting, a 10% sample of records was drawn randomly from files for all completed inquest (for whatever reason) for each selected coroner's area. A total of 375 such completed inquests on all types of death in 2008 were examined.

Geographical representativeness was based on selecting one coroner's area in each of the ten Strategic Health Authority (SHA) areas in England and two in Wales. For England there was a two-stage sampling process. In the first stage, three coroners' areas from each SHA area was selected on the basis of the highest number of inquests completed. The second stage consisted of randomly selecting one of these three areas for investigation.

The key findings from this survey show that the information received by the Programme from coroners is consistent with the coronial inquest file papers. This exercise did not identify any 'false positives' i.e. any over-reporting.

In 2008 five cases, where one or more controlled drugs or psychoactive substances were mentioned, were not reported to *np*-SAD. An extrapolation of these five cases projects an increase of 50 in the number of reported cases from coroners in England and Wales in 2008. The degree of under reporting in both the 2007 and 2008 cases is comparable (3.9% and 3.3% respectively). This underlines the consistency in reporting.

Chapter 1 Drug-related deaths in England

This chapter looks at drug-related deaths which occurred in England in 2009, and also examines trends over the past decade for illicit substances and prescribed medications implicated in death. Responses were received from a total of 94 out of 102 coroners' jurisdictions in England. This is a coverage rate of about 92%. The first section in this chapter examines cases that capture a range of psychoactive drugs, and covers the history of drug use irrespective of the cause of death. Included within this section is a comparison of those with a history of drug use against those without. This section highlights any changes made between 2008 and 2009 including figures for the jurisdictions and a breakdown for the English regions. The second section describes cases that meet the definition used by the Government for monitoring its drug strategy i.e. 'drug misuse' (Appendix 2). An examination of trends over the last decade using this definition is then presented. The distinctions between different age-groups, older drug users, and polysubstances have been given a special emphasis in this chapter.

Demographic profile

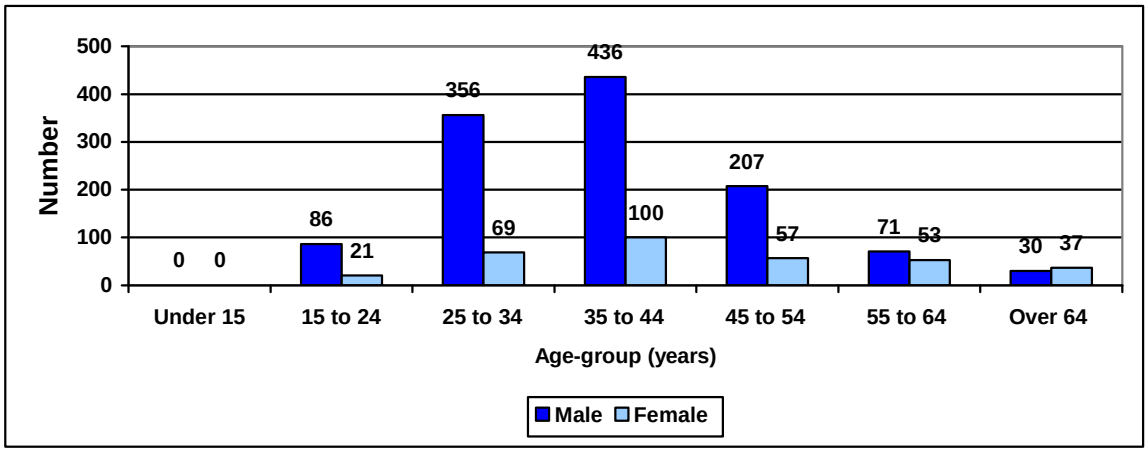
1. Demography

There were 1,524 drug-related deaths reported to the Programme in 2009. Seventy-eight percent of cases were male and 22% female (Table 1.1 and Figure 1.1). Half (49%) were unemployed. Seventy percent of deaths occurred for those less than 45 years old. There were similar proportions living alone (42%) or with others (40%), and 3% were of no fixed abode. Where ethnicity was known, the majority were White (93.4%); the rest (n = 101) were Black (2.8%), Asian (1.7%), and Other (2.1%).

Table 1.1: Demographic variables for *np*-SAD drug-related deaths, England, 2009

Variable	Category	Number (%)
Total		1,524 (100.0)
Gender	Male	1,187 (77.9)
	Female	337 (22.1)
Employment status	Unemployed	753 (49.4)
	Employed	409 (26.8)
	Childcare/houseperson	23 (1.5)
	Student	28 (1.8)
	Retired/sickness/invalidity	149 (9.8)
	Other	4 (0.3)
	Not known	158 (10.4)
Living arrangements	Alone	641 (42.1)
	With others	606 (39.8)
	No fixed abode	41 (2.7)
	Other	76 (5.0)
	Not known	160 (10.5)

Figure 1.1: *np*-SAD drug-related deaths by age and gender, England, 2009



2. Age

Most deaths in England during 2009 occurred amongst those aged 35 years and over (65%), one-quarter (28%) were aged 25-34, and only 7% were 15-24 years old, and less than one percent for those less than 15 years of age (Figure 1.2). The median age at death was 39.0 years (semi-interquartile range = 7.5). Older male, White drug users are at most risk of drug-related deaths (Bird et al, 2003; Ghodse et al, 2009). Of the 1,524 cases that died in England in 2009, 108 were under 24 years old, and 295 were 50 and over.

3. Older age-groups

Exposure to a history of drug use or addiction increased with age. Older drug users are defined here as those aged over 40 years at the time of death, and with a known history of drug use or addiction. However, they need not necessarily have been known to treatment services. The survival rate of older drug users has increased over the years from 463 cases in 2000 to 739 in 2009. The median age at death of those with a history of drug abuse was 32 years in 2000; by 2009 this had risen to 37 years.

Over the past decade there was little significant change in the main demographic characteristics of drug users aged over 40; more than half were unemployed compared with about 25% employed and 10% retired. In 2009, half of such cases lived alone, whilst 32% lived with others, compared to 42% and 40% respectively of all-age cases in 2009. Males accounted for between 75-85% of deaths in drug users over 40 during the past decade. For this age-group the number of deaths declined as age rose; the oldest individuals were 90 years of age.

When looking at manner of death (see Appendix 1 for how this is defined), over the past decade accidental deaths accounted for the largest proportion (55%) amongst all age-groups. Those aged 51-60 experienced the highest intentional overdoses out of those aged over 40; in 2009 suicides accounted for 5% of deaths for those aged 51-60, and 1% for those aged 41-50. By comparison, in 2008 suicides accounted for 8% of deaths for those aged 51-60, and 3% for those aged 41-50.

There were more deaths in the 41-50 years age-group compared to older age-groups. This pattern remained constant over the past decade.

There was a steady year on year increase during the past decade in deaths amongst those aged over 40 years (Figure 1.3). In addition, more deaths have been reported for those with a drug history, and those injecting.

Figure 1.2: *np*-SAD drug-related deaths by age-group, England, 2009

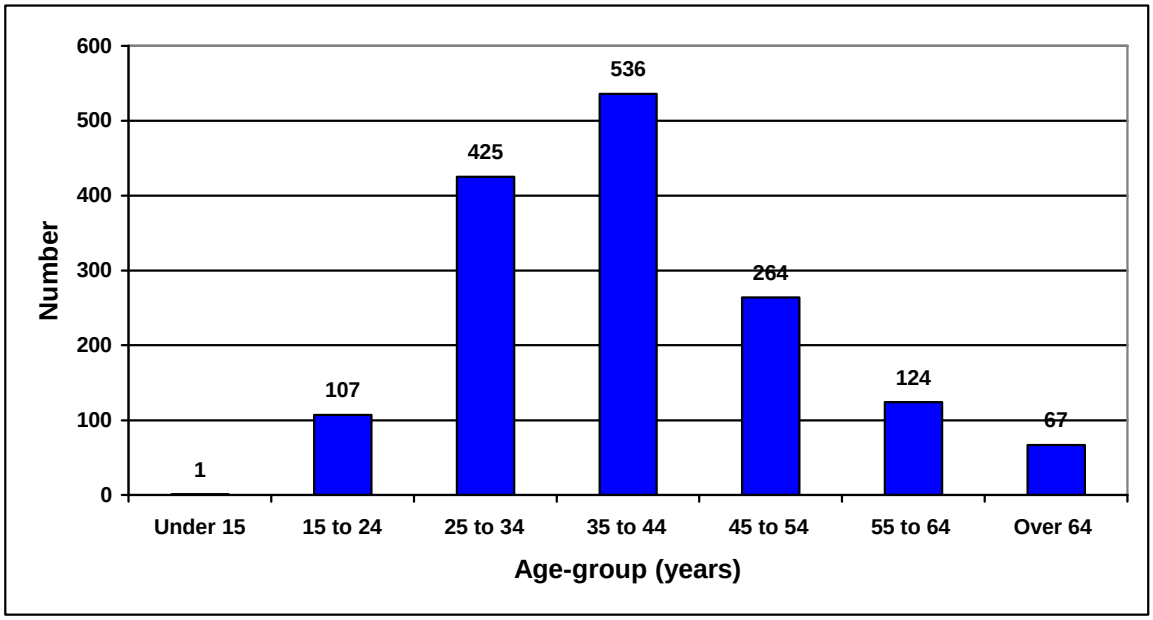
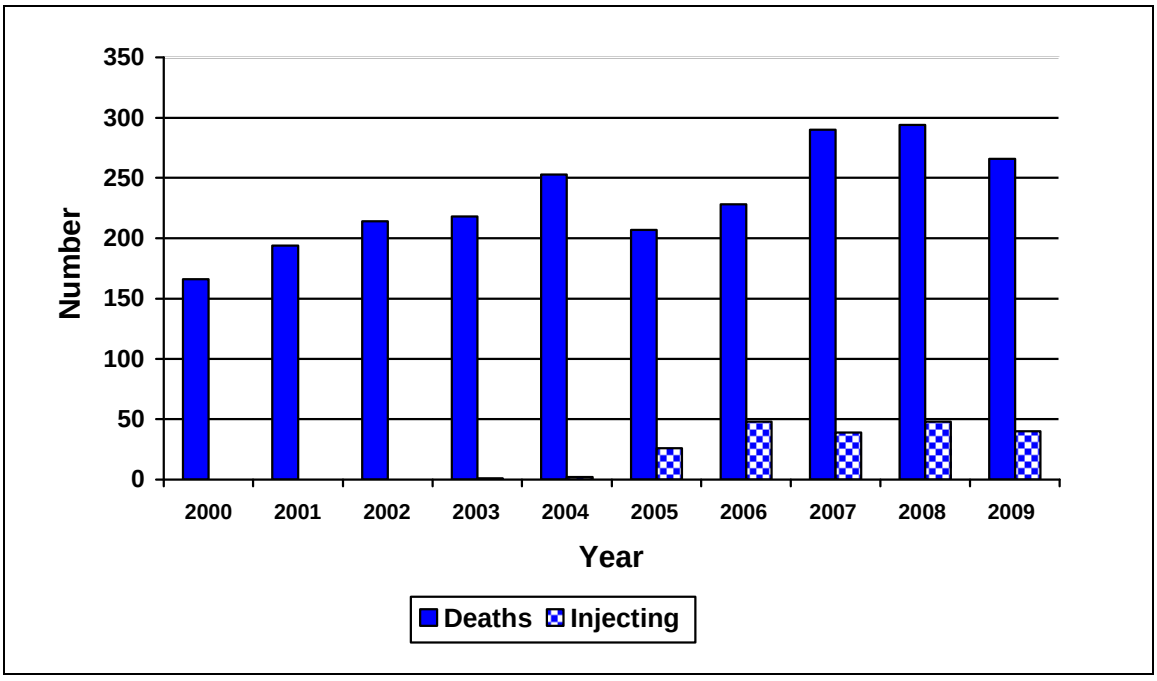


Figure 1.3: np-SAD drug-related deaths of drug users, aged over 40 years, England, 2000-9



In the past ten years, older drug users (41+ years) were most commonly prescribed hypnotics/sedatives: 41-50 (25%), 51-60 (33%); and 71 and over (29%). The exception was in the 61-70 age-group, where anti-depressants were the more frequently prescribed substances (39%). Hypnotics/ sedatives were the second most commonly prescribed medication (33%) for the 61-70 years age-group. Methadone was prescribed to just under a quarter amongst the 41-50 and 51-60 age-groups compared to 12% for those aged 61-70, and was not prescribed to those aged 71 and over. The prescribing of other opiates/opioid analgesics increased with age; 10% for those aged 41-50 years and 20% for those aged 51 and over. Heroin/morphine was prescribed not more than 3% over the decade

irrespective of age with an exception for those aged 71 and over for whom it was 8%.

Seventy-three percent of cases involved prescribed medication which was also implicated in the death. Seven percent of older drug users (41+ years) were prescribed anti-depressants which were implicated in death (Figure 1.4). Five percent of younger drug users (less than 40 years old) were prescribed anti-depressants implicated in death. Eight percent of older drug users were prescribed hypnotics/sedatives which were implicated in death whilst 6% of younger drug users were prescribed hypnotics/sedatives. Sixteen percent of older drug users were prescribed methadone which was implicated in death, compared to 10% of younger drug users.

Figure 1.4: Comparison of prescribed psychoactive drugs implicated in *np*-SAD deaths amongst drug users, England, 2000-9

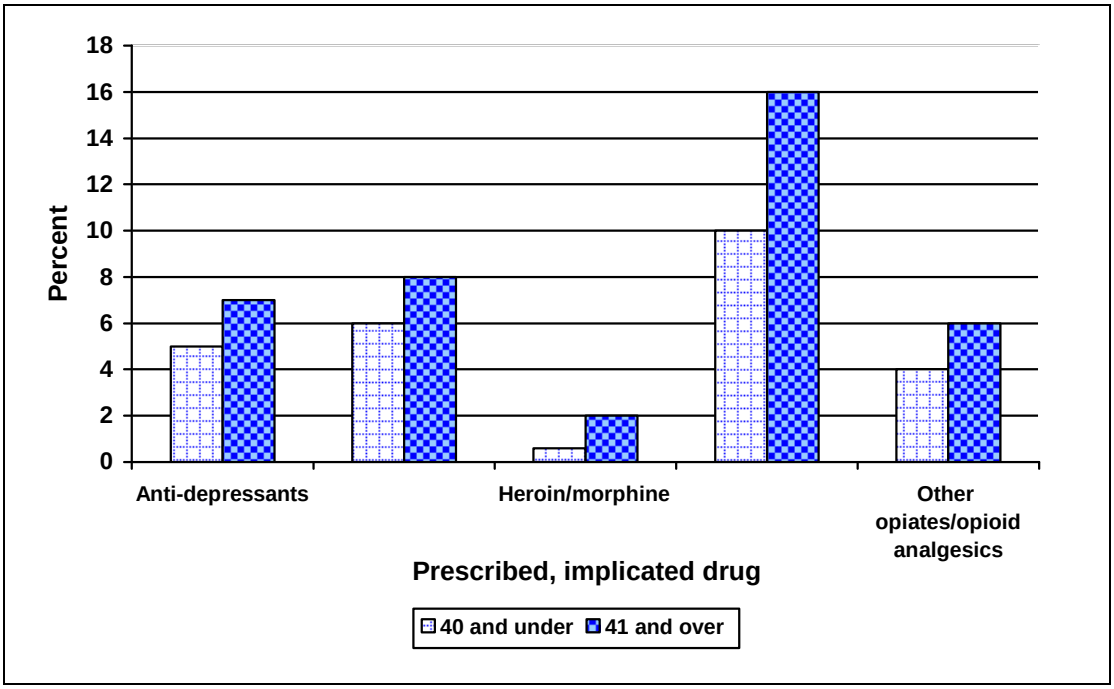
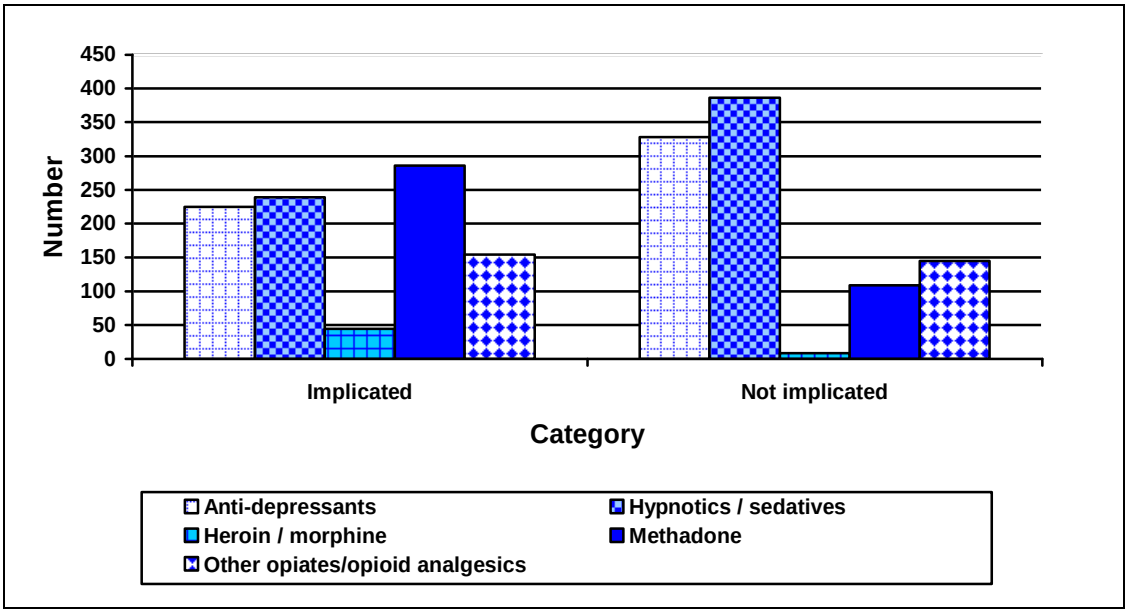


Figure 1.5 shows that 85% of older drug users (over 40 years) prescribed heroin/morphine had that same medication implicated in death. Prescribed methadone was implicated in 73% of deaths of those to whom it was prescribed; for those prescribed other opiates/opioid analgesics the proportion was 52%.

Figure 1.5: Prescribed medication implicated vs. non-implicated in *np*-SAD deaths of drug users aged over 40 years, England, 2000-9



4. Location of death

In 2009 73% of cases died either at the deceased's home address or another private residential address, 18% died in hospital, and 8% died elsewhere (e.g. public open space, public facilities, or railway station).

5. Underlying cause(s) of death

The categories of underlying cause(s) of death for coding within ICD-10 (Appendix 1) were as follows:

- Accidental poisoning (X40-X47): 66.0%
- Intentional self-poisoning (X60-X67): 11.4%
- Poisonings of undetermined intent (Y10-Y15): 10.2%
- Other (e.g. natural causes, drowning, hanging, unascertained): 12.4%

Males were significantly more likely than females to die of accidental poisoning (70% vs. 52%) (*Proportion Ratio PR: = 1.4, 95% Confidence Interval CI: = 1.2 – 1.5*). Females, by contrast, were significantly more likely than males to die of intentional self-poisoning (23% vs. 8%) (*PR = 2.8, 95% CI = 2.1 – 3.7*), and poisoning of undetermined intent (16% vs. 9%) (*PR = 1.9, 95% CI = 1.4 – 2.5*).

Deaths of those aged less than 45 years were more likely than older cases to die of accidental poisoning (74% vs. 49%) (*PR = 1.5, 95% CI = 1.4 – 1.7*). This said, the most frequent underlying cause of death within each group was accidental: under 18 (57%); 18-24 (68%); 25-29 (76%); 30-34 (75%); 35-39 (74%); 40-49 (69%); and over 50 (41%).

There were 505 accidental poisonings by narcotics and psychodysleptics for those aged 35 and over. There were 286 for the 25-34 age-group, and 63 for those aged 15-24 years. Accidental poisoning by hypnotics/sedatives, anti-depressants and psychotropic substances were again highest amongst those aged 35 years and over (77), compared to those aged 25-34 (20) and 15-24 (8). Studies in Australia have shown that a reduction in registering for opioid pharmacotherapy for those aged les than 35 years is greater than those aged 35 and over. A 41% drop was experienced amongst the 25-34 age-group and a 26% drop for 15-24 year-olds, when compared to those aged 35 and over, where no change in levels was experienced (Degenhardt et al, 2005).

In England, those aged 45 years or over were more likely than younger cases to die of intentional self-poisoning (24% vs. 6%) (*PR = 3.9, 95% CI = 2.9 – 5.0*), and poisoning of undetermined intent (14% vs. 11%) (*PR = 1.8, 95% CI = 1.3 – 2.4*).

For those aged over 50 intentional overdoses accounted for half of the overall total of such deaths in all age-groups (88/175). The main mechanism of death (as given in the first line

of the cause of death field on the death certificate) for intentional overdoses for those aged 50 and over involved either anti-depressants, or sedatives/hypnotics (23) rather than narcotics and pyschodysleptics (15). Intentional hanging was greatest for age groups 25-29 (7), and 18-24 (6), compared to those aged over 50 (2). Asphyxiation was the most frequent cause of death which was non-substance related, amongst older age-groups, as well as respiratory failure/depression and bronchopneumonia.

6. Manner of death

The results for 2009 cases are as follows:

- Natural: 3.2%
- Accidental: 70.2%
- Suicidal: 14.5%
- Homicidal: 0.1%
- Undetermined: 10.8%
- Unclassified/not specified: 1.2%

Males were more likely than females to die an accidental death (75% vs. 54%) (*PR = 1.4, 95% CI = 1.2 - 1.5*). Conversely, females were more likely than males to die of suicide (25% vs. 11%) (*PR = 2.3, 95% CI = 1.8 – 2.9*), or a death where the manner was undetermined (15% vs. 10%) (*PR = 1.5, 95% CI = 1.1 – 2.1*).

Cases aged less than 45 years were more likely than older cases to die accidentally (78% vs. 53%) (*PR = 1.5, 95% CI = 1.4 - 1.6*). Those aged 45 years or over were more likely than younger cases to die intentionally (26% vs. 10%) (*PR = 2.7, 95% CI = 2.2 – 3.5*), or in a manner that was undetermined (15% vs. 9%) (*PR = 1.6, 95% CI = 1.2 – 2.2*).

Substances implicated in death

1. All substances

Of the 1,524 cases reported, 1,419 were directly implicated to psychoactive drugs. Seven percent (n = 105) were not included, as no psychoactive drug was implicated in the cause of death, however there could be a history of drug abuse. The principal substances implicated were heroin/morphine (49%), alcohol in combination with other substances (32%), other opiates/opioid analgesics (21%), methadone (20%), hypnotics/sedatives (19%); anti-depressants (18%), and cocaine (10%) shown in Table 1.2.

Heroin/morphine was the most frequently identified substance implicated (either as a single drug or in combination) in death for most age-groups: less than 18 (14%); 18-24 (47%); 25-29 (48%); 30-34 (58%); 35-39 (54%); and 40-49 (47%); followed by methadone and other opiate/opioid analgesics (Figure 1.6). For the over 50s other opiate/opioid analgesics (37%) was the most frequently identified substance implicated, followed by anti-depressants (27.8%), heroin/morphine (26%), and hypnotics/ sedatives (18%).

Table 1.2: Psychoactive substances implicated in *np*-SAD deaths, England, 2009

Drug category	Number (%) of cases where no other substance was implicated	Number (%) of cases where drug was implicated
Total	1,419 (100.0)	1,419 (100.0)
Alcohol	-	447 (31.5)
Amphetamines	16 (1.1)	33 (2.3)
Anti-depressants	74 (5.3)	262 (18.4)
Anti-epileptics	2 (0.1)	17 (1.3)
Anti-Parkinson's	2 (0.1)	4 (0.4)
Anti-psychotics	11 (0.8)	51 (3.6)
Cannabis	4 (0.3)	22 (1.6)
Cocaine	27 (1.9)	142 (10.0)
Ecstasy-type drugs	2 (0.1)	6 (0.4)
GHB	6 (0.4)	15 (1.0)
Heroin/morphine	238 (16.8)	698 (49.2)
Hypnotics/sedatives	18 (1.3)	275 (19.4)
Methadone	56 (3.9)	282 (19.8)
Other opiates/opioid analgesics	71 (5.0)	301 (21.2)

Notes: Column totals may sum to more than 100% since more than one substance may be implicated in a death. Not all cases had drugs directly implicated in death; these are excluded from this table.

Other opiates/opioid analgesics was implicated in 24% of deaths for those aged 35 and over (Figure 1.7), 18% for deaths within the age-group 25-34, and just 11% for those aged 15-24. Alcohol-in-combination with another substance accounted for 64% of deaths for those aged over 35, whilst it more than halved for 25-34 (30%) and 15-24 (23%). For those aged 35 and over, alcohol-in-combination was implicated in 21% of total deaths.

Figure 1.6: Principal substances implicated in death, by selected age-groups, England, 2009

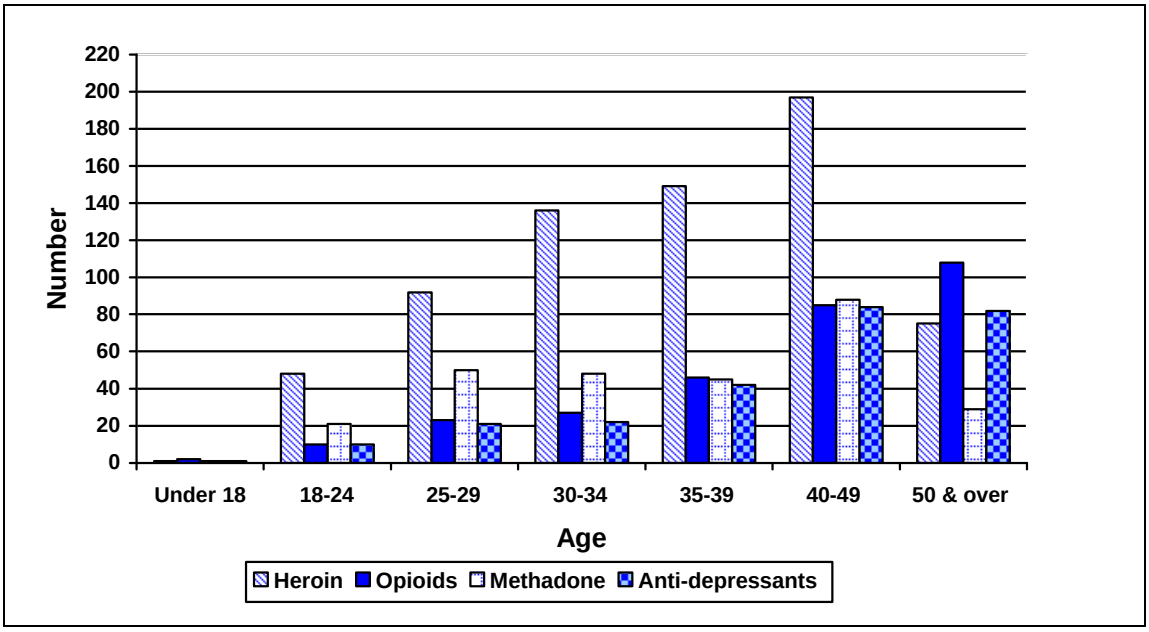
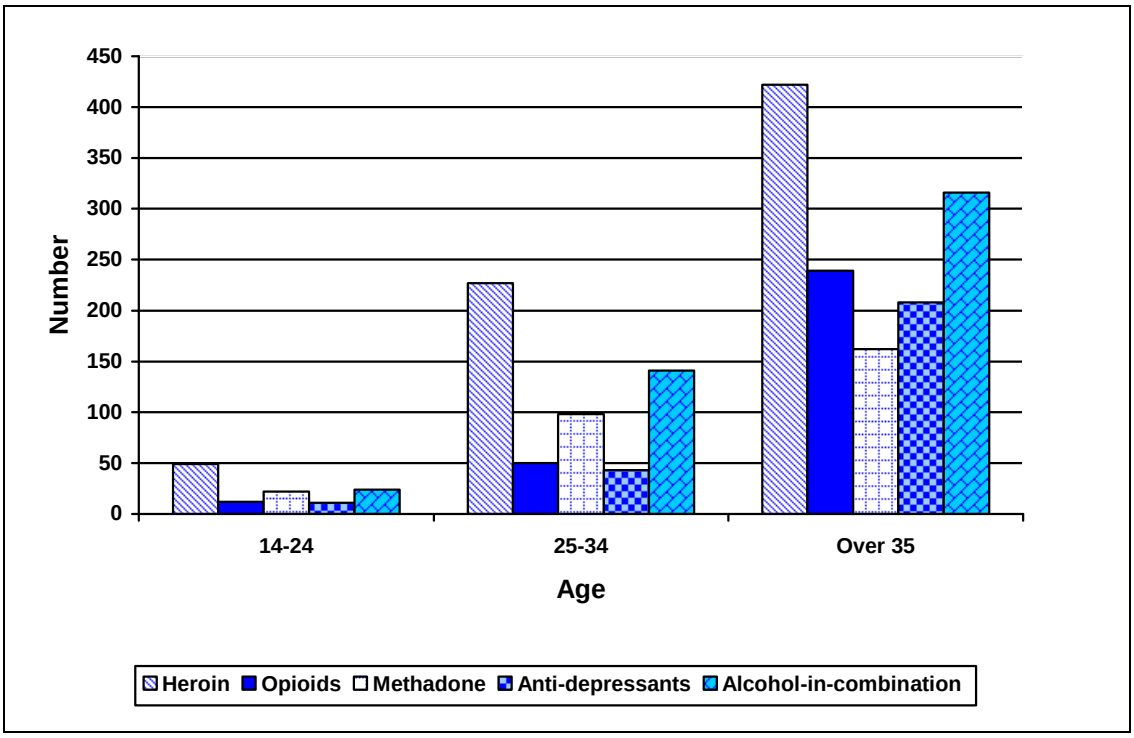


Figure 1.7: Principal substances implicated in deaths, by selected age-groups, England, 2009



For all age-groups heroin/morphine was identified as the most frequent single substance implicated in death, except for those aged 55 and over where other opiates/opioid analgesics was more frequent (Table 1.3).

Table 1.3: Age-group and psychoactive drug implicated in death, *np*-SAD cases, England, 2009

Age-group (years)	Number (%) where drug was implicated	Drug category (alone or in combination) most frequently implicated in each age group
All ages	1,419 (100.0)	Heroin/morphine (49.2%)
15–24	92 (6.5)	Heroin/morphine (53.3%)
25-34	398 (28.0)	Heroin/morphine (57.0%)
35-44	503 (35.4)	Heroin/morphine (56.9%)
45-54	246(17.3)	Heroin/morphine (39.0%)
55-64	118 (8.3)	Other opiates/opioid analgesics (39.8%)
65 & over	62 (4.4)	Other opiates/opioid analgesics (53.2%)

The pattern of drug-specific fatality is somewhat different in male and female cases. Among males, the most frequently mentioned drugs were: heroin/morphine (50%); alcohol-in-combination (30%); methadone (19%); hypnotic/sedatives (18%); other opiates/opioid analgesics (17%); anti-depressants (13%) and cocaine (10%). Furthermore, there is a higher proportion of cases of drug-specific fatality among males compared to females in respect of heroin/morphine, amphetamine, cannabis, cocaine, and GHB.

Among female cases, the most frequently mentioned drugs were: anti-depressants (31%); heroin/morphine (30%); other opiates/ opioid analgesics (29%); alcohol-in-combination (27%); hypnotic/sedatives (20%); and methadone (17%). Amongst females, there are a greater proportion of cases involving anti-depressants, other opiates/ opioid analgesics, and anti-psychotics.

2. Polysubstances

Over the past decade, one-fifth (21%) of drug-related deaths has involved heroin/morphine in combination with alcohol. Ten percent of deaths involved other opiates/opioid analgesics combined with alcohol, and 9% of deaths heroin/morphine and other opiates/opioid analgesics were combined. Opiates and opioids including heroin/morphine accounted for 70% of deaths where a psychoactive substance was involved. This pattern has remained stable for the past decade. The combination of heroin/morphine and other opiates/opioid analgesics fluctuated between 6% and 11% over the past ten years. The most prevalent substance combinations implicated during 2000-9 were: heroin/ morphine with alcohol (21%); heroin/morphine with hypnotics/sedatives (12%); and hypnotics/sedatives with alcohol (11%). Over the last decade alcohol-in-combination with two other stimulants constantly featured. Combinations of drugs, with or without alcohol, pose greater risks for mortality (Chapter 8).

The most frequent combinations of prescribed psychoactive drugs in 2000 were also the most common in 2009. Prescribed hypnotics/ sedatives in combination with anti-depressants accounted for 12% of cases in 2000 and 14% in 2009. Hypnotics/sedatives in combination with other opiates/opioid analgesics accounted for 7% of cases in 2000 compared to 6% in 2009. Again, hypnotics/sedatives together with anti-psychotics accounted for 5% in 2000 and 6% of cases in 2009.

3. Single substances

The following substances, as the sole implicated drug, accounted for 533 (38%) deaths: heroin/morphine (17%), other opiates/opioid analgesics (5%), anti-depressants (5%), methadone (4%), cocaine (2%), hypnotic/sedatives (1.3%), amphetamines (1.1%), anti-psychotics (0.8%) barbiturates (0.4%), cannabis (0.4%), GHB (0.4%), and ecstasy-type drugs (0.1%).

4. Prescribed psychoactive drugs

Altogether, 814 cases were reported to be receiving prescribed psychoactive drugs at the time of their death (Table 1.4). Within this group, prescribed drugs reported were: anti-depressants (54%); hypnotic/sedatives (41%); other opiate/opioid analgesics (24%); anti-psychotics (21%) and methadone (18%). 'Polypharmacy', i.e. multiple prescriptions of psychoactive drugs, occurred in 71% of these cases.

Prescribing medical history was directly related to age for those on prescribed medication at the time of their death. The result shows: under 18 (0.1%), 18-24 (4%), 25-29 (9%), 30-34 (13%), 35-39 (19%), 40-49 (30%), and 50 and over (25%). The most common prescribed medications were anti-depressants (29%) followed by hypnotics/ sedatives (22%). These prescribed medications increased with advancing age. Three-quarters of those aged 35 and over were on prescribed medication compared to other age-groups. For those aged 35 years and older hypnotics/sedatives were 46% higher compared to 25-34 age-group, and 88% higher than those aged 15-24 years old.

Table 1.4: Prescribed psychoactive medication, *np*-SAD cases, England, 2009

Drug category	Number (%) of cases on prescribed psychoactive medication	Number (%) of cases where same drug was implicated in death
Total	814 (100.0)	
Amphetamines	5 (0.6)	0 (0.0)
Anti-depressants	441 (54.1)	185 (42.0)
Anti-epileptics	87 (10.7)	13 (14.9)
Anti-psychotics	173 (21.3)	43 (24.9)
Heroin/morphine	41 (5.0)	32 (78.0)
Hypnotic/sedatives	335 (41.1)	114 (34.0)
Methadone	144 (17.7)	97 (67.4)
Other opiates/opioid analgesics	197 (24.2)	111 (56.3)
Note: Column totals may sum to more than 100% since more than one substance may be prescribed to an individual and more than one substance may be implicated in a death.		

The following paragraphs take a closer look at the relationship between deaths and the involvement of prescribed medication.

Methadone, alone and in combination with other drugs, was implicated in 282 cases. Of these, 66% may have obtained methadone from illicit sources, compared to 34% who were known to be receiving prescribed methadone prior to their death *(PR = 1.9, 95% CI = 1.6 - 2.3)*.

Methadone alone was implicated in 56 cases. Of these, 54% may have obtained the drug from illicit sources, compared to 46% who were known to be receiving prescribed methadone, compared to *(PR = 1.2, 95% CI = 0.8 – 1.7)*.

Hypnotic/sedatives, alone and in combination with other drugs, were implicated in 275 cases. Of these, 59% may have obtained them illicitly, compared to the 41% who were known to be receiving a prescription for this class of drug *(PR = 1.4, 95% CI = 1.2 – 1.7)*.

Eighteen cases had hypnotic/sedatives alone implicated in their death, of whom 7 (39%) had received the drug on prescription, compared to 11 (61%) who may have obtained it illicitly *(PR = 1.6, 95% CI = 0.8 – 3.1)*.

Anti-depressants, alone and in combination with other drugs, were implicated in 262 cases. Of these, 71% were known to be receiving prescribed anti-depressants at the time of their death, compared to 29% who may have used drugs prescribed for others *(PR = 2.4, 95% CI = 2.0 – 2.9)*.

Anti-depressants alone were implicated in 74 cases. Of these, 62% were known to be receiving prescribed anti-depressants, compared to 38% who may have used drugs prescribed for others *(PR = 1.6, 95% CI = 1.1 – 2.3)*.

Other opiates/opioid analgesics (e.g. dihydrocodeine, dextropropoxyphene) alone and in combination with other drugs, were implicated in 301 cases. Of these, 63% may have obtained the drug by other means, compared to the 37% who were known to be receiving prescribed opiate/opioid analgesics prior to their death (*PR = 1.7, 95% CI = 1.4 - 2.0*).

Other opiate/opioid analgesics alone were implicated in 71 cases. Of these, the drugs were apparently obtained by other means in 52% of cases, compared to being prescribed in 48% of cases (*PR = 1.1, 95% CI = 0.7 - 1.9*).

Drug abuse/dependence

Cases reported with a history of drug abuse/dependence or recreational drug use (DAs) accounted for 69% (n = 772). Those without such a history, non drug abusers (NDAs) accounted for 31% (n = 341). Four hundred and ten cases (27%) were reported as "not known" with respect to history of drug abuse/dependence. These cases were excluded from further analysis.

1. Demography

The cases were more likely to be male (*PR = 1.4 95% CI = 1.2 - 1.5*) and less than 45 years of age, 77% compared to 49% (*PR = 1.6, 95% CI = 1.4 - 1.8*). The median age at death for DAs was 37.6 years (semi-interquartile range = 6.1), while that for NDAs was 44.0 years (semi-interquartile range = 11.1) (*Mann-Whitney U = 93,559.0 p < 0.0005*).

2. Location of death

There was no significant difference between DAs (72%) and NDAs (75%) with respect to the location of their death. In both groups the majority died at home or in a defined residential address. Hospital deaths accounted for a similar proportion of both DA (19%) and NDA (18%) deaths. A higher proportion of DAs (9%) died in temporary accommodation or in public places than NDAs (5.8%). However, this difference was not statistically significant.

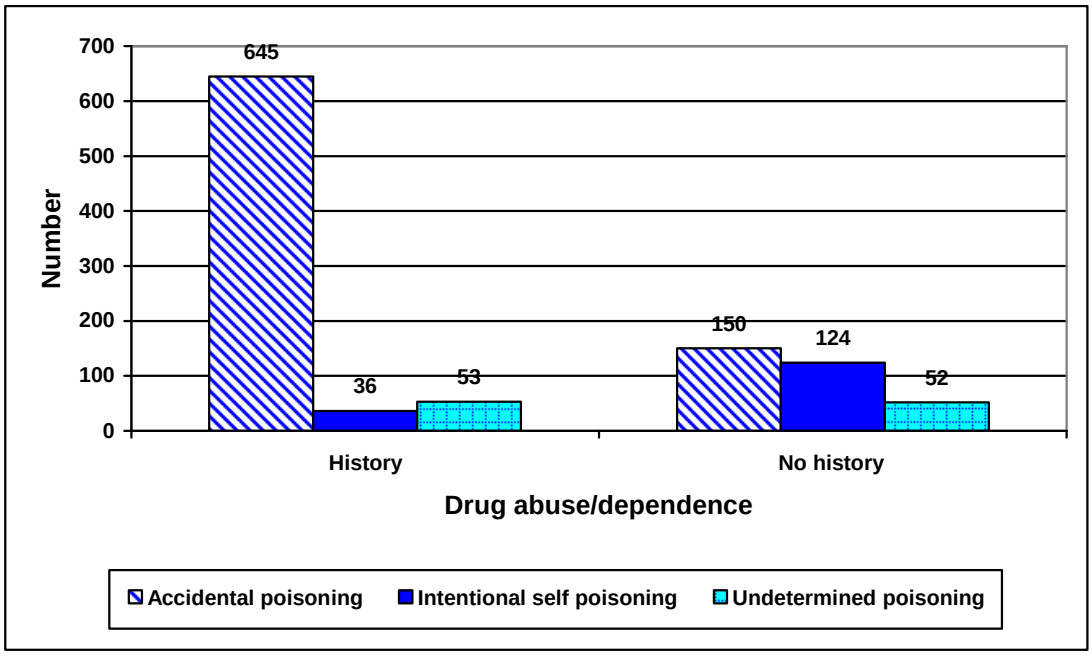
3. Underlying cause(s) of death

DAs were more likely than NDAs to die of accidental poisoning (79% vs. 40%) (*PR = 2.0, 95% CI = 1.7 - 2.2)* - see Figure 1.8. NDAs, by contrast, were more likely than DAs to die of intentional self-poisoning (32% vs. 2%) (*PR = 17.6, 95% CI = 10.2 - 30.3*), and poisoning of undetermined intent (17% vs. 6%) (*PR = 3.0, 95% CI = 2.1-– 4.3*).

4. Manner of death

A similar pattern is exhibited with regard to manner of death. DAs were more likely than NDAs to die an accidental death (83% vs. 44%) (*PR = 1.9, 95% CI = 1.7 - 2.1*). Conversely, NDAs were more likely than DAs to die of suicide (36% vs. 5%) (*PR = 7.8, 95% CI = 5.1- 11.1*), or a death where the manner was undetermined (15% vs. 7%) (*PR = 2.2, 95% CI = 1.5 - 3.2*).

Figure 1.8: Principal underlying cause(s) of death by drug abuse/dependence history, *np*-SAD cases, England, 2009



Changes between 2008 and 2009

The following section compares deaths in 2009 with those that occurred in 2008. Deaths in 2009 are reported as 1,524. During the same time-frame in 2008, 1,374 cases were reported. This is an increase in reporting of 11% in 2009. Figures for 2009 (and 2008, to a lesser extent) can be expected to increase as further inquests on drug-related deaths are completed and reported to the Programme. The figures for 2009, therefore, cannot be compared directly with those in previous *np*-SAD publications.

1. Demography

Whilst there were small changes between 2008 and 2009, the demographic profile of cases remained stable with no significant changes in age, gender, and employment status distributions. Ethnicity remained similar except for those of Black ethnicity the number of whom doubled from 14 in 2008 to 31 in 2009. There was a decrease in the proportion of cases of no fixed abode (from 5.8% to 2.7%). A small increase was observed in the proportion of deaths occurring in residential premises (from 70% to 73%).

2. Underlying cause(s) of death

The proportion of accidental deaths remained stable at 66% in 2009 (65% in 2008). Whilst intentional self-poisoning deaths decreased slightly from 13% in 2008 to 11% in 2009, and poisonings of undetermined intent decreased from 11% to 10%, deaths from other causes increased slightly from 11% to 12%.

3. Manner of death

The relatively stable patterns observed for underlying cause(s) of death were echoed for the manner of death. The only change of note was a small decrease in the proportion of undetermined deaths from 13% to 11%.

4. Substances implicated in death

4.1 Multiple substances

In 2009 there were 1,419/1524 deaths that involved psychoactive substances; 105 cases were excluded from the following analyses as they did not involve psychoactive substances. The number of 2008 cases examined was 1,286. Heroin/morphine remained the most frequently mentioned drug in 2009, having been implicated in 49% of deaths 946% in 2008). There were increases both in the number and proportion of mentions for heroin/morphine, methadone, anti-depressants cannabis, hypnotic/sedatives, and other opiates/opioid analgesics (Table 1.5).

4.2 Single substance

There were slight changes between 2008 and 2009 in the proportions accounted for by fatalities involving a single psychoactive substance. There were decreases in the proportions accounted for by methadone, cocaine, ecstasy-type drugs, other opiates/ opioid analgesics, anti-epileptics, anti-Parkinson's, and anti-psychotics. There were increases for anti-depressants, cannabis, GHB, heroin/morphine and hypnotics/ sedatives (Table 1.6).

Table 1.5: Changes in proportions of psychoactive substances implicated in multiple substance deaths, *np*-SAD cases, England, 2008 and 2009

Substance	2008 (N = 1,286) ‡	2008 (N = 1,592) †	2009 (N = 1,419)	Percentage Ratio (PR)	95% CI	Change (percentage points)
Alcohol-in-combination	32.7	31.0	31.5	1.0	0.9 - 1.2	- 1.2
Amphetamines	4.2	3.9	2.3	1.8	1.2 – 2.8	- 1.9
Anti-depressants	18.0	18.7	18.5	1.0	0.9 - 1.2	+ 0.5
Anti-epileptics	1.8	1.8	1.3	1.3	0.7 – 2.4	- 0.5
Anti-Parkinson's	0.4	0.3	0.4	1.1	0.3 - 3.6	-
Anti-psychotics	4.6	4.9	3.6	1.3	0.9 – 1.8	- 1.0
Cannabis	1.4	1.6	1.6	1.1	0.6 - 2.1	+ 0.2
Cocaine	14.0	13.7	10.0	1.4	1.1 – 1.7	- 4.0
Ecstasy-type drugs	2.3	2.3	0.4	5.3	2.2 – 12.8	- 1.9
GHB	1.0	0.9	1.0	1.1	0.5 - 2.3	-
Heroin/morphine	45.5	43.5	49.2	1.1	1.0 - 1.2	+ 3.7
Hypnotic/sedatives	15.9	15.5	19.4	1.2	1.0 - 1.4	+ 3.5
Methadone	19.5	19.4	19.8	1.0	0.9 - 1.2	+ 0.3
Other opiates/ opioid analgesics	20.6	20.2	21.2	1.0	0.9 - 1.2	+ 1.4

Note: Column totals may sum to more than 100% since more than one substance may be implicated in a death.
†On average approximately 300 cases of inquest from the year of death are not completed and are added to next year.
‡ The PR and CI are based on the year on year 2008 figure

Table 1.6: Changes in proportions of psychoactive substances implicated in single substance deaths, *np*-SAD cases, England, 2008 and 2009

Substance	2008 (N = 1,286) ‡	2008 (N = 1,592) †	2009 (N = 1,419)	Percentage Ratio (PR)	95% CI	Change (percentage points)
Amphetamines	1.2	1.1	1.1	1.0	0.5 – 1.9	- 0.1
Anti-depressants	5.1	5.4	5.2	1.0	0.7 - 1.4	+ 0.1
Anti-epileptics	0.5	0.4	0.1	3.3	0.7 – 16.4	- 0.4
Anti-Parkinson's	0.2	0.1	0.1	1.1	0.2 – 7.8	- 0.1
Anti-psychotics	0.9	1.1	0.8	1.1	0.5 – 2.5	- 0.1
Cannabis	0.2	0.3	0.3	1.8	0.3 – 9.9	+ 0.1
Cocaine	3.5	3.5	1.9	1.8	1.2 – 2.9	- 1.6
Ecstasy-type drugs	0.8	0.8	0.1	5.5	1.2 – 25.1	- 0.7
GHB	0.2	0.3	0.4	2.3	0.4 – 11.7	+ 0.2
Heroin/morphine	16.3	15.3	16.8	1.0	0.9 – 1.2	+ 0.5
Hypnotic/sedatives	1.1	1.1	1.3	1.2	0.6 – 2.3	+ 0.2
Methadone	5.9	6.0	3.9	1.5	1.1 – 2.1	- 2.0
Other opiates/ opioid analgesics	5.7	5.8	5.0	1.1	0.8 – 1.5	- 0.7

Note: Column totals may sum to more than 100% since more than one substance may be implicated in a death.
†On average approximately 300 cases of inquest from the year of death are not completed and are added to next year.
‡ The PR and CI are based on the year on year 2008 figure

Deaths per 100,000 population by area

This section provides information by different geographical units for the number of deaths per 100,000 population aged 16 years and older. Tables A and B provide information by coroners' jurisdiction, Tables C and D provide breakdown by DA(A)T area, and Table E by Primary Care Trust area.

Jurisdictions with highest rates in 2009

The following coroner's jurisdictions in England reported annual drug-related death rates higher than 10/100,000 population in 2009: Brighton & Hove (23.55); East Lancashire (13.97); North Tyneside (13.03) and Liverpool (11.72). Of these four areas, Brighton & Hove showed a small increase (from 21.2), the rest showed significant increases from 2008; East Lancashire (8.84); North Tyneside (5.88) and Liverpool (8.93).

Jurisdictions with lowest rates in 2009

The following jurisdictions reported annual drug-related death rates of less than 1/100,000 population in 2009: West Sussex (0.16); Avon (0.23); North Yorkshire Eastern (0.49); Essex & Thurrock (0.73); and Eastern Somerset (0.92). The following areas experienced decreases in death rates from 2008; West Sussex (4.43); Avon (0.46); North Yorkshire Eastern (2.43); and Eastern Somerset (5.07). Essex & Thurrock (0.73) increased from 2008 (0.27). The following areas reported that there had been no relevant cases: Isle of Scilly; Spilsby & Louth and Great Yarmouth.

Table A: England cases in 2009 by coroner's jurisdiction (16 years and over) and deaths in 2008 reported in 2009/10

Coroner's Jurisdiction & county district	*np*-SAD deaths Jan-Dec 2009	Annual death rate per 100,000 population [1]	*np*-SAD 2008 deaths reported in 2009/10 [2]
Queen's Household	0	0.00	0
ENGLAND			
AVON	2	0.23	3
BEDFORDSHIRE	21	4.44	1
BERKSHIRE	7	1.06	1
BUCKINGHAMSHIRE			
Buckinghamshire	10	2.56	0
Milton Keynes	-	-	-
CAMBRIDGESHIRE			
North & East Cambridgeshire	-	-	-
Peterborough	7	5.42	1
South & West Cambridgeshire	-	-	-
CHESHIRE	27	3.32	24
CORNWALL			
Cornwall	21	4.79	10
Isles of Scilly	0	0.00	0
CUMBRIA			
North & West Cumbria	11	4.97	0
South & East Cumbria	6	3.17	0
DERBYSHIRE			
Derby & South Derbyshire	19	3.94	1
North Derbyshire	15	4.56	1
DEVON			
Exeter & Greater Devon	21	4.93	11
Plymouth & South West Devon	7	2.90	0
Torbay & South Devon	2	1.01	0
DORSET			
Bournemouth, Poole & Eastern Dorset	25	6.26	0
Western Dorset	4	2.11	0
DURHAM			
Darlington & South Durham	4	1.79	1
North Durham	4	1.47	0
EAST SUSSEX			
Brighton & Hove	50	23.55	1
East Sussex	23	5.51	3
ESSEX			
Essex & Thurrock	8	0.73	2
Southend & South East Essex	15	5.54	1
GLOUCESTERSHIRE	9	1.90	5
GREATER MANCHESTER			
Manchester	33	8.83	16
North Manchester	27	5.63	15
South Manchester	20	3.50	1
West Manchester	19	3.00	1
HAMPSHIRE			
Central Hampshire	14	5.02	2
North East Hampshire	7	2.22	0
Portsmouth & South East Hampshire	26	5.68	8
Southampton & New Forest	26	7.69	0

Coroner's Jurisdiction & county district	*np*-SAD deaths Jan-Dec 2009	Annual death rate per 100,000 population [1]	*np*-SAD 2008 deaths reported in 2009/10 [2]
HEREFORDSHIRE	5	3.40	0
HERTFORDSHIRE	18	2.11	1
HUMBERSIDE			
East Riding & Hull	20	4.13	1
ISLE OF WIGHT	6	5.17	1
KENT			
Central & South East Kent	11	4.14	10
Mid Kent & Medway	6	1.45	4
North East Kent	24	8.87	0
North West Kent	5	1.35	1
LANCASHIRE			
Blackburn, Hyndburn & Ribble Valley	20	9.15	0
Blackpool & the Fylde	10	5.53	0
East Lancashire	20	10.28	1
Preston & West Lancashire	37	6.39	1
LEICESTERSHIRE			
Leicester City & South Leicestershire	12	2.86	0
Rutland & North Leicestershire	13	3.55	0
LINCOLNSHIRE			
Boston & Spalding	6	6.97	0
North Lincolnshire & Grimsby	17	6.63	0
Spilsby & Louth	0	0.00	0
Stamford	-	-	-
West Lincolnshire	6	2.75	0
LONDON			
City of London	1	13.97	0
Eastern London	15	1.71	0
Inner North London	54	7.86	2
Inner South London	41	4.92	2
Inner West London	16	2.12	0
Northern London	13	1.23	1
Southern London	11	1.31	8
Western London	77	7.39	37
MERSEYSIDE			
Knowsley, St Helens & Sefton	5	1.02	0
Liverpool	42	11.72	1
Wirral	8	3.19	0
NORFOLK			
Greater Norfolk	36	5.80	8
Great Yarmouth	0	0.00	0
NORTHAMPTONSHIRE	21	3.86	10
NORTHUMBERLAND			
North Northumberland	1	1.05	2
South Northumberland	7	4.34	0
NORTH YORKSHIRE			
North Yorkshire Eastern	1	0.49	0
North Yorkshire Western	6	2.11	0
York	-	-	-
NOTTINGHAMSHIRE	29	3.33	3
OXFORDSHIRE	16	3.11	2
SHROPSHIRE			
Mid & North Shropshire	2	1.25	4
South Shropshire	1	1.27	0
The Wrekin	6	4.68	0

Coroner's Jurisdiction & county district	*np*-SAD deaths Jan-Dec 20098	Annual death rate per 100,000 population [1]	*np*-SAD 2007 deaths reported in 2009/10 [2]
SOMERSET			
Eastern Somerset	2	0.92	3
Western Somerset	9	4.29	0
SOUTH YORKSHIRE			
South Yorkshire East	12	2.74	2
South Yorkshire West	20	3.24	1
STAFFORDSHIRE			
South Staffordshire	17	3.44	3
Stoke-on-Trent & North Staffordshire	18	4.79	2
SUFFOLK	17	2.95	0
SURREY	25	2.82	5
TEESSIDE			
Hartlepool	3	4.10	5
Teesside	26	6.90	8
TYNE & WEAR			
Gateshead & South Tyneside	10	3.57	0
Newcastle-upon-Tyne	3	1.33	0
North Tyneside	21	13.03	13
Sunderland	8	3.48	10
WARWICKSHIRE	12	2.80	5
WEST MIDLANDS			
Birmingham	48	5.05	34
Black Country	10	1.48	0
Coventry	4	1.62	0
Wolverhampton	-	-	7
WEST SUSSEX	1	0.16	0
West YORKSHIRE			
West Yorkshire Eastern	56	6.31	10
West Yorkshire Western	36	4.17	5
WILTSHIRE	13	2.52	3
WORCESTERSHIRE	17	3.75	20

Note that (0) refers to either no drug-related deaths or death rates of less than 0.01, whilst (–) indicates that no reports were submitted for the specific period from that jurisdiction or area. In subsequent reports these rates may increase as more inquests on deaths in 2009 are held and/or notified to the np-SAD. These rates should therefore be regarded as minimum rates. Rows for administrative counties have been shaded where there are coroner's areas located within them; coroners' areas which correspond to a complete administrative county have not been shaded.

(1) The rate per 100,000 population is based on published mid-year population estimates for local government administrative areas for the years in question. However, the areas covered by 23 of the coroners' jurisdictions in England and Wales are not co-terminous with these boundaries and cover parts of such areas (see Appendix 3). Where administrative areas are split between jurisdictions, the estimated population has been divided into two or three as applicable. However, this means that the population of some coroners' jurisdictions may be either over- or under-estimated. It is necessary to make such assumptions until more accurate figures can be obtained or calculated.

(2) Notified after the publication of the *np*-SAD Annual Report, 2009.

(3) The amalgamations of the following coroner's jurisdictions during the period covered by this report mean that rates for the new areas have been calculated retrospectively based on published figures: High Peak and Scarsdale were merged to form North Derbyshire (1 February 2006); Gloucester and Cheltenham merged to form Gloucestershire (1 April 2006). In Norfolk, King's Lynn and Norwich & Central Norfolk to form Greater Norfolk (6 April 2007); in Cumbria, the three jurisdictions of North East Cumbria, Southern Cumbria & Furness, and Western Cumbria to form two new areas - North & West Cumbria and South & East Cumbria (1 May 2007).

Table B: Changes in annual death rate per 100,000 population for *np*-SAD cases (16 years old and over), and annual percentage of all inquests held, 2008 and 2009

Coroner's Jurisdiction & county district	Number of *np*-SAD deaths 2008	Annual death rate per 100,000 population 2008 (1)	Annual % of all inquests held in 2008 (2)	Number of *np*-SAD deaths 2009	Annual death rate per 100,000 population 2009 (1)	Annual % of all inquests held in 2009 (2)
Queen's Household	0	0.00	0.00	0	0.00	0.00
ENGLAND						
AVON	4	0.46	0.57	2	0.23	0.29
BEDFORDSHIRE	34	7.19	14.17	21	4.44	10.88
BERKSHIRE	1	0.15	0.32	7	1.06	2.36
BUCKINGHAMSHIRE						
Buckinghamshire	10	2.56	5.88	10	2.56	9.80
Milton Keynes	6	3.34	5.77	-	-	-
CAMBRIDGESHIRE						
North & East Cambridgeshire	1	0.71	1.49	-	-	-
Peterborough	5	3.87	4.67	7	5.42	8.43
South & West Cambridgeshire	14	4.03	7.29	-	-	-
CHESHIRE	44	5.41	5.68	27	3.32	3.25
CORNWALL						
Cornwall	24	5.48	7.04	21	4.79	6.42
Isles of Scilly	0	0.00	0.00	0	0.00	0.00
CUMBRIA						
North & West Cumbria	11	4.97	7.80	11	4.97	11.96
South & East Cumbria	5	2.64	2.84	6	3.17	3.61
DERBYSHIRE						
Derby & South Derbyshire	20	4.14	6.78	19	3.94	6.91
North Derbyshire	11	3.34	3.57	15	4.56	5.34
DEVON						
Exeter & Greater Devon	38	6.76	9.87	21	4.93	5.38
Plymouth & South West Devon	6	4.76	1.55	7	2.90	1.46
Torbay & South Devon	10	6.76	6.29	2	1.01	1.67
DORSET						
Bournemouth, Poole & Eastern Dorset	27	6.76	15.08	25	6.26	16.34
Western Dorset	9	4.76	9.18	4	2.11	4.88
DURHAM						
Darlington & South Durham	5	2.24	3.57	4	1.79	3.01
North Durham	6	2.21	2.69	4	1.47	1.62
EAST SUSSEX						
Brighton & Hove	45	21.20	18.99	50	23.55	22.94
East Sussex	9	2.16	2.76	23	5.51	7.14
ESSEX						
Essex & Thurrock	3	0.27	0.59	8	0.73	2.24
Southend & South East Essex	11	4.06	7.91	15	5.54	11.03
GLOUCESTERSHIRE	17	3.58	3.96	9	1.90	2.46
GREATER MANCHESTER						
Manchester	57	15.26	7.67	33	8.83	4.37
North Manchester	39	8.13	9.92	27	5.63	5.68
South Manchester	8	1.40	1.31	20	3.50	3.06
West Manchester	3	0.47	0.46	19	3.00	2.99

Coroner's Jurisdiction & county district	Number of *np*-SAD deaths 2008	Annual death rate per 100,000 population 2008 (1)	Annual % of all inquests held in 2008 (2)	Number of *np*-SAD deaths 2009	Annual death rate per 100,000 population 2009 (1)	Annual % of all inquests held in 2009 (2)
HAMPSHIRE						
Central Hampshire	11	3.94	6.11	14	5.02	7.18
North East Hampshire	1	0.32	0.83	7	2.22	6.36
Portsmouth & South East Hampshire	26	5.68	8.41	26	5.68	6.18
Southampton & New Forest	19	5.62	8.72	26	7.69	12.62
HEREFORDSHIRE	4	2.72	4.76	5	3.40	5.38
HERTFORDSHIRE	35	4.11	8.47	18	2.11	4.49
HUMBERSIDE						
East Riding & Hull	20	4.13	6.83	20	4.13	6.90
ISLE OF WIGHT	4	3.45	4.49	6	5.17	8.33
KENT						
Central & South East Kent	23	8.65	14.02	11	4.14	5.82
Mid Kent & Medway	19	4.58	7.72	6	1.45	2.33
North East Kent	22	8.13	11.22	24	8.87	11.32
North West Kent	19	5.11	10.11	5	1.35	2.17
LANCASHIRE						
Blackburn, Hyndburn & Ribble Valley	19	8.70	6.40	20	9.15	5.62
Blackpool & the Fylde	13	7.19	10.24	10	5.53	8.20
East Lancashire	13	6.68	8.84	20	10.28	12.20
Preston & West Lancashire	31	5.36	6.95	37	6.39	8.58
LEICESTERSHIRE						
Leicester City & South Leicestershire	7	1.67	1.05	12	2.86	1.89
Rutland & North Leicestershire	5	1.36	2.94	13	3.55	7.51
LINCOLNSHIRE						
Boston & Spalding	1	1.16	1.69	6	6.97	10.17
North Lincolnshire & Grimsby	16	6.24	12.60	17	6.63	11.97
Spilsby & Louth	5	3.85	8.93	0	0.00	0.00
Stamford	0	0.00	0.00	-	-	-
West Lincolnshire	4	1.83	3.13	6	2.75	5.31
LONDON						
City of London	0	0.00	0.00	1	13.97	5.00
Eastern London	13	1.48	3.46	15	1.71	4.53
Inner North London	41	5.97	8.91	54	7.86	9.25
Inner South London	49	5.88	8.51	41	4.92	8.60
Inner West London	21	2.78	4.93	16	2.12	4.21
Northern London	35	3.30	6.84	13	1.23	2.69
Southern London	21	2.51	7.09	11	1.31	4.47
Western London	91	8.73	20.09	77	7.39	16.85
MERSEYSIDE						
Knowsley, St Helens & Sefton	7	1.43	2.59	5	1.02	2.01
Liverpool	32	8.93	6.29	42	11.72	8.68
Wirral	6	2.39	2.25	8	3.19	3.27
NORFOLK						
Greater Norfolk	44	7.09	10.65	36	5.80	7.86
Great Yarmouth	0	0.00	0.00	0	0.00	0.00

Coroner's Jurisdiction & county district	Number of *np*-SAD deaths 2008	Annual death rate per 100,000 population 2008 (1)	Annual % of all inquests held in 2008 (2)	Number of *np*-SAD deaths 2009	Annual death rate per 100,000 population 2009 (1)	Annual % of all inquests held in 2009 (2)
NORTHAMPTONSHIRE	37	6.80	12.37	21	3.86	7.22
NORTHUMBERLAND						
North Northumberland	3	3.15	2.83	1	1.05	0.84
South Northumberland	0	0.00	0.00	7	4.34	7.29
NORTH YORKSHIRE						
North Yorkshire Eastern	5	2.43	4.00	1	0.49	0.88
North Yorkshire Western	6	2.11	4.76	6	2.11	5.08
York	3	1.85	2.86	-	-	-
NOTTINGHAMSHIRE	16	1.84	3.73	29	3.33	7.38
OXFORDSHIRE	4	0.78	1.46	16	3.11	6.13
SHROPSHIRE						
Mid & North Shropshire	5	3.12	4.55	2	1.25	2.41
South Shropshire	0	0.00	0.00	1	1.27	2.27
The Wrekin	3	2.34	3.75	6	4.68	7.69
SOMERSET						
Eastern Somerset	11	5.07	7.14	2	0.92	1.43
Western Somerset	10	4.77	6.37	9	4.29	5.88
SOUTH YORKSHIRE						
South Yorkshire East	13	2.96	3.55	12	2.74	4.43
South Yorkshire West	42	6.80	8.77	20	3.24	4.39
STAFFORDSHIRE						
South Staffordshire	17	3.44	4.80	17	3.44	4.56
Stoke-on-Trent & North Staffordshire	17	4.52	3.54	18	4.79	4.44
SUFFOLK	35	6.07	13.36	17	2.95	6.34
SURREY	27	3.04	6.96	25	2.82	6.01
TEESSIDE						
Hartlepool	6	8.21	10.53	3	4.10	6.00
Teesside	30	7.97	8.60	26	6.90	9.22
TYNE & WEAR						
Gateshead & South Tyneside	15	5.35	6.15	10	3.57	4.95
Newcastle-upon-Tyne	9	4.00	3.06	3	1.33	1.03
North Tyneside	13	8.07	5.88	21	13.03	9.91
Sunderland	12	5.22	3.54	8	3.48	2.25
WARWICKSHIRE	5	1.17	2.07	12	2.80	5.77
WEST MIDLANDS						
Birmingham	34	3.58	3.03	48	5.05	4.99
Black Country	12	1.77	3.49	10	1.48	3.76
Coventry	1	0.41	0.47	4	1.62	1.96
Wolverhampton	7	3.69	3.66	-	-	-
WEST SUSSEX	28	4.43	7.89	1	0.16	0.38
West YORKSHIRE						
West Yorkshire Eastern	72	8.11	12.31	56	6.31	10.89
West Yorkshire Western	32	3.70	6.34	36	4.17	7.93
WILTSHIRE	5	0.97	1.44	13	2.52	3.33
WORCESTERSHIRE	20	4.41	6.64	17	3.75	4.97

Note that (0) refers to either no drug-related deaths or death rates of less than 0.01, whilst (–) indicates that no reports were submitted for the specific period from that jurisdiction or area. In subsequent reports these rates may increase as more inquests on deaths in 2009 are held and/or notified to the np-SAD. These rates should therefore be regarded as

minimum rates. Rows for administrative counties have been shaded where there are coroner's areas located within them; coroners' areas which correspond to a complete administrative county have not been shaded.

(1) The rate per 100,000 population is based on published mid-year population estimates for local government administrative areas for the years in question. However, the areas covered by 23 of the coroners' jurisdictions in England and Wales are not co-terminous with these boundaries and cover parts of such areas (see Appendix 3). Where administrative areas are split between jurisdictions, the estimated population has been divided into two or three as applicable. However, this means that the population of some coroners' jurisdictions may be either over- or under-estimated. It is necessary to make such assumptions until more accurate figures can be obtained or calculated.

(2) Inquests held on all ages.

(3) The amalgamations of the following coroner's jurisdictions during the period covered by this report mean that rates for the new areas have been calculated retrospectively based on published figures: High Peak and Scarsdale were merged to form North Derbyshire (1 February 2006); Gloucester and Cheltenham merged to form Gloucestershire (1 April 2006). In Norfolk, King's Lynn and Norwich & Central Norfolk to form Greater Norfolk (6 April 2007); in Cumbria, the three jurisdictions of North East Cumbria, Southern Cumbria & Furness, and Western Cumbria to form two new areas - North & West Cumbria and South & East Cumbria (1 May 2007).

Table C: np-SAD cases in 2009 by Drug and Alcohol Action Team area (16 years and over) – number and rate per 100,000 population

Drug and Alcohol Action Team	Number and annual death rate per 100,000 population – usual area of residence		Number and annual death rate per 100,000 population – place of death	
	No	Rate	No	Rate
ENGLAND				
NORTH EAST				
County Durham	10	2.41	8	1.93
Darlington	1	1.24	0	0.00
Gateshead	11	7.03	10	6.39
Hartlepool	3	4.10	3	4.10
Middlesbrough	11	9.95	13	11.76
Newcastle upon Tyne	2	0.89	3	1.33
North Tyneside	24	14.90	25	15.52
Northumberland	4	1.56	4	1.56
Redcar and Cleveland	7	6.18	7	6.18
South Tyneside	0	0.00	0	0.00
Stockton on Tees	6	3.93	6	3.93
Sunderland	7	3.05	8	3.48
NORTH WEST				
Blackburn with Darwen	13	12.39	15	14.07
Blackpool	7	6.01	8	6.87
Bolton	16	7.71	16	7.71
Bury	7	4.78	7	4.78
Cheshire	12	2.14	12	2.14
Cumbria	17	4.14	16	3.90
Halton	5	5.26	3	3.16
Knowsley	0	0.00	1	0.83
Lancashire	62	6.53	61	6.43
Liverpool	39	10.88	42	11.72
Manchester	31	8.30	33	8.83
Oldham	6	3.51	6	3.51
Rochdale	14	8.63	16	9.86
Salford	2	1.12	3	1.68
Sefton	6	2.65	4	1.77
St Helens	2	1.39	2	1.39
Stockport	4	1.75	4	1.75
Tameside	15	8.71	14	8.13
Trafford	3	1.76	1	0.59
Warrington	10	6.36	11	6.99
Wigan	1	0.40	1	0.40
Wirral	8	3.19	8	3.19
YORKSHIRE AND HUMBER				
Barnsley	4	2.20	4	2.20
Bradford	22	5.71	23	5.97
Calderdale	1	0.62	1	0.62
Doncaster	10	4.26	9	3.83
East Riding of Yorkshire	9	3.27	10	3.63
Kingston upon Hull	12	5.75	11	5.27
Kirklees	14	4.40	12	3.77
Leeds	36	5.75	39	6.23
North East Lincolnshire	8	6.29	8	6.29
North Lincolnshire	6	4.65	5	3.87

Drug and Alcohol Action Team	Number and annual death rate per 100,000 population – usual area of residence		Number and annual death rate per 100,000 population – place of death	
	No	Rate	No	Rate
North Yorkshire	10	2.04	8	1.63
Rotherham	4	1.96	3	1.47
Sheffield	18	4.13	18	4.13
Wakefield	16	6.12	16	6.12
York*	-	-	-	-
EAST MIDLANDS				
Derby	14	7.32	12	6.27
Derbyshire	21	3.39	20	3.23
Leicester	10	4.32	10	4.32
Leicestershire	14	2.68	15	2.87
Lincolnshire*	13	2.28	15	2.63
Northamptonshire	19	3.49	20	3.68
Nottingham	12	5.03	14	5.86
Nottinghamshire	16	2.53	15	2.37
Rutland	0	0.00	0	0.00
WEST MIDLANDS				
Birmingham	38	4.83	42	5.34
Coventry	5	2.03	4	1.62
Dudley	3	1.21	5	2.02
Herefordshire	4	2.72	4	2.72
Sandwell	5	2.19	3	1.32
Shropshire	3	1.26	4	1.68
Solihull	6	3.66	6	3.66
Staffordshire	25	3.70	24	3.55
Stoke-on-Trent	8	4.13	10	5.17
Telford and Wrekin	6	4.68	5	3.90
Walsall	4	1.99	2	0.99
Warwickshire	12	2.80	12	2.80
Wolverhampton*	-	-	-	-
Worcestershire	18	3.97	17	3.75
EAST				
Bedfordshire	14	4.29	13	3.99
Cambridgeshire*	0	0.00	0	0.00
Essex	16	1.43	16	1.43
Hertfordshire	19	2.23	19	2.23
Luton	10	6.81	8	5.44
Norfolk	37	5.30	35	5.02
Peterborough	7	5.42	7	5.42
Southend-on-Sea	6	4.58	6	4.58
Suffolk	17	2.95	18	3.12
Thurrock	1	0.85	1	0.85
LONDON				
Inner London				
Camden	15	7.67	19	9.71
City of London	0	0.00	1	13.97
Hackney	13	7.96	15	9.19
Hammersmith and Fulham	17	11.76	20	13.84
Haringey	2	1.11	1	0.55
Islington	13	8.27	15	9.54
Kensington and Chelsea	10	6.63	8	5.30
Lambeth	14	6.23	20	8.90

Drug and Alcohol Action Team	Number and annual death rate per 100,000 population – usual area of residence		Number and annual death rate per 100,000 population – place of death	
	No	Rate	No	Rate
Lewisham	7	3.38	7	3.38
Newham	0	0.00	1	0.53
Southwark	10	4.44	8	3.56
Tower Hamlets	5	2.92	8	4.68
Wandsworth	2	0.84	1	0.42
Westminster	7	3.44	7	3.44
Outer London				
Barking and Dagenham	4	3.16	1	0.79
Barnet	5	1.90	3	1.14
Bexley	1	0.56	1	0.56
Brent	0	0.00	3	1.37
Bromley	3	1.24	3	1.24
Croydon	5	1.86	7	2.60
Ealing	11	4.45	11	4.45
Enfield	3	1.33	4	1.78
Greenwich	5	2.84	4	2.27
Harrow	0	0.00	0	0.00
Havering	4	2.16	4	2.16
Hillingdon	17	8.54	17	8.54
Hounslow	13	7.38	14	7.90
Kingston-upon-Thames	5	3.87	5	3.87
Merton	0	0.00	0	0.00
Redbridge	5	2.50	6	3.00
Richmond-upon-Thames	9	6.22	10	6.91
Sutton	0	0.00	0	0.00
Waltham Forest	3	1.72	3	1.72
SOUTH EAST				
Bracknell Forest*	1	1.11	1	1.11
Brighton and Hove	48	22.61	48	22.61
Buckinghamshire	8	2.05	10	2.56
East Sussex	22	5.27	23	5.51
Hampshire	40	3.87	41	3.97
Isle of Wight	6	5.17	6	5.17
Kent	44	3.92	44	3.92
Medway towns	2	1.00	2	1.00
Milton Keynes*	-	-	-	-
Oxfordshire	17	3.30	17	3.30
Portsmouth	12	7.33	12	7.33
Reading*	2	1.70	4	3.39
Slough*	3	3.19	2	2.13
Southampton	18	9.33	20	10.37
Surrey	24	2.71	24	2.71
West Berkshire*	1	0.84	0	0.00
West Sussex	5	0.79	3	0.47
Windsor and Maidenhead*	0	0.00	0	0.00
Wokingham*	1	0.80	0	0.00
SOUTH WEST				
Bath and North East Somerset*	0	0.00	0	0.00
Bournemouth	16	11.64	18	13.09
Bristol*	2	0.58	2	0.58
Cornwall & Isles of Scilly	21	4.77	21	4.77
Devon	24	3.85	22	3.53

Drug and Alcohol Action Team	National and annual death rate per 100,000 population – usual area of residence		National and annual death rate per 100,000 population – place of death	
	No	Rate	No	Rate
Dorset	6	1.78	5	1.48
Gloucestershire	9	1.90	9	1.90
North Somerset*	0	0.00	0	0.00
Plymouth	6	2.91	7	3.39
Poole	6	5.28	6	5.28
Somerset	11	8.00	11	2.58
South Gloucestershire*	1	0.00	0	0.00
Swindon	6	3.95	6	3.95
Torbay	1	0.90	1	0.90
Wiltshire	8	2.20	7	1.93

Note: In addition there were a number of cases that could not be allocated to specific DA(A)T areas because they were of no fixed abode and/or the jurisdiction in which the inquest was held covers more than one DA(A)T. Some cases were usually resident outside the UK. Some DA(A)Ts are covered by coroner's jurisdictions that did not submit information or only partial information) to the np-SAD; they are marked thus - *.

Table D: np-SAD cases in 2009 by Drug and Alcohol Action Team area (16 years and over) – demographics and drugs implicated

Drug and Alcohol Action Team	No	Gender		Age group						Ethnicity					Main Drug Strategy drug implicated					
	Total	Male	Female	15-24	25-34	35-44	45-54	55-64	>64	White	Black	Asian	Other	Not known	Heroin/ morphine	Methadone	Hypnotics/ sedatives	Cocaine	Amphetamine	Ecstasy-type
ENGLAND																				
NORTH EAST																				
County Durham	8	6	2	1	2	3	1	1	0	3	0	0	0	5	4	0	3	5	0	0
Darlington	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gateshead	10	10	0	2	7	1	0	0	0	8	0	0	0	2	6	4	3	6	0	0
Hartlepool	3	3	0	0	2	1	0	0	0	3	0	0	0	0	1	0	3	0	0	0
Middlesbrough	13	13	0	0	4	3	3	3	0	13	0	0	0	0	5	1	4	1	0	0
Newcastle upon Tyne	3	2	1	1	1	0	1	0	0	3	0	0	0	0	1	1	0	1	0	0
North Tyneside	25	15	10	3	10	5	2	3	2	22	0	0	0	3	6	5	9	8	0	0
Northumberland	4	3	1	2	1	1	0	0	0	3	0	0	0	1	3	0	4	1	0	0
Redcar and Cleveland	7	5	2	1	2	3	1	0	0	7	0	0	0	0	3	1	2	1	0	0
South Tyneside	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stockton on Tees	6	5	1	0	5	1	0	0	0	5	0	0	0	1	1	3	1	4	0	0
Sunderland	8	8	0	3	2	2	1	0	0	8	0	0	0	0	2	0	2	0	0	0
NORTH WEST																				
Blackburn with Darwen	15	10	5	1	4	6	3	1	0	11	0	1	0	3	3	5	5	0	8	0
Blackpool	8	6	2	1	5	1	1	0	0	8	0	0	0	0	2	2	1	0	3	1
Bolton	16	11	5	4	3	4	4	1	0	2	0	0	0	14	9	4	0	1	9	0
Bury	7	7	0	0	1	4	1	0	1	1	0	1	0	5	1	2	2	1	3	0
Cheshire	12	8	4	0	2	4	5	1	0	2	0	0	0	10	2	3	2	0	4	0
Cumbria	16	14	2	1	5	10	0	0	0	14	0	1	0	1	5	3	8	1	13	0
Halton	3	2	1	0	2	1	0	0	0	3	0	0	0	0	2	2	0	0	2	0
Knowsley	1	1	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0
Lancashire	61	45	16	5	15	16	13	7	5	22	0	0	0	39	24	8	18	4	42	0
Liverpool	42	26	16	1	12	14	7	7	1	39	0	0	0	3	15	20	4	12	19	0
Manchester	33	20	13	2	6	13	5	3	4	25	0	0	1	7	13	5	4	1	17	0
Oldham	6	5	1	0	1	4	0	0	1	0	0	0	0	6	1	1	0	0	2	0
Rochdale	16	13	3	1	1	6	3	5	0	3	0	1	0	12	6	4	4	0	10	0
Salford	3	3	0	0	0	3	0	0	0	2	0	0	1	3	1	1	0	1	3	0
Sefton	4	3	1	0	0	3	1	0	0	4	0	0	0	1	1	1	0	1	0	0
St. Helens	2	2	0	0	1	1	0	0	0	2	0	0	0	0	1	0	0	0	1	0
Stockport	4	2	2	1	0	0	2	1	0	0	0	0	0	4	2	1	3	0	5	0
Tameside	14	9	5	0	6	2	4	2	0	6	0	0	0	8	5	0	1	0	6	0
Trafford	1	1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	0
Warrington	11	8	3	0	6	3	1	0	1	4	0	0	0	7	3	0	1	0	4	0
Wigan	1	1	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0
Wirral	8	7	1	0	1	5	2	0	0	5	0	0	1	2	3	3	0	0	3	0

Drug and Alcohol Action Team	No	Gender		Age group						Ethnicity					Main Drug Strategy drug implicated					
	Total	Male	Female	15-24	25-34	35-44	45-54	55-64	>64	White	Black	Asian	Other	Not known	Heroin/ morphine	Methadone	Hypnotics/ sedatives	Cocaine	Amphetamine	Ecstasy-type
YORKSHIRE AND HUMBER																				
Barnsley	4	2	2	2	1	0	1	0	0	4	0	0	0	0	2	2	1	1	0	0
Bradford	23	21	2	2	5	8	8	0	0	21	1	0	1	0	17	5	0	3	0	0
Calderdale	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Doncaster	9	9	0	1	1	4	3	0	0	9	0	0	0	0	5	3	0	0	1	0
East Riding of Yorkshire	10	6	4	0	4	4	1	1	0	5	0	0	0	5	6	1	2	0	0	0
Kingston upon Hull	11	7	4	1	1	8	0	1	0	6	0	0	0	5	8	4	2	0	1	0
Kirklees	12	12	0	0	8	3	0	1	0	11	0	0	0	1	7	6	1	2	1	0
Leeds	39	30	9	1	10	18	4	4	2	33	2	1	0	3	15	11	5	0	1	0
North East Lincolnshire	8	8	0	0	5	1	2	0	0	8	0	0	0	0	6	0	2	0	0	0
North Lincolnshire	5	5	0	2	1	1	1	0	0	3	0	0	0	2	3	2	2	0	0	0
North Yorkshire	8	8	0	2	2	4	0	0	0	2	0	0	0	6	7	2	2	2	0	0
Rotherham	3	2	1	0	2	0	1	0	0	3	0	0	0	0	1	2	0	0	0	0
Sheffield	18	17	1	1	4	11	2	0	0	15	0	0	0	3	8	5	4	2	0	0
Wakefield	16	10	6	1	3	9	2	1	0	13	0	0	0	3	5	3	2	2	0	0
York*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EAST MIDLANDS																				
Derby	12	8	4	1	1	6	4	0	0	11	1	0	0	0	3	1	0	0	0	0
Derbyshire	20	15	5	1	4	6	4	4	1	20	0	0	0	0	9	5	2	0	0	0
Leicester	10	8	2	0	5	3	0	2	0	6	0	1	1	2	4	5	1	1	1	0
Leicestershire	15	12	3	1	4	6	1	1	2	11	0	0	0	4	12	3	5	0	0	0
Lincolnshire*	15	15	0	2	3	8	1	1	0	9	1	0	0	5	10	4	3	1	0	0
Northamptonshire	20	13	7	1	8	4	2	3	2	15	1	0	0	4	5	5	6	2	0	1
Nottingham	14	12	2	2	8	2	1	1	0	11	0	0	0	3	9	1	1	2	2	1
Nottinghamshire	15	12	3	0	3	4	6	1	1	15	0	0	0	0	6	0	3	0	1	0
Rutland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WEST MIDLANDS																				
Birmingham	42	38	4	5	7	17	10	3	0	25	1	4	0	12	23	10	4	22	0	1
Coventry	4	4	0	0	1	1	1	1	0	2	0	0	0	2	1	2	1	4	0	0
Dudley	5	5	0	0	2	2	0	1	0	5	0	0	0	0	3	2	2	2	0	0
Herefordshire	4	3	1	0	3	0	0	1	0	3	0	0	0	1	2	1	1	2	0	0
Sandwell	3	3	0	0	1	1	1	0	0	1	0	1	1	0	3	0	0	0	0	0
Shropshire	4	3	1	0	1	1	0	1	1	2	0	0	0	2	1	1	3	3	0	0
Solihull	6	5	1	0	1	3	0	2	0	3	0	1	0	2	5	0	2	2	0	0
Staffordshire	24	18	6	5	8	4	1	3	3	24	0	0	0	0	12	3	4	3	0	0
Stoke-on-Trent	10	9	1	2	6	0	2	0	0	10	0	0	0	0	8	2	1	2	0	0
Telford and Wrekin	5	4	1	0	0	4	0	1	0	3	0	0	0	2	1	0	0	2	0	0
Walsall	2	1	1	0	1	1	0	0	0	2	0	0	0	0	1	0	0	0	0	0
Warwickshire	12	10	2	1	4	3	2	2	0	9	0	0	0	3	10	4	6	7	0	0
Wolverhampton*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Worcestershire	17	13	4	1	6	10	0	0	0	16	0	0	0	1	10	0	1	1	0	0
EAST																				
Bedfordshire	13	10	3	1	3	2	5	1	1	13	0	0	0	0	6	2	4	0	0	0
Cambridgeshire*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Essex	16	11	5	1	2	7	0	3	3	10	0	0	0	6	7	0	3	5	0	0
Hertfordshire	19	15	4	0	5	6	6	0	2	1	0	0	0	18	10	2	6	5	1	0
Luton	8	5	3	2	1	1	4	0	0	7	1	0	0	0	4	0	0	2	0	0
Norfolk	35	27	8	2	13	7	10	0	3	10	0	0	0	25	16	4	5	0	0	0

Drug and Alcohol Action Team	No	Gender		Age group						Ethnicity					Main Drug Strategy drug implicated					
	Total	Male	Female	15-24	25-34	35-44	45-54	55-64	>64	White	Black	Asian	Other	Not known	Heroin/ morphine	Methadone	Hypnotics/ sedatives	Cocaine	Amphetamine	Ecstasy-type
Peterborough	7	5	2	0	3	2	1	1	0	6	0	0	1	0	5	2	0	1	0	0
Southend-on-Sea	6	3	3	1	2	2	1	0	0	5	0	0	1	0	0	3	2	0	0	0
Suffolk	18	13	5	1	6	9	1	1	0	9	0	0	0	9	9	5	4	1	0	0
Thurrock	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0
LONDON																				
Inner London																				
Camden	19	16	3	0	4	6	5	2	2	12	3	0	1	3	8	4	1	2	0	0
City of London	1	1	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
Hackney	15	11	4	0	5	7	1	2	0	8	2	0	0	5	11	2	0	4	0	0
Hammersmith and Fulham	20	18	2	0	5	7	6	1	1	15	1	0	3	1	11	5	2	4	1	0
Haringey	1	1	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
Islington	15	12	3	1	2	7	4	1	0	8	1	1	0	5	5	2	3	2	0	0
Kensington and Chelsea	8	6	2	0	3	3	2	0	0	8	0	0	0	0	2	2	0	6	0	0
Lambeth	20	19	1	0	8	9	2	1	0	8	0	0	2	10	13	3	3	5	0	0
Lewisham	7	7	0	0	3	2	2	0	0	1	0	0	0	6	1	1	0	2	0	0
Newham	1	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Southwark	8	8	0	0	1	4	3	0	0	6	1	0	0	1	8	5	0	2	0	0
Tower Hamlets	8	7	1	0	4	3	1	0	0	8	0	0	0	0	5	2	1	2	0	0
Wandsworth	1	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Westminster	7	7	0	0	1	2	3	1	0	3	0	0	2	2	2	2	1	5	0	0
Outer London																				
Barking and Dagenham	1	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0
Barnet	3	3	0	0	1	0	1	1	0	2	0	0	1	0	2	2	0	0	0	0
Bexley	1	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
Brent	3	2	1	0	1	1	1	0	0	2	0	0	0	1	2	0	1	1	0	0
Bromley	3	2	1	0	2	1	0	0	0	2	1	0	0	0	1	0	0	1	0	0
Croydon	7	6	1	1	3	2	1	0	0	1	0	0	0	6	6	1	2	2	0	0
Ealing	11	9	2	0	3	4	3	1	0	6	1	1	0	3	3	1	2	0	0	0
Enfield	4	2	2	0	0	4	0	0	0	2	1	0	0	1	0	1	0	0	0	0
Greenwich	4	4	0	0	1	3	0	0	0	2	0	0	0	2	4	0	0	0	0	0
Harrow	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Havering	4	4	0	0	2	1	0	1	0	3	0	0	0	1	2	1	1	3	0	0
Hillingdon	17	16	1	2	2	9	3	1	0	12	1	2	1	1	3	0	2	5	0	0
Hounslow	14	11	3	3	1	4	2	1	2	8	1	2	2	1	6	3	1	1	0	0
Kingston-upon-Thames	5	3	2	0	2	3	0	0	0	4	0	0	1	0	4	1	0	2	0	0
Merton	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Redbridge	6	5	1	1	2	3	0	0	0	5	1	0	0	0	3	1	1	3	0	0
Richmond-upon-Thames	10	6	4	1	1	5	1	0	2	9	0	0	0	1	4	1	0	1	0	0
Sutton	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Waltham Forest	3	3	0	0	1	1	0	1	0	2	0	0	0	1	2	0	0	0	0	0
SOUTH EAST																				
Bracknell Forest*	1	1	0	0	0	0	1	0	0	0	0	0	1	0	1	1	0	0	0	0
Brighton and Hove	48	33	15	5	10	15	10	4	4	47	0	0	0	1	22	5	23	3	0	2
Buckinghamshire	10	9	1	0	4	2	4	0	0	8	1	0	0	1	8	1	0	1	0	0
East Sussex	23	17	6	1	8	7	6	1	0	21	2	0	0	0	16	3	8	3	0	0
Hampshire	41	27	14	1	9	14	3	8	6	39	1	0	0	1	10	3	6	3	0	0
Isle of Wight	6	5	1	0	1	0	5	0	0	6	0	0	0	0	1	3	0	0	1	0
Kent	44	30	14	2	10	16	8	4	4	10	0	0	0	34	17	6	7	2	1	0
Medway towns	2	2	0	0	0	1	1	0	0	0	0	0	0	2	0	0	0	0	0	0
Milton Keynes*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Drug and Alcohol Action Team	No	Gender		Age group						Ethnicity					Main Drug Strategy drug implicated					
	Total	Male	Female	15-24	25-34	35-44	45-54	55-64	>64	White	Black	Asian	Other	Not known	Heroin/ morphine	Methadone	Hypnotics/ sedatives	Cocaine	Amphetamine	Ecstasy-type
Oxfordshire	17	13	4	3	5	6	1	2	0	15	0	0	0	2	14	3	0	1	0	0
Portsmouth	12	9	3	2	6	3	0	0	1	12	0	0	0	0	3	1	2	0	0	0
Reading*	4	4	0	1	0	1	2	0	0	2	1	0	0	1	2	0	0	2	0	0
Slough*	2	1	1	0	1	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0
Southampton	20	13	7	1	5	7	2	3	2	19	0	0	0	1	8	1	1	6	3	0
Surrey	24	22	2	1	7	6	8	2	0	8	0	0	0	16	12	4	6	3	0	0
West Berkshire*	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
West Sussex	3	3	0	0	1	0	1	1	0	3	0	0	0	0	3	0	1	0	0	0
Windsor and Maidenhead*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wokingham*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH WEST																				
Bath and North East Somerset*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bournemouth	18	15	3	0	5	7	4	0	2	16	1	0	0	1	12	3	5	0	0	3
Bristol*	2	2	0	0	0	1	1	0	0	0	0	0	0	2	0	0	0	0	0	0
Cornwall & Isles of Scilly	21	17	4	2	4	5	7	2	1	13	0	0	0	8	5	2	2	0	0	0
Devon	22	17	5	2	3	10	4	0	3	19	0	0	0	3	7	2	5	0	0	0
Dorset	5	3	2	0	1	4	0	0	0	4	0	0	0	1	2	0	0	0	0	0
Gloucestershire	9	8	1	0	1	7	0	1	0	8	0	0	0	1	3	2	2	0	2	0
North Somerset*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plymouth	7	5	2	1	4	2	0	0	0	2	0	0	0	5	5	2	1	0	0	0
Poole	6	3	3	1	2	3	0	0	0	4	1	0	0	1	2	1	1	0	0	0
Somerset	11	7	4	0	1	3	2	4	1	6	0	0	0	5	6	1	2	0	0	0
South Gloucestershire*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Swindon	6	5	1	0	3	2	1	0	0	4	0	0	1	1	3	4	0	1	0	0
Torbay	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0
Wiltshire	7	4	3	1	2	2	2	0	0	4	0	0	1	2	1	2	3	1	0	0

Note: In addition there were a number of cases that could not be allocated to specific DA(A)T areas because they were of no fixed abode and/or the jurisdiction in which the inquest was held covers more than one DA(A)T. Some cases were usually resident outside the UK. Some DA(A)Ts are covered by coroner's jurisdictions that did not submit information (or only partial information) to the np-SAD; they are marked thus - *.

Table E: np-SAD cases in 2009 by Primary Care Trust and Strategic Health Authority areas in England and Substance Misuse Advisory Regional Team areas in Wales (16 years and over)

Area	Number and annual death rate per 100,000 population – usual area of residence		Number and annual death rate per 100,000 population – place of death	
	No	Rate	No	Rate
ENGLAND (SHA and PCT)				
NORTH EAST SHA	86	4.10	87	4.14
County Durham	10	2.41	8	1.92
Darlington	1	1.24	0	0.00
Gateshead	11	7.03	10	6.39
Hartlepool	3	4.11	3	4.11
Middlesbrough	11	9.92	13	11.72
Newcastle-upon-Tyne	2	0.88	3	1.33
North Tyneside	24	14.89	25	15.51
Northumberland	4	1.56	4	1.56
Redcar and Cleveland	4	1.56	4	1.56
South Tyneside	0	0.00	0	0.00
Stockton on Tees Teaching	6	3.92	6	3.92
Sunderland Teaching	7	3.05	8	3.48
NORTH WEST SHA	280	5.02	283	5.07
Ashton, Leigh and Wigan	1	0.40	1	0.40
Blackburn with Darwen	13	12.20	15	14.07
Blackpool	7	6.01	8	6.87
Bolton	16	7.71	16	7.71
Bury	7	4.78	7	4.78
Central and Eastern Cheshire	6	1.63	6	1.63
Central Lancashire	17	4.63	17	4.63
Cumbria Teaching	17	4.15	16	3.90
Halton and St Helens	7	2.93	5	2.09
Heywood, Middleton and Rochdale	14	8.62	16	9.85
Knowsley	0	0.00	1	0.83
Lancashire East	27	8.83	23	7.52
Liverpool	39	10.85	42	11.69
Manchester	31	8.27	33	8.80
North Lancashire Teaching	18	6.52	20	7.24
Oldham	6	3.51	6	3.51
Salford	2	1.12	3	1.68
Sefton	6	2.65	4	1.77
Stockport	4	1.75	4	1.75
Tameside and Glossop	15	7.51	14	7.01
Trafford	3	1.75	1	0.58
Warrington	10	6.36	11	6.99
Western Cheshire	6	3.10	6	3.10
Wirral	8	3.19	8	3.19
YORKSHIRE AND HUMBER SHA	170	4.05	167	3.97
Barnsley	4	2.20	4	2.20
Bradford and Airedale Teaching	22	5.71	23	5.97
Calderdale	1	0.62	1	0.62
Doncaster	10	4.26	9	3.83
East Riding of Yorkshire	9	3.27	10	3.63
Kirklees	14	4.40	12	3.77
Leeds	36	5.73	39	6.21
NHS Hull	12	5.74	11	5.26

Area	Number and annual death rate per 100,000 population – usual area of residence		Number and annual death rate per 100,000 population – place of death	
	No	Rate	No	Rate
North East Lincolnshire Care Trust Plus	8	6.24	8	6.24
North Lincolnshire	6	4.76	5	3.97
North Yorkshire and York*	10	1.53	8	1.23
Rotherham	4	1.96	3	1.47
Sheffield	18	4.12	18	4.12
Wakefield District	16	6.13	16	6.13
EAST MIDLANDS SHA	119	3.34	121	3.40
Bassetlaw	2	2.20	2	2.20
Derby City	14	7.32	12	6.27
Derbyshire	21	3.55	20	3.38
Leicester City	10	4.30	10	4.30
Leicestershire County and Rutland	14	2.52	15	2.70
NHS Lincolnshire*	13	2.27	15	2.62
NHS Northamptonshire	19	3.50	20	3.68
Nottingham City	12	5.00	14	5.83
Nottinghamshire County Teaching	14	2.59	13	2.41
WEST MIDLANDS SHA*	137	3.16	137	3.16
Birmingham East and North	14	4.52	17	5.49
Coventry Teaching	5	2.02	4	1.62
Dudley	3	1.21	5	2.02
Heart of Birmingham Teaching	10	4.90	11	5.39
Herefordshire	4	2.72	4	2.72
North Staffordshire	10	5.70	8	4.56
Sandwell	5	2.20	3	1.32
Shropshire County	3	1.26	4	1.68
Solihull*	6	3.66	6	3.66
South Birmingham	14	5.10	14	5.10
South Staffordshire	15	3.04	15	3.04
Stoke-on-Trent	8	3.99	10	4.98
Telford and Wrekin	6	4.68	5	3.90
Walsall Teaching	4	1.99	2	0.99
Warwickshire	12	2.80	12	2.80
Wolverhampton City*	-	-	-	-
Worcestershire	18	3.97	17	3.75
EAST OF ENGLAND SHA	131	2.86	123	2.68
Bedfordshire	14	4.29	13	3.98
Cambridgeshire*	0	0.00	0	0.00
East and North Hertfordshire	10	2.35	11	2.58
Great Yarmouth and Waveney	6	3.45	6	3.45
Luton	10	6.80	8	5.44
Mid Essex	2	0.68	1	0.34
Norfolk	37	5.96	35	5.64
North East Essex	6	2.25	4	1.50
Peterborough	7	5.41	7	5.41
South East Essex	15	5.54	15	5.54
South West Essex	1	0.32	1	0.32
Suffolk	11	2.29	12	2.50
West Essex	3	1.35	2	0.90
West Hertfordshire	9	2.12	8	1.88

Area	Number and annual death rate per 100,000 population – usual area of residence		Number and annual death rate per 100,000 population – place of death	
	No	Rate	No	Rate
LONDON SHA	211	3.46	224	3.67
Barking and Dagenham	4	3.16	1	0.79
Barnet	5	1.91	3	1.14
Bexley	1	0.56	1	0.56
Brent Teaching	0	0.00	3	1.37
Bromley	3	1.24	3	1.24
Camden	15	7.65	19	9.68
City and Hackney Teaching	13	7.61	15	8.78
Croydon	5	1.86	7	2.60
Ealing	11	4.44	11	4.44
Enfield	3	1.33	4	1.78
Greenwich Teaching	5	2.83	4	2.27
Hammersmith and Fulham	17	11.75	20	13.82
Haringey Teaching	2	1.10	1	0.55
Harrow	0	0.00	0	0.00
Havering	4	2.16	3	1.62
Hillingdon	17	8.52	17	8.52
Hounslow	15	8.46	14	7.89
Islington	13	8.25	15	9.52
Kensington and Chelsea	10	6.62	7	4.64
Kingston	5	3.87	5	3.87
Lambeth	14	6.23	20	8.90
Lewisham	7	3.37	7	3.37
Newham	0	0.00	1	0.52
Redbridge	5	2.51	6	3.01
Richmond and Twickenham	10	6.91	10	6.91
Southwark	10	4.44	8	3.55
Sutton and Merton	0	0.00	0	0.00
Tower Hamlets	5	2.92	8	4.67
Waltham Forest	3	1.71	3	1.71
Wandsworth	2	0.84	1	0.42
Westminster	7	3.44	7	3.44
SOUTH EAST COAST SHA	145	4.19	145	4.19
Brighton and Hove City	48	22.56	48	22.56
East Sussex Downs and Weald	14	5.15	15	5.51
Eastern and Coastal Kent	38	6.46	37	6.29
Hastings and Rother	8	5.52	8	5.52
Medway	2	1.00	2	1.00
Surrey	23	2.62	25	2.85
West Kent	7	1.31	7	1.31
West Sussex	5	0.79	3	0.47
SOUTH CENTRAL SHA	114	3.50	113	3.47
Berkshire East*	5	1.63	3	0.98
Berkshire West*	4	1.10	4	1.10
Buckinghamshire	11	2.75	10	2.50
Hampshire	40	3.87	41	3.97
Milton Keynes	-	-	-	-
NHS Isle of Wight	6	5.17	6	5.17
Oxfordshire	18	3.62	17	3.42
Portsmouth City Teaching	12	7.31	12	7.31
Southampton City	18	9.30	20	10.33

Area	National and annual death rate per 100,000 population – usual area of residence		National and annual death rate per 100,000 population – place of death	
	No	Rate	No	Rate
SOUTH WEST SHA	119	2.79	116	2.72
Bath and North East Somerset*	0	0.00	0	0.00
Bournemouth and Poole Teaching	22	8.75	24	9.54
Cornwall & Isles of Scilly	21	4.77	21	4.77
Devon	24	3.85	23	3.69
Dorset	6	1.78	5	1.48
Gloucestershire	9	1.90	9	1.90
NHS Bristol*	2	0.58	2	0.58
North Somerset*	0	0.00	0	0.00
Plymouth Teaching	8	3.87	7	3.38
Somerset	11	2.58	11	2.58
South Gloucestershire*	1	0.48	0	0.00
Swindon	6	3.85	6	3.85
Torbay Care Trust	1	0.90	1	0.90
Wiltshire	8	2.20	7	1.93

Note: In addition there were a number of cases that could not be allocated to specific PCT areas because they were of no fixed abode and/or the jurisdiction in which the inquest was held covers more than one PCT. Some cases were usually resident outside the UK. Some PCTs are covered by coroner's jurisdictions that did not submit information (or only partial information) to the np-SAD; they are marked thus - *.

Profile of cases meeting the criteria for monitoring the Government's drug strategy

This section considers cases meeting the definition used to monitor the Government's drug strategy, i.e. 'drug-misuse'. To derive these cases, the following two categories of cases are excluded from the *np*-SAD ones: (a) deaths of non-drug abusers where no Controlled Drugs were found at post mortem or where a specific compound analgesics was found at post mortem; and (b) deaths of drug abusers where no Controlled Drugs were found at post mortem or where a specific compound analgesics was found at post mortem and the mechanism of death was hanging, drowning, accident, etc. Of the 1,524 cases reported to the Programme, 76% (n = 1,152) met the criteria for classification as a 'drug misuse' death (Appendix 2).

1. Demography

Similar patterns were reported to previous years. The majority of cases were male (81%). The median age at death was 38 years (semi-inter quartile range = 6.9), with three-quarters (75%) being under the age of 45 years. Where ethnicity was known 93% were White. Where addict status was known, 78% had a history of drug-dependence or use. Just over half (54%) of cases were unemployed, and 45% of cases were living alone or of no fixed abode at the time of their death (Table 1.7).

2. Location of death

Three-quarters (75%) died either at the deceased's home address or other private residential address, about one-sixth (17%) died in hospital and the remainder (8%) died elsewhere (e.g. public open space, public facilities or railway station).

3. Underlying cause(s) of death

The categories of underlying cause of death (ICD-10 codes) were as follows:

- Accidental poisoning (X40-X47): 80.7%
- Intentional self-poisoning (X60-X67): 7.7%
- Poisonings of undetermined intent (Y10-Y14): 8.2%
- Other (e.g. natural causes, drowning, hanging, unascertained): 3.4%

4. Manner of death

The manner of death in these cases was as follows:

- Natural: 1.5%
- Accidental: 82.3%
- Suicidal: 7.8%
- Homicidal: 0.1%
- Undetermined: 7.9%
- Unclassified/not specified: 0.4%

5. Substances implicated in death

Psychoactive substances were implicated in 1,144/1,152 deaths (99%). The principal substances implicated in drug-related deaths were: heroin/morphine (60%) and alcohol in combination with other drugs (34%). Other classes of drugs making a sizeable contribution (10% or over) to deaths were: methadone (24%); Hypnotics/sedatives (21%); other opiates/ opioid analgesics (20%); anti-depressants (11%) and cocaine (11%). Heroin/morphine as the sole implicated drug accounted for 21% of deaths (Table 1.8).

Table 1.7: Demographic characteristics of cases reported to *np*-SAD meeting the criteria for monitoring the Government's drug strategy, England, 2009

Variable	Category	Number (%)
Total		1,152 (100.0)
Gender	Male	930 (80.7)
	Female	222(19.3)
Employment status	Unemployed	625(54.3)
	Employed	289 (25.1)
	Childcare/house person	14 (1.2)
	Student	19 (1.6)
	Retired/sickness/invalidity	85(7.4)
	Other	2 (0.2)
	Not known	118 (10.2)
Living arrangements	Alone	476 (41.3)
	With others	453 (39.3)
	No fixed abode	38 (3.3)
	Other	64 (5.6)
	Not known	121 (10.5)

Table 1.8: Psychoactive substances implicated in deaths reported to *np*-SAD meeting the criteria for monitoring the Government's drug strategy, England, 2009

Drug category	Number (%) of cases where no other substance was implicated	Number (%) of cases where drug was implicated
Total of cases with psychoactive drug implicated	1,144(100.0)	1,144 (100.0)
Alcohol-in-combination(1)	-	388 (33.9)
Amphetamines	15 (1.3)	32 (2.8)
Anti-depressants	18 (1.6)	126 (11.0)
Anti-epileptics	0 (0.0)	11 (1.0)
Anti-Parkinson's	0 (0.0)	2 (0.2)
Anti-psychotics	3 (0.3)	21 (1.8)
Cannabis	2 (0.2)	16 (1.4)
Cocaine	24 (2.1)	130 (11.4)
Ecstasy-type drugs	1 (0.1)	4 (0.3)
GHB	5 (0.4)	14 (1.2)
Heroin/morphine	235 (20.5)	687 (60.1)
Hypnotic/sedatives	11 (1.0)	240 (21.0)
Methadone	54 (4.7)	273 (23.9)
Other opiates/opioid analgesics	48 (4.2)	231 (20.2)
(1) Alcohol on its own does not meet the criteria for 'drug misuse' case.		

Age and substances implicated followed similar patterns as previously reported; heroin/morphine (65.0%) was most frequently implicated amongst those aged 15-44 years. In those aged 45 years and over, heroin/ morphine (45.5%) was most frequently implicated, followed by other opiates/opiate analgesics (31.7%) and methadone (21.7%) See Table 1.9 for further details.

Table 1.9: Age and drug implicated in deaths reported to *np*-SAD meeting the criteria for monitoring the Government's drug strategy, England, 2009

Age-group (years)	Number (%) where drug was implicated	Drug category (alone or in combination) most frequently implicated in each age group
All ages	1,144 (100.0)	Heroin/morphine (60.1%)
14 & under	-	-
15–24	77 (6.7)	Heroin/morphine (62.3%)
25-34	348 (30.4)	Heroin/morphine (63.8%)
35-44	429 (37.5)	Heroin/morphine (66.4%)
45-54	183 (16.0)	Heroin/morphine (51.9%)
55-64	71 (6.2)	Other opiates/opioid analgesics (46.5%)
65 & over	36 (3.1)	Other opiates/opioid analgesics (52.8%)

6. Other aspects

Information on other aspects of the decedents' circumstances was also reported on the *np*-SAD data collection form; such as release from prison, hepatitis and HIV/AIDS status. These are illustrated below.

6.1 Release from prison

A total of 52 cases were found who had been in prison at some time. Most (over 80%) of them had been released from prison recently. Four died on the same day they left prison and two the following day. Heroin use was implicated in all of these fatalities, only one was on a methadone prescription. Out of these 52 cases, 46 were male and 6 were female. The manner of death in these cases was: accidental overdose (44); drowning (1); hanging (1); and other causes (5). Two cases had been prescribed methadone, which was present in the post-mortem toxicology tests. The principal substances implicated were: heroin/morphine (15 as sole mention; 24 in combination); other opiates/opioid analgesics (2, 5); methadone (2, 13); anti-depressants (0, 1); hypnotics/sedatives (0, 10); and cocaine (0, 3). There were 10 deaths where alcohol was in combination with at least one other substance.

6.2 Hepatitis and HIV/AIDS

Altogether, 18 cases were identified where the individual was positive for either hepatitis or HIV/AIDS. Only one case was female. The underlying cause of death in most of these cases was typically drug abuse, drug toxicity or natural causes. Hepatitis was mentioned in all but one of the 17 cases as a contributory cause of death. For hepatitis cases, 10 were specified as hepatitis C, and in 7 cases the type of hepatitis was not given. Controlled drugs in combination with other drugs were implicated in 7 cases, and alcohol- in-combination in another 7 cases. There was only one case involving HIV/AIDS.

Ten year trends in death 2000-2009

This section examines deaths that occurred between 2000 and 2009 using the definition used to monitor the Government's drug strategy. The analysis is based on a 'panel' approach, that is, only areas which reported in every single year of the ten-year period were examined. This method enhances the statistical robustness of the findings and the conclusions that can be derived from them. Seventy coronial areas are represented, accounting for 69% of all cases reported. In all, a total of 13,228 cases meet the criteria for inclusion in the sample analysed here, for the ten-year period.

Table 1.10: Demographic characteristics of cases reported to *np*-SAD meeting the criteria for monitoring the Government's drug strategy, panel of coroners' areas, 2000-2009

Variable	Category	Number (%)
Total		13,228 (100.0)
Gender	Male	9,885 (74.7)
	Female	3,343 (25.3)
Employment status	Unemployed	6,661 (50.4)
	Employed	3,823 (28.9)
	Childcare/house person	225 (1.7)
	Student	253 (1.9)
	Retired/sickness/invalidity	1,338 (10.1)
	Other	95 (0.7)
	Not known	833 (6.3)
Living arrangements	Alone	5,273 (39.9)
	With others	5,719 (43.2)
	No fixed abode	651 (4.9)
	Other	693 (5.2)
	Not known	892 (6.7)
History of drug use	History	7,697 (58.2)
	No history	3,653 (27.6)
	Not known	1,878 (14.2)
Place of death	Defined residential address	8,865 (67.0)
	Hospital	3,205 (24.2)
	Other locations	1,080 (8.2)
	Not specified	78 (0.6)
Ethnicity	White	10,239 (77.4)
	Black	224 (1.7)
	Asian	135 (1.0)
	Other	178 (1.3)
	Not known	2,452 (18.5)

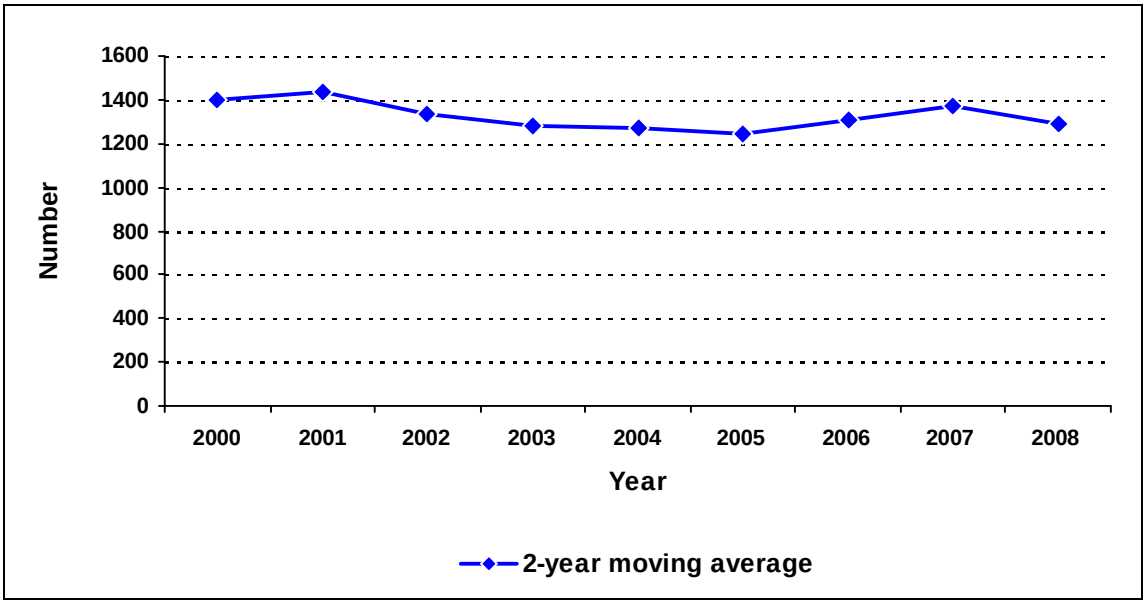
1. Demography

Summary information for some of the key demographics is given in Table 1.10 for the period as a whole. The information has not been broken down by year since there was very little variation either across the decade or in terms of changes from year-to-year. Previous annual reports have noted the consistency in many of these attributes over time especially in terms of the proportion of ethnic groups represented, those aged less than 45 years, gender, living arrangements, employment status, place of death, and manner of death.

Figure 1.9 shows the trend (using a 2-year moving average) in the number of deaths meeting the criteria for the Drug Strategy definition that occurred in a panel of English coronial areas from 2000 to 2009. The number of deaths fell steadily from a peak in 2001 to 2005 before rising again by 2007. Although there appears to be a decline in the last year or so, this fall may not be as pronounced as the graph indicates as more inquests relating

to deaths in 2008 and 2009 are completed and notified to the Programme. Upward revisions to figures for these two years reported on should be expected.

Figure 1.9: Trend in number of deaths meeting the Drug Strategy criteria, selected panel of coronial areas, 2000-2009



The number of cases broken down by gender is presented in Figure 1.10. There have been some fluctuations in the male:female ratio (range 2.4:1 to 3.6:1) over the decade, but with no discernible overall trend. Overall, there were 15 deaths of individuals aged less than 15 years, tending to be fewer in recent years. The number of deaths amongst those aged 15 to 24 years tended to fall over time, as did those in the 25-34 age-group (Figure 1.11). An increasing proportion of deaths were accounted for by those in the 35-44 and 45-54 age-groups, and to a lesser in the 55-64 age-group. In the oldest age-group (65 years and over) there was a fairly stable pattern of death. The median age at death increased progressively year on year from 34.8 to 39.5 years between 2000 and 2009. Where known, the proportion of cases with a known history of drug abuse or dependence fell from 70% to 67% over the decade, although there were year-to-year variations.

Figure 1.10: Trend in number of deaths meeting the Drug Strategy criteria, selected panel of coronial areas, by gender, 2000-2009

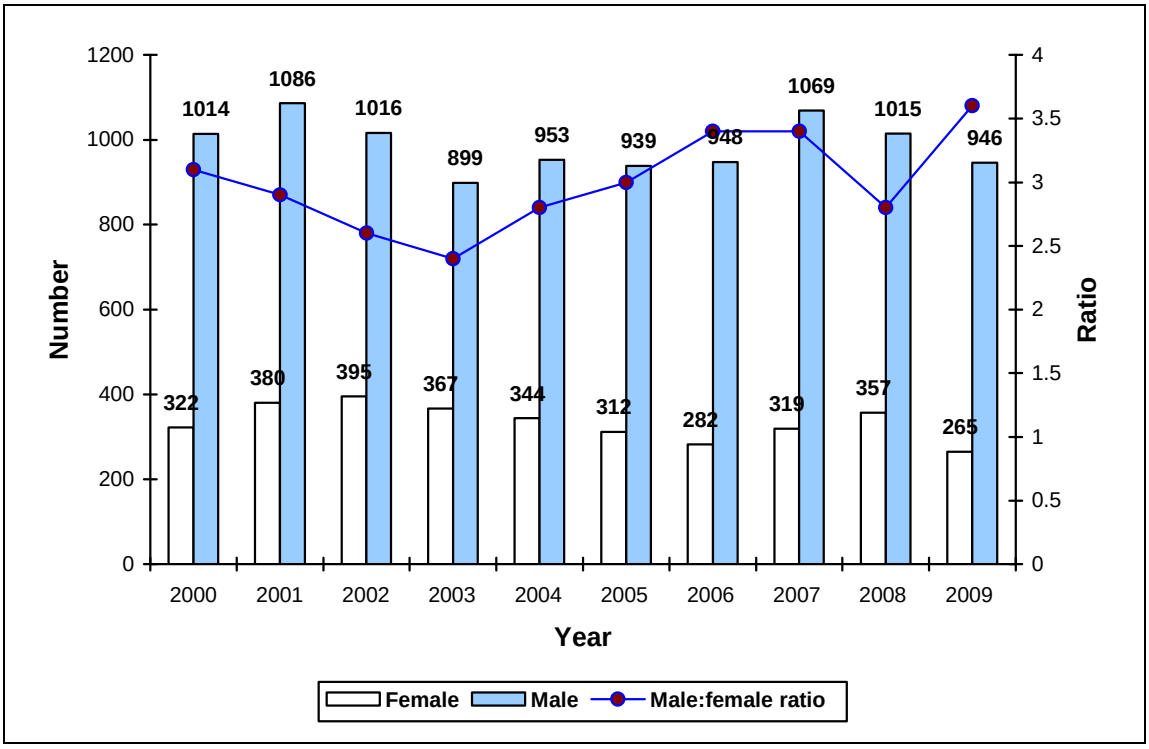
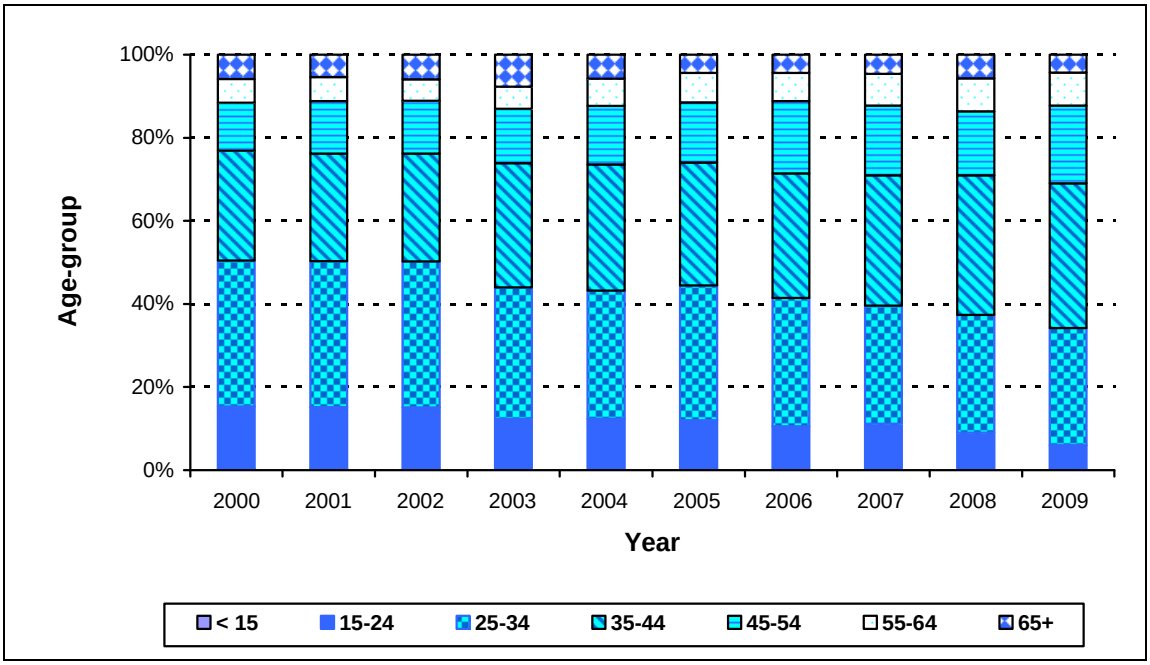


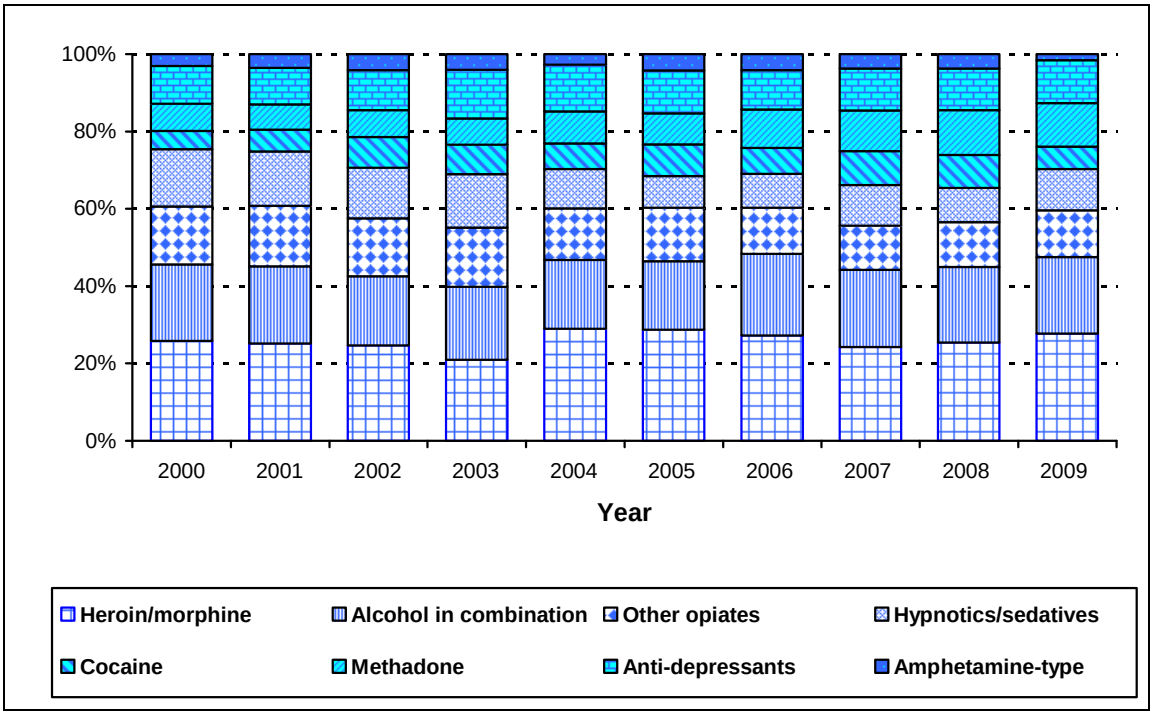
Figure 1.11: Trend in proportion accounted for by age-group of deaths meeting the Drug Strategy criteria, selected panel of coronial areas, 2000-2009



2. Substances implicated in death

Figure 1.12 shows the substances most commonly implicated, whether alone or in combination, in death. The figure indicates the proportion of selected substances implicated in death rather than the proportion of cases in which the substances is involved. In terms of cases, heroin/morphine accounted for the largest proportion (25.7%), followed by alcohol-in-combination (19.2%), and other opiates/opioid analgesics (13.6%). The other most frequently implicated drugs were: hypnotics/sedatives (11.6%), anti-depressants (10.8), methadone (8.5%), cocaine (7.1%), and amphetamine-type substances (amphetamine, MDMA, etc: 3.5%). These proportions did not change dramatically over time, although there appears to have been an overall decline in the contribution made by hypnotics/sedatives, and an increasing presence of methadone.

Figure 1.12: Trend in substances implicated in deaths meeting the Drug Strategy criteria, selected panel of coronial areas in England, 2000-2009



Breakdown for English regions

Tables F, G and H provide a profile of cases in the English regions which are the same as the National Treatment Agency's areas. The annual rate of 'drug misuse' deaths per 100,000 population ranged from 1.83 in the South West to 3.89 in the North West. The proportion of males ranged from 76.1% to 87.4%. The North East appears to have proportionately more deaths in the 15-24 year age-group than other regions. Where ethnicity is known, most deaths amongst minority communities appear to occur in the following regions: Yorkshire & Humber; East Midlands; Midlands; London; and the South East. However, numbers are low. The proportion of cases with a known history of drug use or addiction ranges from 50.5 to 66.3%.

In each region, the overall profile of drugs commonly implicated in death is consistent with the national picture. However, there appear some drugs with a higher presence in some regions compared to others. For example, other opiates/opioid analgesics were implicated in one-third of cases in the North West compared to 12.6% in the West Midlands. Hypnotics/sedatives were involved in 47.6% of deaths in the North East compared to only 8.9% in London. Suicides appear to be more common in the East and South East of England.

Table F: Profile of Drug Strategy deaths in English regions – Northern England

Government Office Region	North East		North West		Yorkshire & Humber	
Demographics	No	%	No	%	No	%
Population mid-2009 aged 16 years and over	2,125,800		5,600,800		4,286,900	
'Drug misuse' deaths reported	63		218		135	
Number of deaths/100,000 population aged 16 and over	2.96		3.89		3.15	
Gender						
Male	54	85.7	166	76.1	108	80.7
Female	9	14.3	52	23.9	26	19.3
Age-group (years)						
Under 15	0	0.0	0	0.0	0	0.0
15-24	10	15.9	14	6.4	9	6.7
25-34	31	49.2	65	29.8	38	28.1
35-44	14	22.2	77	35.3	64	47.4
45-54	5	7.9	39	17.9	18	13.3
55-64	2	3.2	14	6.4	6	4.4
65 and over	1	1.6	9	4.1	0	0.0
Ethnicity						
White	54	85.7	122	56.0	106	78.5
Black	0	0.0	0	0.0	4	3.0
Asian	0	0.0	2	0.9	1	0.7
Other	0	0.0	2	0.9	1	0.7
Unknown	9	14.3	92	42.2	23	17.0
Drug use/addiction history						
Yes	33	52.4	112	51.4	81	60.0
No	9	14.3	45	20.6	13	9.6
Unknown	21	33.3	61	28.0	41	30.4
Selected main drugs implicated*						
Heroin/morphine	32	50.8	103	47.2	80	59.3
Methadone	15	23.8	61	28.0	43	31.9
Hypnotics/sedatives	30	47.6	51	23.4	20	14.8
Cocaine	4	6.3	18	8.3	11	8.1
Amphetamines	0	0.0	16	7.3	4	3.0
Ecstasy-type drugs	0	0.0	1	0.5	0	0.0
Other opiates/opioid analgesics	11	17.5	72	33.0	19	14.1
Anti-depressants	8	12.7	25	11.5	15	11.1
Anti-psychotics	1	1.6	5	2.3	2	1.5
* Percentages may add to more than 100% because of more than one substance being implicated						
Manner of death						
Natural	0	0.0	5	2.3	2	1.5
Accidental	48	76.2	173	79.7	122	90.4
Suicidal	5	7.9	19	8.8	3	2.2
Homicidal	0	0.0	0	0.0	0	0.0
Undetermined	10	15.9	19	8.8	8	5.9
Unascertained/unknown	0	0	1	0.5	0	0.0

Table G: Profile of Drug Strategy deaths in English regions – Central England

Government Office Region	East of England		East Midlands		West Midlands	
Demographics	No	%	No	%	No	%
Population mid-2009 aged 16 years and over	4,675,000		3,635,400		4,378,200	
'Drug misuse' deaths reported	86		110		111	
Number of deaths/100,000 population aged 16 and over	1.84		3.03		2.54	
Gender						
Male	69	80.2	91	82.7	97	87.4
Female	17	19.8	19	17.3	14	12.6
Age-group (years)						
Under 15	0	0.0	0	0.0	0	0.0
15-24	5	5.8	9	8.2	11	9.9
25-34	27	31.4	34	30.9	33	29.7
35-44	28	32.6	40	36.4	40	36.0
45-54	17	19.8	11	10.0	16	14.4
55-64	4	4.7	10	9.1	10	9.0
65 and over	5	5.8	6	5.5	1	0.9
Ethnicity						
White	41	47.7	89	80.9	84	75.6
Black	1	1.2	2	1.8	1	0.9
Asian	0	0.0	1	0.9	5	4.5
Other	2	2.3	1	0.9	1	0.9
Unknown	42	48.8	17	15.5	20	18.0
Drug use/addiction history						
Yes	53	61.6	57	51.8	56	50.5
No	17	19.8	15	13.6	16	14.4
Unknown	16	18.6	38	34.5	39	35.1
Selected main drugs implicated*						
Heroin/morphine	56	65.1	67	60.9	80	72.1
Methadone	18	20.9	24	21.8	25	22.5
Hypnotics/sedatives	20	23.3	21	19.1	22	19.8
Cocaine	15	17.4	6	5.5	4	3.6
Amphetamines	1	1.2	4	3.6	0	0.0
Ecstasy-type drugs	0	0.0	1	0.9	1	0.9
Other opiates/opioid analgesics	13	15.1	25	22.7	14	12.6
Anti-depressants	12	14.0	10	9.1	8	7.2
Anti-psychotics	2	2.3	1	0.9	3	2.7
* Percentages may add to more than 100% because of more than one substance being implicated						
Manner of death						
Natural	1	1.2	0	0.0	1	0.9
Accidental	67	77.9	84	76.4	94	84.5
Suicidal	11	12.8	9	8.2	7	6.3
Homicidal	0	0.0	1	0.9	0	0.0
Undetermined	6	7.0	16	14.5	9	8.1
Unascertained/unknown	1	1.2	0	0.0	0	0.0

Table H: Profile of Drug Strategy deaths in English regions – Southern England

Government Office Region	London		South East		South West	
Demographics	No	%	No	%	No	%
Population mid-2009 aged 16 years and over	6,254,900		6,839,400		4,308,800	
'Drug misuse' deaths reported	169		181		79	
Number of deaths/100,000 population aged 16 and over	2.70		2.65		1.83	
Gender						
Male	145	85.8	138	76.2	61	77.2
Female	24	14.2	43	23.8	18	22.8
Age-group (years)						
Under 15	0	0.0	0	0.0	0	0.0
15-24	4	2.4	11	6.1	4	5.1
25-34	50	29.6	53	29.3	19	24.1
35-44	73	43.2	59	32.6	37	46.8
45-54	28	16.6	37	20.4	13	16.5
55-64	10	5.9	11	6.1	4	5.1
65 and over	4	2.4	10	5.5	2	2.5
Ethnicity						
White	103	60.9	133	73.4	55	69.6
Black	10	5.9	5	2.8	2	2.5
Asian	2	1.2	1	0.6	0	0.0
Other	11	6.5	2	1.1	2	2.5
Unknown	43	25.4	40	22.1	20	25.3
Drug use/addiction history						
Yes	112	66.3	107	59.1	48	60.8
No	27	16.0	36	19.9	12	15.2
Unknown	30	17.8	38	21.0	19	24.1
Selected main drugs implicated*						
Heroin/morphine	105	62.1	117	64.6	47	59.5
Methadone	39	23.1	29	16.0	19	24.1
Hypnotics/sedatives	15	8.9	43	23.8	18	22.8
Cocaine	51	30.2	19	10.5	2	2.5
Amphetamines	1	0.6	4	2.2	2	2.5
Ecstasy-type drugs	0	0.0	1	0.6	0	0.0
Other opiates/opioid analgesics	32	18.9	28	15.5	17	21.5
Anti-depressants	17	10.1	21	11.6	10	12.7
Anti-psychotics	1	0.6	4	2.2	2	2.5
* Percentages may add to more than 100% because of more than one substance being implicated						
Manner of death						
Natural	3	1.8	3	1.7	2	2.5
Accidental	152	89.9	147	81.2	61	77.2
Suicidal	8	4.7	21	11.6	7	8.9
Homicidal	0	0.0	0	0.0	0	0.0
Undetermined	6	3.6	8	4.4	9	11.4
Unascertained/unknown	0	0.0	2	1.1	0	0.0

Commentary

The demographic profile of drug-related deaths in England remains consistent with previous reports; a higher proportion of males to females, White, with a typical age of 25-44. 'Drug misuse' deaths amongst those aged 15-24 appear to have dropped over the past ten years. The number and proportion of deaths of known drug users aged more than 40 years at the time of death notified to the Programme also increased over the past decade. Deaths have doubled from 14 to 31 for those of Black ethnicity between 2008 and 2009.

Accidental poisoning still remains the most frequent underlying cause of death across all age-groups. However, older females are more likely to die of intentional self-poisoning, especially those over 50 years old. Suicides amongst those dying of 'drug misuse' were less likely than in other populations, since suicide commonly involves more prescribed medication, such as anti-depressants and/or hypnotics/ sedatives.

The most frequent drugs implicated in deaths of males were heroin/morphine, whilst for females it was anti-depressants, closely followed by heroin/morphine. Other opiates/opioid analgesics play a more important part on drug overdoses in older age-groups, especially amongst the over 50s. Deaths reported for 2009 suggest that the involvement in death of amphetamines and cocaine have decreased, whilst methadone and heroin/morphine have increased. This pattern is similar to that in 'drug misuse' cases. There has been a decline in monovalent deaths; in 2009 they accounted for 35% of cases whereas in 2008 they were implicated in 42%. Heroin/morphine combined with alcohol remains to be the most frequent polysubstance combination over the past ten years, followed by heroin/morphine combined with hypnotics/sedatives.

The most commonly prescribed medications implicated in death were anti-depressants, followed by hypnotics/sedatives. The implication of prescribed medications increases with age. The type of medication implicated also varies with age; three-quarters of those 35 years and older were on prescribed medication compared with their counterparts. Heroin/morphine (typically morphine-based pain-killers) increased in age especially for those over 70 years. The use of such medications by older age-groups probably reflects the increased need for pain-relief as individuals grow older. When prescribed, heroin/morphine and methadone were most likely to be implicated in deaths of older drug users. It appears that approximately 60% of hypnotics/sedatives, other opiates/opioid analgesics and methadone-related deaths are more likely to arise from illicit than licit substances.

Chapter 2 Drug-related deaths in Wales

This chapter describes the pattern of drug-related deaths in Wales reported by coroners to the *np*-SAD that meet the Programme's case criteria.

1. Demography

Notifications of 102 drug-related deaths occurring in 2009 were received from coroners in Wales. It is possible that this number may increase as inquests are subsequently completed for deaths that occurred in 2009. Furthermore, information for two of the coroner's areas in North Wales was unavailable when preparing this report. The number of such deaths reported in last year's annual report was 62 in 2008. Details of a further 27 deaths in 2008 were received since the publication of the last Annual Report.

In 2009 there was a rate of 4.16 drug-related deaths per 100,000 population aged 16 years and over, compared with 3.18 in 2007 and 3.65 in 2008. These rates are low by comparison with England and Scotland but similar to those in Northern Ireland.

The majority (86%) of the cases in 2009 were male (Table 2.1). The median age at death was 34.2 years (semi-interquartile range = 6.6) (Figure 2.1). Four-fifths (81%) of cases were under 45 years. About two-thirds (63%) were unemployed, and half (52%) lived with others. Where ethnicity was known, most (97%) decedents were White; however, ethnic background was not given in 37% of all cases. Addict status was known in 64 cases, 69% of which had a history of dependence or drug use.

Table 2.1: Demographic variables for drug-related deaths reported by coroners meeting *np*-SAD criteria, Wales, 2009

Variable	Category	Number (%)
Total		102 (100.0)
Gender	Male	88 (86.3%)
	Female	14 (13.7%)
Employment status	Employed	27 (26.5%)
	Unemployed	64 (62.7%)
	Childcare/house person	0 (0.0%)
	Students/pupils	1 (1.0%)
	Retired/sickness/invalidity	8 (7.8%)
	Not known	2 (2.0%)
Living arrangements	Alone	35 (34.3%)
	With others	53 (52.0%)
	No fixed abode	5 (4.9%)
	Other	4 (3.9%)
	Not known	5 (4.9%)

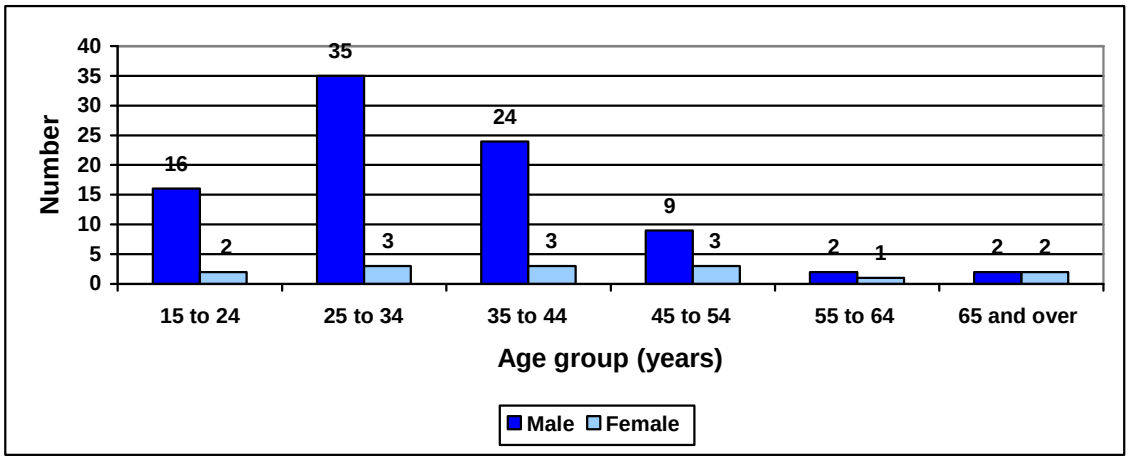
2. Location of death

Most fatalities (80%) occurred at a defined residential address (i.e. the deceased's home address or other private residential address). Ten percent occurred in hospital and 10% elsewhere.

3. Cause(s) of death

Four-fifths (81%) of cases died from accidental poisoning, 6.8% from intentional self-poisoning, and in 4/102 of cases the intent was undetermined. Three of the deaths were traumatic and another one related to mental disorders due to harmful drug use. The remaining cases were related to other causes of death.

Figure 2.1: Drug-related deaths reported by coroners meeting *np*-SAD criteria, by age and gender, Wales, 2009



4. Substances implicated in death

4.1 All substances

Psychoactive drugs were directly implicated in 95 (93%) cases. The principal substances implicated were: heroin/morphine (55%); alcohol-in-combination (32%); other opiates/ opioid analgesics (24%); hypnotics/sedatives (23%); methadone (21%); anti-depressants (16%); and cocaine (5%) (Table 2.2).

Figure 2.2 takes into account data where one of the following drugs was known to be implicated: alcohol-in-combination; amphet-amines; anti-depressants; anti-epileptics; cocaine; heroin/morphine; methadone; or other opiates/opioid analgesics.

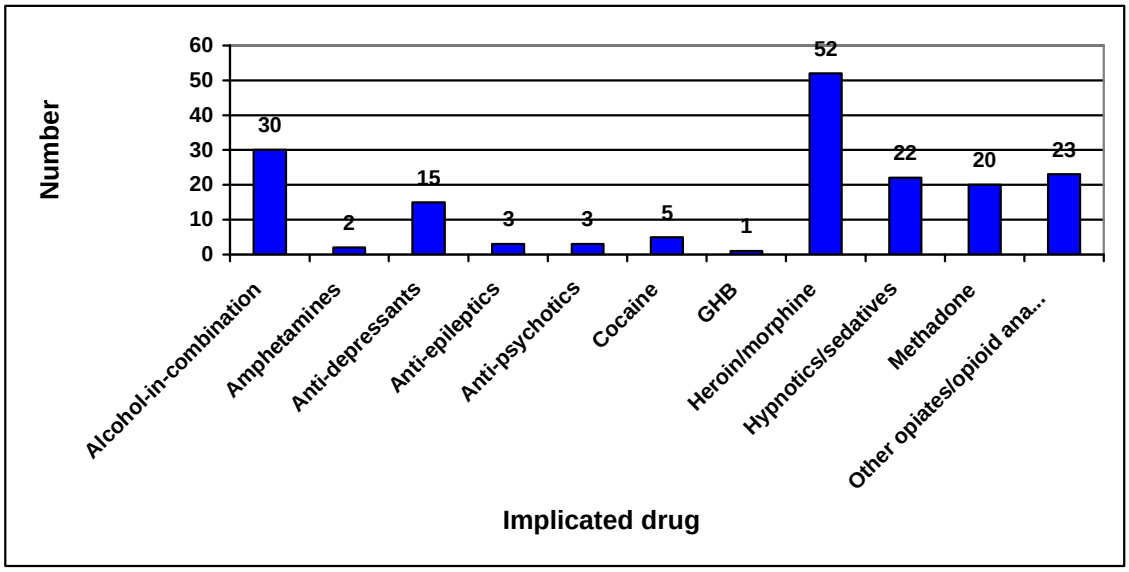
4.2 Single substances

Monovalent deaths accounted for 40% of all fatalities where psychoactive substances were implicated. The following substances, as the sole implicated drug, accounted for 31/38 of these deaths: heroin/morphine; methadone; and other opiates/ opioid analgesics (Table 2.2).

Table 2.2: Psychoactive substances implicated in deaths reported by coroners meeting *np*-SAD criteria, Wales, 2009

Drug category	Number (%) of cases where no other substance was implicated	Number (%) of cases where drug was implicated
Total	95 (100.0)	95 (100.0)
Alcohol-in-combination	-	30 (31.6)
Amphetamines	2 (2.1)	2 (2.1)
Anti-depressants	2 (2.1)	15 (15.8)
Anti-epileptics	1 (1.1)	3 (3.2)
Anti-Parkinson's	0 (0.0)	1 (1.1)
Anti-psychotics	0 (0.0)	3 (3.2)
Cannabis	0 (0.0)	0 (0.0)
Cocaine	2 (2.1)	5 (5.3)
Ecstasy-type drugs	0 (0.0)	0 (0.0)
GHB	0 (0.0)	1 (1.1)
Heroin/morphine	19 (20.0)	52 (54.7)
Hypnotic/sedatives	0 (0.0)	22 (23.2)
Methadone	7 (7.4)	20 (21.1)
Other opiates/opioid analgesics	5 (5.3)	23 (24.2)
Note: Column totals may sum to more than 100% since more than one substance may be implicated in a death.		

Figure 2.2: Drug-related deaths reported by coroners meeting *np*-SAD criteria, by selected psychoactive drug implicated, Wales, 2009



5. Age and drug implicated in death

Heroin/morphine accounted for most deaths in the 15-24, 25-34 and 35-44 age-groups (Table 2.3). In each of the remaining age-groups several substances were equally likely to be implicated. Looking at the over 45 years age-group as a whole, the most commonly implicated substances were anti-depressants and other opiates/opioid analgesics (6 cases each).

Table 2.3: Age and psychoactive drug implicated in deaths reported by coroners meeting *np*-SAD criteria, Wales, 2009

Age-group (years)	Number (%)	Drug category (alone or in combination) most frequently implicated in each age-group
All ages	95 (100.0)	Heroin/morphine (55%)
15-24	18 (18.9)	Heroin/morphine (72%)
25-34	38 (40.0)	Heroin/morphine (63%)
35-44	27 (28.4)	Heroin/morphine (44%)
45-54	12 (12.6)	Anti-depressants (25%) Methadone (25%) Other opiates/opioid analgesics (25%)
55-64	3 (3.2)	Anti-depressants (67%) Other opiates/opioid analgesics (67%)
65 & over	4 (4.2)	Alcohol-in-combination 1 case) Anti-depressants (1 case) Heroin/morphine (1 case) Other opiates/opioid analgesics (1 case)

6. Gender and drug implicated in death

The pattern of other drug-specific fatality was somewhat different in male and female cases. Among males, the most frequently mentioned drugs were: heroin/morphine (53%); alcohol-in-combination (30%); hypnotics/sedatives (22%); other opiates/opioid analgesics (19%); methadone (18%); and anti-depressants (14%).

Among female cases, the drugs mentioned were: other opiates/opioid analgesics (43%); heroin/morphine (36%); methadone and alcohol-in-combination (both 29%); and hypnotics/sedatives and anti-depressants (both 21%. Compared to male cases, female cases had higher proportions of fatality associated with other opiates/opioid analgesics (43% vs. 19%), methadone (29% vs. 18%), and anti-depressants (21% vs. 14%). Furthermore, there were no fatalities due to amphetamine, cocaine, ecstasy-type drugs, or GHB among females.

7. Regional data

This section contains information based on various geographical units. Table 2.4 provides information by Coroner's jurisdiction on the number of cases reported in 2008 and 2009, the number per 100,000 population aged 16 years and over, and the proportion of all inquests accounted for by drug-related deaths. Tables 2.5 and 2.6 provide information by Drug and Alcohol Action Team area on the number of deaths per 100,000 population aged 16 and over, and key findings in respect of key demographics and principal drugs implicated in death. Finally Table 2.7 gives the number of deaths per 100,000 population aged 16 and over for the four Substance Misuse Advisory Regional Team areas (which are co-terminous with the four police force areas).

In those areas for which data were available at the time of preparing this report, the highest number of deaths per 100,000 population (aged 16 years and over) were found in the Swansea and North West Wales coroners' areas, whilst there no cases in Ceredigion (Table 2.4). Cocaine would appear to be a more significant role in deaths in North Wales than in other areas, and amphetamine a greater role in Bro Taf. Methadone and hypnotics/sedatives made a major contribution to deaths in the Dyfed-Powys SMART area. In Iechyd Morgannwg, heroin/morphine was the dominant drug implicated in death (Table 2.6).

Table 2.4: Deaths reported, rates per 100,000 (aged 16 and over), and proportion of all inquests, Wales, 2008 and 2009

Coroner's Jurisdiction	Addit-ional 2008 deaths reported in 2009/10[1]	Cumul ative total num-ber of deaths 2008	Annual death rate per 100,000 popula-tion 2008 [2]	Annual % of all inquest s held in 2008[3]	Num-ber of deaths 2009	Annual death rate per 100,000 popula-tion 2009 [2]	Annual % of all inquests held in 2009
Bridgend & Glamorgan Valleys	12	19	5.56	8.02	10	2.12	5.52
Cardiff & the Vale of Glamorgan	0	2	0.56	1.83	18	5.00	4.95
Carmarthenshire	0	9	6.15	9.09	10	6.83	12.35
Central North Wales	-	3	1.75	1.20	-	-	-
Ceredigion	0	0	0.00	0.00	0	0.00	0.00
Gwent	1	7	1.55	4.61	19	4.22	11.31
Neath & Port Talbot	0	7	6.24	14.58	4	3.57	5.19
North East Wales	-	5	2.18	2.17	-	-	-
North West Wales	0	13	8.47	7.98	14	9.12	10.69
Pembrokeshire	0	4	4.19	5.13	4	4.19	5.63
Powys	1	4	3.69	6.35	4	3.69	6.45
Swansea	13	17	9.05	8.85	22	11.72	11.22

Note: (0) refers to either no drug-related deaths or death rates of less than 0.01, whilst (–) indicates that no reports were submitted for the specific period from that jurisdiction or area. In subsequent reports these rates may increase as more inquests on deaths in 2009 are held and/or notified to the *np*-SAD. These rates should therefore be regarded as minimum rates.
(1) Notified after the publication of the *np*-SAD Annual Report, 2009.
(2) The rate per 100,000 population is based on published mid-year population estimates for local government administrative areas for the years in question.
(3) Includes updated information submitted in 2009/10.

Table 2.5: Deaths by Drug and Alcohol Action Team area (16 years and over) – number and rate per 100,000 population, Wales, 2009

Drug and Alcohol Action Team	National and annual death rate per 100,000 population – usual area of residence		National and annual death rate per 100,000 population – place of death	
	No	Rate	No	Rate
Bro Taf	24	4.04	25	4.21
Dyfed Powys	18	4.33	18	4.33
Gwent	21	4.66	21	4.66
Iechyd Morgannwg	24	5.88	24	5.88
North Wales*	12	2.16	14	2.52
Note: There were 3 cases that were usually resident outside Wales and thus could not be allocated to a specific DA(A)T. Some DA(A)Ts are covered by coroner's jurisdictions that did not submit information (or only partial information) to the *np*-SAD; they are marked thus - *.				

Table 2.6: Deaths by Drug and Alcohol Action Team area (16 years and over) – demographics and drugs implicated, Wales, 2009

Drug and Alcohol Action Team	No	Gender		Age group						Ethnicity					Main Drug Strategy drug implicated					
	Total	Male	Female	15-24	25-34	35-44	45-54	55-64	>64	White	Black	Asian	Other	Not known	Heroin/ morphine	Methadone	Hypnotics/ sedatives	Cocaine	Amphetamine	Ecstasy-type
Bro Taf	25	19	6	5	9	7	3	1	0	18	1	0	0	6	17	4	4	1	2	0
Dyfed Powys	18	14	4	2	6	4	4	1	1	18	0	0	0	0	5	8	10	0	0	0
Gwent	21	18	3	4	12	5	0	0	0	3	0	0	0	18	9	5	3	1	0	0
Iechyd Morgannwg	24	24	0	6	7	8	2	0	1	21	0	0	1	2	18	0	4	1	0	0
North Wales"	14	13	1	1	4	3	3	1	2	2	0	0	0	12	3	3	1	2	0	0
Note: There were 3 cases that were usually resident outside Wales and thus could not be allocated to a specific DA(A)T. Some DA(A)Ts are covered by coroner's jurisdictions that did not submit information (or only partial information) to the *np*-SAD; they are marked thus - *.																				

Table 2.7: Deaths by Substance Misuse Advisory Regional Team areas in Wales (16 years and over), 2009

SMART	National and annual death rate per 100,000 population – usual area of residence		National and annual death rate per 100,000 population – place of death	
	No	Rate	No	Rate
North Wales*	12	2.16	14	2.52
Dyfed Powys	18	4.33	18	4.33
South Wales	48	4.79	49	4.89
Gwent	21	4.66	21	4.66
Note: In addition there were a number of cases that could not be allocated to specific SMART areas because they were of no fixed abode. Some cases were usually resident outside the UK. Some SMARTs are covered by coroner's jurisdictions that did not submit information (or only partial information) to the *np*-SAD; they are marked thus - *.				

8. Commentary

There was a higher ratio of male to female drug-related deaths in Wales during 2009 than in other countries within the UK; this was especially so in Iechyd Morgannwg and North Wales. Those who died tended to be younger than in other areas, for example in Gwent all those who died were less than 45 years. A greater proportion of cases were unemployed than elsewhere.

The nature of deaths were also different in Wales compared to England and Northern Ireland, In particular, there was a higher proportion of accidental overdoses and a lower proportion of cases where the intent was not clear. Whilst the profile of psychoactive substances implicated in deaths was broadly similar to other regions, there was a greater role played by heroin/morphine and other opiates/opioid analgesics.

Chapter 3 Drug-related deaths in Northern Ireland

This chapter describes the pattern of drug-related deaths in Northern Ireland. The Northern Ireland Statistics and Research Agency (NISRA) provided the data analysed in this section, from registrations recorded by the General Register Office for Northern Ireland. Coroners in Northern Ireland routinely submit returns on drug-related deaths after conducting an inquiry, similar to that in England and Wales.

1. Demography

Notifications of 65 drug-related deaths occurring in 2009 were received from NISRA and coroners which meet the *np*-SAD case criteria. The number of such deaths was 81 in 2007 and 59 in 2008 (including 29 notifications received since the publication of last year's report). This leads to an increase of about 10% in drug-related deaths between 2008 and 2009. However, details of further deaths for 2008 and 2009 may be subsequently notified to NISRA by coroners. In 2009 there was a rate of 4.62 drug-related deaths per 100,000 population aged 16 years and over, compared with 5.80 in 2007 and 4.23 in 2008. These rates are low by comparison with England and Scotland but similar to those for Wales.

Three-fifths (62%) of the cases in 2009 were male (Table 3.1). The median age at death was 41.5 years (semi-interquartile range = 11.9) (Figure 3.1). Two-thirds (66%) of cases were under 45 years. Just over a half (54%) were unemployed, half (48%) lived with others. Where ethnicity was known (n = 57), all decedents were White. Addict status was known in 37/65 cases, 14 (38%) of which had a history of dependence.

Table 3.1: Demographic variables for drug-related deaths reported by NISRA and coroners meeting *np*-SAD criteria, Northern Ireland, 2009

Variable	Category	Number (%)
Total		65
Gender	Male	40 (61.5)
	Female	25 (38.5)
Employment status	Employed	13 (20.0)
	Unemployed	35 (53.8)
	Childcare/house person	1 (1.5)
	Student/pupil	1 (1.5)
	Retired/sickness/invalidity	11 (16.9)
	Not known	4 (6.2)

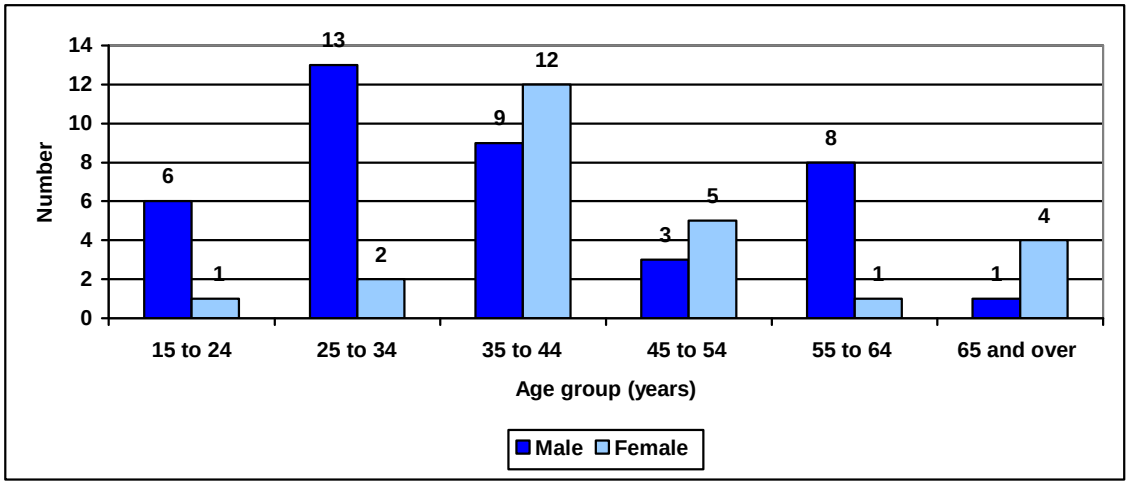
2. Location of death

Most fatalities (82%) occurred at a defined residential address (i.e. the deceased's home address or other private residential address). Fifteen percent occurred in hospital and 3% elsewhere.

3. Cause(s) of death

Based on the information available from coroners, 31% of cases died from accidental poisoning, 5% from intentional self-poisoning. In 62% of cases the intent was undetermined. Two cases died of natural causes.

Figure 3.1: Drug-related deaths reported by NISRA and coroners meeting *np*-SAD criteria, by age and gender, Northern Ireland, 2009



4. Substances implicated in death

4.1 All substances

Psychoactive drugs were directly implicated in all but four cases. The principal substances implicated were: other opiates/opioid analgesics (33); hypnotics/sedatives (32); alcohol-in-combination (27); anti-depressants (24); and anti-psychotics (7) (Table 3.2). This profile is different to that seen in England and Wales and more similar to that seen in Scotland in terms of the large proportion of hypnotics/ sedatives involved (GROS, 2010).

Figure 3.2 takes into account data where one of the following drugs was known to be implicated: alcohol-in-combination; amphet-amines; anti-depressants; anti-epileptics; anti-Parkinson's; anti-psychotics; cannabis; cocaine; ecstasy-type drugs; GHB; heroin/ morphine; hypnotics/sedatives; methadone; and other opiates/opioid analgesics.

4.2 Single substances

The following substances, as the sole implicated drug, accounted for 11/65 (17%) deaths: anti-depressants; heroin/morphine and other opiates/ opioid analgesics (Table 3.2).

Table 3.2: Psychoactive substances implicated in deaths reported by NISRA and coroners meeting *np*-SAD criteria, Northern Ireland, 2009

Drug category	Number of cases where no other substance was implicated (N = 61)	Number of cases where drug was implicated (N = 61)
Alcohol-in-combination	-	27
Amphetamines	0	2
Anti-depressants	4	24
Anti-epileptics	0	1
Anti-Parkinson's	0	2
Anti-psychotics	0	7
Cocaine	0	3
Heroin/morphine	3	9
Hypnotic/sedatives	0	32
Methadone	0	3
Other opiates/opioid analgesics	4	33

Note: Column totals may not sum to 61 since more than one substance may be implicated in a death.

5. Age and drug implicated in death

In all age groups, except those aged 55-64 years, hypnotics/sedatives were the leading substances implicated. However, in these groups, except the 25-34 age-group, other opiates/opioid analgesics were implicated in equal numbers. This class of drugs was the most frequently mentioned substance contributing to fatality in the 55-64 age-group (Table 3.3).

Figure 3.2: Drug-related deaths reported by NISRA and coroners meeting *np*-SAD criteria, by psychoactive drug implicated, Northern Ireland, 2009

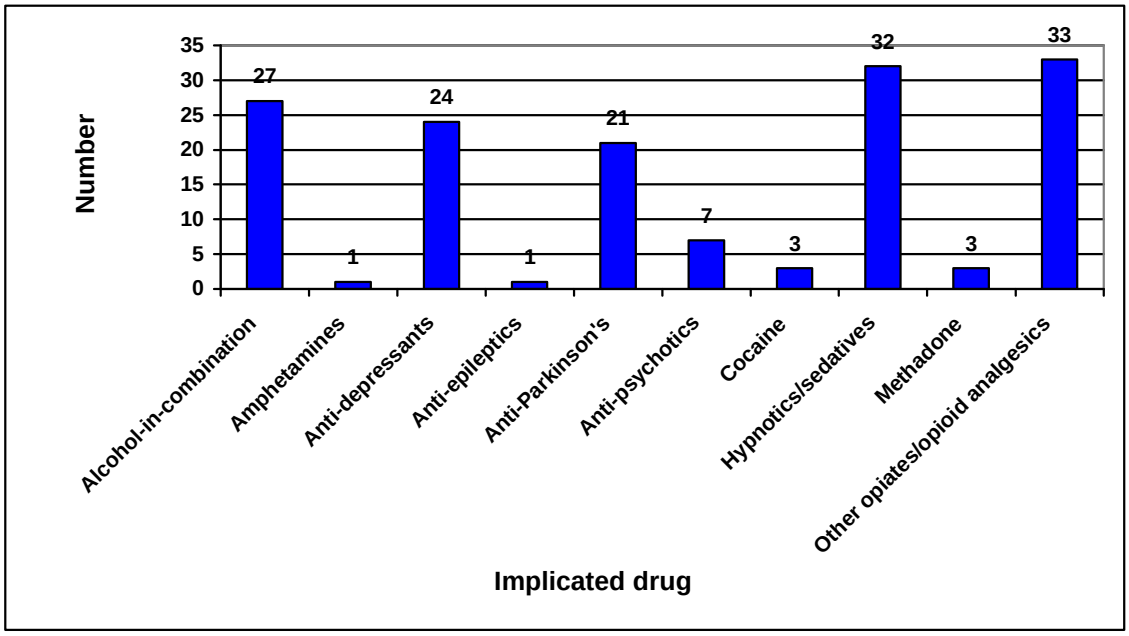


Table 3.3: Age and psychoactive drug implicated in deaths reported to NISRA meeting *np*-SAD criteria, Northern Ireland, 2009

Age-group (years)	Number where substance implicated	Drug category (alone or in combination) most frequently implicated in each age group
All ages	61	Other opiates/opioid analgesics (33)
15-24	7	Hypnotics/sedatives (5) Other opiates/opioid analgesics (5)
25-34	15	Hypnotics/sedatives (8)
35-44	18	Hypnotics/sedatives (9) Other opiates/opioid analgesics (9)
45-54	7	Alcohol-in-combination (4) Anti-depressants (4) Hypnotics/sedatives (4) Other opiates/opioid analgesics (4)
55-64	9	Other opiates/opioid analgesics (5)
65 & over	5	Alcohol-in-combination (3) Anti-depressants (3) Hypnotics/sedatives (3) Other opiates/opioid analgesics (3)

6. Gender and drug implicated in death

The pattern of other drug-specific fatality was somewhat different in male and female cases. Among males, the most frequently mentioned drugs were: hypnotics/sedatives (22); other opiates/opioid analgesics (19); alcohol-in-combination (18); anti-depressants (15); heroin/morphine (7); anti-psychotics (5); cocaine (3); amphetamines (2); and methadone (2).

Among female cases, the drugs mentioned most commonly were: other opiates/opioid analgesics (14); hypnotics/sedatives (10); alcohol-in-combination (9); anti-depressants (9); anti-psychotics (2); heroin/morphine (2). Compared to male cases, female cases had a higher proportion of fatality associated with other opiates/ opioid analgesics (61% vs. 50%). Furthermore, there were no fatalities due to amphetamine, cocaine, and anti-epileptics among females.

7. Commentary

The number of deaths notified to the Programme from sources in Northern Ireland showed a modest increase in 2009. The demographic profile of those dying in 2009 is similar to previous years.

The profile of the psychoactive substances implicated in these cases is broadly similar to previous years. The role of specific types of drugs in drug-related mortality continues to show significant differences to those occurring in England and to a lesser extent in Wales. There are proportionately fewer deaths involving heroin/morphine and methadone. However, there is a greater role played by hypnotics/sedatives and anti-depressants. The relatively higher involvement of hypnotics/sedatives is similar to the pattern in Scotland, and to a lesser extent in Wales.

Chapter 4 Drug-related deaths in Scotland

This section describes the pattern of drug-related deaths in Scotland. The Scottish Crime and Drug Enforcement Agency (SCDEA) on behalf of the Association of Chief Police Officers in Scotland (ACPOS) collate data on drug-related deaths obtained from Scottish police forces. These data are used to populate a police/SCDEA national database which is maintained by the SCDEA. As such the data supplied to the SCDEA remain the property of the submitting force that is also responsible for its accuracy and submission to the database.

Drug-related death cases are those that meet the definition used by the Association of Chief Police Officers (Scotland) – "where there is prima facie evidence of a fatal overdose of controlled drugs. Such evidence would be recent drug misuse, for example controlled drugs and/or a hypodermic syringe found in close proximity to the body and/or the person is known to the police as a drug misuser although not necessarily a notified addict." Thus, most suicides in Scotland are excluded. Figures for 'drug misuse' deaths registered in 2009 have been recently published by the General Register Office for Scotland.[1]

1. Demography

Notifications of 479 drug-related deaths occurring in 2009 were received by the SCDEA, covering the following police force areas: Central Scotland (2.1%); Dumfries & Galloway (1.9%); Fife (5.9%); Grampian (9.0%); Lothian & Borders (18.6%); Northern (3.1%); Strathclyde (49.5%); and Tayside (10.0%).

The majority (78%) of cases were male (Table 3.1). The median age at death was 35.1 years (semi-interquartile range = 6.6) (Figure 4.1). 86% of cases were under 45 years. Where ethnicity was known, 99% were White.

2. Location of death

In line with data protection, the SCDEA database structure does not record information on living arrangements and place of death. Such information was available in only three Scottish cases; all died at home.

3. Cause(s) of death

Of the fatalities (95.6%) were considered to be accidental (i.e. clearly non-deliberate) poisoning. Deaths due to natural causes (1.9%) and mental disorders due to psychoactive substances (2.5%) accounted for the remaining cases.

4. Substances implicated in death

4.1 All substances

Psychoactive drugs were not directly implicated in about 2.3% of cases (n = 11). Of the remaining 468 cases, the principal substances implicated were: heroin/morphine (69%); hypnotics/sedatives (29%); methadone (36%); alcohol in combination with other substances (31%); other opiates/ opioid analgesics (11%); and cocaine (8%) (Table 4.2).

Figure 4.2 takes into account data where one of the following drugs was known to be implicated: alcohol-in-combination; anti-depressants; cocaine; ecstasy-type drugs; heroin/morphine; methadone; hypnotics/ sedatives; or other opiates/opioid analgesics.

4.2 Single substances

The following substances, as the sole implicated drug, accounted for 150 (32%) deaths: heroin/morphine (21%); methadone (8%); other opiates/opioid analgesics (1%); cocaine (1%); amphetamines (<1%) and hypnotics/sedatives (<1%) (Table 4.2).

[1] GROS. (2010). *Drug-Related Deaths in Scotland in 2009*. Edinburgh: General Register Office (Scotland). 17 August 2010. Available at:http://www.gro-scotland.gov.uk/files2/stats/drug-related-deaths/drd2009/drd2009.pdf. Accessed on 17 August 2010

Table 4.1: Demographic variables for drug-related deaths as reported by Scottish police forces to the SCDEA, 2009

Variable	Category	No	%
Total		479	100.0
Gender	Male	372	77.7
	Female	107	22.3
Age-group (years)	Under 15	1	0.2
	15-24	68	14.2
	25-34	167	34.9
	35-44	178	37.2
	45-54	58	12.1
	55-64	7	1.5
	65 & over	0	0.0

Table 4.2: Psychoactive substances implicated in drug-related deaths as reported by Scottish police forces to the SCDEA, 2009

Drug category	Number (%) of cases where no other substance was implicated	Number (%) of cases where drug was implicated*
Total	468 (100.0)	468 (100.0)
Alcohol-in-combination	-	147(31.4)
Amphetamines	2 (0.4)	6 (1.3)
Anti-depressants	1 (0.2)	16 (3.4)
Anti-epileptics	0 (0.0)	0 (0.0)
Anti-Parkinson's	0 (0.0)	0 (0.0)
Anti-psychotics	1 (0.2)	4 (0.9)
Cannabis	0 (0.0)	0 (0.0)
Cocaine	6 (1.3)	37 (7.9)
Ecstasy-type drugs	0 (0.0)	2 (0.4)
GHB	1 (0.2)	1 (0.1)
Heroin/morphine	98 (20.9)	321(68.6)
Hypnotic/sedatives	3 (0.6)	135 (28.8)
Methadone	37 (7.9)	166 (35.5)
Other opiates/opioid analgesics	4 (0.9)	50 (10.7)
Note: Column totals may sum to more than 100% since more than one substance may be implicated in a death.		

Figure 4.1: Drug-related deaths as reported by Scottish police forces to the SCDEA, by age and gender, 2009

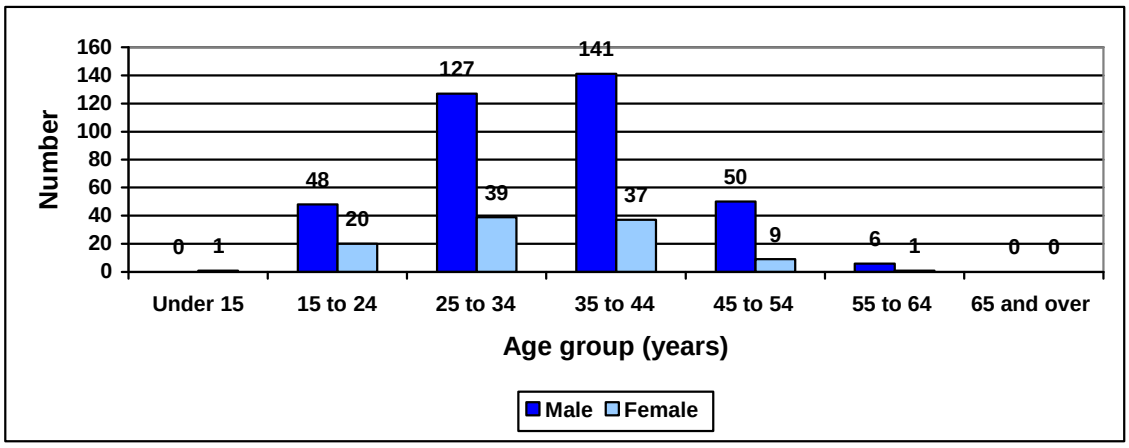
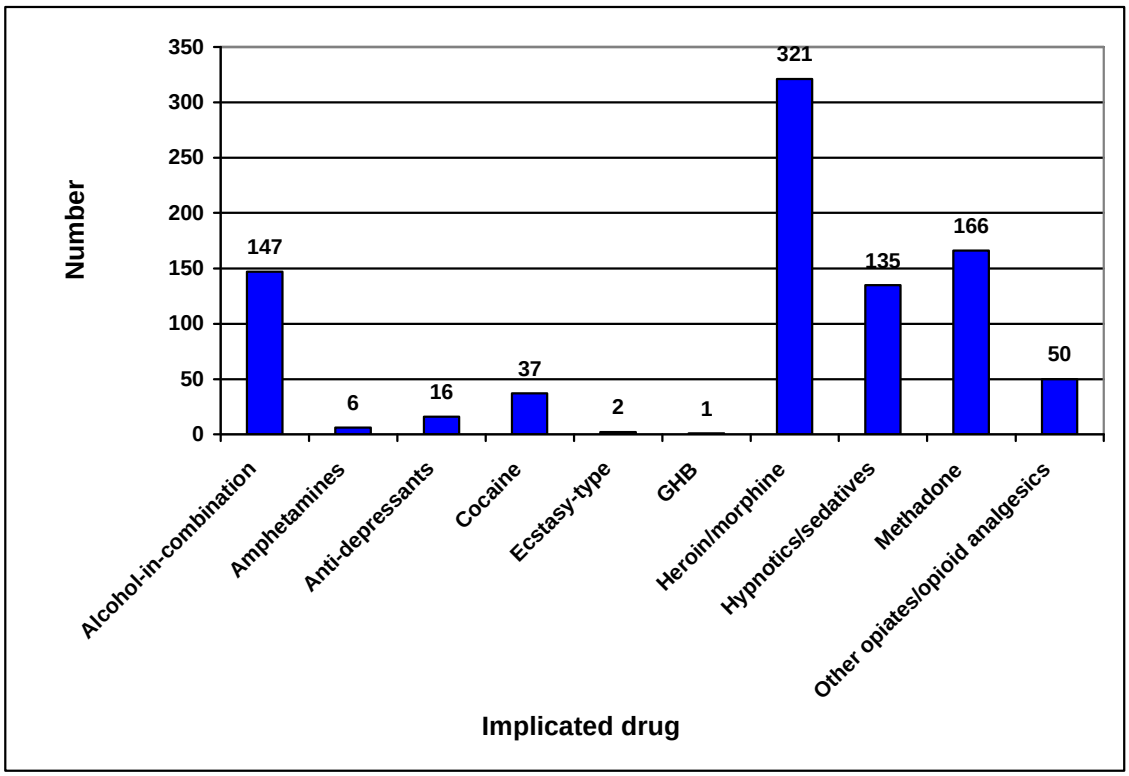


Figure 4.2: Drug-related deaths as reported by Scottish police forces to the SCDEA, by selected psychoactive drug implicated, 2009



5. Age and drug implicated in death

In cases aged 15 years and over, heroin/morphine was the most frequently mentioned drug contributing to fatality (Table 4.3).

This was also the case for all of these individual age-groups. The sole case of an individual aged less than 15 years involved a combination of other opiates/opioid analgesics and hypnotics/sedatives.

Table 4.3: Age and psychoactive drug implicated in drug-related deaths as reported by Scottish police forces to the SCDEA, 2009

Age-group (years)	Number (%)	Drug category (alone or in combination) most frequently implicated in each age group
All ages	468 (100.0)	Heroin/morphine (68.6)
14 & under	1 (0.2)	Other opiates/opioid analgesics & hypnotics/sedatives (1 case)
15–24	66 (14.1)	Heroin/morphine (62.1%)
25-34	161 (34.4)	Heroin/morphine (73.3%)
35-44	175 (37.4)	Heroin/morphine (68.6%)
45-54	58 (12.4)	Heroin/morphine (69.0%)
55-64	7 (1.5)	Heroin/morphine (57.1%)
65 and over	0 (0.0)	-

6. Gender and drug implicated in death

In males (n = 366) and females (n = 102), heroin/morphine was the most frequently mentioned drug, accounting for 71% and 59% of fatalities respectively. However, the pattern of other drug-specific fatality was somewhat different in male and female cases.

Among males, the most frequently mentioned drugs were: heroin/morphine (71%); alcohol-in-combination (66%); methadone (32%); hypnotics/sedatives (29%); other opiates/ opioid analgesics (11%); and cocaine (9%). Furthermore, there appears to be a higher proportion of cases of drug-specific fatality among males compared to females in respect of alcohol-in-combination (66% vs. 24%).

Among female cases, the most frequently mentioned drugs were: heroin/morphine (59%); methadone (49%); hypnotics/sedatives (28%); alcohol-in-combination (24%); other opiates/opioid analgesics (6%); anti-depressants (6%); and cocaine (5%). Compared to male cases, it appears that female cases had a higher proportion of fatality associated with methadone (49% vs. 32%); and anti-depressants (6% vs. 3%).

7. Regional data

The number of drug-related deaths reported by police to the SCDEA and meeting the *np*-SAD case criteria fell from 312 in 2004 to 254 in 2005 and then rose to 374 in 2006. The figure for 2007 was 357, but rose to a new peak of 478 in 2008 (an increase of 34%). This figure remained stable in 2009 (Table 4.4). The rates in the Fife, Grampian, Lothian & Borders, Strathclyde and Tayside police force areas are on a par with some of the higher rates reported in England and Wales.

8. Commentary

Whilst data received by *np*-SAD from coroners suggests that the number of drug-related deaths increased in England, Wales and Northern Ireland during 2009, information from the Scottish police indicate stabilisation of SCDEA cases. Figures released by the General Register for Scotland show a slight fall in deaths registered in 2009, using a number of different definitions (GROS, 2010).

Where recorded by the SCDEA, the demographic profile of those who died from drug-related causes is similar to those in other parts if the UK e.g. a higher proportion of males to females, aged typically 25-44 years, and White.

The overwhelming majority of deaths were accidental drug overdoses. The level in Scotland was much higher than in other regions reflecting the different case definition used by Scottish police forces. Opiates such as heroin and methadone are implicated in the majority of cases, and play a larger role than in other regions. Alcohol-in-combination with other substances and hypnotics/sedatives (which are mostly diazepam and temazepam) also feature prominently in Scottish deaths. There have been falls in the involvement of stimulants such as cocaine, amphetamines and ecstasy-type drugs.

Table 4.4: Deaths meeting *np*-SAD criteria as reported by Scottish police forces to the SCDEA, per 100,000 population by police force area, 2007-9

Police force area	Number of deaths 2007	Annual death rate per 100,000 population 2007 (1)	Number of deaths 2008	Annual death rate per 100,000 population 2008 (1)	Number of deaths 2009	Annual death rate per 100,000 population 2009 (1)
Central Scotland Police	9	3.11	13	4.48	10	3.02
Dumfries & Galloway Constabulary	4	2.69	8	5.38	9	6.06
Fife Constabulary	22	5.78	33	9.12	28	7.70
Grampian Police	33	6.16	47	8.71	43	7.89
Lothian & Borders Police	50	5.42	82	8.81	89	9.48
Northern Constabulary	7	2.45	12	4.17	15	5.19
Strathclyde Police	200	9.05	244	11.02	237	11.14
Tayside Police	32	8.37	39	9.82	48	12.01
Scotland	357	6.94	478	9.25	479	9.22
(1) The rate per 100,000 population is based on published mid-year population estimates for local government administrative areas for the years in question.						

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Chapter 5 Drug-related deaths in the Islands

This chapter reports on deaths in 2009 and examines the pattern of drug-related deaths in the Islands between 2005 and 2009. Coroners and their equivalents in Guernsey, Jersey and the Isle of Man routinely submit returns on drug-related deaths to the *np*-SAD that meet the Programme's case criteria.

As there are comparatively few cases in a single year, even when combining data for the Islands together, data for 2005-9 have been aggregated together so that the findings are more statistically robust.

1. Demography

To date, the Programme has been notified of 7 relevant deaths on Jersey and 5 on the Isle of Man during 2009; Guernsey has no deaths to report. A total of 56 drug-related deaths occurred between 2005 and 2009: 13 in 2005, 10 in 2006, 12 in 2007, 9 in 2008 and 12 in 2009. This shows a stable situation in drug-related deaths in three Islands between 2005 and 2009. The number of deaths in this 5-year period was 4 in Guernsey, 32 in Jersey and 20 in the Isle of Man. In 2009 the number of deaths per 100,000 population aged 16 years and over was 9.39 for Isle of Man and 7.54 for Jersey; there were no cases in Guernsey (Tables 5.1 and 5.2).

Just over three-quarters (77%) of the cases during the 5-year period were male (Table 5.3). The median age at death was 37.6 years (semi-interquartile range = 10.9). A little over two-thirds (68%) of cases were under 45 years (Figure 5.1). Where ethnicity was known, the overwhelming majority (96%) of decedents were White, 41% were unemployed, half (52%) lived with others. Addict status was known in 30/56 cases, only 5% of which had a history of dependence. Key demographics and the principal drugs implicated in death during 2009 are given for the individual Islands in Table 5.4.

Table 5.1: Changes in annual death rate per 100,000 population for *np*-SAD cases (16 years old and over), and annual percentage of all inquests held, by Island, 2008 and 2009

Island	Number of *np*-SAD deaths 2008	Annual death rate per 100,000 population 2008 (1)	Annual % of all inquests held in 2008 (2)	Number of *np*-SAD deaths 2009	Annual death rate per 100,000 population 2009 (1)	Annual % of all inquests held in 2009 (2)
Guernsey	0	0.00	0.00	0	0.00	0.00
Jersey	6	7.97	11.76	7	9.39	14.00
Isle of Man	3	4.47	7.89	5	7.54	12.82

Note: (0) refers to either no drug-related deaths or death rates of less than 0.01, whilst (–) indicates that no reports were submitted for the specific period from that jurisdiction or area. In subsequent reports these rates may increase as more inquests on deaths in 2009 are held and/or notified to the *np*-SAD. These rates should therefore be regarded as minimum rates.
(1) Notified after the publication of the *np*-SAD Annual Report, 2009.
(2) The rate per 100,000 population is based on published mid-year population estimates for local government administrative areas for the years in question.
(3) Includes updated information submitted in 2009/10.

Table 5.2: Number and rate per 100,000 population (16 years and over) for *np*-SAD cases, by place of residence and death, by Island, 2009

Island	National and annual death rate per 100,000 population – usual area of residence		National and annual death rate per 100,000 population – place of death	
	No	Rate	No	Rate
Guernsey	0	0.00	0	0.00
Jersey	6	6.03	7	7.54
Isle of Man	4	8.05	5	9.39
Note: Some cases were not usually resident in the Islands.				

Table 5.3: Demographic variables for drug-related deaths meeting *np*-SAD criteria, the Islands, 2005-2009

Variable	Category	Number (%)
Total		56
Gender	Male	43 (76,8)
	Female	13 (23.2)
Employment status	Employed	22 (39.3)
	Unemployed	23 (41.1)
	Childcare/house person	2 (3.6)
	Student/pupil	1 (1.8)
	Retired/sickness/invalidity	8 (14.3)
Living arrangement	Alone	24 (42.9)
	With others	29 (51.8)
	Not known	3 (5.4)

Table 5.4: Key demographics and principal drugs implicated in death for *np*-SAD cases, by Island, 2009

Island	No	Gender		Age group						Ethnicity					Main Drug Strategy drug implicated					
	Total	Male	Female	15-24	25-34	35-44	45-54	55-64	>64	White	Black	Asian	Other	Not known	Heroin/ morphine	Methadone	Hypnotics/ sedatives	Cocaine	Amphetamine	Ecstasy-type
Guernsey	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jersey	5	4	1	0	1	3	1	0	0	4	0	1	0	0	4	0	1	0	0	0
Isle of Man	7	7	0	1	2	3	0	0	1	7	0	0	0	0	3	1	1	0	0	0
Note: Some cases were usually resident outside the Islands.																				

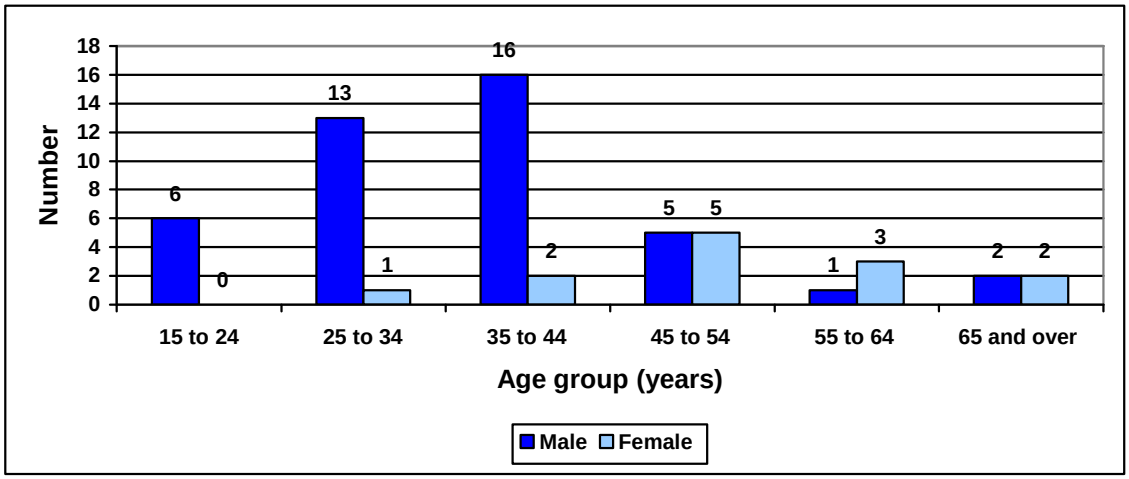
2. Location of death

Most fatalities (82%) occurred at a defined residential address (i.e. the deceased's home address or other private residential address). Thirteen percent occurred in hospital and 7% elsewhere.

3. Cause(s) of death

Based on the information available from coroners, 61% of cases died from accidental poisoning, 29% from intentional self-poisoning, and in 10% of cases the intent was undetermined.

Figure 5.1: Drug-related deaths meeting *np*-SAD criteria, by age and gender, the Islands, 2005-2009



4. Substances implicated in death

4.1 All substances

Psychoactive drugs were directly implicated in 54 cases while in two cases there was no implication of any psychoactive substances. The principal substances implicated were: other opiates/opioid analgesics (23); heroin/morphine (21); hypnotics/sedatives (14); alcohol-in-combination (13); anti-depressants (11); Methadone (5) and anti-psychotics (3) (Figure 5.2).

Figure 5.2 takes into account data where one of the following drugs was known to be implicated: alcohol-in-combination; amphet-amines; anti-depressants; anti-epileptics; anti-Parkinson's; anti-psychotics; cannabis; cocaine; ecstasy-type drugs; GHB; heroin/ morphine; hypnotics/sedatives; methadone; and other opiates/opioid analgesics.

4.2 Single substances

The following substances, as the sole implicated drug, accounted for 24/56 (43%) deaths: anti-depressants; heroin/morphine; hypnotic/sedatives and other opiates/ opioid analgesics (Table 5.5).

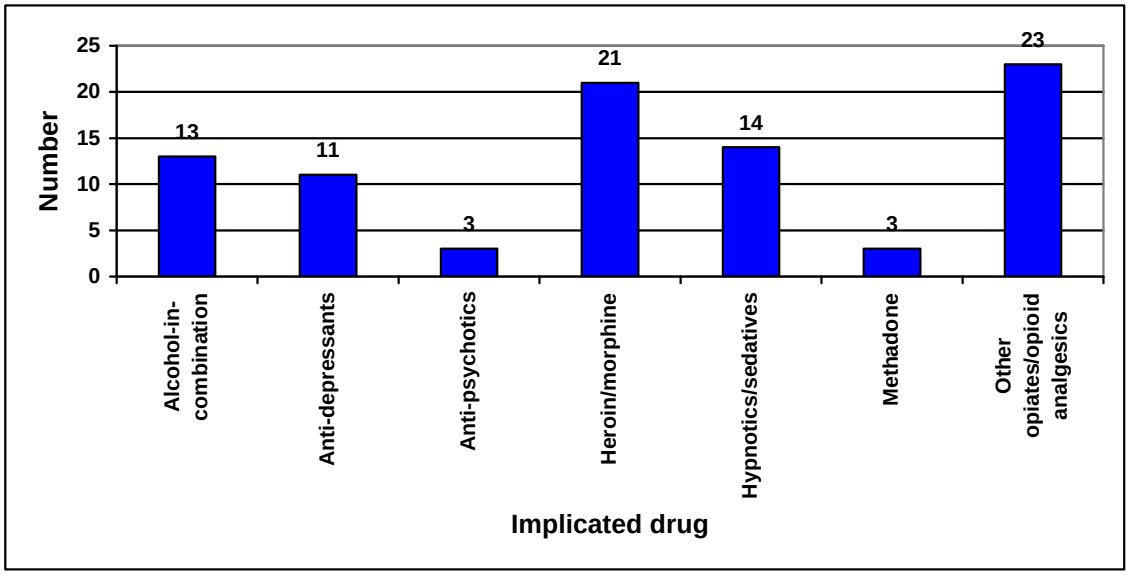
Table 5.5: Psychoactive substances implicated in meeting *np*-SAD criteria, the Islands, 2005-2009

Drug category	Number of cases where no other substance was implicated (N = 54)	Number of cases where drug was implicated (N = 54)
Alcohol-in-combination	-	13
Anti-depressants	2	11
Anti-psychotics	0	3
Heroin/morphine	10	21
Hypnotic/sedatives	1	14
Methadone	0	5
Other opiates/opioid analgesics	11	23

5. Age and drug implicated in death

In all ages, other opiates/opioid analgesics (23) were the leading substances implicated, followed by Heroin/morphine (21). However, for individual age groups, heroin/morphine was the leading implicated drugs among younger age groups (less than 45 years). Hypnotics/sedatives; other opiates/opioid analgesics; and anti-depressants drugs were the most frequently mentioned substance contributing to fatality in the remaining age-groups (Table 5.6).

Figure 5.2: Drug-related deaths *np*-SAD criteria, by psychoactive drug implicated, the Islands, 2005-2009



6. Gender and drug implicated in death

The pattern of other drug-specific fatality was somewhat different in male and female cases. Among males, the most frequently mentioned drugs were: heroin/morphine (19); other opiates/opioid analgesics (16); hypnotics/sedatives (11); alcohol-in-combination (10); anti-depressants (6); methadone (5); anti-psychotics (5); and cannabis, anti-psychotics and ecstasy-type mentioned in one fatality.

Among female cases, the drugs mentioned most commonly were: other opiates/opioid analgesics (7); anti-depressants (5); alcohol-in-combination (3); anti-psychotics (2); heroin/morphine (2). There were no fatalities due to methadone, cannabis and ecstasy-types among females. Compared to male cases, female cases had a higher proportion of fatality associated with other opiates/ opioid analgesics (53% vs. 37%) and anti-depressants (39% vs. 15%).

Table 5.6: Age and psychoactive drug implicated in deaths reported by Guernsey, Isle of Man and Jersey coroners at the Islands meeting *np*-SAD criteria, 2005-2009

Age-group (years)	Number where substance implicated	Drug category (alone or in combination) most frequently implicated in each age group
All ages	56	Other opiates/opioid analgesics (23) Heroin/morphine (21) Hypnotics/sedatives (14) Alcohol in combination (13) Anti-depressants (11) Methadone (5) Anti-psychotics (3) Cannabis and Ecstasy-types (1 for each drug)
15-24	6	Heroin/morphine (4) Other opiates/opioid analgesics (2) Anti-depressants (2) Hypnotics/sedatives (1)
25-34	14	Heroin/morphine (8) Other opiates/opioid analgesics (6) Methadone (2) Anti-depressants (1) Cannabis (3)
35-44	18	Heroin/morphine (7) Alcohol in combination (7) Other opiates/opioid analgesics (6) Hypnotics/sedatives (5) Methadone (3 Anti-depressants (1) Anti-psychotics (1) Ecstasy-type (1)
45-54	10	Hypnotics/sedatives (5) Other opiates/opioid analgesics (4) Anti-depressants (4) Alcohol-in-combination (4) Heroin/morphine (2) Anti-psychotics (1)
55-64	4	Anti-depressants (3) Other opiates/opioid analgesics (2) Anti-psychotics (1)
65 & over	4	Other opiates/opioid analgesics (3) Hypnotics/sedatives (3)

7. Commentary

The number of deaths notified to the Programme from the Islands showed a modest increase for the Isle of Man and Jersey in 2009. Guernsey again had no cases to report. The general demographic profile of cases in the Islands is in line with the pattern in the UK as a whole, although far fewer appear to have had a known history of drug dependence or use. .

When data for the three Islands are combined together, the profile of the psychoactive substances implicated in these cases is broadly similar across the period 2005-9. The role of specific types of drugs in drug-related mortality continues to show significant differences to those occurring in England and to a lesser extent in Wales. There are proportionately fewer deaths involving cocaine and methadone. However, there is a greater role played by other opiate/opioid analgesics; heroin/morphine; and anti-depressants.

Chapter 6 Drug-related deaths in the United Kingdom

1. Numbers of deaths reported

The total number of deaths that occurred during 2009 in the UK reported to the National Programme on Substance Abuse Deaths (*np*-SAD) was 2,182. This number compares to 1,952 cases reported by the same sources during the equivalent period in 2008. This change represents an increase of 11.8% for the UK in the number of notifications to the Programme, but not necessarily in drug-related mortality during this period.

Of the 2,182 drug-related deaths reported for 2009, England was 1,524; Scotland 479; Wales 102; Northern Ireland 65; and the Islands 12. In 2008 out of the 1,952 England had 1,374; Scotland 477; Wales 62; Northern Ireland 30; and the Islands 9.

As in the previous Annual Reports those inquests which have not been completed will be added to next year's figure.

The number of cases reported from England represents an increase of 10.9% over the number reported during the equivalent period last year. For Wales, Northern Ireland, and the Islands reporting has been more comprehensive than in previous years and therefore it is not possible to be sure if the true numbers have remained stable or otherwise.

Drug-related cases in Scotland recorded by the SCDEA remained stable.

2. Demography

The majority (78%) of cases were male (Table 6.1). This proportion varied from 62% in Northern Ireland to 86% in Wales. Where ethnicity was known, the majority were White (95%). The proportion of individuals living with others ranged from 40% in England to 52% in Wales. Nearly two-fifths (39%) of decedents were known to be unemployed.

The median age at death was 38.0 years for all sources combined; they ranged from 34.2 years in Wales to 41.5 years in Northern Ireland. There were also differences in the median ages broken down by gender; 37.3 years for males compared to 40.7 years for females.

The above differences reflect distinctions in the nature and purpose of the data sources, the types of cases covered, and the volumes of cases dealt with by them. These variations also illustrate the limitations on making comparisons between them.

Table 6.1: Demographic variables for drug-related deaths, UK, 2009

Variable	Category	Number (%)
Total		2,182 (100.0)
Gender	Male	1,698 (77.8)
	Female	484 (22.2)
Age-group (years)	Under 15	2 (0.1)
	15-24	201 (9.2)
	25-34	646 (29.6)
	35-44	769 (35.2)
	45-54	344 (15.8)
	55-64	143 (6.6)
	Over 64	77 (3.5)
Location of death	Defined residential address	1,264 (57.9)
	Hospital	290 (13.5)
	Other	129 (5.9)
	Not known	499 (22.9)

Figure 6.1: Drug-related deaths by age and gender, UK, 2009

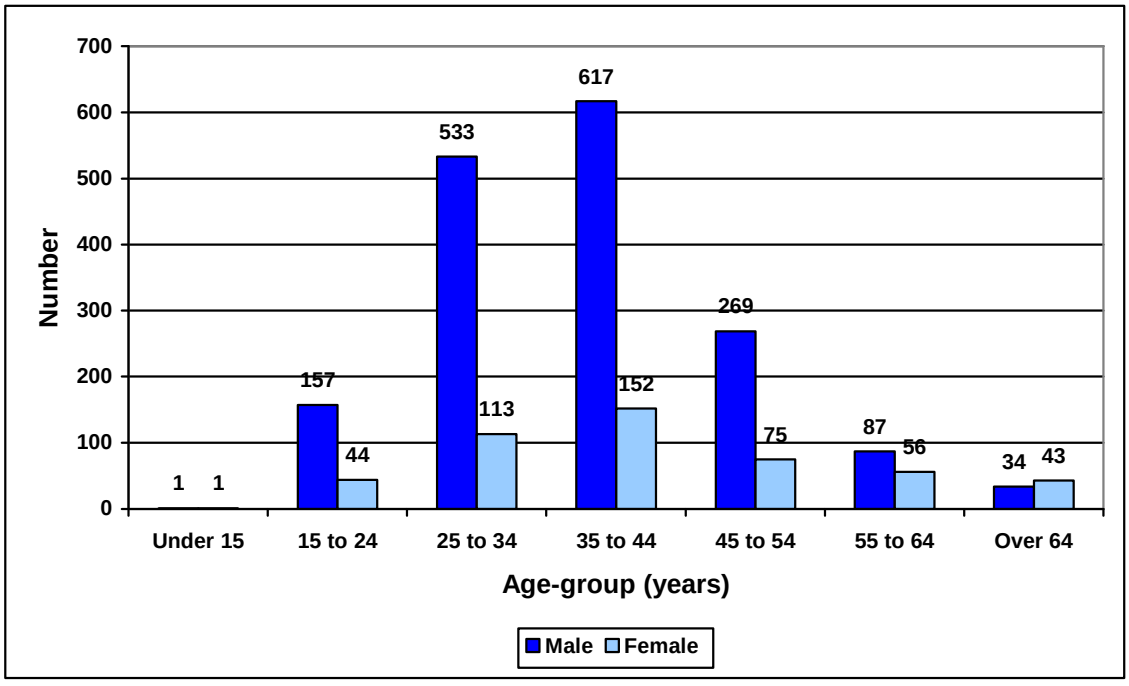


Figure 6.2: Drug-related deaths by age, UK, 2009

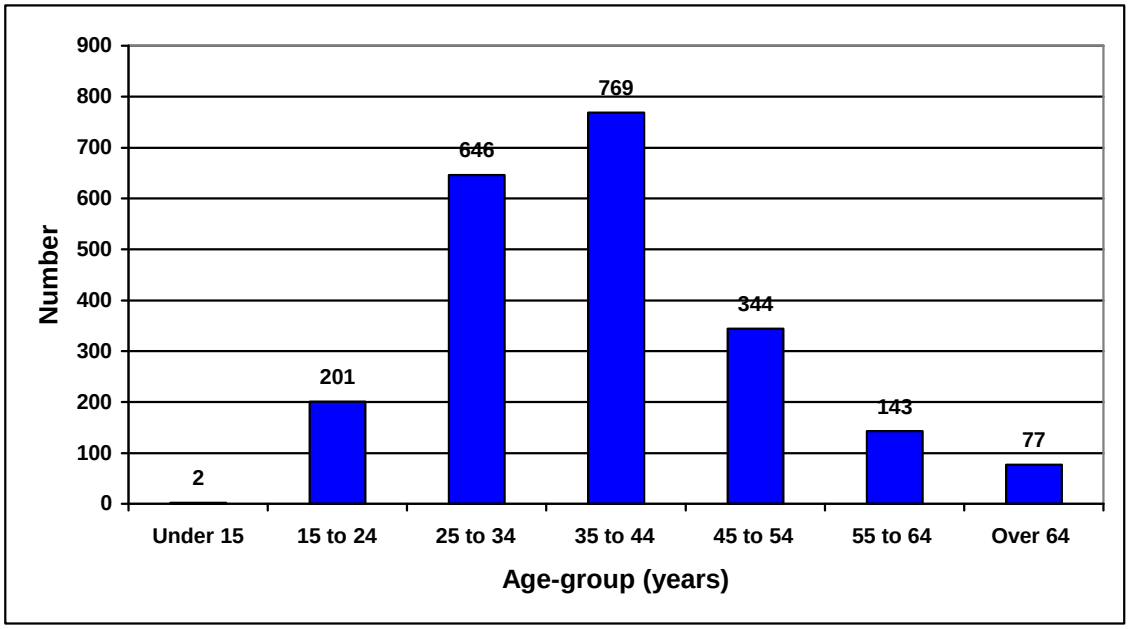
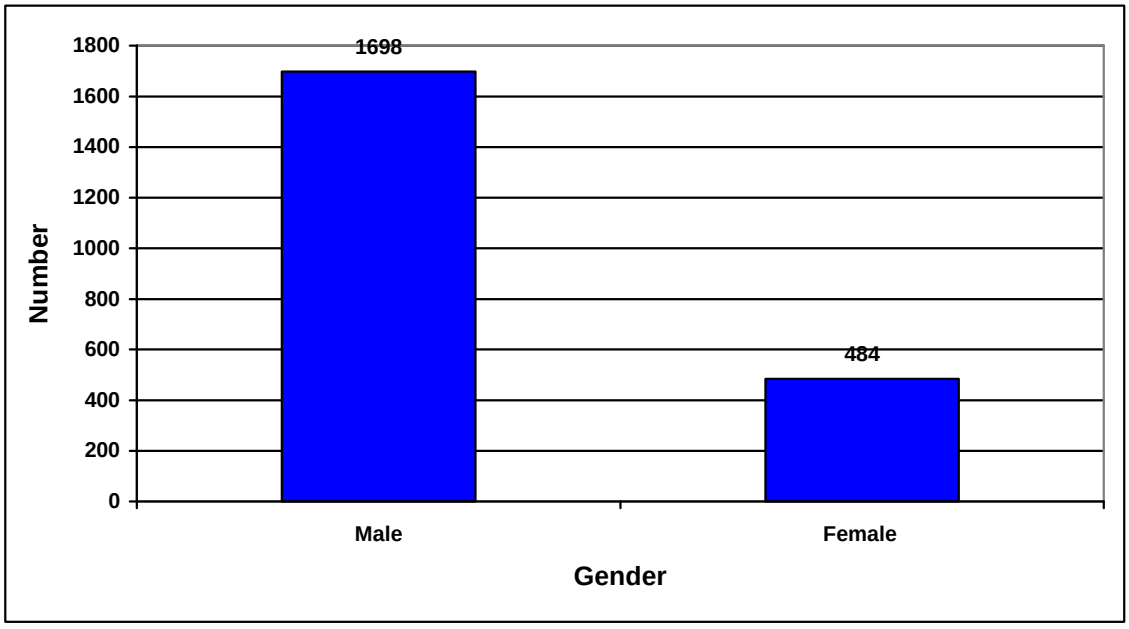


Figure 6.3: Drug-related deaths by gender, UK, 2009



3. Location of death

Where place of death was reported, about 75% died at a defined residential address (i.e. the deceased's home address or other private residential address), 17% died in hospital and 7% died elsewhere (e.g. in a public place). The proportion dying at a defined residential address ranged from 73% in England to 81% in Northern Ireland. The corresponding proportions for deaths in hospital ranged from 10% in Wales to 18% in England. Such information was available in only three Scottish cases; all died at home. In line with data protection, the SCDEA database structure does not record information on living arrangements and place of death.

4. Cause(s) of death

The majority of fatalities (72.3%) were considered to be accidental (i.e. clearly non-deliberate) poisoning, 8.5% from intentional self-poisoning, and 9.2% for poisonings of undetermined intent. The remaining cases (10.0%) were related to other causes of death. There are differences between different parts of the UK and Islands in the proportions of deaths accounted for by these main groupings of underlying cause(s) of death (Table 6.2). These reflect, in part, differences between the SCDEA and *np*-SAD case definitions. A detailed breakdown for all cases covered by this report is given in Table 6.3.

Table 6.2: Main underlying causes of death, by country and territory, 2009

Underlying cause of death (%)	Country or territory							
	England	Wales	Scotland	Northern Ireland	Guernsey	Jersey	Isle of Man	UK & Islands
Accidental poisoning	65.9	80.4	95.6	27.7	0.0	71.4	60.0	72.3
Intentional poisoning	11.4	6.9	0.0	4.6	0.0	14.3	20.0	8.5
Poisoning of undetermined intent	10.2	3.9	0.0	61.5	0.0	14.3	0.0	9.2
Other causes	12.5	8.8	4.4	6.2	0.0	0.0	20.0	10.0
Number of deaths	1524	102	479	65	0	7	5	2182
Rate of drug-related deaths/100,000 population aged 16	3.62	5.39	11.16	4.62	0.00	9.23	7.38	4.32

Table 6.3: Drug-related deaths by underlying cause(s) of death, UK and Islands, 2009

ICD-10	No. of cases (n = 2,182)	%	Description
			Accidental poisoning
X40	22	1.0	Non-opioid analgesics, antipyretics and anti-rheumatics
X41	134	6.1	Anti-epileptic, sedative-hypnotic, Anti-parkinsonism and psychotropic drugs, not elsewhere classified
X42	1379	63.2	Narcotics and psychodysleptics (hallucinogens), not elsewhere classified
X43	1	0.0	Other drugs acting on the autonomic nervous system
X44	13	0.6	Other and unspecified drugs, medicaments and biological substances
X45	19	0.9	Alcohol
X47	2	0.1	Gases
X49	1	0.0	Other & unspecified chemicals & noxious substances
			Intentional self-poisoning
X60	11	0.5	Non-opioid analgesics, antipyretics and anti-rheumatics
X61	78	3.6	Anti-epileptic, sedative-hypnotic, Anti-parkinsonism and psychotropic drugs, not elsewhere classified
X62	82	3.8	Narcotics and psychodysleptics (hallucinogens), not elsewhere classified
X63	1	0.0	Other drugs acting on the CNS
X64	9	0.4	Other and unspecified drugs, medicaments and biological substances
X65	1	0.0	Alcohol
X67	4	0.2	Gases
			Poisoning of undetermined intent
Y10	9	0.4	Non-opioid analgesics
Y11	77	3.5	Anti-Parkinsonism drugs
Y12	108	5.0	Narcotics/psychodysleptics
Y14	5	0.2	Other/unspecified drugs
Y15	2	0.1	Alcohol
Y46	1	0.0	Adverse effects of anti-epileptics & anti-Parkinson's
Y49.5	1	0.0	Adverse effects of antipsychotics
			Mental & behavioural disorders due to psychoactive substance use
F10.0	1	0.0	Intoxication - alcohol
F10.2	4	0.2	Chronic alcoholism
F11.0	3	0.1	Intoxication - opiates
F11.2	3	0.1	Dependence – opioids
F13.0	5	0.2	Intoxication – hypnotics/sedatives
F14.2	2	0.1	Dependence – cocaine
F14.5	1	0.0	Psychotic disorder - cocaine
F15.0	5	0.2	Intoxication – stimulants
F15.2	1	0.0	Dependence – stimulants
F18.0	2	0.1	Intoxication – volatile substances
F19.1	4	0.2	Harmful use – multiple other
F19.2	10	0.5	Dependence – multiple/other
Z72.2	6	0.3	Drug abuse, personal history
			Brain
G40.9	2	0.1	Epileptic seizures
G93.1	1	0.0	Brain damage, anoxic/hypoxic
G97.8	1	0.0	Cerebral hypoxia, unspecified
			Diseases of the respiratory system
J18.0	1	0.0	Bronchopneumonia
J18.9	1	0.0	Pneumonia, unspecified
J43	1	0.0	Emphysema
J69.0	1	0.0	Aspiration pneumonia
J96.0	1	0.0	Acute respiratory failure
J96.9	2	0.1	Respiratory failure/depression
R09.2	1	0.0	Cardiorespiratory failure/arrest
R95	1	0.0	Sudden infant death syndrome ('cot death')

ICD-10	No. of cases (n = 2,182)	%	Description
			Cardiovascular system – diseases, defects or conditions affecting
I20-I25	1	0.0	Ischaemic heart diseases
I25.1	6	0.3	Atherosclerotic heart disease
I33.0	1	0.0	Acute & subacute infective endocarditis
I40.9	2	0.1	Acute Myocarditis
I42.2	1	0.0	Other hypertrophic cardiomyopathy
I42.7	1	0.0	Cardiomyopathy due to drugs & other external agents
I49.9	1	0.0	
I50.9	2	0.1	Cardiac arrythmia
I51.8	2	0.1	Cardiac failure, unspecified
I61.9	1	0.0	Heart diseases
I70	2	0.1	Intracerebral haemorrhage
I74.0	2	0.1	Atherosclerosis
I82.8	1	0.0	Arterial embolism/thrombosis Embolism/thrombosis of other specified veins
			Diseases of the respiratory system
J18.0	1	0.0	Bronchopneumonia
J18.9	1	0.0	Pneumonia, unspecified
J43	1	0.0	Emphysema
J69.0	1	0.0	Aspiration pneumonia
J96.0	1	0.0	Acute respiratory failure
J96.9	2	0.1	Respiratory failure/depression
R09.2	1	0.0	Cardiorespiratory failure/arrest
R95	1	0.0	Sudden infant death syndrome (‘cot death’)
			Diseases of the liver
K26	1	0.0	Duodenal ulcer
K70	7	0.3	Alcoholic liver disease
K71	1	0.0	Toxic liver disease (inc. drug-induced)
K74.6	1	0.0	Other & unspecified liver cirrhosis
K76.0	1	0.0	Fatty (change of) liver, not elsewhere classified
K85	1	0.0	Acute pancreatitis
			Injuries
S09.7	2	0.1	Multiple injuries of head
S09.9	2	0.1	Head injuries unspecified
S12.9	1	0.0	Fracture of neck, part unspecified
			Road traffic incidents
V05	2	0.1	Pedestrian injured in collision with railway train
V13	1	0.0	Pedal cyclist injured in collision with car, van, etc
V23	2	0.1	Motorcycle rider injured in collision with car, etc
V43.5	2	0.1	Car driver injured in collision with car, etc
V47.5	3	0.1	Driver injured in collision with fixed/stationary object
V48.5	4	0.2	Car driver injured in non-collision accident
V89.2	2	0.1	Person injured in unspecified motor vehicle accident – traffic
			Hanging
W76	5	0.2	Other accidental hanging and strangulation
X70	35	1.6	Intentional hanging
Y20	1	0.0	Hanging, undetermined intent
			Asphyxia
R09.0	2	0.1	Asphyxia, general
T59.9	1	0.0	Toxic effects of other gases, fumes & vapours, unspecified
T71	2	0.1	Asphyxiation
W78	2	0.1	Aspiration of gastric contents
W79	1	0.0	Inhalation & ingestion of food obstructing airway
W83	1	0.0	Suffocation by plastic bag
X09	1	0.0	Inhalation of smoke and fumes
			Drowning & submersion
W66	2	0.1	Whilst in bath tub
W69	3	0.1	Whilst in natural water
W70	1	0.0	After fall into natural water
			Falls
W17	5	0.2	Other fall from one level to another
W19	1	0.0	Unspecified fall

ICD-10	No. of cases (n = 2,182)	%	Description
			Other
A22.7	1	0.0	Anthrax septicaemia
A40.0	1	0.0	Septicaemia due to streptococcus, Group A
A41.9	1	0.0	Septicaemia, unspecified
B17.1	1	0.0	Acute hepatitis C
C34	1	0.0	Malignant neoplasm of bronchus & lung
D07.5	1	0.0	Carcinoma in situ, prostate
E10	3	0.1	Diabetic ketoacidosis
E84.0	1	0.0	Cystic fibrosis with pulmonary manifestations
E87.2	3	0.1	Metabolic acidosis, exc. diabetic acidosis
L02.4	1	0.0	Abscess, furuncle and carbuncle of limb
M06.9	1	0.0	Rheumatoid arthritis, unspecified
M72.6	1	0.0	Necrotising fasciitis
T07	8	0.4	Multiple injuries, unspecified
T88.7	1	0.1	Unspecified adverse effect of drug/medicament
X31	1	0.0	Exposure to excessive natural cold
X85	1	0.0	Assault by drugs
W26	1	0.0	Contact with knife, sword or dagger (stab wound)
R99	15	0.6	Unascertained

Where possible, causes of death have been grouped together in terms of the mechanisms of death. At present, although all causes of death on the death certificate (together with other information if available) are taken into consideration in classifying underlying cause of death, the principal cause of death is used here by *np*-SAD to allocate the ICD-10 code. In order to achieve a greater level of consistency, a hierarchical system was introduced for classifying the underlying cause of death using ICD-10 criteria for deaths involving multiple substances. Deaths that involve a combination of narcotics and other psychoactive drugs are coded as narcotic deaths. Where possible a code which specifies intentionality is used.

5. Substances implicated in death

Psychoactive drugs were not directly implicated in about 5.8% of cases (n = 127). Of the remaining 2055 cases, the principal substances implicated were: heroin/morphine (53%); alcohol in combination with other substances (32%); hypnotics/sedatives (23%); methadone (23%); other opiates/ opioid analgesics (20%); anti-depressants (16%) and cocaine (9%).

Table 6.4 shows that whilst there are commonalities across the various parts of the UK and Islands in terms of the main psychoactive substances given above being implicated in death, there are noticeable regional differences. For example, hypnotics/ sedatives play a proportionately greater role in Northern Ireland and Scotland. Heroin/morphine and methadone play lesser roles in Northern Ireland when compared to the rest of the UK, whereas other opiates/opioid analgesics played a greater role. The lesser role plated by methadone can be explained, in part, by the fact that methadone is not prescribed as widely in Northern Ireland as in other areas. Anti-depressants also play a greater role in Northern Irish deaths. By contrast they hardly feature in SCDEA cases; however, this reflects the fact that the definition used by the SCDEA does not cover the general population or suicides but accidental overdoses involving controlled drugs.

Table 6.4: Psychoactive substances (%) implicated in drug-related deaths, by country and territory, 2009

	Country or territory							
Drug category	England	Wales	Scotland	Northern Ireland	Guernsey	Jersey	Isle of Man	UK & Islands
Total	1419	95	468	61	0	7	5	2055
Alcohol-in-combination	31.5	31.6	31.4	44.3	0.0	14.3	60.0	32.0
Amphetamines	2.3	2.1	1.3	3.3	0.0	0.0	0.0	2.1
Anti-depressants	18.4	15.8	3.4	39.3	0.0	0.0	20.0	15.5
Anti-epileptics	1.3	3.2	0.0	1.6	0.0	0.0	0/0	1.1
Anti-Parkinson's	0.4	1.1	0.0	3.3	0.0	0.0	0.0	0.4
Anti-psychotics	3.6	3.2	0.9	11.5	0.0	14.3	0.0	3.3
Cannabis	1.6	0.0	0.0	0.0	0.0	0.0	0.0	1.1
Cocaine	10.0	5.3	7.9	4.9	0.0	0.0	0.0	9.1
Ecstasy-type drugs	0.4	0.0	0.4	0.0	0.0	0.0	0.0	0.4
GHB	1.0	1.1	0.1	0.0	0.0	0.0	0.0	0.8
Heroin/morphine	49.2	54.7	68.6	14.8	0.0	42.9	80.0	52.9
Hypnotics/sedatives	19.4	23.2	28.8	52.5	0.0	14.3	20.0	22.7
Methadone	19.8	21.1	35.5	4.9	0.0	14.3	0.0	23.0
Other opiates/opioid analgesics	21.2	24.2	10.7	54.1	0.0	42.9	20.0	20.0
Note: Column totals may sum to more than 100% since more than one substance may be implicated in a death.								

6. Commentary

Whilst data received by *np*-SAD from coroners suggests that the number of drug-related deaths increased in England, Wales and Northern Ireland during 2009, information from the Scottish police indicate stabilisation of SCDEA cases. In fact, figures just released by the General Register for Scotland show a slight fall in deaths between 2008 and 2009 (GROS, 2010).

Overall, demographic profiles of those who died from drug-related causes are similar across the various countries within the UK e.g. a higher proportion of males to females, aged typically 25-44 years, White, and the majority of cases living with others, there are differences within this general pattern.

Most deaths were accidental drug overdoses, occurring at a private residential address (typically at home or the home of a friend). Opiates such as heroin, methadone and opioid analgesics are implicated in the majority of cases. Other substances playing major roles in deaths include alcohol-in-combination with substances, hypnotics/sedatives, anti-depressants, and cocaine. However, there are also regional variations in these patterns.

Whilst there appears to have been an increase in the number of cases involving heroin and methadone, there has been a noticeable decline in the role of stimulants (cocaine, amphetamines, and ecstasy-type drugs) in death. The patterns obtaining in different parts of the UK, and possible reasons for the recent changes in recreational drug use, are examined in the following chapters.

Chapter 7 Commentary and emerging themes

Introduction

This chapter provides up-to-date information on emerging trends and issues to those who investigate drug-related deaths (DRDs) and those who are trying to prevent such fatalities. The main trends and issues highlighted here emerge from the submitted forms, communications from coroners, and other relevant sources. This section also draws on published sources and intelligence from forensic toxicological agencies.

General patterns

The total number of deaths that occurred during 2009 in the UK reported to the National Programme on Substance Abuse Deaths (*np*-SAD) was 2,182. This number compares to 1,952 cases reported by the same sources during the equivalent period in 2008. This change represents an increase in the number of notifications to the Programme, but not necessarily in drug-related mortality during this period. Similarly, the increase in the number of cases reported from England, Wales, and Northern Ireland do not necessarily mean an increase in deaths related to drug use. Drug-related cases in Scotland recorded by the SCDEA remained stable.

The demographic profile of fatalities reported by coroners to the *np*-SAD remains consistent with previous reports. There was an increase in the proportion of deaths where the underlying cause of death was accidental poisoning (up from 76.4% to 80.7%) with corresponding falls in the proportions recorded as intentional self-poisoning and poisoning of undetermined intent.

Opiates/opioids (i.e. heroin/morphine; methadone; other opiates/opioid analgesics), alone or in combination with other drugs continue to account for the majority of all cases. Heroin/morphine alone or in combination with other drugs, accounted for the highest proportion (60%) of 'drug misuse' fatalities in 2009, an increase over the 2008 level of 55%. There was a fall in the proportion of cases involving the stimulants cocaine (from 15.7% to 11.4%), amphetamines (from 4.8% to 2.8%), and ecstasy-type drugs (from 2.7% to 0.3%). These patterns are also reflected at country level. Over recent years there has been a trend towards multiple substances, including alcohol, being implicated in deaths. In 2009, there was a further decline in monovalent deaths.

Exposure to a history of drug use or addiction increased with age. Other opiates/opioid analgesics play a more important part on drug overdoses in the older age-groups, especially amongst the over 50s. For those aged less than 50, heroin/morphine remains the dominant substance implicated in death. Intentional overdoses in the over 50s accounted for half of all such deaths in all age-groups. Generally, the role of prescribed medication in death increases with age.

Prescribed heroin/morphine and methadone are most commonly involved in deaths where these substances are directly implicated in death. Other opiates/opioid analgesics, hypnotics/sedatives, and anti-depressants prescribed to individuals are less likely to be involved in their deaths.

The number and proportion of deaths of drug users aged more than 40 years at the time of death with a known history of drug abuse or dependence notified to the *np*-SAD increased over the past decade. The median age at death of individuals with such a drug history was 32.4 years in 2000; by 2008 this had risen to 37.2 years.

Emerging issues

As part of its surveillance function, in recent years the *np*-SAD Annual Report has reported on new substances which are appearing on the drug scene and which have either been noted in post mortem toxicological reports and/or implicated in deaths reported to the Programme. In the main, new substances appear first in the toxicological reports and then sometime later in the cause of death.

Mephedrone

Forensic toxicologists have reported increased seizures of 'legal highs' derived from methcathinone, particularly mephedrone or methylmethcathinone commonly known as "bubbles" and "meow-meow". An increasing number of alerts have been issued by some drug treatment agencies and Accident & Emergency Departments (Wood et al, 2010). Some of these cases have now gone to inquest or through similar formal investigations by Procurators Fiscal in Scotland, and have been reported to *np*-SAD. The Programme was aware at the end of July of least 52 deaths in the UK and Islands where mephedrone is alleged to have been consumed; some of these have turned out not to be related to mephedrone use. The current situation, as presently known, is as follows:

- Total number of fatal cases where mephedrone has been detected = 38
- Cases where mephedrone was the sole direct cause of death = 2
- Cases where mephedrone and methadone were jointly the direct cause of death = 1
- Cases where mephedrone was implicated but also underlying health issues = 2
- Cases where mephedrone impacted with other substances on mental state leading to hanging = 2
- Cases where natural cause of death but mephedrone was contributory factor with antidepressant medication = 2
- Cases awaiting completion of Coroner/Procurator Fiscal inquiries = 29

MDPV (methylenedioxypyrovalerone)

The first seizure of MDPV was referred to the FSS in the third quarter of 2009. By the end of the first quarter of this year a total of 35 seizures had been sent for testing. This substance became a Class B drug in April this year. To date, only two cases have been notified to the Programme where MDPV was found in the post-mortem toxicology; both deaths occurred in the first 4 months of 2010.

NRG-1 (Naphyrone)

In spring 2010 there were reports of new substances chemically altered to circumvent new controls on 'legal highs ' becoming available to purchase in 'head-shops' and over the Internet. Naphyrone and other generically related substances became Class B drugs from 23 July 2010. Since the composition of such products, marketed as bath salts or plant food, is not necessarily what is stated on the packaging consumers are at risk of potential adverse health consequences (Davies et al, 2010). Test purchases do indicate that some of the products being sold in recent months contain prohibited substances such as mephedrone, methylone, butylone and MDPV (Brandt et al, 2010; Ramsey et al, 2010). The Programme is actively monitoring deaths reported by coroners for such substances.

Heroin contaminated with anthrax

Since late 2008 there have been substantiated and authoritative reports of heroin (or its cutting agents) contaminated with anthrax, confirmed by laboratory investigations. From December 2009 to 30 July 2010 a total of 47 cases (including 13 fatalities) have been reported in Scotland from 8 of its 14 Health Board areas. Three cases have been reported in England: a fatality in Blackpool in early February, and two cases in London (one of whom died in late March 2010). So far only one of these cases has been reported to *np*-SAD, but others are expected in due course.

Conclusions

Opiates, mainly heroin/morphine and methadone, still account for the majority of drug-related deaths in the UK. There is evidence both from *np*-SAD data and other authoritative sources that the role of these substances in such deaths further increased during 2009.

The falls noted above for cases involving the stimulants cocaine, amphetamines, and ecstasy-type drugs may well be due to the growing use in recent years of so-called 'legal highs' such as ketamine, the piperazines and GHB/GBL. Whilst these are still available their popularity has declined slightly, in part as a consequence of them having been brought under the control of the Misuse of Drugs Act 1971. At the same time, other novel substances – principally methcathinones and related chemicals – have emerged onto the recreational drug scene in Western Europe but especially the British Isles.

The rapidity with which these new substances have emerged appears to be at an increasing rate. In the past, the market for new psychoactive substances to explore evolved steadily over much longer periods of time. It is now difficult to gauge with any certainty what will be the next 'big thing' that will capture the attention of the experimenter or regular recreational drug user. Furthermore, there is a lack of information provided to the potential consumer by the retailer as to the true nature of the ingredients in the substance being purchased. Therefore, it important that the *np*-SAD, in collaboration with other surveillance systems, continues to monitor reports from the treatment and forensic toxicology fields and coroners' records so as to be able to alert health professionals about emerging issues, and to suggest to Coroners and pathologists what they might look out for. The following chapter provides such audiences with an overview of the role played in death by some of the traditional substances implicated, as well as the emerging ones.

It is important, however, not to overlook the fact that opiates/opioids still account for the majority of drug-related deaths in England and other pats of the UK. Together with hypnotics/sedatives (chiefly benzodiazepines such as diazepam and temazepam) the involvement of heroin in deaths has increased over the past year. The injection of heroin contaminated with anthrax is a serious risk factor for adverse health consequences and death at present, especially in Scotland. As heroin can be stockpiled for several years before being released onto the market it is importance that vigilance is maintained by heroin users and those who treat them for any tell-tale signs of infection, thereby preventing premature death.

Chapter 8 Role of drugs in death

This chapter outlines how the main substances of abuse (prescribed and non-prescribed) cause death. It has been written with the following audiences in mind – coroners, pathologists, toxicologists and clinicians. Because of the nature of this subject, the discussion will mainly revolve here around the pharmacological and clinical issues related to the single psychoactive substances. Whenever possible, indications have been given in terms of how long active ingredients remain in the body (i.e. half-life), and the ranges (where available) for toxic and fatal levels of these substances. Furthermore, for each substance described here some information highlighting the various factors which may influence the toxicity of a substance has been provided, e.g. tolerance, drug/drug interactions, slow metabolism, length of half-life, idiosyncratic reactions, and substance synergies.

Synergistic combinations of substances

Quite frequently, drug-related deaths involve a cocktail of drugs, such as opiates, stimulants, alcohol and benzodiazepines. It is evident that much still needs to be done in educating users of the risks associated with polydrug use. Some prescribed medications, such as anti-epileptics, can affect specific drugs, such as methadone metabolism; both prescribers and users need to be aware of these risks. Benzodiazepines and alcohol individually act only relatively weakly to depress the respiratory system, but patients beginning treatment with benzodiazepines should be warned about possible interactions of benzodiazepines with alcohol.

Heroin, methadone, codeine and buprenorphine

Quaglio et al (2001) evaluated the causes of 2,708 deaths in heroin addicts. Overdose was found to be the major cause (37%), followed by HIV/AIDS (32.5%), road accidents (9.4%), suicide (5.5%), and liver diseases (3.5%). Liver disease may however be secondary to blood-borne viruses associated with injecting (e.g. Hepatitis B, Hepatitis C) as well as increased alcohol use in these patients. Overdose has been reportedly related to respiratory depression, aspiration of vomit and pulmonary oedema (ACMD, 2000). Central nervous system (CNS) depression is likely however to be the most important and first issue here, which leads to respiratory depression and then to the other medical consequences. On the other hand, the dominance of the widely-held belief that heroin-related fatalities are a consequence of overdose may be challenged (Mirakbari, 2004). In fact, the presence of other drugs (primarily CNS depressants such as alcohol and benzodiazepines) are commonly detected at post mortem (ACMD, 2000).
Heroin main metabolites: 6-mono-acetylmorphine (6-MAM) and morphine

As a synthetic opioid, methadone causes death in a similar way to heroin (Corkery et al, 2004; Ghodse, 2010). However, what sets methadone apart from other opioids is its potential for delayed toxicity. The principal mechanisms for methadone-related deaths are: respiratory depression; airway obstruction; pulmonary oedema and bronchopneumonia. Respiratory depression develops 12-14 hours after ingestion of methadone, particularly in those who have had or have only a weak tolerance to the drug. Tolerance can be lost through abstinence while imprisoned or by having successfully completed in-patient opiate detoxification. Death due to aspiration of vomit can occur from a combination of the emetic effects of heroin/methadone and its depression of the cough reflex. Pulmonary oedema is also a common cause of fatalities amongst addicts overdosing on heroin/ methadone, as well as those on non-opioid drugs. It can have a relatively quick onset and thus can become a major factor in death. Linked to pulmonary oedema is bronchopneumonia.

The metabolism of methadone is very slow in those who have just entered methadone maintenance treatment (MMT) compared to those who have been fully induced and stabilised. A number of studies have found fatal post mortem (blood) concentrations in the range 0.2 mg/l - 4.5 mg/L, with the mean ranging from 0.8 mg/L to 1.4 mg/L (Corkery et al, 2004). It has been suggested that a lethal dose of methadone amongst non-dependent subjects is between 0.8 to 1.5 mg/kg of body mass, which may parallel (on average) an intake of 50 mg for adults and 10 mg for children. A serum methadone concentration of over 0.4 mg/L may be enough to cause death from respiratory

depression, yet levels of up to 1 mg/l have been found in living patients receiving treatment.
Methadone main metabolites: 2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine (EDDP); and 2-ethyl-5-methyl-3,3-diphenylpyrroline (EMDP)

It is not infrequent to meet in the clinics with codeine/dihydrocodeine misusers. Codeine has a low affinity for opioid receptors and the analgesic effect of codeine may be due to its conversion to morphine. The adult lethal dose of codeine has been reported to be between 0.5 to 1.0 g (Inchem, 2010). This dose may cause convulsions and unconsciousness, and death from respiratory failure may result within 4 hours. Moffat (1986) estimated the minimum lethal adult dose at 800 mg. Drug concentrations in codeine fatalities are approximately 2.8 mg/L in blood and 103.8 mg/L in urine (Baselt and Cravey, 1989). Death from codeine overdose is relatively rare. An association with alcohol or other CNS depressants increases the risk of fatalities.
Codeine main metabolites: morphine; norcodeine; glucuronides and sulphates of both the unchanged drug and its metabolites (Moffat, 1986)

Buprenorphine, a partial agonist, has a less well defined effect on the respiratory function than that usually expected for opiates, with a ceiling effect on both respiratory depression and analgesic action with increasing doses. A ceiling on the respiratory depression is possibly a valuable therapeutic safeguard although the situation is different for sensitive individuals, in whom these drugs may cause severe respiratory distress (Schifano, 2007b). From this point of view, buprenorphine is often considered a relatively safe compound. On the other hand, an increase has been observed in buprenorphine-related deaths in the UK since high dose formulation entered the market with respect to previous years (Schifano et al, 2005). This trend should be carefully monitored over the next few years, given that the high dosage of buprenorphine formulation constitutes a potent risk factor for premature mortality among addicts. Most of the buprenorphine–related death cases involve a combination of different compounds and alcohol suggesting that it is less safe than widely suggested, especially among polysubstance abusers. Benzodiazepines are frequently identified in conjunction with buprenorphine. One might wonder if the real cause of death, in these cases, is due to a particular pharmacokinetic interaction (both buprenorphine and benzodiazepines are CYP3A substrates) and/or to a synergistic effect of the two drugs. Buprenorphine is also frequently taken in conjunction with other opiates and painkillers, an observation that could be consistent with the complex presentation of opiate misuse and pain.
Buprenorphine main metabolites: buprenorphine-3-O-glucuronide; norbuprenorphine N-dealkyl buprenorphine

Cocaine

Many of the cardiovascular effects of cocaine have been attributed to the sympathomimetic actions of the drug. Both the peripheral nervous system and the brain have been studied as potential sites for the sympathomimetic actions of cocaine (Schifano and Corkery, 2008). As a consequence, there may be several detrimental effects of cocaine, particularly on the cardiovascular system, including: hypertension and tachycardia; arrhythmias; myocardial infarction with/without coronary atherosclerosis; coronary atherosclerosis and/or intimal smooth muscle cell proliferation; increased platelet aggregation; myocarditis; small vessel spasm; rupture of the ascending aorta. Cocaine can produce arrhythmias either through the production of myocardial ischemia or as a direct result of ion channel alterations. Excessive catecholamines, combined with sodium and potassium channel blockades, give rise to a wide variety of supra-ventricular and ventricular arrhythmias (Wood et al, 2009). Cocaine may induce myocardial ischemia by increasing the work of the heart. Cocaine can also increase the demand for oxygen by elevating the blood pressure and heart rate. Cocaine can cause a wide range of other problems including: neurological (e.g. cerebrovascular accidents, i.e. strokes, seizures); gastrointestinal (e.g. abdominal pain, bowel infarction); and respiratory symptoms (e.g. respiratory collapse, pulmonary oedema). Cocaine can induce hyperthermia as a result of increased metabolism, peripheral vasoconstriction, and an impairment of the thalamus to control body temperature

The lethal dose of cocaine is highly variable due to individual differences in sensitivity among users (Kaye and Darke, 2003).

Although deaths have been reported after a single dose of a few hundred milligrams, there are cases in which a dose of several grams has not proved fatal. Moreover, overdose can occur regardless of the administration route. However, injecting cocaine is likely to pose the greatest risk of overdose, followed by smoking, and then intranasal use (Kaye and Darke, 2003).

In the UK, a steady increase over the years in cocaine/crack cocaine-related fatalities has been reported (Ghodse et al 2008; Schifano and Corkery, 2008). There may be a few possible explanations, not necessarily contradictory, for the overall increase in number of cocaine/crack cocaine-related deaths reported. These include: increase in cocaine/crack cocaine consumption in a polydrug fashion, including opiates/opioids, misuse context, and higher reporting rates of cocaine/crack cocaine on death certificates (Schifano and Corkery, 2008). Alternatively, since only a minority of fatalities involve a monovalent cocaine/crack cocaine intoxication, increase in death mentions might reflect increase in fatalities related to cocaine in combination with other drugs, such as ecstasy (Schifano et al, 2006). Huge media interest surrounded some of the high profile cases of cocaine-related incidents occurring in the last decade or so in the UK and this may have increased awareness of the possible consequences of drug consumption. In turn, this may have led to improved surveillance, monitoring and recording of this substance in investigations of sudden and/or unexpected deaths. According to figures from the UK, cocaine/crack cocaine was the sole drug mentioned on death certificates in 36% of the total number of related fatalities in England and Wales (Schifano and Corkery, 2008).
Cocaine main metabolites: benzoylecgonine, and ecgonine methyl ester. If taken with alcohol: cocaethylene may be identified as well. Anhydroecgonine methylester (AEME) can be a useful marker for the detection of cocaine smoking in clinical and forensic cases.

Alcohol

The blood ethanol concentrations associated with intoxication reflect the rate of intake, the degree of tolerance acquired by previous regular consumption and the simultaneous effects of other drugs. A rapid rise in blood ethanol concentration produces a greater degree of intoxication than a gradual rise to the same level and substantial tolerance develops in regular drinkers (Morgan and Ritson, 2010). In non-habitual drinkers, blood ethanol concentrations of between 30 to 70 mg/100ml (6.5 to 15.2 mmol/l) can lead to definite impairment of cognitive function, motor co-ordination and sensory perception whereas concentrations of 150 to 250 mg/100ml (32.6 to 54.4 mmol/l) generally give rise to obvious intoxication. On the other hand, habitual drinkers may sustain blood ethanol concentrations of 300 mg/100ml (65.2 mmol/l) or more without signs of inebriation (Morgan and Ritson, 2010).

More severe alcohol intoxication leads to increasing drowsiness and then coma, with depressed tendon reflexes, hypotension and hypothermia; respiration becomes shallow and difficult. Death may result from respiratory depression or following inhalation of vomit. The blood ethanol concentration at which death occurs varies considerably; it may occur with blood ethanol concentrations $\leq$ 400 mg/100ml (87 mmol/l) although survival has been recorded with blood alcohol concentrations $\geq$ 700 mg/100ml (152.2 mmol/l; Morgan and Ritson,2010). Co-ingestion of alcohol with other CNS depressants such as benzodiazepines and opiates/opioids can lead to respiratory depression and death.
Alcohol main metabolite: acetaldehyde

Benzodiazepines

Benzodiazepine agonists and other agonist ligands at the benzodiazepine site achieve their therapeutic effects by enhancing the actions of the inhibitory neurotransmitter gamma-aminobutyric acid (GABA) at its receptor site (Schifano, 2009). The benzodiazepines have a binding site on the GABA receptor, which forms a channel through the membrane and opens and closes to control chloride flow into the cell. When benzodiazepine agonists are on their receptor site, GABA produces a more rapid pulsatile opening of the channel, and the flow of chloride is increased. There are several other drugs which are also ligands of the GABA-chloride ion receptor complex, notably the barbiturates, chloral hydrate and the newer non-benzodiazepine hypnotics, zopiclone, zolpidem and zaleplon ("Z"-drugs). Benzodiazepines are fairly safe in overdose if taken alone. Even massive overdoses, if taken without other CNS depressants, are almost never fatal (Schifano, 2009).

Main metabolites of diazepam: N-desmethyl metabolites: nordiazepam

Amphetamine/methamphetamine and MDMA/ecstasy

The systemic side effects of both amphetamine and methamphetamine ('crystal meth' or 'ice') arise from their peripheral actions as they act as indirect sympathomimetic amines and may include: tachycardia, hypertension, palpitations, sweating, dry mouth, decreased gastro-intestinal motility and dilated pupils. Methamphetamine appears to cause cardio-myopathy (in a way similar to that induced by cocaine), but also pulmonary oedema; myocardial infarction; ischaemic and haemorrhagic strokes (Schifano et al, 2007; Schifano et al, 2010).
Main metabolites of methamphetamine: *p*-Hydroxymethamphetamine and *p*-hydroxyamphetamine
Main metabolites of amphetamine: norephedrine; 4′-hydroxynorephedrine

The adverse effects of MDMA may be related to metabolism and two overlapping metabolic pathways have been postulated. The first (and predominant) is carried out through the ring degradation by O-dealkylation to the corresponding 3,4–dihydroxy metabolites. The second pathway leads, via chain degradation, to MDA. Both MDA and MDMA metabolism is regulated by the levels of the hepatic enzyme CYP2D6. About 5-9% of Caucasians are deficient in this enzyme, so that poor metabolisers may be at greater risk of toxic responses to the drug even at low doses. It is important to note that race/ethnicity is a risk/protective factor in MDMA/MDA toxicity. The COMT enzyme is involved in the transformation of 3,4-dihydroxy-methamphetamine-HHMA (the main MDMA metabolite) to 4-hydroxy-3-methoxymethamphetamine-HMMA. About 25% of the Caucasian population present with low COMT activity. HMMA may stimulate the release of the anti-diuretic hormone vasopressin so that excessive levels of water retention, coupled with hyponatraemia, can be observed. Therefore, young women may be at greater risk. One could conclude that the range of COMT activity (due to genetic polymorphism) may explain some of the inter-individual differences in vasopressin secretion after MDMA consumption. A small increase in MDMA dosage can lead to a significant rise in drug plasma concentration ('non linear' pharmacokinetics). All of these factors taken together might lead to the conclusion that there may be, in at least some individuals, a significant lack of dose-response relationship after MDMA administration and explains why toxic reactions may be unrelated to the amount taken (Schifano, 2004).

Although there may be a biphasic MDMA concentration in tablets in the UK, an average ecstasy tablet in the UK has been reported to contain some 60-70 mg of MDMA. Consequently, in a subject weighing 70 kg, one could conservatively conclude that, with the ingestion of some 20-30 tablets, the equivalent of the lethal dose (LD50) described in small animals can be achieved. Up to 40-50 ecstasy tablets have been described as the maximum dosage taken on a single occasion and, at least in the UK, heavy ecstasy consumers may binge with some 15-25 tablets per occasion. Although there are pronounced individual differences with regard to the sensitivity to MDMA toxic effects, life-threatening or lethal outcomes have been seen with concentrations between 0.11 and 7.0 mg/L (Schifano, 2004). It is possible that other factors, such as aggregation in close environments (as in the case with clubs), together with high ambient temperature and possibly dehydration may play an important role in increasing the risk of a fatal outcome. Furthermore, a reverse tolerance/sensitisation phenomenon can occur in experienced stimulant users (Schifano, 2004).
Main metabolites of MDMA/ecstasy: 3,4–dihydroxy metabolites; MDA; 3,4-dihydroxy-methamphetamine-HHMA. In some individuals: 4-hydroxy-3-methoxymethamphetamine-HMMA may be identified.

Cannabis and synthetic cannabinoids ('Spice' drugs)

Despite the widespread illicit use of cannabis there are very few if any instances of people dying from an overdose and fatalities involving Δ9-tetrahydrocannabinol (THC) might happen most often after intravenous injection of cannabis oil. According to the Merck Index the LD50 (dosage lethal to 50% of rats tested) of Δ^9-THC by inhalation is 42 mg/kg of body weight (O'Neil, 2005). That is the equivalent of a 75 kg man inhaling the THC found in some 10-20 high-potency (e.g. 150-300 mg each in terms of THC content) joints in one session, assuming no THC is

lost through smoke loss or absorption by the lungs (Schifano, 2007a). With low-potency (e.g. 5-25 mg THC content) joints such toxic levels are very difficult to be ingested. Probably for this reason, it was previously thought that it is practically impossible to overdose on cannabis, as the user would certainly either fall asleep or otherwise become incapacitated from the effects of the drug before being able to consume a fatally toxic quantity of THC. However, nowadays it is not unusual to meet in clinics with users smoking some 15-20 high-strength joints per day (Schifano, 2007a). For an overview of cannabis-related mortality see the *np*-SAD annual report for 2007 (Ghodse et al, 2007: 27-9).

Synthetic cannabinoids are functionally similar to Δ^9-tetrahydrocannabinol (THC), the active principle of cannabis (EMCDDA, 2010a). Like THC, they bind to the same cannabinoid receptors in the brain. In late 2008, several cannabinoids were detected in herbal smoking mixtures or so-called incense/room odorisers. Typical of these were "Spice Gold", "Spice Silver" and "Yucatan Fire", but many other products later appeared. These products are typically sold via the Internet and in 'head shops'. Most common synthetic cannabinoids include (EMCDDA, 2010a): naphthoylindoles (e.g. JWH-018, JWH-073 and JWH-398); phenylacetylindoles (i.e. benzoylindoles, e.g. JWH-250); cyclohexylphenols (e.g. CP 47,497 and homologues of CP 47,497); classical cannabinoids (e.g. HU-210; EMCDDA, 2010a). Only little is known about the detailed pharmacology and toxicology of the synthetic cannabinoids. It is possible that, apart from high potency, some cannabinoids could have particularly long half-lives potentially leading to a prolonged psychoactive effect. In addition, there could be considerable inter-and intra-batch variability in smoking mixtures, both in terms of substances present and their quantity. Thus, there might be a higher potential for overdose than with cannabis (EMCDDA, 2010a).
Cannabis main metabolites: Δ 9 - tetrahydrocannabinol-11-oic acid (THC-11-oic acid); 11-nor-Δ 9 -tetrahydrocannabinol-9-carboxylic acid (9-THC-COOH).
Synthetic cannabinoids main metabolites: Methods for the forensic analysis of blood samples for the recent intake detection of synthetic cannabinoids are available in some laboratories. However, the detection of metabolites in urine samples is not yet fully developed (EMCDDA, 2010a).

Piperazines

1-Benzylpiperazine (BZP) is part of a small group of benzyl-substituted piperazines (EMCDDA, 2010b). Despite claims by some tablet and capsule suppliers that they are herbal products, piperazine and its derivatives are synthetic substances that do not occur naturally. The large-scale misuse of certain piperazine derivatives (often known as 'party pills') started in New Zealand several years ago, but became common in Europe only after 2004. BZP is a central nervous system (CNS) stimulant with around 10% of the potency of d-amphetamine (EMCDDA, 2010b). Animal studies have demonstrated that BZP stimulates the release and inhibits the reuptake of dopamine, serotonin and noradrenalin (EMCDDA, 2010b). There have been a few instances of fatalities involving BZP and other piperazines, typically involving other drugs (see Section IV of this report for more information on such fatalities).
BZP main metabolites: 4-hydroxy-BZP; 3-hydroxy-BZP; 4-hydroxy-3-methoxy-BZP; piperazine; benzylamine; and *N*-benzylethylenediamine. The hydroxy-metabolites are also excreted as glucuronic and/or sulphuric acid conjugates in urine (EMCDDA, 2010b).

Khat and synthetic cathinones (mephedrone)

With respect to khat chewing, there is concern that people who do not wash khat before consuming it will ingest pesticides. Such pesticides may contribute to the development of cancer of the digestive system and kidney failure among khat chewers. Deaths have been reported that were caused by poisoning following the ingestion of pesticides/fertilisers used in the cultivation of khat (Corkery et al, in press). No such cases have been reported in the UK. Parasitic infections, such as fascioliasis, can also be transmitted through the consumption of contaminated khat. Although khat has a stimulatory effect during the first few hours of consumption, its use can increase the risk of road traffic accident fatalities. There have been a few instances reported in the UK of individuals who, having experienced a psychotic illness as a result of

khat consumption, killed others and/or themselves.

There may be several mechanisms of deaths arising from khat use (Corkery et al, in press), including: (a) irritation from substances in khat that causes a laryngeal spasm; and (b) whilst chewing, a piece of khat gets stuck in the trachea and cannot be dislodged by repeated coughing. Both types of incident can lead to choking and asphyxia. Furthermore, it is thought that khat consumption may be associated with acute myocardial infarction and haemiplegia, because of meningeal haemorrhages.

Although studies on animals have shown that khat is hepatotoxic with increases in liver enzymes and there has been histo-pathological evidence of acute hepato-cellular degeneration (Al-Mamary et al., 2002), it has only been recently that clinical human case reports have been published (Brostoff et al., 2006, Saha and Dollery, 2006). One case report suggested that hepatitis was probably due to right heart failure which in turn was possibly due to direct khat toxicity - as it did not respond to withdrawal of statins or proton pump inhibitors (Saha and Dollery, 2006). Chapman et al. (2010) report on six cases of khat chewers (including two females0 with severe, acute hepatitis that resulted in death or liver transplantation. These all had similar histopathological findings, typically multi-lobular necrosis, with two having chronic liver disease. As no other cause for their liver disease was found, and since re-exposure to khat-chewing resulted in further liver damage, a high concentration of cathinone was found in a sample of damaged liver tissue 3 weeks after the patient's last khat use, there were no significant features to suggest an autoimmune or immunoallergic process in these cases, it was concluded that khat consumption was the aetiological cause of the liver injury in these individuals. Repeated episodes of sub-clinical hepatitis may evolve into chronic liver disease over time, as demonstrated by the presence of chronic liver disease in two subjects who used khat on a long-term basis.

During the last few months, British media and newspapers have been reporting fatalities almost daily allegedly related to mephedrone consumption, but only a few of them have already been confirmed. A report over a mephedrone related fatality first appeared in Sweden in 2009, referring to an 18 year old girl's death in December 2008. No other drugs, apart from mephedrone, were identified by the toxicological screenings. Previously, a Danish teenager found in possession of mephedrone died in May 2008, although toxicology reports were inconclusive. Data collected by the National Programme on Substance Abuse Deaths (*np*-SAD) suggest that by end of May 2010 there have been at least 43 suspected deaths related to mephedrone in England, 8 of in Scotland and 1 in Guernsey (Schifano et al, in preparation). Among them, preliminary analysis carried out in at least 38 out of these 52 cases have provided positive results for the presence of mephedrone at post mortem, with 1 having been confirmed as the result of the adverse effects of methadone and mephedrone in combination. Remaining cases are, to date, awaiting further investigations. One could also argue that not all suspected cases may have been identified. From this point of view, it is important to emphasize that a number of reported fatalities implicate mephedrone consumption in combination with other substances and recreational drugs, such as alcohol, cannabis, cocaine, amphetamine, methadone, methylone and 4-MTA (Schifano et al, in preparation).

Khat main metabolites: cathinone; norpseudoephedrine/cathine; norephedrine

Mephedrone main metabolite: the metabolism might follow the following pathway: N-demethylation to the primary amine, reduction of the keto moiety to the respective alcohol, and oxidation of the tolyl moiety to the corresponding alcohols and carboxylic acid is the major metabolic pathway, followed by N-dealkylation.

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Appendices

Appendix 1: The *national programme* on Substance Abuse Deaths (*np*-SAD)

Aims and objectives

The Programme's principal aim is to reduce and prevent drug-related deaths in the UK due to the misuse of drugs, both licit and illicit, by collecting, analysing, and disseminating information on the extent and nature of death. The Programme offers a comprehensive prevention package to Drug (and Alcohol) Action Teams (DA(A)Ts), Primary Care Trusts (PCTs) and Strategic Health Authorities (SHAs) with a mission to tackle the problem of drug-related deaths.

The Programme's objectives are to:

- Collect and collate drug-related mortality data
- Develop and maintain a computerised surveillance system
- Identify substances implicated in drug-related deaths – including new drugs and new combinations
- Monitor and examine patterns and trends, e.g. geographic, demographic, substances implicated in death, method of death
- Act as an early warning system for new trends in mortality and drug misuse
- Use data as an indicator to estimate the prevalence of substance-related problems and assess the hazards associated with substance abuse
- Collaborate with relevant agencies in research on substance-related mortality locally, nationally and internationally
- Inform and facilitate discussion on the prevention of drug-related deaths, whether accidental or intentional
- Provide data for local and national drug abuse policy formulation and programme planning
- Disseminate information on drug-related mortality to the scientific community, clinicians, policy makers and other interested parties

Surveillance data management

Data collated for this programme is stored on the np–SAD coroners' database which was established in 1997. Its purpose is to provide information for the Programme's surveillance system of monitoring drug-related deaths reported by coroners, procurators fiscal and other agencies.

Data collection

All coroners in the UK (see Appendix 3) are issued with copies of the standard data collection form (see Appendix 4). They are invited to complete the forms on all deaths that meet the criteria described in this report (see Appendix 2) and return them to the *np*-SAD at the ICDP office at St. George's, University of London for coding and entry onto the database.

Data submission is mostly directly on paper by coroners or their staff. There is also manual completion of the *np*-SAD data collection form or print-out of completed computer-generated forms using bespoke software. Forms are submitted when inquests are complete – either singly or in batches. Some data are received electronically. Manual extraction of data by team members is undertaken at some coroners' courts – mostly in London.

A monitoring process is undertaken to ascertain the quality of the information received from coroners, as well as the extent to which all relevant cases are being identified and submitted. This assists in further improving the quality of the various outputs that the Programme seeks to provide.

Data entry and coding

A great deal of consideration was given to the area of data coding to ensure that comparison with other databases was possible and that the final analyses would be useful to readers. For example, cases were coded for area of residence of the deceased.

To enable comparison with various national and international datasets all causes of death have been coded according to the International Classification of Diseases (ICD-10). This is an international standard for the classification of diseases and health-related problems published by the World Health Organisation (1992). The online version (ICD-10 2007) has been employed for coding all substances implicated in death separately according to its therapeutic drug category, i.e. hypnotics/sedatives, anti-depressants, opiates, etc.

The 'intentionality' of deaths based on the coroner's verdict and/or or other additional information employing ICD-10 codes is inadequate for informing interested parties as to whether certain categories of drug-related deaths can be prevented.

Whilst the 'cause' of death (as given in the preceding section) is concerned with the disease or injury responsible for the lethal sequence of events, the 'manner' of death explains how the cause of death arose, i.e. a natural or violent death. The categories for 'manner of death' have been adopted from the UK practice (Explore Forensics) with the additional categories for those where intentionality is unclear or manner of death is impossible to determine: natural, accidental, suicidal, homicidal, undetermined, and unclassified/not specified. Verdicts of 'dependence on drugs' or 'non-dependent abuse of drugs' are regarded as 'accidental'. The 'manner of death' is derived from information such as the verdict or 'finding', history of drug misuse or dependence, post mortem drugs, and other information; and is based on the interpretation of the death by *np*-SAD and clinical presentation/profile of the individual case.

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Statistical analysis

Due to the nature of the information collected by the programme, i.e. drug-related deaths as reported by the coroners, this is an observational study. Hence, statistical methods employed are based on proportions and ratios. Where the data include proportions of incidence for particular groups of interest, the ratio of the proportions forms a measure of the relative risk in one group compared with that of another. These scales of measurement are generally known as point estimates. Although point estimates can be calculated they do not represent the 'true' values. Each point estimate is subject to random variation. Confidence intervals (CI) provide an indication of the range in the true values for the population as a whole, which would be expected in future investigations. The methods used for quantitative data relied mainly on complex assumptions of distributional form. It may be the case that the assumptions are not always satisfied. In such cases, methods known as distribution-free methods can be applied, also known as non-parametric tests (e.g. Mann-Whitney). The data were analysed using SPSS™ for Windows version 17.

Data storage

The anonymised data-set for coroners is held on a SPSS database for analysis. All data held, whether electronic or paper, is stored securely and treated as confidential. Access is restricted to Programme staff; only aggregated and anonymised data are released to third parties.

Other activities and resources

The Programme provides information to public consultations, Parliamentary questions, Ministerial briefings, as well as contributing to the UK's Early Warning System. As part of the early warning function, emerging trends and potential issues are brought to the attention of policy-makers and coroners in a special briefing.

The *np*-SAD team also conduct in-depth psychological autopsies on individual cases and carry out confidential inquiry exercises on request. The team also provides analysis of data for specific Drug and Alcohol Action Teams (DAATs), Primary Care Trusts (PCTs) and (Special Health Authorities) SHAs on request.

Findings from the Programme's annual report and research articles published in peer-reviewed journals articles also feed into both the national and international research base. For example, the key findings from the *np*-SAD are included in the annual report from the UK Focal Point to the EMCDDA, and in various annual United Nations publications

In addition to the above activities, the Programme

- Is the official custodian of the national UK Addicts Index Access database and paper files covering the period 1968-1997
- Holds a copy of the official Dead Addicts datafile
- Is located in an academic centre with input from relevant disciplines
- Brings to a broad range of expertise from different professional backgrounds – psychiatry, psychology, social science, pharmacology, epidemiology, addictive behavioural science, database, project management, etc.

- Has national and international experience, collaborating in research and training with bodies such as the World Health Organisation, European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), and the European Collaborating Centres for Addiction Studies.

National Steering Group

The *np*-SAD has a National Steering Group to provide additional expertise to the Programme through involvement and participation. Its principal role is in giving advice on the full range of its activities, including the national surveillance of coroners and production of the annual report.

Appendix 2: Definitions of drug-related death

np-SAD definition

An *np*-SAD case is defined as a relevant death where any of the following criteria are met at a completed inquest, fatal accident inquiry or similar investigation:

- One or more psychoactive substances* directly** implicated in death;
- History of dependence or abuse of psychoactive drugs;
- Presence of Controlled Drugs*** at post mortem; or
- Cases of deaths directly due to drugs but with no inquest.

Deaths where solvents and other volatile substances are implicated alone are NOT included. Information on this is collected by the Department of Community Health Sciences at St. George's, University of London; further information can be seen at http://www.vsareport.org. Alcohol is included only when implicated in combination with other qualifying drugs.

* 'Psychoactive' substances are those having a direct effect on perception, mood, cognition, behaviour or motor function. Typically these include opiates and opioid analgesics, hypnotics, sedatives, anti-depressants, anti-epileptics, anti-psychotics, hallucinogens and stimulants such as amphetamines and cocaine.

** 'Directly implicated' means that drugs were considered by the coroner or other person investigating the death to have been instrumental in the coming about of the deceased's death (e.g. through poisoning or intoxication), or causing their powers of reasoning and/or perception to be so affected as to induce them to take risks which they would not have done had they been sober (e.g. thinking they could fly).

*** 'Controlled Drugs' are those drugs specifically classified by the Misuse of Drugs Act 1971 as amended by subsequent legislation. Controlled drugs include opioids, cocaine, amphetamines, cannabis, GHB, hallucinogens and most benzodiazepines.

Who is a drug abuser/dependent?

A drug abuser/dependent case is defined as one with a history of substance abuse where one or more of the following criteria are met:

- Reported as a known illicit drug user by the coroner, based on evidence obtained at inquest;
- Prescribed substitute medication for drug dependence;
- Presence of an illicit drug at post mortem, where not prescribed; or
- Presence of any additional information on the coroner's report suggestive of a history of drug abuse, and where such a history fulfils ICD-10 criteria: (F11-F16 and F19, using the 4-code subdivisions of .0 (acute intoxication), .1 (harmful use), and .2 (dependence syndrome).

Drug misuse definition

Cause of death categories included in the headline indicator of 'drug misuse' deaths used to monitor progress against the Government's drug strategy are defined in terms of ICD-10 codes and Controlled Drug Status. The relevant codes from ICD-10 are given in brackets.

The definition comprises two types of deaths:

a) deaths where the underlying cause of death has been coded to the following categories of mental and behavioural disorders due to psychoactive substance use (excluding alcohol, tobacco and volatile solvents):
(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 controlled under the Misuse of Drugs Act 1971 was mentioned on the death record:
(i) Accidental poisoning by drugs, medicaments and biological substances (X40–X44);

(ii) Intentional self-poisoning by drugs, medicaments and biological substances (X60–X64);
(iii) Poisoning by drugs, medicaments and biological substances, undetermined intent (Y10–14);
(iv) Assault by drugs, medicaments and biological substances (X85); and
(v) Mental and behavioural disorders due to use of volatile solvents (F18)

Notes:

1. Deaths coded to opiate abuse which resulted from the injection of contaminated heroin have been *included* in the indicator. This differs from the approach taken in Scotland, where these deaths have been *excluded*. This is because the General Register Office for Scotland (GROS) is able to identify deaths which occurred as a result of the use of contaminated heroin, whereas in England and Wales, these deaths cannot be readily identified. In practice, in England and Wales, they will only be included where the drug was mentioned on the death record and the death was coded to one of the ICD codes on the ONS database of drug-related poisonings and not to an infection code.
2. Specific rules were adopted for dealing with compound analgesics which contain relatively small quantities of drugs listed under the Misuse of Drugs Act, the major ones being dextropropoxyphene, dihydrocodeine and codeine. Where these drugs are mentioned on a death record, they have been excluded if they are part of a compound analgesic (such as *co-proxamol, co-dydramol or co-codamol*) or cold remedy. Dextropropoxyphene has been excluded on all occasions, whether or not paracetamol or a compound analgesic was mentioned. This is because dextropropoxyphene is rarely, if ever, available other than as part of a paracetamol compound. However, codeine or dihydrocodeine mentioned **alone** were included in the indicator. This is because they are routinely available and known to be abused in this form. This approach is taken by both the Office for National Statistics and the General Register Office for Scotland.

3. Drugs controlled under the Misuse of Drugs Act 1971 include class A, B and C drugs.

Definition used by SCDEA

Deaths reported to the SCDEA by Scottish police forces are those which meet the definition used by the Association of Chief Police Officers (Scotland) – "where there is prima facie evidence of a fatal overdose of controlled drugs. Such evidence would be recent drug misuse, for example controlled drugs and/or a hypodermic syringe found in close proximity to the body and/or the person is known to the police as a drug misuser although not necessarily a notified addict." Thus, most suicides in Scotland will be excluded.

Appendix 3: Coroner's jurisdictions/ police force areas reporting drug-related deaths, United Kingdom & Islands

Administrative county/area	Jurisdiction	Description
	(The) Queen's Household	"The Coroner of the Queen's Household has exclusive jurisdiction in respect of inquests and, semble, inquiries which do not lead to inquests, on persons whose bodies are lying within the limits of any of the Queen's palaces or within the limits of any other house where Her Majesty is then demurrant and abiding in her own royal person, notwithstanding the subsequent removal of Her Majesty from such palace or house. The limits of the palace or house are deemed to extend to any courts, gardens or other places within the curtilage of the palace or house but not further. Where a body is lying dead beyond these limits, the coroner of the Queen's Household has no jurisdiction."
ENGLAND		
Avon	Avon	The city of Bristol and the districts of Bath & North East Somerset, North West Somerset & South Gloucestershire
Bedfordshire	Bedfordshire & Luton	The whole county of Bedfordshire and the county of Luton
Berkshire	Berkshire	The whole county of Berkshire
Buckinghamshire	Buckinghamshire	The whole county of Buckinghamshire (excl. Milton Keynes)
	Milton Keynes	The whole county of Milton Keynes
Cambridgeshire	North & East Cambridgeshire	The districts of Fenland & East Cambridgeshire
	Peterborough	The district of Peterborough
	South & West Cambridgeshire	The City of Cambridge, the districts of Huntingdon and South Cambridgeshire
Cheshire	Cheshire	The whole county of Cheshire
Cornwall	Cornwall	The whole county of Cornwall (exc. Isles of Scilly)
	Isles of Scilly	The Isles of Scilly
Cumbria	North and West Cumbria	The districts of Allerdale, Carlisle and Copeland.
	South and East Cumbria	The districts of Barrow-in-Furness, Eden, and South Lakeland.
Derbyshire	Derby & South Derbyshire	The county of Derby and the districts of Erewash & South Derbyshire. The district of Amber Valley (except the parts in the Coroner's Jurisdictions of North Derbyshire). In the district of West Derbyshire, the parishes of Alkmonton, Ashbourne, Atlow, Biggin, Boylestone, Bradbourne, Bradley, Brailsford, Clifton & Compton, Cubley, Doveridge, Edlaston & Wyaston, Fenny Bentley, Hognaston, Hollington, Hulland, Hulland Ward, Hungry Bentley, Kirk Ireton, Kniveton, Lea Hall, Longford, Mapleton, Marston Montgomery, Mercaston, Norbury & Roston, Offcote & Underwood, Osmaston, Rodsley, Shirley, Snelston, Somersal Herbert, Sudbury, Thorpe, Tissington, Yeaveley and Yeldersley
	North Derbyshire	The District of Bolsover and North East Derbyshire. The Boroughs of Chesterfield and High Peak. In the Borough of Amber Valley the parishes of Denthick, Lea and Holloway, South Wingfield and Alfreton. The District of Derbyshire Dales except the parishes in the Derby and South Derbyshire Coroner's District.

Administrative county/area	Jurisdiction	Description
Devon	Exeter & Greater Devon	The districts of East Devon, Exeter, Mid Devon, North Devon, Torridge, West Devon. That part of the district of Teignbridge comprising the parishes of Alphington, Ashton, Bovey Tracey, Bridford, Christow, Chudleigh, Doddiscombsleigh, Dunchideock, Dunsford, Exminster, Hennock, Holcombe Burnell, Ide, Kenn, Lustleigh, Manaton, Moretonhampstead, North Bovey, Shillingford St George, Tedburn St Mary, Trusham & Whitestone.
	Plymouth & South West Devon	The district of Plymouth. The district of South Hams except the parishes in the Torbay and South Devon coroner's district.
	Torbay & South Devon	The district of Torbay. The district of Teignbridge except the parishes in the Coroner's Jurisdiction of Exeter and Greater Devon. That part of the district of South Hams comprising the parishes of Ashprington, Berry Pomeroy, Blackawton, Cornworthy, Dartington, Dartmouth, Dean Prior, Dittisham, Halwell, Harberton, Holne, Kingswear, Littlehampton, Marldon, Rattery, Slapton, Staverton, Stoke Fleming, Stoke Gabriel, Strete, Totnes and West Buckfastleigh
Dorset	Bournemouth, Poole & Eastern Dorset	The counties of Bournemouth & Poole, Christchurch, Purbeck and Wimbourne
	Western Dorset	The districts of West Dorset, North Dorset and Weymouth & Portland
Durham	Darlington & South Durham	The county of Darlington and the districts of Sedgefield and Teesdale {Wear Valley also included]
	North Durham	The districts of Chester-Le-Street, Derwentside, Durham and Easington
East Sussex	Brighton & Hove	The county of Brighton & Hove
	East Sussex	The whole county of East Sussex
Essex	Essex & Thurrock (Essex No 1)	The districts of Basildon, Braintree, Brentwood, Chelmsford, Colchester, Epping Forest, Harlow, Maldon, Tendring, Thurrock and Uttlesford
	Southend & South East Essex (Essex No 2)	The districts of Southend, Rochford and Castle Point
Gloucestershire	Gloucestershire	The county of Gloucestershire
Greater Manchester	Manchester	The district of Manchester
	North Manchester	The districts of Bury, Rochdale & Oldham
	South Manchester	The districts of Stockport, Tameside and Trafford
	West Manchester	The districts of Wigan, Bolton and Salford
Hampshire	Central Hampshire	The districts of Winchester, Test Valley and Eastleigh
	North East Hampshire	The districts of Basingstoke, Hart & Rushmoor and that part of the district of East Hampshire not contained in the Portsmouth & South East Hampshire coroner's district
	Portsmouth & South East Hants	The county of Portsmouth and the districts of Fareham, Gosport and Havant and, in the district of East Hampshire, the parishes of Buriton, Clanfield, Colemore and Priors Dean, East Meon, Froxfield, Hawkley, Horndean, Langrish, Liss, Petersfield, Rowlands Castle and Steep
	Southampton & New Forest	The county of Southampton and the district of New Forest
Herefordshire	Herefordshire	The whole county of Herefordshire
Hertfordshire	Hertfordshire	The whole county of Hertfordshire

Administrative county/area	Jurisdiction	Description
Humberside	East Riding & Hull	The counties of the East Riding of Yorkshire and the city of Kingston-upon-Hull
Isle of Wight	Isle of Wight	The whole county of the Isle of Wight
Kent	Central & South East Kent	The district of Shepway. The borough of Ashford. The district of Dover except those parishes with the North East Kent coroner's district. In the district of Swale, the parishes of Boughton under Bleab, Doddington, Dunkirk, Eastling, Faversham, Graveney & Goodnestone, Hernhill, Luddenham, Lynsted, Newnham, Norton & Buckland, Oare, Ospringe, Selling, Sheldwich Badlesmere & Leaveland, Stalisfield, Stone, Teynham, Throwley
	Mid Kent & Medway	The City of Rochester upon Medway, the districts of Gillingham and Maidstone. The district of Swale, with the exception of Faversham and the parishes in the Coroner's Jurisdiction of East Kent. In the district of Tonbridge and Malling, the parishes of Addington, Aylesford, Birling, Burham, Ditton, East Malling & Larkfield, King's Hill, Leybourne, Mereworth, Offham, Ryarsh, Snodland, Trottiscliffe, Wateringbury & East Peckham, Wouldham.
	North East Kent	The district of Thanet. The City of Canterbury. In the district of Dover, the parishes of Ash, Aylesham, Deal, Eastry, Eythorpe, Goodnestone, Great Mongeham, Nonington, Northbourne, Preston, Ringwould & Kingsdown, Ripple, Sandwich, Sholden, Staple, Stourmouth, Sutton by Dover, Tilmanstone, Walmer, Wingham, Woodnesborough, Worth.
	North West Kent	The districts of Dartford, Gravesham, Sevenoaks and Tunbridge Wells. The district of Tonbridge and Malling, except the parishes in the Mid-Kent and Medway Coroner's district.
Lancashire	Blackburn, Hyndburn & Ribble Valley	The districts of Blackburn, Hyndburn & Ribble Valley
	Blackpool & the Fylde	The districts of Blackpool and Fylde
	East Lancashire	The districts of Burnley, Pendle and Rossendale
	Preston & West Lancashire	The districts of Lancaster, Wyre, Chorley, Preston, South Ribble and West Lancashire
Leicestershire	Leicester City & South Leicestershire	The county of Leicester and the districts of Blaby, Harborough, Oadby, Wigston
	Rutland & North Leicestershire	The county of Rutland and the districts of Charnwood, Hinckley & Bosworth, Melton and North West Leicestershire
Lincolnshire	Boston & Spalding	The districts of Boston and South Holland
	North Lincolnshire & Grimsby	The counties of North Lincolnshire and North East Lincolnshire
	Spilsby & Louth	The district of East Lindsey, except the parishes in the West Lincolnshire coroners' district. In the district of West Lindsey, the parishes of Bigby, Brocklesbury, Cabourne, Caistor, Claxby, Grasby, Great Limber, Holton Le Moor, Keelby, Kirmond le Mire, Legsby Linwood, Market Rasen, Middle Rasen, Nettleton, Normanby le Wold, North Kelsey, North Willingham, Osgodby, Owersby, Riby, Rothwell, Searby cum Owmby, Sixhills, Somerby, South Kelsey, Stainton le Vale, Swallow, Swinhope, Tealby, Thoresway, Thorganby and Walesby.

Administrative county/area	Jurisdiction	Description
	Stamford	In the district of South Kesteven, the parishes of Aslackby & Laughton, Barholm & Stowe, Baston, Billingborough, Bourne, Braceborough & Wilsthorpe, Careby Aunby & Holywell, Carlby, Castle Bytham, Corby Glen, Counthorpe & Creeton, Deeping St James, Dowsby, Dunsby, Edenham, Folkingham, Greatford, Haconby, Horbling, Irnham, Kirkby Underwood, Langtoft, Little Bytham, Market Deeping, Morton, Pointon & Sempringham, Rippingale, Stamford, Swayfield, Swinstead, Tallington, Thurlby, Toft with Lound & Manthorpe, Uffington, West Deeping and Witham on the Hill
	West Lincolnshire	The district of Lincoln. The district of North Kesteven. The district of South Kestevan, except the parishes in the Coroner's Jurisdiction of Stamford. The district of West Lindsey, except the parishes in the Coroner's jurisdiction of Spilsby & Louth. In the district of East Lindsey, the parishes of East & West Barkwith, Hatton, Langton by Wragby, Panton, West Torrington, Wragby.
London	City of London	City of London
	Eastern London	The London boroughs of Barking, Havering, Newham, Redbridge & Waltham Forest
	Inner North London	The London boroughs of Camden, Hackney, Islington & Tower Hamlets
	Inner South London	The London boroughs of Greenwich, Lambeth, Lewisham & Southwark
	Inner West London	The London boroughs of Wandsworth & Merton, the Royal Borough of Kensington & Chelsea, and the City of Westminster
	Northern London	The London boroughs of Barnet, Brent, Enfield, Haringey & Harrow
	Southern London	The London boroughs of Bexley, Bromley, Croydon and Sutton
	Western London	The London boroughs of Ealing, Hammersmith, Hillingdon, Hounslow and Richmond-upon-Thames, and the Royal Borough of Kingston-upon-Thames
Merseyside	Knowsley, St Helens & Sefton	The districts of Knowsley, St Helens and Sefton
	Liverpool	The district of Liverpool
	Wirral	The district of Wirral
Norfolk	Greater Norfolk	The city of Norwich, the districts of Breckland, Broadland, King's Lynn, North Norfolk, South Norfolk, and West Norfolk
	Great Yarmouth	The borough of Great Yarmouth
Northamptonshire	Northamptonshire	The whole county of Northamptonshire
Northumberland	North Northumberland	The districts of Alnwick and Berwick-upon-Tweed and so much of the districts of Castle Morpeth and Wansbeck as lies north of the line for the time being of the centre of the River Wansbeck
	South Northumberland	The districts of Blyth Valley & Tynedale, and so much of the districts of Castle Morpeth & Wansbeck as lie south of the line for the time being of the centre of the River Wansbeck
North Yorkshire	North Yorkshire Eastern	The districts of Hambleton, Ryedale and Scarborough
	North Yorkshire Western	The districts of Richmondshire, Craven, Harrogate and Selby

Administrative county/area	Jurisdiction	Description
	York	The county of York. In the district of Harrogate, the parishes of Nether and Upper Poppleton. In the district of Ryedale, the parishes of Clifton (without), Earswick, Haxby, Heworth (without), Holtby, Huntington, Murton, New Earswick, Osbaldwick, Rawcliffe, Skelton, Stockton-on-the-Forest, Strensall, Towthorpe, Wigginton. In the district of Selby, the parishes of Dunnington, Elvington, Fulford, Heslington, Kexby, Naburn & Deighton, Wheldrake.
Nottinghamshire	Nottinghamshire	The whole county of Nottinghamshire and the City of Nottingham
Oxfordshire	Oxfordshire	The whole of the county of Oxfordshire
Shropshire	Mid & North Shropshire	The districts of Oswestry, North Shropshire, Shrewsbury & Atcham
	South Shropshire	The districts of South Shropshire and Bridgnorth
	The Wrekin	The whole county of the Wrekin
Somerset	Eastern Somerset	The districts of Mendip and South Somerset
	Western Somerset	The districts of Sedgemoor, Taunton Deane and West Somerset
South Yorkshire	South Yorkshire East	The district of Doncaster and Rotherham
	South Yorkshire West	The districts of Barnsley and Sheffield
Staffordshire	South Staffordshire	The districts of Cannock Chase, East Staffordshire, Lichfield, South Staffordshire, Stafford and Tamworth.
	Stoke-on-Trent & North Staffordshire	The county of Stoke-on-Trent, and the districts of Newcastle-under-Lyme and Staffordshire Moorlands.
Suffolk	Suffolk	The county of Suffolk.
Surrey	Surrey	The whole county of Surrey
Teesside	Hartlepool	The county of Hartlepool
	Teesside	The counties of Middlesbrough, Redcar & Cleveland and Stockton-on-Tees.
Tyne & Wear	Gateshead & South Tyneside	The districts of Gateshead and South Tyneside
	Newcastle-upon-Tyne	The City of Newcastle-upon-Tyne
	North Tyneside	The district of North Tyneside
	Sunderland	The district of Sunderland
Warwickshire	Warwickshire	The whole county of Warwickshire
West Midlands	Birmingham	The districts of Birmingham & Solihull
	Black Country	The districts of Dudley, Sandwell, and Walsall
	Coventry	The district of Coventry
	Wolverhampton	The district of Wolverhampton
West Sussex	West Sussex	The whole county of West Sussex
West Yorkshire	West Yorkshire Eastern	The metropolitan district of Leeds and Wakefield
	West Yorkshire Western	The metropolitan districts of Bradford, Calderdale and Kirklees
Wiltshire	Wiltshire & Swindon	The counties of Wiltshire and Swindon
Worcestershire	Worcestershire	The whole county of Worcestershire
WALES		
	Bridgend & Glamorgan Valleys	The county boroughs of Bridgend, Merthyr Tydfil & Rhondda, Cynon & Taff
	Cardiff & the Vale of Glamorgan	The county of Cardiff and the county borough of the Vale of Glamorgan
	Carmarthenshire	The districts of Carmarthen, Llanelli and Dinefwr
	Central North Wales	The county of Denbighshire, the county borough of Aberconwy & Colwyn.
	Ceredigion	The district of Ceredigion
	Gwent	The county of Monmouthshire, the county borough of Blaenau Gwent, Caerphilly, Newport and Torfaen

Administrative county/area	Jurisdiction	Description
	Neath & Port Talbot	The districts of Neath & Port Talbot. In the borough of Lliw Valley, the communties of Cilybebyll, Clydach, Cwmllnfell, Gwam-Cae-Gurwen, Mawr, Pontardawe & Ystalyfera
	North East Wales	The boroughs of Flintshire and Wrexham. In the district of Glyndwr, the communities of Ceiriog Ucha, Chirk, Glyntraian, Llangedwyn, Llangollen, Llangollen Rural, Llanrhaeadr-ym-Mochnant, Llansantffraid Glyn Ceiriog, Llansilin & Llantysilio.
	North West Wales	The counties of Anglesey, Caernarfonshire, Merionethshire
	Pembrokeshire	The district of Preseli and South Pembrokeshire (including Caldey Island and St Margaret's Island)
	Powys	The whole county of Powys
	Swansea	The district of Swansea. In the borough of Lliw Valley, the communities of Gorseinon, Gowerton, Grovesend, Llangyfelach, Llwchwr, Penllergaer, Pontarsulais, Pont-Lliw.
NORTHERN IRELAND		
NORTHERN IRELAND		Whole of Northern Ireland
THE ISLANDS		
	Guernsey	Alderney, Brecqhou, Guernsey, Herm, Jethou, Lihou, Little Sark, Sark
	Jersey	Jersey
	Isle of Man	Isle of Man
SCOTLAND		
Argyll & Clyde	Dumbarton	Fiscal area (but figures included in Strathclyde Police figures)
Central Scotland Police		Clackmannanshire, Falkirk, and Stirling Council areas
Dumfries & Galloway Constabulary		Dumfries & Galloway Council area
Fife Constabulary		Fife Council area
Grampian Police		City of Aberdeen, Aberdeenshire, and Moray Council areas
Lothian & Borders Police		East Lothian, City of Edinburgh, Midlothian, West Lothian, and the Borders Council areas
Northern Constabulary		Highland, Orkney Islands, Shetlands Islands, and Western Isles Council areas, and parts of Argyllshire (Ardnamuchan and Glencoe) and Morayshire (Grantown-on-Spey and Cromdale)
Strathclyde Police		Argyll and Bute, East Dumbartonshire, Dumbarton and Clydebank, South Lanarkshire, North Lanarkshire, East Ayrshire, North Ayrshire, East Renfrewshire, City of Glasgow, Inverclyde, South Ayrshire, and Renfrewshire Council areas
Tayside Police		Angus, City of Dundee, and Perthshire and Kinross Council areas

Since the start of 2004, the following amalgamations of coroners' jurisdictions in England have occurred: East Berkshire, Reading and West Berkshire to form one for the whole county of Berkshire (1 April 2004); East and West Cornwall to form one for the whole county of Cornwall, but excluding the Isles of Scilly (1 February 2004); in Cumbria, Furness and Southern Cumbria to form South Cumbria & Furness (1 April 2004); Hertford and West & North Hertfordshire to form one for the whole county of Hertfordshire (1 October 2004); in Lincolnshire, Louth and Spilsby to form Spilsby & Louth (1 December 2003); in the West Midlands, Dudley, Sandwell, and Walsall to form Black Country (1 August 2004); in Derbyshire, High Peak and Scarsdale to form North Derbyshire (1 February 2006); in Gloucestershire, Gloucester and Cheltenham to form Gloucestershire (1 April 2006); in Suffolk, Greater Suffolk and Lowestoft to form Suffolk (1 August 2006). Further amalgamations have taken place in 2007, these changes will be reflected in future reports.

The retirement of several coroners has resulted in some coroners taking on responsibility for additional jurisdictions. The Isles of Scilly (regarded as part of Cornwall) are currently being looked after by the coroner for Plymouth & South West Devon. Data for Herefordshire are also submitted now together with those for Worcestershire. The two jurisdictions in Durham are now being looked after by the same coroner, but have not been formally amalgamated. The coroner for Suffolk is also coroner for Southend & South East Essex.

In Northern Ireland, a process of amalgamation has been completed and since 1 April 2006 there has been a single coroner's area covering the whole of the Province. It is centred on the Greater Belfast office and served by three full-time coroners, overseen by a High Court judge.

Appendix 4: *np*-SAD data collection form

The National Programme on Substance Abuse Deaths (*np*-SAD)

NOTIFICATION OF DRUG-RELATED DEATHS

Section I Demographic information

Deceased forename(s): _____ Gender: ☐ Male ☐ Female

Family name: _____Other names known by: _____

Date of birth: _____/_____/_____ Place of birth: _____

Usual address:_____

_____Postcode: _____

Ethnicity (tick one only)

☐ White ☐ Pakistani ☐ Black African ☐ Other, specify_____

☐ Chinese ☐ Bangladeshi ☐ Black Caribbean ☐ Not known

☐ Indian ☐ Black other, specify _____

Occupational status (tick one only)

☐ Employed (manual) ☐ Unemployed ☐ Retired

☐ Employed (non-manual) ☐ Childcare/houseperson ☐ Student/pupil

☐ Self employed ☐ Invalidity/sickness ☐ Other, specify_____

☐ Not known

Living arrangements (tick one only)

☐ Alone ☐ Self and children ☐ No fixed abode

☐ With partner ☐ With parent(s) ☐ Other, specify_____

☐ With partner & children ☐ With friend(s) ☐ Not known

Section II Details of death

Date of death: _____/_____/_____

Place of death: (tick one only)

☐ Home ☐ Residential premises (.e. hotel) ☐ In custody

☐ Place of work ☐ Street or highway ☐ Place of recreation/sport

☐ Treatment centre ☐ Educational establishment ☐ Hospital

☐ Other place, specify_____

Cause(s) of death (as given on the death certificate)

1(a)_____
(b) _____
(c) _____
2 _____

The National Programme on Substance Abuse Deaths (*np*-SAD)

Toxicology
Please list drugs and alcohol present at post mortem (in order of importance, if known)

	Drug/alcohol	Level				Drug/alcohol	Level		
		B	T	U			*B*	*T*	*U*
1					4				
2					5				
3					6				

B = Blood; T = Tissues; U = Urine

Section III Coroner's verdict

Section IV Background information

Recent history of drug use and other relevant information: e.g. evidence of injecting drug use; evidence of 'crack' use; recently released from prison or discharged from treatment programme; psychiatric history; known to alcohol/drug services; length of use; poly-substance user; known health problems associated with substance misuse; last 24 hours of life (if known), time police summoned, any drugs paraphernalia, etc.:

Was the deceased on prescribed psychoactive medication? □ Yes □ No □ Not known
If yes, please list drugs:
1 _____ 2 _____
3 _____ 4 _____
5 _____ 6 _____

Was the deceased a drug addict or known drug abuser? □ Yes □ No □ Not known

---

Section V Coroner's details

Coroner's name: _____Date inquest completed: ____/_____/_____
Jurisdiction: _____ Office: _____
Signature: _____ Date: _____/_____/_____

Please send completed form to:

National Programme on Substance Abuse Deaths (np-SAD)
International Centre for Drug Policy
St George's, University of London
FREEPOST LON 10141,
London SW17 0BR

For general enquiries: Tel 020 8725 2623 or Fax 020 8266 6494

This form is available electronically

Copies available from

National Programme on Substance Abuse Deaths (*np*-SAD)
International Centre for Drug Policy (ICDP)
St George's, University of London
Cranmer Terrace
London
SW17 0RE

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E-mail: npSAD@sgul.ac.uk

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