



DRUG DEATHS IN FORTH VALLEY (SCOTLAND) 2013

**A report on the findings of the Forth Valley
Alcohol and Drug Partnership Drug Related
Critical Incidents Group**

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Acknowledgements

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Executive Summary

Case Vignette: A Typical Drug Death Victim in Forth Valley in 2013

The average person dying as a result of a fatal drug overdose in Forth Valley in 2013 would have been a 37 year old white male. He would have started his illicit substance misuse around the age of 14; approximately one year before he left school. At this point, he might have taken up employment or vocational training for a career. His childhood may have been difficult; his parents might have been separated and his family members might have had a history of mental health difficulties and/or substance misuse. He may even have suffered physical and/or sexual abuse as a child.

From the age of 14 onwards, he would have proceeded to misuse a cocktail of drugs including alcohol, cannabis, amphetamines, LSD and ecstasy. Approximately five years after leaving school he would have taken heroin for the first time. He would have started injecting the drug at around 23 years of age. He would have maintained meaningful and close relationships with his friends and family members throughout his life, although these might also have been complicated by his substance misuse and associated behaviour. He would have had children; however, they would not have lived with him and he would have lost custody of them.

He would have been known to at least two services, intermittently, including his GP and specialist substance misuse services in Forth Valley during the five years prior to his death. In this time he would have been misusing several types of illicit substances including heroin and benzodiazepines (prescribed and/ or non-prescribed). He would have encountered at least one complex episode of a co-morbid psychiatric or physical health problem. He would also have experienced other adverse life events, such as bereavement, assault or the loss of a close relationship. At some point in his life, he is likely to have suffered a non-fatal drug overdose. He would have criminal record and may have served a prison sentence some point during his life.

At the time of his death, he would have been unemployed and living with other adults, although he would have been classed as single. He would have been close to friends and family members, some of whom may also have been substance misusers. Although he would not have been socially isolated, it is likely that he may also have experienced difficulties in these relationships. At the time of his death, he would have been well known to his GP, but he would have been unlikely to have sought or received pharmacological treatment for his drug dependency. He would have continued to misuse a cocktail of illicit and prescribed substances.

On the day of this death, he would have consumed alcohol and have purchased at least one 'tenner' bag of heroin alongside benzodiazepines. He would have shared these amongst friends and co-users and consumed the substances in their presence. He would have died in the presence of others, who would for some time have continued to believe that he was merely asleep. As such, any attempts to revive him would have been delayed. Hours later, often the next day, his friends and family would have noticed that something was wrong and summoned an ambulance. He would have been dead by the time the ambulance arrived at his home address.

At post mortem, his blood sample would have revealed the cocktail of CNS depressants such as heroin, benzodiazepines, and/or methadone as well as anti-depressant medication and alcohol which ultimately caused his death.

Background

Aims and Objectives

The principal aim of the Forth Valley Drug Death and Critical Incident Review group is the reduction and prevention of critical incidents and drug deaths in Forth Valley. This report includes information pertaining to the geographic, social, criminal offending, substance misuse, physical, psychiatric/psychological and service use characteristics as well as the specific circumstances of drug deaths that occurred in Forth Valley in 2013. Based on this information, the group has set forth recommendations to facilitate the reduction of drug deaths and inform policy and practice at a local and national level.

Methods

The population of drug deaths (DDs) in Forth Valley in 2013 consisted of 24 cases. Information about these deaths was collected via dissemination of the East Central Scotland Drug Deaths Questionnaire to services who were in contact with the deceased individual prior to their death, as well as case notes held by social care services, specialist addiction services, general practice, prison and Police Scotland. Data relating to the specific cause of death, post-mortem and toxicology was obtained from the Procurator Fiscal.

Key Results

Incidence and Prevalence of Drug Deaths

- There were a total of 24 drug deaths (DDs) in Forth Valley in 2013
- The average drug death rate in Forth Valley in 2013 (0.08 per 1000) was lower than the 2008-2012 Scottish average rate of 0.10 per 1000 and a reduction of the rate seen in the previous year
- Although the highest number of drug deaths occurred in Falkirk, the highest rate of drug deaths in Forth Valley occurred in the Clackmannanshire area
- Clackmannanshire also has the highest proportion of problem drug users based on population totals in Forth Valley and problem drug users in Clackmannanshire have a slightly higher drug death rate than those in the other two council areas

Demographic, Social Functioning and Life Context Trends

- 100% of Forth Valley drug death victims were White Caucasian
- The majority (79.1%) of Forth Valley drug death victims were male
- The mean age of Forth Valley drug death victims in 2013 was 37.5 years
- The average age of drug deaths victims is increasing
- Half of the drug death victims were living with at the time of their deaths
- The living arrangements of drug death victims at the time of their deaths were stable for only about half of the victims over the six months prior to death
- The majority (79.2%) of the drug death victims were single at the time of their death
- The majority (54.1%) of the drug death victims had children; the overall pattern was that underage children tended to live with their mothers, regardless of whether or not she was a substance user
- The majority of drug death victims were not socially isolated; many were known to have a close relationship with a family member and/or at least one close friend

- The mean age at which drug death victims left school was 15 years
- Data pertaining to employment/education activity after leaving school was not routinely reported by services.
- At the time of death, 87.5% of drug death victims were unemployed

Criminal Justice Issues and Offending Patterns

- The majority of the drug death victims had a criminal history (90.4%)
- Unlike previous years, criminal activity and release from prison in the weeks leading up to the deaths were not common in 2013

Physical, Psychological/Psychiatric Health and Significant Life Events

- The majority of drug death victims (70.8%) experienced significant psychological or psychiatric difficulties, the most common of which were symptoms of anxiety and depression
- 54.1% of the drug death victims were known to have suffered significant physical health difficulties
- 83.3% of DD victims were known to have experienced a significant adverse event in their adult lives and 37.5% had experienced adversity in childhood
- Most common adverse life events included child custody loss, bereavements, serious relationship problems and assault/physical abuse
- The majority of drug death victims (83.3%) had experienced a combination of psychological difficulties, physical difficulties and/or life events alongside their substance misuse problems

Substance Misuse Histories

- The vast majority of the drug death victims were known poly-drug users, 50% of which were intra-venous users
- The median age at which drug misuse began was 14 years, and age at which individuals first injected was 23 years
- By the time of their deaths, the victims had an average drug using career of over 23 years
- 29.2% were known to have overdosed at some point in their lives, often on multiple occasions, which indicates a noticeable reduction in the number of recorded non-fatal overdoses as compared with previous years
- 87.5% of the drug death victims were known to have had severe problems with their alcohol consumption at some points in their lives. For 62.5% these problems persisted until their deaths

Service Use Histories

- All drug death victims were known to at least one service in the 5 years prior to their deaths
- The majority of drug death victims (87.5%) had accessed at least one service in the 6 months prior to their deaths
- General Practitioners saw 70.8% of the eventual drug death victims in the 6 months prior to their deaths
- A large proportion (79.2%) of the drug death victims did not seek/receive treatment for their drug problem 6 months before they died

- 20.8% were receiving pharmacological treatment in the 6 months prior to their deaths, all of whom were still receiving their substitute medication at the time of their deaths

Circumstances of the Death

- Drug deaths in 2013 in Forth Valley occurred at a relatively even rate over the course of the year
- Overall, drug deaths were somewhat more likely to occur during a weekend rather than on a weekday
- The majority of DDs (83.3%) occurred in the presence of others, which were in all cases known to the victim
- In many cases where others were present, the victim was simply believed to be sleeping at the time of their death, thus delaying any possible interventions
- CPR was attempted by bystanders in about half of the cases (45.9%); however, this was often partial and had to be instructed by the ambulance crew over the telephone
- 17 of the 24 drugs deaths involved opiates and bystanders were present; in these cases it is possible that the effects of the opiates could have been reversed if the overdose had been recognised and take-home-naloxone had been available at the scene

Toxicology Findings

- Benzodiazepines, heroin/morphine, methadone and alcohol were the four most common substances involved in the drug deaths of 2013 in Forth Valley
- 79.2% of victims had taken benzodiazepines shortly before their death
- All but one death involved at least one opiate substance
- All of the drug deaths occurring in Forth Valley were polysubstance deaths
- There is widespread evidence for diversion of prescribed substances and non-adherence to medication prescribed by General Practitioners

Recommendations and Actions

- Forth Valley should continue to collect data within the ISD Drug Deaths Database, to support their compilation of the National Drug Related Death Reports.
Action: Continue to collect data in accordance with timescales and processes as defined by ISD.

- The process of reviewing all drug deaths should be more rigorous and it is recommended that it should employ similar methodology to the NHS Forth Valley suicide review processes.
Action: Ensure actions that emerge from findings are shared and completed by Clinical Governance groups in a timely manner.

- Annually review and maintain robust information sharing protocols between all partner agencies.
Action: Maintain and review ISPs in accordance with NHS protocols.

- The group must consider further the particularly high drug death rate in Clackmannanshire, look to understand the reasons for this and target communication and preventative strategies accordingly.
Action: Full Drug Death Report to be highlighted to Clackmannan ADP, the CPP, and the NHS Board.

- Overdose awareness training and Naloxone should be routinely and actively be provided to family members of substance users.
Action: Improve the liaison with family support services to support provision of overdose prevention training and Naloxone to families.

- In relation to prison liberations, it is recommended that information as to whether a prisoner has been given overdose awareness training and naloxone is included with the information about methadone dosing.
Action: Prison Healthcare Management to support staff to utilise FACE to improve information sharing and communication relating to discharges. Author and support the implementation of the Prison Liberation Pathway.

- Services should be aware of the important role of both mental and physical health in the recovery of substance users. Services should increase the quality of recording health problems and the associated actions to improve the general health of clients.
Action: Fully implement ICP standard relating to physical health, ensure regular medical and recovery reviews are undertaken jointly for those in treatment services.

- The NHS Forth Valley ORT Champion must engage with doctors and other health professionals to promote best care of substance users and raise awareness of their multiple co-morbidities, as well as the high rates of non-adherence and diversion of prescribed medication.
Action: The ORT Champion should ensure that the Drug Death Report is shared widely within Forth Valley at a strategic level.

- Continue the Scottish Ambulance Service non-fatal overdose report work.
Action: Maps to be provided quarterly to the DD group by Signpost Recovery, detailing incidents and engagement levels. Assertive outreach work should be considered.
- Forth Valley General Practitioners should actively engage with the healthcare of substance misusers.
Action: Actively promote Naloxone training and prescribing by General Practitioners, with the view that all GPs should have a Naloxone kit on site. New guidance should be authored and implemented for General Practitioners around the risks of prescribing medication which are prevalent in drug deaths.
- Further analysis of the deaths that occurred within services should occur to ensure optimal learning. In 2013, there were five individuals who died while in contact with substance misuse service.
Action: The process of reviewing these deaths should be re-assessed with a view of implementing a multiagency partnership approach.
- Drug death victims are in contact with lots of different services – but not always drug treatment services. The ADP should continue to actively promote workforce development opportunities within areas such as the Citizen’s Advice Bureau, Benefits Agencies, Children and Families Social Work departments and Criminal Justice Social Work settings to ensure staff have knowledge of substance misuse services and can appropriately signpost people.
Action: The ADP should support, evaluate and report on workforce development initiatives.
- It is noted that there are a significant number of drug deaths victims who are not in contact with any services at the time of their deaths.
Action: Take forward the vulnerable persons referral system with Police Scotland and Signpost Recovery to engage the substance misusers who are not in contact with services.
- At the end of a period of treatment, services should provide a risk assessed discharge plan to ensure smooth transition between services and ongoing recovery.
Action: All services should have a discharge plan in place when individuals are exiting services, this should direct individuals to HRS for additional support and motivation.
- Naloxone should be made available to harder to reach individuals (who are not in contact with services).
Action: Facilitate peer-to-peer Naloxone training amongst substance misusers. Pharmacy training and Naloxone supply should continue to be supported.
- It is noted that there is an increase in the prevalence of alcohol in the poly-substance drug death. Forth Valley must strengthen access to alcohol treatment for poly-substance users.
Action: Forth Valley must develop multi-agency pathways for the treatment of harmful use of alcohol and alcohol dependence.

Section 1: Introduction

Forth Valley Alcohol and Drug Partnership Drug Related Critical Incident Group is a multi agency partnership formed to review the circumstances around substance related death in Forth Valley. Forth Valley has a strong history of research into drug deaths, having been the site of pioneering research by Deborah Zador in 2005 into factors which precipitate drug deaths across Scotland. The work of the group, including this report, seeks to build on this strong foundation.

It has the express aim of reviewing all drug deaths and using the key learning points not just to prevent future drug death, but also to improve the care and treatment experience of services users and their carers. The group is also explicitly tasked with delivering locally the recommendations of the National Forum on Drug Related Death. The group submits relevant information to ISD Scotland for their National Drug Related Death report, in accordance with their requirements and stipulations.

The group has worked in accordance with the guidelines set out in a jointly agreed Information Sharing Protocol, which allows sufficient information to be linked and shared, but also satisfies the rigours and safeguards of data protection legislation.

Section 2: Methodology

This report is a retrospective analysis of trends, similarities and common themes occurring within victims of drug deaths in Forth Valley over the past year (2013). Information has been analysed from a descriptive perspective and does not infer that the data collated necessarily identifies risk factors attributable to a drug death. In order to accomplish such a task one would require a controlled sample of a living, drug taking and general population.

2.1 Population

In total, there were 24 individuals who died as a result of a fatal drug overdose in Forth Valley in between January and December 2013. Deaths occurring as the result of both accidental and deliberate overdoses (suicides) were reviewed by the group. Included in this report is descriptive information pertaining to the individuals who died as a result of an illicit overdose in the Forth Valley area in 2013. All of these fatalities have been confirmed of dying from a fatal drug overdose by post-mortem toxicology reports obtained from the Procurator Fiscal. A further seven cases were reviewed by the drug death group in Forth Valley, but their deaths were ultimately attributed to causes other than a fatal drug overdose.

2.2 Definition of a Drug Death (DD)

The definition of a Drug Death (DD) is complex, with individual studies adopting specific definitions, which vary depending upon the focus of the study. A drug death is defined as:

‘Where there is prima facie evidence of a fatal overdose of controlled drugs. Such evidence may 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.’

The complexity of providing a suitable DD definition is demonstrated by the differences in definitions incorporated by different organisations. For example, the World Health Organisation (WHO) defines it as ‘fatal consequences of the abuse of internationally controlled substances and/or of non medical use of other substances for psychic effects,’ (WHO, 1993; p7). This definition allows the incorporation of deaths indirectly associated with drug abuse, such as chronic intoxication, suicide, drug abuse-related accidents and drug-abuse related diseases.

This definition is similar, but not identical, to the definition employed by the National Register for Scotland (NRS). The NRS definition includes instances in which toxicological findings indicate the presence of a controlled substance, but where this substance may not necessarily have been a factor contributing to the individual’s death.

The Inclusion/Exclusion criteria presented below incorporates the ICD-10 codes used by various national Drug Related Deaths investigations, e.g. GROS, 2008 and The National Investigations into Drug Related Deaths 2003 (Zador et al., 2005) and Drug Misuse Statistics Scotland (ISD, 2013). Subsequently, the Drug Death Monitoring Group conforms to this definition of a DD.

2.3 Inclusion Criteria: ICD-10

Drug Deaths, where the underlying cause of death has been coded to the following sub-categories of 'mental and behavioural disorders due to psychoactive substance use';

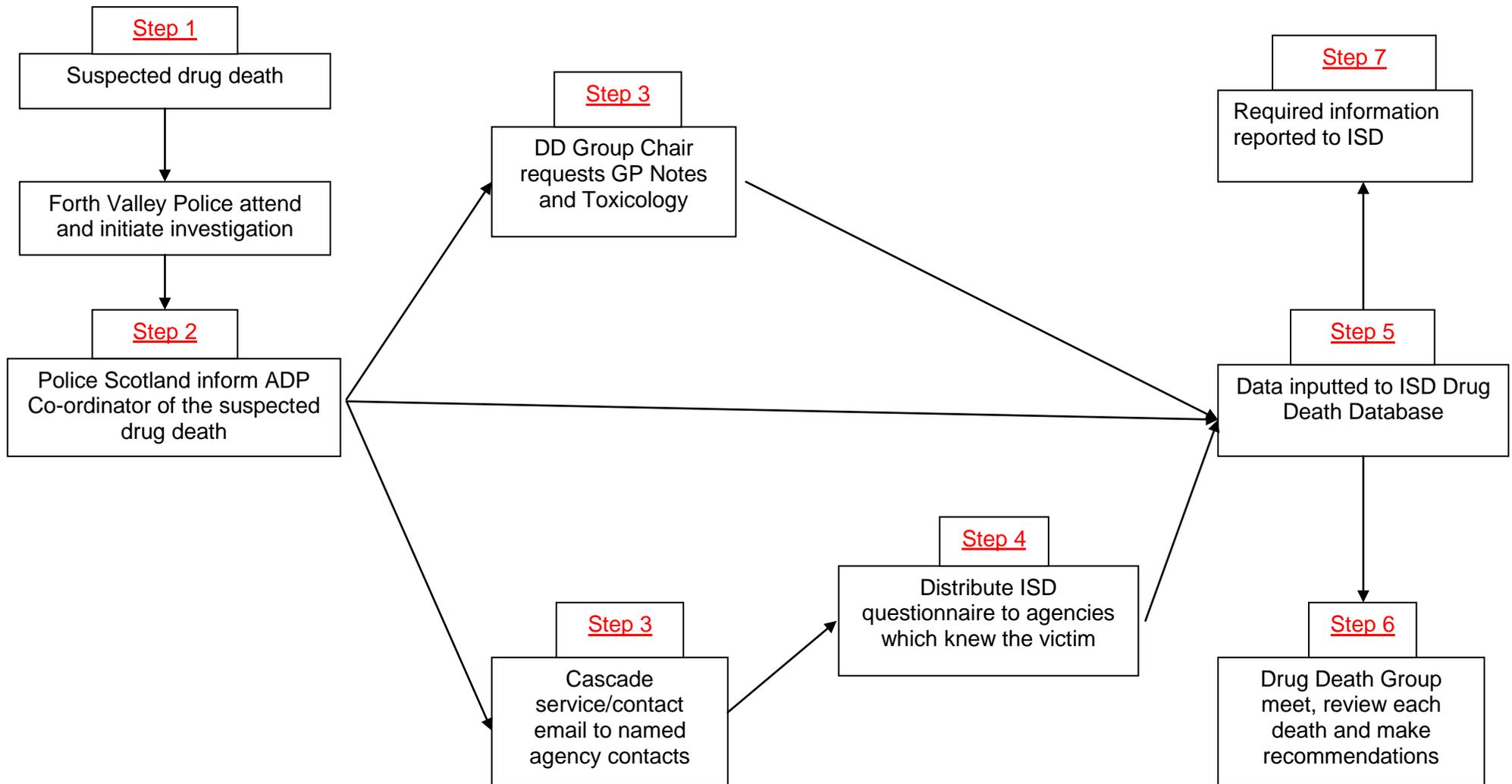
- a)
- (i) opioids (F11)
 - (ii) cannabinoids (F12)
 - (iii) sedatives or hypnotics (F13)
 - (iv) cocaine (F14)
 - (v) other stimulants, including caffeine (F15)
 - (vi) hallucinogens (F16); and
 - (vii) multiple drug use and use of other psychoactive substances (F19)
- b) Deaths coded to the following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

2.4 Exclusion Criteria

- (a) deaths coded to mental and behavioural disorders due to the use of alcohol (F10), tobacco (F17) and volatile substances (F18)
- (b) deaths coded to drug abuse which were caused by secondary infections and related complications (e.g. septicaemia)
- (c) deaths from AIDS where the risk factor was believed to be the sharing of needles;
- (d) deaths where a drug listed under the Misuse of Drugs Act was present because it was part of a compound analgesic or cold remedy, e.g.:
 - Co-proxamol: paracetamol, dextropropoxyphene
 - Co-dydramol: paracetamol, dihydrocodeine
 - Co-codamol: paracetamol, codeine sulphate

All three of these compound analgesics have, particularly co-proxamol, been used in suicidal overdoses.

2.5: Flowchart – Forth Valley data collection response to deaths (where misuse of drugs is suspected)



2.6 Step-by-step Guide to Data Collection

Step 1:

A suspected drug death occurs in the Forth Valley and police attend and carry out investigation into the circumstances surrounding the death. The length of the investigation depends upon the individual circumstances and can vary from a few days to a number of months.

Step 2:

Police inform the ADP of the suspected drug death. At this point, the name and date of birth of the deceased are shared.

Step 3:

The ADP disseminates the ISD Drug Death Questionnaire to all agencies who knew the victim for completion. At this point, the Chair of the Forth Valley Drug Deaths Group also request toxicology from the Procurator Fiscal and the GP notes from the relevant General Practitioner.

Step 4:

Agencies check records to see if the individual has accessed their respective services. If the individual is known to a particular agency, the Drug Death Questionnaire is completed by that agency and returned to the ADP Administrator to be entered into the ISD Drug Death Database.

Step 5:

All questionnaires, case notes and post-mortem/toxicology reports are held by ADP Administrator to be entered into the ISD Database.

Step 6:

The Forth Valley Drug Related Critical Incident Review Group meets to discuss each death and make recommendations.

Step 7:

The ADP Administrator reports each Drug Death, alongside all the detail required of the death, to ISD in accordance with Scottish Government stipulations.

2.7 Protocol and Creation of the Drug Deaths Database

Services who had contact with the deceased individuals prior to their deaths complete the ISD Drug Death Questionnaire, which contains sections on the following domains:

1. Demographic Characteristics
2. Life Context and Social Functioning
3. Criminal Justice Issues and Offending History
4. Substances Use History
5. Physical and Psychological Health
6. Service Provisions
7. Additional information

2.8 Drug Deaths Database

The main source of information for the current report was the Forth Valley Drugs Death Database (EXCEL/SPSS), which holds all data on Drugs Deaths that have occurred within the Forth Valley area since January 2010. The database is securely held on a stand-alone machine and housed within the Alcohol and Drug Partnership Premise in NHS Forth Valley. The group has worked hard to deliver an Information Sharing Protocol which allows sufficient information to be linked and shared, but also satisfies the rigours and safeguards of data protection legislation.

2.9 Data Analysis

For the purposes of the present report, data contained within the Drug Deaths Database was collated and analysed by one researcher. The data analysis presented in the current report is limited to descriptive statistics. The researcher is supervised by the Chairperson of the Drug Related Critical Incident group. The process of data collection and analysis broadly involved the following stages:

1. Maintenance of the database on a regular basis, entering of new information and regular cleansing of existing data
2. Background research on past/current government directives and relevant literature
3. Extraction of relevant data pertaining to the seven domains of the questionnaire outlines above
4. Extraction and submission of data required by ISD for the National Drug Related Death Database.
5. Data analysis (via Excel/SPSS) and interpretation/synthesis
6. Presentation of results

2.10 Data Collection Sources

Outlined below are lifestyle domains and sources used in data collection:

Domain	Sources Used
1. Demographic Characteristics	- Sudden Death Report - Drug Death Questionnaire
2. Life Context and Social Functioning	- Sudden Death Report - Social Work Notes, Social Enquiry - Criminal Justice Service Reports - Psychiatric Reports - GP Notes and Correspondences - ARS/CADS/FVCJDTS Notes - Drug Death Questionnaire
3. Criminal Justice and Offending	- Sudden Death Report - Post-Mortem/Toxicology Reports - Drug Death Questionnaire
4. Substance Use History And	- Sudden Death Report - GP Notes and Correspondences
5. Physical and Psychological Health	- ARS/CADS/FVCJDTS Notes - Psychiatric Reports - Social Work Notes - Drug Death Questionnaire
6. Service Use History	All of the above sources
7. Additional Information	All of the above sources

2.11 Missing Data

The availability/lack of information for all cases is stated clearly throughout the content of this report and it is noted that use of multiple sources may reflect variations in the data obtained. However, the availability of additional sources such as the East Central Scotland Drug Death Questionnaire and access to GP notes has enabled the review group to maximise the insight into the established life domains of the drug death victims of 2013. Indeed, the DD group acknowledge this as part of an ongoing aim, rather than a limitation, whereby the aim is to continue to synthesise information from multiple sources and develop a systematic approach in identifying the lifestyle patterns of the drug death victims.

Recommendations

- Forth Valley should continue to collect data within the ISD Drug Deaths Database, to support their compilation of the National Drug Related Death Reports.
- The process of reviewing all drug deaths should be more rigorous and it is recommended that it should employ similar methodology to the NHS Forth Valley suicide review processes.
- Annually review and maintain robust information sharing protocols between all partner agencies.

Section 3: Results

3.1 Demographic Characteristics

This section describes patterns surrounding the incidence and location of drug deaths. It also considers gender, age and ethnicity of drug death victims.

3.1.1 Incidence and Prevalence of Drug Deaths

In 2013 the Forth Valley Drug Death and Critical Incident Review Group considered and reviewed 31 deaths, which included drug related, non-drug related and drug deaths cases. These lives of these individuals and the circumstances of their deaths have been reviewed and discussed in detail by the group; the result of these discussion and conclusion are contained in this report in the form of the recommendations and action plan.

The group's definition of a drug death requires an individual to have died from causes which are directly attributable to the overdose of at least one illicit substance in order to be considered a drug death and be included in the present report. As such, the broader scale of deaths including deaths from accidental injury, blood borne viruses and drug related illnesses are not included in this review.

Of these 31 cases, 24 were subsequently confirmed as drug deaths by toxicology at the time of writing this report. The remaining seven death were attributed to causes other than the consumption of illicit substances.

Key Points

- There were a total of 24 drug deaths (DDs) in Forth Valley in 2013

3.1.2 Residency of DD victims within Forth Valley

The resident council area of DD victims in Forth Valley during 2013 are displayed in Table 1 below.

Table 1: DD Victims Council Areas of Residency 2013 (n = 24)

<i>Council Area</i>	<i>Number of DDs</i>
Clackmannanshire	6
Falkirk	12
Stirling	6

Half of drug deaths in 2013 occurred in the victim's own homes (50%). This was the case for 12 victims, all of whom were pronounced dead in their usual place of residence. Eight individuals (33.3%) died in residential premises other than their own homes. A further four individuals (16.6%) died in hospital, although they had consumed the substances leading to their deaths in locations other than their home addresses as well. It should be noted that one individual died outwith the Forth Valley area, but is nevertheless included in this report as this person was known and engaged with services in the area.

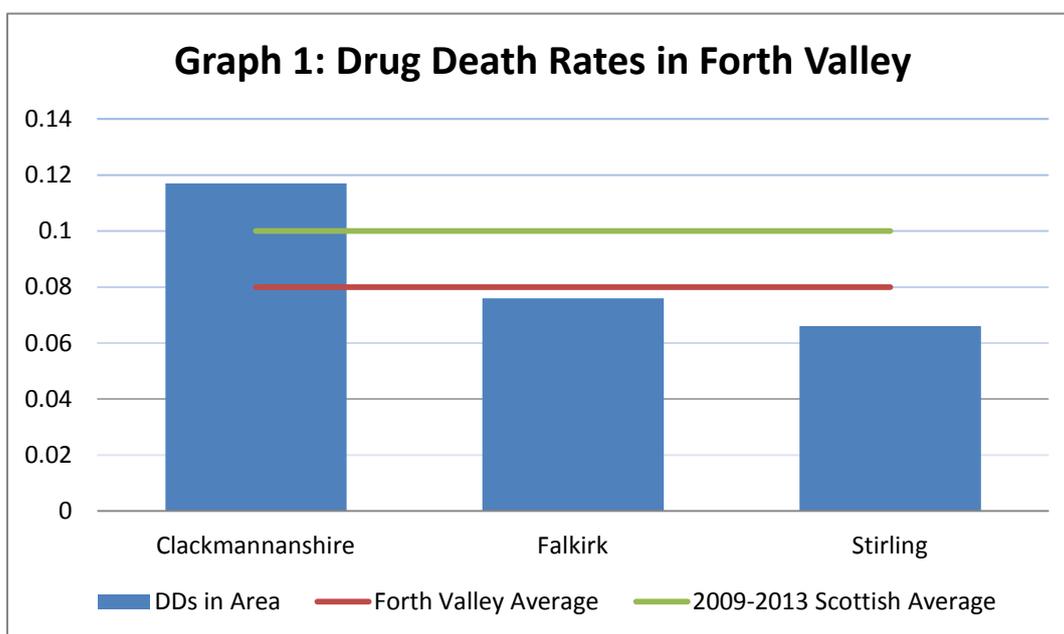
The results demonstrate that in 2013 the vast majority of drug death victims in Forth Valley died in close proximity to their homes. It is therefore probable that they did not have to travel far to obtain their drugs and elevated death rates in specific locations are not as a result of individuals travelling to those areas in order to obtain the drugs.

The calculation of the number of drug deaths per 1000 of the population corresponding to the location of the drug death enables identification of possible drug death “hotspots”. The drug death rate per 1000 of the population has been calculated according to geographical area. Table 2 displays the population of the three council areas of Forth Valley.

Table 2: Population of the Council Areas within Forth Valley¹

Falkirk	Stirling	Clackmannanshire
157,140	91,260	51,280

Across the whole of Forth Valley, the number of drug deaths per 1000 of the population was 0.08 in 2013, which is a decrease from the previous year. The drug death rate in Forth Valley is also below the Scottish average rate of 0.10 drug deaths per 1000 in 2009-2013¹. However, when considering the separate council areas of Forth Valley, the rates are as follows: most drug deaths occurred in Clackmannanshire (0.117 per 1000), followed by Falkirk (0.076 per 1000) and Stirling (0.066 per 1000). This data suggests that compared with the previous year, the reduction in drug death in Forth Valley has primarily occurred in the Clackmannanshire area, while the rates in Falkirk and Stirling have stayed stable. These pattern of drug death rates across Forth Valley and Scotland are summarised in graph 1 below:



An alternative way of assessing the relative number of drug deaths across the three council areas within Forth Valley is by comparing the number of drug deaths in the area to the number of problem drug users². There are an estimated 480 problem drug users in Clackmannanshire, 1000 in Falkirk and 710 in Stirling. These figures suggest that the highest proportion of problem drug users in Forth Valley are based in Clackmannanshire

¹ This information was obtained from the General Register Office (GRO) for Scotland

² These figures were estimated by the General Register Office (GRO) for Scotland for 2009/2010

(9.36 problem drug users per 1000 of the population), followed by Stirling (7.78) and Falkirk (6.36). The fact that the highest proportion of drug deaths in Forth Valley occur in Clackmannanshire is therefore expected given that it also has the highest proportion of problem drug users. However, when the drug death rates are considered as a function of the total number of problem drug users per area, the results suggest that problem drug users in Clackmannanshire also have somewhat higher death rates than those in the other areas: in Clackmannanshire, there were 12.5 drug deaths per 1000 problem drug users in 2012, compared with 12.0 in Falkirk and 8.5 in Stirling.

Key Points

- The average drug death rate in Forth Valley in 2013 (0.08 per 1000) was lower than the 2008-2012 Scottish average rate of 0.10 per 1000 and a reduction of the rate seen in the previous year
- Although the highest number of drug deaths occurred in Falkirk, the highest rate of drug deaths in Forth Valley occurred in the Clackmannanshire area
- Clackmannanshire also has the highest proportion of problem drug users based on population totals in Forth Valley and problem drug users in Clackmannanshire have a slightly higher drug death rate than those in the other two council areas

3.1.3 Gender and Ethnicity

The majority (79.1%) of Forth Valley drug death victims in 2013 were male. The male: female gender ratio in was 19:5. This is broadly consistent with national patterns: across the whole of Scotland in 2013, 74.7% of all drug deaths victims were male³.

All 24 drug death victims (i.e. 100%) were white British, the predominant ethnicity in Forth Valley.

3.1.4 Age

The age of drug death victims in Forth Valley in 2013 ranged from 18 to 62 years, with a mean age of 37.5 years. This is comparable to the Scottish average; the median age of drug death victims in 2013 in Scotland was 40 years⁴. The average age of drug deaths victims is increasing across all areas of Scotland, including Forth Valley.

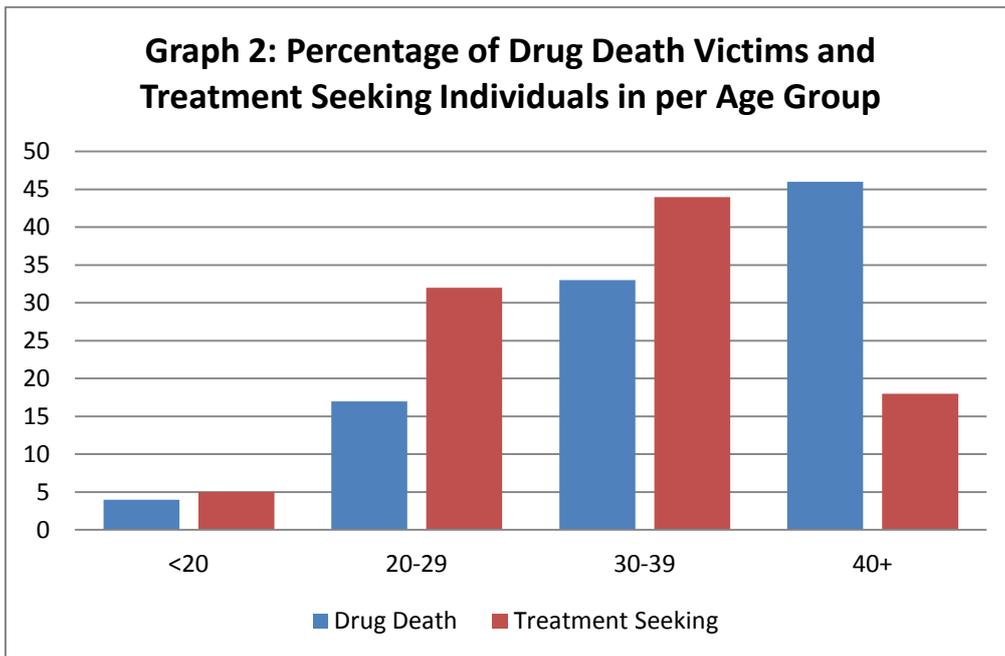
The drug death victims in Forth Valley in 2013 thus were of a wide variety of ages. When broken down into separate age categories spanning 10 years each, the results show that the majority of victims (46%) were 40 years of age or older. 33% of victims were between 30-39 years of age, 17% of victims were between 20-29 years of age and 4% were under the age of 20. This continues to challenge the popularly but erroneously held idea that drug death victims are often teenagers.

While there appears to be a trend for the individuals to die due to a drug death at an increasingly later stage in life, the majority of individuals seeking substance misuse

³ These figures were obtained from the GROS (2013)

⁴ GROS reports median ages as opposed to averages

treatment for the first time in Forth Valley⁵ fall within the 30-39 year age group. These figures are summarised in graph 2 below:



This indicates that while individuals were most likely to seek treatment in their 20s or 30s, a drug death is likely to occur at a later time in life.

Key Points

- 100% of Forth Valley drug death victims were White Caucasian
- The majority (79.1%) of Forth Valley drug death victims were male
- The mean age of Forth Valley drug death victims in 2013 was 37.5 years
- The average age of drug deaths victims is increasing

Recommendations:

- The group must continue to consider the particularly high drug death rate in Clackmannanshire, look to understand the reasons for this and target preventative strategies accordingly.

⁵ These figures were obtained from the ISD and are for the year ending March 2010

3.2 Life Context and Social Functioning

This section describes drug death victims' accommodation and living arrangements at the time of their death and in the six months prior to their deaths. This section also considers information relating to employment, both directly after school and at the time of death as well as patterns surrounding the individuals' relationships with both friends and family.

3.2.1 Housing and Living Arrangements

Living arrangements at the time of death were known for all individuals. Half of the individuals (50%) were living with other at the time of their deaths. A further nine victims (37.5%) were living on their own at the time of their deaths. Three drug death victims had no fixed abode. Of these, one stayed at various different locations of friends and family members and two were living in homeless accommodation at the time of their deaths.

When considering the housing status of the drug death victims, it is important to recognise that in a number of cases the living arrangements varied frequently, and the lifestyles of these individuals were sometimes described as "chaotic". As such, in addition to the three homeless individuals mentioned above, an additional three victims experienced at least one change in living situation in the six months prior to their deaths. This was either due to being incarcerated in the 6 months prior to death, or due to a change in relationship status.

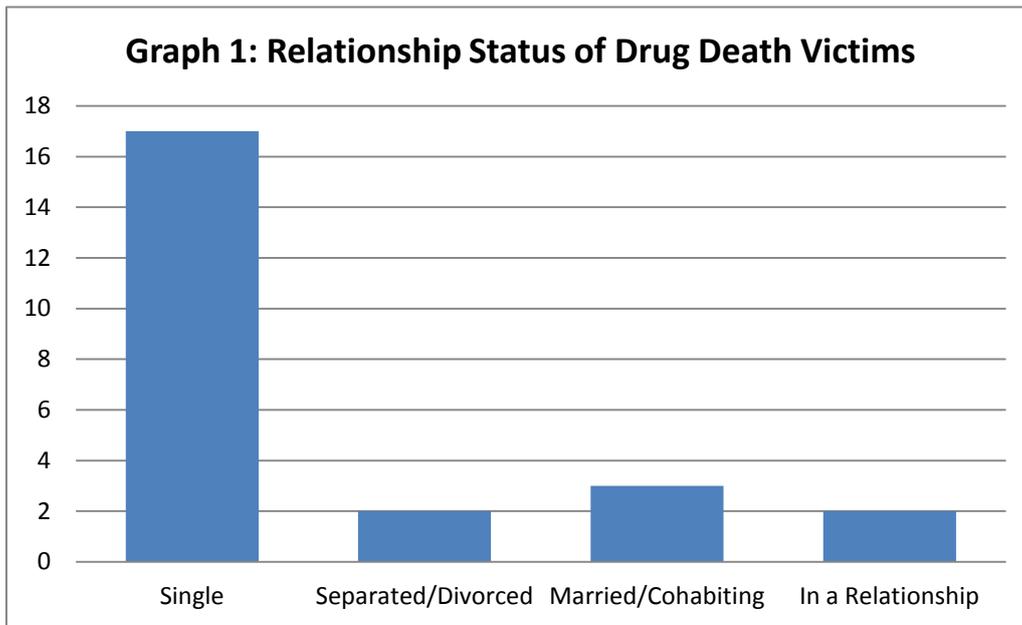
Overall, these results suggest that only about half of the drug victims were living in stable environments. However, the fact that a large number of drug death victims were living with others suggests that they were supported by a network of friends and families. It also indicates that amongst the disruptions caused by their drug use they were able to sustain meaningful relationships with others, which is considered in more detail in the next section.

Key Points

- Half of the drug death victims were living with at the time of their deaths
- The living arrangements of drug death victims at the time of their deaths were stable for only about half of the victims over the six months prior to death

3.2.2 Relationship and Family Information

The relationship status of the drug death victims is considered here as it provides an indication of the level of social support available to these individuals. Graph 1 below shows the relationship status of individuals at their time of death:



The majority (79.2%) of the drug death victims were single, separated or divorced at the time of their deaths, while the remaining 20.8% were known to be in a relationship (three of which were married/cohabitating).

Of the five individuals who did have partners at the time of their deaths, 40% had a partner who also had a known substance or alcohol misuse problem. For these individuals, their drug misuse use was probably perpetuated by their environment. Since this information is not recorded routinely, this figure may, in reality, be higher. Furthermore, 60% of those who were in a relationship at the time of their deaths were also known to have experienced significant difficulties in these relationships.

3.2.3 Relationship with Children

Thirteen of the 24 drug death victims (or 54.1%) had children; however, this does not imply that the victims were directly responsible for their children's welfare. Ten of these victims had children under the age of 18. However, the children were living with the drug death victims at the time of their deaths in only one case. In total, 31 children lost a parent due to a drug death in 2032 in Forth Valley. Of these, 19 were under the age of 18 and two children lost their primary caregiver.

3.2.4 Friendships and Relationships

Information about the nature of relationships drug death victims held with friends was also considered. However, while information relating to close family relationships was generally available, information about meaningful friendships is often difficult to ascertain. Of the 24 drug death victims, 62.5% were known to have had at least one relative they felt close to. Of those individuals, the majority shared this close relationship with a parent (n=9). Four individuals had a close relationship with a sibling and two had close relationships with their adult children. Five individuals were known to have family members who were also known to have experienced significant substance misuse problem.

57.4% of the drug death victims were known to have at least one meaningful friendship. However, in nine of these fourteen individuals (64.3%), the friends were also known to be substance misusers.

This information shows that the drug death victims were generally not socially isolated as a result of their drug use and had managed to maintain meaningful relationships with others, including those outside the drug using community. This suggests that there was perhaps some degree of social support available to the drug death victims as they did have relatives and friends to whom they could turn for support if it was needed. There is a support base, that can be tapped into provide important information relating to overdose and drug misuse that could be cascaded to not only the drug using, but wider spectrum of the community.

Key Points

- The majority (79.2%) of the drug death victims were single at the time of their death
- The majority (54.1%) of the drug death victims had children; the overall pattern was that underage children tended to live with their mothers, regardless of whether or not she was a substance user
- The majority of drug death victims were not socially isolated; many were known to have a close relationship with a family member and/or at least one close friend

3.2.5 Education and Employment Status after Leaving School

The mean age at which the drug death victims left school was 15 years. However, this information was only known for five individuals. The employment status immediately after leaving school was also only known for seven individuals; four of these were employed, one had pursued further training and two were known to have been unemployed.

3.2.6 Employment Status at the Time of Death

At the time of their deaths, the vast majority of victims were in receipt of benefits. Only three victims were in stable employment at the time of their death (12.5%); the remaining victims were unemployed. This is perhaps not surprising when considering that the victims began using illicit substances around the age of 14 years⁶ and died around the age of 37, which provides an indication of the chronicity of their substance misuse and subsequent impact of this on their quality of life.

Key Points

- The mean age at which drug death victims left school was 15 years
- Data pertaining to employment/education activity after leaving school was not routinely reported by services.
- At the time of death, 87.5% of drug death victims were unemployed

⁶ See Section 5.

Recommendations

Overdose awareness training and Naloxone should be routinely and actively be provided to family members of substance users.

3.3 Criminal Justice and Offending

The present section examines the DD victims' criminal and offending history in more detail. History of incarcerations is also considered.

3.3.1 History of Offending

The criminal justice and offending histories were available for 21 of the 24 drug death victims. Of these, 19 individuals (90.4%) had a criminal history. Most of these individual had been arrested at least once in their lives, although only one individual had been arrested in the six months prior to death.

3.3.2 History of Incarcerations

Eleven individuals (or 45.8% of all drug death victims) were known to have served at least one prison sentence some point during their lives. Eight of these individuals had been incarcerated more than once. However, only two of these individuals had been in prison in the 12 months before their death.

Table 1: Number of DDs occurring following prison release

Time since most recent prison release	No. of drug death victims who had been in prison (n = 11)
Less than 2 weeks	0
2 weeks to 1 month	0
1 to 6 months	1
6 months to a year	1
More than a year	9

As shown in Table 1, of those who had served a prison sentence in the past, not one individual died within one month of being released from prison.

Key Points

- The majority of the drug death victims had a criminal history (90.4%)
- Unlike previous years, criminal activity and release from prison in the weeks leading up the deaths were not common in 2013

Recommendations

- In relation to prison liberations, it is recommended that information as to whether a prisoner has been given over dose awareness training and naloxone is included with the information about methadone dosing.

3.4 Physical/Psychological Health and Significant Life Events

This section explores the types of physical and psychological/psychiatric problems experienced by the drug death population in Forth Valley, with a particular emphasis on co-morbidities and life events.

Data pertaining to the physical and psychological health of the drug death victims in Forth Valley was available for all 24 individuals at the time of writing this report. However, it is not possible to say how complete this data might be; therefore the current section can only summarise what is known about these individuals. It is likely that the results reported in the present section are underestimating the real situation.

3.4.1 Psychiatric/Psychological Problems

Seventeen of the 24 drug death victims (or 70.8%) were known to have experienced psychiatric or psychological difficulties.

By far the most common problem reported were both mood and anxiety disorders, with 15 individuals (62.5%) each having reported such symptoms; just over half of these individuals had been prescribed medication for these conditions.

Two individuals (8.3%) suffered from psychotic symptoms and a further two (8.3%) had a diagnosed personality disorder. It is likely that their symptoms were exacerbated by their substance misuse.

At least five of the above individuals experienced complex and multiple psychiatric difficulties.

Furthermore, eight of the drug death victims (or 33.3%) had a history of self-harm, had expressed suicide ideation and/or had attempted suicide.

3.4.2 Physical Health Problems

Thirteen of the 24 drug death victims (or 54.1%) were known to have suffered from significant physical difficulties.

Common problems included Blood-borne viruses (n = 5), severe respiratory problems (n = 7), vascular diseases (n = 2), and liver problems (n = 3). In three cases there was a clear link between chronic pain and their subsequent substance misuse.

Key Points

- The majority of drug death victims (70.8%) experienced significant psychological or psychiatric difficulties, the most common of which were symptoms of anxiety and depression
- 54.1% of the drug death victims were known to have suffered significant physical health difficulties

3.4.3 Significant Life Events

Information pertaining to the childhoods of the drug death victims was not available for all individuals. This information was generally not available for those victims in the older age groups. However, nine individuals (or 37.5%) were known to have experienced significant difficulties in childhood. These individuals reported disrupted childhoods, parental separation physical abuse, sexual abuse and/or had spent time in foster/kinship care.

Twenty drug death victims (83.3%) were known to have experienced significant adverse life events, with most individuals having suffered multiple life events. The number and type of life events commonly recorded in case notes are summarised in the table below:

Table 1: Number and Type of Life Events Recorded in Case Notes

Life Event	No. of individuals	% of individuals
Child Custody Problems	8	33.3%
Domestic Abuse	6	25.0%
Bereavement	4	16.6%
Assault	4	16.6%
Homelessness	4	16.6%
Relationship Break-up	4	16.6%
Severe Accident	3	12.4%
Sexual Abuse	2	8.3%

The most common life event impacting the lives of drug death victims were child custody problems (33.3%) and domestic abuse, which 25% of this group had experienced. It should be noted that incidents of physical and/or sexual abuse in particular are likely to be markedly underreported and that these rates are, in reality, higher.

At a basic level, the above information provides an indication of the level of instability and vulnerability of these individuals in their lives. The personal histories show that these drug death victims experienced sexual, physical and/or emotional abuse and significant losses, which may have in turn been precipitating, maintaining and/or consequential factors of their substance misuse.

Sadly, in some cases the drug death victim's siblings, partners or friends were not only substance users but also drug death victims themselves. The life events of the victims convey a sense of vulnerability, which may have led to the formation of coping by means of substance misuse and therefore impacted negatively upon their abilities to manage adversity in their adult lives.

Key Points

- 83.3% of DD victims were known to have experienced a significant adverse event in their adult lives and 37.5% had experienced adversity in childhood
- Most common adverse life events included child custody loss, bereavements, serious relationship problems and assault/physical abuse

3.4.4 Co-morbidity

Up until this point, the psychiatric problems, physical problems and life events of these individuals have been examined in isolation. In reality, however, individuals often suffer from a combination of these factors. The concept of co-morbidity can differ widely in terms of context and interpretation. For example, an ongoing issue is whether or not co-morbidity should be viewed over the course of a lifetime, or within a predefined context (Todd et al, 2004). For the purposes of this report, analysis of DD victim's co-morbidity is considered in the context of multiple physical, psychological/psychiatric, and substance misuse morbidities over the course of their lives, as opposed to a specific point in their lives.

The table below summarises the combinations of physical and psychiatric/psychological difficulties⁷, as well as life events experienced by the drug death victims in connection with their substance abuse.

Table 2: Combinations of Co-morbidity with Substance Misuse Experienced by DD victims (n = 24)

Combinations	No. of Individuals	% of Individuals
Physical difficulties alone	0	0%
Psychological difficulties alone	0	0%
Life Event alone	3	12.5%
Physical + Psychological	3	12.5%
Physical + Life Events	3	12.5%
Psychological + Life Events	7	29.1%
Physical + Psychological + Life Events	7	29.1%

Only one individual was not known to have suffered any difficulties in addition to their substance misuse (4.1%). As demonstrated by the table above, the combined effects of physical and psychological difficulties, together with life events, are far more prevalent in this population than these difficulties on their own. The majority of drug death victims (83.3%) had experienced a combination of significant physical difficulties, psychological difficulties and/or life events alongside their substance misuse problems.

Key Points

- The majority of drug death victims (83.3%) had experienced a combination of psychological difficulties, physical difficulties and/or life events alongside their substance misuse problems

Recommendations

- Services should be aware of the important role of health in the recovery of substance users. Services should increase the quality of assessment and care planning, recording both mental and physical health problems and the associated action proposed to improve the general health of clients.

⁷ For the purpose of this table, past self-harm or suicide attempts are included as psychological difficulties

- The NHS Forth Valley ORT Champion must engage with doctors and other health professionals to promote best care of substance users and raise awareness of their multiple co-morbidities, as well as the high rates of non-adherence and diversion of prescribed medication.

3.5 Substance Misuse Histories

The present section further examines the substance misuse histories of the drug death victims; including the age at which they started misusing illegal substances, lifetime injecting characteristics and overdose histories.

Details of the substance misuse histories were available for all of the individuals who died as a result of a drugs death in 2013.

In the 6 months prior to death, all of these victims were known to have misused prescribed and non-prescribed drugs. All but one of these individuals were known to abuse illicit substances and alcohol in combinations of two or more, which in all but one case included at least one of the following: heroin, benzodiazepines and/or methadone (prescribed and non-prescribed). This suggests that almost all drug death victims were known poly-drug users.

While the focus of this report is on drug deaths occurring as a result of illicit substances, it is nevertheless worth noting that a substantial proportion of the drug death victims (87.5%, or 21 individuals) were also known to have severe problems with their alcohol consumption at some point in their lives. For 15 individuals (62.5%) these problems persisted until their deaths.

3.5.1 Age at which Drug Misuse Began

The age at which the drug death victims started misusing drugs was known for 16 individuals, and ranged from 12 to 21 years, with a median age of 14 years. This is slightly before the age at which the drug death victims typically left school, which was at the age of 15. A common trend was for the individuals to start abusing cannabis (and alcohol) at that age, followed by a combination of ecstasy, LSD, amphetamines and cocaine some months after that.

The median age at which victims started abusing heroin was 20 years; this figure is based on the six individuals for which this information was known.

The average age of a drug death victim in Forth Valley in 2013 was 37.5 years – suggesting that the drug death victims of Forth Valley had an average drug career of approximately 23 years prior to their deaths.

3.5.2 Lifetime Injecting Characteristics

The injecting behaviour of drug death victims were considered in order to gain a more detailed profile of the drug use histories and characteristics of this population.

Twelve (or 50%) of the victims were known to have injected at some point in their lives. The age at which these individuals first injected was known for five of these individuals and ranged from 17 to 32 years, with a median age of 23 years. Considered together with the age at which these individuals first stated using heroin (20 years), these figures confirm a known trend whereby individuals tend to first smoke heroin for some time before progressing to intra-venous use of the drug.

3.5.3 Overdose Histories

Seven of the 24 individuals (or 29.2%) were known to have experienced at least one drug overdose at some point in their lives. For the remaining 14 individuals no overdose had been recorded, which does not imply that they have never actually experienced an overdose. It should be noted that this is a marked decrease in recorded overdose as compared with previous years. This could be an indication of fewer non-fatal overdoses being reported to services, or a reflection of a situation whereby non-fatal overdoses are not reported or recorded consistently. In either case, this trend should be carefully monitored.

For those individuals that were known to have overdosed in the past, the number of recorded overdoses ranged between 1 and 5, which included both accidental and deliberate overdoses. Five of those who were known to have overdosed in the past had done so on multiple occasions.

Key Points

- The vast majority of the drug death victims were known poly-drug users, 50% of which were intra-venous users
- The median age at which drug misuse began was 14 years, and age at which individuals first injected was 23 years
- By the time of their deaths, the victims had an average drug using career of over 23 years
- 29.2% were known to have overdosed at some point in their lives, often on multiple occasions, which indicates a noticeable reduction in the number of recorded non-fatal overdoses as compared with previous years
- 87.5% of the drug death victims were known to have had severe problems with their alcohol consumption at some points in their lives. For 62.5% these problems persisted until their deaths

Recommendations

Continue the Scottish Ambulance Service non-fatal overdose report work.

3.6 Service Use Histories

The present section outlines the service use histories of the drug death victims in the 6 months and 5 years prior to their deaths. It also summarises any pharmacological interventions in the 6 months prior to death.

It is recognised that being engaged in a process of care and treatment has a positive impact on outcomes, including reducing the number of drug-deaths. In order to co-ordinate and integrate the care that is provided to individuals it is important to determine the extent of contacts made with services and the agencies most involved in providing a service to drug death victims.

3.6.1 Services Accessed within 5 Years Prior to Death

Information pertaining to service use histories was available for all individuals. Records showed that all of these individuals had contact with at least one service in the 5 years prior to their deaths, 20 of whom were known to two or more services. The particular services involved are listed in the table below:

Table 1: Contact with Services of 2013 DD victims in the 5 years prior to death (n=24)

Service	No. of individuals who had contacts	% of individuals who had contact
General Practitioner (GP)	20	83.3%
NHS Addiction Service (CADS)	9	37.5%
Criminal Justice Social Work (CJS)	9	37.5%
A&E	8	33.3%
Scottish Prison Service (SPS)	7	29.2%
Mental Health Services	5	20.8%
Signpost	3	12.5%
Homeless Services	2	8.3%
Criminal Justice Service	2	8.3%

Table 1 illustrates the types of agencies that the drug death victims were involved with 5 years before their death. *This table does not include multiple contacts made by an individual to any single agency.*

General Practitioners were the most accessed service providers; 83.3% of the drug death victims had been in contact with their GPs in the 5 years prior to death. The other most commonly accessed services were NHS Forth Valley Community Alcohol and Drug Services and Criminal Justice Services (37.5% each) and Hospital Accident and Emergency Units (33.3%).

Little information was obtained from Social Work Services. It is likely that the individuals had contact with this service as well, and the DD group should ensure that this information is obtained in future.

3.6.2 Services Accessed During the 6 months Prior to Death

The majority of the individuals (87.5%) were known to have had contact with at least one service during the 6 months prior to their death. However, this implies that 22.5% of drug death victims were not in contact with any service at the time of their deaths.

The table below shows the number of agencies accessed by individuals (n = 14) in the 6 months prior to their deaths.

Table 2: Contact with Services of 2013 DD victims in the 6 months prior to death (n=24)

Service	No. of individuals who had contacts	% of individuals who had contact
General Practitioner (GP)	17	70.8%
Criminal Justice Social Work (CJS)	5	20.8%
NHS Addiction Service (CADS)	4	16.6%
A&E	4	16.6%
Scottish Prison Service (SPS)	1	4.1%
Mental Health Services	1	4.1%
Signpost	0	0%
Homeless Services	1	4.1%
Criminal Justice Service	0	0%

Table 2 displays the number of contacts of drug death victims made with a statutory and/or non-statutory agency 6 months prior to death. Five individuals had contact with multiple services in the 6 months prior to their deaths.

Most contact had been made with the General Practitioner (70.8%), followed by Criminal Justice Social Work Services (28.8%), as well as NHS Addiction Service (16.6%) and Accident and Emergency rooms (16.6%).

Key Points

- All drug death victims were known to at least one service in the 5 years prior to their deaths
- The majority of drug death victims (87.5%) had accessed at least one service in the 6 months prior to their deaths
- General Practitioners saw 70.8% of the eventual drug death victims in the 6 months prior to their deaths

3.6.3 Pharmacological Interventions

Of particular interest is the proportion of drug death victims who received pharmacological treatment for their drug dependency in the 6 months prior to their deaths. This information was available for all 24 individuals.

Five individuals (20.8%) of the drug death victims had received some form of pharmacological treatment for a drug misuse problem in the six months prior to their deaths. This means that the majority of victims (79.2%) did not receive or seek

pharmacological treatments or opiate substitute medication at the time of their deaths. One individual was known to be on a waiting list at the time of death.

Of the individuals who received pharmacological treatment, all were prescribed methadone and all were still receiving their substitute medication at the time of death. The average dose prescribed to these individuals was 63mg of methadone each day. One individual received their substitute prescription to take away from the pharmacy, and the remaining four had to consume their substitute prescription under supervision and while on the premises of the pharmacy. At the time of death, toxicology showed that four of the five individuals who had been prescribed methadone had consumed the medication shortly before their deaths. Methadone was not found in the blood samples of one of the individuals who had been prescribed the substance.

Key Points

- A large proportion (79.2%) of the drug death victims did not seek/receive treatment for their drug problem 6 months before they died
- 20.8% were receiving pharmacological treatment in the 6 months prior to their deaths, all of whom were still receiving their substitute medication at the time of their deaths

Recommendations

- Forth Valley General Practitioners should actively engage with the healthcare of substance misusers.
- Further analysis of the deaths that occurred within services should occur to ensure optimal learning. In 2013, there were five individuals who died while in contact with substance misuse service.
- Drug death victims are in contact with lots of different services – but not always drug treatment services. The ADP should continue to actively promote workforce development opportunities within areas such as the Citizen's Advice Bureau, Benefits Agencies, Children and Families Social Work departments and Criminal Justice Social Work settings to ensure staff have knowledge of substance misuse services and can appropriately signpost people.
- It is noted that there are a significant number of drug deaths victims who are not in contact with any services at the time of their deaths.
- At the end of a period of treatment, services should provide a risk assessed discharge plan to ensure smooth transition between services and ongoing recovery.

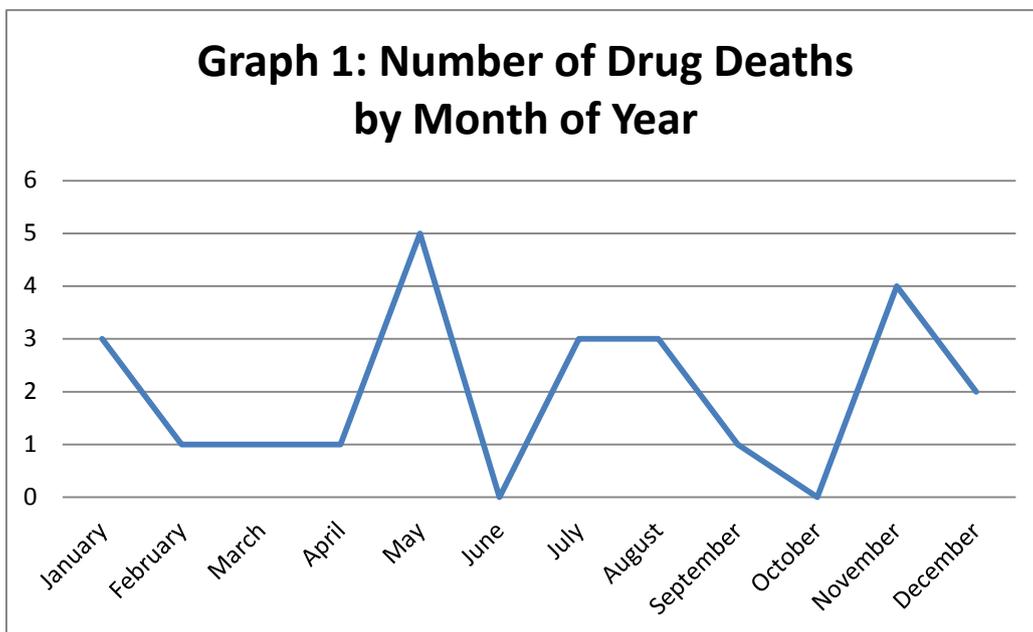
3.7 Circumstances of Death

The present section summarises the circumstances of the drug deaths in Forth Valley in 2013, including the months of the year and days of the week that the drug deaths occurred. This section also describes specific information concerning the scene of the death, such as the presence of others and attempted interventions.

Information pertaining to the circumstances of death was available for all 24 drug death victims.

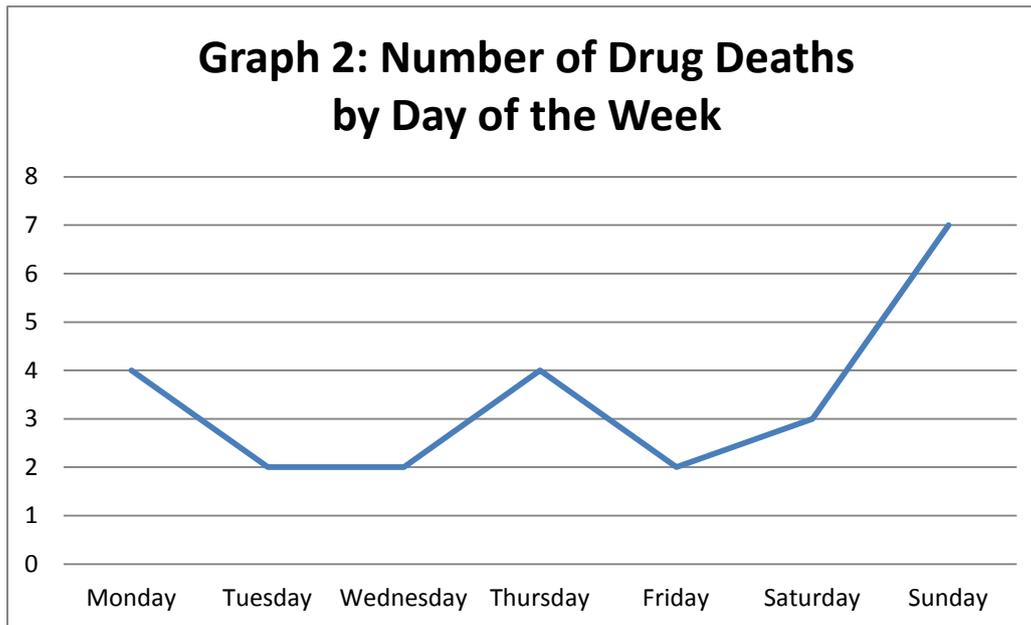
3.7.1 Timings of Deaths

3.7.1.1 Month of the Year



As can be observed from Graph 1 above, the prevalence of drug deaths in Forth Valley remained relatively constant over the course of 2013. The marked increase in the number of drug deaths towards the end of the year (or the beginning of the winter months) seen in 2012 was not observed again.

3.7.1.2 Days of the Week



As can be seen from the graph above, drug death victims in Forth Valley were somewhat more likely to occur on a weekend (especially on a Sunday) as opposed to other days of the week.

However, there was no noticeable trend of alcohol involvement in the drug deaths over the course of the week. Of the 18 deaths which involved alcohol, half occurred on a weekend. Similarly, there was no trend of drug deaths involving methadone occurring more frequently at a particular time during the week.

Key Points

- Drug deaths in 2013 in Forth Valley occurred at a relatively even rate over the course of the year
- Overall, drug deaths were somewhat more likely to occur during a weekend rather than on a weekday

3.7.2 Circumstances of Death

The circumstances surrounding the individual drug deaths were also considered, including whether or not others were present at the time of death, if bystanders recognised common signs of overdose and what, if any intervention was employed.

The majority of drug death victims (n = 20 or 83.3%) were in the company or in close proximity to others at their point of death. That means that others were at least present in the same premises as the victim at the time of their deaths. In all but one of the cases, the individuals present were known to the victim. The relationships of those persons present were usually partners, close family members or friends of the victim.

When considered together with the toxicology results, there were 17 deaths which involved either heroin or methadone and an individual known to the victim was present at the time

of death. In these cases it might have been possible to reverse the effects of the opiates if take-home-Naloxone had been available at the scene. However, the overdose was not recognised or taken seriously in at least 15 of these cases, and take-home Naloxone was only known to have been available in one instance (but was not administered).

3.7.3 Snoring Immediately Prior to Death

It has been noted that individuals often are observed to be snoring prior to a visible adverse reaction to the drugs they have consumed. Respiratory distress was noted by bystanders in five cases (20.8% of those where bystanders were present). In many cases the victim was simply thought to be asleep at the time of their death and this may have inhibited further intervention. Individuals present were often known to have checked up on the victims, sometimes on several occasions.

Whilst snoring was not reported for the majority of cases, it may well be the case that it did not appear significant to those who were present. In such cases, the presence or absence of snoring would not have been reported to the police, and would not have been documented in the Sudden Death Report. However, awareness of such warning signs of an overdose may assist individuals in identifying overdose and intervening to prevent them becoming a drug fatality.

3.7.4 Interventions Attempted at the Scene

Of cases where a witness was present (n = 20), some form of cardio-pulmonary resuscitation (CPR) was attempted by bystanders in prior to ambulance arrival in almost half of the cases (9 individuals or 45.9%). The details pertaining to the exact nature of the CPR procedures carried was out not always fully recorded. However, in most cases the CPR had to be instructed by the ambulance crew to those present over the telephone. In one case there is evidence that the CPR was initiated by the bystanders without needing to be prompted to do so.

The nature of CPR conducted was often partial, e.g. checking the airways or putting the victim in the recovery position.

Ambulances attended 22 of the 24 drug deaths (91.7%). However, in 15 cases, the victim was clearly and irrevocably dead when the ambulance arrived (including 9 victims where bystanders were present). This highlights the continued need for overdose awareness training.

Key Points

- The majority of DDs (83.3%) occurred in the presence of others, which were in all cases known to the victim
- In many cases where others were present, the victim was simply believed to be sleeping at the time of their death, thus delaying any possible interventions
- CPR was attempted by bystanders in about half of the cases (45.9%); however, this was often partial and had to be instructed by the ambulance crew over the telephone

- 17 of the 24 drugs deaths involved opiates and bystanders were present; in these cases it is possible that the effects of the opiates could have been reversed if the overdose had been recognised and take-home-naloxone had been available at the scene

Recommendations

Naloxone should be made available to harder to reach individuals (who are not in contact with services).

3.8 Toxicology Results of Drug Deaths

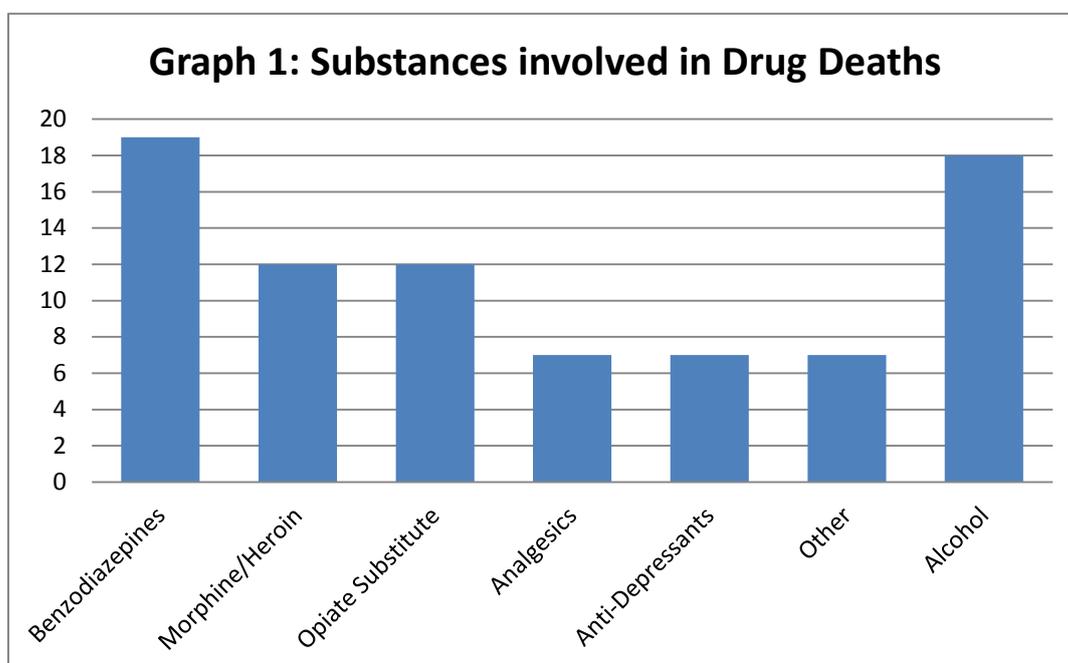
This section describes the post-mortem toxicology findings of the Drug Death victims in context of the poly-substance misuse culture in Forth Valley in 2013.

Post mortem toxicology reports of all the drug death victims were analysed to gain a greater insight into the types of substances that led to the fatal overdoses.

Forensic toxicologists conduct blood/urine tests for the substances believed to be implicated in the drug death. A typical blood test usually tests for basic drugs, including acid/neutral drugs, benzodiazepines, non-steroidal anti-inflammatory drugs (NSAIDs) and morphine. Urine samples are analysed for opiates, amphetamines, cannabinoids, cocaine, benzodiazepines, methadone, barbiturates, tricyclic antidepressants (TCA), MDMA and methamphetamine. Therefore, only those substances tested for are likely to be detected in the toxicology, potentially biasing the outcome of toxicology findings.

3.8.1. Toxicology results

Graph 1 below shows the most common substances which were found in the toxicology results of the drug death victims in Forth Valley in 2013. The graph also shows the number of victims who were found with each substance in their toxicology results. Please note that metabolites are not considered in the following analysis (e.g. diazepam and nordiazepam are represented simply as benzodiazepines).



As this graph shows, benzodiazepines were the most common substances involved in drug deaths in Forth Valley in 2013. It was involved in 79.2% of all deaths, which were all but five cases.

Heroin/morphine was the second most common illicit substance involved in drug deaths in Forth Valley in 2012, having been detected by toxicology in 12 (or 50%) of victims.

Methadone was also involved in 50% of the drug deaths in Forth Valley in 2013. Four of the individuals who died with methadone in their system had been prescribed the medication at the time of their deaths. These findings suggest that the remaining eight victims had obtained their methadone illicitly.

Antidepressants were detected in 7 (29.2%) of the drug deaths (amitriptyline n=3 and mirtazapine n=6 – with one death involving both of these substances).

The analgesics, which were detected in 7 (29.2%) deaths included gabapentin (n=2), pregabalin (n=2) dihydrocodeine (n=2) and tramadol (n=2).

Other substances included amphetamines and other stimulants such as cocaine and ecstasy as well as anti-psychotic drugs.

Alcohol was involved in 18 (or 75%) of deaths, a marked increase from the previous year..

Overall, benzodiazepines, heroin/morphine, methadone and alcohol were the four most common substances involved in the drug deaths in Forth Valley in 2013.

Key Points

- Benzodiazepines, heroin/morphine, methadone and alcohol were the four most common substances involved in the drug deaths of 2013 in Forth Valley
- 79.2% of victims had taken benzodiazepines shortly before their death
- All but one death involved at least one opiate substance

3.8.2 Role of Prescribed Medication

There were several instances where prescription substances were found in the toxicology that had not been prescribed to the individuals. As such, while 12 individuals were found to have consumed an opiate substitute (such as methadone) shortly prior to their deaths, only four of these were prescribed the substance. This indicates that many individuals are sourcing the drugs which ultimately lead to their deaths illicitly. An additional individual was prescribed methadone, but this was subsequently not detected in their toxicology, indicating that this may have been diverted.

Benzodiazepines were found in 19 cases, but had only been prescribed to three of these individuals. A further individual had been prescribed a benzodiazepine, which was subsequently not detected in their toxicology results.

In total, eight antidepressant substances were found in seven of the deaths. Of these, five had been prescribed. Furthermore, three individuals had been prescribed antidepressant medication which was not found in their toxicology results.

Dihydrocodeine was prescribed to two individuals; this was not found in the toxicology of either of these individuals. However, two different individuals had died with unprescribed dihydrocodeine in their toxicology. Similarly, four individuals had been prescribed gabapentin; this was only found in the toxicology in one of these victims and two had been prescribed pregabalin that was found to be involved in the death of one of these individuals.

There was also some evidence of illicit sourcing and diversion of other medication in the drug deaths of 2013, including propranolol and quinine. However, this was not as prevalent as had been observed in the drug deaths of the previous year.

3.8.3 Substances Implicated Concomitantly

As demonstrated by the figures the previous section, almost all of the drug death victims died as a result of the consumption of a combination of drugs. On average, 4.27 separate substances were discovered in the toxicology of the Forth Valley drug death victims.

Key Points

- All of the drug deaths occurring in Forth Valley were polysubstance deaths
- There is widespread evidence for diversion of prescribed substances and non-adherence to medication prescribed by General Practitioners

Recommendations

- The NHS Forth Valley ORT Champion must continue to engage with doctors and other healthcare professionals to raise awareness of the non-adherence and diversion of prescribing regimes.
- It is noted that there is an increase in the prevalence of alcohol in the poly-substance drug death. Forth Valley must strengthen access to alcohol treatment for poly-substance users.