

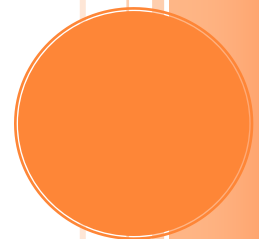


DRUG DEATHS IN FORTH VALLEY 2016

*An Annual Report of the Findings of the Forth Valley
Alcohol and Drug Partnership Drug Death and
Critical Incident Review Group*

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EXECUTIVE SUMMARY

This report contains cumulative information about all drug deaths which occurred in the Forth Valley area of Scotland between January and December 2016. Key points include the following:

- There were 57 drug deaths in Forth Valley in 2016, the highest number of drug deaths ever recorded in this area in any given year. This is in line with the notable increase in drug death prevalence across the whole of Scotland in 2016.
- Compared to 2015, the rate of drug deaths had decreased slightly in Stirling (from 0.13 to 0.11 per 1000 population), but increased in Clackmannanshire (0.15 in 2015 to 0.21 in 2016) and Falkirk (0.09 in 2015 to 0.22 in 2016). The rise in the number of drug deaths in Falkirk was particularly high.
- The mean age of drug death victims was 37 years, with no significant age differences in the drug death victims of the three council areas of Forth Valley.
- 72% of the drug death victims were male; both age and gender of the victims were in line with national trends.
- The majority (70%) of drug death victims were living in their own homes at the time of their deaths; 60% of the victims lived on their own.
- The majority of drug death victims were not involved in an intimate relationship at the time of their deaths.
- 25 children in Forth Valley lost a parent as a result of a drug death in 2016.
- 84% of drug death victims were unemployed at the time of their deaths.
- 60% of drug death victims had served a prison sentence in the past.
- The majority of the drug deaths victims were suffering from serious physical (70%) and mental (88%) health problems.
- Around 1 in 5 of the drug death victims had been the victim of abuse in the past, and adverse life events in the six months prior to their deaths were common.
- 91% of the drug death victims were known substance misusers and 58% were known injecting drug users.
- 54% of the drug death victims were known to have taken a drug overdose at least once in the past.

- All of the drug death victims were registered with a GP at the time of their deaths.
- 46% of the drug death victims were in contact with services which specialise in the treatment of substance misuse at the time of their deaths.
- 25% of the drug death victims had been prescribed an opioid substitute medication at the time of their deaths (in all cases this was methadone).
- There were no reliable patterns in the days of the week or month of the year during which drug deaths occurred in Forth Valley; however, more deaths occurred in the first half of the year.
- The majority of drug deaths (60%) occurred in the victims own homes.
- Bystanders were present in just under half of the drug deaths (49%). These were in all cases known to the victim and were often partners, family members or friends.
- Take Home Naloxone had been supplied to 16% of the drug deaths victims prior to their deaths, and was administered by bystanders in 7% of the cases.
- The substances most commonly involved in the drug deaths were benzodiazepines (70%), heroin/morphine (63%) and alcohol (58%).
- Both cocaine and pregabalin were only found in deaths which occurred in Falkirk and not in the other areas of Forth Valley.
- Prevalence of medications that is primarily available by prescription (e.g. anti-depressants and gabapentin) was high; as were indications of diversion of prescribed medication.

INTRODUCTION

The aim of the Forth Valley Drug Death and Critical Incident Review Group is the reduction and ultimately prevention of drug related harm and critical incidents, including drug deaths and non-fatal overdoses in Forth Valley. This report includes information pertaining to the geographic, social, criminal offending, substance misuse, physical health, psychiatric/psychological health and service use characteristics of individuals who died as a result of a fatal drug overdose. The circumstances of these deaths are also considered in the present report. This information is based on the data submitted to the NRS database, which collates information regarding all drug deaths in Scotland. As a result of 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 Used

The Forth Valley Drug Death and Critical Incident Review Group routinely collects information about all drug deaths in the Clackmannanshire, Falkirk and Stirling council areas (i.e. Forth Valley) and submits this information to the ISD database. The present report is based on an extract of this data.

Any death for which no death certificate can be issued immediately is subject to a police investigation and a Sudden Death Report, which is submitted to the Procurator Fiscal. The group is alerted by the police of any deaths which have the potential to be later confirmed as drug deaths by the post-mortem toxicology results. Specifically, these are either sudden deaths of known substance users or deaths in which illicit drugs were found at the scene of death or mentioned by witnesses.

The group then requests medical records for the potential drug death victims, as well as information from additional treatment services the individual might have been known to.

Approximately 8 weeks after the death, the police share the post mortem and toxicology reports of the suspected drug deaths with the group, at which point the deaths are either confirmed or rejected as drug deaths. If the death is confirmed, the ISD database is populated. The database is populated using a number of sources, including: General Practice electronic and paper records, Psychiatry and Substance Misuse Services case records, Clinical Portal, data collected from services, information from Social Work, Police Reports and Post Mortem and Toxicology reports.

A process of confidential data interchange occurs between the National Records of Scotland and the local Drug Death Coordinator, which can be a further point at which drug deaths may be identified and investigated by the group. The National Records of Scotland produce an annual report on drug deaths – their information is derived from post-mortem and toxicology reports and inclusion weighted towards the pathologists' recorded cause of death.

FINDINGS

Prevalence of Drug Deaths

The Forth Valley Drug Death and Critical Incident Review Group has identified 57 drug deaths which occurred in Forth Valley between January and December of 2016. These were deaths which were directly caused by the consumption of either illicit drugs or illicitly obtained prescribed drugs; i.e. deaths which were either attributed to a fatal drug overdose by the post-mortem pathologist and which were not better explained by other underlying health conditions, or deaths for which it was reasonable to assume that illicit drugs played a significant role and such drugs were found in the post-mortem toxicology. According to the National Records of Scotland Report for 2016¹, there were 50 drug-related deaths in Forth Valley in the same timeframe. Differences between these figures are explained due to the following reasons:

- 1) The NRS includes drug deaths based on the date the deaths were registered (which may be some time past the actual date of death), whereas this group consider deaths based on the actual date of death. This means that some deaths occurring towards the end of December can be considered in different calendar years.
- 2) Deaths are re-patriated to the usual area of residence of the individual or the area of their General Practice registration. This means that some Forth Valley residents who die elsewhere are included in Forth Valley NRS totals and some individuals who lived elsewhere and died in Forth Valley are included in this report.
- 3) The majority of the difference in the two data sets is accounted for due to use of different interpretations of the definition of a drug death, which remains a complex topic. The authors of this report have chosen to be inclusive and there are a number of deaths included in the present report which are not included in the National Records of Scotland report. The NRS criteria focus on the order and wording of the cause of death which has led to the exclusion of some deaths which the authors felt should be included. These additional deaths have been examined in depth and the group is satisfied that they merit inclusion in this dataset.

Based on a Forth Valley population of 302,650 individuals in 2016², this corresponds to 0.188 drug death per 1000 population. This is noticeably higher than the 2011 – 2015 Scottish average of 0.11 drug deaths per 1000 population as well as the 2011 – 2015 Forth Valley average of 0.09 drug deaths per 1000 population per calendar year¹. The 2015 rate for drug deaths per 1000 population across Forth Valley was 0.11. However, it should be noted that the number of drug deaths have increased across the whole of Scotland; the National Records of Scotland Report has included 867 drug deaths in Scotland in 2016¹, which based on the latest population figures of 5,873,000 people living in Scotland², suggests a rate of 0.16 drug deaths per 1000 population in Scotland in 2016.

¹ NRS, Drug-related deaths in Scotland in 2016 (published on 15 August 2017)

² National Population Data, NRS, 2016 (published 28th April 2016)

In response to the sharp increase in drug deaths in Forth Valley in 2016, the Forth Valley Drug Death and Critical Incident Review Group commissioned an internal interim report in October 2016 (see Appendix 1).

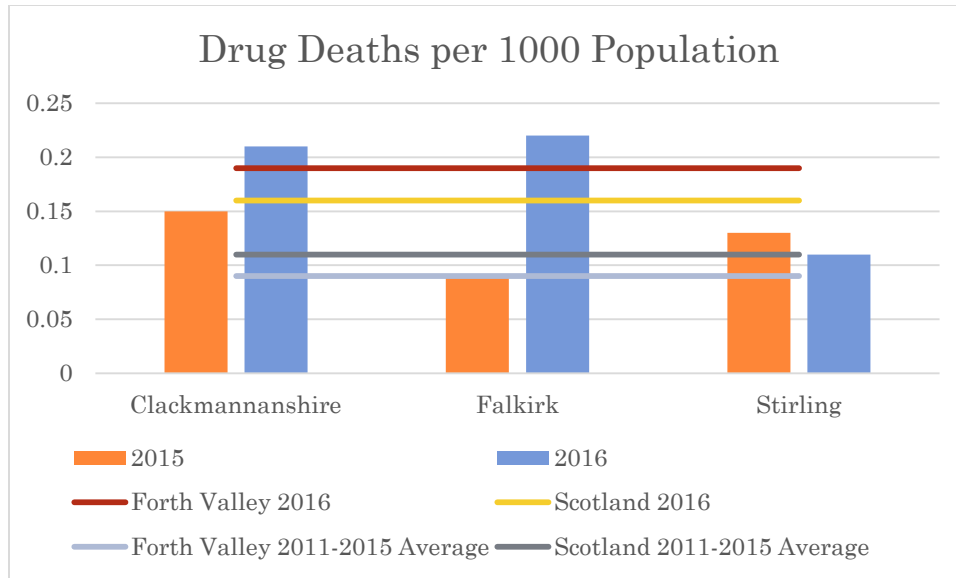
Drug Deaths by Area within Forth Valley

The 57 drug deaths in Forth Valley in 2016 did not occur evenly across the three council areas. Specifically, there were comparatively higher rates of drug deaths in the Clackmannanshire (0.21 per 1000 population) and Falkirk areas (0.22 per 1000 population) as compared to the Stirling area (0.11 per 1000 population) of Forth Valley, as summarised in the following table:

Area	Number of DDs	Population	DD per 1000 population
Clackmannanshire	11	51,360	0.21
Falkirk	35	158,650	0.22
Stirling	11	92,830	0.11
Forth Valley	57	302,650	0.188

According to the NRS data, the 5 year (2011 – 2015) average per 1000 population is 0.12 for the whole of Scotland, 0.17 for Clackmannanshire, 0.10 for Falkirk and 0.09 for Stirling. This highlights that there has been a particularly large increase in drug deaths in the Falkirk area of Forth Valley in the year 2016. Rates of drug deaths in Clackmannanshire have been consistently high over the past 5 years, with yet another increase in 2016.

The following graph shows the drug death rates for the three areas of Forth Valley per 1000 population, as well as the Scottish and Forth Valley averages for 2011-2015 and 2016 for comparison. Note that although drug deaths have risen across Scotland in 2016 when compared with the averages for previous years, the rise in the number of drug deaths in Forth Valley appears to exceed even this national trend.



Age, Gender and Ethnicity of Drug Death Victims

The mean age of drug death victims in Forth Valley was 37 years, with ages ranging from 19 to 62 years. When broken down into the separate council areas, the average age of drug death victims in Falkirk was also 37 years, Clackmannanshire drug death victims were slightly younger with an average age of 35.5 years, and drug death victims in Stirling were slightly older with an average age of 38.5 years.

In terms of gender, 41 of the drug death victims were male and 16 were female, giving a male:female gender ratio of 2.56 male victims to every female victim (i.e. 72% of drug death victims were male). This is broadly in line with national figures and patterns previously observed in the drug deaths occurring in Forth Valley and across Scotland.

All drug death victims were white, with the vast majority being described as White Scottish.

Living Situation of Drug Death Victims

The majority of drug death victims were living in their own homes (n = 40 or 70%) at the times of their deaths, with some living in the homes of their relatives (n = 6 or 10%), or living in other accommodation arrangements (n = 6 or 10%), for example with friends. Six individuals (or 10%) were homeless, either having no fixed abode at all or staying in homeless accommodation at the time of death. This indicates that while compared to the general population the rate of homelessness is high in this particular group, the majority of individuals appear to have been in stable and settled living arrangements.

Following on from this, the majority of the drug deaths victims were living on their own at the time of death (n = 34 or 60%). The remaining 23 individuals (40%) were living with others, either with their spouse or partner (n = 5), with their parents or other relatives (n = 11) or with other individuals (n = 7), for example their friends.

Families of the Drug Death Victims

The relationship status was known for 51 (or 89%) of the drug death victims. Five individuals (or 9%) were married or living with a civil partner. The majority of drug death victims however were not in long term relationships and were either classified as single (n = 32 or 56%), separated (n = 7 or 12%), divorced (n = 5 or 9%), or widowed (n = 2 or 4%).

Whether or not the drug deaths victims had children under the age of 16 was known for 40 individuals (or 70%). Fifteen of these individuals had a total of 25 children between them, who therefore lost a parent as a result of a drug death in Forth Valley in 2016 (5 children each in Clackmannashire and Stirling; and 15 children in Falkirk). Of these, five drug death victims had their children living with them at the time of their deaths; these five victims had a total of seven children who lost their primary caregiver as a result of a drug death.

Employment Status

The majority of drug death victims were unemployed at the time of their deaths (n = 48 or 84%) and a further four individuals (or 7%) were registered as long term sick or disabled. It is likely that a number of these individuals were in receipt of state benefits. Only five drug death victims (or 9%) were employed at the time of their deaths.

Criminal Justice Histories

Seven individuals (12%) were known to have been in police custody, with 38 individuals (67%) not having been in police custody in the 6 months prior to their deaths. This data was unknown for the remaining 12 (21%) of drug death victims (and it is thus assumed that they had no criminal histories). Of the drug death victims who had been arrested, one had been arrested in the two weeks prior to their death.

Thirty four drug death victims (or 60%) were known to have served a prison sentence in the past, with the last known prison stay of these individuals lasting in duration from 2 days to 3 years. Two individuals had been released from prison in the two weeks prior to death, which is a known risk factor for suffering both fatal and non-fatal overdoses. A further two victims had been released from prison between 2 weeks and 6 months prior to their deaths, four were

released between 6 month and 1 year prior to death, and the remaining 2 were released more than a year prior to their deaths.

Physical and Mental Health Indicators

The medical histories of all drug death victims were known. Of the 57 drug death victims, 41 (or 70%) were known to have serious physical health problems. The most common conditions suffered and their prevalence are summarised in the following table:

Medical Condition	Number of DD victims	Percentage
Respiratory Disease	10	18%
Cardiac Disease	11	19%
DVT	9	16%
Hepatitis C	14	25%
Other Liver Disease	5	9%
Renal Disease	4	8%
Diabetes	4	8%
Musculoskeletal Problems	7	12%
Chronic Pain	9	16%
Other (e.g. Epilepsy)	11	19%

Similarly, the psychiatric and mental health difficulties of the drug death victims were known, and of the 57 eventual drug death victims, 50 (or 88%) experienced mental health difficulties. The most common conditions are summarised in the table below:

Psychiatric Condition	Number of DD victims	Percentage
Depression	38	67%
Anxiety	18	32%
Posttraumatic Stress	6	11%
Personality Disorder	7	12%
Schizophrenia	2	4%
Psychotic Episode	3	6%
Other (e.g. Bipolar)	6	11%

In addition, 15 (or 26%) of the drug death victims had a known history of self-harm, and 4 victims (8%) were known to have self-harmed in the 6 months prior to their death. Sixteen victims (28%) had previously attempted suicide and 4 individuals (8%) had attempted suicide in the 6 months prior to their deaths.

It is recognised that substance users experience high levels of comorbidity. In reality, many drug death victims suffer a complex combination of physical and mental health difficulties.

Life Events

Substance misusers are known as a particularly vulnerable population, which is reflected in the fact that 10 (or 18%) of the drug death victims were known to have experienced sexual abuse in their lives and 11 (or 19%) had been the victim of physical abuse. Two individuals (or 4%) were known perpetrators of physical abuse.

Recent life events were also prevalent amongst the victims, and those life events which were experienced in the 6 months prior to death are recorded in the following table:

Life Event	Number of DD victims	Percentage
Recent Ill Health	10	18%
Relationship Breakdown	6	11%
Relapse	6	11%
Criminal Justice Problems	6	11%
Homelessness	6	11%
Bereavement	5	9%
Child Custody Problems	3	5%
Other	4	8%

It should be noted that the data sources used to collect this information (i.e. service records) have limitations in terms of recording this information. As such, the actual prevalence of life events experienced by the drug deaths victims may be considerably higher.

Substance Misuse Histories

Fifty-two of the 57 drug death victims (91%) were known substance misusers and 33 individuals (or 58%) were injecting drug users. The length of time of their drug use and injecting drug use is summarised in the following table:

Length of Time	Drug Use (n = 52)	Injecting Drug Use (n = 33)
Less than 6 months	2 (4%)	3 (9%)
6 months – 1 year	1 (2%)	0 (0%)
1 – 5 years	9 (17%)	4 (12%)
6 – 10 years	8 (15%)	4 (12%)
11 – 19 years	16 (30%)	9 (27%)
20 years or more	11 (21%)	7 (21%)
Unknown	10 (19%)	6 (18%)

Thirty-one (or 54%) of the drug death victims were known to have overdosed at least once in the past. The number of previous overdoses of these individuals ranged from one to five, with an average of 2.8.

Five individuals (9%) had undergone drug detoxification in the year prior to their deaths.

Although this is not the focus of this report, it should be noted that many of the drug death victims also had experienced problematic alcohol use. For 24 individuals (42%) this alcohol misuse had occurred in the six months prior to death, and a further 9 individuals (16%) had misused alcohol in the past but longer than 6 months ago.

GP Contact

All of the drug deaths victims were registered with and had known contact with a GP at one point. The length since last contact with the GP is summarised in the table below:

Length of Time since last GP Contact	Number of DD victims	Percentage
Longer than 2 years	4	8%
1 – 2 years	9	16%
6 months – 1 year	20	35%
1 – 6 months	14	25%
2 weeks – 1 month	7	12%
Less than 2 weeks	3	5%

This information indicates that most drug death victims were known to their GPs and many had been in contact with their GPs not long before their deaths.

Service Contact

Apart from contact with their general practitioners, the drug death victims were also often known to other, non-drug related treatment services at the time of their deaths. Nine individuals (or 16%) received specific treatment for alcohol misuse at the time of their deaths. Three individuals (or 5%) were in contact with Housing Services at the time of their deaths. 22 of the drug death victims (or 39%) had contact with Social Work Services in the 5 years prior to their deaths; 9 individuals (16%) were open cases to Social Work at the time of their deaths.

In terms of contact with services specific to the treatment of drug misuse, the drug deaths victims attended a range of services including specialist and third sector support for drug and alcohol problems, such as NHS prison healthcare, addiction psychology and psychiatric services as well as voluntary organisations in the 5 years prior to their deaths.

At the time of their deaths, 26 of the drug death victims (46%) were in contact with specialist services. These are summarised in the following table:

	Clackmannanshire (n=11)	Falkirk (n=35)	Stirling (n=11)
Community Alcohol and Drug Service	3 (27%)	9 (26%)	2 (18%)
Addiction Recovery Service	2 (18%)	1 (3%)	0 (0%)
Forth Valley Substance Treatment Service	0 (0%)	0 (0%)	0 (0%)
General Practitioner Prescribing	1 (9%)	0 (0%)	0 (0%)
Statutory Mental Health Service	0 (0%)	7 (20%)	0 (0%)
Signpost Recovery	0 (0%)	0 (0%)	1 (9%)

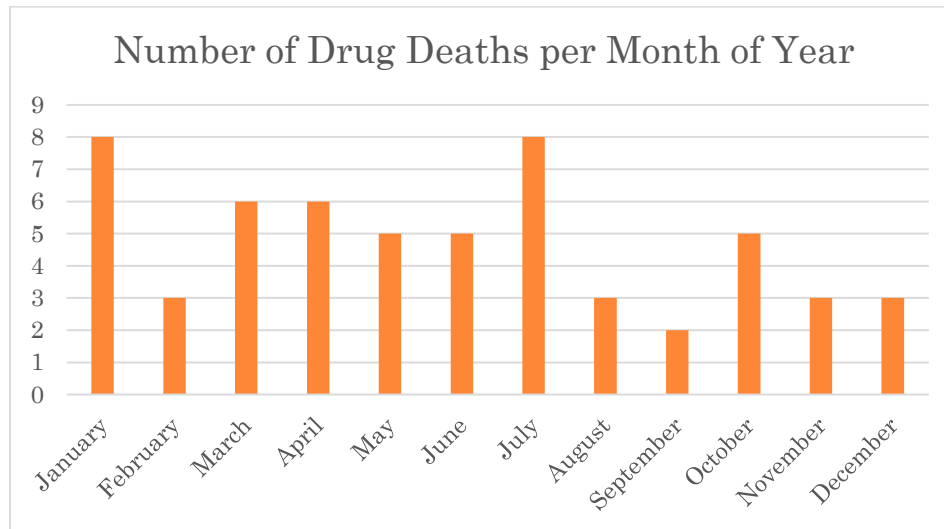
Fourteen drug death victims were patients of the NHS CAD Service at the time of their deaths; these were distributed relatively evenly across the three council areas in Forth Valley. Seven drug death victims were seen by the NHS mental health service at the times of their deaths (but not by specialist addiction services); all of these were in the Falkirk area.

Fourteen (25%) of the drug death victims had been prescribed substitute medication (all methadone) at the time of their deaths. One individual had changed the type of substitute medication in the two weeks prior to death, and one other had stopped receiving the substitute medication in the two weeks prior to death. All others had been prescribed the substitute medication for more than one year. The doses ranged from 22 – 95 mg and 12 of the 14 individuals received their substitute by supervised consumption; the remaining two individuals were allowed to take their medication home.

When considering this separately across the three council areas, 8 of the drug death victims (or 23%) in Falkirk had been prescribed an opioid substitute, compared with 5 drug death victims (or 45%) of the drug deaths victims in Clackmannanshire and only one (9%) drug death victim in Stirling, which indicates that a larger proportion of drug death victims in Clackmannanshire were in treatment than in the other two areas.

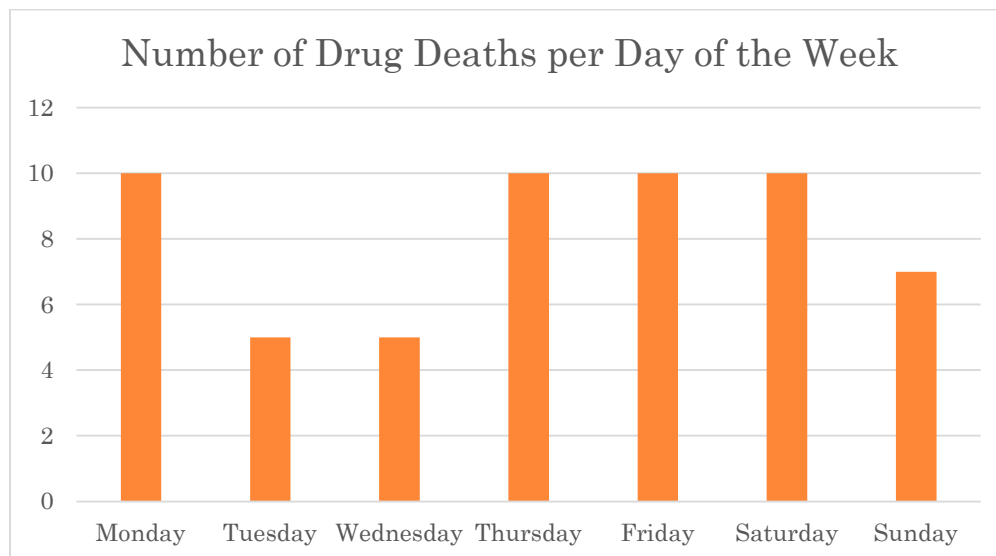
Timings of the Drug Deaths

The months of the year in which the drug death victims died are presented in the following graph:



Although the number of drug deaths vary somewhat by calendar month, this does not suggest a particular pattern of drug deaths being any more or less likely to occur at different times of the year. However, it appears that there were fewer drug deaths in the latter half of the year than the first, which might indicate that the uncharacteristically high rate of drug deaths in the area might be reducing again.

Similarly, the days of the week on which the drug deaths occurred are summarized in the following table:



This data suggests that in 2016, drug deaths were somewhat less likely to occur in the middle of the week (on Tuesdays and Wednesdays) rather than on other days of the week. This is likely the result of random variation in the data, but should be noted for further observations. Reasons as to why this might be the case are also not immediately apparent.

Circumstances of the Drug Deaths

The location of the drug deaths were known for all cases. The majority of drug deaths occurred in the victims' own homes (n = 34 or 60%), with a number of deaths occurring in someone else's home (n = 10 or 18%), often the homes of friends, partners or family members. Ten deaths (18%) occurred in hospital; these victims had consumed the fatal overdose usually at a residential property and were transported to hospital by ambulance before being declared dead there. A further three deaths (5%) occurred at other locations, e.g. homeless accommodation.

Bystanders were present in 28, or just under half of the drug deaths (49%). Most commonly bystanders were friends of the drug death victims (n=16), family members (n=7) or their spouse (n=5).

Bystanders attempted resuscitation in less than half of the total number of drug deaths (n = 24 or 42%), but in the majority of cases where bystanders were present (24 out of 28, or 86%). In 31 cases (54%) resuscitation was not attempted, generally because no bystanders were present, and this information is unknown for a further two individuals (4%).

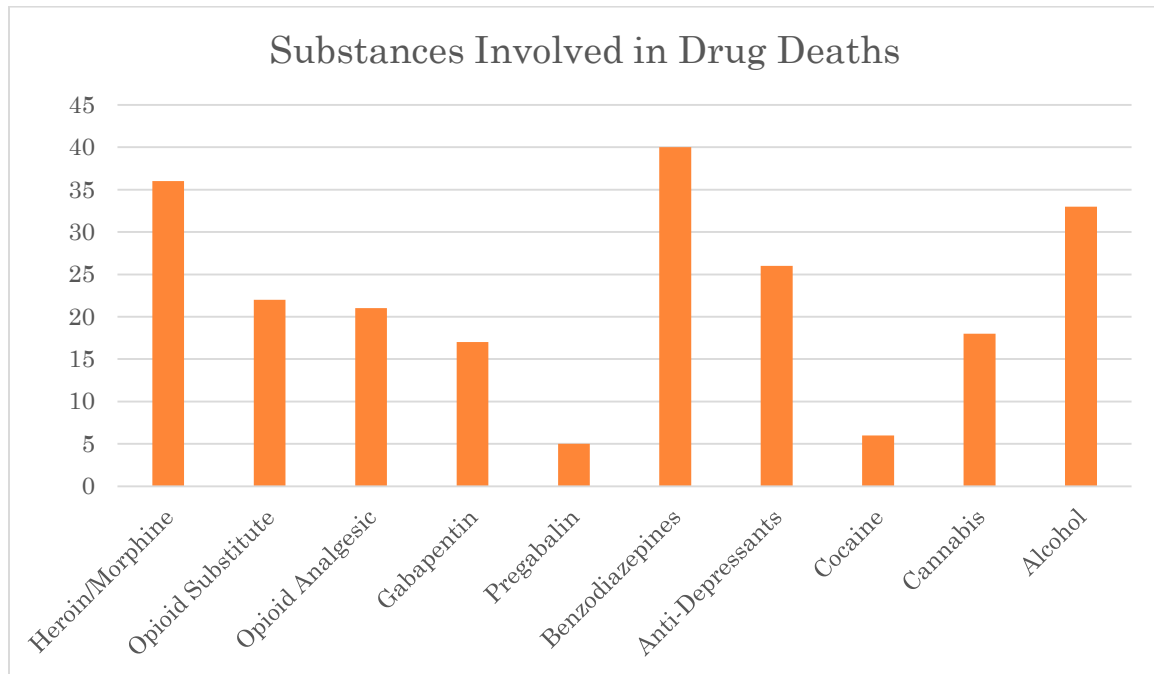
However, ambulances attended 46 of the eventual drug deaths (81%). It is unknown, however, in how many of these cases the victim was still alive by the time the ambulance arrived.

Take Home Naloxone had been supplied to 9 (16%) of the drug death victims at some point prior to their deaths, all had been dispensed by drug treatment services. Take Home Naloxone was available at the scene of 6 of the drug deaths (11%) and administered by bystanders in 4 cases (7%).

To put this in context, there were 184 known non-fatal overdoses in Forth Valley in 2016 (44 in Clackmannanshire, 87 in Falkirk and 53 in Stirling). In the same year, 369 Take Home Naloxone kits had been dispensed in the area (84 in Clackmannanshire, 182 in Falkirk and 103 in Stirling).

Substances Involved in the Drug Deaths

The substances involved in the drug deaths of Forth Valley in 2016 are summarised in the following graph:



The substances most commonly involved in all drug deaths were benzodiazepines (70%), heroin/morphine (63%) and alcohol (58%).

There was also a pattern in the deaths that revealed that most deaths appeared to involve either an opioid analgesic or gabapentin, but the two were not mixed unless the opioid analgesic was tramadol.

The following table considers the prevalence of drugs in the deaths by council area; the first column gives the number and percentages of all drug deaths which involved each substance. The subsequent three columns break this down into the different council areas in Forth Valley. In these columns, the percentages are based on the number of drug deaths which occurred in this area.

All Drug

Falkirk

Clackmannan-

Stirling

Substance	Deaths (n=57)	(n=35)	shire (n=11)	(n=11)
Morphine	36 (63%)	22 (63%)	7 (63%)	7 (63%)
Opiate Substitute	22 (39%)	15 (45%)	5 (45%)	3 (27%)
Opioid Analgesic	21 (37%)	14 (40%)	4 (36%)	3 (27%)
Gabapentin	17 (30%)	12 (34%)	3 (27%)	2 (18%)
Pregabalin	5 (9%)	5 (15%)	0 (0%)	0 (0%)
Benzodiazepines	40 (70%)	27 (77%)	6 (54%)	7 (63%)
*Etizolam	13 (23%)	8 (23%)	2 (18%)	3 (27%)
Anti-Depressant	26 (46%)	17 (49%)	4 (36%)	5 (45%)
Cocaine	6 (11%)	6 (17%)	0 (0%)	0 (0%)
Cannabis	18 (32%)	12 (34%)	5 (45%)	1 (9%)
Alcohol	33 (58%)	20 (57%)	5 (45%)	8 (72%)

(* Etizolam is a benzodiazepine but is considered separately here because of a novel recent trend of availability in Forth Valley).

Notable in the breakdown of the substances per area is that cocaine and pregabalin were only found in deaths in Falkirk and not in the other two areas of Forth Valley.

Role of Prescribed Medication

A number of the substances which have been commonly found in the drug deaths of Forth Valley can also be prescribed to individuals. As an indication of potential diversion of prescribed medication, this section considers the presence or absence of prescribed medications in the drug deaths of Forth Valley in 2016.

a) Opioid Substitute

Opioid substitutes were involved in 22 deaths (39%). However, only 14 individuals (25%) had been prescribed the medication. Of these, 13 individuals had consumed the substance prior to their deaths as evidenced by the toxicology report, and one individual had been prescribed methadone but this was not detected post-mortem, indicating that they had not taken it as prescribed. The remaining 7 (12%) individuals must have sourced the opiate substitute that contributed to their deaths illicitly as it had not been prescribed to them.

b) Benzodiazepines

Benzodiazepines were involved in 40 (or 70%) of the drug deaths. However, only four individuals (7%) had been prescribed a benzodiazepine, which was always diazepam. Of these four individuals, three were found with benzodiazepines in their bodies post-mortem. One individual had been prescribed diazepam but had not taken it as prescribed, as it was not detected in their body following their deaths. However, the majority of drug death victims which had consumed benzodiazepines prior to their deaths, 37 individuals or 65% of all drug deaths are assumed to have sourced these drugs illicitly.

c) Gabapentin

Gabapentin was involved in 17 (30%) of all drug deaths. Conversely, it was only prescribed to 7 individuals (or 12%). Of these, only 5 had taken the medication prior to their deaths, as evidenced by the post-mortem toxicology, meaning two individuals who had received prescribed gabapentin had not taken it. Similarly, the majority of individuals who had taken gabapentin prior to their deaths (n = 12 or 21% of all drug deaths) had taken gabapentin which was not prescribed to them.

d) Pregabalin

Pregabalin was involved in 5 (or 9%) of the drug deaths in Forth Valley. It had been prescribed to 4 individuals (7%); however, of these only two had taken the medication prior to their deaths, meaning that the other two individuals who had received prescribed pregabalin had not taken it. Furthermore, 3 individuals who had taken pregabalin prior to their deaths had not been prescribed the medication. It should also be noted that all deaths involving pregabalin occurred in the Falkirk area of Forth Valley.

e) Anti-depressants

Anti-depressant medication was involved in 26 (46%) of the drug deaths. Anti-depressant medication had been prescribed to 21 individuals (37%). The specific prescribed substances included mirtazapine (n = 8), sertraline (n = 7), fluoxetine (n = 2), amitriptyline (n = 2), dosulepin (n = 1), and trazadone (n = 1). Fifteen individuals (26%) had been prescribed anti-depressants and had also taken this substance at the time of their deaths, indicating compliance with prescribing regimens.

Eleven drug death victims had taken anti-depressant medication which was not prescribed to them; in most cases this was amitriptyline (n = 6) or mirtazapine (n = 4). One individual also took non-prescribed citalopram.

It should be noted that three individuals also appeared to have “swapped” their prescribed anti-depressant for another one (e.g. had been prescribed sertraline but were found with mirtazapine in their body). Five other individuals had taken their prescribed anti-depressant, as well as another anti-depressant medication which was not prescribed to them (mirtazapine or amitriptyline).

f) Opioid Analgesics

Opioid Analgesics were involved in 21 (37%) of all drug deaths. These included dihydrocodeine (n = 14), tramadol (n = 6) and fentanyl (n = 1). Seven individuals (12%) had been prescribed analgesic medication; in six cases this was dihydrocodeine and one individual had been prescribed oxycodone. Four of these individuals had taken their prescribed opioid analgesic prior to death and three had not. It should be noted that tramadol was not prescribed to any of the drug death victims, but was nevertheless involved in a number of deaths (n = 6). 16 drug deaths (28%) involved opioid analgesic mediation that had not been prescribed to the individuals.

ACTION PLAN

	Action	Sub Actions	Lead	Timescale	Comments	RAG
1.0: Ensure accurate collection of data regarding drug related deaths in Forth Valley.						
1.1	Continue to ensure ISD work completed.	Submit data to ISD.	Elaine Lawlor Claire McIntosh Anita Dufton Heather Jolly	August 2017		
1.2	Consider any identified trends regarding gender in relation to drug related deaths and non-fatal overdoses.				Detail of this action will be included in the 2016 DRD Research	
2.0: Develop mechanisms to learn from drug related deaths and implement changes to practice to prevent future drug related deaths.						
Staying Alive Good Practice Indicator: DRD Monitoring and Learning						
2.1	Embed case management approach for SMS deaths in and out of service. Include prison healthcare deaths	Develop internal SMS guidance for internal review processes for DRD.	Claire McIntosh Service Managers Elaine Lawlor Nick Higgins	March 2018	ADP has supported an additional day of admin support for a period of 6 months.	
		Develop and convene	Claire McIntosh	April 2017	Case Management	

		specific bi monthly case review meeting.	ADP Support Team		process now embedded	
2.0: Develop mechanisms to learn from drug related deaths and implement changes to practice to prevent future drug related deaths.						
Staying Alive Good Practice Indicator: DRD Monitoring and Learning						
		Ensure GPs are routinely invited to DRD reviews of appropriate patients.	Chair of Review Group Service Managers	Ongoing		
2.2	Develop Forth Valley Drug Trend Monitoring Group (DTMG).	<p>Agree representation on national group</p> <p>Update the NHS Forth Valley Public Health and Forth Valley ADP Drug Warning system Process</p> <ul style="list-style-type: none"> Finalise Substance Misuse Alert Cascade Protocol. Define process within a SOP. Evaluate in partnership with clinical effectiveness 	<p>ADP support</p> <p>Oliver Harding Carol Crawford Elaine Lawlor Jean Logan</p>	October 2017	Initial local group convened to support development of national group	
2.0: Develop mechanisms to learn from drug related deaths and implement changes to practice to prevent future drug						

related deaths. Staying Alive Good Practice Indicator: DRD Monitoring and Learning						
2.3	Participate in Forth Valley DRD Research.	Complete report on 2016 drug related deaths.	Elaine Lawlor Claire McIntosh Julia Neufeind	October 2017	Research commissioned and draft report due mid August.	
		Consider reasons for the significant increase in drug related deaths in 2016. Target communication and prevention strategies accordingly.	DRD Group	March 2018		
2.4	Wide dissemination of DRD Report including to IJB's and Community Justice Partnerships (supported by ORT champion)		ADP support	November 2017		
		Host Forth Valley Drug Related Death Conference	ADP Support Team	November 2017		
2.5	Continue direct NFO referral work with Scottish Ambulance Service and Signpost Recovery.	Review process to include assertive outreach.	Elaine Lawlor Claire McIntosh Norrie Moane	September 2017		

2.0: Develop mechanisms to learn from drug related deaths and implement changes to practice to prevent future drug related deaths.

Staying Alive Good Practice Indicator: DRD Monitoring and Learning

		Seek permission from Medical Director regarding the Assertive Outreach approach	Claire McIntosh Elaine Lawlor	September 2017		
		Review NFO ISP.	Elaine Lawlor	September 2017		
		Incorporate the assertive outreach pathway into the work of the Harm Reduction Mobile Unit.	Norrie Moane	October 2017		
		Complete NFO research for individuals known to Forth Valley Substance Misuse Services.	Norrie Moane	June 2017		

3.0: Staying Alive Good Practice Indicator: High Risk Injecting / Wound Care / Bacterial Infections

4.0: Staying Alive Good Practice Indicator: Prison Through care / Police Custody

5.0: Staying Alive Good Practice Indicator: Homelessness / Rough Sleeping / Housing						
5.1	Extend invitation to Housing colleagues to join DRD Prevention Group.	Identify appropriate reps from Clackmannanshire, Falkirk and Stirling.	ADP Support Team	May 2017	Complete	
5.2	Scope out the prevalence of injecting rates amongst drug users who are homeless	Interrogate Neo Database	Jean Logan Harm Reduction Service	December 2017		
		Include IEP Peer questionnaire	FVRC			
6.0: Staying Alive Good Practice Indicator: Prescription Drugs and Non-Opiate Illicit Substances						
6.1	Investigate the use of testing for stimulant use in the setting of the Emergency Department.	Scope out financial implications of auditing previous years presentation	Tracy Coyle	October 2017		
7.0: Staying Alive Good Practice Indicator: Workforce Development						
7.1	Expand marketing of NPS training to the following settings:	Scope out student support in higher education establishments	ADP Support Team	November 2017	Marketing complete to Ambulance Service, Mental	

	*Student support *A&E *Scottish Ambulance Service *Mental Health – acute and community settings *Homelessness	across Forth Valley			Health setting and Homeless settings.	
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GROUP MEMBERSHIP

The following individuals are members of the Forth Valley ADP Drug Death and Critical Incident Review Group:

Denise Allan	Team Leader, Prisoner Healthcare
Elaine Brown	ADP Lead, Clackmannanshire and Stirling ADP
Martha Rae	Forth Valley Family Support
Nick Burgess	Manager, Falkirk Criminal Justice Social Work
Tracy Coyle	Clinical Nurse Manager,
Carol Crawford	BBV MCN Lead
Neil Gillies	Scottish Ambulance Service
Norma Howarth	Operations Manager, Signpost Recovery
Elaine Lawlor	Forth Valley ADP Coordinator
Jean Logan	Lead Pharmacist / Mental Health, Substance Use
Kenneth McAndrew	Detective Inspector, Police Scotland
Ann McArthur	Health Promotion Officer, NHS Forth Valley
Ruth McDonald	Lead Officer, Falkirk ADP
Ann McGregor	BBV MCN Workforce Lead, NHS Forth Valley
Claire McIntosh	Clinical Lead CADS
Norrie Moane	General Manager, Signpost Recovery
Paul Mooney	Chief Executive, Addictions Support and Counselling
Annemarie Parnell	Manager, Criminal Justice Service, Falkirk
Roseanne Robertson	Housing Manager, Stirling
Scott Robertson	Sergeant, Police Scotland
Laura Smith	Housing, Falkirk Council
Caroline Steele	General Practitioner
Elizabeth Taylor	Addiction Caseworker, Prisoner Healthcare

APPENDIX 1

Drug Deaths in Forth Valley 2016

Interim Report

(October/November 2016)

Authors: Dr. Julia Neufeind, Dr. Claire MacIntosh, Elaine Brown and Martin Harvie

BACKGROUND AND KEY FINDINGS

This interim report was commissioned by the Forth Valley Drug Related Critical Incident Review Group as a result of an unexpectedly high number of suspected drug deaths which have are being investigated in 2016 so far. The aim of this report is to highlight any new trends in the existing information gathered on the suspected drug deaths of 2016, identifying any possible reasons for the concerning increase in the number of drug deaths and thus facilitating possible interventions.

For the purpose of this report, the information available about the suspected drug deaths of 2016 at this point in time (October 2016) will be compared to the confirmed drug deaths of 2015, with the view of identifying any new patterns and potential factors which might explain the sudden rise in drug deaths. It should be noted that this is an interim report which does not seek to comprehensively describe the drug deaths of Forth Valley in 2016. Instead, this report highlights key observations from the existing and still growing intelligence about the suspected drug deaths of the current year. A full report which will comprehensively summarise the demographics of all drug death victims of 2016 (similar to those published in previous years), including their living situations, service contact, medical history and circumstances of their deaths will be published in 2017.

Because operational procedures relevant to drug deaths in Forth Valley have not changed recently, this report focusses on the specific drugs involved in the recent deaths in the first instance, as this is deemed to be the most likely area to reveal new patterns which may explain the concerning rise in drug deaths. Basic demographic information of the drug death victims are also considered.

The report has highlighted the following key observations:

- The drug death victims of 2016 in Forth Valley so far are noticeably younger than in previous years. The available data for the 2016 drug death victims shows that their average age at time of death was 34 years. In previous years, the average age of death was 40 years (and had been rising consistently for the past 5 years, which is consistent with national trends).
- The increase in the number of drug deaths in 2016 appears to have occurred primarily in the Falkirk area of Forth Valley. The proportion of drug deaths occurring in Falkirk has increased by almost 50% from the previous year. At the

same time, rates of deaths in Stirling and Clackmannanshire are consistent with previous years.

- Toxicology findings reveal that Etizolam, a benzodiazepine that is not prescribed in Forth Valley, has been found in 44% of drug deaths this year and was virtually unknown in previous years. However, this drug does not explain the relative increase in the number of drug deaths in Forth Valley, as it was found at consistently equal rates in drug deaths across the three areas.
- Gabapentin, Pregabalin and opioid analgesics such as Dihydrocodeine and Tramadol are also more prevalent in the suspected drug deaths of 2016 than in previous years. Moreover, these particular substances were found in the drug deaths which occurred in Falkirk at significantly higher rates than anticipated.

PREVALENCE OF DRUG DEATHS

There were 34 drug deaths in Forth Valley in 2015. In comparison, at the time of writing of this report (October 2016), 41 individuals are suspected to have died as a result of a drug death in Forth Valley in 2016; with 34 of these deaths have already been confirmed as drug deaths. The trajectory suggests that by the end of 2016, there might be in excess of 50 individuals who will have died as a result of a fatal drug overdose in Forth Valley in this calendar year. This would be by far the highest number of drug death observed so far in Forth Valley in any given year. The remainder of this report is based on the data which is available on the 41 suspected drug deaths of 2016.

MONTHS OF THE YEAR AND DRUG DEATHS

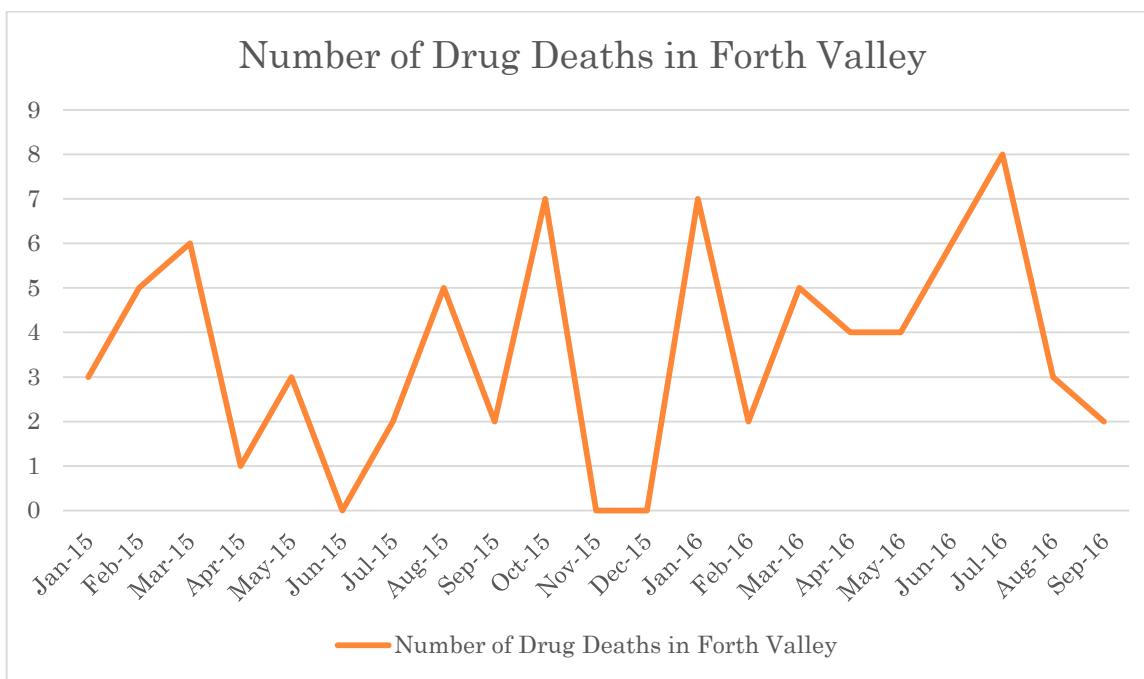
In order to examine any potential trends in the timing of these drug deaths, the following table and graph display the number of drug deaths which occurred in each calendar month of 2015 and 2016.

Table 1: Month of Year of the Drug Deaths

Month	2015	2016
January	3	7
February	5	2
March	6	5
April	1	4
May	3	4
June	0	6
July	2	8
August	5	3
September	2	2
October	7	Not available yet
November	0	Not available yet
December	0	Not available yet

This data is repeated in different form in the following graph:

Figure 1: Drug Deaths by Months of 2015 and 2016



The distribution of drug deaths over the months of 2015 and 2016 does not reveal an obvious point in time at which the rate of drug deaths began to rise. However, it is likely that any new pattern in the drug deaths started around the beginning of 2016; as such this report will focus on drug deaths trends in 2016 and compare these with trends observed in previous years.

It should also be noted that in the two months prior to writing this report, the rate of drug deaths appears to have decreased again.

LOCATION OF DRUG DEATHS (COUNCIL AREAS)

Table 2: Location of Drug Deaths by Council Area

Council Area	2015	2016
Falkirk	14 (41%)	24 (59%)
Stirling	12 (35%)	8 (20%)
Clackmannanshire	8 (24%)	9 (21%)

This data suggests that the main increase in drug deaths in 2016 appears to have occurred in the Falkirk area. In the Falkirk area, the proportion of the total number of drug deaths in 2016 has increased by almost 50% from the 2015 proportion. In comparison, the percentage

of all Forth Valley drug deaths which occurred in Stirling and Clackmannanshire have decreased between 2015 and 2016.

DEMOGRAPHIC INFORMATION OF DRUG DEATH VICTIMS

The age and gender of the suspected drug death victims of 2016 are summarised in the tables below and compared with the same data for the 2015 Forth Valley drug death victims.

Table 3: Gender of Drug Death Victims

Gender	2015	2016
Male	25 (74%)	33 (80%)
Female	9 (26%)	8 (20%)

Table 4: Age of Drug Death Victims

Age	2015	2016
< = 19	0	1
20 – 29	4	12
30 – 39	12	17
40 – 49	10	11
50 +	8	0
Average	40.35	34.17

This data suggests that the gender of drug death victims of 2016 is similar to that observed in previous years. However, the suspected drug death victims of 2016 are noticeably younger than those of 2015. It should be noted that on a local as well as national level, the average age of drug death victims at the time of their deaths were rising by about one year for every calendar year in which the trends were reported. This has led to speculations that on the whole, the drug death victims across Scotland are one particular aging cohort of long term drug users. The unexpectedly lower average age of drug death victims in the suspected drug deaths of 2016 suggests that it may be a new and younger demographic of drug users that are dying in this year. In particular, more drug death victims appear to be dying in their 20s, while so far in 2016 no drug death victim was over the age of 50.

TOXICOLOGY FINDINGS

At the time of writing this report, toxicology results were available for 34 (83%) of the 41 drug deaths so far in 2016. The data contained in this section is based on the available information on these individuals, and should thus be interpreted only as a sub-set of the overall patterns.

The presence of substances in these deaths were as follows:

Table 5: Prevalence of Substances in Drug Deaths (Toxicology)

Substance involved in death	Number of Deaths (% of 34 available toxicology reports)
Heroin/Morphine	18 (53%)
Opioid Substitute	13 (38%)
Other Opioid	10 (29%)
Gabapentin and/or Pregabalin	14 (41%)
Benzodiazepines	29 (85%)
Etizolam	15 (44%)
Antidepressants	10 (29%)
Antipsychotic Medication	1 (3%)
Amphetamines	2 (6%)
Cocaine	5 (15%)
Cannabis	17 (50%)
Alcohol	17 (50%)

In comparison, in the years 2010 – 2013, the prevalence of heroin in drug deaths ranged from 50 – 70%, opioid substitutes ranged from 35-50%, benzodiazepines from 70-90%, other analgesic medication from 20 – 30%, antidepressant medication from 30-70% and alcohol from 30-75%. As such, the data is in line with expected trends based on the data from previous years, except in the case of “other analgesic medication” if gabapentin is considered in this category. It appears that the number of deaths involving these substances are particularly high in 2016.

Furthermore, of particular interest is Etizolam (a benzodiazepine), which has been found in 15 deaths (or 44%) of the suspected drug deaths in 2016 so far and has not been observed in previous years. It is therefore considered separately in this section, despite also being included in the “benzodiazepine” row.

A number of substances, including anti-psychotic medication and amphetamines were only found in a very small number of the suspected drug deaths in 2016. They are therefore highly unlikely to have contributed to the rise in drug deaths in this year and are not considered in the subsequent data.

Given the relatively high proportion of drug deaths in Falkirk, the following table breaks down the prevalence of the drug deaths in the different council areas of Forth Valley. The percentages in the body of the table present the proportion of all suspected drug death in Forth Valley involving this type of drug per area (and could thus be compared with the proportion of all drug deaths which have occurred in each council area).

Table 6: Prevalence of Substances in Deaths by Council Area

Substances involved in death	Falkirk N = 24 (59%)	Stirling N = 8 (20%)	Clackmannanshire N = 9 (21%)
Heroin/Morphine	10 (55%)	5 (28%)	3 (17%)
Opioid Substitute	7 (54%)	3 (23%)	3 (23%)
Other Opioid	7 (70%)	1 (10%)	2 (20%)
Gabapentin/Pregabalin	10 (72%)	2 (14%)	2 (14%)
Benzodiazepines	16 (55%)	6 (21%)	7 (24%)
Etizolam	9 (60%)	3 (20%)	3 (20%)
Antidepressants	7 (70%)	1 (10%)	2 (20%)
Cocaine	4 (80%)	0 (0%)	1 (20%)
Cannabis	11 (65%)	2 (12%)	4 (23%)
Alcohol	8 (47%)	6 (35%)	3 (18%)

Drugs which were found at disproportionately high rates in Falkirk drug deaths (i.e. more than 10% above the expected frequency, which is based on the proportion of drug deaths occurring in that area) include potentially prescribed opioids other than substitute medication, gabapentin and pregabalin, and antidepressants. It is therefore possible that these particular drugs are playing a role in the large increase in the number of drug deaths occurring in Falkirk in 2016 and thus the total number of drug death in Forth Valley. (Note that the prevalence of cocaine in Falkirk deaths is also unexpectedly high; however, due to the low overall prevalence of this drug it is unlikely to contribute meaningfully to explaining the recent increase in drug deaths).

PRESCRIPTION OF OTHER MEDICATION

At the time of writing this report, medical notes were available for 37 of the 41 (or 90%) suspected drug death victims of 2016. Based on this information, the following table breaks down the number of individuals in the three council areas who were prescribed substitute medication, opioid analgesic medication, gabapentin or pregabalin, benzodiazepines and antidepressants. Similar to the table in the previous section, the percentages in the body of the table present the proportion of all suspected drug death in Forth Valley who were prescribed the given substance and can therefore be compared with the proportion of all drug deaths which have occurred in each council area.

Table 7: Prescribed Medication by Council Area

Substances Prescribed	Falkirk N = 24 (59%)	Stirling N = 8 (20%)	Clackmannanshire N = 9 (21%)
Opioid Substitute	4 (40%)	1 (10%)	5 (50%)
Other Opioid	2 (66%)	1 (33%)	0 (0%)
Gabapentin or Pregabalin	4 (50%)	1 (12%)	3 (38%)
Benzodiazepines	2 (100%)	0 (0%)	0 (0%)
Antidepressants	8 (62%)	2 (15%)	3 (23%)

It should be noted that overall, few substances were prescribed to the victims of suspected drug deaths in 2016 in Forth Valley. As such, this data should be interpreted with some caution.

Between January and October of 2016, 10 (24%) of the drug death victims were prescribed an opiate substitute drug at the time of their deaths. This is in line with the prescription rates of 2015, when equally 10 individuals (equating 29% of the total in 2015) had been prescribed a substitute drug at the time of their deaths. Of note here is that the prescription rates of substitute medications were particularly high in the Clackmannanshire area.

With regard to the high incidence of Falkirk deaths involving analgesic medication, gabapentin/pregabalin and/or antidepressant medication, the proportion of these substances prescribed to drug death victims who died in Falkirk is not unusually high (i.e. close to the 59% of total drug deaths occurring in Falkirk).