



Drug Related Deaths Annual Report 2022

Public Health and Health Policy

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Overview of deaths

Key findings:

- There were 183 drug-related deaths recorded in NHS Lothian in 2022, an 8.5% decrease compared to 2021.
- This decrease was driven by a decrease within one area of Lothian (Midlothian) while number of deaths in City of Edinburgh, East Lothian and West Lothian remained the same, or rose slightly.
- There was a 21% decrease in drug related deaths in Scotland over between 2021 and 2022. Note the number of deaths in Lothian is measured using the local definition and the national number using the NRS definition, for a comparison between areas using the NRS

1.1 Methods to ascertain number of drug related deaths in Lothian

Reports of suspected drug-related deaths are received throughout the year, with death reports forwarded by the pathology lab and recorded by the Lothian Drug Related Death Coordinator. The timely reporting of suspected drug-related deaths is valuable to monitor new trends and hotspots. Deaths are recorded to the locality where the person lived at the time of their death, with those of No Fixed Abode (NFA) included in the locality where they were staying at the time of their death. Deaths occurring in prison are categorised separately. There is difference in the definition used for drug-related deaths between NHS Lothian data and National Records of Scotland (NRS) data. NRS data includes deaths only where drugs were listed as the *first* primary cause of death whereas NHS Lothian data includes all primary drug-related deaths. The broader definition used by NHS Lothian capture more individuals and therefore gives a broader picture of individuals experiencing harm from the use of drugs. Further detail on the definitions of drug related deaths is provided in Annexes A, B and C.

1.2 Number of drug related deaths in Lothian

In the calendar year 2022, 183 primary drug-related deaths were recorded in NHS Lothian, this is a decrease of 17 deaths, or 8.5% compared to 2021 when 200 deaths were recorded. This compares to a decrease of 279 deaths, or 21%, nationally between 2021 and 2022, using the NRS definition of drug-related deaths. Numbers of deaths were not seen to change consistently across all four localities within Lothian, with the overall decrease in deaths driven by 17 fewer deaths in Midlothian and 2 fewer deaths taking place in prisons. Deaths in City of Edinburgh, East Lothian, West Lothian and amongst those with no fixed abode all remained the same or rose slightly. Midlothian has historically had a small number of deaths, and while we welcome this local reduction, it cannot be directly attributed to any single change in treatment provision or other circumstances that can be isolated for replication elsewhere. It may therefore be that the decrease in deaths in this area are simply due to random variation. Table 1 provides a breakdown for each locality within Lothian, as well as for the four geographical areas within Edinburgh.

Table 1. Number of primary drug-related deaths by locality in Lothian in 2022 with comparison to 2021, source: NHS Lothian data

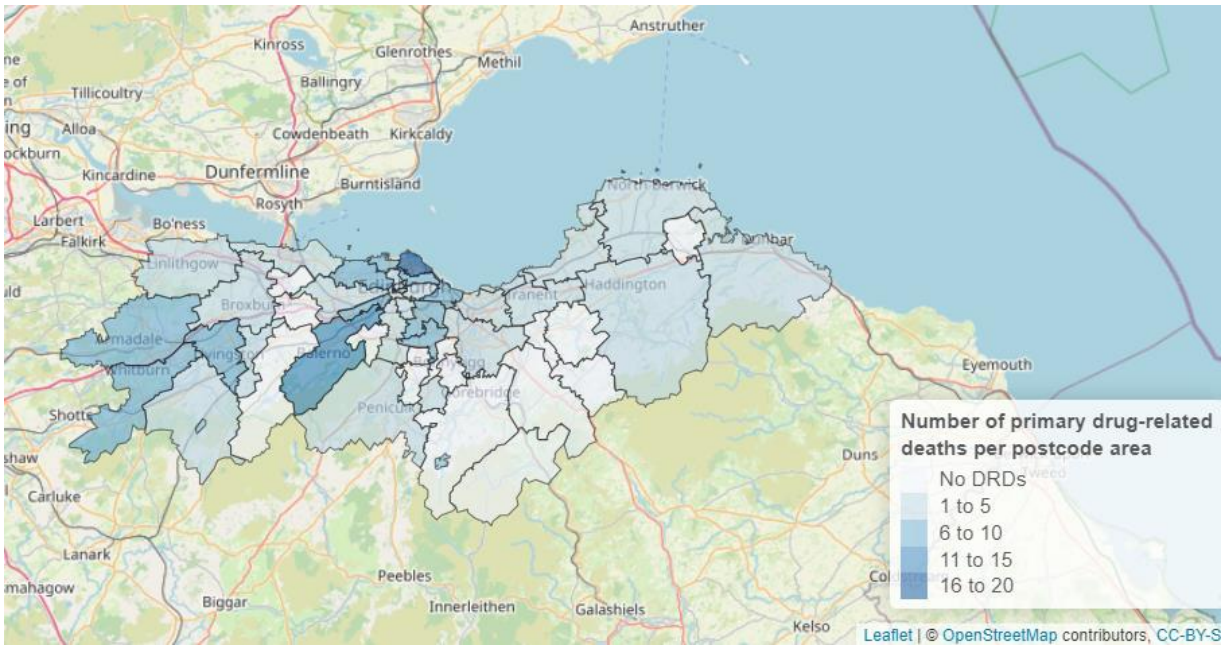
Area	Primary drug-related death 2022	Change 2021 to 2022	Primary drug-related deaths 2021
City of Edinburgh	121	↑	118
Edinburgh North-East	34	↑	32
Edinburgh North-West	25	↑	17
Edinburgh South-East	29	↓	33
Edinburgh South-West	21	↓	27
Edinburgh NFA	12	↑	9
East Lothian	18	↑	16
Midlothian	7	↓	24
West Lothian	35	–	35
HMP Edinburgh & Addiewell	2	↓	4
NHS Lothian	183	↓	200

While there was a slight increase of 3 drug-related deaths in Edinburgh overall, there was a fall in the number of deaths in the South of Edinburgh and an increase in the North, in particular in the North-West locality, containing Drum Brae, Granton, and South Gyle. In East Lothian there was an increase of 2 deaths while the number of deaths remained unchanged in West Lothian.

1.3 Location of drug-related deaths in Lothian

Drug-related deaths in 2022, as in previous years, were spread throughout Lothian. The postcode area with the greatest number of residents suffering from drug-related deaths was EH6 in the North-East locality of Edinburgh encompassing Leith and Newhaven. This was followed by postcode area EH14 in the South-West locality of Edinburgh encompassing Slateford and Wester Hailes and EH4 in the North-West locality of Edinburgh, encompassing Muirhouse. Intermediate datazones are small geographical areas containing a population of between 2,500 and 6,000 household residents. Four intermediate datazones recorded 5 drug-related deaths each. Three of these were located in the City of Edinburgh these include the zones Old Town, Princes Street and Leith Street, Murrayburn and Wester Hailes North, and Moredun and Craigour, with the final intermediate datazone with a high number of deaths being Blackburn in West Lothian.

Figure 1. Map of drug-related deaths in Lothian in 2022 by home postcode of deceased individual, source: NHS Lothian data. Note that deaths where the individual had no fixed abode are not included.



1.4 Trends in drug related deaths in Lothian

In all areas within Lothian deaths have been rising since 2014, however this trend appears to have levelled off in the most recent year.

Figure 2. Primary drug-related deaths in Lothian, 2014 to 2022, source: NHS Lothian data

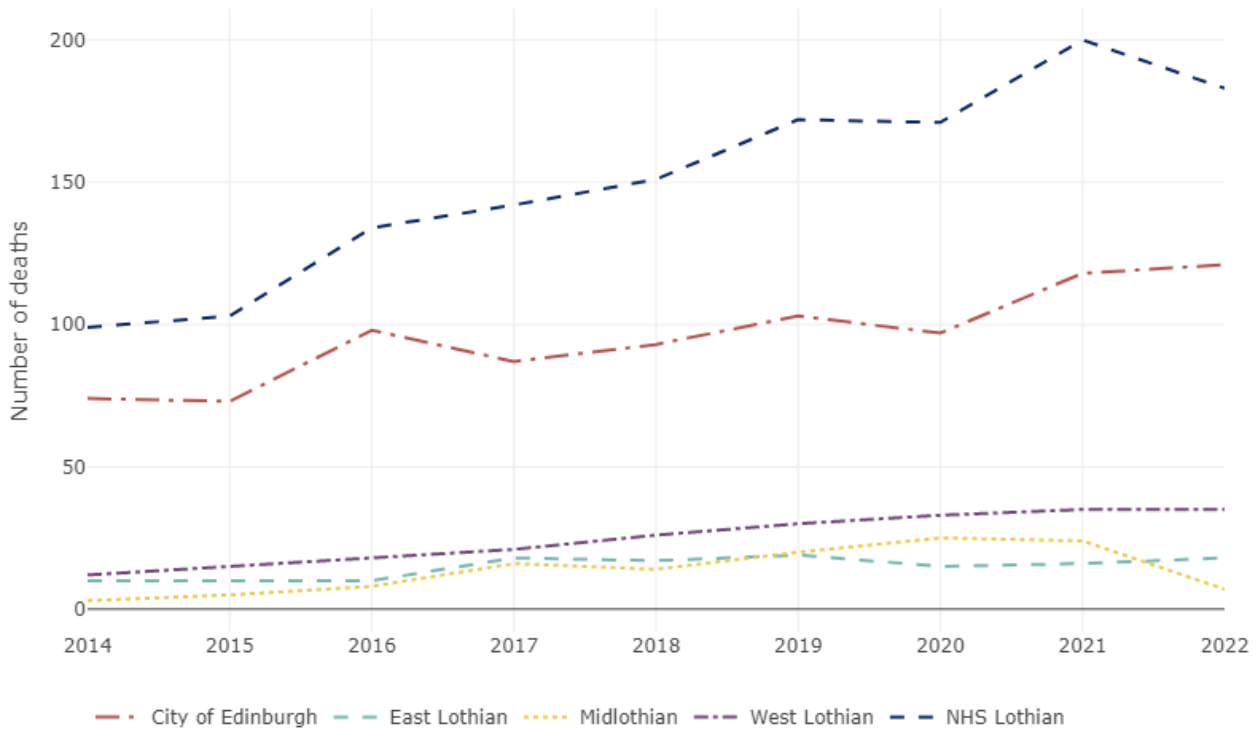
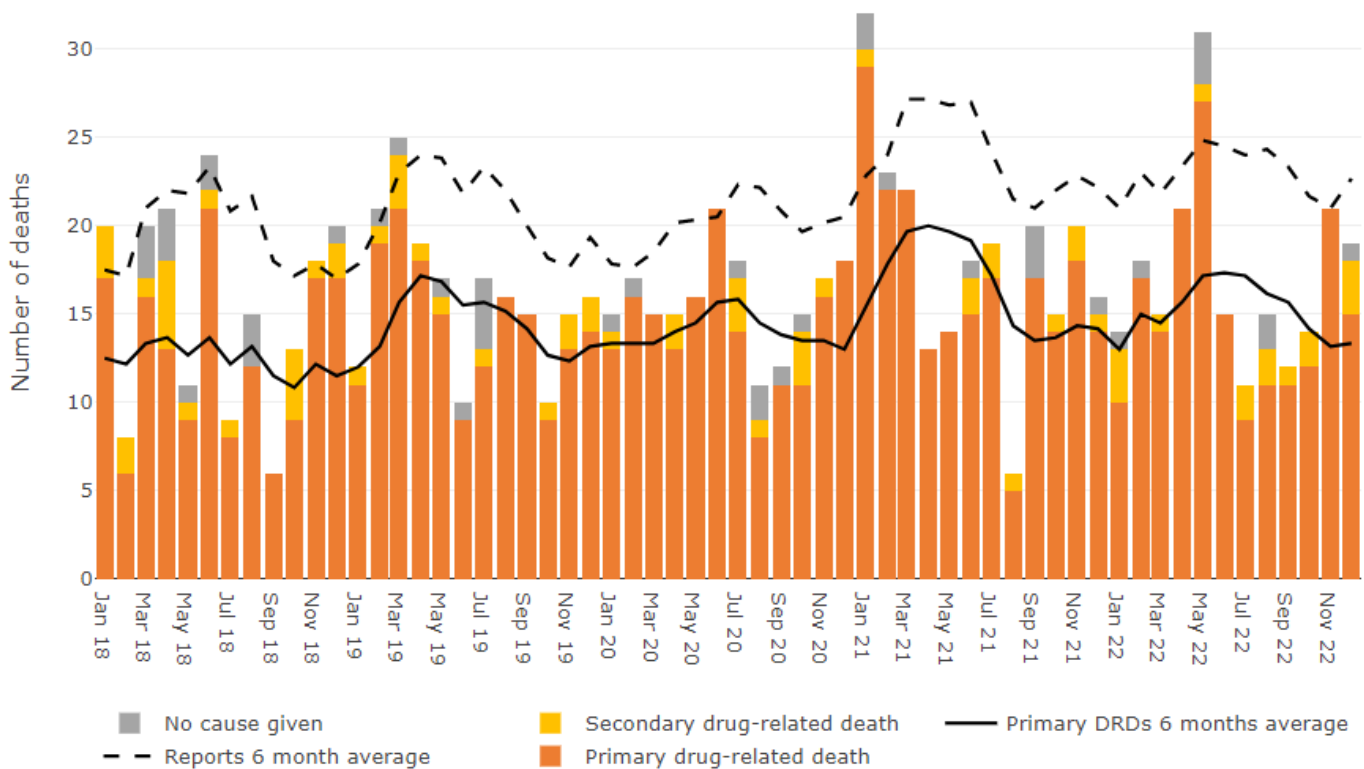


Figure 3 below shows the total number of reports of suspected drug-related deaths received per month and the outcome from January 2018 to December 2022. Note the possible outcomes; primary drug-related death, secondary drug-related death, and no cause given or unascertained. Due to the variable nature of the number of reports and outcomes over the period shown two rolling averages are included. These are the average number of reports received (dashed line) and the average number of primary drug-related deaths over the previous 6 months (solid black line). This smooths out the month-to-month variation to help reveal underlying trends.

Figure 3. Drug-related deaths in NHS Lothian by months: number of reports, outcomes and 6-month average of reports and primary drug-related deaths, between 2018 and 2022, source: NHS Lothian data



1.5 Drug-related deaths by cause of death in Lothian

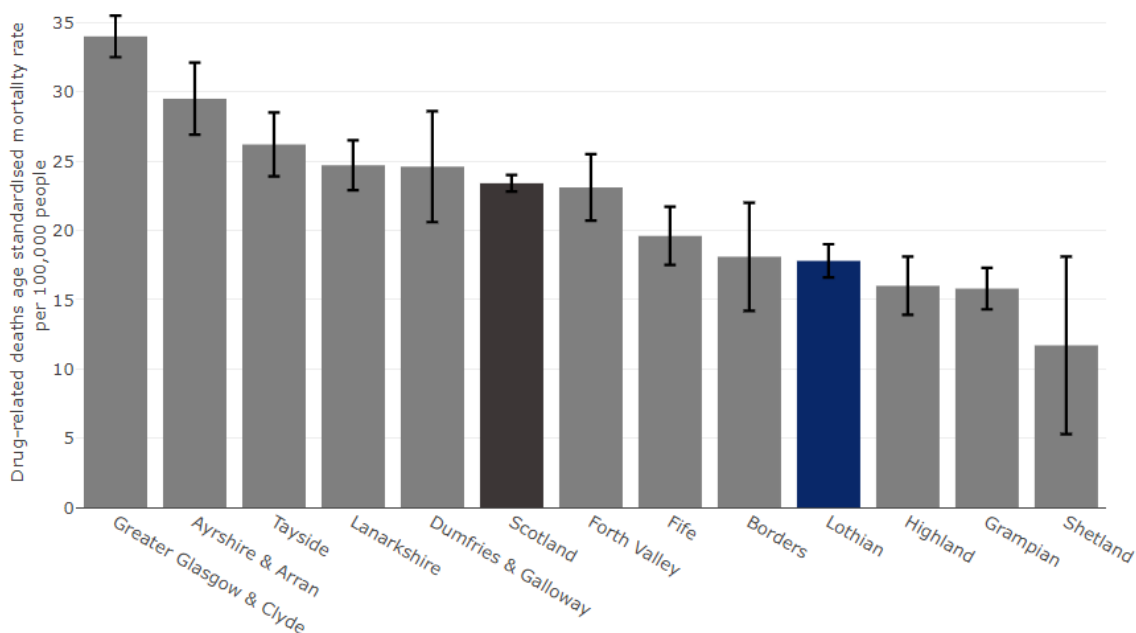
In 2022, in Lothian the majority (83.6%) of drug-related deaths were classified as accidental poisonings, 6.6% of deaths were classified as intentional self-poisoning. This breakdown is similar to national statistics of 89% and 7% respectively. There were a small number of deaths classed as mental and behavioural disorders due to drug use and assault by drugs. Lastly there were a group of deaths which were excluded by NRS (see Annex D) these include deaths coded for example as acute myocardial infarction where cocaine was implicated as playing a role in the death.

1.6 Comparison of drug related death numbers with other areas

In order to make comparisons between health board or local authority areas the definition of a drug-related death from the National Records of Scotland is used (see Annex B, C and D for more details). The rate of drug-related deaths varies substantially between Health Boards across Scotland. Figure 4 below compares age-standardised drug-related deaths per 100,000 people in the period 2018 to 2022. Greater Glasgow and Clyde has

the highest rate of drug-related deaths of all Scottish health boards with 34 deaths per 100,000 people, while Shetland had the lowest rate with 11.7 deaths per 100,000 people, over the period 2018-2022. In Lothian the age-standardised death rate in the period 2018-2022 was 17.8 per 100,000 people compared to the Scotland wide rate of the drug-related death rate was 23.4 per 100,000 people. We know that drug related deaths are more common in areas of higher deprivation, and Lothian's rates being lower than the Scottish average likely reflect the fact the Lothian has lower-than-average levels of deprivation compared to other Health Boards.

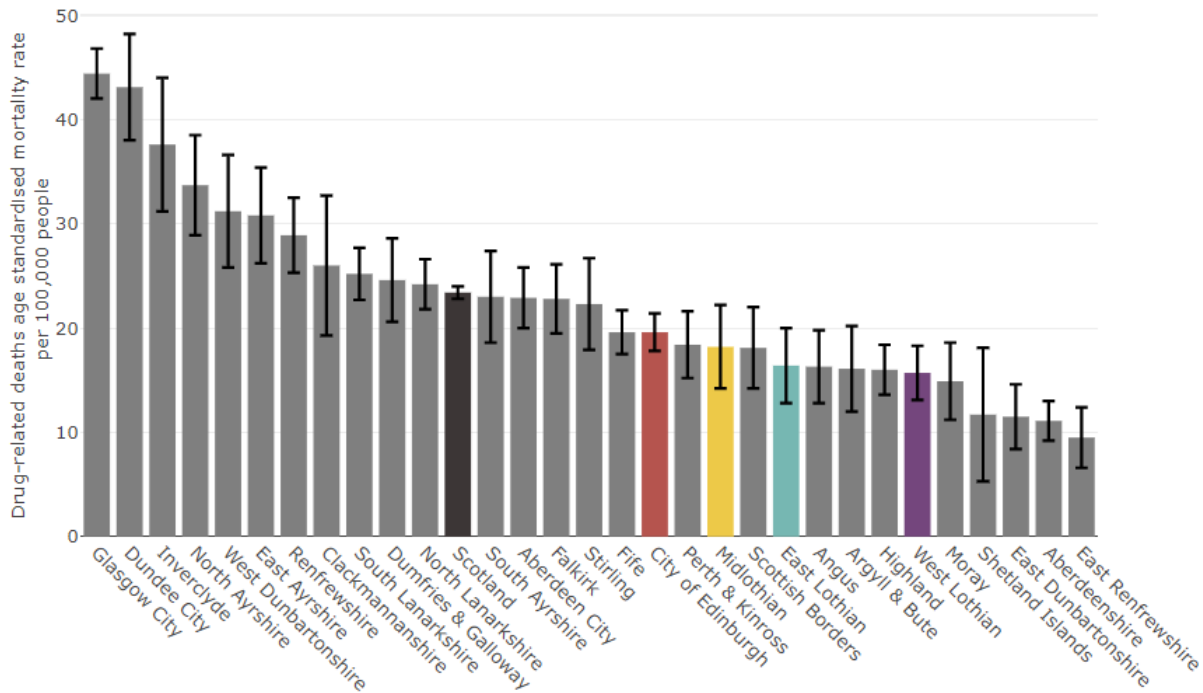
Figure 4. Drug-related deaths for selected NHS Board areas, age-standardised death rate per 100,000 people 2018-2022, source: National Records of Scotland



Source: National Records of Scotland

At a local authority level, between 2018 and 2022 Glasgow City had the greatest number of age-standardised drug-related deaths per 100,000 people at 44.4. Using Scotland as a benchmark with 23.4 age-standardised deaths per 100,000 people in the period 2018-2022, all local authorities in Lothian had a lower rate of age-standardised drug-related deaths than the national rate. Within Lothian, the City of Edinburgh reported the greatest rate of 19.6 age standardised deaths per 100,000 people, this was followed by Midlothian, East Lothian, and West Lothian with rates of 18.2, 16.4 and 15.7 respectively.

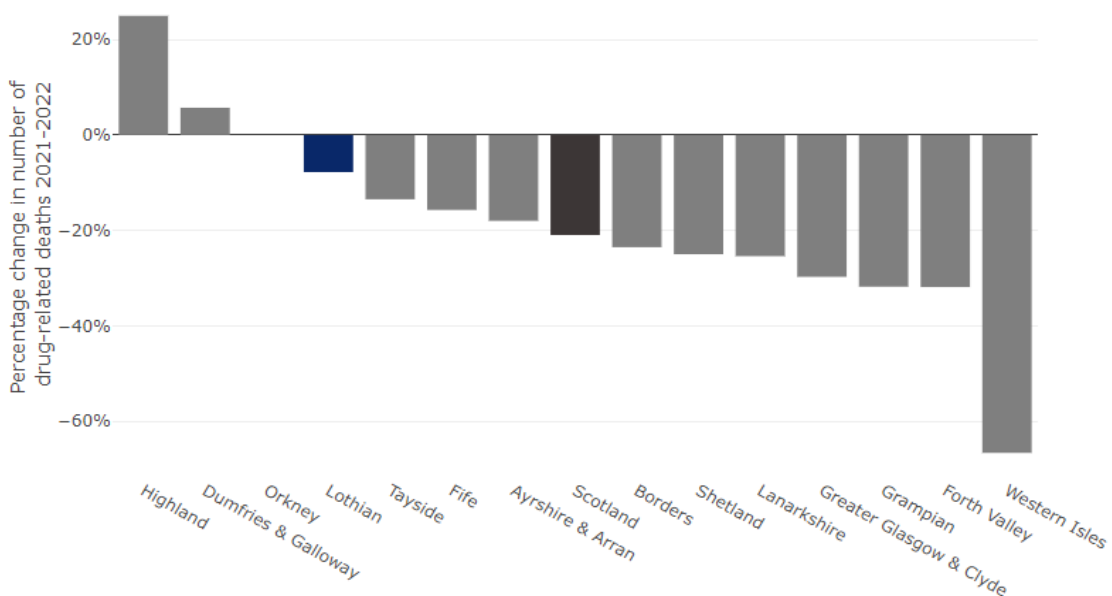
Figure 5. Drug-related deaths for selected council areas, age standardised death rate per 100,000 people 2018-2022, source: National Records of Scotland



Source: National Records of Scotland

In 2022 compared to 2021 there was a 21% decrease in the number of drug-related deaths in Scotland. Lothian recorded a lower decrease than other large health boards, with NRS data showing a 7.8% decrease in drug related deaths compared to decreases in Grampian; Greater Glasgow and Clyde; Lanarkshire: and Tayside of 31.8%; 29.7%; 25.4% and 13.5% respectively.

Figure 6. Percentage change in number of drug-related deaths per NHS Board, 2021-2022, source: National Records of Scotland



Source: National Records of Scotland

Demographics of those who suffered a drug-related death

Key findings:

- Of the 183 drug-related deaths in 2022 69% were male and 31% were female.
- The median age of those that suffered a drug-related death in 2022 was 46.
- People living in the most deprived areas of Lothian were 16 times more likely to die from a drug related death than those living in the least deprived areas.

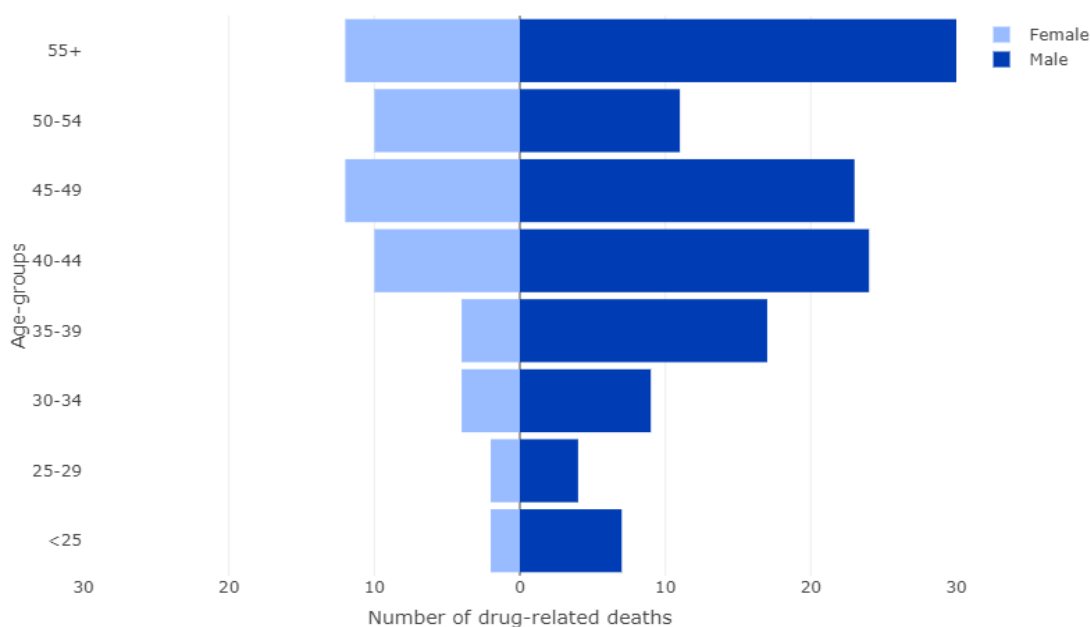
2.1 Sex

Of the 183 primary drug-related deaths recorded in NHS Lothian in 2022, 127 were male (69.4%) and 56 were female (30.6%). This is similar to data from 2021, when 69% of deaths were in males and 31% were in females. It is also similar to national data from National Records Scotland (NRS) where in 2022 65.8% of deaths were in males and 34.2% were in females. This does however represent a change from historical data, which shows that nationally, in the early 2000s, males were four or five times as likely to suffer a drug-related death than females, compared with being twice as likely to suffer a drug related death in 2022.

2.2 Age

In 2022, the age group with the most drug-related deaths was 55+ (44), followed by those aged 45-49 (35), and 40-44 (34), see figure 7 for a full breakdown of the number of deaths per age-group. This breakdown is similar to national statistics where these age groups also had the most deaths in 2022. In Lothian in 2022 there was an overall decrease of 17 deaths compared to 2021, however the decrease was not equally distributed across all age groups, for example there was a decrease of 13 deaths in those age 50-54 but an increase of 13 deaths in those age 55+.

Figure 7. Drug-related deaths in Lothian by age-group and sex 2022, source: NHS Lothian data



The average age of people who died from a drug-related death in Lothian in 2022 was 46, compared to 43.5 in both 2020 and 2021. This remains similar to the national average (using the NRS definition of drug-related deaths) of 45. In Lothian, the average age of females who suffer drug related deaths is slightly older than males.

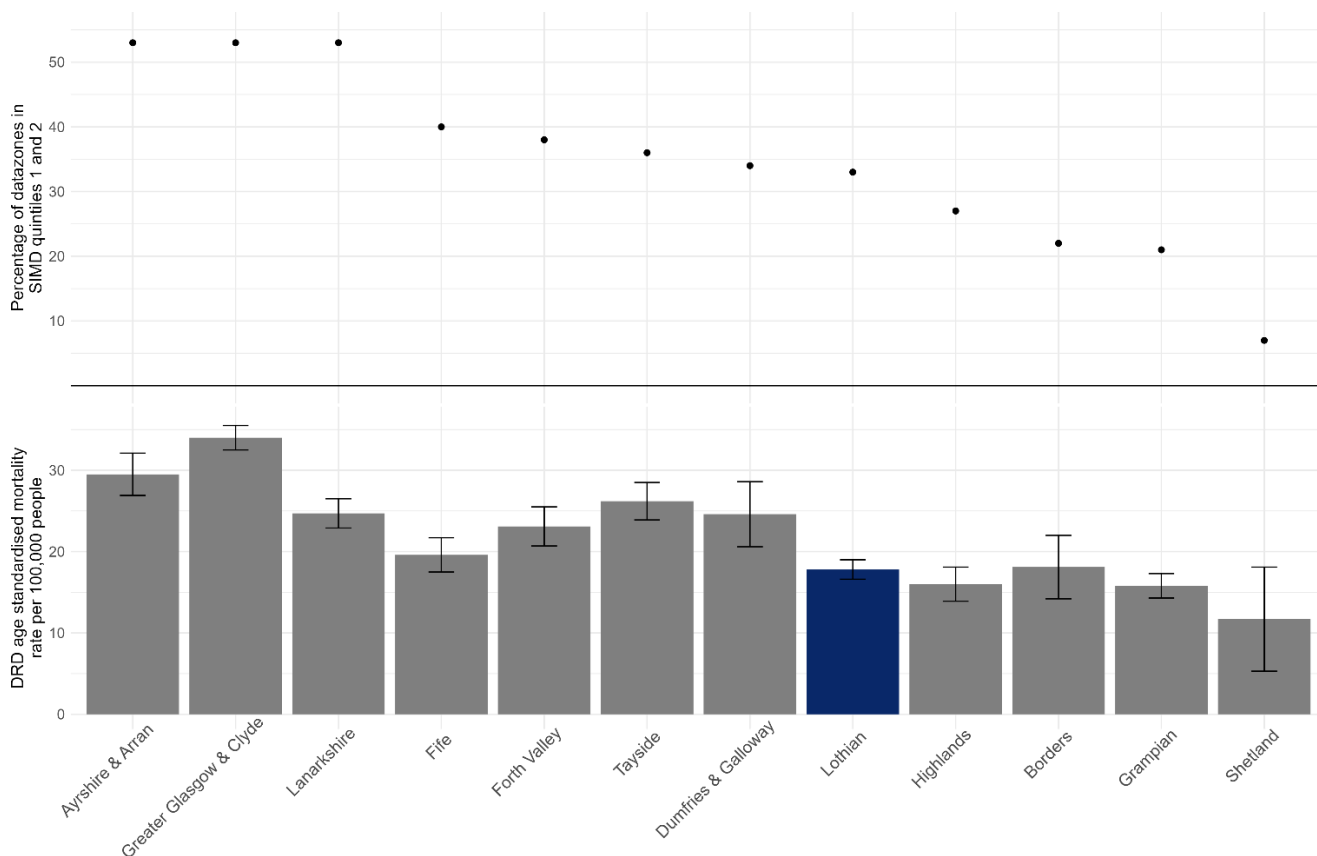
Table 2. Age distribution of drug related deaths in 2022, source: NHS Lothian data

Sex	Number	Mean (years)	Standard deviation	Minimum	Median	Max
Female	56	47.5	12.3	23	46	86
Male	127	45.7	12.1	16	45	79
All	183	46.2	12.2	16	46	86

2.3 Area-level deprivation-level of home postcode

In 2022, after adjusting for age, people in the most deprived geographical areas (SIMD Quintile 1) of Scotland were 15.9 times more likely to die of a drug related death than people in the least deprived areas (SIMD quintile 5). Figure 8 below compares the proportion of datazones per health board in SIMD quintile 1 and 2 to the drug-related death age standardised mortality rate per 100,000 people. The chart shows an overall correlation between boards with a high proportion of datazones in SIMD quintiles 1 and 2, and those with high rates of drug-related deaths. Some Boards, including Ayrshire and Arran; Greater Glasgow and Clyde and Lanarkshire's higher rate of drug related deaths could be potentially explained by the level of deprivation in those Health Boards areas.

Figure 8. Percentage of datazones in SIMD quintile 1 & 2 per health board and drug-related death age standardised mortality rates per 100,000 people 2018-2022, source: Scottish Government and National Records of Scotland



2.4 Ethnicity, disability and other protected characteristics data

Data was not adequately enough recorded on death reports in order to be able to provide any analysis of deaths by ethnicity, disability or other protected characteristics.

2.5 Mental health co-morbidities at time of death

Police and pathology reports for all suspected drug-related deaths were checked for their medical history, however medical history was not available for all deaths. Of those that suffered a drug-related death in 2022 in Lothian, 48% had at least one mental health condition described as part of their medical history in these reports.

Drugs implicated in deaths

Key findings:

- A total of 53 different drugs were implicated in 2022, compared to 46 in 2021
- More than one drug was implicated in the majority of deaths.
- Opioids remain implicated in the largest proportion of deaths (86%), followed by benzodiazepines (67%) and gabapentinoids (51%).
- Prescription drugs were significantly implicated in drug related deaths, but in many cases the drugs were not prescribed to the individual who died.

3.1 Methods to ascertain drugs implicated in deaths in Lothian

Drugs implicated in drugs-related deaths are those listed by the pathologist on the ME4 form. This form is specifically for the pathologist to confirm which drugs they believe were involved in each death. The level of implication of different drugs within each drug related death in Lothian is included in Annex D.

The number of drugs implicated in drug-related deaths varied significantly ranging from 1 to 11 different drugs. The median number of drugs implicated in drug-related deaths remained 4 (the same as in the previous 3 years) from a median of 3 classes of drugs.

3.2 Classes of drugs implicated

Fifteen different classes of drugs and 53 different drugs were implicated in at least one drug-related death in Lothian in 2022, this is compared to 55 in 2019, 42 in 2020, and 46 in 2021. Table 3 below provides a breakdown of the classes of drugs implicated including the number of drugs in each class, the number of deaths implicated in, and the total number of times implicated. Note that three primary drug-related deaths did not have toxicology available and are thus excluded from the following section.

Opioids remain the most commonly implicated class of drugs, implicated in 155 of the 183 primary drug-related deaths. Benzodiazepines are the second most commonly implicated class of drugs, implicated in 121 deaths, followed by gabapentinoids. This is a change from 2020 and 2021 when stimulants were the third most commonly implicated class of drugs.

Table 3. Classes of drugs implicated in primary drug-related deaths in Lothian in 2022, source: NHS Lothian data

Drug class	Number of DRDs implicated in	Percentage of DRDs implicated in	Total times implicated	Number of different drugs
Opioid	155	86.1%	222	11
Benzodiazepine	121	67.2%	192	15
Gabapentinoid	92	51.1%	106	2

Stimulant	82	45.6%	88	4
Anti-depressant	28	15.6%	40	8
Alcohol	17	9.4%	17	1
Atypical antipsychotic	10	5.6%	10	3
Non-benzodiazepine GABAergic	9	5.0%	9	1
NSAID	5	2.8%	5	1
Anti-histamine	4	2.2%	4	2
Beta blocker	4	2.2%	4	1
Anti-nausea	3	1.7%	3	1
Anaesthetic and NMDA receptor antagonist	2	1.1%	2	1
Anti-epileptic	1	0.6%	1	1
Non-opioid analgesic	1	0.6%	1	1
Total	180		704	53

3.3 Overview of commonly implicated drugs

The most commonly implicated drugs in drug-related deaths in 2022 resemble those of previous years with some changes. A full breakdown of the most commonly implicated drugs can be found below in Table 4. Methadone remains the most commonly implicated drug and is the most commonly prescribed form of opioid substitution therapy. Methadone is, however, rarely the only drug implicated in a death.

Benzodiazepines continue to be implicated in a high proportion of drug-related deaths, however the specific benzodiazepines most commonly implicated have continued to change through 2022, with etizolam being largely replaced by bromazolam. Bromazolam is a novel benzodiazepine first detected in Scotland in 2021, which produces strong sedative effects. A Rapid Action Drug Alerts and Response (RADAR) warning was issued by Public Health Scotland in July 2023 in relation to bromazolam. In 2022 there has also been a rise in the gabapentinoid implication in deaths.

Table 4. The most commonly implicated drugs in drug-related deaths in Lothian, source: NHS Lothian data

Drug class	Drug name	Percentage and number of primary drug-related deaths implicated in		
		2022	2021	2020
Opioid	Methadone	50.3% (92)	54.0% (108)	48.8% (84)
Gabapentinoid	Pregabalin	43.2% (79)	32.0% (64)	34.3% (59)
Stimulant	Cocaine	41.0% (75)	43.5% (87)	40.7% (70)
Benzodiazepine	Diazepam	35.0% (64)	30.5% (61)	40.7% (70)
Benzodiazepine	Etizolam	29.5% (54)	50% (100)	41.3% (71)
Opioid	Heroin derived morphine	18.6% (34)	27.5% (55)	16.9% (29)
Gabapentinoid	Gabapentin	14.8% (27)	9% (18)	15.7% (27)
Opioid	Morphine	14.2% (26)	13.5% (27)	9.9% (17)
Benzodiazepine	Bromazolam	11.5% (21)	-	-

3.4 Opioids

Opioids remain the most commonly implicated class of drugs, implicated in 155 of the drug-related deaths in Lothian in 2022, with 222 implications in total. A full breakdown of the opioids implicated in primary drug-related deaths can be found below in table 5 below. Methadone and buprenorphine are the two most frequently prescribed drugs in opioid substitution therapy, however they are not always prescribed to the person whose death they are implicated in. A full breakdown of the prescription drugs implication in drug-related deaths can be found Section 3.9, below.

In 2021 there was an increase in the number of deaths involving heroin compared to previous years, the number of implications for heroin in 2022 has fallen to above that of 2020. National Record of Scotland (NRS) data combines heroin and morphine into one drug 'heroin/morphine', resulting in a reduction in the granularity around this data at national level. Morphine implications have remained similar to previous years. There was an increase in codeine implications compared to 2021. One death in Lothian had the synthetic opioid protonitazene implicated.

Table 5. Opioids implications in 2022, source: NHS Lothian data

Drug name	Percentage (number) of primary drug-related deaths implicated in		
	2022	2021	2020
Methadone	50.3% (92)	54% (108)	48.8% (84)
Heroin derived morphine	18.6% (34)	27.5% (55)	16.9% (29)
Morphine	14.2% (26)	13.5% (27)	9.9% (17)
Dihydrocodeine	10.9% (20)	12% (24)	12.2% (21)
Codeine	9.3% (17)	5.5% (11)	2.9% (5)
Tramadol	9.3% (17)	6% (12)	8.1% (14)
Buprenorphine	6.0% (11)	9% (18)	8.7% (15)
Oxycodone	1% (2)	3% (6)	4.1% (7)
Tapentadol	0.5% (1)	-	-
Fentanyl	0.5% (1)	1% (2)	1.7% (3)
Protonitazene	0.5% (1)	-	-
Total	222	262	195

3.5 Benzodiazepines

Fifteen different benzodiazepines were implicated in drug-related deaths in 2022, an increase on the 11 implicated in 2021. Table 6 below provides a breakdown of the benzodiazepines and other drugs acting in a similar manner, along with their level of implication. Benzodiazepines were only implicated along with other drugs, however their inclusion potentially furthered the depressant effects of opioids and gabapentinoids, making drug-related death more likely than if only opioids or gabapentinoids had been taken.

Table 6. Benzodiazepines and GABAergic, and anti-epileptic drug implications in 2022, source: NHS Lothian data

Drug class	Drug name	Percentage (number) of primary drug-related deaths implicated in		
		2022	2021	2020
Benzodiazepine	Diazepam	35.0% (64)	30.5% (61)	40.7% (70)
	Etizolam	29.5% (54)	50.0% (100)	41.3% (71)
	Bromazolam	11.5% (21)	-	-
	Flubromazepam	8.2% (15)	2.0% (4)	-
	Alprazolam	4.4% (8)	3.5% (7)	2.3% (4)
	Flualprazolam	3.8% (7)	1.0% (2)	3.5% (6)
	Clonazolam	2.7% (5)	4.0% (8)	-
	Phenazepam	2.2% (4)	-	5.8% (10)
	Clonazepam	2.2% (4)	3.5% (7)	0.6% (1)
	Temazepam	1.6% (3)	-	-
	Midazolam	1.1% (2)	-	-
	Lorazepam	1.1% (2)	1.0% (2)	0.6% (1)
	Nitrazepam	0.5% (1)	1.0% (2)	-
	Flubromazolam	0.5% (1)	4.5% (9)	3.5% (6)
	Chlordiazepoxide	0.5% (1)	-	0.6% (1)
Non-benzodiazepine GABAergic	Zopiclone	4.9% (9)	-	2.3% (4)
Anti-epileptic	Lamotrigine	0.5% (1)	3% (6)	0.6% (1)

Diazepam was the most commonly implicated benzodiazepine in 2022. Etizolam continued to be commonly implicated in drug-related deaths in 2022 before bromazolam became commonly implicated towards the end of the 2022, a trend which has continued in 2023. Other benzodiazepines such as flubromazepam, alprazolam, and flualprazolam were implicated in small numbers throughout the year.

Public Health Scotland (PHS) has proposed that drug related deaths should be categorised to distinguish between those in which 'prescribable' and / or 'street benzodiazepines' are implicated (see Annex E). Prescribable benzodiazepines are benzodiazepines (or metabolites thereof) which are licenced for prescription in the UK, while street benzodiazepines (or metabolites thereof) are not licensed for prescription in the UK or thought to have originated from an illicit source (due to low overall prescribing in Scotland). Of the 192 benzodiazepines implicated in primary drug-related deaths in Lothian, 77 were prescribable and 115 could be classified as street benzodiazepines. Using national data from NRS, Lothian recorded the highest rate of prescribable benzodiazepines implicated in drug related deaths amongst all health boards, with prescribable benzodiazepines implicated in 38% of deaths, compared to the national rate of 18%. Lothian recorded a lower rate of street benzodiazepine implications than the national rate, at 45.2% vs 48.1%. It is important to note that not all prescribable drugs were prescribed to the person whose death they were implicated in. More information is provided on prescription drugs in Section 3.9, below.

3.6 Gabapentinoids

Implications of both pregabalin and gabapentin have increased in 2022 after remaining stable in previous years. Gabapentinoids remain an important contributor to multi-drug deaths due to their depressant effects. Gabapentinoids are less frequently prescribed than other prescription medications implicated in drug related deaths in Lothian, however the rate of gabapentinoid implications in drug-related deaths is higher in Lothian at 51.2% of deaths (based on data from NRS) than other comparable health boards for example Greater Glasgow and Clyde and Lanarkshire at 31.7% and 27.4% respectively.

Table 7. Gabapentinoids implications in 2022, source: NHS Lothian data

Drug name	Percentage (number) of primary drug-related deaths implicated in		
	2022	2021	2020
Pregabalin	43.2% (79)	32% (64)	34.3% (59)
Gabapentin	14.8% (27)	9% (18)	15.7% (27)

3.7 Stimulants

Stimulants are often contributors to multi-drug drug related deaths, however they also have a higher prevalence of being the sole drug implicated in a drug-related death which includes another underlying pathology such as ischaemic heart disease. The chronic use of stimulants is also known to cause heart disease. There has been a slight decrease in the number of deaths in which cocaine was implicated (75 in 2022, compared to 87 in 2021 87). The number of deaths in which other stimulant drugs such as amphetamine, MDMA and methamphetamine has remained unchanged. Table 8 below provides a breakdown of stimulants implicated in primary drug-related deaths in 2022.

Table 8. Stimulant implications in 2022, source: NHS Lothian data

Drug name	Percentage (number) of primary drug-related deaths implicated in		
	2022	2021	2020
Cocaine	41.0% (75)	43.50% (87)	40.7% (70)
Amphetamine	4.4% (8)	3.50% (7)	6.4% (11)
MDMA (ecstasy)	2.2% (4)	1.50% (3)	7.0% (12)
Methamphetamine	0.5% (1)	0.50% (1)	1.2% (2)

3.8 Alcohol

Due to its depressant effects, alcohol can exacerbate the effects of other depressant drugs such as benzodiazepines and opioids. Alcohol is recorded as being implicated in drug related deaths in conjunction with other drugs, however deaths solely related to alcohol are captured in separate [national statistics on alcohol-specific deaths](#). The level of implications of alcohol has remained similar to previous years.

Table 9. Alcohol implications in 2022, source: NHS Lothian data

Drug name	Percentage (number) of primary drug-related deaths implicated in		
	2022	2021	2020
Alcohol	9.3% (17)	11% (22)	15.1% (26)

3.9 Prescription drugs

Methadone is the most common prescription drug implicated in drug-related deaths. The proportion of methadone prescribed to the person whose death it was implicated in has remained stable since 2020 at around 65%. It is important however to note that a person being in receipt of a prescription for methadone does not necessarily mean that it was taken in the prescribed dosage. Other prescription opioids such as dihydrocodeine, codeine and buprenorphine are frequently prescribed to those whose death they were implicated in.

The gabapentinoids pregabalin and gabapentin are commonly not prescribed to the person whose death they are implicated in, with a prescription rate of 22% and 30% respectively. Diazepam, while not considered a street benzodiazepine, was found only to be prescribed to a third of those whose deaths it was implicated in.

Table 10. Prescription drugs implications in 2022, source: NHS Lothian data

Drug name	Total implications	Prescribed to the individual whose death it was implicated in	Prescribed to another individual	Unknown	% Prescribed to the individual whose death it was implicated in
Methadone	92	59	33		64%
Pregabalin	79	17	61	1	22%
Diazepam	64	22	41	1	34%
Gabapentin	27	8	18	1	30%
Morphine	26	4	22		15%
Dihydrocodeine	20	8	11	1	40%
Tramadol	17	10	7		59%
Amitriptyline	17	7	8	2	41%
Codeine	17	6	11		35%
Buprenorphine	11	3	8		27%
Mirtazapine	10	9	1		90%
Zopiclone	9	4	5		44%
Quetiapine	4	4			100%
Olanzapine	4	2	1	1	50%
Sertraline	3	2		1	67%
Cyclizine	3		3		0%
Temazepam	3		3		0%
Fluoxetine	3	2	1		67%
Citalopram	3	2	1		67%
Promethazine	3	1	1		33%

Social circumstances at time of death

Key findings:

- 35% of those that died of a drug-related death in 2022 were in contact with substance use services at the time of their death.
- 15% had experienced a previous non-fatal overdose.
- 16% had experienced recent contact with police custody.
- 82% lived in non-temporary accommodation.
- 57% lived alone.
- 19% had children under the age of 16.
- 48% had a mental health condition recorded in their police or pathology report.

4.1 Contact with substance use services

All drug-related deaths were checked for their contact with services in NHS Lothian only, including substance use services and the General Practitioner National Enhanced Service (GP-NES). A person was deemed as currently in contact with substance use services if they had not been discharged from the service. For GP-NES, where patients are never 'discharged', two data sources were used: records of appointments and prescription data. Persons with a history of GP-NES registration were classified as currently in contact with the service if they had an appointment or a prescription in the 60 days prior to their death. Table 11 below shows the service status for all primary drug-related deaths in Lothian in 2022.

Table 11. Number of drug-related deaths by status and engagement with substance use services – days since contact, source: NHS Lothian data

Service and status	Number of persons	Percentage of persons
Substance use service – in service at time of death	35	19.1%
Substance use service – discharged within 60 days of death	7	3.8%
Substance use service – discharged within 61 to 365 days of death	5	2.7%
Substance use service – discharged within > 1 year of death	19	10.4%
GP-NES – last contact with service within 60 days of death	29	15.8%
GP-NES – last contact within 61 to 365 days of death	17	9.3%
GP-NES > 1 year of death	11	6.0%
No known contact	60	32.8%
Total	183	

Over a third (34.9%) of those who suffered a drug-related death were in current contact (not discharged from substance use service or having been seen by GP-NES within the past 60 days at the time of their death). This is in keeping with the level seen in 2020 and 2021 36% and 37% respectively. A further 16% (29 persons) who suffered a drug-related death in 2022 were in contact with services in the year prior to their death, this is also similar to the level seen in 2021. Around a third, 33% (60 persons) had no history of contact with substance use services, which is similar to the level seen in 2021, but a decrease on the 53% of drug-deaths in Lothian that had no history of contact with services in 2020.

Males that died of a drug-related death were marginally more likely than females to be in contact with services at the time of their death – 37% versus 30.3% respectively. This mirrors the pattern of caseload of substance use services, with 64.3% of the caseload being male and 35.7% female. The younger age group 35-44 was the most likely to be in contact with services (GP-NES or substance use service) at the time of their death, followed by those aged 45 to 54, at 52.8% and 36.2% respectively. This also mirrors the demographics of the substance use service's caseload, with 70% of their caseload made up of those in the age-groups 35-44 and 45-54.

4.2 Previous non-fatal overdoses

Three data sources are used to determine previous non-fatal overdoses (NFO) in Lothian. This includes any mention in either police or pathology reports as well as the NHS Lothian dataset of near-fatal overdoses, which contains data from the Scottish Ambulance service (SAS) and TRAK (NHS Lothian patient records). Recent near-fatal overdoses are defined as having occurred within 6-months prior to death, as per the definition is used in national drug-related death reporting.

In 2022, 27 (15%) of those who died of a drug-related death in Lothian had a recent near-fatal overdose record, this compares to 19% in 2021. A small number, 8 (4.4%) of those who had a recent near-fatal overdose were in contact with services at the time of their death. Around a fifth, 21 (78%) of those who had a previous NFO recorded were male and 6 (22%) were female. Thirteen of those who died of a drug-related death had multiple previous near-fatal overdoses recorded.

Under the Medication Assisted Treatment (MAT) Standard 3 each drug treatment service should provide assertive outreach to those categorised as high risk of drug-related harm, including those who have experienced a near-fatal overdose. The decrease in the proportion of those who died from drug related deaths following a previous NFO may indicate that assertive outreach is helping to prevent those who experience an NFO from going on to experience fatal overdose.

4.3 Previous contact with police custody

Police reports for each person who suffered a drug-related death were checked to ascertain if individuals had had a recent (within 6-months prior to death) record of police custody. In 2022, 29 (15.9%) of those that suffered a drug-related death had recently been in police custody, compared to 22% in 2021. Males were more likely than females to have a record of recent police custody prior to their death. The decrease in the proportion of those who died from drug related deaths following a recent record of police custody may

indicate that work within the criminal justice system is helping to prevent those who come into contact with the system from going on to experience fatal overdose.

4.4 Housing circumstances at time of death

The majority (82%) of those that died of a drug-related death in Lothian in 2022 lived in non-temporary accommodation. Non-temporary accommodation is defined as owned, privately rented, rented from a housing association or council, note that someone living long term with their parents or family is included here. Twenty (10.9%) of those that died lived in temporary accommodation defined as bed and breakfasts and hostels, ‘sofa surfing’ or staying short-term with friends or family. Eight people were defined as having no-fixed abode¹. Additionally, 3 people were living in supported accommodation at the time of their death, defined as accommodation for those with extra care needs with support staff. Two people died of a drug-related death while in prison.

Table 12. Accommodation status, source: NHS Lothian data

Accommodation type	Number of persons	Percentage
Non-temporary	150	82%
Temporary	20	10.9%
No fixed abode (NFA)	8	4.4%
Supported accommodation	3	1.6%
Prison	2	1.1%

4.5 Immediate circumstances at time of death

Understanding the immediate circumstances of drug related deaths is crucial given the success of interventions such as Take Home Naloxone (THN). Unfortunately, the vast majority of those that died of a drug related death in Lothian in 2022 were found dead (88%), meaning there was no opportunity for the person who found them to administer an intervention such as naloxone. This is in keeping with findings from previous years.

More than half (57%) of those that died of a drug related death lived alone, which is an increase on the 49% in 2021. Around half (48%) of those who died of a drug related death were alone within a property at the time of death, while two-thirds (68%) of those were alone in the room where they died. Two-thirds (68.9%) were found in their own homes, consistent with previous years. Others who died from drug related deaths were found in other’s home (15.3%) or their own room in temporary accommodation (7.1%). Relatively few deaths were outside (4.4%) or in other locations. Table 13 below provides a breakdown of the immediate circumstances at time of death for death where opioids were implicated, given the potential for overdose reversal with naloxone.

¹ Note that while 12 people were recorded as having No Fixed Abode (NFA) (Table 1). On further investigation of individuals’ housing status 8 were believed to be sleeping rough or to have no additional information, while 4 were staying in temporary accommodation or temporarily with a friend.

Table 13. Immediate circumstances at time of death for deaths with opioids implicated, source: NHS Lothian data

	Yes	No	Unclear/ Unknown	Other	% Yes
Found dead	139	12	4	0	89%
Lived alone	89	52	4	10	57%
Alone in property at time of death	71	65	9	10	46%
Alone in room at time of death	99	39	1	16	64%

4.6 Family circumstances at time of death

The majority of those that suffered a drug-related deaths were found by their partner (24.6%), friends (24%), or family (16.4%). However, there were a number of deaths discovered by “others” (18.6%) which include hostel and accommodation staff, strangers, and the police including welfare checks (15.3%).

Not all of those who died of a drug-related death had complete family information available. Of those who had this information available 19% were known to have children under the age of 16. Of these, 10 had children living with them at the time of their deaths and 4 drug-related deaths occurred with children present. Additionally, 28 of those who suffered a drug-related death in Lothian had a young-person aged 16 to 25, of which 6 lived with them and 3 were present at the time of the death. Note that data is collected in line with the National Drug Related Death Database (NDRDD) in which children are defined as under 16. NHS Lothian otherwise classifies children as those aged under 18.

Conclusions and recommendations

Overall drug related deaths reduced in Lothian between 2021 and 2022, however the reduction was driven by a reduction in one local authority area (Midlothian). While we welcome this local reduction, and its contribution to an overall reduction in drug related deaths in Lothian, the reduction cannot be directly attributed to any single change in treatment provision or other circumstances that can be isolated for replication elsewhere. It is known that drug related deaths are significantly patterned by deprivation. The fact that deaths from drug use have not continued to rise in Lothian, despite the increased pressure that we know our population are facing from the cost of living crisis, should be viewed positively. However we need to acknowledge that drug related deaths in Lothian have not reduced by the same extent as other large Health Boards in Scotland, or the Scotland average. We must continue to work to fully implement the MAT Standards, while also recognising that MAT Standard implementation alone is unlikely to be enough. The additional work that Lothian's three ADPs will commit to as part of their new strategies from 2024, aligned with the priority areas set out in the National Mission on Drugs, will be crucial.

Looking at Lothian data specifically we see that men continue to account for around two-thirds of drug related deaths, with the average age at which deaths occurred remaining relatively stable over time. Poor recording of data on ethnicity, disability and other protected characteristics means we don't have a full demographic picture of those who are suffering from drug-related harms and / or being helped or missed by our interventions. We need to improve data collection of these demographics and ensure services continue to be accessible and acceptable to all.

The fact that opioids are implicated in 85% of deaths, reinforces the importance of the full implementation of the MAT Standards, which focus particularly on the provision of opioid substitution therapy. However with benzodiazepines implicated in 67% of deaths we need to ensure we are supporting harm reduction in all people who use drugs, including through the cascade of relevant RADAR alerts to provide information to services and service users on the risks of novel substances. We also recognise the number of prescription drugs involved in deaths, including the fact that in many cases these drugs were not prescribed to the individual who died from using them. There is potential for medicines management work to be undertaken in this area, to reduce the extent to which individuals have access to excess or non-prescribed supplies of prescription drugs.

We have seen a slight decrease in the number of drug related deaths where an individual has previously suffered from a recorded NFO, as well as a slight decrease in the number of deaths where an individual was in contact with police custody within the six months prior to their death. This may be a sign of the success of assertive outreach work and work within the criminal justice system means more people who come into contact with services in these ways are being supported to avoid future drug related deaths.

We know that most people who suffer drug related deaths are living in non-temporary accommodation, and that most people die at home, many of whom live alone and / or are alone in their property or room at the time of death. Few people die in public places, meaning there are not obvious public 'hotspots' for us to tackle. We must therefore continue to find ways to engage with those living within stable, as well as temporary,

accommodation and continue to emphasise the important harm reduction messages of encouraging people who use drugs to avoid doing so alone and to carry naloxone to be able to help reverse the effects of opioid overdose. Continued work to explore options to support safer drug consumption may also help to address these deaths.

We know that many of those who die have children and that some are found by children. We must therefore continue our work to support children and families bereaved by drug deaths as well as ensuring that substance use services fulfil public protection duties in asking about family circumstances of service users to identify children or young people in need of support at the earlier possible opportunity.

We are aware that Scottish Government and Public Health Scotland are currently conducting a review of best practice processes in reviewing drug related deaths, and we welcome future national guidance to ensure our work to review drug related deaths is as impactful as possible.

Recommendations

1. Alcohol and Drug Partnerships and Health and Social Care Partnerships in Lothian should continue to implement the MAT Standards, including ensuring they benefit non-opioid, as well as opioid users.
2. Alcohol and Drug Partnerships in Lothian should use learning from the areas in Scotland that saw the greatest reduction in drug related deaths to influence future work in Lothian.
3. Substance use services in Lothian should work to improve data collection on the protected characteristics of those in contact with them and ensure that services are accessible and acceptable to all demographics.
4. NHS Lothian's public health directorate should continue to monitor real-time suspected drug death reports, and to facilitate two-way sharing of information with Public Health Scotland, to identify and cascade information on risks from novel substances.
5. NHS Lothian's pharmacy directorate should explore opportunities to strengthen current activity around prescribing and medicines utilisation review, to support safe, appropriate and effective use of medicines and contribute to ambitions to reduce harm in the context of drug related deaths.
6. NHS Lothian's public health directorate, analytical services and alcohol and drug partnerships should ensure the continuation of work to identify vulnerable individuals and provide assertive outreach work to support them, including those who have experienced a non-fatal overdose and / or come into contact with police custody.
7. All services that work with people who use drugs should continue to promote harm reduction messages that encourage individuals to avoid being alone when taking drugs and to carry naloxone in order to reverse the effects of opioid overdose, including through the extension of community pharmacy provision of take-home naloxone to East, West and Midlothian.
8. Edinburgh Alcohol and Drug Partnership should continue work to explore potential options for safer drug consumption facilities in Lothian.
9. Alcohol and Drug Partnerships in Lothian should continue work to identify and support the children and families of substance users and those bereaved by drug related deaths.
10. NHS Lothian's public health directorate should await the publication of the Scottish Government and Public Health Scotland review of drug death review processes and implement relevant recommendations.

Annex A. NHS Lothian Drug-related death definition

Drug-related deaths in NHS Lothian are reported according to the cause of death as given by the pathologist in the detailed pathology and toxicology examination of deaths that are suspected to be drug related. These are classified into four possible overall outcomes:

Primary drug-related death:

A death in which controlled substances are included in lowest line of the primary cause of death. These are the causes that are directly related to death. It is possible that non-drug causes may also be included in that line such as ischaemic heart disease.

Secondary drug-related death:

A death in which controlled substances are included in the secondary cause of death (if one is present) but not in the primary cause of death. This secondary cause may include specific drugs or evidence that chronic drug abuse has contributed to death, although not directly.

Unascertained:

In these cases, no cause of death can be determined by the pathologists with any degree of certainty and the primary and only cause of death is "1a Unascertained". It is possible that drugs were detected in some, but this is not adequate to show how they or other causes might have been implicated.

Not a drug-related death:

In these cases, whilst a police report of a suspect drug related death was received, a cause not involving controlled substances has been determined to be the cause(s) of death, primary and where present) secondary.

Annex B. NRS definition of drug-related deaths

A2. The definition

Drug misuse deaths are defined as follows: (the relevant ICD10 codes are given in brackets):

a) deaths where the underlying cause of death has been coded to the following subcategories of 'mental and behavioural disorders due to psychoactive substance use':

- (i) opioids (F11);
- (ii) cannabinoids (F12);
- (iii) sedatives or hypnotics (F13);
- (iv) cocaine (F14);
- (v) other stimulants, including caffeine (F15);
- (vi) hallucinogens (F16); and
- (vii) multiple drug use and use of other psychoactive substances (F19).

b) deaths coded to the following categories and where a drug listed under the Misuse of Drugs Act 1971) was known to be present in the body at the time of death (even if the pathologist did not consider the drug to have had any direct contribution to the death):

- (i) accidental poisoning by and exposure to drugs, medicaments and biological substances (X40 – X44);
- (ii) intentional self-poisoning by and exposure to drugs, medicaments and biological substances (X60 – X64);

- (iii) assault by drugs, medicaments and biological substances (X85); and
- (iv) poisoning by and exposure to drugs, medicaments and biological substances, undetermined intent (Y10 – Y14).

A3. Deaths which are excluded

The NRS implementation of the definition excludes a small proportion of the deaths which were coded to one of the ICD10 codes listed in Section A2, specifically:

- deaths coded to drug abuse where the direct cause of death was secondary infections or later complications of drug use. The statistics therefore exclude deaths from:
 - secondary infections such as clostridium or anthrax infection resulting from the injection of contaminated drugs:
 - conditions which could be regarded as later complications of drug use, such as bronchopneumonia, lobar pneumonia, bilateral pneumonia, septicaemia or organ failure where drug misuse was not specified as the direct and immediate cause of death (even though it may have damaged greatly the person's health over the years - so reference to, for example, 'chronic' or 'long-term' drug abuse does not necessarily mean that it was the direct and immediate cause of death).
- deaths where a drug listed under the Misuse of Drugs Act was likely to be present only as part of a compound analgesic or cold remedy. For this purpose, identified the following compound analgesics and cold remedies when producing its statistics:
 - for 2018 and earlier years:
 - Co-codamol (paracetamol and codeine sulphate);
 - Co-dydramol (paracetamol and dihydrocodeine);
 - Co-proxamol (paracetamol and dextropropoxyphene); and
 - Dextropropoxyphene alone (as explained below).
 - for 2019 onwards:
 - Codeine and aspirin (co-codaprin);
 - Codeine and brompheniramine maleate;
 - Codeine and dextropropoxyphene;
 - Codeine and diphenhydramine hydrochloride;
 - Codeine and ibuprofen;
 - Codeine and paracetamol (co-codamol, as before);
 - Dextropropoxyphene and paracetamol (co-proxamol, as before);
 - Dextropropoxyphene alone (as before, as explained below);
 - Dihydrocodeine and aspirin;
 - Dihydrocodeine and dextropropoxyphene;
 - Dihydrocodeine and paracetamol (co-dydramol, as before);
 - Pholcodine;
 - Tramadol and paracetamol;

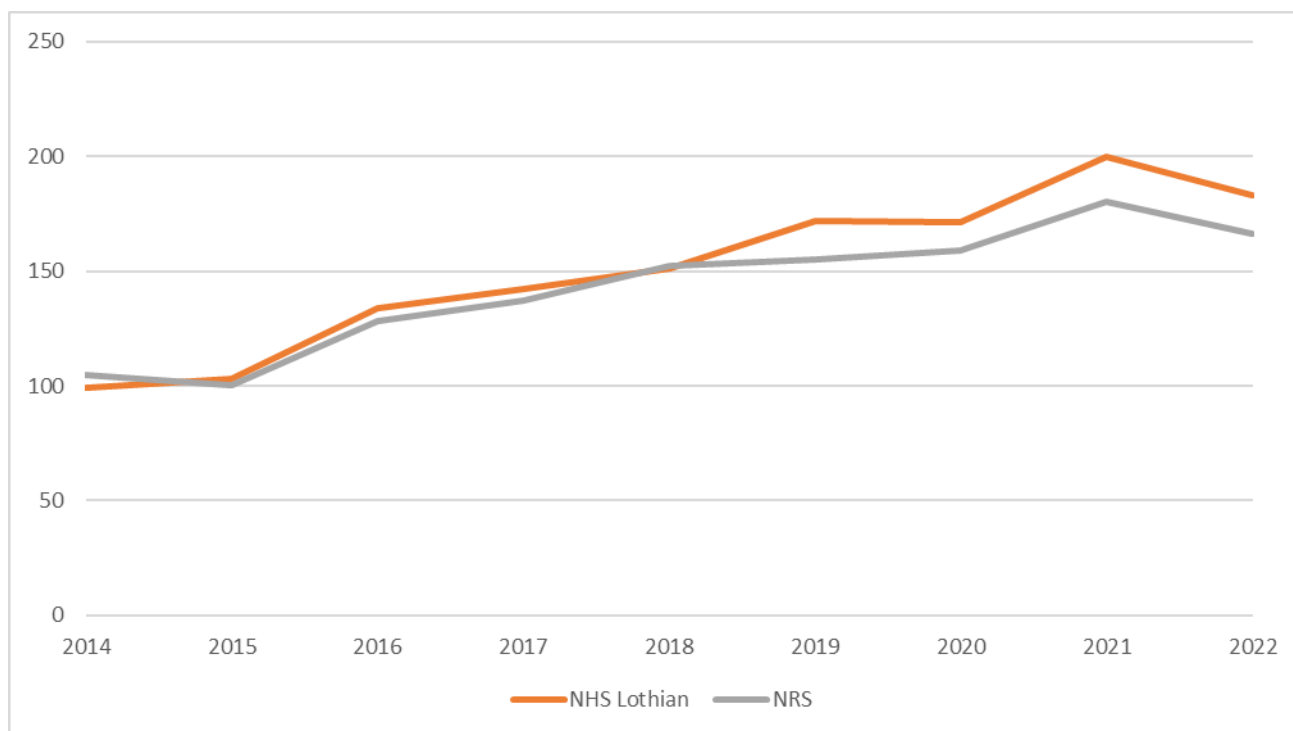
Source: <https://www.nrscotland.gov.uk/files/statistics/drug-related-deaths/22/drug-related-deaths-22-annex-A.pdf>

Annex C. Reasons for the difference in NRS and NHS Lothian figures

In previous years there has been a small difference in the number of drug-related deaths reported by National Records Scotland and NHS Lothian, however in recent years this difference has grown, see figure below. For example, in 2018 NRS reported 152 drug-

related deaths and NHS Lothian reported 151. There are well understood reasons for this difference, for example due to the difference in definition (see Annex B and C) and due to NRS using the date of a death's registration as the temporal marker compared to NHS Lothian using the date of the death.

Figure A. Number of drug-related deaths recorded by NHS Lothian and NRS for Lothian 2014 to 2022



In 2022, NHS Lothian reported 183 drug-related deaths and NRS 166. In total between the two sets of cases. There is a total of 202 persons. 147 persons are included in both sets of cases. 19 cases are included in the NRS set of cases but not the NHS Lothian, with 36 included in the NHS Lothian but not NRS datasets.

Of the 19 cases in the NRS dataset but not the NHS Lothian seven died in 2020, of these 6 were included in the 2021 NHS Lothian reporting and one case was classified as unascertained, and thus not included. Seven deaths were classified as unascertained by the pathologist and included by NRS as the person had a history of drug use. Additionally, five deaths were of persons not living in NHS Lothian at the time of their death.

Of the 36 deaths included by NHS Lothian in 2022 but not by NRS, 18 were due to the order in which the cause of death was written due to the definition employed by NRS. Six deaths were not included due to missing the mid-December cut off and may be included in the list of deaths for 2023. A further seven deaths were defined by the pathologist as primary drug-related deaths but excluded by NRS all of which have at least one controlled substance implicated. Lastly, five deaths not included by NRS are thought to be due to the person's address history.

Annex D. Counts of implicated drugs

The extent that each drug was implicated in each primary drug-related deaths is coded as below. The level of implication is significant in understanding how different drugs contributed to each drug-related death.

- 10: The drug was probably the cause of death on its own
 20: The drug could have caused death on its own but other drugs will or may have contributed
 30: The drug was one of a number of drugs that, acting in combination, were responsible for the death
 40: The drug was implicated in death alone or in combination with other drugs and with another non-drug related factor, for example COPD or ischaemic heart disease

Table A. Count of drugs implicated and level of implication

Drug class	Drug name	Level of implication				Total	Class total
		10	20	30	40		
Opioid	Methadone			79	13	92	222
	Heroin derived morphine			30	4	34	
	Morphine	1		16	9	26	
	Dihydrocodeine	1		9	10	20	
	Codeine	1		11	5	17	
	Tramadol	1	1	9	6	17	
	Buprenorphine			8	3	11	
	Oxycodone			2		2	
	Tapentadol			1		1	
	Fentanyl	1				1	
	Protonitazene			1		1	
Benzodiazepine	Diazepam			49	15	64	192
	Etizolam			47	7	54	
	Bromazolam			18	3	21	
	Flubromazepam			14	1	15	
	Alprazolam			7	1	8	
	Flualprazolam			6	1	7	
	Clonazolam			5		5	
	Phenazepam			4		4	
	Clonazepam			4		4	
	Temazepam			2	1	3	
	Midazolam			1	1	2	
	Lorazepam			1	1	2	
	Nitrazepam				1	1	
	Flubromazolam			1		1	
	Chlordiazepoxide			1		1	
Gabapentinoid	Pregabalin			69	10	79	106
	Gabapentin			20	7	27	
Stimulant	Cocaine	4	3	50	18	75	88
	Amphetamine			5	3	8	
	MDMA (ecstasy)		1	3		4	
	Methamphetamine			1		1	

Anti-depressant	Amitriptyline			15	2	17	40
	Mirtazapine			7	3	10	
	Sertraline			3		3	
	Citalopram			3		3	
	Fluoxetine			2	1	3	
	Venlafaxine			2		2	
	Dosulepin			1		1	
	Trazodone			1		1	
Alcohol	Alcohol			16	1	17	17
Atypical antipsychotic	Quetiapine			4		4	10
	Olanzapine			4		4	
	Aripiprazole			2		2	
Non-benzodiazepine GABAergic	Zopiclone			7	2	9	9
NSAID	Paracetamol			3	2	5	5
Anti-histamine	Promethazine			2	1	3	4
	Cetirizine				1	1	
Beta blocker	Propranolol	1		2	1	4	4
Anti-nausea	Cyclizine			2	1	3	3
Anaesthetic and NMDA receptor antagonist	Ketamine	1		1		2	2
Anti-epileptic	Lamotrigine			1		1	1
Non-opioid analgesic	Nefopam				1	1	1

Annex E. Prescribable and street benzodiazepines

'Prescribable' benzodiazepines (and metabolites): as classified by PHS in June 2023

Chlordiazepoxide
 Clobazam
 Clonazepam
 Chlorazepam
 Desmethyldiazepam
 Diazepam
 Librium

Loprazolam
Midazolam
Nitrazepam
Nordiazepam
Oxazepam
Temazepam
Valium
7-aminoclonazepam
7-aminonitrazepam

'Street' benzodiazepines (and metabolites): as classified by PHS in June 2023

Adinazolam
Alprazolam
Bromazepam
Bromazolam
Clonazolam
Cloxazolam
Delorazepam
Desalkylgidazepam
Diclazepam
Etizolam
Flualprazolam
Flubromazepam
Flubromazolam
Flunitrazepam
Lormetazepam
Phenazepam
Pyrazolam
8 aminoclonazolam

See additional notes for the classification of Lorazepam in section H3 of the annex retrievable from: <https://www.nrscotland.gov.uk/files//statistics/drug-related-deaths/22/drug-related-deaths-22-annex-H.pdf>