

The risk matrix: Drug-related deaths in prisons in England and Wales, 2015–2020

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Abstract

This article explores the factors contributing to drug-related deaths in English and Welsh prisons between 2015 and 2020. Based on content analysis of all Prison and Probation Ombudsman 'other non-natural' fatal incident investigation reports, descriptive statistics were generated. Qualitative analysis explored the circumstances surrounding deaths and key risk factors. Most deaths were of men, whose mean age was 39 years. Drug toxicity was the main factor in causing death, exacerbated by underlying physical health conditions and risk-taking behaviours. A variety of substances were involved. New psychoactive substances became more important over time. A high proportion had recorded histories of substance use and mental illness. During this period, the prison system was under considerable stress creating dangerous environments for drug-related harm. This study highlights the process of complex interaction between substances used, individual characteristics, situational features and the wider environment in explaining drug-related deaths in prisons. Implications for policy and practice are discussed.

KEYWORDS

drug-related deaths, England and Wales, mental health, new psychoactive substances, prisons, risk behaviours, substance use

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1 | INTRODUCTION

Since 2012, rates of drug-related deaths (DRDs) in the UK have more than doubled and exceed other European countries. In England and Wales, 4859 deaths related to drug poisoning were registered in 2021, the highest number since records began in 1993 (Office for National Statistics [ONS], 2022a). The rate has increased every year since 2012 after remaining relatively stable over the preceding two decades. 3060 drug poisoning deaths registered in 2021 (63.0% of drug poisonings) were identified as 'drug misuse' (i.e., either the underlying cause is drug abuse or drug dependence, or any of the substances involved are controlled under the Misuse of Drugs Act 1971 [UK] or both), accounting for 53.2 deaths per million people (ONS, 2022a).

Approximately half of all drug poisoning deaths registered in 2021 involved an opiate (45.7%; 2219 deaths); one quarter (25.1%; 1219 deaths) had no drug type recorded on the coroner's death certificate (e.g., records only mention 'drug overdose' or 'multiple drug toxicity'); 840 deaths involved cocaine; 663 deaths methadone; 258 deaths new psychoactive substances (NPS), especially due to an increase in the number of deaths involving benzodiazepine analogues (primarily flubromazolam and etizolam) (ONS, 2022a).

The ONS commented that possible explanations for the increase are: 'there is an ageing cohort of drug users, likely to be suffering from the effects of long-term drug use and becoming increasingly susceptible to a fatal overdose; new trends in taking specific drugs, including gabapentinoids and benzodiazepines, alongside heroin or morphine, may increase the risk of an overdose; there may have been an increase in disengagement or noncompliance with opiate substitute therapy (OST); and the rise in deaths involving cocaine is likely to be a direct consequence of the increasing prevalence in use linked to low prices and high purity levels' (ONS, 2022a; Section 7). Lewer (2022b) argues that the 'ageing cohort theory' has been overstated and the risk of overdose has increased within all age groups. He suggests that the disinvestment in drug treatment since 2012, the large increase in polydrug use and the complex long-term health conditions of people who use drugs (e.g., cancer, respiratory conditions, heart disease and liver disease) are all factors which help to explain the increase in drug-related deaths.

Increases in drug-related deaths have also been observed in prisons (Inquest, 2020). Her Majesty's Prison and Probation Service (HMPPS) worked with the ONS on an examination of deaths in prison custody occurring between 2008 and 2016 (ONS, 2016). Eighty-eight of 1830 total deaths were identified as being drug-related: opiates were the most common drug type mentioned on death certificates (62 mentions), with methadone, heroin and morphine the most common forms. Of the 88 deaths, 41 (47%) were classified as 'other non-natural' (ONN) with a further 13 (15%) unclassified awaiting further information (and likely to become ONN once classified). Twenty-four (27%) of the deaths were classified as self-inflicted and 10 (11%) were classified as natural causes. The Independent Advisory Panel on Deaths in Custody and the Royal College of General Practitioners Secure Environments Group comment that the 'other non-natural' category offers a useful proxy measure for drug-related deaths (IADPDC/RCGP, 2022, p. 8). The large majority of drug-related deaths were males which accounted for 93% of all drug-related deaths (82 deaths) compared with six female deaths between 2008 and 2016. This equates to almost 10 drug-related deaths in prison custody each year during this 9-year period. The risk of dying by drug poisoning in the male prison population was not significantly higher or lower than the general male population in England and Wales (IADPC/RCGP, 2022).

After 2016, a rise in DRDs in prisons appeared to be linked to increased availability and use of NPS in prisons. The IADPDC/RCGP report (2022, p. 8) noted that many cases since 2015 have been attributed to synthetic cannabinoid toxicity and other effects of the use of NPS, sometimes alongside prescription or other illicit drugs. A Nuffield Trust report found that injury and poisoning were a common reason for those in prison being admitted to hospital, 18% of cases compared with 6% of all admissions in the general population (aged 15+). NPS use was recorded in more than 25% of all inpatient admissions by those in prison in 2017/18—just under 2400 people (Davies et al., 2020). Other research has found links between the use of NPS in English prison settings and increased self-harm and suicidal ideation (Ralphs et al., 2017).

Before 2016, new psychoactive substances (e.g., synthetic cannabinoids) were not routinely tested in post-mortems and other investigations carried out in hospitals and prisons. Over the years 2015–2020, awareness and understanding of NPS grew and higher numbers began to be recorded. In their Learning Lessons Bulletin, the Prison and Probation Ombudsman (PPO) (2015) focused on synthetic cannabinoids, noting that these drugs are generally odourless and their use was proving difficult to detect and manage. They pointed out that more than with 'traditional' drugs, the strength and effects of NPS are unpredictable, adding that as well as the direct physical and mental effects of taking drugs, there are associated problems of debt and bullying (PPO, 2015).

New psychoactive substance use is much more common in UK prisons, than in the community, but difficult to treat. A 2022 review of alcohol and drug treatment in secure settings divided substances into the categories 'opiates' 'non-opiates' and 'alcohol'. 43,255 adults (91% men) were reported as being in treatment in prisons with a focus on opiates for 51%, 18% being treated for non-opiates, 19% for non-opiates and alcohol, and 11% for alcohol only. Just over one-third (39%) were identified as having mental health needs (ONS, 2022b).

Although some research has been conducted on drug-related deaths following release from prison (see e.g., Farrell & Marsden, 2008; Graham et al., 2015), few studies have analysed those occurring in prisons. This has been a neglected issue both in policy debate, and in monitoring and research at both the national and international levels (see Penal Reform International, 2022). The IAPDC/RCGP report concluded:

The number of substance misuse-related deaths in the criminal justice system is still unclear. The last data set analysed for deaths in prison is now 5 years old...*Understanding who is dying and their characteristics should inform the prioritisation of future work to prevent deaths* (IAPDC/RCGP, 2022; 5).
(our italics).

The aim of this article is to explore the factors contributing to drug-related deaths (DRDs) in English and Welsh prisons between the years 2015 and 2020 based on analysis of 'other non-natural' fatal incident investigations conducted by the Prison and Probation Ombudsman (PPO). Various risk factors for drug-related deaths are examined, including the changing nature of substance use within prisons, individual characteristics and risk behaviours. Individual risk factors alone do not explain increasing deaths: deaths need to be set within the wider contexts or risk environments of contemporary prisons. Identifying and understanding risks and the interrelationships between risks and the environment is needed to implement prevention and interventions that are effective both within prison and on release. An analysis of incidents can aid in developing alternative policies and prevention strategies. As Tomczak and McAllister (2021, p. 214) argue, fatal incident investigations provide 'a window to identify, organise, and apply learning... [and] are potentially significant triggers for harm reduction'.

1.1 | Theoretical approach

Critical research has highlighted the problems of large-scale imprisonment and the failure of the prison system to meet adequate standards of care, particularly in relation to safety and healthcare provision (Coyle et al., 2016; Ginn, 2012; Ismail, 2022). These wider issues impact on the specific situation of people using drugs in prison on which we focus here.

Our research is informed by the risk environment framework first proposed by Rhodes (2002). The risk environment is defined as 'the space—whether social or physical—in which a variety of factors interact to increase the chances of harm occurring' (Rhodes, 2002, p. 211). A number of different environments are included in the framework including physical, social, economic and policy, and interactions occur at micro, meso and macro levels. The 'risk environment' includes both individual and structural factors and emphasises contextual features. Rhodes (2009, p. 193) later argued:

A 'risk environment' framework envisages drug harms as a product of the social situations and environments in which individuals participate. It shifts responsibility for drug harm, and the focus of harm-reducing actions, from individuals alone to include the social and political institutions which have a role in harm production.

In the risk environment of the prison, we see that individual substances, individual characteristics and behaviours, and social relationships combine with prison policies and procedures, and wider economic, social and political structural and systemic features to produce a drug-related death. This constellation we term 'the risk matrix'.

The concepts of 'risk' and 'risk matrix' are used by different disciplines (e.g., medicine, criminology, engineering, environmental studies, public health and sociology) in different ways, (e.g., Beck, 2020; Bier & Mosleh, 1990; Gray et al., 2019; Vatanpour et al., 2015). Our aim is to understand how each sudden DRD in prison happens—emerges as an event—in a context made up of interwoven forces coming together in a unique combination: by looking at a number of cases, our aim is to discern common patterns. Our appreciation of the concept 'risk matrix' has derived from our deep immersion in the data we have assembled.

The concept 'risk matrix' thus draws on insights from the risk environment literature which has grown over time since Rhodes' 2002 seminal article (e.g., Al-Darraj & Altice, 2018; Azbel & Altice, 2018; O'Gorman, 2016; Rhodes, 2009; Small & McNeil, 2018). In the matrix concept, the distinctive focus is on the *origin* of a thing or event—in our case, sudden DRD in prison. Attention focuses on how a number of forces come together in unique constellations *in space and time* to produce a DRD. Each death is unique to that person, always sad and sometimes tragic: but by looking at common patterns, we may be able to identify features which, if they had played out differently, could have avoided the death. Attention is on the details of the process. 'If only' is a phrase often heard from bereaved families and friends—small changes in how actions occurred over time and in space might have changed the outcome. But if certain features are common and prevalent in the environment, the event is likely to happen to someone at some time in some place, so changes made in these conditions and interactions might help to prevent future deaths.

2 | METHODS

2.1 | The role of the Prison and Probation Ombudsman and fatal incident investigations

The Prison and Probation Ombudsman is an independent body appointed to provide *inter alia* 'fair and impartial investigations' of fatal incidents in prisons, probation approved premises, immigration detention facilities and secure training centres (Prison and Probation Ombudsman, 2017). Since 2004, the PPO has investigated all deaths that occur in custody by gathering information and evidence about what was happening to the person before their death.

The PPO investigations involve examining records and policies of individual establishments and include interviews with staff members and those living in prisons. Each report comprises an overall abstract, summary, account of the investigation process, key information about the prison, key events, issues and recommendations. A final report is sent to the family and the service as well as to the Coroner conducting an inquest. After the inquest has concluded, the fatal incident report is uploaded onto the PPO website. An action plan is added with most reports, covering responses from those named to the recommendations made in the report. There can be a lengthy delay between the date of the death and the report being published. This has been exacerbated by the COVID-19 pandemic.

The PPO fatal investigation reports provide a rich and unique archive for researchers. As Tomczak (2022, p. 500) argues, 'these detailed, publicly available documents are an underutilized data source, providing extensive

information about deaths, prisons, and responses to prison deaths over time.' PPO fatal investigation reports have been analysed to explore self-inflicted deaths or deaths by suicide (Tomczak, 2018) domestic violence perpetration and suicide risk in males imprisoned (Dewar, 2018) and natural cause deaths involving palliative care (Kirkham, 2021). To our knowledge, the research reported here is the first time that they have been used to analyse substance-related deaths. These deaths should be seen as the tip of an iceberg: underneath are greater numbers of non-fatal overdose events, illness and suffering, including self-harm incidents and associated stress on prison systems, staff and those imprisoned (Tomczak & McAllister, 2021).

2.2 | Analysing substance-related deaths through PPO fatal investigation reports

The PPO classifies the fatal incident reports under five main categories: homicide, natural causes, other non-natural, self-inflicted and unclassified (McAllister, 2021). In this study, we analysed 129 fatal incident investigations from 2015 to 2020 in the 'other non-natural' category. We analysed reports that had been published by end of December 2021 (see Table 1). The later years (i.e., 2019–2020) are incomplete. Between January 2021 and 28 June 2022, a further 25 reports were added to the website (2016:2; 2017:2; 2018:7; 2019:8; 2020:4; 2021:2) and additional reports continue to be added once completed). As noted above, there are often delays in publishing reports due to the review and inquest processes, all of which were exacerbated in these years by the impact of the COVID pandemic.

The years 2015–2020 were chosen as this period showed marked increases in the number of deaths in the non-natural category as well as changes in the substances used in prison, specifically an increase in SCRAAs (i.e., synthetic cannabinoid receptor agonists) known as 'Spice' (Duke, 2020; Ralphs et al., 2017; User Voice, 2016) and increasing concern regarding the diversion and misuse of prescribed medication in prison (Duke & Trebilcock, 2021).

A template was constructed to record basic demographic and descriptive data for each person (i.e., age, sex, offence, length of sentence, time in current establishment and cell occupancy), the official cause of death, circumstances surrounding the death, references to mental health, bullying, debt, contact with treatment and other prison services, as well as the main issues relating to their use and involvement with substances. The Ombudsman recommendations for action and key points from the action plan were also noted. A coding framework was devised and data were inputted from the templates into SPSS for analysis. Frequencies and cross-tabulations were run to generate the descriptive analysis.

Using the steps of Framework analysis (Ritchie & Spencer, 1994), the templates were analysed qualitatively. The research team familiarised themselves with the data in all the templates by year; then themes and sub-themes

TABLE 1 Number of deaths in the 'other non-natural' category per annum analysed in survey 2015–2020 reported by December 2021 on the PPO website

Year	Number by 31 December 2021
2015	12
2016	23
2017	25
2018	50
2019	13
2020	6
Total	129

were identified both inductively and deductively; next, the templates were coded and indexed with themes; then the findings were charted and summarised onto a matrix; and finally, a process of interpretation and mapping was conducted where the themes were grouped into higher level categories and the interrelationships and linkages between them were examined.

Ethical approval for the study was obtained through the Middlesex University Ethics Committee. Although the PPO fatal investigation reports are publicly available on the PPO website and name the person who has died, we took care to ensure that individuals could not be readily identified in the research by removing their names and exact dates of death in the analysis and giving them their own case record number (e.g., CR#1).

The data drawn from PPO reports have key limitations. Our data describe only features which the PPO selected to include, so for example prior histories of substance use or physical health are only recorded where the PPO has considered these to be relevant to explaining the death. Our analysis is therefore dependent on the quality of the prison records used and the recording practices of the PPO investigators. A concern of the PPO investigation is to attribute responsibility for the death, so there is a concentration of attention on issues relating to monitoring and immediate responses as well as the quality of treatment. Because of the nature of the investigations, some issues, evidence and voices are given more prominence than others while some others are largely absent.

3 | RESULTS

3.1 | Cause of death

Based in most cases on post-mortem reports, the cause of death recorded was related to substance use in 80% of cases. As shown in Table 2, the cause of death could be divided into six main categories.

Substance use was implicated or suspected by PPO initially in all cases and this was usually found to be correct, even though in 15% it could not be proven at the time. Where toxicity led to death, the cause was generally noted as hypoxic brain injury or damage; bronchopneumonia; or cardiac arrest. Synthetic cannabinoids alone were a major factor or in a

TABLE 2 Cause of death

Type of cause	Substances involved	N	%
Toxicity of substances as principal factor (53%)	NPS or synthetic cannabinoids alone	34	26
	NPS combined with other drugs	5	4
	One drug other than NPS	16	12
	Combined substances	14	11
Individual's pre-existing physical condition (13%)	Drug-taking contributes significantly	7	5
	Drug and alcohol use partially involved	10	8
Aspiration of vomit/gastric contents		10	8
Effects of sudden withdrawal or detox		1	1
Accidental		6	5
No role for substances		7	5
Unascertained or not recorded		19	15
Total		129	100

Abbreviation: NPS, new psychoactive substances.

small number of cases when combined with codeine or prescribed medication. Some other drugs proved lethal when used alone: methadone (five cases), cocaine (three cases), tramadol (two cases) and one each for heroin, co-codamol, prescribed citalopram, morphine, antidepressants, and 3,4-methylenedioxy-methamphetamine (MDMA). Combining substances is known to be a particularly dangerous activity and here deaths followed from various combinations: mixed drugs (2), heroin/morphine and cocaine (2), methadone with diazepam or benzodiazepine (2) buprenorphine with diazepam and/or alprazolam (2) and one each for combinations of heroin, zopiclone, pregabalin, and diazepam; three prescription drugs; methadone and morphine; cocaine and MDMA; morphine and heroin; and gabapentin and methadone.

Pre-existing physical morbidities which exacerbated the effects of substance use covered various heart conditions including ischaemic heart disease (4), chronic heart disease (2) hypertensive heart disease (1) atheroma (1) with a variety of drugs used especially NPS, but also amitriptyline, citalopram and paracetamol, and codeine. Other conditions which were thought to have led to vulnerabilities in the individual when combined with drug-taking included myocardial scarring, chronic obstructive pulmonary disease (COPD), pneumonia, sepsis, pulmonary embolism, prostate cancer, and liver cirrhosis. One case was linked to the effects of sudden withdrawal or detox.

In six cases (5%), the cause of death was deemed to be accidental while consuming substances or being under the influence. This included incidents of electrocution, choking while being restrained, attempting to conceal drugs, self-ignition and smoke inhalation, burns and a road accident while on release and under the influence of alcohol. These examples of accidental deaths, although unusual, highlight the more general risky circumstances and violent context within which the use of drugs takes place in prisons.

In 15% of cases, drug toxicity was suspected, but could not be demonstrated. Substances implicated included China White (NPS), synthetic cannabis and alcohol. In some cases, no drug metabolites or alcohol or common synthetic metabolites were detected at post-mortem. In the early days of NPS, the cause of death sometimes appeared mysterious, and without specific tests for synthetic drugs, a definitive cause of death was not possible. Examples that illustrate these unascertained deaths include a man aged 32 who had previously had a heart attack and the suspicion was that he had taken NPS (CR#21); in another case no drugs or alcohol were found in the toxicology tests, but he had a history of NPS use (CR#9); and in another unexplained death, there were previous reports of his using NPS, burnt foil was found in his room, and traces of NPS were found in items taken from the cell (CR#35).

3.2 | The risk matrix

The risk matrix represents the collision of a number of related and unrelated and more or less predictable forces that converge in any individual case to lead to an unexpected death where substance use plays a part. While the substance and its toxicity clearly are important, our argument is that this is not the only factor at work and that an adequate explanation requires attention to a number of interacting forces. These will be considered separately initially in the sections below.

3.2.1 | 'Risky' substances

The drugs of choice in prison have traditionally been opiates and cannabis due to their sedative qualities, which help to relieve stress, relax and pass the time (Boys et al., 2002; Kolind, 2015; Ritter et al., 2013). However, since 2011, there has been increasing concern about the use of NPS in prisons in England and Wales (Duke, 2020). These substances were popular in prisons because initially they were not detected by mandatory drug testing, were relatively cheap to purchase, not perceived as 'illegal', nor have a distinctive drug smell and helped to relieve the boredom and monotony of prison life (Ralphs et al., 2017; User Voice, 2016; Public Health England, 2017).

Our analysis shows the rising and extensive contribution that synthetic cannabinoids played in the number of deaths from 2015 to 2020, followed by methadone, benzodiazepines, synthetic cathinones, cocaine, methamphetamine and heroin (see Figure 1).

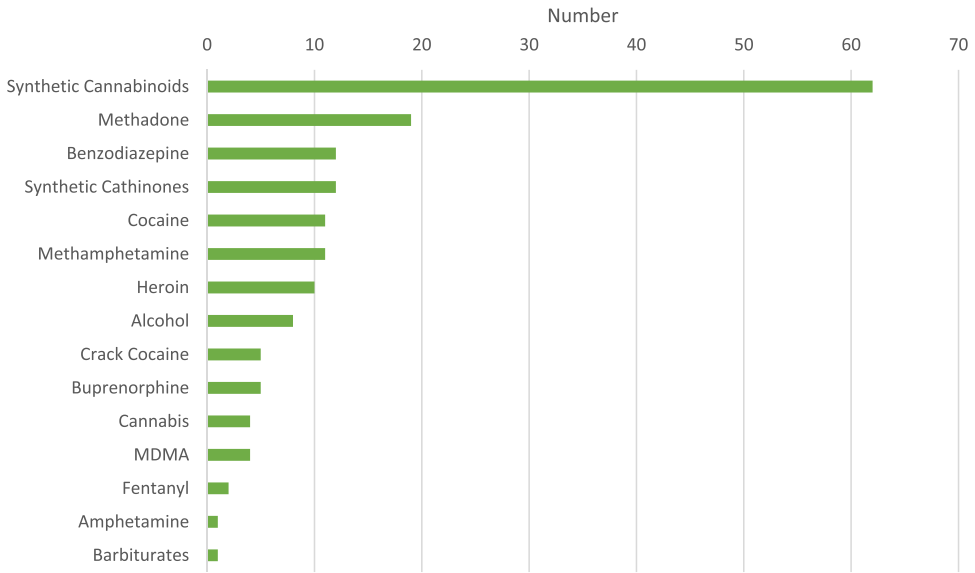


FIGURE 1 Substances recorded as implicated in cause of death 2015–2020.

TABLE 3 Types of NPS recorded as implicated in non-natural category deaths, 2015–2020^a

	2015	2016	2017	2018	2019	2020	Total
Synthetic cannabinoids implicated in death	3	5	11	27	10	6	62
Synthetic cathinones implicated in death	1	2	2	4	0	3	12
Total deaths per year:	12	23	25	50	13	6	129
% of deaths due to NPS each year	33%	30%	52%	62%	77%	150% ^b	57%

^aBoth cannabinoids and cathinones involved in a small proportion of these deaths.

^bVery small numbers in our analysis for this year distort figures.

Table 3 shows that synthetic cannabinoids were implicated in 62 (48%) and synthetic cathinones in 12 (9%) of the deaths analysed. Synthetic cannabinoids were increasingly implicated in deaths during the years 2015–2018.

Our qualitative analysis of the PPO reports reveals an apparent lack of awareness and knowledge about NPS among some prison staff and pathologists, particularly during the early years of our study from 2015 to 2016. During this period, there was little information about their effects and toxicity. On occasions, batches of NPS were particularly strong and caused a number of people to collapse on the wings at the same time (CR#24). NPS was not being picked up routinely in the toxicology reports in post-mortems or in mandatory drug testing until after 2016. There was also a clear lack of reaction and understanding around the risks of NPS among those imprisoned, prison staff and hospital staff. In some cases, individuals had been using NPS for a long time and warning signs had either been missed or ignored. For example, one man who died in 2015 of the toxic effects of synthetic cannabinoids causing pulmonary oedema and congestion had collapsed three times previously and been admitted to hospital. Although he was suspected of taking NPS in the lead up to his death, no action had been taken (CR#5).

A vast array of legitimate prescription medication was prescribed to this group for both physical and mental health conditions. In the years 2015–2016, there appeared to be little knowledge or understanding about the risks of interactions between prescribed medications and NPS. Combining these increased the risk of adverse effects and in some cases, death. For example, one of the deaths in 2015 was caused by a cocktail of drugs in the system

including methadone, buprenorphine, diazepam, quetiapine, gabapentin, Buscopan and synthetic cannabinoids. In this case, the cell mate said that the deceased smoked Black Mamba on the night of his death and smoked most nights combined with Buscopan (CR#11).

3.2.2 | Individuals 'at risk'

The majority of the people who died were men (94%). This corresponds closely to the prison population where 95% are male. The mean age of these cases was 39 years. It is not possible to ascertain the ethnicity of the person from the PPO reports.

Almost two-fifths (43%) were aged over 40 years (see Table 4), slightly higher than the percentage aged over 40 years in the UK prison population (35.4%) (House of Commons Library, 2021). In explaining drug-related deaths in the community, the 'ageing cohort' thesis has been put forward, suggesting that there is a group of older people who use opiates and have age-related health conditions which make them more likely to overdose (ACMD, 2019; Pierce et al., 2015; Public Health England PHE, 2017). In addition, among older people who use opiate drugs, deaths from heart disease are four times those expected in the general population and three times greater for cancer (Lewer et al., 2022a).

The ageing cohort thesis alongside long-term health conditions applied to some in our analysis. For example, a 47-year-old man died of cardiac failure after taking NPS, but had a history of opiate dependence, weak heart, COPD, and liver cirrhosis. He was prescribed a daily dose of methadone (50 ml) and various other medications to relieve asthma, reduce coughing and breathlessness, as well as sleeping tablets (CR#98).

Each year, a high proportion (88%) of those who died had a history of substance use either in prison or in the community before their death recorded in their notes (see Table 5). Synthetic cannabinoids were the most commonly mentioned substances in the reports, followed by heroin, alcohol, methadone, crack cocaine and cannabis (see Figure 2). Reference in the PPO reports to these substances drew on entries in records made by staff in the context of assessments, consultations and observations. They referred variously to current (in prison) and prior use. These observations should not be viewed as comprehensive, but they reflect information available to staff within the system on the pattern of substance use reported. In some cases, there was a pattern of problematic use of substances and previous overdoses, both in the community and in prison, although histories of substance use were not systematically or fully reported by the PPO.

TABLE 4 Age and sex of cases of non-natural deaths 2015–2020

Characteristic				
Sex	Male	Female		
	121 (94%)	8 (6%)		
Age group (mean 39 years)	20–29 years	30–39 years	40–49 years	50+ years
	20 (15.5%)	54 (42%)	33 (26%)	22 (17%)

TABLE 5 Recorded medical conditions: non-natural deaths 2015–2020

Medical condition	Number	%
History of substance use recorded	113	88
Reference to mental ill health recorded	74	57
Reference to underlying physical ill-health condition recorded	33	26

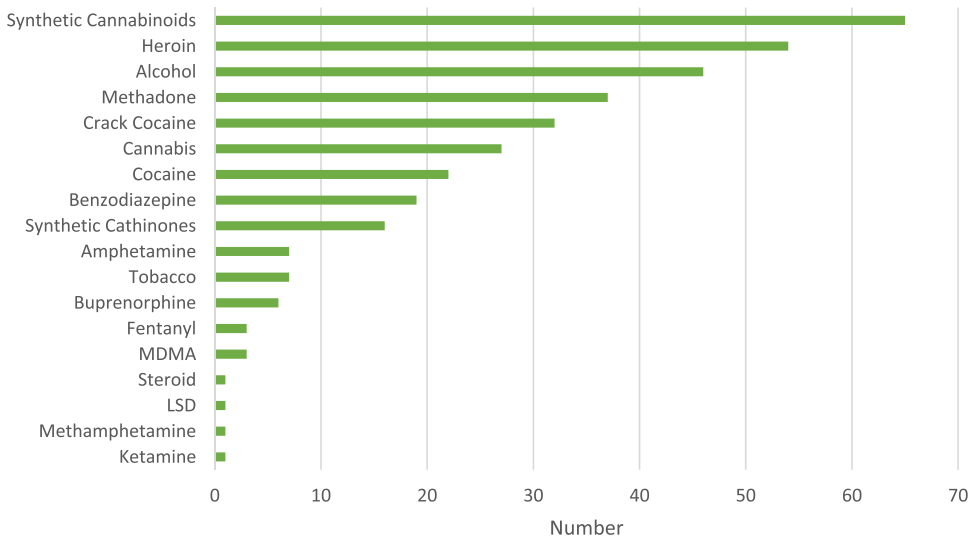


FIGURE 2 Recorded history of substance use in prison and/or in the community before death by type†. †More than one or several substances were usually recorded for individuals.

The individuals whose deaths we analysed had multiple co-morbidities (including poor physical health and mental health) (see Table 5) and received multiple prescriptions for various conditions. Around one-quarter (26%) of those who died had an underlying physical health condition recorded which included high blood pressure, obesity, coronary heart disease, diabetes, epilepsy, asthma, liver and pancreatic disease, hernia, irritable bowel syndrome, COPD, cancer, migraine, dental pain, fibromyalgia, kidney disease, multiple sclerosis, and chronic leg, back and ankle pain. In general, this group were in very poor health.

In 57% of the deaths, there were indicators of mental illness. As shown in Table 6, certain clusters predominate within the mental illness comorbidities.

Seven people had a learning disability and/or ADHD recorded in combination with another mental health condition. A high proportion of self-harm and suicide attempts had been made in the months before the deaths. In many cases, Assessment, Care in Custody and Teamwork (ACCT) procedures had been put in place to manage those individuals identified as being at risk of suicide or self-harm, but the adequacy and effectiveness of these procedures and psychiatric care in particular appears weak. For example, one man who was serving a long sentence for murder said that he had no desire to live and had made several attempts of self-harm and suicide before his death (CR#108). Another man had a long history of mental ill health (i.e. schizophrenia, depression, anxiety, personality disorder) and reference to self-harm was found in a note in his cell. He had attempted to take his own life several times in the previous year by overdose and hanging (CR#6). Overall, the number of self-harm incidents increased significantly and steadily in prisons (almost doubling) from 32,313 incidents in 2015 to 63,622 incidents in 2019 then decreasing to 55,542 in 2020 (HMPPS, 2021a), once again indicating the wider violent and risky atmosphere in prisons within which the specific concern with drug-related deaths should be viewed.

The majority of those who died were sentenced at the time of their deaths (79%). Four cases were in prison charged with an offence (3%). Those who died were in prison for a variety of offences. The most common offence was burglary 22 cases (17%), followed by robbery 21 cases (16%), assault 13 cases (10%), grievous bodily harm 11 cases (9%), sexual offences 9 cases (7%), shoplifting and theft 8 cases (6%), drug offences 8 cases (6%), and murder 8 cases (6%). Almost two-thirds of these people who died were in prison for a serious offence involving violence (Table 7).

TABLE 6 Mental health conditions recorded^a (n = 74)

Groups of mental illness comorbidities	Number	%
Depression and anxiety (depression 25; anxiety 15; PTSD 5)	45	31
Suicidal and self-harm (suicidal 22; self harm 23)	45	31
Substance use with mental illness	19	14
Personality disorder	16	11
Psychosis (hearing voices 3; paranoia 1; paranoid schizophrenia 1; schizophrenia 6; schizoaffective disorder 1; bipolar 2; hypomania 1; detained under the Mental Health Act 1; psychosis 2)	18	13
Total	143	100

Abbreviation: PTSD, post-traumatic stress disorder.

^aMany individuals had more than one condition.

TABLE 7 Types of offences (main offence noted where more than one offence recorded)

Violent offences	Number 84	65%
Robbery (21) [includes robbery 16; aggravated burglary 2; armed robbery 1; robbery with firearm 1; robbery and sexual offence 1]		
Assault (13) [includes charge of assault 2; serious assault 1; wounding and/or assault 4; common assault 1; wounding with intent 2; threat to kill 3]		
Grievous Bodily Harm (GBH) (11)		
Sexual offences (9) [includes sexual offences 4; with children 1; rape 2; attempted rape 1; sexual assault and theft 1]		
Murder (8)		
Possession of offensive weapon (7)		
Violent offence (6)		
Manslaughter, unlawful killing, kidnap and attempted murder (4)		
Arson (2)		
Dangerous driving causing injury or death (2)		
Affray (1)		
Property-related offences and other non-violent	45	35%
Burglary (22)		
Shoplifting and theft (8)		
Drug offences (8)		
Driving and drink driving (2)		
Others (5) [includes racially aggravated public order offence 1; breach of conditions of licence 1; tendering fake currency 1; immigration offence 1; blackmail 1]		
Total	129	100%

There are important 'silences' in the PPO reports about individual characteristics and family circumstances. For example, there is little mention of their marginalised backgrounds and past trauma. Surveys of the prison population indicate that they have histories of trauma and experiences of marginalisation (e.g., in local authority care (24%), experienced abuse as a child (29%), observed violence in home as a child (41%), expelled/excluded from school (42%), no qualifications (47%), unemployed in the 4 weeks before custody (68%), homeless before custody (15%). (Prison Reform Trust, 2021).

3.2.3 | Risky behaviours

The qualitative data analysis revealed examples where substances were being used in a 'risky' manner. In some cases, unknown substances were mixed with other prescribed medication or other illicit substances. In others, substances were stockpiled, and large amounts were taken all at once. For example, one of the men who died in 2018 had a high level of prescribed medication in his system along with NPS. Although he had been prescribed both oxycodone and pregabalin, there was suspicion that he had obtained additional supplies of oxycodone within the prison and stockpiled it (CR#93).

There were also instances where makeshift pipes and inhalers were constructed to consume substances and enhance their effects which increased harm. In one case, an adapted vape was attached to a wire in a plug socket to create a flame to smoke NPS (CR#116). Similarly, in 2018, a man died of burns and smoke inhalation as a result of trying to smoke NPS with an adapted vaping device and kettle wires (CR#102).

The drugs market in prison also generated risks and increased harm to individuals. Table 8 shows that in almost one-third (29%) of non-natural death cases, there was reference in the report that they had been involved in some way in the drugs supply in prison. There were a few deaths where substances had been concealed in the individual's body and had burst. For example, one of the men who died in 2015 had no recorded history of substance use, but died accidentally due to a burst package containing a mixture of substances (4MC—clephdrone, methylenedioxy-methamphetamine [ecstasy], BZP) which he had trafficked into the prison (CR#3). In another case, the post-mortem found a package carried internally with 18 pregabalin tablets which may have contributed to the individual's death (CR#55).

The culture of debt and bullying around drugs generated further risks and harm to individuals. Being a victim of bullying was recorded in almost one-third of the reports (31%). In some cases, bullying was linked to debts accumulated in prison. In 27% of cases, there was reference to being in debt recorded. There were instances where unknown substances (e.g., NPS) had been 'tested' on those who were in debt. In one case, a 51 year old man who was suffering from paranoid schizophrenia was in debt due to drug use and had been used by others as a 'guinea pig' for new batches of NPS (CR#83). However, bullying in prison is complex and sometimes those who are victims bully others. For example, one man was involved in bullying and violence, but also under threat due to considerable accumulated debt. He would bully others for their prescribed medication (CR#53). There were a few cases where individuals had been involved in taking large amounts of NPS as entertainment for others. A game called the 'spice

TABLE 8 Risky behaviours/experiences recorded in non-natural deaths, 2015–2020

Risky behaviour/experience	Number	%
Reference to bullying (victim) recorded	40	31
Reference to bullying (perpetrator) recorded	8	6
Reference made to debt recorded	35	27
Reference made to involvement in drugs supply in prison recorded	37	29

bucket challenge' was played in one prison where if participants could smoke all the NPS in the bucket, they would get an additional amount for free (CR#41); this seemed to be a factor in this man's death. In another disturbing case in 2016, a man with mental illness was bullied into testing large amounts of NPS as a form of entertainment (CR#28). Quite often, it seemed those selected to be victims of violent bullying were viewed as weaker than others, because of their learning disability or age or mental illness. The wider culture within prisons within which bullying and exploitation occurs forms the background to these specific deaths. While linked to drugs and especially NPS, the underlying causes of this threatening and violent culture would need to be addressed even if drugs were to be eradicated from prisons.

3.2.4 | Risky circumstances

The qualitative analysis revealed some of the ways in which the immediate situation increased the risk of death. PPO reports raised issues around the operational response to overdose events, for example citing delays between a medical emergency code being received and an ambulance being called. In the heat of the moment, staff used what they had to hand, like CPR, defibrillators and naloxone. Use of naloxone was in these cases ineffective but, of course, there may have been 'near misses' where naloxone was successful, which would not appear in our data. In the case of one man who died of coronary heart disease plus the effects of NPS, during the immediate response two nurses administered two doses of naloxone (CR#74). In a case where the cause of death was unascertained, the toxicology report noted that the man had propranolol and naloxone in his system, likely used by paramedics (CR#82). When a man died from choking on his vomit caused by taking methadone and synthetic cannabinoids, the officer attending used a hand-held suction device to remove vomit and the lead nurse administered naloxone. A second dose of naloxone was administered as well as a shock from a defibrillator (CR#91). Another man who died from aspiration pneumonia, following inhalation of vomit after using PS, had been found unresponsive and nursing staff administered naloxone but this had no effect (CR#101).

In some cases, equipment such as defibrillators could not be located or were not working, and in others, resuscitation was not started promptly. For example, there was a delay in treating a man who had collapsed in his cell, due to staff not having a radio to immediately call for help and failure by staff to resuscitate. The death was caused by lack of oxygen to the brain following a cardiac arrest (CR#109). However, in other cases, there were attempts to resuscitate even after it was clear that the person had died, and rigour mortis had set in. There were numerous recommendations from the PPO around providing clear guidance about the circumstances in which resuscitation is inappropriate.

Many of the deaths occurred during the night and when cells were unlocked in the morning, the person would be unresponsive. At times, there was a lack of monitoring and people were left for many hours before staff went back to check on them. On one occasion in 2017, at both the 7:20am and 9:00am roll call, it was assumed that the individual was asleep. He was found dead at 11:00 am (CR#36). Even when staff had information that someone was under the influence, this did not always result in greater monitoring. For example, in 2016, although staff had been alerted that an individual had taken an overdose of prescribed medication, he was not moved to healthcare for observation or his cell checked for additional medication (CR#34).

The majority of those who died had been in their current prison for less than 1 year (77%) (see Table 9). Almost two-thirds (61%) had been in that prison for six months or less and almost one-third (28%) for one month or less. If it takes time for staff to acquire knowledge about an individual's needs and establish good relations with them, then individuals are at greater risk when coming newly into a prison. Higher prisoner and staff turnover in a prison will influence this aspect of risk in the prison environment.

There appeared to be increased risk of death during key transition periods such as on arrival in prison, after recall and after transfer to a new prison. In some cases, the individuals had only been in the prison for a matter of days when they died. For example, in 2018, one woman died after being in the prison for only 2 days. She had

TABLE 9 Prison experiences: Non-natural deaths 2015–2020

Situation				
Cell occupancy	Single	Shared	Not stated	
	97 (75.2%)	29 (22.5%)	3 (2.3%)	
Time in this prison	Up to 1 month	More than 1 month, less than 6 months	More than 6 months, less than 12 months	More than 1 year
	36 (28%)	42 (33%)	21 (16%)	30 (23%)

tested positive for both heroin and cocaine: she had been on a methadone prescription in her previous prison and in the community. On arrival, she was experiencing withdrawal (both her subjective experience and some physical signs), but she was viewed suspiciously by nursing staff because they thought she was being manipulative, trying to obtain stronger different medication to use (CR#86) and her requests were refused. Linked to this, there were many instances where the PPO reports revealed that those who died did not have adequate health screening and assessment on arrival or had not been monitored properly when prescriptions were altered. For example, in 2015, one man who had a history of polysubstance use died of the toxic effects of methadone after an increase in his prescription. He died in the induction wing after only 5 days in the prison (CR#12). There were even deaths in detoxification or stabilisation wings where individuals had not received proper monitoring.

Three quarters of the people who died (75%) were occupying a single cell at the time of their death. However, there were also deaths that occurred in shared cells and on detoxification wings. For example, an individual undergoing drug and alcohol detoxification died from a combination of methadone and chlordiazepoxide which led to respiratory depression and aspiration pneumonia. He was in a shared cell in the prison detox unit. His cellmate reported loud snoring and asked to be moved because of this disruption during the night. The PPO expressed concern that prison staff were not alert to the possibility that the loud persistent snoring was a symptom of drug-induced unconsciousness. He was found dead in the morning (CR#19).

The PPO reports highlighted inadequate procedures for administration of prescribed medication in some prisons. Due to staff shortages, sometimes this was not monitored and increased the risk of diversion and stockpiling. For example, in 2015, a woman died of tramadol toxicity at levels which were not consistent with her prescribed daily dose. This suggested that she had taken a higher dose all at once. The PPO expressed concern that she was able to store up her medication or obtain additional supplies within the prison and recommended closer supervision of administration of medication (CR#8). Until the 2019 prison drugs strategy, prescribed medication was not part of prison drugs policy. New prescribing guidance in prisons was also issued by the RCGP in 2019 (see Duke & Trebilcock, 2021).

There were circumstances in the personal lives of those who died that may have contributed to their substance use. For example, in some cases, risky dates such as Christmas holidays, birthdays, and deaths of significant others appeared to be triggers for increased use and/or experimentation. For example, one man died on his 40th birthday and there was suspicion that he had used synthetic cannabinoids. He experienced chest pains and fitting, but toxicology did not identify the substances in the post-mortem (CR#104). In another case, a birthday celebration involving a combination of hooch (i.e., prison brewed alcohol) and MDMA resulted in death (CR#23). These accidental overdose deaths appeared to be linked to celebrations, but others were linked to trauma and may have been deliberate attempts to die. For example, in 2016, a man died of methadone toxicity likely from an additional illicit supply. Just before he died, he was coming up to the anniversary of his partner's death and was very upset after a phone call with family. He had made a previous suicide attempt (CR#18).

In some cases, the types of treatment available in prison (e.g., drug and alcohol treatment and healthcare in general) were not judged to be equivalent to that which would have been received in the community. This was the conclusion regarding one of the deaths in 2017 which involved a series of events including not monitoring the

individual properly during methadone treatment, moving him from the stabilisation unit and lack of communication between medical staff about the prescription (CR#48).

There were recurring issues noted in the PPO reports around not following up when someone did not attend an appointment or when a person refused an intervention. Many of those who died had long experience of drug treatment both inside and outside prisons. They may have had poor treatment engagement due to inappropriate or unattractive treatment options offered in prisons, such as reducing regimes for opiate substitution treatment and abstinence-only options. For example, one man who died in 2019 had a place on a drug treatment unit, but had ended his place due to recent drug use and failure to engage in groups and interventions. He appeared generally unresponsive to treatment (CR#122). In other cases, those who had died had refused their referrals to treatment. This echoes the findings of Dennis (2021) who has argued that drug-related deaths in the community need to be set within the wider context of risk related to cuts to treatment, rigidity of treatment regimes and shift towards abstinence-oriented approaches, as well as increasing health and social inequalities. She identifies the 'problem of treatment response-ability, where our often inflexible and limited treatment options are failing to respond to older people who have used drugs for a long time' (Dennis, 2021, p. 1181).

3.2.5 | Risky environment

There are 140 prison and secure settings in England and Wales. In the years 2015–2020, we noted 65 prisons where a non-natural death occurred. There were 15 where more than two deaths were recorded (ranging from three to eight deaths per prison) totalling 86 deaths, with 3 being the most common number per prison. There were no obvious differences between these 15 prisons and the rest with regard to type or size or location. Qualitative analysis of evidence in the PPO reports on the culture and organisation of these prisons revealed issues which contributed to creating a hazardous environment. The reports on the drug-related deaths showed signs of a system under stress. There appeared to be a concentration of stresses in the prisons with the higher number of deaths, but these risky conditions were present to some extent in many of the prisons on occasion.

The account which follows draw on analysis of evidence from Her Majesty's Inspector of Prisons (HMIP) and Independent Monitoring Board (IMB) reports (summarised in PPO reports), as well as from the PPO reports themselves. This evidence showed that some prisons at some points in time constituted very dangerous environments for both those imprisoned and prison staff. The detail in PPO reports highlighted the complex interrelation or entanglement of a number of forces operating together in any particular situation. They showed how features of the environment connect with each other and impact on individuals with particular characteristics and behaviours.

By focusing on the 15 prisons where drug-related deaths were more frequent, our qualitative analysis revealed a picture of the toxic environment in these prisons. Common issues affecting those in prison included victimisation and self-harm, debt, bullying and violence, and a very high prevalence of mental illness and drug and alcohol use. The prisons were already in a weak state, evidenced by staff turnover, loss of experienced staff, lack of purposeful activity, poor standards of health care and lack of specific resources such as drug treatment, testing staff and sniffer dogs. Into this situation came an influx of new substances, initially undetectable and underestimated. There were some valiant attempts to respond to this by prison authorities but some notable failings leading to a collapse of order in some cases. Management and staff responded principally by trying to reduce supply, for example by more use of body scanners, netting, cameras, and cell searches. However, in these prisons a pervasive drug culture remained and became the dominant characteristic. As many as two-thirds of people in these prisons reported to HMIP and/or IMB inspectors that it was easy or very easy to acquire drugs or alcohol; there were frequent ambulance call outs; organised crime gained control and mobile phones, drugs and tobacco continued to be smuggled into the prisons using drones, throwovers, visitors or inside body cavities. Violence increased. As many as one-third said to HMIP inspectors that they had developed drug problems while in prison. An extraordinary number

of individuals in these prisons *were reported* to be being seen by the prison drug and alcohol services—between one half and two thirds in some instances. As many as half of those imprisoned in some of these 15 prisons were receiving psychosocial support. While this does not tell us much about the quality of the care they received, it does indicate the pressure on services and staff in those prisons and the fact that a very high need for drug and alcohol treatment and psychosocial interventions had been recognised.

From 2016, the prison system as a whole was often described as being in a state of 'crisis' from those within the system and by external commentators (Cavendish, 2016; Council of Europe, 2020; Crook, 2016; House of Commons Debates, 2016; Prison and Probation Ombudsman, 2017). This 'crisis' was linked to overcrowding, increasing levels of violence, staff shortages, inexperienced staff, cuts to services and programmes both within prisons and in the outside community (House of Commons, 2021).

Assaults and serious assaults have been at record levels since 2013. Assaults on staff have tripled from 3266 (359 serious assaults) in 2013 to 9995 (952 serious assaults) in 2019. The National Tactical Response Group, a unit which manages serious incidents in prisons, responded to 720 incidents in 2019 which increased from 104 incidents in 2010 (Prison Reform Trust, 2021).

The percentage of those imprisoned held in crowded conditions decreased slightly from 25.5% in 2015 to 22.5% in 2020 (HMPPS 2021a, 2021b). However, this still constitutes a fifth of the prison population and impacts the overall regime of the prison, the staffing, and what can be delivered in relation to programmes and activities. There were also reductions to the resource budget of HMPPS. Between 2010–2011 and 2014–2015, this budget was cut by 20%. Although there have been recent increases, the resource budget remains 8% lower in real terms than in 2010–2011 (Prison Reform Trust, 2021).

'Purposeful activity' includes education, work and other activities to aid rehabilitation and this has deteriorated over time. From 2016 to 2020, HMIP inspections found a decline in positive ratings for purposeful activity work in the prisons inspected (HM Chief Inspector of Prisons, 2016, 2017, 2018, 2019, 2020). As penal reformer, Frances Crook, has argued 'a key problem is lack of activity' and she refers to the 'sheer monotony of life inside'. It is therefore not surprising that 'drugs are readily available across the prison estate' (Crook, 2021). In prisons, where there are low rates of positive drug tests and drug finds, then the scores on the HMIP 'purposeful' activity are good and conversely, they are poor where there is high drug use (Black, 2020).

Staffing was also cut during the early period of our analysis. Frontline operational prison staff were cut by 26% between 2010 and 2017. Despite recruitment efforts, compared to 2010, there are still 12% fewer staff (Prison Reform Trust, 2021). Retention of staff is also problematic with almost half (48%) of those who left the prison service staying in their roles for less than 2 years. This staff turnover has also impacted on the levels of staff experience with the proportion of staff with 3 years or less service increasing and those with 10 or more years decreasing (Prison Reform Trust, 2021). The staff shortages inevitably led to inadequate monitoring and surveillance of those imprisoned, particularly when substance use and mental health problems had been flagged before the deaths, and also delays in emergency responses to critical incidents. This was mentioned frequently in the PPO investigation reports. The uniformed staff shortages also lead to decreases in time spent out of cells and result in restricted regimes with reduced access to association, showers, telephone, gym and physical education and outside exercise.

The lack of staff capacity and resources also extended to mental health, substance use and wider health care services in prison. For example, it was noted in relation to a death in 2018 that the HMIP inspection and IMB reports had noted that the mental health and substance use team did not have capacity to meet the needs of a complex population (CR#98). Prison officers are usually untrained in the management of mentally ill patients. A survey of 380 prison officers found 84% said they dealt with mental illness problems every day (Wall, 2022).

Due to austerity cuts, and lack of institutional support from commissioners and prison management, many of the structured drug treatment programmes in prisons have closed down, or have struggled to continue operations with minimal resources. For example, the Forward Trust managed 14 intensive programmes serving over 1000 prisoners in 2013, a number that dwindled to seven programmes and 300 participants before the pandemic lockdowns in 2020 (Trace, 2022).

4 | DISCUSSION

The data and case examples described above illustrate how multiple factors interact in complex ways to create a risk matrix, a web of individual, situational and systems factors which may result in accidental death when intersecting risk trajectories 'collide'. Although the risk matrix differs for each individual, the prison itself is the space within which the risk matrix operates. This offers opportunities to consider interventions to reduce risks and create enabling environments (Duff, 2010) within prisons that promote health, healing and rehabilitation and to challenge current criminal justice approaches to substance use in the UK.

In recent years, the 'drugs' issue has risen high on the policy agenda and more attention has been paid to the situation in prisons. Following her comprehensive Review of Drugs, Dame Carol Black recommended greater use of police diversion and community sentences with treatment as alternatives to custodial sentences, expansion and improvement of treatment both inside and outside prisons and continuity of drug treatment on release from custody (Black, 2021). The new 10-year drugs strategy places emphasis on improving technology to detect drugs in prisons (HM Government, 2021a, 2021b). In July 2022, the government announced £120 million would be spent on up to 18 abstinence-based 'drug recovery wings' and 100 'incentivised substance-free living units' would be rolled out in prisons by 2025. A 'tough approach' would continue on release and include both extra control with more testing and extra support and treatment in the community. More staff would be appointed including 50 'health and justice partnership co-ordinators' to coordinate transfers from the prison to the community and work between prisons, probation and treatment providers (HM Government, 2022).

These new monies are welcome but will only begin to cover the ground lost in the 12 years of austerity following the 2008 financial crisis and the arrival of Conservative dominated governments. Given the evidence presented in this article, especially regarding the extraordinary extent of substance use and substance dependency within prisons and the prevalence of mental illness, will the new expenditure and measures provide a sufficient response to what is clearly a crisis in the prison system? We suggest more fundamental rethinking of the role of prisons and policies regarding substance use is needed to address three sets of issues.

Firstly, there is a need for a fundamental re-think as to who should receive a sentence of imprisonment. Research studies point to the importance of diverting people with opioid use disorder out of custodial settings into community-based penalties and treatment (Bird et al., 2015; Graham et al., 2015; Macmadu et al., 2020). A high proportion of individuals are imprisoned for non-violent, property-related offences. To the extent that these acquisitive crimes were committed to support drug use, an alternative approach would involve diversion of these cases into specific drug rehabilitation regimes, either residential or in the community. Alternatives to custody would remove this population who are at greater risk of further drug-related harm exacerbated in the prison setting and reduce overcrowding. Moreover, the high proportion of people in prison suffering from mental illness also raises the question of whether prison is the right place for them. '[P]risons...function like black holes into which society banishes those it deems problematic' (Crook, 2021). Prison is an unhealthy place. Many arrive with long term mental and physical health problems (Ismail et al., 2021; Sturop-Toft et al., 2018; WHO, 2014) and in many cases—certainly in those which result in a drug-related death, their health deteriorates further when in prison. Where they have committed violent offences, an alternative might be secure psychiatric hospitals where the focus of attention could be on their mental illness, especially the neglected category of dual diagnosis or comorbidity. However, it is unrealistic to propose these policies, given current dominant political ideologies and the threadbare state of health and social services in general. A recent *File on Four* and *Guardian* investigation found that due to a lack of beds in secure NHS psychiatric units, there were delays or refusals in response to referrals from prisons (Wall, 2022). Currently only the most extreme cases are referred to hospitals so high proportions of mentally ill people remain in prisons.

Second, for those for whom imprisonment is unavoidable, the nature of prison drug treatment needs re-thinking. Of the cases reviewed here, nearly two-thirds (65%) were in prison at the time of their death for an offence involving violence (Table 7). For those who have substance use dependency, alternatives to a purely

abstinence-focused regime might help, including the provision of high-quality specialist OST. We know from our analysis of drug-related deaths that treatment engagement for some individuals had been poor and that they may not want to engage in abstinence-only treatment (see also Lloyd et al., 2017). An alternative approach would also include greater attention to harm reduction, accepting that some substance use within prisons is unavoidable and may even be appropriate. Here, more attention should be given to providing advice and information on the dangers of combining use of different substances, making drug checking available, and provision of safe supplies and equipment. For the high proportion of the prison population who fall into categories described by drug specialists as those for whom conventional drug treatment has failed and for whom alternative treatments might be considered, more specialised treatments could be considered. In 2016, the ACMD recommended a range of alternatives, some of which would be relevant in prisons, including 'broader provision of naloxone, heroin-assisted treatment for those for whom other forms of OST are not effective, medically supervised drug consumption clinics, [and] treatment for alcohol' (ACMD, 2016; 1.8.5).

These ideas are controversial enough when discussed for the general population and would be seen as earth shattering if applied in prisons. Yet it seems clear that use of the very dangerous NPS drugs and lethal combinations of untested and often unknown drugs are contributing to rising numbers of accidents and deaths in prisons. The paradoxical effects of current policies in attempting to crack down on the use of opiates and other drugs has led to greater use of NPS. Smoking bans contributed to use of NPS and adapting vaping devices with associated hazards (Brown et al., 2022; Gray & Ralphs, 2021). For some, their excess or illicit use of substances may be a form of self-medication, influenced partly by distorted availability of medical assistance (Duke & Trebilcock, 2022).

Thirdly, the majority of the PPO investigations pointed to multiple failures in the monitoring of people who use substances both illicitly and on prescription, as well as in the operational responses to drug-related incidents. The PPO recommendations around the provision of basic life-saving equipment such as radios and defibrillators that are in working order, as well as appropriate use of naloxone, would improve the emergency response to drug-related harms and overdose events and help to prevent deaths. Regular training in resuscitation and basic first aid for both staff (and more crucially for those imprisoned) is essential. Proper monitoring of people when they have been involved in previous incidents of drug-related harm is critical. Transition points and trigger dates and events also need to be tracked carefully. Our analysis has demonstrated that arrival in prison from the community and transfers to other prisons are important transition points where coordination and continuity of care and treatment is needed. Similarly, trigger dates such as celebratory occasions (e.g., holidays, birthdays, etc.) and traumatic events and news (e.g., death of loved ones, relationship breakdowns, etc.) need to be monitored carefully. This highlights the importance of close relationships between prison staff and those imprisoned, so that staff have knowledge when particular individuals may be vulnerable to increased risk.

Finally, tackling the drug 'problem' in prisons is not just about drug supply and drug treatment interventions. Improvements to the wider regime with increases to the quantity and quality of 'purposeful activity' (ie. rehabilitation, employment and education and training programmes) are key reforms which would help address the demand for drugs in prisons. Improvements to the quality of healthcare in prisons, both for physical and mental health conditions, is needed. Recruiting more staff and retaining those who have built up experience and expertise are key priorities. All would require additional funding and political will.

5 | CONCLUSION

The debate around drug-related deaths both in the wider community and within prisons has become unhelpfully polarised: it should not be a matter of blaming either individual or environment but of understanding the way in which multiple risks collide and interconnect to produce harm. As Dennis (2021) argues in relation to drug-related deaths in the community, the danger with solely focussing on substances, individuals and risk behaviours is that these deaths become seen as inevitable and it is assumed that little can be done to prevent them. Although the

substances used, individual characteristics and behaviours do play roles, it is important to examine the various social processes, situations, systems and environments in which deaths occur. In this article, we have tried to demonstrate the complexity of drug-related deaths in prisons and show how various individual, structural, systems, material, and managerial factors interact, or become entangled, in lethal combination.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

PEER REVIEW

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