

## Short Report

# Deaths in custody in the Irish prison service: 5-year retrospective study of drug toxicology and unnatural deaths

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## Summary

Mental health and substance misuse disorders are associated with unnatural deaths in prisoners. Deaths in Irish prisons between 2009 and 2014 were retrospectively analysed using coroner's findings, including post-mortem toxicology. There were 69 deaths in custody, 38 of which met inclusion criteria. All deaths by overdose (16) were positive for illicit drugs; 53% of deaths (8 of 15) due to hanging were also positive for illicit drugs, and 29% of deaths (2 of 7) from other causes were toxicology positive. In conclusion, 26 unnatural deaths (68%) were associated with use of illicit drugs, which are a major contributory factor to deaths of prisoners.

## Declaration of interest

None.

## Keywords

Deaths in prisons; alcohol misuse; substance misuse; deaths in custody.

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In a review of prison suicides in 12 countries between 2003 and 2007, Fazel *et al* found that rates of suicide among male prisoners were at least three times higher than estimates of male general population rates.<sup>1</sup> A national UK study of prison suicides between 1999 and 2000 found that there was a high rate of pre-existing mental disorder, particularly drug dependence.<sup>2,3</sup> In 1997, it was noted that prison suicide patterns in Ireland mirrored those in neighbouring jurisdictions and that numbers had increased markedly over the past 10 years.<sup>4</sup> A 1999 report noted that although most deaths were judged to be suicides, there had been an increase in deaths due to drug overdoses.<sup>5</sup> A recent Canadian study of 478 deaths in various custodial administrations, reported that nearly half of all prisoners who died in custody had a history of mental illness or substance misuse.<sup>6</sup> A systematic survey of mental health in Irish prisons found that 69% of prisoners reported significant substance or alcohol misuse issues prior to committal.<sup>7</sup> It was also found that drug and alcohol dependence and harmful use were the most common problems, present in between 61 and 79% of prisoners.

In order to plan preventive measures, we examined the substance-related causes of unnatural deaths in the Irish prisoner population. This study aimed to analyse deaths in custody in Irish prisons between 2009 and 2014, focusing on unnatural deaths. We examined the prevalence of positive post-mortem toxicology for illicit drugs by prisoners where the verdict at inquest was suicide, misadventure, or an open verdict. We hypothesised that active misuse of drugs or alcohol while in custody could contribute to unnatural death in custody. Having positive toxicology for illicit drugs at the time of death was taken as the outcome relevant to the hypothesis.

## Method

Prison healthcare records of all deaths identified by the Irish prison service for 5 years between 2009 and 2014 were reviewed. Two researchers extracted data independently of each other. One researcher collected data from coroners' records and the other extracted clinical data from prison medical records. Official causes

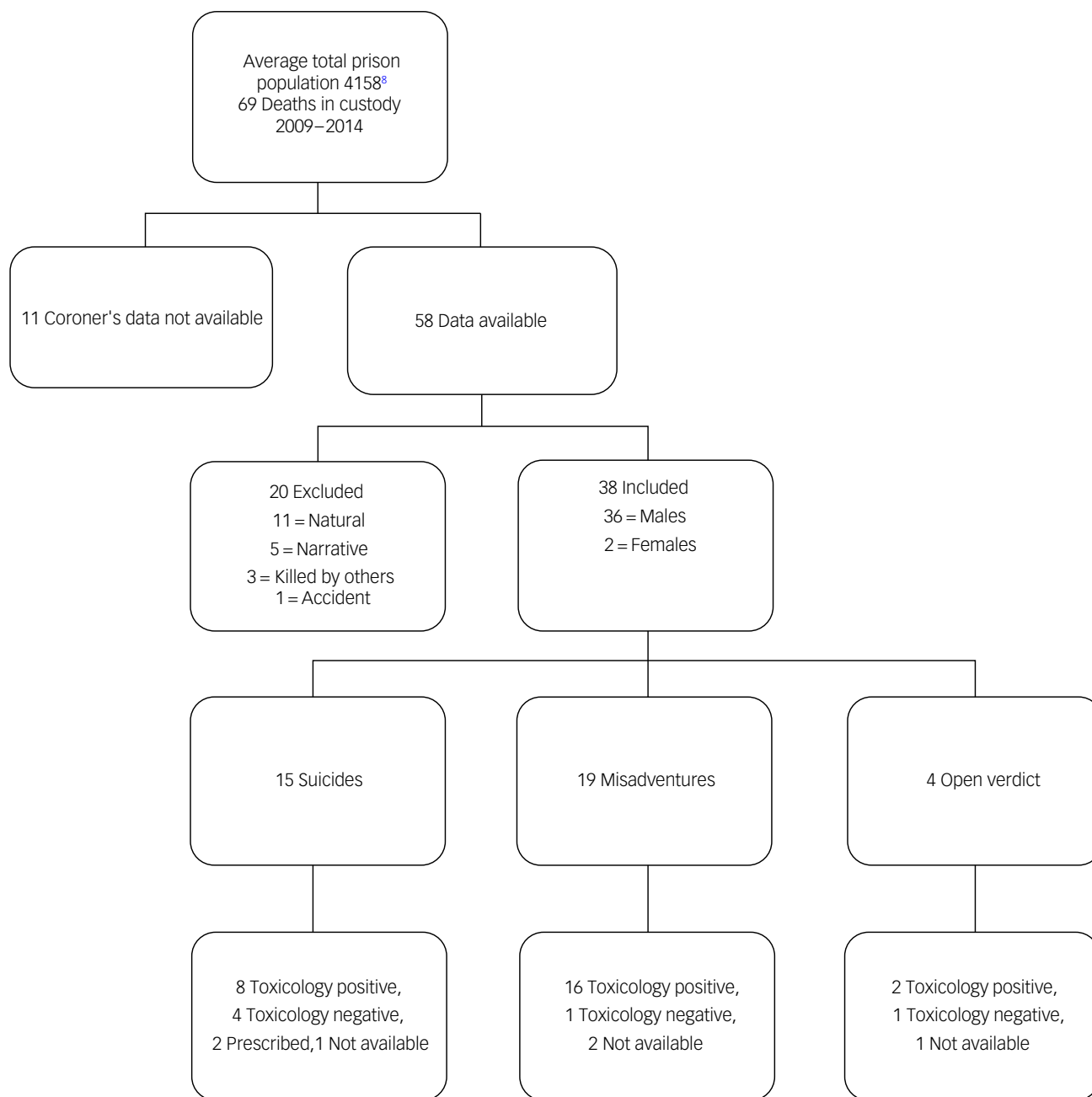
of death, coroner's court verdicts and post-mortem toxicology reports were obtained. Those who were judged to have died by suicide or misadventure, or for whom there was an open verdict, were included (Fig. 1). There were narrative verdicts for five individuals, all of whom died of natural causes and were excluded. An open verdict is recorded where evidence before the court does not fully explain the manner in which death occurred. A narrative verdict is a short, neutral account of the facts, to include the statutory findings in relation to the identity of the deceased, the date and place of death, and the medical cause of death. Data were entered in SPSS version 22 for Windows. Chi-squared tests were used for association, and binary logistic regression was used to examine the determinants of having positive toxicology for illicit drugs at the time of death. The study was approved by the ethics and effectiveness committee of the National Forensic Mental Health Service.

## Results

Of the 38 deaths included, 15 (39%) were given a verdict of suicide at inquest. Nineteen (50%) misadventures and four (10%) open verdicts were recorded. Toxicology was not available for four deaths, as it was not requested in these cases. Toxicology was positive for prescribed psychiatric drugs (excluding prescribed methadone and benzodiazepine) in two cases.

Positive toxicology for illicit drugs was noted in 26 (68%) of cases; 21 of these were positive for more than one illicit drug. Eight of these 26 deaths received a verdict of suicide (30%), 16 (61%) were given a verdict of misadventure, and two (7%) were given an open verdict.

Four cases of death by suicide were recorded as positive for non-prescribed benzodiazepines only, while another four were positive for various combinations. Non-prescribed benzodiazepines were positive in two of these four, in combination with alcohol and prescribed methadone. One in the suicide category was positive for cannabis and prescribed methadone (Supplementary Table 1, available at <https://doi.org/10.1192/bjo.2018.53>).



**Fig. 1** Cases, verdicts and positive toxicology.

All 16 deaths by misadventure were positive for combinations of illicit drugs. Benzodiazepines (15 of 16) and opiates excluding methadone (13 of 16) were the most common illicit drugs in this category, followed by methadone, cocaine and cannabis (Supplementary Table 1).

One prisoner in the open verdict category was positive for novel psychoactive substances and alcohol. One was positive for codeine (non-prescribed) with prescribed drugs (Supplementary Table 1).

Personal demographic characteristics were not significantly different from the general prisoner population.

### Toxicology versus causes

The coroner attributed death directly to overdose with illicit drugs in 16 of the 38 (42%) deaths, in keeping with post-mortem toxicology. Hanging was the cause of death in 15 of the 38 (39%) deaths. Of these, eight (53%) had positive toxicology for illicit drugs. Other

causes were given for seven out of the 38 (18%) deaths. Of these, two (28%) had positive toxicology for illicit drugs.

It was noted that almost all the deaths with a verdict of suicide were due to hanging. All deaths classified as misadventure were due to drug overdose.

### Temporary release

Fourteen of the 38 prisoners (37%) died while on temporary release. Eleven of these (78%) had positive toxicology results, while 15 of the 24 (63%) who died in prison were positive ( $\chi^2 = 1.37$ , d.f. = 1,  $P = 0.242$ ). Eight of 14 (57%) on temporary release and eight of 24 (33%) in prisons died by overdose ( $\chi^2 = 3.03$ , d.f. = 2,  $P = 0.22$ ). Three of 14 (21%) on temporary release and 12 of 24 (50%) in prisons died by hanging ( $\chi^2 = 3.02$ , d.f. = 1,  $P = 0.082$ ). Being on temporary release or not, and cause of death (overdose, hanging or other) were entered into binary logistic regression with positive toxicology

as the outcome. Neither independent variable was significantly associated with positive toxicology at the time of death (omnibus test  $\chi^2 = 2.506$ , d.f. = 2,  $P = 0.286$ ). Addition of an interactive effect between temporary release and method did not add to the model.

## Discussion

Regardless of cause of death, the use of illicit drugs at the time of death appeared to be a major contributory factor when compared with unnatural deaths in a community sample. A recent study of post-mortem toxicology in Irish deaths by suicide in the community showed a much lower prevalence of illicit drugs.<sup>9</sup>

Unnatural deaths are common while on temporary release from prison. Positive toxicology for illicit drugs at the time of death was not significantly more common for those in the community on temporary release than those in prison. Surprisingly, the risk of unnatural death while on temporary release suggests that imprisonment may offer partial protection. Temporary release accounted for as many as 12% of prisoners at times during the study period. However, 37% of unnatural deaths occurred while on temporary release. Complete data on all temporary release prisoners were not available.<sup>10</sup>

This study supports the development of dual diagnosis services, in line with the national drugs strategy, *Reducing Harm; Supporting Recovery*.<sup>11</sup> A World Health Organization report on prevention of overdose deaths in the criminal justice system mentions specific models and interventions adopted by various countries.<sup>12</sup> It highlights the importance of multidisciplinary collaboration to provide drug treatment interventions. As well as harm reduction methods, including methadone maintenance, continuity of care post release is crucially important. The report also emphasises the need to educate patients regarding risks of drugs and overdose, especially in the post discharge period. We suggest that friends and family members who visit prisons should be made aware that bringing in contraband is a major contributory factor to unnatural deaths in custody, including deaths by hanging, as they can cause increased disinhibition and impulsivity. Given the association between positive toxicology and unnatural deaths, a focus should be placed on improving measures, such as screened visits, that reduce access to illicit drugs in prisons.

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## Supplementary material

Supplementary material is available online at <https://doi.org/10.1192/bjo.2018.53>.

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## References

- Fazel S, Grann M, Kling B, Hawton K. Prison suicide in 12 countries: an ecological study of 861 suicides during 2003–2007. *Soc Psychiatry Psychiatr Epidemiol* 2010; **46**(3): 191–195.
- Shaw J, Appleby L, Baker D. *Safer Prisons: A National Study of Prison Suicides 1999–2000 by the National Confidential Inquiry into Suicides and Homicides by People with Mental Illness*. PsyEXTRA Dataset: American Psychological Association, 2003.
- Shaw J, Baker D, Hunt IM, Moloney A, Appleby L. Suicide by prisoners. *Br J Psychiatry* 2004; **184**(3): 263.
- Dooley E. Prison suicide—politics and prevention: a view from Ireland. *Crisis* 1997; **18**(4): 185–189.
- Ireland Department of Justice. *Report of the National Steering Group on Deaths in Prisons*. 1999.
- Vaughan AD, Zabkiewicz DM, Verdun-Jones SN. In custody deaths of men related to mental illness and substance use: a cross-sectional analysis of administrative records in Ontario, Canada. *Journal of Forensic and Legal Medicine*. 2017; **48**: 1–8.
- Kennedy HG, Monks S, Curtin K, Wright B, Linehan S, Duffy D, et al. *Mental Health in Irish prisoners. Psychiatric Morbidity in Sentenced, Remanded and Newly Committed Prisoners*. National Forensic Mental Health Service, 2005. <https://www.drugsandalcohol.ie/6393/>.
- Irish Prison Service, Annual Report, 2012 (<http://www.irishprisons.ie/images/pdf/annualreport2012web.pdf>).
- Kielty J, van Laar A, Davoren M, Conlon L, Hillick A, McDonald C, et al. Psychiatric and psycho-social characteristics of suicide completers: a comprehensive evaluation of psychiatric case records and postmortem findings. *Ir J Psychol Med* 2015; **32**(2): 167–176.
- Irish Prison Service, Annual Report, 2009 (<http://www.irishprisons.ie/images/pdf/annualreport2009.pdf>).
- Department of Health, Ireland, *Reducing Harm, Supporting Recovery A health-led response to drug and alcohol use in Ireland 2017–2025*. Department of Health, 2017 (<http://health.gov.ie/wp-content/uploads/2017/07/Reducing-Harm-Supporting-Recovery-2017-2025.pdf>).
- World Health Organization, Regional Office for Europe, *Preventing overdose deaths in the criminal-justice system*. Updated reprint, WHO, 2014 ([http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0020/114914/Preventing-overdose-deaths-in-the-criminal-justice-system.pdf?ua=1](http://www.euro.who.int/__data/assets/pdf_file/0020/114914/Preventing-overdose-deaths-in-the-criminal-justice-system.pdf?ua=1)).

