A Qualitative Study of Fatal and Non-fatal Overdose among Opiate Users in South Wales

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Submitted to Welsh Government January 2017

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2. Acknowledgements

We would like to say thank you to all the workers across the agencies and prisons in South Wales who facilitated our access to interviewees. We are also grateful for their help in providing us with quiet places in which to conduct the interviews. A special thank you is extended to all those people who generously gave up their time to speak to us about their overdose experiences. Without their input, we would not have been able to learn the valuable lessons that we have.

3. Introduction

Harm reduction is at the heart of the Welsh Government's Substance Misuse Strategy and reducing the number of drug-related deaths is a key aim (Welsh Government 2008). A large proportion of drug-related deaths are the result of accidental opiate overdose (European Drug Report 2016) and reducing the number of fatal (and non-fatal) poisonings is understandably a key target listed in the Substance Misuse Delivery Plan 2016-2018 (Welsh Government 2016a).

In 2014, research was undertaken on a national scale to estimate the extent of non-fatal overdose among opioid users in Wales (Bennett, Holloway and Bird 2014). The research involved surveying all needle and syringe programme (NSP) users over a one-month period and asking them about their overdose experiences. Nearly half of all respondents (48%) reported having overdosed at some point in their lives and 15% said that they had done so in the last year. As part of this study, qualitative (telephone) interviews were undertaken with a small number of needle exchange users who had provided their phone numbers (confidentially) after completing the survey. These interviews highlighted some important issues that we felt needed to be investigated in more depth with a larger number of participants to achieve saturation of the issues. It was felt that more in-depth research would enable us to investigate more thoroughly the circumstances of overdose events (experienced or witnessed) and identify ways of reducing harm and ultimately saving lives.

Funding was therefore sought from a Research Institute at the University of South Wales and matched with support from Welsh Government (in the form of the research time of Dr Rhian Hills) to undertake a large qualitative study of recent overdose events. The principal objectives of the study were to identify the factors that precipitate an overdose and to understand the short and long-term impact of such events on users and witnesses. The secondary objectives were to investigate the use of Take Home Naloxone and other harm reduction measures (e.g. CPR, ringing 999, using the recovery position) employed during overdose events. The third objective was to provide Welsh Government with a report based on the research findings that would help inform future policy and practice in relation to drug-related deaths. This document is that report.

While our study examined a large number of topics, this report focuses largely, but not exclusively, on one key issue, namely, overdose management (i.e. how people respond to overdose events)[1]. The report begins by examining patterns in drug-related deaths on a global, European and UK basis to help put the research in context. It then examines the academic literature to establish what is currently known about the topic of overdose management. The report then provides an overview of the methods used and details of our sample of interviewees. The main body of the report, where we present our findings, is divided into four sections, each focusing on a key issue identified in our analysis. Quotations from our interviewees are weaved into our discussions and provide evidence for the points being made. At the end of the report we consider the implications of the findings for policy and practice and we make some tentative recommendations for the future.

[1] It is anticipated that subsequent reports will focus on other issues including overdose prevention.

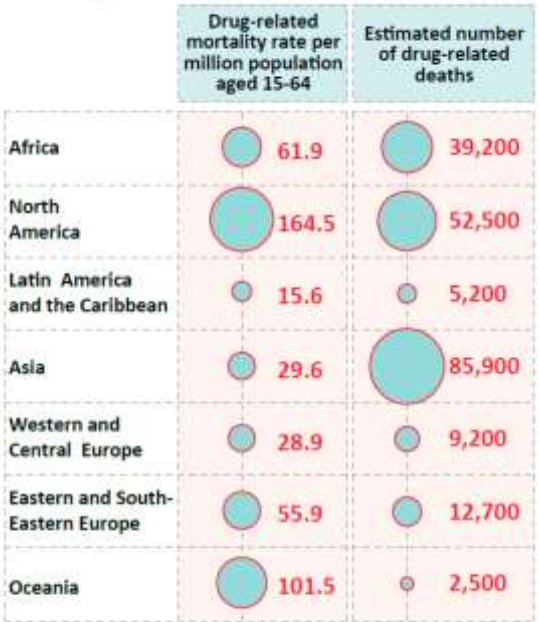
4. Prevalence of drug-related deaths

In this section we examine the prevalence of drug-related deaths across the world to help put the current research into context. We begin with a review of global rates and move on to consider rates in Europe. Finally, we examine data relating to the UK focusing on the prevalence of drug-related deaths in Wales. The broad goal of this review is to examine the extent of the problem and consider how the situation in Wales compares with elsewhere.

Global rates

Drug-related deaths are of international concern and data on the prevalence of drug-related deaths in multiple countries are published by the UNODC annually in the World Drug Report. The most recent report (published in 2016) estimates that in 2014 there were 207,400 drug-related deaths corresponding to 43.5 deaths per million people aged 15 to 64. The estimated number of drug-related deaths reported by individual countries varies considerably by region[2] ranging from a high of 85,900 in Asia[3] to a low of 2,500 in Oceania (see Figure below extracted from the World Drug Report 2016). However, while Oceania reported the lowest total number of reported deaths this region was estimated to have the second highest rate per million population (101.5) second only to North America's rate of 164.5 per million population. Interestingly, Western and Central Europe were estimated to have the second lowest rate per million population (28.9) but the third highest total number of drug-related deaths (9,200).

FIG. 18 Drug-related mortality rate and number of drug-related deaths, by region, 2014



Sources: responses to the annual report questionnaire; Inter-American Drug Abuse Control Commission; and Louisa Degenhardt and others, "Illicit drug use", in *Comparative Quantification of Health Risks: Global and Regional Burden of Disease Attributable to Selected Major Risk Factors*, vol. 1, Majid Ezzati and others, eds. (Geneva, World Health Organization (WHO), 2004), p. 1,109.

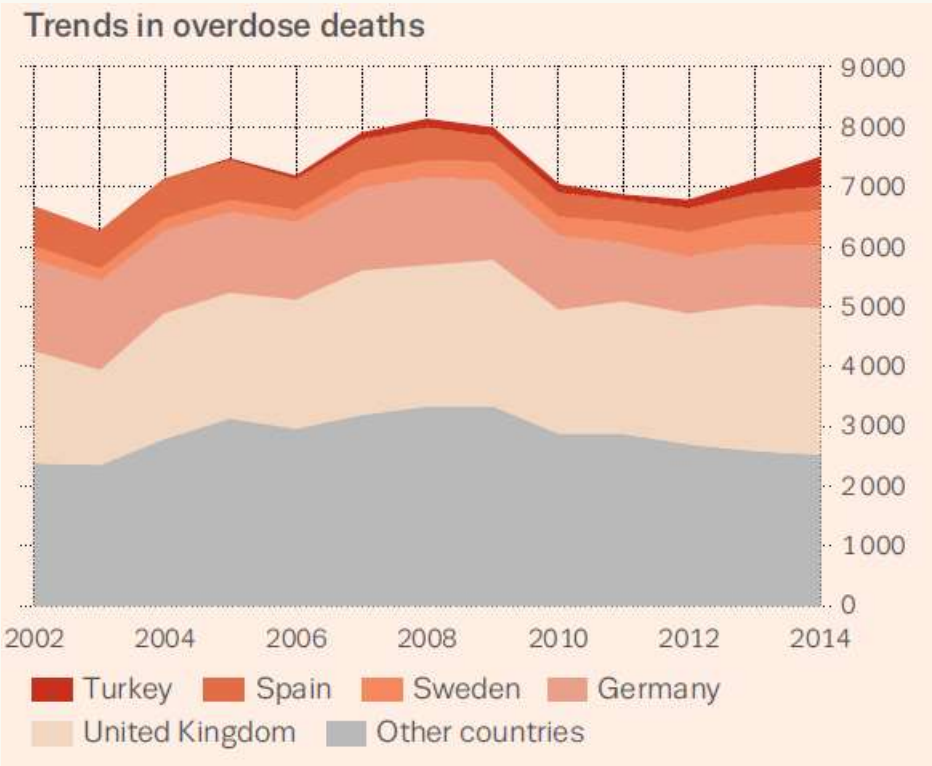
[2] Methodological and reporting issues are recognised as potential confounding factors.

[3] In 2015 China gave its first-ever assessment of the human impact of drug overdose, saying there were as many as 49,000 deaths in 2014. Source: Business Insider, June 24, 2015. http://www.businessinsider.com/r-china-says-economic-losses-from-drug-abuse-hit-81-billion-a-year-2015-6?IR=T

Overdose deaths are reported to contribute to between roughly one-third and one-half of all these deaths and most are attributable to opioids (World Drug Report 2016). Based on these estimates, there were somewhere between 2,760 and 4,600 overdose deaths in Western and Central Europe in 2014.

European rates

Data on the prevalence of drug-related deaths in Europe are published annually by the European Monitoring Centre for Drugs and Drug Addiction. The most recent report (published in 2016) estimates that more than 70,000 lives were lost to drug overdoses in the EU in the first decade of the 21st Century (European Drug Report 2016). Between 2013 and 2014, the number of overdoses in Europe increased by 11% to 6,800 from an estimated 6,100 in 2013 (European Drug Report 2015, 2016). The proportion of overdose deaths involving opioids also increased during this period from 66% to 82% (a 24% increase). Overall, the rate of overdose deaths in Europe is estimated to be 18.3 per million population aged 15-64. However, rates of over 40 deaths per million were reported in eight countries including the UK, which alone accounted for more than one-third (36%) of all overdose deaths in Europe[4] (see Figure below extracted from the European Drug Report 2016).



[4] National mortality rates vary considerably and are influenced by factors such as prevalence and patterns of drug use and methodological issues such as under-reporting and coding practices

England and Wales rates

Annual data on the prevalence and characteristics of drug-related deaths in England and Wales are published annually by the Office of National Statistics (ONS). The figures presented in the statistical bulletins cover both deaths due to drug poisoning and deaths due to drug misuse. Deaths due to drug misuse are defined by ONS as:

> *Either (a) a death where the underlying cause is drug abuse or drug dependence or (b) a death where the underlying cause is drug poisoning and where any of the substances controlled under the Misuse of Drugs Act 1971 are involved.*
>
> (ONS 2016, p.4)

In 2015 a total of 2,479 drug misuse deaths were registered in England and Wales, which is the highest number since records began and a 10% increase from the previous year (ONS 2016). In Wales, while the numbers are small in comparison with those in England (168 compared with 2,300), the proportional increase from 2014 was much higher (49% compared with 8%). The recent increase in Wales reversed a five-year downward trend and the number of registered deaths (168) and rate of registered deaths (58.3 per million population) is now the highest level since comparable records began in 1993[5].

	2011	2012	2013	2014	2015
Drug poisoning	215	214	208	168	238
Drug misuse	148	135	135	113	168

In line with global and European data, there has been a gradual increase in the number of drug misuse deaths involving heroin/morphine in England and Wales. In 2015 the number of deaths in Wales that involved heroin/morphine increased to 85, an increase of 93% from the 44 registered in the previous year (ONS 2016). Over time, there has also been a gradual increase in the number of drug misuse deaths resulting from accidental overdose in Wales. In 2015, 85% of drug misuse deaths were the result of accidental poisoning compared with 74% in 2011.

In summary, measuring drug-related deaths is methodologically tricky and notes to this effect are routinely included in the official reports cited above. However, these reports are the best estimates available and while there are variations in methodology there is a general consensus that drug misuse deaths (of which a large proportion are accidental overdose involving heroin/morphine) are increasing in most countries including Wales. The challenge now is to find ways of reversing this trend. One way in which many countries have endeavoured to do this has been through Take Home Naloxone programmes.

[5] It is important to note that when the data are analysed by the year the death occurred rather than the year of registration, there is a much smoother trend in deaths related to drug misuse in Wales. This suggests that the large increase in the mortality rate in 2015 is likely an artefact of registration delays and the rate for deaths registered in 2014 was artificially low.

5. Take Home Naloxone

Opioid overdoses can often be prevented if substances such as naloxone are available (World Drug Report 2016). Naloxone is a drug that temporarily reverses the effects of an opiate overdose. More specifically, naloxone is an opioid antagonist, which blocks the actions of opioid medicines such as morphine, diamorphine, codeine, pethidine and methadone. Naloxone has a long history of use in the emergency treatment of opioid overdose (Maxwell et al. 2006). It counteracts the depressive respiratory effects of opioids and can bring an overdose patient back to consciousness in minutes following its administration.

Take Home Naloxone (THN) schemes in which people at risk of opiate overdose are provided with 'take home' kits of naloxone for use in emergency overdose situations, have been operating around the world for several decades (Bennett and Holloway 2011). For example, naloxone has been available over-the-counter in Italy since the 1980s and it has been used to counteract opiate overdose in the US for more than 20 years. Wales has been operating a THN scheme in Wales since 2009 and in 2011, after a pilot 'demonstration' period, the THN programme was rolled out across the country making it the first in the UK to launch a national THN scheme (McDonald et al 2016).

Each year, Public Health Wales publishes a report on the distribution and use of naloxone across Wales (Public Health Wales 2016). Since the THN scheme was first introduced in 2009, more than 10,000 kits have been issued to nearly 6,000 unique individuals. This includes 5,918 kits to new individuals and 4,634 kits as re-supply following the use, loss or expiry of previous kits. In 2015-16, 3,186 kits were issued (supplied and re-supplied), representing an increase of more than 14 per cent from the previous year. In the last year, 1,058 new individuals were supplied with THN and 937 existing service users were re-supplied. Use of THN was reported once for every nine individuals registered as a carrier of THN.

Since 2009, THN has reportedly been used during 1,065 drug poisoning events including 433 events during 2015-16. In relation to the latter, the outcome was reported for 392 events and fatalities occurred in less than one per cent of cases. In 85 per cent of cases THN was administered to a third party rather than to the owner of the kit, and 60 per cent of all reported drug poisoning events occurred within a private residence. Follow-on care (i.e. an ambulance) was requested and provided in 63 per cent of all cases where THN was used in a drug poisoning event, representing a 5.4 percentage point increase on the previous year. As with previous years the demographic profile of those individuals who had used THN included; living in non-secure accommodation, poly-drug use, and having experienced at least one previous non-fatal drug poisoning.

While real progress has been made in disseminating THN kits across Wales (to 4,851 unique individuals), there is much more to be done. Indeed, recent estimates suggest that there are 25,767 opioid users in Wales, which means that the vast majority of people potentially at risk of opioid overdose have not yet got kits. The challenge of distributing THN to those at risk of overdose is well documented. In recognition of the difficulty and the need to make THN more widely available, the UK government changed the legislation in October 2015. The new law now permits drug workers employed through Local Authorities to distribute

THN kits to anyone with a need for naloxone. Previously, it could only be issued on prescription by medical professionals to people at risk of an opioid overdose. The new legislation was accompanied by clinical guidance which stipulated that THN kits should be issued along with 'suitable advice'. Precisely what 'suitable advice' means is not stated.

Advice on how best to respond to and manage an overdose is routinely provided as part of the THN scheme. The training is often done in a group setting although one-to-one sessions have become increasingly popular in Wales. The sessions usually involve people being trained to recognise the signs and symptoms of an overdose and how best to respond and manage overdose events. The sessions often include guidance on the importance of calling 999, placing someone in the recovery position, administering CPR and training on how to administer naloxone. The content of THN training sessions used to be guided by Welsh Government. However, following an evaluation of the scheme it was recommended that the training be shortened. The content of training sessions was subsequently left to the discretion of those distributing THN kits.

The recent change in legislation means that THN can now be distributed more widely than before. This brings with it an opportunity to educate many more people about how to respond to and manage overdose events. It is therefore important to ensure that the education provided is appropriate, up-to-date and evidence-based. In the next section we review the evidence and examine what is currently known about the best way of responding to an overdose in order to save lives.

6. Literature review

A rapid evidence review was undertaken to identify publications reporting findings from qualitative research on opiate overdose. To this end, searches were undertaken of four bibliographic databases (see Table 1). The search term used for the database searches was: 'qualitative AND overdose AND heroin' in the abstract[6]. The searches generated 111 hits relating to 62 unique studies. The titles and abstracts of these studies were reviewed and the full publications were obtained when they appeared to match our research interest. The papers from the database search and the references from the published papers were then read and those that met our selection criteria were included in the review. To be selected, the study had to present the results of a qualitative study that investigated overdose experiences (either witnessed or experienced) by drug users and the paper had to be published in the English language. In total, 53 studies met these criteria. The most relevant of these papers are reviewed briefly in the paragraphs below[7].

Table 1 Results of literature searches

Database	Total 'hits'
Web of Science	60
ASSIA	9
PsycINFO	17
PubMed[8]	25
TOTAL HITS	111
TOTAL unique	62
TOTAL relevant	53

UK studies

While most of the studies were based on research conducted outside of the UK, our review identified a small body of work based on research undertaken in the UK. Interestingly, the most recently published UK paper was based on data collected from a study undertaken approximately 20 years ago (between 1997 and 1999) that examined iatrogenic harm after emergency treatment of heroin/opioid overdose (Neale and Strang 2015). The research was based on the re-analysis of: 70 face-to-face interviews conducted within a few hours of an overdose occurring, observations within hospital settings and a further 130 interviews with illicit opiate users. The researchers found that users' views did not always correspond with the observation of events. While users repeatedly reported harm caused by naloxone over-antagonism (e.g. acute withdrawal symptoms) the observational data indicated that participants did not always know that they had been given naloxone and doctors did not

[6] Typically, abstracts are 250 words long while titles are usually less than 20 words. Searching abstracts for key terms is therefore likely to generate more relevant hits than a search of titles.

[7] An in-depth review of all 53 papers is beyond the remit of this report. We have therefore focused our attention on the papers that are most relevant to the current report, i.e. on overdose management.

[8] PubMed comprises more than 26 million citations for biomedical literature from MEDLINE, life science journals, and online books.

necessarily admit it incautiously. The authors refer to the concept of contemporary legend to help explain their findings. They assert that 'the power of belief and folklore over lived experience [reminds] us that instances of negative events (however rare or unlikely) can have a disproportionately harmful impact when they do occur' (p. 6). Through contemporary legend, the authors found that naloxone was transformed from a life-saving medication into a painful punishment administered by a hostile workforce. To address this problem, the authors recommend that workers need to apply 'good treatment' that builds trust with patients, is sensitive to concerns and provides clear information. More attention to titrating the most appropriate dose is also recommended in order to minimise the risk of naloxone-precipitating withdrawal.

Rome and Boyle (2008) conducted a comprehensive study funded by the Scottish Government, which included a thorough review of the literature as well as qualitative and quantitative research on overdose. The qualitative element of the research involved in-depth interviews with 58 drug users who had either experienced or witnessed an overdose and with 10 family members. The study was driven by two aims: to investigate how to increase the number of witnesses to drug overdose calling for help quickly; and to investigate what measures could be effective in preventing death from overdose while help is on its way.

Among the respondents who had witnessed an overdose, just over half (56%) intervened as soon as they realised someone had overdosed. A range of resuscitation methods were employed including use of appropriate actions (e.g. CPR, mouth-to-mouth, recovery position) and inappropriate actions (e.g. slapping, walking the person about, cold water). In a small number of cases, the overdose victim was placed outside (9%) alone. Nearly two-thirds of witnesses (61%) reported calling an ambulance at their last witnessed overdose and in nearly half of these cases the ambulance was called immediately or within five minutes. Barriers to calling 999 were most commonly found to be presence of the police and legal repercussions. Other barriers were also reported and these included fearing repercussions from the victim's family members, friends or others, or more pragmatic reasons such as the time it takes to clean up any evidence of drug taking, or lack of knowledge about appropriate responses.

The report included a list of recommendations. In relation to overdose management, Rome and Boyle (2008) recommended that (a) action be taken at national and local level to ensure that information about management (and prevention) of overdose is available to drug users and their families, and (b) that information on current policy on police attendance at overdose events and the positive benefits that this brings must also be made available to drug users and their families.

Wright et al (2006) conducted in-depth face-to-face interviews with 27 people with a history of heroin use and homelessness who had experienced or witnessed a heroin overdose. The research found that homeless people were able to recognise signs of a heroin overdose and many were prepared to take responsibility and be proactive in taking measures to revive and resuscitate a fellow user in an overdose situation. Sometimes the actions taken were appropriate (e.g. use of CPR) but other less appropriate methods were also used (e.g. walking the victim around and inflicting pain by slapping). Willingness to take responsibility was found to be context dependent. Reluctance was more common if responding involved

calling the police or if an overdose occurred in a hostel setting (which might result in eviction and loss of tenancy). Lack of knowledge regarding how to act in an overdose situation also prevented some people from taking responsibility during an event. With regard to naloxone, the research found that many users had good prior knowledge which demonstrated that any future[9] programme of THN would 'not be entirely alien to homeless drug users' (p. 4). They also found that abuse of naloxone was rare and that the over-riding theme was of reluctance to use it rather than to abuse it. While there were some who believed that naloxone might be used maliciously to induce withdrawal, such beliefs were not grounded in previous experience. The authors concluded that a programme of peer use THN among homeless drug users could be feasible so long as prior training is provided.

Finally, Beswick et al (2002) examined accuracy and myths in peer resuscitation methods for opiate overdose among 108 opiate users in London, UK. The participants in this study reported a wide range of responses to overdose events. These included 'probably valuable' responses (including putting the victim in the recovery position, calling 999 and using naloxone) but also 'ineffective or frankly harmful' responses (including injecting with salt solution and immersing in a cold bath) (p. 1108). The participants were asked about their experiences of witnessing fatal overdoses and some reported that little action was taken during the events. In one case this was because the victim was asleep in another room but in others it was because the witness did not know what to do, although they did know to call an ambulance but then left the victim, who later died, alone. The authors concluded that there was a need for inpatient overdose prevention programmes and that enhancements in both confidence and knowledge of effective action could help to save lives.

United States

Outside of the UK research on overdose management has been more prevalent. In the US, for example, our review identified several studies that had used qualitative methods to investigate the issue. Wagner et al (2014), for example, investigated the experience of responding to drug overdose among individuals trained in overdose prevention in Los Angeles, California. These authors highlighted the effects that responding to overdoses had for 'responders'. Positive effects included an increase in self confidence and control, feelings of pride and heroism as well as a recognition of one's own expertise. Negative effects included a sense of burden, anger, fear and regret, which occasionally resulted in the severing of social ties. The authors concluded that taking up the role of responder can involve taking up a new social role that has positive effects but that it also can result in some stress that may require additional support. Furthermore, equipping people with the skills, technology and support needed to respond to an overdose 'has the potential to confer both individual and community-wide benefits' (p. 157).

Frank et al (2014) conducted semi-structured interviews with 46 prescription opioid users aged 18-32 in New York City to investigate overdose experiences and knowledge. The researchers found that participants were relatively uninformed about overdose awareness, avoidance and response strategies including naloxone. This was despite significant

[9] This study was published in 2008 several years before national roll-out of THN programmes in Wales and Scotland. There is no national programme currently operating in England although THN is distributed in some areas.

experience of overdose events, which included overdose deaths. The researchers reported that participants viewed themselves as distinct from traditional heroin users and as such were unlikely to use the harm reduction services (e.g. NSPs) where messages about overdose prevention and response are often provided. The authors conclude that there is a need to develop 'innovative outreach strategies' to better reach and serve young prescription opioid users. The authors also recommend that prevention efforts, including reversal education, be specifically tailored for and targeted to this vulnerable group.

Sherman et al (2009) conducted in-depth interviews with 25 participants of the Staying Alive programme in Baltimore, US to investigate diffusion of overdose prevention information among drug users. The study found that participants shared what they had learned in both their actions and conversations both within and outside of overdose events. Interestingly, talking about and teaching others how to use naloxone 'was central to most overdose prevention conversations' (p. 141) However, participants reported the difficulty they had in talking to their friends directly about overdose prevention, and there were limited examples of this kind of discussion. The authors suggested that overdose prevention training could be enhanced if it included brief communications skills training with the aim of increasing 'overdose prevention talk' in combination with information about naloxone. In conclusion, the authors reported that injecting drug users are both interested in and able to diffuse overdose prevention and response skills to their networks. The importance of promoting the diffusion of such information and skills was also recognised.

Sherman et al (2008) conducted qualitative interviews with 31 injecting drug users and explored responses to witnessed overdose events when naloxone was used and events where it was not. Participants reported that they considered a range of factors when deciding how to respond. Fear of legal consequences was prevalent but this was 'counterbalanced' by the wish to save a life (p. 3). A range of responses (appropriate and inappropriate) were reported including: calling for an ambulance, use of naloxone, use of cold water or ice, hitting the victim, sternum rubbing, and mouth-to-mouth resuscitation. Interestingly, the authors described that inappropriate responses (e.g. slapping, use of water/ice, etc) were rarely reported and they predicted that use of such methods would 'hopefully diminish over time' (p. 4). The research identified a desire and ability to help among drug-using peers and participants were proud that they were able to intervene and save a life. The main conclusion drawn was that teaching IDUs how to use naloxone is an effective risk reduction strategy.

Other countries

Research on overdose events has also been conducted in countries other than the UK and the US. Bartlett et al (2011), for example, conducted a qualitative evaluation of a peer-implemented overdose response pilot project in Gejiu, China. This study explored local understandings of risk factors related to overdose and assessed barriers to overdose response. The research identified a general reluctance to call for emergency rescue. Barriers to ringing for help included privacy concerns and the potential impact on family relationships. Concerns were also expressed over the potential of the police attending the scene and fear of urine tests that could result in up to three years of detention in compulsory detoxification centres. Others opted out of calling for emergency help because

they had faced discrimination in hospitals where no concern was shown for them and where some professionals refused to help. Interestingly, virtually all of the participants reported that the cost, which included ambulance transportation, naloxone administration, and a medical check-up at the hospital, was a 'serious barrier to treatment' (p. 303). The authors concluded by describing that they would explore strategies, including targeted trainings and new partnerships with local hospitals, to try and reduce opiate overdose mortality in 'this resource-poor setting' (p. 301).

Finally, and perhaps most relevant to the current research, is the study conducted by Richter (2015) which investigated overdose management among a sample of opiate users in Sweden. The study involved qualitative interviews with 35 heroin users who had witnessed someone else's overdose. Participants reported sympathy with and understanding for overdose victims and they generally displayed positive attitudes towards helping them. Nevertheless, many barriers to effective overdose management were reported, which included: an inability to respond due to their own state of intoxication, emotional numbing which reduced empathy or led to the situation not being taken seriously, the inability to determine the difference between an overdose and a heroin high, uncertainty about whether an overdose was a suicide attempt or an accident, and a reluctance to intervene and 'spoil the high' of another user.

Calling for an ambulance was often found to be 'a last resort' once other methods (often including folk methods such as slapping victims and using ice or water) had been tried and had failed (p.96). Particular concerns were expressed about the risks of calling the emergency services and the potential of being accused of 'involuntary manslaughter' or homicide. Interestingly, in some cases the witnesses determined whether the victim could be saved or not and those declared 'beyond saving' were left without assistance (p.96). In conclusion, the authors recommend that simpler response techniques such as intranasal naloxone programmes be introduced to help speed up responses particularly among witnesses who are high and finding it difficult to respond. In addition, the authors argue for more up-front communication among using peers so that intent (of suicide) is clear and for overdose prevention measures to address the fear of the police attending overdose events when emergency calls are made.

Summary

Overdose management has been an under-explored issue in the UK, particularly within the last 10 years. It is notable that the most recent UK publication is based on data collected nearly 20 years ago and that the most recent UK research is nearly 10 years old. There is evidently a need to investigate contemporary overdose events to examine whether the same messages remain relevant today or whether new issues need to be addressed. This is particularly important given the recent increase in drug-related deaths in Wales and across the UK (and the world). Our review of relevant research in other countries including the US, China and Sweden, has demonstrated that witnesses are often willing and able to respond to overdose events but many barriers remain that reduce the speed and efficiency of their responses. The question that remains to be answered is whether these findings reflect the UK situation and hence whether the recommendations made in these papers are appropriate for the UK context.

7. Methods

The research was funded by USW (in collaboration with WG) and ethical approval for the study was granted by the USW Faculty of Business and Society's Research Committee and, for the prison interviews, by the NOMS National Research Committee (see Appendix for further details).

The research employed a cross-sectional design in which participants were questioned at a point in time about their direct and indirect experiences of opiate overdose. The strategy adopted was largely qualitative although some quantitative data were also collected (e.g. number of times overdosed or witnessed an overdose and the number of times naloxone was used). The focus on qualitative data collection enabled us to gather detailed narrative accounts of events personally experienced or witnessed by participants (Bryman 2016).

To gather this in-depth data, semi-structured interviews were conducted with eligible participants recruited from statutory and third sector drug treatment providers operating across South Wales and from two Welsh prisons. Staff members working within the agencies and prisons were instrumental in identifying eligible participants for us and in providing us with a safe place in which to conduct the interviews. We are grateful to them for their assistance with this. Fifty-five participants were recruited to the study - roughly half were recruited from community organisations (n=29) and half from the prisons (n=26). Eligibility was based primarily on whether the person was (or had recently been) and opiate user and whether they had personally experienced or witnessed an overdose event[10].

Participation in the research was voluntary and all participants were given details (verbally and in writing) about the nature and purpose of the research and what their participation in it would involve prior to taking part. All participants were asked to sign a consent form to indicate their agreement to participate. Recalling and reliving overdose events can be traumatic for victims and witnesses and we therefore took great care before, during and after the interviews to protect the well-being of our participants. In some cases this involved stopping interviews, moving on to different topics, avoiding certain topics and referring participants to their key workers if they appeared upset at any point. From the outset, participants were advised that they could stop the interview at any point and withdraw from the research altogether if they wished. Further details about the ethical issues involved in the research can be found in the Appendix.

The interviews were digitally recorded (with the consent of participants) and lasted, on average for 22 minutes (ranging from 10 to 60 minutes). The interviews were conducted by the two researchers (roughly half each, 29 by one and 26 by the other). Audio recordings were deleted once they had been professionally and securely transcribed by Voicescript Ltd. The written transcripts were printed out and both researchers read through them independently. Key themes were highlighted and discussed resulting in a set of key themes

[10] Previous studies have used different definitions of an overdose. Some researchers have defined overdoses to include events that required medical treatment while others have been less restrictive. In our study, we made the decision not to include a definition as we were keen to avoid confusing our participants with a technical definition. Furthermore, we had found in our previous research that opiate users had a good understanding of what the term meant. This finding was supported by the current research which included a question on definitions as part of the interview. Our participants routinely defined an overdose as an event during which an opiate user lost consciousness and was, for a period of time, not rousable.

that guided the computerised data analysis undertaken within NVivo. The computerised analysis was done manually using the coding tool and also with the help of coding queries (e.g. to search for particular words and combinations of words). Parent, child and sibling nodes were developed and used to store coded text (i.e. relevant quotations) that could be used as evidence to support our conclusions. Before we present the results of this analysis, we will first give an overview of the characteristics of our sample. The main aim is to demonstrate that our sample was a credible one that could reliably comment on overdose events and help us to achieve our research aims.

Sample characteristics

The majority of participants were male (82%) and most were White British (93%) (see Table 2). The average age was 34 (ranging from 18-54, SD 7.5 years). The demographic profile of the sample is therefore not dissimilar to that of all clients commencing treatment in Wales (Welsh Government 2016b).

All participants had used heroin at some point in their lives and more than half (58%) listed heroin as their current primary drug (either alone or in combination with other drugs). The majority of participants (95%) had a history of injecting and most had a history of previous treatment (93%). Of the 39 participants who reported that they were currently receiving treatment, all but one was receiving opiate substitute medication. More than three-quarters of the sample had served a term of imprisonment at some point in their lives and nearly half (47%, n=26) were in prison at the time of the interview.

Table 2 Characteristics of the interview sample

Characteristic	N	%
Male	45	82%
Female	10	18%
White British	51	93%
Other	4	7%
Mean age	34	18-54; SD = 7.5 years
Ever used heroin	55	100%
Primary drug heroin	32	58%
Ever injected	52	95%
Ever had treatment	51	93%
Currently in treatment	39	71%
Currently substitute	38	69%
Ever been in prison	43	78%
Currently in prison	26	47%

As part of the interview, questions were asked about participants' awareness and experience of Take Home Naloxone as well as questions about any witnessed or experienced overdoses (see Table 3). More than three-quarters (78%) of the sample had received THN training and nearly two-thirds had been given a kit (including one untrained person who was given a kit by a friend). A little under one-third of participants had used a THN kit and 11% had used more than one kit. Overdose experiences were common among respondents with 80% reporting at least one overdose in their lifetime and 65% reporting multiple overdoses[11]. The majority (93%) of participants had witnessed an overdose event and more than one-third (35%, n=19) had witnessed a fatal overdose.

Table 3 THN training and overdose events

Variable	N	%
THN training	43	78%
Ever had a THN kit	36	65%
Ever used THN kit	17	31%
Used THN kit multiple times	6	11%
Currently got a THN kit	20	36%
OD ever	44	80%
Multiple OD	36	65%
Witnessed OD	51	93%
Witnessed fatality	19	35%

The primary purpose of the interviews was to obtain narrative accounts of overdose events that had been witnessed or experienced by the participants. Fifty participants provided accounts of witnessed events and 43 provided accounts of their own personal overdose events. Some participants provided accounts of more than one event while others focused on just one event. In total, we obtained accounts of 107 unique overdose events from our sample of 55 participants.

[11] Calculating the average number of overdoses was not possible because participants were often quite vague about how many they had experienced. When probed, participants were unsure of how many they had experienced and preferred to give ranges rather than precise figures. For example: "10-20", "5+", "3 or 4". The difficulty of recognising one's own overdose and knowing what happened during that event is a limitation to the study which is addressed later in the report.

8. Results

In this section we present the results of our analysis of the 107 accounts focusing on one specific topic - the management of overdose events. Our aim is to establish how in practice opiate users respond to overdose events and to consider the implications of this for THN training and harm reduction practices more generally. The results are structured around the four key issues that emerged from the analysis, namely: (1) recognising an overdose, (2) first responses, (3) use of folk methods, and (4) use of THN.

1. Recognising an overdose

It was clear from the accounts provided that recognising an overdose was not always straightforward. One particular problem was that many overdoses had occurred out of sight of potential witnesses. This was usually because the victim had gone somewhere private to inject, which meant that their overdose was not responded to or managed as quickly as it could have been had a witness been present. Many of our participants described, often in vivid terms, how by 'luck' or 'chance' they came across someone overdosing in another room.

> *… he'd bought some and went upstairs and done it and no one thought to go up and check on him or anything until it was too late. When we'd found him, then we did realise about it then, rigor mortis had set in and everything as well so there was no point with resuscitation. (42)*

> *He was in the living room. Me and my partner was in the kitchen. His partner was in the kitchen with us, he was on his own in the living room. …Because we was arguing, his partner … turned round and walked into the living room. Then she come running back going "He's gone. He's gone over, he's gone over". And then I ran into the living room and he's just on the settee like. You could see he was grey, do you know what I mean, straight away within 10 minutes, 5 minutes of him doing it. (17)*

Several participants described events where the victim had injected privately in the bathroom. On some occasions the victims overdosed close to the door which blocked access to the people outside and delayed them from providing assistance.

> *He went into the bathroom to inject because he was injecting in his groin and the other two injected into our arms. But, then he was taking a long time in the toilet, so it was like "Oi, where are you" and then knocking on the door. I tried to open the door and he was behind the door. (28)*

> *They'd locked themselves in and God knows how I managed to unlock it from the outside because I've tried recently to see how I did it but I must have had a panic and managed to do it. … I managed to call the ambulance and sort of bring them round a bit. But if I couldn't unlock that door God knows what could have happened to him like. (34)*

> *… she actually left the room where they all were and went to use in the bathroom. It was a good job that her daughter thought, "where's my Mum, she hasn't come*

back." She went to the toilet, couldn't open the door; the door was jammed by her Mum. (41)

Even when witnesses were physically present in the same room, they were often not present mentally. This was usually because the witnesses were intoxicated themselves and were not capable of noticing that an overdose was taking place. This again, delayed or prevented appropriate responses from taking place.

Everybody in the party thought he was just asleep. We'd been up for days. We thought he was just like, but he was dead. … Well, I'd been taking MCat, so I was on the roof. I didn't care about anything. I wasn't really paying any attention to anything. (48)

Sometimes, both physical and mental presence was not enough to trigger a response. Some witnesses did not realise the victim was overdosing simply because they were not paying attention.

You'd be surprised how easy it is for somebody to go over and you not even notice. (55)

I wasn't taking much notice, to be honest (23)

On other occasions, however, the witnesses did not know that an overdose was occurring because they were not prepared to check whether someone was overdosing or 'gouching out'[12].

Well, it's a fine line isn't it, and short of shaking a person every couple of minutes saying are you gouching or are you not able to respond, which nobody wants … When you've taken your drugs, you don't want someone shaking you every two minutes to make sure you are still compos mentis. (30)

This reluctance to ruin someone's 'buzz' was also reported by Richter (2015) in his study of overdose events among heroin users in Sweden. Encouragingly, however, not all of our participants felt this way. One described how she would routinely check on her fellow users by shaking them and how she was not at all concerned about spoiling their buzz if it meant saving their lives.

So now I don't care if I'm spoiling somebody's buzz to be honest. I'd rather know – you're in my company - so I'd rather know you're all right than, "Oh see you later, ta-ra," give them a kick and they're not moving and then find out the next day, "Oh so and so OD-d last night. So and so passed away." Just by me shaking them would have brought them round. So what if I'm spoiling your buzz – tough.

This tends to suggest that the culture of not checking is not so ingrained and pervasive that there is not scope to change it.

[12] The term gouching is commonly used by heroin users to describe the 'nod' or drowsy, dream-like state that users experience after consuming heroin (see DAN 24/7.org.uk).

Key messages

It is clear from the accounts provided by our participants that problems in recognising overdoses often delayed (and sometimes prevented) life-saving actions from taking place. In some cases the delays meant that it was too late to save the victim's life. It is therefore important that lessons are learned from these accounts and that strategies are developed to help ensure that overdoses are recognised as quickly as possible. One way of doing this might be to adjust the guidance given to users so that the emphasis on 'not using alone' is shifted to 'using in sight' of others.

If users can be encouraged to use in sight of others, they could be encouraged to use in sight of someone who is capable of recognising and responding to an overdose (i.e. someone who is not too intoxicated him/herself). One way of doing this might be to encourage staggered use whereby one person is the 'designated smoker' who smokes a small amount of the drug (to take the edge off their withdrawal) whilst others inject. This could help to ensure that at least one person in the group remains capable of calling for an ambulance and/or administering naloxone. While this might be an ambitious goal given the nature of opiate use and the compulsion to inject among users, Richert (2015) has suggested that it may work among certain groups such as couples or people with close relationships. Indeed, one of our participants described how she and her partner would routinely check on each other when using:

> *Well we both make sure that we – we both keep an eye on each other when we use. I always call in to him. If he goes into the bathroom to use I always call into him every whatever, however long, to make sure he's still responding back. (34)*

However, those users who do persist in using alone might be encouraged to let someone know where they are going, to leave the door of that room unlocked and, if possible, to use the drug away from the door so that the entrance is not blocked if they overdose and collapse. The importance of checking on fellow users could also be emphasised. Ruining the buzz is a risk worth taking when lives are at stake.

Finally, drug consumption rooms in which users are able to inject drugs safely in the presence of capable and willing witnesses would address all of the issues highlighted in this section. Recent reports indicate that there are more than 90 drug consumption facilities operating across 10 countries across the world, including six European countries (Australian Drug Law Foundation 2014, EMCDDA 2015). Interestingly, figures from the Sydney facility indicate that staff members have responded to more than 5,000 overdose events on site and there have been no fatalities (Australian Drug Law Foundation 2014).

2. First responses

Once an overdose has been identified the opportunity to respond arises. In theory, the first response should be to call 999. In practice, however, the first responses reported by our participants were usually shock, panic, screaming and shouting. All of these responses served to delay more appropriate responses from taking place.

> *… everyone was screaming and shouting. (46)*

> *I just stood there like a shivering wreck sort of thing. (55)*

In many of the accounts provided, participants reported that ambulances had been called. In some cases this was done promptly after the overdose had been identified. In fact, in one case it was called a little too promptly (e.g. when someone was "just gouched" and not in an overdose state). However, this was rare and in some cases the reverse was true, and delays were evident sometimes with fatal consequences. Reasons for delay were varied and included: conflict at the scene, other responses taking precedence, moving the victim to a different location, and hiding drugs. The following quotation is a good example of a case where conflict at the scene resulted in a delay in calling for ambulance.

> *I said, ring the ambulance. No, no, no. I said, ring the ambulance. Nobody would ring the ambulance. So I took the phone off one of the girls who was there … and said 'f*** off', rang the ambulance. … She was alive until she nearly got to the hospital and then ended up it killed her. (48)*

In a small number of cases it was evident that an ambulance had not been called. Two interviewees explained that this was because the victim would not have wanted them to because involving the authorities might have a negative impact on their lives (e.g. they would have lost their room in a hostel where drug use was not permitted). Interestingly, in one case the decision not to call 999 was described almost as if it were a life-saving action. The participant explained that she was concerned that the victim might leave the scene and overdose again somewhere else out of sight of any witnesses.

> *I'd rather him stay there to make sure he's ok instead of him wandering off because we'd called the ambulance. (7)*

It was encouraging to note that witnesses, on the whole, cared about the victims and while they may not have responded according to the book (often for fear of the consequences for themselves), they usually did something to try to save the victims' lives. The following quotation illustrates this very well.

> *… put him into the recovery position then and cleared his airways and then he started breathing. But that scared me because I stayed up all night with him because he was going back under after I'd brought him round. … I didn't want to phone the ambulance then because my girlfriend was pregnant. Social Services would have been involved straight away. So that was a very close one that was. (46)*

Even in cases where the relationship between witness and victim was not a close one, witnesses still did things to help even if they did then leave the scene.

> *I just leave because it's only a drug relationship. So it's like yeah all right, I've got my drugs, it's a shame you're going over. I'll do my best to help you but I'm off because drug users don't want police involved and it's the way it is. (16)*

In line with previous research, it was a rare event (only one in fact) where the witness did nothing to help.

> *I've seen a young girl go over … I just left. I shouldn't. That was a terrible thing to do, but I just panicked. I'd a pocketful of drugs, so I'd gone. (48)*

It was more common for participants to describe how 'others' would run off and leave victims, or throw victims out onto the street, but how they were not like that.

> *But some people leave them and run away, and that's dangerous. I would never, never do that and I try to tell people don't, it's not fair. Even call the ambulance, don't just leave them lying there. (2)*

> *I've been in situations where people have gone over and the person whose flat it is, is 'right, chuck them outside. Phone an ambulance', and it's like, well no, that's my mate. Do you know what I mean. I wouldn't do that to a dog, never mind a person. It's only been a handful of times it's ever happened, but every time I've taken responsibility and told them 'no chance, I'm phoning an ambulance. (28)*

It should be acknowledged, however, that there may be alternative explanations for these findings. For example, it is possible that our sample was biased and excluded people who run off and leave overdose victims. It is also possible that our participants did not wish to disclose to us that they had left the scene of an overdose potentially leaving someone to die.

<u>Key messages</u>

It was evident from the accounts provided that participants' first response to an overdose was usually panic and this served only to delay appropriate responses from taking place. One way of addressing this issue might be to try to prepare potential witnesses for the inevitable panic as part of any overdose management training given. The benefits of calling 999 and of passing on the enormous responsibility of saving someone's life to medical professionals could also be highlighted.

It was also clear from the accounts that witnesses usually helped others. This culture of supportive action and pro-social behaviour could be more widely promoted to show users that this is standard practice. The sense of heroism and satisfaction and increased self-esteem having saved a life could also be promoted (see also Wagner et al 2014). Fear of the authorities is clearly extremely powerful and in many cases this delayed appropriate responses (i.e. calling 999) from taking place. In Wales, the Police do not routinely attend

overdose events unless a flag has been placed on the address to highlight potential dangers to paramedics. Wider publicity of this might go some way towards ameliorating concerns about police presence. Richert (2015) suggested that exemption laws (such as the Good Samaritan 911 laws in the US) could be introduced to ensure that heroin users who seek medical assistance at overdose events are 'not themselves liable to be prosecuted for their use or possession of illicit drugs'. Richert (2015) also suggests that decriminalising the use of illicit drugs and possession of illicit drugs for personal use would have a similar effect.

3. Use of 'folk methods'

The use of 'folk' methods (or 'home remedies') as a means of managing overdose events has a long history. Folk methods are inappropriate actions taken by witnesses in the mistaken belief that they will help reverse an opiate overdose. Examples include: slapping victims, inflicting pain, throwing water on them, applying ice, walking them around, and injecting them with stimulants or salt water (Wagner et al 2014, Richert 2015). THN training programmes usually discuss these 'myths' and emphasise the need to avoid using such methods. Nevertheless, in our study, witnesses (and victims) reported use of these methods almost as a matter of routine. This was not because the witnesses were unsure someone was overdosing and they were checking, rather it was because they knew they were and they wanted to help (either instead of or before calling for an ambulance, or while waiting for an ambulance to arrive).

While none of our participants described injecting victims with stimulants or salt water, many described walking victims around, using water and slapping them. On some occasions a combination of these actions were taken.

> *Then I just got him up and just kept on pacing him, both of us holding him up, pacing him, waiting for the ambulance. (28)*
>
> *Yeah, I blacked out and they said I fell to my knees and it was like I had been shot or something. I just fell to my knees and then onto my face. Them I came round and they were throwing water all over me. (9)*
>
> *Basically we tried waking him up, and one of the boys said chuck cold water on him that will wake him up. (50)*
>
> *I was slapping his face and all like trying to make himself come round and then I sort of was trying to hold him to come into the sitting room, like pick him up, but he was a bit of a pain to be honest with you. (34)*
>
> *… I just remember waking up soaking wet. But they did all the wrong things to me anyway, the way they were going on. They were slapping me, the usual stuff people think brings you round, which it doesn't, does it? Throwing water in my face, slapping me, trying to walk me around. (46)*

What was evident from the accounts was that the folk methods, or home remedies, had apparently worked in the past and were therefore seen as viable responses. Recovery and survival were associated with use of these methods which resulted in their continued use. This point is illustrated well in the following quotation from one participant who describes how he had used folk methods 'successfully' on multiple occasions but when they were not used the victim, his Uncle, died.

> *I would throw cold water and slap them and bring them along, and pick them up and walk them, but they say don't do that. But, I said, well I have brought tons of people around doing that whereas my Uncle died but I didn't try bringing him around. (53)*

Key messages

The accounts provided indicate that the use of folk methods is commonplace and this is in spite of efforts to dispel the myths as part of THN training programmes. The main problem appears to be that folk methods have become associated with recovery and survival and this has served to reinforce beliefs that they are appropriate and helpful. Evidently, there is a need to educate potential witnesses about the concept of natural recovery and a need to explain that the relationship between recovery and use of folk methods is coincidental rather than causal. It is likely that the person would have recovered anyway regardless of the folk method(s) used. In fact, the person may have recovered more quickly if folk methods had not been used. Walking someone around, for example, may waste time and also result in a fall (Scottish Drugs Forum 2013). Furthermore, as the heartbeat increases with the exercise of walking, the drugs may be absorbed into the bloodstream more quickly resulting in a more rapid overdose (Exchange Supplies 2009).

4. Use of Take Home Naloxone

Most of the participants in our sample were aware of THN and many had undergone the training and been given kits. Some had actually administered THN during the course of overdose events. However, in some cases interviewees described not carrying their kit and how they had to leave the overdose scene to go home and get it. This inevitably delayed the administration of naloxone, which in the example below, had fatal consequences.

> *It took me about five, 10 minutes then, to ride home on my bike, get the naloxone, come back, and administer it. And it was just too late, I think; he was already dead by then. (41)*

The need for more than one dose (which was the formulation provided in Wales at the time the interviews were conducted) was also described by some interviewees. However, some participants described events where the victim seemed unaware of the need for more than one dose as they did not understand that there was a possibility of overdosing again after the naloxone had worn off (approximately 20 minutes). In the example below, the victim described wanting to cancel the ambulance, which had he overdosed again and no more naloxone was available, could have had fatal consequences.

So he went back in and administered the Naloxone on me, banged it in my leg I think it was, and I came around. Fifteen/twenty seconds, I came around. But before he did that, he phoned the ambulance, and I was like, "Cancel it. Cancel it." Obviously I was embarrassed, you know? (5)

A further cause for concern was the finding that prisoners reported having been trained whilst inside prison but had not been provided with a kit on release.

No. # Prison asked me if I wanted a kit and they said it would be in reception for when I went home. I never received it. (46)

I was meant to have a kit the day I got out but it never happened for some reason. (48)

Others reported not wanting a kit because they were not planning to be around drug users in the future and there was therefore no need.

I think they say that you can do it so they give it you to release with but to be honest I'm not planning on going back around the drug users. I'm going back to my family and I don't even want to be thinking about carrying a Naloxone kit with me because I don't even want to be thinking about going to those places where the drug users are, so I just want to try and cut it all out and just stop it completely and stay away from it all. If I was actively going out to carry on using and carry on doing what I was doing then yeah I probably would take one, but that's not my plan. (43)

I won't need one; I've got no plans on going back to them circles. (47)

I've got myself clean and I've sorted my head out. I think I've sorted my head out anyway. I don't want it anymore. I'm tired of it. I've lost everything in my life, everything that ever mattered to me because of drugs. (48)

One person explained that he did not want a kit because he always used alone. This participant believed that there was no point in having a kit because he would not be able to administer it to himself.

I have not felt the need for it because when I've used I've used solo. (21)

Some participants expressed concern about the message that wanting a THN kit gave to treatment providers. This could be a particular concern for those on court orders and undergoing drug testing.

Interestingly, some witnesses who had been trained and had been given a THN kit described a reluctance to use them. In the quotation below, the participant describes a fear of doing something wrong and the need for follow-up training to help improve confidence.

I just talk to them. I've always talked. Like when my friend OD-d in the bathroom and with my partner I just try talking to them and try and bring them round. I know they say you shouldn't try standing them up and walking them around but you do,

don't you, naturally I suppose just to see if they can do it, so that's what I'd do. I don't know, I've got a Naloxone set, but I'll be honest with you, I wouldn't know how to administer Naloxone even though I've done the training. I think it's because I'd be too panicked that I'd get it wrong or I'd be too panicked in the moment that I just wouldn't be able to do it. I've got the set but I think I'd better do the training again to be honest with you. (34)

The need for follow-up training has also been highlighted by Public Health Wales (2015) who reported that more than three-quarters of service users who had received THN training had not received any follow-up training (77%, 3818/4939).

Key messages

THN is an important way in which overdoses can be reversed and lives can be saved. The accounts provided by our participants highlighted the importance of encouraging users to carry THN kits at all times. If a kit is left at home, valuable time can be lost and lives can be lost as a result. The accounts also emphasised the importance of providing multiple doses of naloxone. Sometimes, one dose is not enough and without additional doses victims may be at risk of death. Encouragingly, Welsh Government has already addressed this issue and Prenoxad (which contains five doses) is now the preferred formulation distributed across Wales. Ensuring that all trained prisoners receive kits on release is of paramount importance given that the period immediately following release is a known risk period for overdose (Merrall et al 2010). THN must be made easily available for all people at risk (even those on court orders).

It was clear from the interviews that some people did not want to be given THN. For some people carrying THN conflicted with their goal of abstinence and plans for the future. Others were concerned that asking for THN would highlight the fact that they were still using heroin to treatment providers. This may be a particular concern for people on court orders. One way of addressing these problems might be to shift the emphasis away from personal need to the potential benefits to others. For example, users might highlight the fact that they know heroin users and would like a kit in case one of their friends overdoses. Similarly, for those who did not plan to be around heroin users, providers might encourage people to carry a kit just in case someone who knew them asked to use it. Treatment providers could also be encouraged to offer training routinely to all clients thereby avoiding the need for a client to request it.

Q So what would get you trained?
A Well if they offered me it here I'd say yeah straightaway like. I haven't asked about it to be honest with you but if they turn around to everyone and said, "Do you want it," I would say yeah straightaway like.
Q So really people asking you rather than you have to ask them to do it?
A Yeah. Because it's not the first thing that pops up on your mind like. (7)

When you go to needle exchanges and say you see your drug worker or something, they hardly ever mention it and the majority of the time you bring it up. (11)

Finally, overdose management training needs to be more widely available, perhaps as part of generic NSP services. This would help to ensure that those who already have kits, those who are reluctant to get a kit and those who got hold of kits without undergoing training, are educated in how best to manage overdose events and potentially save lives. Ideally, this education should be continuous and not a one-off. As several of our interviewees explained:

> *All you can do is educate people and hope they learn from it. (12)*
>
> *The more you say it, the more you're going to take it in and it's kind of stuck with you. (34)*
>
> *"Keep drilling awareness … awareness, awareness, awareness …" (36)*

9. Conclusions

In this report we have presented findings from a qualitative study of overdose experiences (both direct and indirect) among a sample of opiate users in South Wales. When drawing conclusions, however, it is important to recognise the limitations of the research. Perhaps most importantly is the fact that this is a qualitative study based on a sample of 55 opiate users. Drawing inferences about the prevalence of phenomena observed beyond the sample must therefore be done with caution (Neale, Miller and West 2014, p. 175).

Like most cross-sectional studies that rely on self-report surveys of substance misusers, the research is also thwarted by the issues of accuracy of recall and honesty (Neale and Robertson, 2005). Accuracy of recall is particularly problematic in an overdose situation where respondents are unconscious and unaware of what is occurring or, in the case of witnesses, intoxicated or in a state of shock (Bennett and Higgins, 1999). Nevertheless, in spite these weaknesses, self-report is widely used in research on drug users and there is evidence to suggest that it can produce reliable results (Dietz et al., 2005). There is also no real alternative to a self-report survey given the hidden nature of non-fatal opiate overdose.

The decision not to include a definition of an overdose in the survey might also be seen as a limitation given that respondents might define overdoses in different ways. Our decision not to provide a definition was based on previous research which demonstrated that opiate users have a broad understanding of what an overdose involves. We were also keen to investigate how our participants defined an overdose and supplying a definition to them would have confounded this investigation. Finally, the study is limited by the fact that the sample is biased in favour of participants who were willing to participate. It is possible that unwilling participants experienced overdose events in different ways. Generalising the findings beyond the current sample therefore needs to be done with caution.

Accepting these limitations, the study provides new evidence on the characteristics of overdose events and the management of them among opiate users in Wales. The results confirm (and extend) those found in other countries (see Wagner et al 2014, Richter 2015) and could therefore help to shape the future of overdose management in Wales and possibly further afield.

Perhaps the most important finding to emerge from this research is the need to provide overdose management training more widely rather than just as part of THN training. Not everyone who is a potential witness wants THN training and people sometimes slip through the net and do not get given the option. It is important that the opportunity of educating them in how to manage overdose events is not lost. One way of doing this might be to incorporate overdose management techniques within the generic harm reduction advice provided within NSP services, which has traditionally focused on preventing overdoses rather than responding to them.

The need for wider provision of THN kits also emerged as a key issue. Some participants reported a reluctance to obtain a kit because this conflicted with their plans for abstinence. Shifting the emphasis away from personal need to the potential benefits for others may be one way of ensuring that kits are more widely distributed. Treatment providers have an important role to play here and thought might be given to encouraging providers to offer

training routinely to all clients thereby removing the onus of requesting training and kits from clients.

Richter (2015) recommended more up-front communication and discussion amongst using peers in relation to motives for overdose. We did not investigate motives for overdose within our research (and none of our participants mentioned it). Nevertheless, we support Richter's recommendation for greater communication amongst drug-using peers in relation to a range of other issues including: use of appropriate responses, use of inappropriate responses, the dangers of private 'out of sight' use, the fact that police did not turn up when 999 was called, the sense of heroism felt upon saving a life (see Wagner et al 2014) and debriefing in the aftermath of an overdose event. This latter point is particularly important given that some of our participants knew very little about what had happened to them during an overdose event meaning that lessons could not be learned. In fact, in some cases the participants did not even know that they had overdosed and only learned of this by chance.

> *About a week later one of the boys said to me in DIP, 'what were you doing in an ambulance last week outside here?' I said 'I wasn't?' He said 'you were'. I said 'I wasn't'. He said 'trust me, you were in an ambulance. And, I asked the staff and they said, 'yeah you overdosed outside'. So, I couldn't even remember because I was taking more drugs again after what had happened. … No recollection of it. … because it happened about three or four times in a matter of two or three months, my Mum took a photo of me in the hospital bed to shock me into realisation. (50)*

Another obstacle that affected responses to overdose events was fear of the consequences of involving the authorities. This fear has been widely reported in the literature and clearly remains a concern today. It seems that users are still fearful of the police turning up even though they are no longer routinely requested when a 999 call is made. One solution might be to advertise more widely the role of the police in overdose events. Alternatively, if exemption from prosecution is assured in the event that an ambulance is called then it is likely that ambulances will be called more often and more quickly, which may help to save lives and reverse the recent upward trend in drug-related deaths in Wales.

Our final point is an encouraging one. We were impressed by our participants and their willingness to help others during overdose events. Only one respondent admitted that they had left the scene of an overdose having done nothing to help. By contrast, other respondents described going to great efforts to keep someone alive. Given that opiate users are willing to help, it is important that they are given the right tools at the right time with the right kind of advice, in order to reduce as much harm and save as many lives as possible.

10. Recommendations

Our research has highlighted a number of ways in which the management of overdose events might be improved. We have therefore used this information to develop a set of recommendations that might be useful for policy makers and practitioners. The recommendations are presented below in four groups corresponding with the four key areas of our analysis.

Recognising an overdose:

- To adjust current overdose management advice so that the emphasis on 'not using alone' is shifted to 'using in sight' of others.
- To encourage users to use only when in sight of someone capable of recognising and responding to an overdose.
- To promote among groups of users, the idea of a 'designated smoker' who smokes a small amount of the drug, to take the edge off their withdrawal, while others inject.
- To encourage users to check on fellow users to ensure that they are not overdosing.
- To encourage people who persist in using out of sight to: let someone know where they are going, to leave the door of that room unlocked and, if possible, to use the drug away from the door so that the entrance is not blocked if they overdose and collapse.
- To develop harm reduction facilities where users can inject safely in the presence of medical professionals (i.e. capable and willing witnesses) without fear of prosecution.

First responses:

- To ensure that overdose management training raises awareness of the inevitable panic that will be experienced during an overdose event.
- To emphasise during overdose management training that calling 999 will bring medical professionals to the scene who will relieve users of the enormous responsibility of saving a life.
- To promote among users the culture of supportive action and pro-social behaviour that is so evident among witnesses of overdose events.
- To promote the sense of heroism, satisfaction and increased self-esteem experienced by witnesses who have saved someone's life.
- To ameliorate concerns about potential arrest by more widely advertising the role of the police in overdose events.
- To consider introducing exemption laws (such as the Good Samaritan 911 laws in the US) to ensure that those who seek medical assistance for others at overdose events are not themselves liable to be prosecuted for their use or possession of illicit drugs.

Use of folk methods:

- To ensure that overdose management training educates potential witnesses about the concept of natural recovery and the coincidental (rather than causal) relationship between recovery and use of folk methods.
- To continue to educate potential witnesses of overdose events about the inappropriate use (and dangers) of using folk methods.

Take Home Naloxone:

- To encourage users to carry kits whenever possible.
- To continue to provide multiple doses of naloxone.
- To ensure that all trained prisoners receive THN kits on release from prison.
- To ensure that THN kits are accessible to everyone at risk (even those on court orders).
- To encourage ownership of THN kits by shifting the emphasis away from personal need to the need of others.
- To shift the emphasis from requesting a THN kit and training by clients to offering THN kits and training by providers.
- To incorporate overdose management advice within the generic harm reduction advice provided within NSPs.

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12. Appendix

Ethics

1. Informed consent

The respondents need to have sufficient information about who we are, why we are conducting the research, and what we will do with the results in order to make an informed choice to consent. To this end, when recruiting participants from community settings (i.e. needle exchange schemes), we will provide them with a short statement containing information relevant to informed consent (e.g. a statement about who is commissioning the research, how the results will be used, confidentiality of the respondents etc.).

When recruiting participants from within the prisons, we will provide detailed information to prison staff and a summary statement will be uploaded onto the prison intranet. The same summary will be included at the beginning of the on-line survey.

A summary of the statement will also be repeated at the start of all interviews. We will then advise participants that we are going to be discussing overdose events that they may have experienced or witnessed and that this might be distressing for them. We will ask them if they are happy to proceed and feel up to talking about it. This process will help to ensure that participants know what to expect from the interview and are therefore fully informed.

2. Confidentiality

With the participants' persmission the interviews will be digitally recorded and professionally (and securely) transcribed by Voicescript Ltd. The recordings will be deleted from the recorder and computer as soon as they have been uploaded for transcription. Electronic copies of transcribed files will be stored on the principal researcher's secure University hard drive. Hard copies of transcribed files will be kept in a locked filing cabinet in the researcher's locked office.

At the start of each interview we will advise each participant that his or her identity will remain confidential unless he or she refers to an intent to harm him/herself or someone else. In such cases, the interview will be brought to a close and the information will be passed on immediately to the participant's prison officer, drug worker or the drug agency that he or she was recruited from.

3. Anonymity

If community-based participants opt for a telephone interview this would require them leaving a contact number in a sealed envelope in the needle exchange. We are happy to accept pseudonyms or personal names; whichever the respondent prefers. The sealed envelopes will be stored securely within the needle exchange and collected by the researcher on a regular (weekly) basis. Upon collection the cards will be stored securely in a locked cabinet in the principal researcher's locked office.

Prisoners who complete the on-line survey will not be asked to provide any identifying information. The survey results will be downloaded and stored securely on the secure University hard drive. If prisoners are interested in taking part in an in-depth interview, they will need to let a prison officer know. The prison officer will then pass on the prisoners' ID numbers to the researchers.

At the start of all interviews, participants will be advised that quotations may be extracted from the interview and used in published reports. Participants will be reassured that the quotations will be anonymised and that their identity will be protected.

4. Whether the respondent is harmed by the research

The community-based interviews will take place either on the telephone or in a drug agency which would provide support and advice if the respondent was disturbed by the experience. We will also provide information on where to obtain help relating to drug misuse or overdose (including information on the naloxone [overdose-related] scheme).

If during the course of the interview participants become distressed, they will be advised to contact their drug worker or the drug agency that they were recruited from. They will be asked if they are happy to do this themselves or if they would like the interviewer to do it on their behalf. We will also provide them with the number of the Samaritans (08457 90 90 90).

At the end of all community-based interviews we will thank participants for their time and advise them that they should contact their drug workers or drug agency if they have any problems that they would like to discuss. We will also provide them with the telephone number of the Samaritans (08457 90 90 90).

The prison-based interviews will take place in the prison visits block, which is supervised by prison staff. If participants become distressed during the interview, they will be advised to contact their prison drug worker or a prison officer. They will be asked if they are happy to do this themselves or if they would like the interviewer to do it on their behalf.

At the end of all prison-based interviews, we will thank participants for their time and advise them to contact their prison drug worker or a prison officer if they have any problems that they would like to discuss.

5. Issues relating to personal safety of the researchers

The community-based interviews will be conducted either face-to-face or over the telephone. If participants opt for a face-to-face interview, this will be conducted in a private room in a drug agency. In such cases, the interviewer will make sure that someone in the agency is aware that the interview is taking place and that other people are nearby.

The prison-based interviews will be conducted face-to-face in the prison visits block. The interview will be conducted privately so that no one can hear the conversation, but prison staff will be able to observe the interview taking place.

6. Issues relating to the effect of the survey on the person's treatment experience

Respondents recruited from community settings will be told by the drug worker that the research has nothing to do with them as individuals and is not connected with their support from the agency. Potential respondents will be asked if they are willing to take part in the research and their refusal will be accepted without question.

Respondents recruited from prison settings will be under no obligation to participate in either the on-line survey or the interview. They will be advised that their decision to participate or not to participate will not affect their treatment within the prison.