



# Patient, family members and community pharmacists' views of a proposed overdose prevention intervention delivered in community pharmacies for patients prescribed high-strength opioids for chronic non-cancer pain: An explorative intervention development study

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## Abstract

**Introduction:** Despite opioid prescribing for chronic non-cancer pain (CNCP) having limited therapeutic benefits, recent evidence indicates significant increases in the prescribing of high-strength opioids for individuals with CNCP. Patients prescribed opioids for CNCP have overdose risk factors but generally have low opioid overdose awareness and low perceptions of risk related to prescribed opioids. Currently, there are few bespoke overdose prevention resources for this group.

**Methods:** This qualitative study investigated views on a naloxone intervention for people prescribed high-strength opioids for CNCP delivered via community pharmacies. The intervention included overdose risk awareness and naloxone training and provision. Interviews were conducted with eight patients, four family members and two community pharmacists. Participants were convenience sampled and recruited through networks within the Scottish pain community. The Framework approach was used to analyse findings.

**Results:** All participants had positive attitudes towards the intervention, but patients and family members considered risk of overdose to be very low. Three themes were identified: potential advantages of the intervention; potential barriers to the intervention; and additional suggestions and feedback about the intervention. Advantages included the intervention providing essential overdose information for CNCP patients. Barriers included resource and time pressures within community pharmacies.

**Discussion and Conclusion:** While patients had low overdose knowledge and did not see themselves as being at risk of opioid overdose, they were receptive to naloxone use and positive about the proposed intervention. A feasibility trial is

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merited to further investigate how the intervention would be experienced within community pharmacy settings.

#### KEYWORDS

chronic non-cancer pain, naloxone, overdose intervention, overdose risk, prescription opioids

## 1 | INTRODUCTION

Chronic pain is persistent pain that lasts 3 months or more [1] with serious negative impacts on physical health outcomes and factors related to quality of life, such as impaired sleep [1]. The aetiology of chronic pain is varied [2] and the experience of pain is often complex and emotive. In addition to negative impacts on physical health, there are also mental health implications of living with chronic pain, such as depression [3]. Opioids are a common treatment for people with chronic non-cancer pain (CNCN) [4] and, while they can decrease pain for some [5], there is increasing evidence that they have a limited impact on improving function or reducing pain for many who are affected [6, 7]. Furthermore, long-term opioid treatment for CNCN is associated with an increased risk of adverse events, such as opioid dependence [6], with potential increased risk of fatal and non-fatal opioid overdose [8, 9]. Although opioids are not the most effective or safe treatment for CNCN [10], recent evidence indicates increases in the prescribing of strong opioids for this group, particularly in high-income countries [7]. In Scotland, there has been an increase in drug-related deaths, with prescription opioids (for all cause; not only for pain) and/or non-prescription opioids implicated in 89% of deaths in 2020 [11]. This has thrown a spotlight on groups at risk and CNCN patients may have additional risk factors such as polypharmacy and concurrent mental health problems [8].

In response to an opioid overdose, naloxone can be used to temporarily reverse the overdose by blocking opioid receptors [12]. Naloxone is typically administered to those experiencing overdose by someone else, for example a bystander or a paramedic, and can be administered intravenously, intramuscularly or intranasally [13]. Naloxone provision paired with overdose education is particularly effective in reducing numbers of fatal overdose events [14]. Programs that provide overdose risk information and naloxone training alongside the distribution of naloxone kits are often called 'take-home naloxone' interventions [15]. In Scotland, while drug treatment services typically provide naloxone to clients, other providers are increasingly being considered. For example, evidence shows that community pharmacists are generally willing to engage with harm reduction interventions and have regular contact with people who use prescribed

and non-prescribed opioids [16]. In response to both Scotland's drug-related deaths crisis and the COVID-19 pandemic, there has been an expansion of naloxone provision to populations with a history of opioid dependence and illicit use [17], but there are few harm reduction provisions tailored specifically to the CNCN population. While take-home naloxone is now available to anyone who uses drugs, or anyone who may witness an overdose, it is not widely distributed to the CNCN population [17] in Scotland, as it is in other countries such as Australia and in some US states [18]. Additionally, evidence has identified that some CNCN patients think naloxone is only suitable for people who use illicit drugs [19] and many CNCN patients are unaware of the value of naloxone intervention for opioid overdose [20].

Different elements of the current study have been reported in Schofield et al. [8] and Parkes et al. [21]. These two papers contextualise findings from the current paper within a broader context of perspectives of CNCN pain and overdose risk, and prevalence of patients at overdose risk within the health board where the research was conducted. For insight into perspectives of chronic pain, prescribed opioids and overdose risk, Parkes et al. [21] documented the views of those prescribed opioids for CNCN and family members, given these voices are often under-represented within the literature. Findings represented in the Parkes et al. [21] paper helped to develop the intervention which is reported in the current paper. Important findings which shaped the current intervention included: living with pain and experiencing stigma; pragmatic issues such as potential side effects of prescribed opioids or taking more than prescribed; the role of prescribers in overdose risk and prevention; and attitudes towards naloxone to address overdose risk. To assess the number of at-risk patients within the Scottish health board that funded and hosted the study, Schofield et al. [8] quantified high strength opioid prescribing in the community. Authors identified a large population of patients prescribed high strength opioids who had overdose risk factors but were without access to overdose prevention resources or interventions. The prevalence of at-risk patients illustrated the requirement to explore tailored interventions for this population to improve opioid safety [8]. For an overdose prevention intervention to be appropriate and tailored to the needs of this group, it is important for proposed interventions to be appraised and

evaluated by relevant stakeholder groups to inform intervention development. The aim of this paper is to document the views of patients, family members and community pharmacists regarding the proposed bespoke overdose prevention intervention for patients prescribed opioids for CNCP. Their opinions about the proposed intervention are discussed and a revised intervention created.

## 2 | METHODS

An in-depth discussion of study ethics, recruitment, informed consent and analysis processes is included in Parkes et al. [21]. A condensed outline is therefore included below for brevity.

### 2.1 | Intervention development

In terms of the proposed intervention, participants were given an overview of its intended components which were as follows: a protocol for community pharmacists concerning who to provide the intervention package to, and when; take-home intra-nasal naloxone product (Nxyoid®); a participant information sheet on the risk factors for opioid overdose, such as co-use of other drugs; a participant information sheet on the signs of opioid overdose/response actions; a pharmacy training pack with information participants would likely require, including answers to frequently asked questions; and a checklist to assist pharmacy staff in ensuring that correct information is provided to patients receiving the pack/ensuring consistency of delivery of the pack. Participants were informed that the findings from the interviews, alongside evidence from Scotland's national take-home naloxone program, would be used to adapt and develop this proposed intervention. Participants were informed that the overall aim of the intervention was to reduce harm and improve patient safety. The intervention components were deliberately not developed at this point but were used as conversation starting points with the aim of getting views to develop the intervention further.

### 2.2 | Ethical review and inclusion criteria

The University of Stirling National Health Service Invasive and Clinical Research committee provided ethical approval (reference number 18/19: No.052). Participants were people with personal experience of being prescribed high-strength opioids for CNCP, or family members of

someone prescribed high-strength opioids for CNCP, or community pharmacists. Participant family members were not related to CNCP participants. All participants had to live in Scotland and be over 18 years old. The definition of strong opioids was guided by the research team's clinical experts (DS, CM and AB) and the British National Formulary [22], with the following opioids included: buprenorphine, diamorphine, fentanyl, hydrocodone, hydromorphone, meperidine, morphine, oxycodone, pethidine, tapentadol and tramadol. Oral tramadol had to be at least 400 mg/day, and buprenorphine patches had to be at least 20 mcg/hour. Prescriptions could be current or up to 5 years previous, and any condition which caused CNCP was eligible. Study materials were reviewed by two individuals with lived experience who were financially reimbursed for their time/contribution. In addition, this manuscript was reviewed by an individual with lived experience to facilitate a sensitive representation of experiences.

### 2.3 | Recruitment and informed consent

Convenience sampling was used to ensure that all participants had experience relating to CNCP. Potential participants were found via professional and organisational networks, social media and Scotland's pain community. Individuals were provided with initial information about the study and invited to contact the researchers for more information. After discussing the project and providing consent, the research team arranged for a convenient interview time for the participant. No participants who contacted the team were ineligible. Participants were invited to the study by email and all received a participant information sheet that the study Research Fellow (author RF) discussed with them to request and gain written informed consent. All interviews were conducted by RF after participants had read through the proposed intervention, and used a semi-structured format. The interview included talking through the intervention's components detailed above. Interview questions of relevance for the current paper asked participants what they thought of the proposed overdose prevention intervention as a strategy to reduce harms associated with prescription opioid use in a CNCP patient population. The research team also asked questions which specifically gathered data about perceived advantages and disadvantages of the intervention and asked for feedback on how the intervention could be developed further. Seven of the 14 participants also provided views on a second version of the intervention which had been revised following feedback from all participant groups in the interviews. For further detail see the topic guide in Supporting

Information. Interviews were conducted between October 2019 and February 2020, and no participants withdrew. Interviews were either face-to-face or via telephone. Interviews lasted approximately 45–60 min and all were audio recorded and transcribed. A £20 honorarium was provided to participants. If face-to-face, travel was reimbursed and refreshments were available. All participants were invited to a follow-up interview which asked for views about the revised overdose prevention intervention. Findings from the original and follow-up interviews are included in this paper.

## 2.4 | Analysis

A researcher (Tyler Browne) uploaded transcripts to NVivo (Version 12) and coded and analysed them with support from RF using the Framework approach [23]. For full details for the analysis process, please see Parkes et al. [21].

## 3 | RESULTS

In total,  $n = 8$  patients,  $n = 4$  family members and  $n = 2$  community pharmacists were interviewed. Three themes were developed: perceived advantages of the overdose prevention intervention; perceived barriers of the overdose prevention intervention; and additional intervention suggestions and feedback.

While individuals prescribed opioids (denoted as 'individual') and family members are reported separately from community pharmacists in this section, there are overlapping and shared perspectives.

### 3.1 | Theme 1: Perceived advantages of the overdose prevention intervention

#### 3.1.1 | Patients prescribed opioids and family members

A consensus emerged that the bespoke overdose prevention intervention would be positive for patients prescribed high-strength opioids for CNCP, and patients and family members outlined several potential advantages and benefits of the intervention.

While general prospective advantages of the intervention were discussed by some, others outlined specific times when they would have benefited from the intervention. Participants indicated that the intervention had the potential to provide peace of mind during times of concern:

*'[My partner] has told me that she's been worried a few times retrospectively. She's come upon me in a bad way and she's been keeping a very close eye on me. But if there was an intervention that would be safe, then I'd say she would probably take it. We've been close'.* (Individual 1, man)

The notion of the intervention providing reassurance was also discussed by others: *'It would just give you that peace of mind that it was here if anything happened'* (Individual 6, woman). Patients often considered the potential positive impact of the intervention on those around them.

Another proposed benefit of the intervention was related to the option to use a naloxone nasal spray instead of an injection. One individual noted that administering naloxone via an intranasal spray was preferable as it removed barriers related to fear of needles. Further, there was a perception that using a nasal spray would be less intrusive to the recipient which would, in turn, be more comfortable for the person administering:

*'My dad would be like, "Well I don't really want to stab my daughter. I have to go and inject her with something and I'm not sure what it is." At least with like a spray it doesn't feel quite so bad, some folk are really anxious with needles anyway'.* (Individual 6, woman)

Participants also outlined that engaging family members in the intervention was an advantage: *'It's brilliant, it's great, ... getting family members ... That's really important'* (Individual 4, man). They proposed that it was important for others, beyond the individual prescribed opioids, to understand overdose signs and be trained in naloxone administration. All patients and family members understood the value of naloxone for those prescribed high-strength opioids. Some participants even proposed that naloxone should be made available on prescription:

*'When people are prescribed high doses of very strong pain killers ... then I think that's when naloxone should automatically be made available in the house'.* (Individual 5, woman)

#### 3.1.2 | Community pharmacists

Community pharmacists were also positive about the intervention, and they identified that one of the most obvious advantages was the potential for the intervention



to reduce the risk of opioid overdose. The intervention provided pharmacists with the opportunity to discuss risk with patients, which they viewed as part of their duty of care. Through delivering the intervention, pharmacists could play an active role in reducing harms associated with opioid use:

*'You can say [to other pharmacists] "Look these are the figures [drug-related deaths] we have got from the last five years. These are the simple steps we can take to reduce that." [...] In our [pharmacist] code of ethics your primary concern is duty of care to your patients, and if your patient is at risk of overdose then actually it's your duty to [...] mitigate that'.* (Pharmacist 1, woman)

Notions of responsibility and duties of care were apparent throughout interviews with community pharmacists. A considered benefit of the intervention was that it was 'simple' and a 'straightforward' way to reduce overdose risk. Additionally, when considering intervention delivery, pharmacists identified the potential to integrate the intervention into pre-existing dispensing processes:

*'You'd just have to, you know, give them the information. It's quite straightforward [...], a card you could stick in their bag with their medication'.* (Pharmacist 1, woman)

Further, community pharmacists perceived the use of naloxone as an advantage. Intranasal naloxone was thought to be more acceptable than intramuscular administration: *'The acceptability of a nasal spray is much better than a sort of injecting them'* (Pharmacist 1, woman).

Pharmacists also proposed the potential integration of the intervention with other services for patients, such as home help services. Even if patients lived on their own, there would be potential for bystander intervention, if required, due to the presence of carers which visited the home daily:

*'We have got over three hundred patients on these compliance aids. Almost all of them have got carers who would see them on a day-to-day basis, far more than their family members would, so it would be them that would be coming across it more than anyone else'.* (Pharmacist 2, woman)

Given that demographics and needs vary considerably across pharmacy practices, community pharmacists

stated that the impact of the intervention on other services beyond primary care should be considered.

### 3.2 | Theme 2: Perceived barriers of the overdose prevention intervention

#### 3.2.1 | Patients prescribed opioids and family members

While considerable proposed advantages were outlined, participants also identified potential barriers to the intervention. As naloxone is a bystander intervention, some participants considered the potential barriers for patients who live alone. Some participants described being concerned that they would forget training, and this was related to perceptions that naloxone intervention would not be a common occurrence. Additionally, while naloxone is available for free, one participant was concerned that identification stating that they were carrying naloxone may leave them vulnerable to having their medication stolen for its street value. While this was not a common concern, he stated:

*'Would there be some sort of tag to carry to say that you were carrying this [naloxone]? [...] There is people who are [...] aware of what oxycodone can do for them. And if they know that you've got some [oxycodone] they will take it off you forcibly [...] they are also highly valuable on the street so there is that issue as well'.* (Individual 1, man)

While the quote presented is not a barrier or a weakness of the proposed intervention, it illustrates a potential barrier that may be useful to consider when implementing an overdose prevention intervention.

#### 3.2.2 | Community pharmacists

Community pharmacists evaluated the intervention and considered potential implementation challenges. Community pharmacies differed in terms of demands on resources and time, and to be attractive to all the intervention would need to offer fair reimbursement:

*'I've got quite a well-staffed pharmacy, I also get double cover maybe once or twice a week so, for me, being able to take ten, fifteen minutes with a patient to go through this is absolutely no problem. But I certainly know there is a lot of pharmacies who are*

*understaffed. So, I can see that this service isn't going to appeal to them, and that means that the [financial incentive] figure will have to be a wee bit higher'. (Pharmacist 2, woman)*

Community pharmacists also considered potential barriers related to recruiting patients to receive the intervention. One pharmacist identified that some patients, namely those newer to their opioid medication, might be easier to provide information and training to, compared to others who had been taking their medication for a long time. This illustrates how important it is to tailor initial conversations to each patient's needs and experiences with prescription opioids:

*'For somebody who is newly on it [opioid medication] they are obviously going to be more responsive because it's the unknown [...] whereas I think the ones that are on it, you know, are taking max dose already, I'm not sure, I think they will be a pretty hard group [to persuade]'. (Pharmacist 1, woman)*

As previously discussed, community pharmacists identified home-care workers as a group who could provide the intervention, however, community pharmacists also considered barriers and difficulties which this could cause, such as the intervention becoming a burden for them among their other roles. This would require training and may not be a realistic proposal across the health board.

### 3.3 | Theme 3: Additional intervention suggestions and feedback

#### 3.3.1 | Patients prescribed opioids and family members: Additional suggestions

When considering how best to convey information to those who may intervene with naloxone, one family member suggested the use of a short video or phone app to give instructions on administering naloxone because: *'a picture paints a thousand words'* (Family member 2, man). Suggestions about more generally increasing public awareness of opioid overdose and naloxone were also outlined. One patient proposed a public campaign to raise awareness of naloxone: *'I wouldn't even be against a television campaign. I think posters in GPs, I think discussions with GPs, and I guess I'm not against a media campaign explaining what naloxone is'* (Individual 5, woman). While participants proposed the value of

individual conversations in increasing awareness, they also noted that, to have a wider impact, other strategies such as public campaigns should be utilised. Suggestions to integrate naloxone availability within communities were also outlined, and one participant proposed that naloxone kits should be made available in the same places as defibrillators, with first aid training extending to include information about naloxone and how to administer it: *'It should become part of the same training, just part of general first aid training'* (Individual 5, woman). This individual noted that alongside increases in the prescribing of opioids should be increases in the training of opioid overdose intervention.

Additionally, one suggestion was that people should carry a naloxone identification symbol, such as an ID card or bracelet: *'so that people know that there is naloxone, or I carry naloxone'* (Family member 3, man). There was a sense throughout the suggestions that normalising or 'mainstreaming' naloxone provision/carriage and training could help reduce the stigma associated with CNCP and opioids.

#### 3.3.2 | Community pharmacists: Additional suggestions

Community pharmacists were generally in favour of anything that created a safer environment for CNCP patients using opioids. One pharmacist identified that discussions about overdose risk may potentially dissuade patients from using their opioid medication. Their view was that communication of risk would therefore need to be carefully considered so that patients would not stop taking their medications. Related to risk, one pharmacist suggested a scoring system be created to use alongside the intervention, for instance, on a scale of 1 to 15; 1–5 as low risk, 5–10 as medium risk, and 11–15 as high risk. Additionally, in terms of intervention delivery, one pharmacist outlined that it would be important for pharmacies to be provided with a financial incentive if they were to deliver the intervention. One pharmacist was concerned that staff would not deliver the intervention without financial reward and outlined the requirement to compensate pharmacies for the time and staff investment required.

#### 3.3.3 | Views on the revised intervention package

Participants were also invited to share their views on a revised version of the intervention package. In total, seven participants responded and offered feedback and

the consensus was positive. Participants discussed when the intervention should be provided and who should provide it. One individual proposed that the intervention should only be provided if an individual had been taking opioids for: '*more than a couple of months*' (Individual 4, man). This differed from other participant views that naloxone should be automatically co-prescribed alongside high-strength opioids. Additionally, there were discussions around the delivery of the intervention, and two participants suggested that the intervention should be delivered by GPs instead of community pharmacists. One stated: '*It seems the prescribers are let off the hook with this*' (Individual 2, woman). The other explained that they would find it easier to discuss such issues with their GP, and that it seemed counter-intuitive that the intervention should be rolled out via pharmacies. That said, they also accepted that naloxone co-prescription from GPs might dissuade some people from taking their medication as this might confirm or emphasise related risk.

## 4 | DISCUSSION

The findings reported in the current paper (and those in Parkes et al. [21] and Schofield et al. [8]) informed the final intervention with the idea to conduct a feasibility trial in the future. This paper outlines key stakeholder perceptions of a bespoke overdose prevention intervention tailored to CNCP patients prescribed high-strength opioids. Findings provide insights into views about naloxone provision, potential benefits and challenges of the intervention, and important considerations prior to implementation. A consensus emerged that the proposed intervention would provide important harm reduction to a patient group who are often overlooked. Overall, all participants had positive attitudes towards the proposed overdose prevention intervention, which mirrored previous findings from Nielsen et al. [7, 24]. However, some participants considered the likelihood of needing to use the naloxone intervention as being very unlikely, and this may indicate that CNCP patients saw themselves as being at very low risk of overdose. Previous evidence from Nielsen et al. [7, 24] also highlighted that CNCP patients prescribed opioids considered themselves at low risk of overdose. Relatedly, differences in risk perception between health professional and CNCP patient were reported by Hurstak et al. [25], with patients having lower perceptions of risk related to their prescribed opioids. These authors outlined the need for clinicians to educate patients about this risk, while being mindful of approaching the topic in a way which was not stigmatising [25]. Relatedly, Mueller et al. [19] suggest that framing naloxone as an intervention to increase safety, rather

than a risk reduction intervention, may help to reduce barriers in naloxone acceptability for patients.

Potentially involving family members in the intervention was well received, with participants acknowledging that it would be valuable to share overdose risk and naloxone knowledge with others in their household as 'bystanders'. Previous evidence also emphasises the importance of involving family members in overdose prevention interventions: for example, in most fatal prescription opioid overdoses there is a family member or carer present [7,26]. It has also been acknowledged that fatal overdose may occur because those around the individual do not recognise the signs of an opioid overdose, rather than due to a lack of naloxone [13]. Additionally, once family members understand the risks associated with opioids, they might be more motivated to administer naloxone during an overdose [27]. Naloxone training and overdose education for family members and caregivers is therefore an essential strategy in reducing opioid-related mortality, and interventions that engage family members and friends are more effective at decreasing fatal overdose when compared to interventions that do not [14].

Our study identified a preference for intranasal naloxone across patients prescribed opioids for CNCP, family members and community pharmacists. Wider literature also identifies a preference for intranasal naloxone for patients prescribed opioids for pain management [28]. As noted by one participant, and in previous literature, using a needle for intramuscular administration may be a psychological barrier for non-medically trained individuals [13].

When discussing overdose risk, one suggestion was the automatic co-prescribing of naloxone alongside opioid prescriptions. For example, one patient outlined that, if a prescription were to continue for several weeks, naloxone should automatically be made available to that individual. Previous findings have highlighted that, while co-prescribing naloxone with prescription opioids is a tangible clinical action that could reduce opioid-related mortality, co-prescribing rates remain low [29]. Additionally, automating the process of co-prescribing naloxone could potentially reduce the responsibility of community pharmacists as they would no longer have to assess each patient for eligibility. However, one pharmacist mentioned that co-prescribing naloxone may dissuade patients from taking their medication. Therefore, co-prescribing of naloxone would require communication between prescriber and patient about risk of non-adherence versus risk associated with medication and potential naloxone intervention.

In the current study, some participants considered who may intervene in the event of an overdose if the person was socially isolated. In addition to the role of family

members in the intervention, there was also contemplation of the potential roles and responsibilities of non-family members, namely formal home care workers. There was consensus that such carers may visit more often than families and it might therefore be beneficial to include them in intervention delivery. Most current literature focuses on medical professionals, peer or family member intervention, with little focus on home-care workers. However, McQuade et al. [30] proposed that home care workers can be trained to provide overdose and naloxone education to older adults prescribed opioids, which can result in increased knowledge of opioid risk and naloxone use. There is, however, little evidence about the burden of this additional work on home care workers and it is important to highlight the role of social and healthcare decision makers in determining the feasibility of engaging this group in overdose prevention interventions.

Further suggestions were diverse but generally related to improving clarity across different aspects of the intervention. Interviews were conducted before the Scottish Government's naloxone awareness campaign meaning that there was no specific discussion of this, but videos, pictures or a television campaign were all proposed by patients prescribed opioids for CNCP and family members as potentially helping to illustrate the specifics of naloxone administration. Recent findings from McElhinny et al. [31] identified the feasibility of naloxone video education but outlined that more research is required to compare it with knowledge gained from traditional written materials. Nonetheless, video education materials can reduce barriers related to literacy and improve accessibility [32]. From pharmacist participants there was a suggestion of quantifying prescription opioid overdose risk in a scoring system which would help delineate risk more effectively for patients. Recently, Shoup et al. [33] developed a validated assessment named Rx-OOKS that measures prescription opioid risk knowledge, modified from the Opioid Overdose Knowledge Scale for a prescription opioid population. This measure was found to be a valid indicator of prescription opioid overdose recognition knowledge and naloxone use. Findings from Hurstak et al. [25] and Mueller et al. [19] also discussed reducing risk and outlined the requirement for non-judgmental, empowering discussions between patients and health professionals to improve overdose knowledge and remove barriers to naloxone acceptance.

Community pharmacists outlined the importance of reasonable reimbursement for pharmacist investment of time and resource in delivering such an intervention, something that was particularly important for understaffed pharmacies. Findings from Bakhireva et al. [34] identified inadequate reimbursement as a barrier to pharmacy dispensing of naloxone. This was also supported by

Nielsen and Olson [35] who proposed that having appropriate reimbursement could contribute to pharmacists' ability to educate patients in a time-efficient way. However, authors noted that appropriate resources and reimbursement do not exist for all patient groups [38].

Limitations of the study include the small sample size. As the findings reflect, patients prescribed opioids for CNCP rarely saw themselves as being at significant risk of opioid overdose, and therefore recruitment to an overdose prevention intervention was difficult. Participants perceived the likelihood of an overdose to be rare, and this was understood to be a barrier when recruiting to an overdose prevention study. If perceived risk of overdose is low, there may be less motivation for potential participants to participate in an intervention to reduce risk. The current study was one small component of a larger study [8] that sought to quantify overdose risk in the CNCP population and develop a bespoke overdose prevention intervention. In addition, the stigma associated with naloxone could have impacted on recruitment. Potential participants might have been hesitant to engage with a naloxone intervention because acceptance may somehow indicate to health professionals that they were using their prescription opioids in a problematic way. Although this is only a potential concern within the current study, previous findings from Mueller et al [19] outlined this issue, with CNCP patients' hesitant to accept naloxone as they felt this suggested to health professionals that they were not using their prescription opioid as prescribed. This means that only some perspectives amongst this group can be represented in this study. Additionally, self-selected participants may have been more knowledgeable and comfortable with conversations around overdose, and therefore more likely to participate. Additionally, our small sample of community pharmacists, in part, limits our ability to draw firm conclusions, however, their input was useful in designing the next stage of the research. This professional group is very difficult to involve in research for reasons including, but not limited to, lack of staff cover to release them from pharmacy work to participate in research, and the additional demands experienced in Scotland over this period (pre COVID-19).

#### 4.1 | Refinement of the overdose prevention intervention for future feasibility work

The positive reception towards the proposed intervention encouraged the team to move forward to develop a full intervention 'package' that could be used in a follow-on feasibility study. The team drew from the findings



described in this manuscript, alongside those in Schofield et al. [8] and Parkes et al. [21], developing practice within Scotland, and the expertise of people with lived experience and clinicians, to optimise the materials. The final revised intervention included: an opioid safety card; an opioid safety booklet; a website; and naloxone provision and training via community pharmacies. The opioid safety card included basic information on opioid-related risks, using naloxone and a safety plan to be used in the event of an overdose. The booklet expanded on information in the safety card and provided resources for further information and support. The opioid safety card and booklet included materials adapted from a similar project conducted in Australia, with kind permission from Associate Professor Suzanne Nielson [20]. A project website included online versions of all intervention materials. The proposed intervention involved intranasal naloxone provision and training delivered via community pharmacies. In the refined intervention, community pharmacists would be expected to complete comprehensive training from the Scottish Drugs Forum's (a national third sector/not for profit advocacy organisation) 'Overdose Prevention Intervention and Naloxone Training for Trainers' before delivering the intervention. Financial reimbursement for time investment was outlined by community pharmacists as being an important factor in service delivery, therefore pharmacies need to be compensated for their time if they invest in the service.

## 5 | CONCLUSIONS

The study identified that the proposed, bespoke overdose prevention intervention for patients prescribed high-strength opioids for CNCP was generally well received by patients prescribed opioids for CNCP, affected family members and community pharmacists. These novel findings fill a considerable gap regarding overdose risk and potential interventions for this group of individuals. Participants recognised advantages of the proposed intervention, including increasing patient safety, the acceptability of intranasal administration, and the engagement with family members as bystanders. Barriers were also outlined such as finite time and resources in pharmacies, low overdose knowledge and perceptions of low overdose risk, and concerns about role adequacy to intervene with naloxone in an overdose situation. Future research should now pilot the intervention in community pharmacies to assess feasibility and acceptability.

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## CONFLICT OF INTEREST

No conflicts of interest to declare.

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