"It can save your life, that's all I know," barriers and facilitators for engagement in take-home naloxone for people receiving opioid substitution treatment in regional Australia: An explorative study

Isabella Natale,[1] Craig Harvey,[1] Pene Wood,[2] Karen Anderson[2]

[1]Drugs and Alcohol Services, Barwon Health, Geelong; [2]La Trobe University, Bendigo, Australia

ABSTRACT

Engagement in take-home naloxone (THN) programs by people receiving opioid substitution treatment (OST) in Australia is low despite methadone being a significant contributor to opioid overdose deaths. Our aim was to explore barriers and facilitators for OST patients to engage in THN. We used a descriptive qualitative design with thematic analysis to gain insight into naloxone uptake by people engaged in an OST program in regional Australia. Eleven participants were interviewed; eight had previously engaged with THN. Barriers to THN included limited knowledge and understanding, lack of information, and not personally experiencing an overdose. Facilitators included having a traumatic experience of overdose, knowledge and understanding of THN and overdose, empowerment in carrying naloxone, and expanding THN programs. Support for the expansion of THN programs is desired among participants, and widespread peer distribution is understood to be the key to success. This study found that prior traumatic experience of overdose facilitates acceptance of THN, and being offered THN was the most important factor in engagement. Less clear is how to engage people who lack a traumatic overdose experience.

Correspondence: Isabella Natale, Drugs and Alcohol Service, Barwon Health, PO Box 281, Geelong 3220, Australia.
Tel.: +61.426.193.972 - Fax: +61.3.4215.8793.
E-mail: Isabella.Natale@barwonhealth.org.au

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Introduction

Deaths from unintentional drug overdoses in Australia have almost doubled from 981 in 2001 to 1,654 in 2022 (Penington Institute, 2022). Compelling in number alone, this statistic does not convey the emotional pain that family and friends are left with or stigma due to the nature of their loved one's death (Daley et al., 2018). Adding to potential emotional pain is the possibility that death could have been prevented by administration of naloxone—an opioid antagonist that has a high affinity for opioid receptors, thus temporarily blocking the effects of opioids. Substantial evidence supports the provision of naloxone for opioid toxicity management, and therefore, naloxone has been used to treat opioid overdose for more than thirty years (Campbell, 2019; World Health Organization, 2014).

"Take-home naloxone" (THN) is a term used to refer to the provision of naloxone to anyone potentially likely to witness an opioid overdose in the community. THN programs have been evidenced to reduce overdose mortality in program participants and the wider community (McDonald & Strang, 2016; Strang et al., 2019). THN programs usually include overdose education detailing prevention strategies, how to identify and respond to opioid overdose including seeking help, and how to administer naloxone

(Williams et al., 2014). These programs are targeted towards people who are likely to witness an opioid overdose in the community and are well-placed to intervene (Strang et al., 2019).

Naloxone was first made available for use outside the hospital setting in Italy in 1991 in response to a heroin epidemic (Campbell, 2019). In the late 1990s, naloxone provision began in the United States and in the early 2000s, programs began in the United Kingdom (Campbell, 2019). In 2010, Scotland became the first jurisdiction to implement a national THN program (McAuley et al., 2012), and in 2014, the World Health Organization endorsed widespread availability of naloxone for community management of opioid overdose (World Health Organization, 2014).

THN programs commenced in Australia in 2012 in the Australian Capital Territory and now operate in all Australian jurisdictions (Dwyer et al., 2018). Currently, three different formulations of naloxone are available in Australia: an intranasal spray and two intramuscular injection options—one pre-filled and the other requiring additional equipment to utilize. Naloxone has been available via GP prescription—subsidized on the Pharmaceutical Benefits Scheme since 2012—and for people to purchase over the counter in pharmacies since 2017 (Dwyer et al., 2018). As of July 2022, all pharmacies in Australia have been able to access federal funding to dispense naloxone for free to customers, and changes to legislation in the state of Victoria will soon enable people other than pharmacists, such as harm reduction workers, to supply naloxone (Australian Government Department of Health and Aged Care, 2022).

Prior to July 2022 and despite product and program availability, economical and logistical barriers to accessing naloxone in Australia were evident (Dwyer et al., 2018). For people likely to be present at a drug overdose, the cost to purchase naloxone over the counter, fear of experiencing stigma, and future discriminatory consequences if naloxone was requested were prohibitive (Green et al., 2017).

Patients prescribed opioid substitution treatment (OST) (methadone and buprenorphine) contribute to overdose deaths; while their medication alone does not routinely cause the death, it often plays a significant part (Penington Institute, 2022). This is contrary to public opinion that the methadone implicated in overdose deaths has been diverted and highlights the current relevance and need for THN programs for patients on OST (Jamieson, 2020). In Australia, the rate of accidental deaths involving methadone more than doubled from 2001 to 2020 (Penington Institute, 2022).

Times of increased risk of overdose are at commencement of treatment, when take-away doses are commenced, and at cessation of treatment (Walley et al., 2013). Risks are present at commencement as dosage has not been stabilised and patients are more likely to be continuing use of illicit or prescribed opioids (Walley et al., 2013). Take-away doses increase the availability of the medication, and at cessation, tolerance is often significantly reduced. Despite OST patients demonstrably making effort to reduce or cease opioid use, they continue to have high rates of overdose risk factors such as polysubstance use and relapse leading to increased exposure to overdose events (Walley et al., 2013).

Major barriers to obtaining naloxone in Australia have been identified as out-of-pocket cost to the consumer and difficulties navigating complex health systems (Dwyer et al., 2018) similar to experience in the United States (Deering et al., 2018). The cost of naloxone available over the counter in Australian pharmacies until July 2022 was prohibitive to the person at risk of overdose (Pricolo & Nielsen, 2018). To obtain naloxone at a subsidized price through the pharmaceutical benefits scheme, people must first obtain a prescription from their GP and then have that prescription filled at a pharmacy. The stigma and discrimination from such health services and health professionals (Fomiatti et al., 2022; Strang et al., 2019; Van Boekel et al., 2013) is compounded by the often inaccurate perceived notion of wrongdoing by requesting naloxone, adding another significant barrier to obtaining THN from a pharmacist. Additionally, people receiving methadone view concurrent use of opioids, benzodiazepines, and alcohol as low risk, despite evidence that this is particularly fatal (Deering et al., 2018).

Government funding of THN programs in Victoria began free provision of naloxone in 2018, thus overcoming the financial barrier. As part of a strategy to increase naloxone distribution, naloxone was offered to all OST patients attending medical appointments at a drug and alcohol service in regional Victoria. Experienced reception staff offered free provision that would include a brief training to be carried out by experienced harm-reduction staff while patients waited to see their GP, thereby overcoming both financial and logistical barriers. Despite this, many OST patients declined take-home naloxone, in contrast to the literature, suggesting that other barriers remain (Deering et al., 2018; Dwyer et al., 2018). This qualitative study, therefore, explores persistent potential barriers and facilitators to OST patients.

Materials and Methods

We used a descriptive qualitative design (Sandelowski, 2010) with semi-structured interviews in a regional town in Victoria, Australia. We recruited participants from a community-based drug and alcohol service that offers access to OST prescribing GPs and a take-home naloxone program among other related harm reduction services. This service is the largest service for people accessing OST in the region.

Eleven semi-structured interviews (30-90 minutes in length) were conducted by the lead researcher (IN) and audio recorded. The initial six interviews were conducted face-to-face during February and March 2020, followed by five telephone interviews in July and August 2020, to com-

ply with physical distancing restrictions in place in Victoria at the time due to COVID-19.

Adults over the age of 18 who were being prescribed OST at the time of interview and had been offered THN in the past were purposively recruited (Lavrakas, 2008). Prospective participants who were unable to participate in an interview face-to-face or via telehealth were excluded. All staff at the service were provided with information about the study prior to advertising, posters being placed in waiting areas of the site. Prospective participants were asked to contact the lead researcher to confirm eligibility and discuss interview arrangements.

Written informed consent was obtained prior to all interviews. Ethics approval was obtained from the Research Ethics, Governance & Integrity Unit (Reference 19.123) at Barwon Health and the University Human Ethics Committee at La Trobe University.

The interview guide (Supplementary Materials, Appendix 1) was developed for this study based on the literature (Deering et al., 2018; Dietze, Stare, et al., 2018) and reviewed by experienced clinicians working with OST patients and THN programs. The interview guide was used to explore narratives from participants pertaining to their drug use history leading to OST, their knowledge and experience of overdose, and particularly their attitudes towards take-home naloxone programs and any experience they had with naloxone. This method enabled us to utilize open-ended questions, inviting the participants to give a more detailed response and allowed for further questioning if deemed relevant to the study. Recruitment continued until there was consistency in the concepts and insights into people's experience of naloxone and opioid overdose emerging without presentation of new themes (Fusch & Ness, 2015).

Data analysis

Data were analysed utilizing thematic analysis (Sandelowski, 2010). This is a systematic approach that involves identifying themes or patterns of cultural meaning: coding and classifying data and interpreting the resulting thematic structures. Interviews were transcribed verbatim, and data were then de-identified, coded, and analysed. Initial data were coded separately by all researchers and compared for consistency, after which all remaining data were coded by two researchers (IN and CH). Codes were sorted into themes which all researchers met to discuss and compare. Commonalities, relationships, context, and patterns were considered before themes were refined (Liamputtong, 2009).

Results

Eight males and three females took part in this study, and the median age range was 36-45 years (Table 1). Of the 11 participants, 10 were prescribed methadone, and eight had engaged with THN prior to the study. The gender, age, and OST medication type characteristics matched national data for OST patients in Australia in 2019 (Australian Institute of Health and Welfare, 2020). Three participants had casual work as peer needle and syringe workers; however, for the most part, participants' income consisted of government support. All had access to housing, and education levels varied from degree qualifications to leaving school prior to year 10.

Themes emerging from interviews were grouped into *barriers to engaging with THN* and *facilitators of engaging with THN*. Barriers to engaging with THN were limited knowledge and understanding of THN, lack of information on THN from GPs and pharmacists, not personally experiencing an overdose, and using drugs alone. Facilitators that emerged included having a traumatic experience of overdose, knowledge and understanding of THN and overdose, the belief that having THN is empowering, and expanding THN programs. Each of these themes is discussed below, and the words of the participants are used to illustrate the themes reported. Pseudonyms have been used throughout.

In general, all participants deemed accessing THN as

Table 1. Participant characteristics.

	Gender	Age	OST	Accepted THN
Participant 1	Male	>60	Methadone	Yes
Participant 2	Male	46-60	Buprenorphine/naloxone	Yes
Participant 3	Male	36-45	Methadone	Yes
Participant 4	Male	36-45	Methadone	Yes
Participant 5	Male	26-35	Methadone	Yes
Participant 6	Female	36-45	Methadone	Yes
Participant 7	Female	46-60	Methadone	Yes
Participant 8	Male	36-45	Methadone	No
Participant 9	Male	36-45	Methadone	No
Participant 10	Female	36-45	Methadone	No
Participant 11	Male	36-45	Methadone	Yes

OST, opioid substitution treatment; THN, take-home naloxone.

easy, and not being able to obtain naloxone did not contribute to anyone's decision to accept naloxone or not. Cost or logistical issues were not raised by any participants as contributing factors; therefore, access was not identified as contributing to barriers or to facilitators.

Theme 1: Barriers to engaging with THN

Several barriers to engaging with THN were identified by participants; these included a lack of understanding about THN and the risk of overdose, not personally experiencing an overdose, and using drugs alone.

Limited knowledge and understanding of THN

Participants were asked about their understanding of THN including what it is used for, who they think should use it, and why and how it can be accessed. Among participants who had not engaged with take-home naloxone, understanding that naloxone reversed an overdose and that participants could access it was all that was known. For example, William said, "Naloxone, I know you can just give it to them, or you know it all depends on the person using…. You give it to them, and they'll wake up from an overdose." Similarly, Carol explained "It can save your life, that's all I know" and Paul agreed with, "No, I wouldn't know. I wouldn't even know what it looked like."

Lack of information on THN from GPs and pharmacists

When asked if their OST prescriber or a pharmacist had ever discussed THN with them, only one participant reported that their GP discussed take-home naloxone with them; others voiced a desire for this to occur. For instance, Carol said, "He doesn't talk to me about that kind of stuff…. It would actually be good; it would actually feel like he cares." This tendency was explored further with participants who had been co-prescribed central nervous system depressant medications that would increase their risk of toxicity and overdose. In such cases, Naloxone was still not discussed or offered by their doctors—"Nope…. Nah never, not one doctor," as William succinctly observed. William interpreted this as supporting his view at the time that he was not at risk of overdose and did not need THN. This view was then reinforced by dispensing pharmacists not discussing THN either: "Nope, never. Not one, not any chemist." It wasn't until later when he was offered THN by a harm reduction worker that he was informed of the potential overdose risks.

This pattern was common across all participants except for Carol who said it felt good to be asked about naloxone by the chemist: "The chemist was asking people…. It was good to know it was out there for an option, if needed." A lack of education on overdose risks and THN from GPs and pharmacists could have been a contributing factor to the limited knowledge participants had on THN and could explain why their understanding was limited to the risk of overdose.

Not personally experiencing an overdose

All participants who declined THN had no personal experience of an overdose and even indicated that THN was for people who had overdosed previously, highlighting their limited understanding of THN, as evidenced by Paul: "People that are, you know…. I don't, I don't know. Like to be honest. I don't know people that are, have, have overdosed before? You know, at least once or twice." By assuming that THN was for people who had overdosed previously, participants excluded themselves from this group.

Participants who had not engaged with THN could not explain why they had never had an overdose themselves and did not have strategies to reduce their own overdose risk, and some, such as Paul, believed that the risk to themselves was low or non-existent: "[I]t's not going to happen to me." When specifically asked what strategies were employed to reduce their overdose risk, Tim also downplayed the risk: "I don't know. Nothing I suppose." We interpreted that this denial of overdose risk, combined with not employing any risk reduction strategies, led participants to determine that THN was not relevant to them.

Using drugs alone

Using drugs alone was a barrier to engaging with THN. Participants who used alone and had not engaged with THN reasoned that if a person were alone and experiencing an overdose, then THN was not relevant, as they could not administer it to themselves: "[I]f you're by yourself it's not going to save anyone's life." Comments like this implied a fatalistic view of the risks of using drugs alone.

Theme 2: Facilitators promoting engagement with THN

Traumatic experience of overdose

All participants who had engaged with THN had experienced a traumatic overdose event, and all had personally overdosed at least once. Also, many had experienced an overdose fatality or near miss of someone they identified as close to them, and that affected them deeply, as demonstrated by Ralph: "[M]y friends who I started using heroin with. There was seven of us, and there's only two of us left. So the rest are dead." Participants linked these experiences as informing their decision to engage with THN, as described by Terry and Mark, respectively: "Because of her, I automatically, yeah, wanted it," and "[J]ust my experiences in the past and stuff like that to know that I could've like done something to change the, the defects, was a no brainer". For these participants, it appears that traumatic overdose events pre-determined their engagement with THN when the offer was made.

Knowledge and understanding of THN and overdose

Participants who had accepted THN generally had good knowledge of what naloxone is, its intended use, and the concept of THN programs. Attitudes towards being able to access it themselves were positive, and three participants in this group reported having administered naloxone. Mark stated, "Just basically, that it reverses the effects of the, of the opiates," and William concurred with, "You give it to them, and they'll wake up from an overdose." The effect of naloxone was thus described simply, and feelings of confidence in naloxone and competence to respond to an overdose were evident. It is not clear whether this knowledge facilitated engagement with THN programs or was a result of having accepted THN previously.

Additionally, this same group gave detailed explanations as to why people overdose and outlined various risk reduction strategies utilized to prevent overdoses from occurring. Common strategies included using their drugs in multiple, smaller amounts, not using alone, and being aware of their tolerance. For example, Russell explained that "Two holes in the arm is better than one in the ground," and William said, "You know I always, I only do two points at that time. You know, I know me sort of thing, me tolerance. Do you know what I mean like?" Similar to knowledge of THN, it is not clear whether utilizing risk reduction strategies facilitated engagement with THN programs or was a result of the engagement.

Having THN is empowering

Participants who had used their THN to reverse opioid overdoses described feelings of empowerment, control, and gratitude at being able to take action to prevent harm. Mark, for instance, likened it to being a paramedic, and others expressed relief at having the tools and knowledge to act in potentially life-threatening situations: "[I]t's yeah, just amazing to, to be able to have that kind of control and, yeah, ability." And William reflected on how it is different now with access to THN compared to fifteen years ago:

> At least you can bring them back to life now, you know what I mean. Like, we couldn't do that. You had to get the ambulance to do it. And then nine out of ten, they're going to die because the time the ambulance got there it was too late.

As Mark and William's comments reveal, having access to naloxone and being able to administer it with confidence enables OST patients to feel empowered.

Expanding THN programs

All participants were supportive of THN programs regardless of whether they had used THN. Suggestions to expand THN distribution included peer distribution, targeting drug dealers, making it compulsory via needle syringe programs, and including THN kits in syringe vending machines, as demonstrated by Sandra and Tim respectively: "I think drug dealers should have it" and "Yeah, they should maybe hand it out with every kit pack…. Compulsory, put it in their pack. Make it that they don't it get it unless they take it home."

Furthermore, all participants—regardless of whether they had or had not engaged with THN—supported peer distribution of THN and reported that it was already happening informally. For example, Sandra acknowledged that some people were still not willing to engage with community THN programs, noting that "people are scared of people who have authority." And Ralph suggested that peer distribution could reach this group of people: "[W]e've been able to get ourselves, not just ourselves to have the naloxone, but other people, who come in here and wouldn't engage with, with staff." Through comments such as these, participants reflected about how they and other peers have a role in distributing THN to people who are not being reached by THN programs and are potentially at high risk of overdose, suggesting that peer distribution facilitates access to THN.

Distribution via peers and syringe vending machines were suggested as ways to reduce barriers for people not wanting to engage with THN program staff. The benefits of THN and importance of ensuring access to those who needed it were voiced by all participants.

Discussion

In this study, significant barriers existed for OST patients deciding whether to accept THN such as limited knowledge and understanding, not experiencing an overdose themselves, and using alone. The experience of a traumatic overdose, however, was a facilitator to engaging with THN, and naloxone need only be offered to such participants to facilitate engagement. Participants clearly desired the expansion of THN programs and viewed widespread peer distribution as the key to success.

Consistent with these findings, Deering et al. (2018) report that opioid users who do not engage with THN programs have poor knowledge and understanding of overdose and naloxone (Deering et al., 2018), and this has been identified as an area for improvement (Dietze, Stare, et al., 2018). Findings of this study support the importance of improving knowledge of overdose and naloxone among this population and thereby decreasing barriers to accessing THN.

Some participants said that their GP and/or pharmacist had never discussed THN with them, strengthening self-perceptions regarding low risk of overdose. This is also a missed opportunity for increasing awareness and availability of THN. Despite barriers such as workflow logistics and costs related to limited time (Strang et al., 2019), evidence presented here further supports the belief that GPs should co-prescribe naloxone with opioids (see also, Strang & McDonald, 2016) and that pharmacists dispense

naloxone with opioids (see also, Choremis et al., 2019). In Australia, work is progressing in determining and addressing barriers for pharmacists (Nielsen et al., 2021; Strang et al., 2019; Van Boekel et al., 2013); however further research needs to determine barriers for GPs in Australia, particularly in rural settings.

These findings further indicate that never having experienced an overdose personally contribute to the ambivalence pertaining to perception of one's own risk and play a role in participants deciding not to accept THN, as did using opioids alone. This has not been identified in the literature previously. Participants were focused using naloxone on themselves rather than the thought of using it on someone else. This finding has implications for overdose education and THN program delivery to ensure accurate understanding of the relevance of naloxone, thereby enabling people to make informed choices.

The data clearly demonstrate that a traumatic overdose experience (of oneself or witnessed) preclude engagement with THN. For the population represented in this study, it is imperative that naloxone is put in their hands, as experience of an overdose has been identified as a strong predictor of subsequent overdose (Boyes, 1994). In addition to preventing harm, this will increase knowledge and understanding of naloxone, overdose risk factors, and risk reduction strategies, as demonstrated in this study and others (Dietze, Draper, et al., 2018; Lintzeris et al., 2020). Additionally, having THN may have an empowering effect (see also, McAuley et al., 2018; Wagner et al., 2014). A challenge remaining is how improved knowledge regarding both overdose and the use of naloxone can be achieved among people who do not engage in such programs and is an area for further research.

Based upon this research, OST patients desire an expansion of THN programs regardless of whether they personally choose to accept it, and peer distribution will contribute to reaching people who are not willing or able to engage with non-peer employees of THN programs (see also, Lenton et al., 2015; Nelson et al., 2016; Olsen et al., 2015). This pattern emphasizes the unique position peers have within their community and the additional credibility and trustworthiness conferred on them by patients when talking about overdose. Recent changes to legislation in Victoria (Foley, 2020) will enable this practice on a much larger scale than exists as of this writing.

Limitations to this study include a small number of participants in one regional Victorian location only. Characteristics of the participants in this study were similar to the population of OST patients in Australia; however, further research with a larger sample would be necessary to confer transferability of findings to other contexts, situations, and times (Australian Institute of Health and Welfare, 2020). Further, views sought were on perceptions of risk as opposed to actual practices, and precluding overdose risk factors outside opioid using behaviours—such as smoking, renal function, alcohol intake, and other relevant co-morbidities—were not explored. Finally, the number of participants who did not accept THN was small and may not be representative of the views of all OST patients who do not accept THN.

Conclusions

This study found that prior traumatic experience of overdose amongst OST patients facilitates acceptance of THN. For this group, the relevance of THN programs was clear, and being offered THN was the most important factor in their engagement. Less clear is how to engage people who have not had a traumatic experience because access to and the offer of THN was not enough to confer acceptance of naloxone. Barriers identified, such as poor knowledge and denial of one's own risk, warrant further investigation for implications about overdose prevention and THN program implementation. Expansion of peer distribution of THN in Australia is supported by these findings; however, we suggest that to do this successfully, peer workers must be recognized, remunerated, and supported equitably in the workforce.

While this study has sought to develop greater understanding into the reasons why OST patients accept THN or not, "THN is not a panacea for overdose. It is a last resort for those on the brink" (McAuley et al., 2018). THN programs only address one part of the prevention and response to opioid overdose and should be seen in this context. There is still much work to do to address the broader social, environmental, and legislative issues that overdose occurs within.

References

Australian Government Department of Health and Aged Care. (2022, 30 August 2022). *Take home naloxone program*. Accessed 5 September, 2022. Available from: https://www.health.gov.au/initiatives-and-programs/ take-home-naloxone-program

Australian Institute of Health and Welfare. (2020). *National opioid pharmacotherapy statistics annual data (NOPSAD) collection*. Available from: https://www.aihw.gov.au/reports/alcohol-other-drug-treatment-services/national-opioid-pharmacotherapy-statistics/contents/about

Boyes, A. P. (1994). Repetition of overdose: A retrospective 5-year study. *Journal of Advanced Nursing*, *20*(3), 462-468.

Campbell, N. D. (2019). Naloxone as a technology of solidarity: history of opioid overdose prevention. *Canadian Medical Association Journal*, *191*(34), E945-E946.

Choremis, B., Campbell, T., Tadrous, M., Martins, D., Antoniou, T., & Gomes, T. (2019). The uptake of the pharmacy-dispensed naloxone kit program in Ontario: A population-based study. *PloS One*, *14*(10), e0223589.

Daley, D. C., Smith, E., Balogh, D., & Toscaloni, J. (2018). Forgotten but not gone: The impact of the opioid epidemic and other substance use disorders on families and children. *Commonwealth, 20*(2-3).

Deering, D. E. A., Adamson, S. J., Sellman, J. D., Henderson, C., Sheridan, J., Pooley, S., Robertson, R. M., Noller, G., & Frampton, C. M. A. (2018). Potential risk for fatal drug overdose perceived by people using opioid drugs. *Drug and Alcohol Review*, *37*, S309-S313.

Dietze, P. M., Draper, B., Olsen, A., Chronister, K. J., van Beek, I., Lintzeris, N., Dwyer, R., Nelson, M., & Lenton, S. (2018). Does training people to administer take-home naloxone increase their knowledge? Evidence from Australian programs. *Drug and Alcohol Review*, *37*(4), 472-479.

Dietze, P. M., Stare, M., Cogger, S., Nambiar, D., Olsen, A., Burns, L., & Lenton, S. (2018). Knowledge of naloxone and take-home naloxone programs among a sample of people who inject drugs in Australia: Variations across capital cities. *Drug and Alcohol Review*, *37*(4), 457-463.

Dwyer, R., Olsen, A., Fowlie, C., Gough, C., van Beek, I., Jauncey, M., Lintzeris, N., Oh, G., Dicka, J., & Fry, C. L. (2018). An overview of take-home naloxone programs in Australia. *Drug and Alcohol Review*, *37*(4), 440-449.

Foley, M. (2020, 11 November 2020). *Naloxone to save more lives under amended drug law.* Available from: https://www.premier.vic.gov.au/sites/default/files/2020-11/201111%20-%20Naloxone%20To%20Save%20More%20Lives%20Under%20Amended%20Drug%20Law.pdf

Fomiatti, R., Farrugia, A., Fraser, S., Dwyer, R., Neale, J., & Strang, J. (2022). Addiction stigma and the production of impediments to take-home naloxone uptake. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine, 26*(2), 139-161.

Fusch , P. I., & Ness, L. R. (2015). Are we there yet? Data saturation in qualitative research. *Walden Faculty and Staff Publications,* 455. Available from: https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=1466&context=facpubs

Green, T. C., Case, P., Fiske, H., Baird, J., Cabral, S., Burstein, D., Schwartz, V., Potter, N., Walley, A. Y., & Bratberg, J. (2017). Perpetuating stigma or reducing risk? Perspectives from naloxone consumers and pharmacists on pharmacy-based naloxone in 2 states. *Journal of the American Pharmacists Association*, *57*(2), S19-S27. e14.

Jamieson, A. (2020). *Data summary: Overdose deaths, Victoria 2010-2019* (COR 2018 5754).

Lavrakas, P. J. (2008). *Encyclopedia of survey research methods*. Sage publications.

Lenton, S., Dietze, P., Olsen, A., Wiggins, N., McDonald, D., & Fowlie, C. (2015). Working together: Expanding the availability of naloxone for peer administration to prevent opioid overdose deaths in the Australian Capital Territory and beyond. *Drug and alcohol review*, *34*(4), 404-411.

Liamputtong, P. (2009). Qualitative data analysis: Conceptual and practical considerations. *Health Promotion Journal of Australia*, *20*(2), 133-139.

Lintzeris, N., Monds, L. A., Bravo, M., Read, P., Harrod, M. E., Gilliver, R., Wood, W., Nielsen, S., Dietze, P. M., & Lenton, S. (2020). Designing, implementing and evaluating the overdose response with take-home naloxone model of care: An evaluation of client outcomes and perspectives. *Drug and alcohol review*, *39*(1), 55-65.

McAuley, A., Best, D., Taylor, A., Hunter, C., & Robertson, R. (2012). From evidence to policy: The Scottish national naloxone programme. *Drugs: Education, Prevention and Policy*, *19*(4), 309-319.

McAuley, A., Munro, A., & Taylor, A. (2018). "Once I'd done it once it was like writing your name": lived experience of take-home naloxone administration by people who inject drugs. *International Journal of Drug Policy*, *58*, 46-54.

McDonald, R., & Strang, J. (2016). Are take-home naloxone programmes effective? Systematic review utilizing application of the Bradford Hill criteria. *Addiction*, *111*(7), 1177-1187.

Nelson, M., Lenton, S., Dietze, P., Olsen, A., & Agramunt, S. (2016). Evaluation of the WA peer naloxone project–final report. *Perth: National Drug Research Institute, Curtin University*. Available from: https://www.researchgate.net/profile/Anna-Olsen-3/publication/307605397_Evaluation_of_the_WA_Peer_Naloxone_Project_-_Final_Report/links/58ce0370aca27233551623db/Evaluation-of-the-WA-Peer-Naloxone-Project-Final-Report.pdf

Nielsen, S., Sanfilippo, P., Picco, L., Bruno, R., Kowalski, M., Wood, P., & Larney, S. (2021). What predicts pharmacists' engagement with opioid-outcome screening? Secondary analysis from an implementation study in community pharmacy. *International Journal of Clinical Pharmacy*, *43*(2), 420-429.

Olsen, A., McDonald, D., Lenton, S., & Dietze, P. (2015). Evaluation of the "Implementing Expanded Naloxone Availability in the ACT (I-ENAACT) Program" 2011-2014.

Penington Institute. (2022). Australia's annual overdose report 2022. Melbourne: Penington Institute.

Pricolo, A., & Nielsen, S. (2018). Naloxone rescheduling in Australia: Processes, implementation and challenges with supply of naloxone as a 'pharmacist only'over-the-counter medicine. *Drug and Alcohol Review*, *37*(4), 450-453.

Sandelowski, M. (2010). What's in a name? Qualitative description revisited. *Research in Nursing and Health*, *33*(1), 77-84.

Strang, J., McDonald, R., Campbell, G., Degenhardt, L., Nielsen, S., Ritter, A., & Dale, O. (2019). Take-home naloxone for the emergency interim management of opioid overdose: the public health application of an emergency medicine. *Drugs*, *79*(13), 1395-1418.

Strang, J. S., & McDonald, R. (2016). *Preventing opioid overdose deaths with take-home naloxone*. Publications Office.

Van Boekel, L. C., Brouwers, E. P., Van Weeghel, J., & Garretsen, H. F. (2013). Stigma among health professionals towards patients with substance use disorders and its consequences for healthcare delivery: systematic review. *Drug and Alcohol Dependence*, *131*(1-2), 23-35.

Wagner, K. D., Davidson, P. J., Iverson, E., Washburn, R., Burke, E., Kral, A. H., McNeeley, M., Bloom, J. J., & Lankenau, S. E. (2014). "I felt like a superhero": The experience of responding to drug overdose among individuals trained in overdose prevention. *International Journal of Drug Policy*, *25*(1), 157-165.

Walley, A. Y., Doe-Simkins, M., Quinn, E., Pierce, C., Xuan, Z., & Ozonoff, A. (2013). Opioid overdose prevention with intranasal naloxone among people who take methadone. *Journal of Substance Abuse Treatment*, *44*(2), 241-247.

Williams, A. V., Marsden, J., & Strang, J. (2014). Training family members to manage heroin overdose and administer naloxone: Randomized trial of effects on knowledge and attitudes. *Addiction*, *109*(2), 250-259.

World Health Organization. (2014). Community management of opioid overdose. Available from_ https://apps.who.int/iris/bitstream/handle/10665/137462/?sequence=1