

**Title:** Assembling the social and political dimensions of take-home naloxone

Adrian Farrugia, Suzanne Fraser and Robyn Dwyer

DOI: <https://doi.org/10.1177%2F0091450917723350>

### **Abstract**

This commentary explores the complex position that take-home naloxone holds as a harm reduction strategy in contemporary public health contexts. Providing the opioid antagonist naloxone to people who consume opioids and others likely to witness opioid overdose is currently positioned as an exemplary lifesaving public health intervention. Few socially oriented studies of take-home naloxone raise questions beyond whether or not take-home naloxone ‘works’ – lines of inquiry that we think should be raised. Until take-home naloxone efforts address harms as effects of social context and policy regimes, the focus on individual behavior change will constrain the equitable distribution of responsibility for tackling overdose and the capacity to achieve more ambitious harm reduction goals such as decriminalization and the associated de-stigmatization of those who consume opioids. We conclude by arguing for the analytic incorporation of issues of power and normalization that animate responses to opioid overdose, including take-home naloxone.

### **Keywords**

Take-home naloxone, opioid consumption, opioid overdose, harm reduction, politics

### **Introduction**

This commentary examines the position of ‘take-home naloxone’ provision as a harm reduction strategy in contemporary public health contexts. Take-home naloxone refers to the provision of the opioid antagonist, naloxone, for administration by non-medically trained people who may witness opioid overdose. Focusing primarily on recent shifts in Australia, in this commentary we argue that this intervention entails a range of complex proposals about individual responsibility, community knowledge and social dynamics, without necessarily challenging broader issues such as the role of prohibition in the production of drug use harms. Few studies address the role ascribed to take-home naloxone within current public health approaches focused on individual

behavior change to address harms that could more productively be understood as effects of social contexts. While we are extremely sympathetic to the growing conviction that the lifesaving potential of naloxone should be made more accessible, we also argue that many important sociological and even ethical questions remain to be asked about take-home naloxone. How does take-home naloxone fit within broader individualistic health policies? How does it position people who consume opioids as morally worthy or unworthy subjects? How does it fit with broader reform goals such as decriminalization? To explore these questions we first review contemporary scholarship on the effectiveness of take-home naloxone before moving on to look closely at two examples of recent sociological research on the topic (Faulkner-Gurstein, 2017; McLean, 2016). These studies look beyond the question of whether providing take-home naloxone to people who consume opioids ‘works’. We conclude by arguing that take-home naloxone complicates existing understandings of the politics and ethics of health interventions and throws up new questions about the relationship between structure, agency and discourse as they manifest in health interventions and policy. These broad issues and their particular relevance for take-home naloxone demand further scrutiny.

## **Background**

The last two decades have seen worldwide increases in the consumption of heroin and pharmaceutical opioids (EMCDDA, 2016a; Rudd et al., 2016). An increase in the prescription and consumption of pharmaceutical opioids has also been identified in Australia (AIHW, 2017). As is well known, the consumption of opioids carries with it a risk of fatal overdose. A recent review has found that, worldwide, an average of 48% of people who consume opioids have experienced a non-fatal overdose in their lifetime and 90% have witnessed an overdose<sup>1</sup> (Martins et al., 2015). Australian research presents similar findings with 38% of people who inject heroin reporting experiencing non-fatal overdose (Stafford & Breen, 2017). Accidental deaths due to opioids have been steadily increasing in Australia since 2005 (Roxburgh & Breen, 2016).

Opioid overdose can be reversed through the timely administration of naloxone (Darke & Duflou, 2016) which has been used successfully in emergency medicine for over 40 years (Lenton et al., 2015). Overseas (Strang & Farrell, 1992) and Australian researchers (Darke & Hall, 1997) have argued since the early- to mid-1990s that naloxone should be made available to non-medically trained people. Take-home naloxone programs began to be implemented in US cities in 2000 and, following pilot programs conducted in Scotland between 2005-2007 and Wales in 2009, national programs were established in the UK in 2010 and 2011. Some European countries have implemented programs and pilot programs have been established in a number of low- and middle income countries such as Afghanistan, India, Kazakhstan, Thailand and Vietnam (for a discussion of the development of take-home naloxone programs internationally, see McDonald, Campbell & Strang, 2017). It was only in 2012 that the first take-home naloxone program was initiated in Australia in the Australian Capital Territory (Lenton et al., 2015). In this respect, Australia was exceptionally late in engaging with the lifesaving potential of take-home naloxone. However, small scale take-home naloxone programs, targeting people who inject opioids, are now operating in all but two Australian jurisdictions (Dietze et al., 2015). The scheduling of naloxone in Australia has changed recently too, moving from prescription access only to pharmacist-provided over-the-counter access available for anyone to purchase (Lenton, Dietze & Jauncey, 2016). These important developments have the potential to significantly reduce deaths from accidental opioid overdose (see e.g. Chronister et al., 2016; Nelson et al., 2016; Olsen et al., 2015).

Significantly, despite these measures to increase access to take-home naloxone, impediments to uptake and diffusion remain. Current literature from different national contexts identifies the price of take-home naloxone as one impediment with significant variation in cost across settings (EMCDDA, 2016b). While take-home naloxone may be supplied for free to opioid consumers as part of an overdose harm reduction program, if recipients are required to bear the cost themselves (either filling a prescription or purchasing over the counter) this may be a significant expense for people with limited resources. Likewise the need in some jurisdictions to obtain a prescription can also act as an impediment. Awareness of the complex legal arrangements that govern the supply, accessibility and administration of naloxone present another potential barrier. In the UK, naloxone is scheduled as a medicine that any member of the public can administer, with the aim of saving a

life (this gives take-home naloxone the same status as glucagon, adrenaline and snake anti-venom) (Strang et al., 2006). Different US states have extended 'Good Samaritan' provisions to ensure people can call emergency services to an overdose without fear of arrest for possessing illegal drugs or administering naloxone to someone without a prescription in the recipient's name. These provisions are also designed to remove liability of medical professionals who dispense take-home naloxone and protect them from accusations of malpractice (NPHL, 2017). However, research from the US suggests that awareness of these changes in legislation can be low (e.g. Banta-Green et al., 2013; Faulkner-Gurstein, 2017). Alongside these issues, health service provider awareness of take-home naloxone remains low and the costs of running programs without additional funding can be prohibitive for services (McDonald, Campbell & Strang, 2017). Finally, naloxone's formulation as an injectable medicine might act as an obstacle to uptake for those unfamiliar, fearful or otherwise disinclined to use needles. The Australian situation reflects the complexity of the picture presented here. While take-home naloxone is subsidized under Australia's Pharmaceutical Benefits Scheme, and is available as a pharmacist-provided over-the-counter medicine in pharmacies, the price difference between prescription and over-the-counter access is substantial (prices can vary between approximately AUD \$6.20 on prescription and AUD \$25 – \$70 over-the-counter). Additionally, the cost and logistics of running programs, limited availability of relevant health professionals, health professionals' lack of confidence supplying and advising on take-home naloxone and lack of clarity around legal liability, 'Good Samaritan' laws and administering naloxone to a third party, and stigma have all been cited as potential impediments to increased diffusion and uptake (Dwyer, Fraser & Dietze, 2016; Lenton et al., 2015; Nielsen et al., 2016). In sum, take-home naloxone provision is emerging within complex and dynamic assemblages of social, legal and political forces which together produce impediments and barriers to uptake. (for further details and examples see, Chronister et al., 2016; Dwyer, Fraser & Dietze, 2016; McDonald, Campbell & Strang, 2017; Pricolo & Nielsen, 2017).

## **Literature review**

The research literature supporting the provision of take-home naloxone as a harm reduction strategy is vast. It is not our intention to comprehensively review it here but to highlight some key

findings. A great deal of research now shows that the provision of take-home naloxone saves lives (Bird et al., 2016; Clark, Wilder & Winstanley, 2014; McDonald & Strang, 2016; Olsen et al., 2017). Alongside people who inject opioids, researchers have identified other specific populations that may especially benefit from provision of the medicine, for example, people who consume prescription opioids for pain (Coe & Walsh, 2015), people on methadone maintenance therapy (Walley et al., 2013), recently released ex-prisoners (Bird et al., 2016; Parmar et al., 2017) and people experiencing homelessness (Wright et al., 2006). Other literature suggests that providing take-home naloxone and overdose response training to people who do not consume opioids but are likely to witness overdose is also worthwhile (Bagley et al., 2017; Strang et al., 2008).

Research on the attitudes of opioid consumers towards take-home naloxone strategies offers a complex picture. People who consume opioids have been found to be highly capable of learning overdose emergency response strategies and managing personal supplies of take-home naloxone (McAuley et al., 2010) and generally willing to participate in overdose response training and to administer naloxone on their peers (Hill & McAuley, 2012; Lagu, Anderson & Stein, 2006; Lankenau et al., 2013; Seal et al., 2003; Sherman et al., 2008; Wright et al., 2006). Furthermore, some research suggests that successful administration of naloxone in an overdose event can enhance 'self-esteem' and a sense of having a new and valuable community role (George, Bouley & Begley, 2010; Wagner et al., 2014). However, research also suggests that some opioid consumers are aware of take-home naloxone but choose not to engage with it (Dietze et al., 2015; Stafford & Breen, 2017). Potential reasons for this include fears of stimulating withdrawal symptoms (Neale & Strang, 2015; Wright et al., 2006), fears of police involvement (Lagu, Anderson & Stein, 2006; Sherman et al., 2008; Wright et al., 2006), preference for 'home remedies' for managing overdose situations (Richert, 2015) and feeling burdened by the responsibility to attend stressful and upsetting overdose events (Neale & Strang, 2015; Wagner et al., 2015). As already mentioned, the mode of naloxone administration available is also important, with consumers sometimes expressing a preference for intranasal rather than injection administration (Kerr et al., 2008).

Research has also been conducted on attitudes towards take-home naloxone of relevant health professionals, and this too offers a complex picture. It points to concerns that take-home naloxone could be treated as a 'safety net' against opioid overdose, and therefore encourage increased opioid consumption (Beletsky et al., 2006; Green et al., 2013; Hill & McAuley, 2012). According to some researchers, questions have also been asked by some health professionals about the capacity of people who inject drugs to responsibly manage take-home naloxone supplies, properly identify an opioid overdose and administer take-home naloxone (Beletsky et al., 2006). Such concerns reflect and reproduce unexamined assumptions about the agency, capacity and character of people who consume drugs and remind us that stigma remains highly relevant to the success or otherwise of any health intervention concerning alcohol and other drugs, especially opioid consumption (van Boekel et al., 2013). People who consume opioids (especially those who inject opioids) experience stigma in many different settings such as when accessing healthcare (Fraser et al. in press; Lloyd, 2013; Radcliffe & Stevens, 2008), utilising needle exchange services in pharmacies (Fitzgerald, McDonald, & Klugman, 2004; Simmonds & Coomber, 2009), and at workplaces (Fraser et al. in press; Hathaway, Comeau, & Erickson, 2011). Notably, scepticism among health professionals about take-home naloxone has been found in research to be associated with limited experience working with people who consume opioids (Green et al., 2013): Australian health professionals who work with people who inject drugs generally express strong support for it (Dwyer, Fraser & Dietze, 2016). Also of note are findings from healthcare settings that, where naloxone is not administered at the appropriate dose and with proper care, it can function less as a lifesaving medicine and more as a tool of punishment (Neale & Strang, 2015).

The research in this area serves the important role of supporting and demonstrating the benefits of take-home naloxone. However, perhaps because the field is dominated by quantitative public health research methods, it rarely asks broader questions about such interventions. For example, apart from drawing out relevant regulations about prescription, liability and access, research on take-home naloxone has rarely addressed the political questions that arise when contextualizing it within a broader public health policy climate. In this sense, the socially produced character of opioid overdose and responses to it are yet to be incorporated into any but a few analyses of take-

home naloxone provision. In the sections below we consider in detail the sociological work that has begun to explore these issues, and then draw out the areas in need of further investigation.

### **The social logic of take-home naloxone**

Rachel Faulkner-Gurstein's (2017) ethnographic study of take-home naloxone programs in New York, 'The social logic of naloxone: Peer administration, harm reduction and the transformation of social policy', is the first piece of sociological research we explore in detail. In her article Faulkner-Gurstein (2017) explicitly engages with take-home naloxone's place in US neoliberal health policy. Characterizing neoliberal approaches to health as those that primarily invest in individuals' personal responsibility for health, she argues that contemporary US health policy works to constitute individual people as fully responsible for their health or ill-health.

Starting from the position that the effects of take-home naloxone rely as much on the social context in which opioid consumers operate as on the chemical properties of the drug itself, Faulkner-Gurstein (2017) argues that take-home naloxone exploits consumers' social relations, local knowledge and expertise for public health ends. This contrasts with prohibitionist approaches to opioid consumption which often constitute the social networks of individual consumers as a key problem in their lives; conditions from which they must withdraw if they are to successfully cease drug consumption. Two implications of this change are explored in the article: (1) it formalizes a new relationship between the consumer and the state in which the consumer is approached as an indigenous public health worker and (2) it de-centers traditional health 'experts', physicians and other professionals as the primary authorities in the provision of care.

Importantly, Faulkner-Gurstein acknowledges that, at first glance, take-home naloxone could be considered a perfect example of a neoliberal health program in that it places the responsibility for health care on individuals regardless of their circumstances and resources (that is, except that in many, but not all, cases it entails the direct provision of take-home naloxone as a resource itself).

Faulkner-Gurstein argues that the change comes at the expense of investment from the state and other collective institutions. This responsabilization is an especially complex and political move given the administration of take-home naloxone can expose people to risks such as contact with blood and other body fluids, physical harm, involvement in a death, and entanglement with the legal system (p. 25). Thus, for Faulkner-Gurstein, 'naloxone prioritizes pragmatic interventions while remaining agnostic towards the structural causes of social suffering' (p. 26).

However, Faulkner-Gurstein also argues that naloxone provision complicates these, now familiar, criticisms of neoliberal health reforms. By relying on the local knowledge and social networks of opioid consumers, take-home naloxone strategies recognize their social and relational selfhood. This fosters a collective identity that necessarily has a political dimension. In seeking to exploit, rather than erase and efface, the social connections, embodied knowledge and expertise developed through opioid consumption, take-home naloxone positions target groups as responsible but also politically active. The sophistication of the knowledge required (understanding proper administration, pharmacology, rescue breathing and so on) works to reposition individual consumers as capable public health workers – a potentially de-stigmatizing subject position (also George, Bouley & Begley, 2010; Wagner et al., 2014). Further, in de-centering the authority of traditional health experts, take-home naloxone provision revalues the experience of those on the margins and allows for new coalitions between researchers, law enforcement, public health experts and activists to pursue goals that favor consumer health (p. 26). For Faulkner-Gurstein (2017), such changes and opportunities mean that take-home naloxone cannot be primarily characterized as another form of biopolitical discipline and control (a criticism made of other harm reduction measures such as methadone programs e.g. Bourgois, 2000; and needle and syringe programs e.g. McLean, 2011). While it 'has managed to prevail in the era of austerity and privatization in part by harnessing neoliberal techniques' (p. 27), this strategic connection to neoliberalism does not exhaust its potential.

### **Take-home naloxone in risk environments**

Katherine McLean's (2016) article entitled "There's nothing here': Deindustrialization as risk environment for overdose" is the second piece of research we examine that explicitly asks sociological questions about take-home naloxone. Drawing on in-depth qualitative interviews with people attending a drug treatment facility in McKeesport, Pennsylvania, MacLean (2016) carefully characterizes the setting for her research, noting that it is a post-industrial city facing major unemployment and population loss with 30% of the residents living below the poverty line (McLean, 2016). McLean uses Rhodes' (2009) account of 'risk environments' to emphasize the importance of the local area in shaping opioid overdose risk. This approach takes her analytical focus beyond individual risk behaviors to allow a close look at how risks are produced by forces in environments. In this way, McLean maps a number of 'micro-' and 'macro-' level risks such as consuming alone, fear of police when needing to access emergency services (also Sherman et al., 2008; Wright et al., 2006) and a lack of knowledge about appropriate responses to overdose or about administering naloxone.

The lack of knowledge about naloxone and overdose responses described by McLean (2016) is particularly pertinent. She notes that take-home naloxone has been available in the region for over 10 years, albeit only through the region's sole needle and syringe facility, and had recently been made available in pharmacies (at the time of her research). However, none of McLean's participants had accessed take-home naloxone, partly due to a lack of reliable transport to the needle and syringe facility. For Mclean (2016) then,

naloxone can be tied to several dimensions of the micro-risk environment – not only witnesses' reluctance to contact official authorities, but also their inexperience with opiates, and/or disconnect from services offering overdose prevention education. (p. 24)

Alongside this, she (2016) draws attention to different 'macro' forces in the risk environment, with poverty emerging as a central issue:

Respondents were overwhelmingly pessimistic about the feasibility and success of any overdose interventions that did not simultaneously address the stifling poverty of the region or the alienation and despair of McKeesport's dwindling populace. (p. 24)

A number of issues are covered here, including unemployment, lack of effective local government or social events and activities, a stagnant local economy and the generally depressing atmosphere of the area. These issues lead McLean to argue that McKeesport's economic recession brought on by deindustrialization shaped the environment in such a way as to promote drug consumption. In this situation, the illicit drug market is thought to offer employment (selling drugs) and recreation (consuming drugs) (McLean, 2016 p. 25).

McLean argues that, against this backdrop, or within this risk environment, of de-industrialization, the emergence of take-home naloxone provision as a policy response was vital. However, she argues further that without simultaneous efforts to address other aspects of the risk environment, interventions that aim to empower opioid consumers as individuals will not effectively address overdose (p. 25). Here, the provision of naloxone is analysed as addressing only one micro-level element of the risk environment, when instead a 'multi-level' response is needed, one that works on the region as a whole at the same time that it addresses the vulnerable residents within it (p. 26).

### **New and familiar tensions for alcohol and other drug research**

The purpose of this commentary is not to argue for or against the provision of take-home naloxone in Australia: research has already established its importance as a harm reduction strategy. Rather, we want to canvass the issues that emerge in the sociological research literature currently available, and to raise political questions about take-home naloxone as a harm reduction intervention.

Although we have drawn on international literature, and two articles from the US in particular, we are careful to acknowledge that each setting in which take-home naloxone is taken up presents specific affordances and impediments. For example, Australia's universal healthcare system, which was established in the 1980s, is one particularly important aspect of the Australian context. While acknowledging these issues, a number of general questions emerge in literature on take-home naloxone that are relevant for Australia and beyond. Faulkner-Gurstein's (2017) argument that take-home naloxone provision and overdose response training work to position people who consume drugs as local health workers is a good place to start. The argument emphasizes the

importance of the emotional or affective aspects of harm reduction interventions. Locating the subjects of take-home naloxone initiatives – people who might also be subjects of stigmatizing discourses such as those of addiction – as experts with the capacity to enact public health programs and save lives may counter stigma and position them as having an important role to play in the community. This approach is important because it works to construct people who consume opioids as worthy subjects able to contribute to, and not only to place in jeopardy as is often assumed, the health of those around them. Much like all alcohol and other drug interventions, take-home naloxone initiatives can be understood to enact subjects at the same time that they address a specific problem<sup>ii</sup> (also Fomiatti, Moore & Fraser, 2017; Moore, 2009; Carr, 2011). Faulkner-Gurstein's (2017) focus on the social logic of take-home naloxone is another evocative aspect of her work. This focus emphasizes that accounts of any drug that center primarily on pharmacology for the action or 'effects' of such interventions do not provide a complete or convincing picture of how interventions such as take-home naloxone 'work' and save lives. For example, research exploring the benefit of distributing take-home naloxone to people leaving prison, through community pharmacies or community-based harm reduction organizations (e.g. Parmar et al., 2017; Wagner et al., 2013; Zaller et al., 2013), suggests that these interventions, although individualizing, nevertheless rely on social dynamics and complex coalitions of people, institutions, discourses and tools for them to 'work'. In this way, an analysis of take-home naloxone needs to look closely at the institutions, practices and, more generally, the social arrangements that work to produce responsabilized individuals. These social arrangements, however, have rarely been made an explicit research focus. Indeed, a primary focus on the pharmacology of naloxone or on valorized but highly specific research methods such as randomized control trials may marginalize important voices and perspectives not authorized as medically qualified or informed, or privileged through claims to scientific expertise (for further discussion see Lancaster, 2016; Lancaster, Treloar & Ritter, 2017).

Yet, other questions again surface here. For example, the 'self-esteem' that ought to emerge from being positioned as an expert health worker does not ameliorate the poverty emphasized by McLean (2016). Focusing on the broader context, as McLean (2016) does, underscores the need

for interventions that reduce the likelihood of opioid overdose to begin with and, thus, the need for naloxone. The focus must logically turn to other forces in the environment, and here it is hard to overlook the absence of financial remuneration in the proposed role as local health worker. Further, addressing stigma requires wider approaches too. At present, lives lost to opioid overdose are constituted as less tragic or worthy of grief than other avoidable deaths (Ware, 2008). Without 'multi-level' changes such as these it may be difficult to continue to increase the uptake of this lifesaving medicine. Another question to ask here is whether remaining 'agnostic' about structural inequality risks ignoring or even justifying the social relations that co-produce overdoses to begin with. Relying on the provision of take-home naloxone may, that is, allow policy makers and governments to ignore the social problems such as inequality and criminalization that co-produce overdose. These issues are not addressed by take-home naloxone programs or overdose response training.

### **New approaches for understanding take-home naloxone**

Further exploration of take-home naloxone and the issues and questions introduced here requires an approach able to recognize the many differing forces active in overdose events and ensure they are not abstracted from the event as a whole. Capturing such fluid and emergent dynamics is a concern for many alcohol and other drug researchers working in a range of areas. Many have turned to conceptual tools drawn from what can be broadly categorized as 'post-humanist' theoretical approaches. These approaches privilege the action of assemblages over individual elements, de-centering the agency of human subjects and raising questions about the risks as well as the benefits of humanist models and their tendency to exclude some even as they include others (Barad, 2007; Deleuze & Guattari, 1987; Latour, 2005; Law, 2004). Alcohol and other drug practices, and organizing concepts such as 'addiction', can likewise be analyzed as assemblages produced by specific socio-material arrangements as well as by the research practices aiming to track them (e.g. Duff, 2014; Fitzgerald, 2015; Fraser et al., 2014). Importantly, sociologically informed research on take-home naloxone is yet to exploit the rich potential of these approaches. For our purposes here, it is useful to note that post-humanist approaches have important implications for understanding 'risk' and 'environment' (McLean, 2016) in the multiple and

emergent ways necessary to more fully comprehend how take-home naloxone ‘works’ and does not ‘work’, and for more thoroughly apprehending the reciprocal action between take-home naloxone and enactments of the ‘social’ (Faulkner-Gurstein, 2017).

## Conclusion

In this commentary it has not been our intention to suggest that take-home naloxone provision is not valuable because broader changes are also required. Take-home naloxone has already been shown to be an effective life-saving health intervention. However, the tensions thrown up by take-home naloxone are not only for sociologists interested in health: they are common to our debates about the nature of the social and the relations between structure, agency and discourse (Duff, 2014; Fitzgerald, 2015; Fraser et al., 2014), and are for all of us to navigate. We therefore argue for the need to ask these questions about take-home naloxone, and to identify and mobilize conceptual tools that might be of use in grappling with these issues. The tensions between individual responses and larger social responses, between the recognition of local forces and of global forces in producing overdose events, are among numerous issues that remain to be thoroughly researched using appropriate methods and concepts. Other key areas that would benefit from further research include:

1. the affective dimensions of overdose and naloxone administration, and the impact of attending overdose events in a responsabilized role;
2. experiences of training in the use of take-home naloxone, including the ways in which overdose is presented, risk is discussed and the trainees’ status as opioid consumers is managed;
3. the potential for take-home naloxone provision and training to interrupt or reinforce stigmatizing assumptions about people who consume opioids;
4. the embeddedness of the role and effects of take-home naloxone in peer social networks, and the implications this network model of effectiveness has for promoting uptake in equitable and sustainable ways.

These questions and more need to be investigated in the new contexts in which take-home naloxone is being established as well as in existing ones. Alongside questions of whether take-home naloxone works, researchers need to situate take-home naloxone within wider changes in specific national health contexts and broader international trends, and explore the meanings attributed to it by people who consume opioids and relevant health professionals<sup>iii</sup>. New conceptual tools drawn from post-humanist theoretical approaches are already being productively utilised by sociologists interested in exploring related issues such as concepts of ‘addiction’ (Fraser et al., 2014) and notions of health (Duff, 2014). These tools offer new conceptions of the social, of medicine, of stigma and of expertise so that new knowledge about the place of take-home naloxone in health policy can be developed, and (fundamentally equitable and respectful) enhancements in uptake can be imagined.

## Reference list

- AIHW [Australian Institute of Health and Welfare]. (2017). National opioid pharmacotherapy statistics 2015. [www.aihw.gov.au/alcohol-and-other-drugs/data-sources/nopsad-2015/](http://www.aihw.gov.au/alcohol-and-other-drugs/data-sources/nopsad-2015/). Accessed: 6 Mar 2017.
- Bagley, S., Forman, L., Ruiz, S., Cranston, K. & Walley, A. (2017). Expanding access to naloxone for family members: The Massachusetts experience. *Drug and Alcohol Review*, published online 20 April, 2017.
- Banta-Gree, C., Beletsky, L., Schoeppe, J., Coffin, P. & Kuszler, P. (2013). Police officers’ and paramedics’ experiences with overdose and their knowledge and opinions of Washington State’s drug overdose – naloxone – Good Samaritan law. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 90 (6), 1102-1111.
- Barad, K. (2007). *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*. Durham and London: Duke University Press

Beletsky, L., Ruthazer, E., Macalino, G., Rich, J., Tan, L. & Burris, S. (2006). Physicians' knowledge of and willingness to prescribe naloxone to reverse accidental opiate overdose: Challenges and opportunities. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 84 (1), 126-136.

Bird, S.M., McAuley, A., Perry, S. & Hunter, C. (2016). Effectiveness of Scotland's National Naloxone Programme for reducing opioid-related deaths: A before (2006-10) versus after (2011-13) comparison. *Addiction*, 111, 883–891

Bourgois, P., 2000. Disciplining addictions: the bio-politics of methadone and heroin in the United States. *Culture, Medicine, Psychiatry*, 24 (2), 165-195.

Carr, E. S. (2011). *Scripting addiction: The politics of therapeutic talk and American sobriety*. Princeton: Princeton University Press.

Chronister, K., Lintzeris, N., Jackson, A., Ivan, M., Dietze, P., Lenton, S., Kearley, J. & van Beek, I. (2016). Findings and lessons learnt from implementing Australia's first health service based take-home naloxone program. *Drug and Alcohol Review*, published early online 13 April, 2016.

Clark, A. K., Wilder, C. M. & Winstanley, E. L. (2014). A systematic review of community opioid overdose prevention and naloxone distribution programs. *Journal of Addiction Medicine*, 8 (3), 153-163.

Coe, M.A. & Walsh, S.L. (2015). Distribution of naloxone for overdose prevention to chronic pain patients. *Preventive Medicine*. 80, 41-3.

Darke, S. & Duflou, J. (2016). The toxicology of heroin-related death: Estimating survival times. *Addiction*, 111 (9), 1607-1613.

Darke, S. & Hall, W. (1997). The distribution of naloxone to heroin users. *Addiction*, 92 (9), 1195-1199.

Deleuze, G., and Guattari, F. (1987). *A thousand plateaus: Capitalism and schizophrenia*. Minneapolis: University of Minnesota Press.

Dietze, P., Cogger, S., Malandkar, D., Olsen, A., Lenton, S. (2015). Knowledge of naloxone and take-home naloxone programs among a sample of people who inject drugs in Australia. *Illicit Drugs Reporting System Drug Trends Bulletin April 2015*. Sydney: National Drug and Alcohol Research Centre, UNSW.

Duff, C. (2014). *Assemblages of health: Deleuze's empiricism and the ethology of Life*. New York: Springer.

Dwyer, R., Fraser, S. & Dietze, P. (2016). Benefits and barriers to expanding the availability of take-home naloxone in Australia: a qualitative study. *Drugs: Education, Prevention and Policy*, 23 (5): 388-396.

EMCDDA [European Monitoring Centre for Drugs and Drug Addiction]. (2016a). *European Drug Report 2016: Trends and Developments*. Luxembourg: Publications Office of the European Union. EMCDDA. [European Monitoring Centre for Drugs and Drug Addiction] (2016b). EMCDDA insights: Preventing overdose deaths from heroin and other opioids: Pre-provision of emergency naloxone (take-home naloxone). EMCDDA, Lisbon.

Faulkner-Gurstein, R. (2017). The social logic of naloxone: Peer administration, harm reduction, and the transformation of social policy. *Social Science & Medicine*, 180, 20-27.

Fitzgerald, J. (2015). *Framing drug use: Bodies, space, economy and crime*. Basingstoke: Palgrave Macmillan.

Fomiatti, R., Moore, D. & Fraser, S. (2017). Interpellating recovery: The politics of 'identity' in recovery-focused treatment. *International Journal of Drug Policy*, published online 13 May, 2017.

Fraser, S. & Moore, D. (2011). Governing through problems: The formulation of policy on amphetamine-type stimulants (ATS) in Australia. *International Journal of Drug Policy*, 22 (6), 498-506.

Fraser, S., Moore, D. & Keane, H. (2014). *Habits: Remaking addiction*. Basingstoke: Palgrave Macmillan.

Fraser, S., Pienaar, K., Dilkes-Frayne, E., Moore, D., Kokanovic, R., Treloar, C. & Dunlop, A. (in press). Addiction stigma and the biopolitics of liberal modernity: A qualitative analysis. *International Journal of Drug Policy*.

George, S., Bouley, S. & Begley, D. (2010). 'I saved a life': A heroin addict's reflections on managing an overdose using 'take home naloxone'. *BMJ Case Reports*, doi:10.1136/bcr.05.2010.2986, 1-4.

Green, T., Bowman, S., Zaller, N., Ray, M., Case, P. & Heimer, R. (2013). Barriers to medical provider support for prescription naloxone as overdose antidote for lay responders. *Substance Use & Misuse*, 48 (7), 558-567.

Hathaway, A. Comeau, N. & Erickson, P. (2011). Cannabis normalization and stigma: Contemporary practices of moral regulation. *Criminology & Criminal Justice*, 11 (5), 451-469.

Hill, D. & McAuley, A. (2012). A comparative study of stakeholder views on take-home naloxone services. *Journal of Substance Use*, 17 (5-6), 430-441.

Kerr, D., Dietze, P., Kelly, A-M. & Jolley, D. (2008). Attitudes of Australian heroin users to peer distribution of naloxone for heroin overdose: Perspectives on intranasal administration. *Journal of Urban Health*, 85 (3), 352-360.

Lagu, T., Anderson, B. & Stein, M. (2006). Overdoses among friends: Drug users are willing to administer naloxone to others. *Journal of Substance Abuse Treatment*, 30 (2), 129-133.

Lancaster, K. (2016). Performing the evidence-based drug policy paradigm. *Contemporary Drug Problems*, 43 (2), 142-153.

Lancaster, K., Treloar, C. & Ritter, A. (2017). 'Naloxone works': The politics of knowledge in 'evidence-based' drug policy. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine*, published online 30 January, 2017.

Lankenau, S., Wagner, K., Silva, K., Kecojevic, A., Iverson, E., McNeely, M. & Kral, A. (2013). Injection drug users trained by overdose prevention programs: Responses to witnessed overdoses. *Journal of Community Health*, 38 (1), 133-141.

Latour, B. (2005). *Reassembling the social: An introduction to actor-network theory*. Cambridge: Cambridge University Press.

Law, J. (2004). *After method: Mess in social science research*. London & New York: Routledge.

Lenton, S., Dietze, P. & Jauncey, M. (2016). Australia to reschedule naloxone for overdose. *Medical Journal of Australia*, 2014 (4): 146-147.

Lenton, S., Dietze, P., Olsen, A., et al. (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): 404-11.

Lloyd, C. (2013). The stigmatization of problem drug users: A narrative literature review. *Drugs: Education, Prevention and Policy*, 20 (2), 85-95.

Martins, S.S, Sampson, L., Cerdá, M. & Galea, S. (2015). Worldwide prevalence and trends in unintentional drug overdose: A systematic review of the literature. *American Journal of Public Health*, 105 (11): e29-e49.

McAuley, A., Lindsay, G., Woods, M., & Louttit, D. (2010). Responsible Management and use of personal take-home naloxone supply: A pilot project. *Drugs: Education, Prevention and Policy*, 17 (4), 388–399.

McDonald, R., Campbell, N. & Strang, J. (2017). Twenty years of take-home naloxone for the prevention of overdose deaths from heroin and other opioids – Conception and maturation. *Drug and Alcohol Dependence*, 178, 176-187.

McDonald, R. & Strang, J. (2016). Are take-home naloxone programmes effective? Systematic review utilizing application of the Bradford Hill criteria. *Addiction*, 111 (7), 1177-87.

McLean, K. (2011). The biopolitics of needle exchange in the United States. *Critical Public Health*, 21 (1), 71-79.

McLean, K. (2016). ‘There’s nothing here’: Deindustrialization as risk environment for overdose. *International Journal of Drug Policy*, 29, 19-26.

Moore, D. (2009). 'Workers', 'clients' and the struggle over needs: Understanding encounters between service providers and street-based injecting drug users in an Australian city. *Social Science and Medicine*, 68 (6), 1161-1168.

Neale, J. & Strang, J. (2015). Naloxone – does over-antagonism matter? Evidence of iatrogenic harm after emergency treatment of heroin/opioid overdose. *Addiction*, 110 (10), 1644-1652.

Nelson, M., Lenton, S., Dietze, P., Olsen, A. & Agramunt, S. (2016). Evaluation of the WA peer Naloxone Project – Final report. National Drug Research Institute, Curtin University, Perth, Western Australia.

Nielsen, S., Menon, N., Larney, S., Farrell, M. & Degenhardt, L. (2016). Community pharmacist knowledge, attitudes and confidence regarding naloxone for overdose reversal. *Addiction*, 11 (12), 2177-2186.

NPHL (The Network for Public Health Law). (2017). Legal interventions to reduce overdose mortality: Naloxone access and overdose Good Samaritan laws. Access online 7 July, 2017

<https://www.networkforphl.org/asset/qz5pvn/network-naloxone-10-4.pdf>

Olsen, A., McDonald, D., Lenton, S. & Dietze, P. (2015). Independent Evaluation of the 'Implementing Expanding Naloxone Availability in the ACT (I-ENAACT)' Program, 2011-2014. Final Report July 2015. Melbourne: Centre for Research Excellence in Injecting Drug Use, Burnet Institute.

- Olsen, A., McDonald, D., Lenton, S. & Dietze, P. (2017). Assessing causality in drug policy analysis: How useful are the Bradford Hill criteria in analyzing take-home naloxone programs?. *Drug and Alcohol Review*, published online 18 April, 2017.
- Parmar, M., Strang, J., Choo, L., Meade, A. & Bird, S. (2017). Randomized controlled pilot trial of naloxone-on-release to prevention post-prison opioid overdose deaths. *Addiction*, 502-515.
- Pricolo, A. & Neilsen, S. (2017). Naloxone rescheduling in Australia: Processes, implementation and challenges with supply of naloxone as a 'pharmacist only' over-the-counter medicine. *Drug and Alcohol Review*, published online 27 April, 2017.
- Radcliffe, P. & Stevens, A. (2008). Are drug treatment services only for 'thieving junkie scumbags'? Drug users and the management of stigmatised identities. *Social Science & Medicine*, 67 (7), 1065–1073.
- Rhodes, T. (2009). Risk environments and drug harms: a social science for harm reduction approach. *International Journal of Drug Policy*, 20 (3), 193-201.
- Richert, T. (2015). Wasted, overdosed, or beyond saving – To act or not to act? Heroin users' views, assessments, and responses to witnessed overdoses in Malmö, Sweden. *International Journal of Drug Policy*, 26 (1), 92-99.
- Roxburgh, A., and Breen, C. (2016). *Accidental drug-induced deaths due to opioids in Australia, 2012*. Sydney: National Drug and Alcohol Research Centre, UNSW.
- Rudd, R.A., Aleshire, N., Zibbell, J.E. & Gladden, R.M. (2016). Increases in drug and opioid deaths - United States, 2000–2014. *MMWR Morbidity and Mortality Weekly Report*. 64 (50), 1378-1382.

Seal, K., Downing, M., Kral, A., Singleton-Banks, S., Hammon, J-P., Lovrick, J., Ciccarone, D. & Edlin, B. (2003). Attitudes about prescribing take-home naloxone to injection drug users for the management of heroin overdose: A survey of street-recruited injectors in the San Francisco Bay Area. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 80 (2), 291-301.

Sherman, S., Gann, D., Scott, G., Carlberg, S., Bigg, D. & Heimer, R. (2008). A qualitative study of overdose responses among Chicago IDUs. *Harm Reduction Journal*, 5 (2).

Simmonds, L. & Coomber, R. (2009). Injecting drug users: A stigmatised and stigmatising population. *International Journal of Drug Policy*, 20 (2), 121-130.

Stafford, J. & Breen, C. (2017). *Australian Drug Trends 2016. Findings from the Illicit Drug Reporting System (IDRS). Australian Drug Trends Series No. 163*. Sydney: National Drug and Alcohol Research Centre, UNSW.

Strang, J. & Farrell, M. (1992) Harm minimisation for drug misusers: When second best may be best first. *British Medical Journal*, 304 (6835), 1127–1128.

Strang, J., Kelleher, M., Best, D., Mayet, S. & Manning, V. (2006). Emergency naloxone for heroin overdose: should it be available over the counter? *British Medical Journal*, 333 (7569), 614 – 615.

Strang, J., Manning, V., Mayet, S., Titherington, E., Offor, L., Semmler, C. & Williams, A. (2008). Family careers and the prevention of heroin overdose deaths: Unmet training need and overlooked intervention opportunity of resuscitation training and supply of naloxone. *Drugs: Education, Prevention and Policy*, 15 (2), 211-218.

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 & Alcohol Dependence*, 131 (1), 23–35.

Wagner, K., Davidson, P., Iverson, E., Washburn, R., Burke, E., Kral, A., McNeeley, M., Bloom, J. & Lankenau, S. (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.

Wagner, K., Iverson, E., Wong, C., Bloom, J., McNeeley, N., Davidson, P., McCarty, C., Kral, A. & Lankenau, S. (2013). Personal social network factors associated with overdose prevention training participation. *Substance Use & Misuse*, 48 (1-2), 21-31.

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.

Ware, S-A. (2008). Anti-memorials and the art of forgetting: Critical reflections on a memorial design practice. *Public History Review*, 15, 61-76.

Wright, N., Oldham, N., Francis, K., & Jones, L. (2006). Homeless drug users' awareness and risk perception of 'Take Home Naloxone' use – a qualitative study. *Substances Abuse Treatment, Prevention, and policy*, 1 (28).

Zaller, N., Yokell, M., Green, T., Gaggin, J. & Case, P. (2013). The feasibility of pharmacy-based naloxone distributoin interventions: A qualitative study with injection drug users and pharmacy staff in Rhode Island. *Substance Use & Misuse*, 48 (8), 590-599.

---

<sup>i</sup> These averages were calculated from studies among opioid consumers reported in Table 1 of the review conducted by Martins et al., 2015.

<sup>ii</sup> For a discussion of how alcohol and other drug interventions also co-constitute the problems they seek to address see Fraser and Moore (2011).

<sup>iii</sup> We plan to explore questions such as these in a new Australian research project entitled *Understanding the impediments to uptake and diffusion of take-home naloxone in Australia* (Fraser, S., Dwyer, R., Dietze, P., Neale, J. & Strang, J. (2017). Australian Research Council Discovery Project DP170101669