



## Research Paper

## Losing the uphill battle? Emergent harm reduction interventions and barriers during the opioid overdose crisis in Canada

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## ABSTRACT

Canada continues to experience an escalating opioid overdose crisis that has claimed more than 8000 lives in the country since 2016. The presence of the synthetic opioid fentanyl and its analogues is a central contributor to the increases in preventable opioid-related deaths. However, a number of converging social-structural factors (e.g., the continued criminalisation of drug use, political changes) and political barriers are also complicating and contributing to the current crisis. We briefly outline four harm reduction interventions (i.e., injectable opioid agonist treatment, naloxone distribution programs, overdose prevention sites, and drug checking services) as emerging and rapidly expanding responses to this crisis in Canada. These examples of innovation and expansion are encouraging but also occurring at the same time that the opioid overdose crisis shows few signs of abating. To truly address the crisis, Canada needs political environments at all government levels that are responsive and foster harm reduction innovation and drug policy experimentation.

## Introduction

Often seeming like an uphill battle with no end in sight – especially to people on the front lines and those with lived experience – North America continues to experience an escalating opioid overdose crisis. The presence of highly potent synthetic opioids, namely fentanyl and its analogues (e.g., carfentanil), in illegal and diverted drug supplies is a central contributor to the significant increases in overdose deaths in recent years (United Nations Office on Drugs & Crime, 2017). In Canada, for instance, there were 2,991 opioid-related deaths in the country in 2016, 3,961 in 2017, and 2066 from January to June 2018; the majority of these deaths were unintentional and involved fentanyl or its analogues (Government of Canada, 2018a).

While the increased presence of fentanyl is a key driver, it is not the only contributor to the current crisis. The first wave of significantly increased rates of opioid-related overdoses that began around the end of the 1990s and 2000 has been linked to over prescribing of opioid medications (Centers for Disease Control & Prevention, 2017; Rudd, Aleshire, Zibbell, & Gladden, 2016). Also contributing to overdose deaths is the ongoing criminalisation of drugs which leads to fear of police and arrest that encourages people to consume drugs in less safe ways (e.g., rushed injections) and spaces (e.g., alleys, alone at home; Aitken, Moore, Higgs, Kelsall, & Kerger, 2002; Cooper, Moore, Gruskin, & Krieger, 2005; Wood et al., 2004) and discourages calls to 9-1-1 for

overdoses (e.g., Davidson, Ochoa, Hahn, Evans, & Moss, 2002; Pollini et al., 2006; Sherman et al., 2008). Poverty, homelessness, and other social-structural determinants of health, and political resistance to harm reduction programming, are additional contributing factors (see for example, Dasgupta, Beletsky, & Ciccarone, 2018).

Although harm reduction is not the only pillar of drug policy and thus not the only type of response needed to address the overdose crisis – evident from, for example, the Government of Canada's (2018a) comprehensive and coordinated action plan on opioids – decades' worth of international evidence supports the effectiveness of varied interventions under this model, such as low-threshold methadone maintenance treatment or buprenorphine treatment, needle and syringe programs (NSPs), and supervised consumption services ([SCS]; e.g., Belackova & Salmon, 2017; Potier, Lapr v te, Dubois-Arber, Cottencin, & Rolland, 2014; Stone, 2016; Strike et al., 2013, 2015; Wodak & Cooney, 2005; World Health Organization, 2004, 2014, 2017). Below we explore, as examples, four harm reduction interventions that are emerging or undergoing recent expansion as responses to the opioid overdose crisis in Canada: naloxone distribution programs, injectable opioid agonist treatment (I-OAT), overdose prevention sites (OPS), and drug checking services. We close with suggestions of broader experimentation that warrant consideration. Our focus on Canada stems from the country's nationally and regionally heightened rates of opioid overdose deaths (see again Special Advisory Committee on the

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Epidemic of Opioid Overdoses, 2018) and efforts, often led by grassroots activism (e.g., Lavoie, 2017), to expand harm reduction services. The examples here were chosen because they illustrate that, to achieve optimal coverage, harm reduction interventions benefit greatly from supportive social, clinical, legal, and political environments (see Rhodes, 2002), though securing support from all of these areas at once has often proved elusive. These recent experiences from Canada have strong relevance for stakeholders in other jurisdictions experiencing overdose crises in the context of challenging political environments. We do *not* describe in detail several interventions, that were well established before the crisis emerged (i.e., methadone maintenance or buprenorphine treatment, NSPs, and SCS).

#### Population-level scale-up of naloxone distribution

Access to naloxone, a medication that can be administered by injection or intranasally to reverse an opioid overdose, has obvious life-saving potential in general and during the current overdose crisis. While used for decades in health care, emergency response, and community settings (McDonald, 2016), cost and the designation of naloxone as a prescription medication has prevented widespread distribution and program implementation. However, in some jurisdictions distribution has become more prevalent as a result of government-sponsored distribution programs that include the intranasal format (Department of Health & Social Care, Medicines & Healthcare products Regulatory Agency, & Public Health England, 2017; Ontario Ministry of Health & Long-Term Care, 2018a; see also <http://towardtheheart.com/naloxone>). Take-home naloxone programs, designed to provide bystanders with education and naloxone to administer, are associated with reductions in overdose mortality (McDonald, 2016).

In 2016, Canada reclassified naloxone to allow for access without a prescription (Health Canada, 2016b). At present, every province and territory has implemented naloxone access without prescription at pharmacies, with some provinces offering free take-home naloxone kits (Health Canada, 2018a). Naloxone kits and overdose prevention education are also distributed at community health centres and other community agencies, by healthcare providers, and by outreach workers. As well, a 'facility overdose response box' with multiple doses of naloxone for community-based organisations has also been created (<http://towardtheheart.com/forb>). Thus across Canada, some of the factors necessary to achieve population-level benefits are being put in place. Factors needed to improve naloxone accessibility include large-scale programs with sufficient government funding, a supportive political climate, and sufficient human resources (Madah-Amiri & Clausen, 2016), as a study in Norway showed that these features help to create the conditions necessary for high coverage (Madah-Amiri, Clausen, & Lobmaier, 2017).

While both the number of places where naloxone kits can be obtained and the number of kits distributed has increased (BC Centre for Disease Control, 2018; Paddon, 2018), as of yet in Canada there are no population-level studies of the impact of government-sponsored naloxone distribution programs. An early evaluation showing varied availability of naloxone kits across Canada, with only an estimated one-quarter of pharmacies reporting to have naloxone available, suggests more scale-up needs to be done (Cressman et al., 2017). We are nonetheless hopeful that naloxone access will continue to be scaled up in view of the opioid overdose crisis, particularly as this intervention has not, arguably, faced as many political- and cost-related barriers as the other interventions we highlight here. Notably, for example, growing support for naloxone expansion has been observed in U.S. contexts, even among law enforcement agencies, where other harm reduction interventions remain quite controversial (e.g., Davis, Carr, Southwell, & Beletsky, 2015; Wheeler, Jones, Gilbert, & Davidson, 2015).

#### Expansion of I-OAT

Opioid agonist treatment involves the prescription of pharmaceutical-grade opioids (e.g., diacetylmorphine/heroin, hydromorphone/Dilaudid, morphine), typically to people with treatment-refractory opioid use disorder, in oral, smokeable, or injectable formats. A number of countries, including the United Kingdom, Switzerland, Germany, Denmark, and the Netherlands, have been experimenting with versions of I-OAT for many years (Fischer et al., 2002). Evidence from randomised trials has shown I-OAT to be safe and effective for people who inject drugs and for whom other forms of treatment were ineffective; outcomes have included reductions in opioid use, cocaine use, and criminal activity, as well as overall improvements in well-being (see Ferri, Davoli, & Perucci, 2011). Given that the current opioid overdose crisis is strongly connected to the presence of fentanyl and potent analogues in the drug supply, expanding I-OAT access represents another important harm reduction response.

The history of I-OAT in Canada reflects some of the struggles harm reduction programs have generally confronted in securing and maintaining political support. The North American Opiate Medication Initiative (NAOMI), a randomised controlled trial conducted in Vancouver and Montreal, evaluated the feasibility and effectiveness of I-OAT using diacetylmorphine versus methadone (Oviedo-Joekes et al., 2008). While its encouraging results echoed those from earlier trials in Europe, unlike other I-OAT trials (Strang, Groshkova, & Metrebian, 2012), when NAOMI concluded the Canadian government refused to allow participants to continue receiving this treatment (Boyd, Murray, SNAP, & MacPherson, 2017). Several years later, another I-OAT trial showed positive benefits for clients given Dilaudid versus those given heroin (Oviedo-Joekes et al., 2016). This trial ended during the emergence of the opioid overdose crisis and an announcement by the federal Minister of Health indicated that regulations were changed to prevent continued access to I-OAT using Dilaudid (Boyd et al., 2017; see also <http://www.providencehealthcare.org/salome/timeline.html>); however, a constitutional challenge and a ruling from the Supreme Court of British Columbia allowed for continued prescribing of Dilaudid to trial participants.

Access to I-OAT for people with opioid dependence has since been improving in Canada following a change in the federal government and efforts by British Columbia's provincial government to expand and develop new models of access. Several models of care are being implemented in British Columbia in particular, including I-OAT offered as a standalone service or integrated into acute care settings with comprehensive and dedicated supervised treatment that is designed for settings with high demand and capacity, as well as newer pharmacy-based approaches (Supervised Injectable Opioid Agonist Treatment Guidance Committee, 2017). The province of Alberta also plans to pilot I-OAT programs in Calgary and Edmonton (Cameron, 2018; Gerein, 2017).

#### Emergence of OPS

A direct response to the current overdose crisis, OPS are designed to be lower-budget and implemented much more quickly than their legally sanctioned SCS counterparts (see Health Canada, 2018b; Ponciano, 2018) which also provide supervised spaces for drug consumption. OPS were first opened in Canada in spaces such as tents, trailers, vans, and shipping containers, as well as within existing community-based organisations and housing facilities, to provide safer drug use environments with immediate overdose response (including naloxone administration when needed), distribute and dispose of drug use equipment, and offer information about health and social services. In 2016, the first OPS were opened by activists in Vancouver, British Columbia as 'pop-up', unsanctioned programs responding to perceived government inaction towards dramatically increasing rates of opioid-related overdoses (Arkell, 2018; Kerr, Mitra, Kennedy, & McNeil, 2017). Service users at

OPS can inject drugs, and at some locations smoke or snort drugs, under the supervision of trained volunteers and/or staff, usually including at least one health professional (e.g., nurse or nurse practitioner, physician) per shift (Ontario Ministry of Health & Long-Term Care, 2018). Service model and offerings of ancillary services, such as counselling or HIV testing, vary by OPS across Canada and are undergoing innovations such as peer witness injection programs in shelter settings (e.g., Bardwell, Boyd, Kerr, & McNeil, 2018; Bardwell, Collins, McNeil, & Boyd, 2017). Evaluations of OPS are limited in number so far, but currently available information shows that they are used in increasing numbers by the target population and with no reported fatal overdoses on site (e.g., *Anger grows over pop-up drug use site in Lowertown*, 2017; Kolla et al., 2018; Vancouver Coastal Health, 2018).

Since the introduction of OPS in Canada, harm reduction activists began opening sites in the other parts of the country, including the cities of Toronto and Ottawa in 2017 (*Overdose prevention groups urge health minister to declare emergency*, 2017; Ramlakhan, 2018). In late 2017, the federal government approved a new policy allowing provinces experiencing a public health emergency to apply for an exemption under federal law for temporary OPS (Ontario Ministry of Health & Long-Term Care, 2018). British Columbia's provincial government has responded to activism related to increasing overdose deaths with a declaration of a public health emergency and a move towards expanding OPS (BC Centre for Disease Control, 2017; Tait & Woo, 2017). However, the history of OPS is also marked by political interference and barriers. For example, in Ontario, the June 2018 election of a new provincial government has resulted in increased political pushback and stalls in relation to continued operation of existing OPS and the opening of new sites (issues extended to SCS as well; e.g., Rushowy, 2018; Russell, 2018). Following a so-called review of the evidence, Ontario's new Progressive Conservative government has rebranded these programs as Consumption and Treatment Services (CTS) and has imposed new restrictions on where CTS can be located, how often approvals need to be renewed, and additional application requirements (Ontario Ministry of Health & Long-Term Care, 2018b).

#### *Piloting drug checking services*

Drug checking as a harm reduction intervention was introduced predominantly in Europe in the 1990s to reduce harms associated with use of novel psychoactive drugs that were emerging in party settings (Benschop, Rabes, & Korf, 2002; Brunt et al., 2017). These services offer opportunities for clients to anonymously analyse the content of drugs they intend to use and receive additional information about drug-related risks and safer use strategies. Varied technologies have been developed or adapted to support drug checking ranging from relatively low-cost, portable colorimetric reagent tests to high-cost, laboratory-based technologies such as high performance liquid chromatography and gas chromatography mass spectrometry (see p. 12 of Kerr & Tupper, 2017 for a comparative summary of multiple devices and their analytical capacities). While the higher-cost and stationary technologies can detect the widest range of compounds, these are not so well suited for drug checking initiatives designed to be delivered onsite in field settings such as music festivals. Findings from drug checking efforts have been used to develop public warnings about hazardous or potentially dangerous substances in street-based drug supplies (e.g., Brunt & Niesink, 2011; Ventura et al., 2013). Although not initially designed with an exclusive focus on overdose prevention, drug checking services are increasingly seen as offering valuable opportunities to check drugs for fentanyl and analogue compounds and to relay such information to service users and the wider community.

To date, there are operational and forthcoming drug checking service locations in British Columbia and Ontario, mostly situated at programs providing SCS or OPS as well as at select music festival and party settings (Centre on Drug Policy Evaluation, 2018). There is some interest among potential service users in supplying people who use

drugs with these services at SCS (Kennedy et al., 2018). Preliminary results from a drug checking pilot at two SCS in Vancouver, developed in response to fentanyl in the illicit drug supply and rising overdose rates, revealed that 90.6% of analysed drug samples expected to be heroin tested positive for fentanyl (Tupper, McCrae, Garber, Lysyshyn, & Wood, 2018). (However, it should be noted that this study examined convenience samples offered by a subset of SCS clients which may not be representative of the wider drug market.) While there has also been development of some fentanyl self-testing options, the evidence supporting the use of currently available test strips is limited (McGowan, Harris, Platt, Hope, & Rhodes, 2018). Continued multi-site efforts to evaluate the impact of drug checking services that employ varied technologies is nonetheless needed as such services may offer unique drug-content information to enable clients to reduce their risk of overdose and other adverse harms. Preliminary evidence from nightlife settings has shown that drug checking may influence and lead to modifications in drug consumption risk behaviours (Benschop et al., 2002; Charlois, 2009). Whether uptake and behavioural change will be observed in Canadian SCS/OPS settings remains to be seen. The high costs of purchasing the more sophisticated technologies and the legal exemptions required to carry out drug checking research are notable implementation barriers.

#### *Looking ahead*

We have briefly outlined four harm reduction interventions (I-OAT, naloxone distribution programs, OPS, and drug checking services) as key emergent responses to the opioid overdose crisis. While focused on Canada, discussion of these responses and some of the barriers to their implementation and expansion has strong relevance for international jurisdictions grappling with similar crises. Despite some promising expansion of, and innovation in, these services, and other initiatives as described by the Canadian government (Government of Canada, 2018b), the current crisis shows few signs of abating. Therefore we wonder: are we losing the ongoing uphill battle to reduce opioid-related overdose deaths? Given what we know about the complex social-structural drivers of the opioid overdose crisis, greater effort needs to focus on how to address the ongoing contamination of the drug supply with fentanyl and its analogues, the impacts of the criminalisation of drug use on overdose risk, and the intersecting influences of key social determinants of health such as poverty, homelessness, and trauma that affect many people who use drugs (see *Opioid deaths in Canada expected to hit 4,000 by end of 2017, 2017 Opioid deaths in Canada expected to hit 4,000 by end of 2017*, 2017; Dasgupta et al., 2018).

Currently, although the federal government in Canada is ostensibly more receptive to harm reduction compared to recent history, this very history shows the impermanence of an enabling policy environment. That is, the National Anti-Drug Strategy created by the former Conservative government removed harm reduction as a key pillar, while the current Liberal government restored this pillar with the recent Canadian Drugs and Substances Strategy (see Health Canada, 2016a). As well, an enabling environment at the federal level does not guarantee the same at the provincial and territorial levels of government that have much of the authority to determine the structure of health care and social service systems. Raised earlier as an example in our discussion of OPS, we are seeing concerning and backwards policy trends in the most populous province, Ontario (Dubinski, 2018).

Troublingly, contradictions at the federal level in Canada are also apparent. Indeed, this Liberal government recently signed on in support of a renewed war on drugs led by the United States (Nolen, 2018), leaving many to question how genuinely supportive the government is of harm reduction and drug policy reform. Decriminalisation is not on the agenda of the present federal government. The current Medical Officer of Health for Canada's largest city, Toronto, in calling for a scale-up of harm reduction programming, has also urged the federal

government to show strong leadership, consider decriminalising possession of small amounts of drugs, and convene a task force to further consider the regulation of drugs (Hauen, 2018). Some advocates and researchers note that while decriminalisation will enhance opportunities to reduce opioid overdoses, even such major drug policy reform, by keeping drug markets illegal, will not eradicate contaminated drug supplies, prompting calls for increased efforts to ensure a safer, perhaps legally regulated, drug supply (Oscapella & Canadian Drug Policy Coalition Policy Working Group, 2012). Calls for legalisation therefore also warrant assessment and consideration in the context of a public health crisis of such magnitude. Of course, safer drug supplies can be achieved, in part, through I-OAT and other prescription-based programs, though, given the history in Canada, these cost-effective but still costly programs (Nosyk et al., 2012) are unlikely to be scaled up at a speed that will have a strong impact in the near future..

At present, grassroots groups and activists in Canada are continually challenging governments and pushing for reform, putting their emotional well-being and even liberty at risk for incremental improvements in services that are directly relevant to the current opioid overdose crisis. To truly address this crisis, Canada needs political environments at all levels of government that are responsive, foster innovation and experimentation, and are willing to address the complex web of contributing social-structural factors. Without such environments, we will continue to lose what has been a devastating uphill battle that has already taken so many lives.

#### Declarations of interest

None.

#### CRedit authorship contribution statement

**Carol Strike:** Conceptualization, Writing - original draft, Writing - review & editing. **Tara Marie Watson:** Conceptualization, Writing - original draft, Writing - review & editing.

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