

# **Implementation of risk mitigation prescribing during dual public health emergencies: A qualitative study among Indigenous people who use drugs and health planners in Northern British Columbia, Canada**

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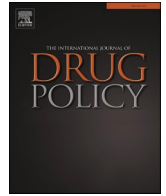
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## Implementation of risk mitigation prescribing during dual public health emergencies: A qualitative study among Indigenous people who use drugs and health planners in Northern British Columbia, Canada

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### ABSTRACT

**Background:** In response to the dual public health emergencies of COVID-19 and the overdose crisis, the Government of British Columbia (BC) introduced risk mitigation prescribing, or prescribed safer supply. In the context of colonialism and racism, Indigenous people are disproportionately impacted by substance use harms and experience significant barriers to receiving care, particularly those living in rural and remote communities. As part of a larger provincial evaluation, we sought to assess the implementation of risk mitigation prescribing as experienced by Indigenous people who use drugs (IPWUD) in Northern BC.

**Methods:** We used the Consolidated Framework for Implementation Research and the First Nations Perspective on Health and Wellness as conceptual frameworks to guide the study. In partnership with people with lived/living experience, we conducted 20 qualitative interviews with IPWUD. Data were supplemented by four interviews with health planners and analyzed thematically.

**Results:** Participants reported limited implementation of risk mitigation prescribing in Northern BC, with unique regional challenges and innovative facilitators to access. Analysis of supplementary health planner data was consistent with the experiences of IPWUD and together provided a comprehensive picture of implementation in Northern BC. Four themes emerged: 1) Northern socio-political-cultural barriers to implementation (outer setting), 2) rural and remote healthcare delivery challenges (inner setting), 3) adaptability of risk mitigation prescribing on Northern wellness (intervention characteristics), and 4) Northern ingenuity, relationality and champions facilitating access (implementation process).

**Conclusions:** Implementation and access to risk mitigation prescribing in Northern BC was limited, with region-specific applicability challenges and a health service delivery model that was not able to sufficiently meet the unique service needs of IPWUD. Demonstrating Northern ingenuity, peer groups, harm reduction community champions, and telehealth services were identified as stopgap measures that promoted access and reduced inequitable implementation within the region.

### Introduction

North America is experiencing an epidemic related to an increasingly

toxic unregulated drug supply; in the Canadian province of British Columbia (BC) over 13,000 people have died of apparent opioid toxicity since the declaration of a public health emergency in 2016 (BC Coroners

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Service, 2023a). The crisis is primarily fueled by the proliferation of illicitly manufactured fentanyl, its analogues, and more recently, benzodiazepines in the unregulated drug supply. In 2019, toxic drug fatalities in BC began to decline, which has been attributed to the widespread scale-up and enhanced accessibility of harm reduction services and substance use treatment throughout the province (Hongdilokkul et al., 2021; Laing et al., 2018; Maguet et al., 2023; Palis et al., 2022). However, the emergence of the COVID-19 pandemic quickly reversed these trends, leading to record-high toxic drug fatalities in 2020 and onward, with a rate of 44.3 per 100,000 population in 2021 (BC Coroners Service, 2023b).

Long before the COVID-19 pandemic, Indigenous Peoples were overrepresented in the toxic drug supply or overdose crises in BC and across Turtle Island (i.e., North America) (2). For example, surveillance data from the First Nations Health Authority (FNHA) reported that First Nations individuals died from toxic drugs at 5.3 times the rate of other BC residents in 2020, and represented 14.7 % of total fatalities while accounting for only 3.3 % of the population (First Nations Health Authority, 2021).<sup>1</sup> It is increasingly understood, and demonstrated by empirical research, that the historical and ongoing impacts of colonization, intergenerational trauma, and systemic racism are strongly associated with the disparity in toxic drug fatalities and other health inequities commonly experienced by Indigenous Peoples today (Barker et al., 2019; Firestone et al., 2022; Greenwood et al., 2018; Hackett et al., 2016; Jacklin et al., 2017; National Collaborating Centre for Indigenous Health, 2019). For Indigenous people who use drugs, intersecting sites of criminalization, racism, and marginalization further bar healthcare utilization and positive health outcomes (Barker et al., 2015; Goodman et al., 2017; Peiris et al., 2008).

Our study setting, the Northern health region of BC (Fig. 1), is 592,116 km<sup>2</sup> encompassing two-thirds of the province's land base – approximately the size of France – but only 6.5 % of BC's population (Northern Health, n.d.). The Northern health region is also home to 54 distinct First Nations, accounting for 36 % of the total First Nations population in the province (Northern Health & First Nations Health Authority, 2015). The challenges of healthcare delivery in rural, remote, and First Nations communities (i.e., “on-reserve”) have been well documented, with key issues including geographic challenges reducing access and availability, low user densities, healthcare provider shortages, and a lack of culturally safe services compared to urban counterparts (Oosterveer & Young, 2015; Nelson & Wilson, 2018). These challenges are often heightened for substance use treatment, care, and harm reduction services in rural and remote communities where limited availability, long waitlists, conservative ideologies, scarce funding, and a lack of specialized providers and clinics create significant barriers (Braithwaite et al., 2021; Burgess et al., 2021). Furthermore, concerns about anonymity and privacy when receiving services within First Nations communities has been previously found to be a barrier to receiving care among Indigenous people who use substances (Fraser & Nadeau, 2015).

At the onset of the dual public health emergencies impacting BC in March 2020, the provincial government approved interim clinical Risk Mitigation Guidance (RMG) to support clinicians to prescribe pharmaceutical alternatives to the unregulated supply – known as “prescribed safer supply” – for people at risk of withdrawal, overdose, and SARS-CoV-2 infection (BC Centre on Substance Use, 2020). The RMG included guidance for the prescription of pharmaceutical-grade opioids, stimulants, benzodiazepines, as well as alternatives for alcohol and tobacco use, to support individuals in adhering to the COVID-19 provincial health orders. While the Government of Canada has committed more than \$60 million for 10 prescribed safer supply pilot projects across

Canada, most are concentrated in urban centres in tightly controlled clinical settings, with time-limited funding (Health Canada, 2022). In contrast, the RMG was the first population-level prescribed safer supply initiative in North America, designed to be implemented by family doctors and nurse practitioners rather than solely by addiction medicine specialists and clinics (e.g., opioid agonist therapy [OAT]). This in theory, meant Northern, rural, remote and First Nations communities would be able to implement RMG into existing primary care infrastructure. We undertook the present qualitative study to assess the implementation of risk mitigation prescribing among Indigenous people who use drugs and health planners in the Northern region of BC and to understand the uptake and applicability outside of major metropolitan areas.

## Methods

### Study design and setting

The present study is nested within a larger initiative to evaluate the implementation and impacts of risk mitigation prescribing in BC (Nosyk et al., 2021). This province-wide multi-methods evaluation combines primary and secondary data sources including analyses of population-level linked administrative health data, a prospective survey among people who use drugs, and semi-structured interviews with people who use drugs, prescribers, and health planners (policymakers, managers, others in leadership roles) with experiences of implementing or prescribing risk mitigation medications (Nosyk et al., 2021). Consistent with principles of community-based participatory research, as outlined in our peer-led publication (Beck McGreevy et al., 2023), people with lived and living experience were involved in all phases of the study including the design, data collection, analysis, and dissemination of the findings. Their meaningful engagement as peer research associates went beyond tokenistic participation, fostering omni-directional learning and co-creation throughout the research process. Specifically, people with lived and living experience were instrumental in recruiting participants receiving RMG, co-developing the interview guide, providing critical input on coding and interpretation of findings, and contributing to the writing and development of the manuscript through verbal and written feedback. This collaborative approach ensured that the research remained grounded in the realities and insights of those most affected by substance use, while honoring community-based participatory research's commitment to equitable partnerships and shared decision-making.

The present qualitative study was led by researchers from the First Nations Health Authority (FNHA), the inaugural provincial health authority by and for First Nations in Canada, and Indigenous peer research associates residing in Northern BC. In alignment with early engagement with Indigenous stakeholders, including people with lived and living experience, we committed to oversampling Indigenous and rural participants (Nosyk et al., 2021), and conducting a nested study in Northern BC, given the lack of harm reduction and safer supply research that is conducted in Northern, rural, remote, and Indigenous contexts. Convenience and purposive sampling were used to recruit self-identified Indigenous people who use drugs and had accessed or tried to access risk mitigation prescribing. Flyers with information about the study, inclusion criteria, and contact information (i.e., a study phone number and email address) were shared on social media and distributed through drug user networks. The inclusion criteria were residence in BC, self-identification as Indigenous (e.g., First Nations, Métis, Inuit), current substance use (defined as opioids, stimulants, benzodiazepines), and receiving or seeking a risk mitigation prescription.

The study was approved by Research Ethics Boards at the University of Victoria (#20-0293) and the five regional health authorities (#H20-01125). See Table 1 for glossary of acronyms.

<sup>1</sup> These rates are likely underestimated as data are restricted to status First Nations as defined in the *Indian Act*, and do not include non-status First Nations, Métis, Inuit, and people who otherwise self-identify as Indigenous living in BC.

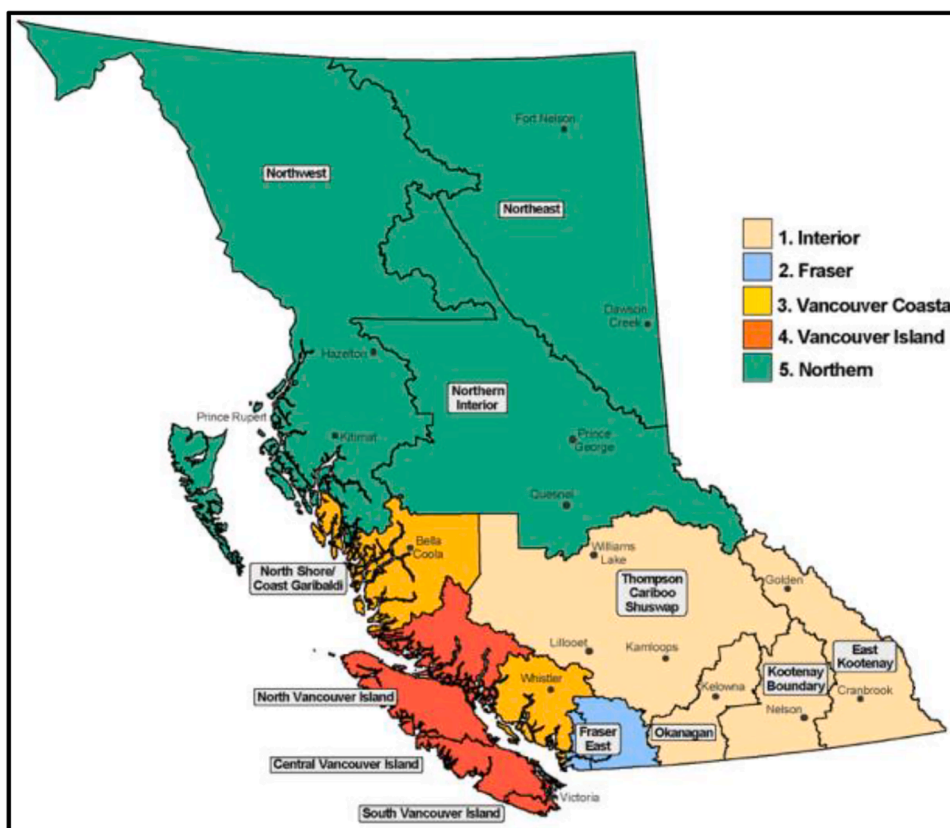


Fig. 1. FNHA health regions and sub-regions of British Columbia. Retrieved from <https://www.fnha.ca/Documents/regionsmap.pdf>.

Table 1

Acronyms list.

British Columbia	BC
Consolidated Framework for Implementation Research	CFIR
First Nations Health Authority	FNHA
First Nations Perspective on Health and Wellness	FNPOHW
First Nations Virtual Substance Use and Psychiatry Services	FNvSUPS
Indigenous people who use drugs	IPWUD
Opioid agonist treatment	OAT
Overdose prevention sites	OPS
Prescribed safer supply	PSS
Risk Mitigation Guidance	RMG
Single room occupancy hotel	SRO

Conceptual frameworks

The present study and larger research initiative used an implementation science approach, guided by the Consolidated Framework for Implementation Research (CFIR) (Damschroder et al., 2009; Kirk et al., 2016). The CFIR offers a structured overview of factors involved in implementation, grouped into five inter-related domains: *outer setting* (broader contextual factors that shape implementation), *inner setting* (healthcare organizations, such as infrastructure and available resources, implementation climate), *intervention characteristics* (core components, complexity, adaptability), *implementation process* (planning, engaging, evaluating, service delivery models), and *individual characteristics* (characteristics of intervention recipients and implementors).

For the present study, the FNHA research team also drew on the First Nations Perspective on Health and Wellness (FNPOHW). The FNPOHW is a visual expression of holistic health, based on traditional teachings, research, and adaptations by First Nations leadership in BC (Fig. 2) (First

Nations Health Authority, n.d.). At the centre is the individual, followed by the four interconnected domains of wellness (emotional, mental, physical, spiritual), values that support wellness (respect, wisdom, responsibility, and relationships), and the subsequent rings represent broader structures and determinants that influence wellness. We adapted the CFIR constructs based on FNPOHW and the research objectives. Specifically, the outer setting includes northern sociopolitical culture and related contextual influences of colonialism, structural racism, drug prohibition and stigma, and a largely rural conservative population. The inner setting includes the Northern health system, healthcare workforce, land, community, family, and Nations. Moving to implementation process, this domain includes champions and service delivery models and how they relate to overarching values of respect, responsibility, relationships, and wisdom that support and uphold wellness. Drilling down to intervention characteristics including the core components and adaptability of risk mitigation prescribing and how the intervention characteristics impacted holistic health of recipients – physical, mental, spiritual and emotional – are at the core of this domain.

Data collection

A semi-structured interview guide organized according to CFIR was developed for use with people who use drugs to assess experiences accessing risk mitigation prescribing. We adapted the guide based on FNPOHW and feedback from Indigenous peer research associates and FNHA teams working in toxic drug response, ensuring that questions were accessible, culturally safe, and elicited information on facilitators, barriers, service needs, and holistic impacts unique to Indigenous people who use drugs residing in Northern BC.

Between August and December 2021, 20 interviews, averaging 43 min in length, were conducted with Indigenous people who use drugs.

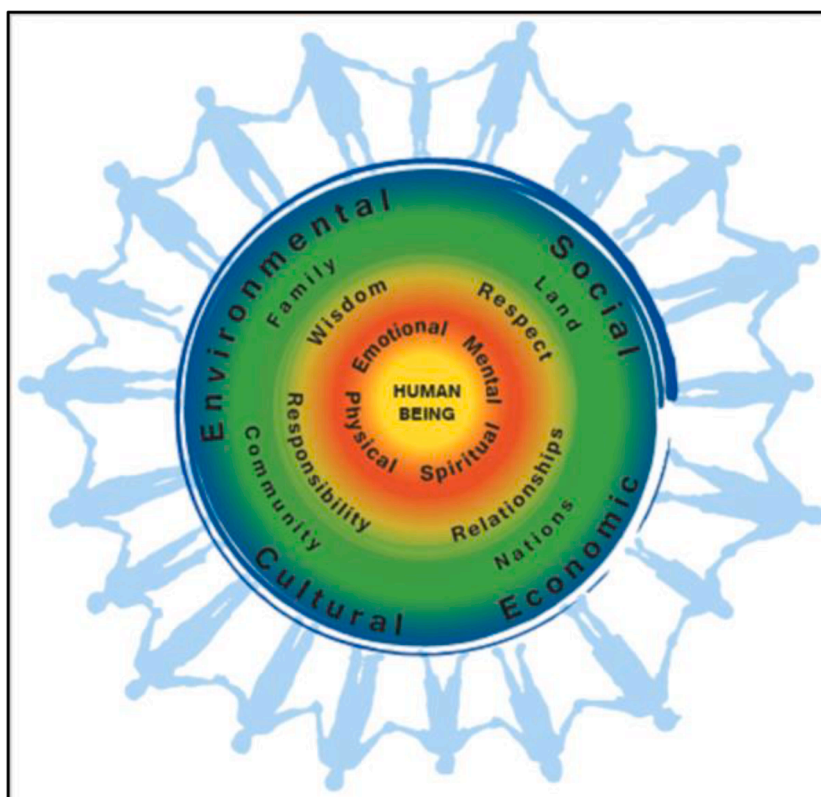


Fig. 2. Visual depiction of the First Nations Perspective on Health and Wellness. Retrieved from: <https://www.fnha.ca/wellness/wellness-for-first-nations/first-nations-perspective-on-health-and-wellness>.

Two white settler researchers (BB, AN) trained in Indigenous research approaches and trauma-informed interviewing conducted interviews remotely by telephone or over Zoom. Peer research associates (SW, WG, KC) helped coordinate the interviews and, where possible and desired by participants, attended the interview in-person in an outdoor space to provide support in compliance with COVID-19 public health guidelines. The majority of participants chose to complete their interview outside with a peer research associate present (15, 75 %). To ensure participants' privacy and comfort, all measures were taken to conduct interviews in a manner that respected confidentiality and participant preference. Participants received a \$30 honorarium via e-transfer or cash payment by a peer research associate.

#### Data analysis

Interviews were recorded, transcribed verbatim, and imported into NVivo (Version 12) to facilitate analysis. The initial coding framework was constructed using the five CFIR domains as conceptual bucket codes (e.g., *implementation process*). BB and AN then each reviewed 10 transcripts to generate descriptive codes within the bucket codes (e.g., *access champions*), finalizing the framework through review and discussion. Using the framework, AN then conducted first cycle coding on all 20 transcripts, generating sub-codes as needed (e.g., *peers and drug user groups*, *pharmacists*). During second cycle coding, BB drew on the FNPOWH as a lens to organize the codes into themes (e.g., *Northern ingenuity*). After the 20 interviews were coded, BB analyzed data thematically through constant comparison and review with team members (AN, SW, WG, KC, CM, BP) to ensure their perspectives and experiences guided analysis (Braun & Clarke, 2006).

#### Health planner interview data process & analysis

Interview data from IPWUD were supplemented by four semi-

structured interviews with health planners that are familiar with the Northern Health Region from the larger evaluation in order to compare and contrast accounts of how the guidance was implemented with how the intervention was received by Indigenous participants. Health planners were defined as individuals involved with the planning, policy-making, or implementation of RMG at organizational, regional or provincial levels and were recruited via purposive (e.g., roles) and snowball sampling. Interviews were conducted between February and September 2021 over Zoom or by telephone by BP and CM, and were audio recorded and transcribed verbatim. BB used the same coding framework as above to analyze the four health planner interviews with CM and BP, paying attention to areas of congruency and opposition. Health planners were emailed the consent form prior to the interview and provided verbal consent. A separate interview guide was developed for use with health planners, but the same analytical process was followed.

#### Results

Indigenous and health planner participants reported limited implementation of risk mitigation prescribing in the Northern Region of BC. Among the twenty Indigenous participants, half identified as women, nine reported being unhoused, and six reported living in an SRO or shelter. Fifteen received a RMG prescription at least once, including hydromorphone (13), immediate release morphine (3), methylphenidate (4), dextroamphetamine (4), and five had tried to access a prescription but were unable to do so. The most common RMG medication was hydromorphone, with thirteen participants reportedly receiving it (participants could be prescribed more than one prescription concurrently and/or over the study period). Additionally, six participants were co-prescribed OAT (i.e., Suboxone, Methadose) with RMG medications. Among those prescribed, eight were not receiving risk mitigation prescriptions at the time of interview. Eleven participants reported being

prescribed in the Northern Region's two largest town centres, Prince George and Quesnel (~76,000 and ~23,000 population, respectively). Four participants were able to access prescriptions outside of Prince George and Quesnel, though their prescriptions were described as a "one-off", were transferred from elsewhere in the province, or were accessed via telehealth services. Supplementary analyses stemming from the four health planner interviews corroborated the experiences of Indigenous participants. Among the four health planner participants, three identified as women. Given the small sample size of health planner interviews, only gender demographics have been included to protect participant confidentiality.

Interviews with Indigenous and health planner participants highlighted barriers and facilitators to risk mitigation prescribing in the Northern region. Our findings encompass four key themes, categorized by the CFIR domains and informed by FNPOHW: 1) Northern socio-political-cultural barriers to implementation (outer setting), 2) rural and remote healthcare delivery challenges (inner setting), 3) adaptability of risk mitigation prescribing on Northern wellness (intervention characteristics), and 4) Northern ingenuity, relationality and champions facilitating access (implementation process).

#### *Outer setting: Northern social, political, and cultural barriers to implementation*

Here, we present findings related to the outer setting of risk mitigation prescribing implementation in the North, combined with the FNPOHW's outer ring of environmental, social, cultural, and economic determinants of wellness.

Among five Indigenous participants who were unable to access risk mitigation prescriptions, RMG was frequently referred to as a "Vancouver thing" (the province's largest city where harm reduction services and providers are concentrated), and not widely known as available for eligible Northern residents. Among those who knew of, or were receiving risk mitigation prescriptions, they reported having to go to multiple clinics, towns, and even traveled "South" to Vancouver to find willing and available providers – or as this participant reflected: "...in the North here, we're having a hell of a time trying to get on it" (INTV 13).

Many Indigenous participants drilled down past geographic barriers and associated the slow roll-out to the Northern sociocultural landscape. Reports of racism and drug use stigma were ubiquitous among Indigenous participants. One participant reflected on the intersecting discrimination experienced by Indigenous people who use drugs compared to non-Indigenous peers:

*So, take what I've told you, and we'll say that's in general for all people. Okay? Now it's worse for Indigenous people. Now take that and add more worseness to it. Right? Because there's already huge stigmatism [sic] and racism in [city of interview] around Natives. We're still all seen as drunk, drug addicts, da, da, da, da ... I would describe this town as we're back, way, way back in time. We're not with the times at all. (INTV14)*

The participant continued to describe how marginalized groups including 2SLGBTQIA+ and Indigenous people were not able to celebrate their communities or cultures without backlash, including vandalism, and that Indigenous-run and -serving health services were viewed as lesser forms of healthcare by the community.

Many Indigenous participants described oversurveillance in commercial spaces by security, as well as being denied health or social services, due to their Indigeneity or drug use. Some participants highlighted that they needed to "jump through hoops" to receive their medications at the pharmacy or the clinic, hoops they felt were due to racism. For example, one participant described the difficulty they experienced accessing their prescription at a large-franchised pharmacy:

*When I first went to drop my script off, I passed it to him and then they wanted me to have ID 'cause they didn't think it was me. I think they thought I was trying to hand in someone else's script. So, they kept asking*

*me my birthdate. And then, the only reason why I ended up getting my very first prescription was because one of the pharmacy people recognized that was me before because I had picked up my puffers and my other medications. (INTV9)*

Several Indigenous participants reported losing their housing as a result of the COVID-19 pandemic, either due to loss of employment or violating public health guidelines related to visitors and drug use. Further, as the participant below, who did not have a prescription and was hesitant about trying again to access one, shared that obtaining housing was often seen as a more pressing need than obtaining a medication, particularly in winter:

*I have like a couple, you know, issues right now medically, like other injuries I have that I just am a little bit scared to just go through any kind of withdrawals. And also, I don't really have access to a whole lot of, um...Like I'm currently homeless. So, I still don't have – like I'm not comfortable trying that right now without the correct resources. (INTV16)*

Compounded by the pandemic, the lack of housing and wraparound supports in Northern communities were seen as barriers to accessing and initiating risk mitigation medications.

Another outer setting factor identified was the challenge of implementing risk mitigation prescribing in the wider context of drug prohibition. Many participants spoke about being harassed, surveilled, or having their prescriptions confiscated by the police for using them in public spaces. This occurred despite having limited or no access to housing or supervised consumption facilities, because "they seem to think that when we're using safe supply, we're actually using street drugs" (INTV 19). Another participant described how police routinely confiscated risk mitigation prescriptions for using them "not as prescribed" (i.e., intravenously), despite participant reports that their prescriber told them they could inject their medications. As a result, health-related harms were reported: "Like I have to use fast. Like I use fast and sometimes I end up missing [my vein] and I get bumps" (INTV8). These participants highlight how criminalization in the form of surveillance and policing was a barrier to maintaining and unsafe use of their prescriptions.

Health planners also reported barriers related to criminalization and drug use stigma when trying to implement RMG. This included municipal bylaws that challenged their ability to be responsive to drug user community calls for harm reduction services, such as establishing overdose prevention sites or safe consumption facilities, which are increasingly found elsewhere in the province. As this health planner participant described: "[Something] has led us into the OPS [overdose prevention sites] conversations, which is very challenging up here in the North just because of the population and the views of the population." This was juxtaposed to risk mitigation prescribing that was seen as even more controversial or radical to implement than overdose prevention sites in BC, as the same health planner continued:

*Our population, the majority are not in agreement with safer drugs and giving out safer drugs free. Like 'Why do I have to pay for my diabetes medication? I never wanted diabetes.' 'Why do I have to pay for my cardiac medications?' And yet, we're providing safer drugs for individuals who have substance use, and we want to make sure that it's a harm reduction. (HP03)*

As this health planner highlights, a common issue is the idea that people who use drugs are less deserving of medications than people with diabetes or cardiac issues (medications which are also publicly provided under BC pharmacare). Health planner and Indigenous participants provided an overview of the unique geographic, political, social, and cultural factors, that intersected with wider drug prohibition and stigma that challenged implementation of risk mitigation prescribing in Northern BC.

### Inner setting: rural & remote health care delivery challenges

Moving from the outer to the inner setting CFIR domain – the health system – and its relationship with the land, community, and Nations in the North and how it influences health outcomes. Indigenous and health planner participants described the unique challenges of delivering healthcare and harm reduction services in Northern, rural, remote, and First Nations communities. Multiple participants reported that risk mitigation prescribing was not available in First Nations communities (i.e., on-reserve). When asked about this, one participant responded that it was “horrible”, and the only option was to drive into the closest town:

*It's [First Nations community] so far out of town, and a lot of people don't have their own vehicle, so they can't drive... There's no actual medical people out going back and forth, really, that I'm aware of... And then the time you spend waiting and getting your shit [prescription in town], and what happens on a bad day? You know, we get snow up here and then blowing in down, and an hour's down and the fucking roads are shut down. (INTV12)*

Among Indigenous participants, long waitlists, provider shortages, high turnover, and unwillingness to prescribe risk mitigation medications were commonly reported barriers and resulted in disruptions to care:

*Took me about 8 weeks to get into see a psych doctor, who actually turned out to be the OAT doctor, but he was the only prescriber up here in [rural community]... and then, that doctor, he left, and we didn't have no replacement for him. And the current replacement actually... none of them will do it [risk mitigation prescribing] up here. (INTV13)*

Another participant spoke about losing access to their risk mitigation prescription and the therapeutic relationship with their family doctor, who retired, resulting in disengagement from primary care, reliance on telehealth services, or delaying healthcare needs entirely.

This was corroborated by health planners, who all spoke of the region-specific difficulties attracting and retaining healthcare providers and staff:

*That is our biggest, one of our biggest barriers in the Northern region, the lack of our ability to recruit and retain healthcare professionals from the whole range; from skilled workers to social workers to nurses to mental health clinicians to even clerical staff. Because of the economy base here they can go work at the city and make three dollars more an hour as a clerk than if they work for us... So, we have huge challenges in terms of service provision there. (HP03)*

The lack of healthcare providers and support staff was identified as more acute in substance use and addiction medicine services, as additional certifications, training, and mentorship often required practitioners to travel to Vancouver or other urban centres. Provider turnover and retention was only one issue, with Indigenous and health planner participants reporting instances of a single provider serving multiple communities on clinical rotation, without replacements for vacation leaves or service options for highway weather closures.

For First Nations communities, substance use service delivery was identified as particularly challenging:

*We do have a mobile, like an outreach mobile support team; but again, we have five main First Nation communities around [town], but they're minimum of an hour and a half drive to get there, so it's been really difficult to be of any real assistance in that regard... And you know, it's a tough job when you think that we have some pretty frigid temperatures up here. You know, many of the roads into the First Nations communities aren't paved. Cell service is extremely limited... So, there's just so many barriers. (HP01)*

When asked why risk mitigation prescribing was not available in their rural community, one Indigenous participant described the inability of the Northern health system to ensure continuation of OAT:

*This is unbelievable, I can't believe I have to say this, but we only have one doctor in town that does the methadone program. So, say you have an appointment, and you miss your Tuesday appointment, and so you call in and you try to book in the next week, and they inform you that your doctor has gone on holidays for a month-and-a-half and you will not be able to get your methadone until he gets back. (INTV14)*

This quote highlights that despite OAT being the first line treatment for opioid use disorder in Canada (Bruneau et al., 2018), publicly-provided for over a decade in BC and considered less controversial due to the robust evidence-base, access issues persist in Northern, BC. Even in communities where providers did prescribe risk mitigation medications, Indigenous participants reported clinics becoming oversubscribed and unable to take on new clients:

*I think we need more doctors to do it. That would help if more people could get on it. That's the problem right now that I see. Because there's so many people that want on it, that I run into, that say, 'Hey, where can I get on it?' or 'I want to get on safe supply.' And I'm like, 'Sorry, they're not taking anybody.' (INTV10)*

These findings highlight the challenges of implementing RMG in an environment where uptake by prescribers was predominantly elective, particularly in the Northern region where there is already a limited and under resourced healthcare workforce.

### Intervention characteristics: how adaptability of risk mitigation prescribing shaped Northern health and wellness impacts

Below, we describe findings around the adaptability or applicability of risk mitigation prescribing in Northern BC, and the associated impacts on physical, emotional, spiritual and mental health of Indigenous recipients. Partly due to the urgency of the dual public health emergencies, RMG was conceptualized largely by and for urban populations without widespread consultation or input from health planners (as reported by interview respondents), prescribers, impacted communities, nor the general public. The challenge of implementing an urban-centric intervention in a northern rural region was acknowledged as needing adaptation by an Indigenous participant who was familiar with the RMG:

*So that's a massive centre [Vancouver] where they got outreach, around every second corner there's an OPS or an SRO [single room occupancy hotel], and they're forward-thinking; you come up here where they're conservative... And when a mass group of people, a few hundred thousand, go 'This is what we're doing,'... then Vancouver can pick it up, and then the rest of BC. Well, people in the North, we get pushed around enough. Like build the wheel, we're going to customize it to work on dirt roads. Right? (INTV13)*

Health planners corroborated that the model developed for the Downtown Eastside in Vancouver (a highly concentrated and marginalized neighbourhood of people who use drugs, where risk mitigation prescribing was more accessible due to the concentration of services and progressive urban culture), was not replicable elsewhere in the province:

*We wish we could do better up here. They're working on policy to allow registered nurses to initiate prescribing of safe supply, but again, the rollout is quite slow up here in the North. And it [RMG] was announced by the government long before there was any process put in place to have [laughs] nurses be able to support that. (HP01)*

The health planners additionally noted a lack of consultation or pre-planning by the province hindered implementation within the Northern health system.

As is common with the prescribing of OAT in our study setting, the RMG stated that medications should be dispensed daily to prevent secondary harms of diversion (BC Centre on Substance Use et al., 2020). All but one Indigenous participant reported having their risk mitigation prescriptions dispensed daily. Daily dispensation created barriers for

individuals living in the North, particularly those living in First Nations communities or outside of town centres where pharmacies are located. As one participant described:

*It was just very inconvenient, especially when I lived out of town. Like I told him [prescriber] that, and it was already wintertime already, right? And I had no vehicle and stuff, so it was a struggle. I was asking my neighbours or I'd walk into town and end up getting it. And walking into town was not fun because it's like about an hour walk to get to the pharmacy from where I lived, so... Ah, the coldest I probably walked was probably about -30 [laughs]. (INTV15)*

The majority of participants affirmed that inclement Northern weather, related highway closures and limited public transportation options were significant barriers to accessing risk mitigation prescriptions.

All participants reported fear or experience of having their prescriptions terminated if they missed a clinic appointment and/or between one-and-three consecutive days of dispensations from the pharmacy, including the eight participants who were no longer receiving risk mitigation prescriptions. Similarly, the majority of participants talked about withdrawal symptoms or being “dope sick” as a barrier to picking up their prescriptions daily. Having to re-initiate risk mitigation prescriptions at a low induction dose or having a prescription terminated after missing a few days of dispensations was reported to contribute to overdose risk in the community, as described by one participant:

*Some of the nurses even cut off a couple of my friends from their safe supply because they didn't go for like a day or something, and they got totally cut off. A couple of my friends like [name] ended up in the hospital because she didn't have the medication. (INTV2)*

The being-cut-off-and-re-initiation cycle of risk mitigation prescriptions was familiar to many as many participants were dispensed OAT and/or were co-prescribed OAT (e.g., buprenorphine and hydro-morphone) daily. The same participant as above described trying to get into an outreach program with medication delivery to prevent prescription termination and the impact on their opioid tolerance.

*Some days I'm not able to pick up my meds [co-prescribed OAT & risk mitigation medications], and then that messes it all up. Then I have to start over... on 20mg. One time I was up at 160 and I missed just 3 days, and then I had to start... right from the bottom. (INTV2)*

Other participants described how inadequate dosing and a punitive medicalized approach discouraged them from continuing, as exemplified by this participant:

*Cause like you know, if you miss one day [dispensation] then you have to start all the way over from the first dosage. It's kind of discourages you to keep on trying...you work so long to get up to a comfortable dosage and then just have to start over because you accidentally missed one day... it happened a couple of time when I was moving. (INTV5)*

Among participants who lived outside of town centres, some described living out of town as a personal harm reduction strategy to reduce unregulated drug use or mitigate exposure to street drug scenes. One participant described the risk that friends living in their First Nations communities were inadvertently exposed to harm due to the medicalized implementation of risk mitigation prescribing:

*They come to town to get their scripts and they fail the piss test because they got to walk by this certain place or whatever may be, they end up running into their friends panning on the street, and then away they go. And you know, they fall back [into unregulated drug use], they get stuck in town. And what are they going to do now? (INTV13)*

Despite the RMG's objectives of reducing risk of overdose, withdrawal, and promoting adherence to the provincial COVID-19 public health orders, the restrictive and medicalized delivery model of risk

mitigation prescribing in Northern BC, including daily dispensation, may have contributed to risks for participants and negatively impacted holistic health, despite of these objectives.

*Implementation process: Northern ingenuity, relationality and champions facilitating access*

Below, we report on implementation process findings related to knowledge, service delivery models and champions of access and how they relate to the FNPOHW's overarching values of respect, relationality, responsibility, and wisdom. As described, most of our sample was recruited from the two largest towns in the region where prescribing was reported to occur. Outside of Prince George and Quesnel, knowledge about risk mitigation prescribing was extremely limited and we found no evidence of a health system approach to disseminating knowledge about risk mitigation prescribing. One participant linked the lack of knowledge about risk mitigation prescribing in their rural community to past negative health care experiences and provider discrimination that prevented inquiring about new medications and substance use care:

*Well, since none of us knew about what safer supply was, I would say it's been impossible to get safer supply in [town]! As well, the nurses and doctors in this town are very stigmatizing towards addicts... like you feel looked down on, you feel lesser than human you get pushed aside, you get ignored by our medical staff here. So, to ask for [a prescription] would be extremely intimidating for me. I would say it's un-accessible here. (INTV14)*

Indigenous participants who were able to access prescriptions reported learning about it from drug user networks, peer groups, harm reduction services, and word of mouth. In small towns where Indigenous people were living away from home (i.e., off-reserve), kinship networks were important facilitators to knowledge and access. As one participant described, their family member, a drug and alcohol counselor, was disseminating information about risk mitigation prescribing to potentially eligible community members:

*I mean there was groups that were actually going out on the streets and trying to – cause a lot of the people that are using and the people that are out there trying to get people on the safe supply – are related. So, they are our family members out there. Like my [relative] for one. Um, [They go] out into the streets, and you know? Tries to get certain family members to try and think about, you know? (INTV5)*

Health planners and Indigenous participants affirmed the involvement of peers as critical to the implementation of risk mitigation prescribing. One health planner described:

*I think it would come as no surprise that close communication and partnership with peer organizations and with people with lived and living experience in terms of the success around risk mitigation, safer supply, like that's a vital component. So, when I think of areas where we did have some really good success, I think of instances where we were able to engage with peer-led organizations and those communities. (HP02)*

In response to longstanding gaps and concerns in availability, accessibility and cultural safety of primary, mental health, and substance use care, the First Nations Health Authority launched two low-barrier, culturally tailored telehealth services at the onset of the pandemic for Indigenous people in BC: the First Nations Doctor of the Day (primary care) and the First Nations Virtual Substance Use and Psychiatry Services (FNvSUPS). As the FNvSUPS program was in its infancy at the time of data collection, few Indigenous participants knew of, or accessed risk mitigation prescriptions through, FNvSUPS. However, among the two participants who received prescriptions via FNvSUPS, they reported a culturally safe and patient-oriented experience:

*I was surprised how the doctor that I talked to now, to get my prescription, the amount of respect and everything I feel... He asked what I wanted and why, and I told him I'd been having troubles with my family doctor... This [FNvSUPS] doctor, I actually feel heard. And I haven't felt that in a long time. (INTV3)*

When asked why they accessed risk mitigation prescribing via telehealth instead of their family doctor, another participant replied: "I just feel like I would rather keep [my drug use] to myself and if I could just talk to somebody, I don't know, it just sounds better. Makes me feel comfortable anyways" (INTV4). This participant highlights issues related to confidentiality and stigma when accessing substance use care in small towns or First Nations communities that are mitigated with telehealth.

More broadly, all health planners corroborated the potential for virtual care to increase access and address prescriber unwillingness to risk mitigation prescribing in the region:

*I honestly think that we're going to be able to do that [implement virtual service] before we're going to be able to get enough physicians here in the northeast that are interested and willing to work in that area of medicine. (HP01)*

Four participants reported learning about access to risk mitigation prescriptions via FNvSUPS from the Northern drug user network and peer group meetings, which facilitated access by helping prospective patients call-in and complete initial clinical requirements (e.g., community referrals, urine drug screen analysis):

*[The peer group lead in rural community] was talking about... I can't remember what it's called, but there's a doctor you can, ah, talk to actual doctors through Zoom and get prescribed there. And there's paperwork on [their] end that [they have] to send through for us, like a recommendation or referral, and then we would be set up with a doctor [virtually] once we were approved. (INTV14)*

Relatedly, some participants recounted how peer groups and outreach workers provided wraparound supports facilitating prescription retention: "[outreach] go and they pick up [shelter clients] every day, and even, they even pick up their medication for them when they're not able to... That's what I'm trying to do so I don't miss any pills or anything." (INTV2)

In addition to peers and drug user groups, individuals acting as "harm reduction community champions" facilitated access and retention across the region. Several participants spoke favourably of specific providers, often nurse practitioners and community pharmacists, working with them to access RMG medications and achieve dosages that met their needs: "I need a doctor that can trust me and build up a relationship so I can have the support I need. And they [nurse practitioners] were on board, right from the start." (INTV10). The importance of a therapeutic relationship with a consistent provider was critical in mitigating the barriers to prescription access and retention, such as having prescriptions transferred to accommodate clients who were returning to their home communities or moving. As one participant, whose lack of personal identification was a barrier to having their prescription dispensed, reported their prescriber went above and beyond to ensure continuity of care with the pharmacy: "Like before all the [nurse practitioners] go home and stuff like that, they'll text message [the pharmacist]... and let them know that this is who and who, and once you get there, they'll message that person again to make sure that it's the right person they're giving it to" (INTV11). The importance of this extra step to ensure the participant received their medication was critical to ensuring access especially in Northern BC, where travel is often required to access services.

Other providers identified as facilitating access were small community pharmacists (as opposed to those working in large-franchised pharmacies). As one Indigenous participant described:

*Oh, [the pharmacist's] awesome. One day I forgot to pick up my weekend supply, and he actually opened up the pharmacy for me on a Sunday. Just so that I could take that dose so I wouldn't have to start all the way back over. He did that for three of us. (INTV2)*

Another participant described how their pharmacist was an advocate in getting their stimulant medication changed (e.g., Dexedrine to Ritalin), and that more broadly, the pharmacist was championing RMG across their region:

*"I talked to the pharmacist, got it [stimulant risk mitigation medication] changed up because some was – it wasn't quite right for me. So the pharmacist up here is amazing, the one. He actually pushes and advocates for it [RMG] across the northeast. He goes to all the pharmacies up here, works them, right?" (INTV13)*

Across all of the 'harm reduction community champions', whether FNvSUPS or local providers, peers, or kin, the importance of responsibility, relationality, and respect were recurring themes for facilitating access. We found no evidence of a structural or health system approach to disseminating information about risk mitigation prescribing but rather our findings around facilitators of access highlighted Northern ingenuity despite a lack of implementation plan or engagement.

## Discussion

We sought to assess the implementation of risk mitigation prescribing among Indigenous people who use drugs and health planners in the Northern region of BC and to understand the uptake and applicability outside of major metropolitan areas. The RMG is the first population-level implementation of prescribed safer supply, driven by intersecting crises of overdose and COVID-19, in the context of ongoing unregulated drug prohibition and colonialism. In the present study, despite the low-barrier potential for implementation, Indigenous and health planner participants reported limited implementation and access to risk mitigation prescribing across Northern BC. Further, significant adaptability challenges were identified with implementing risk mitigation prescribing into existing Northern health system infrastructure. Such challenges included significant healthcare workforce constraints and a lack of willing prescribers, long waitlists and oversubscribing where prescribing was occurring, and region-specific challenges associated with the medicalized model of risk mitigation prescribing that negatively impacted recipients' satisfaction with the program and holistic wellness.

Prior research has identified issues with medicalization including individualization and depoliticization of substance use and trauma and the perpetuation of power and control over marginalized populations; by mechanisms such as prescriber gatekeeping, devaluation of some forms of knowledge and experience in favour of biomedical expertise, surveillance, and stigmatization (Dollar, 2019; Goodyear, 2021; Macevicius et al., 2023). Together, these processes work to reinforce and maintain existing social systems while neglecting to address the social and structural determinants of substance use (Dollar, 2019; Goodyear, 2021). Of note for Indigenous Peoples, medicalization has had a prominent role in maintaining the colonial state in Canada (Goodyear, 2021; Kelm, 2004; Park, 2017; Razack, 2013). Power imbalances present within our health system perpetuate health inequities and poor outcomes among marginalized groups. Recent research has found non-biomedical approaches and socially accountable health partnerships, where Indigenous clients and communities participate in shared decision making with providers and health planners to improve individual and community health and wellness improves individual and community health literacy, agency, and health outcomes (Gallagher, 2019; Markham et al., 2021; Peiris et al., 2008).

Daily dispensation of risk mitigation prescriptions and frequent clinical follow-up visits were identified as significant barriers to access and retention by Indigenous participants in Northern BC. These barriers were exacerbated by frequent reports of stigmatizing and negative experiences with providers at clinics and pharmacies that contributed to Indigenous participants' dissatisfaction and terminating risk mitigation prescribing, and in some cases, disengaging from healthcare all together. These findings are not unique to our study nor to Northern BC, as previous research has long documented the barriers of OAT witness dosing

and daily dispensation (Jones & Quinn, 2021; Jumah et al., 2015; Pilarinos et al., 2022; Scott et al., 2023; Wells et al., 2019), as well as the prevalence of drug use stigma by healthcare professionals across settings (Adams et al., 2023; Aronowitz & Meisel, 2022; Goodman et al., 2017; Papamihali et al., 2020; van Boekel et al., 2013). However, participants described region-specific difficulties related to inclement weather, road closures, limited public transportation options, provider availability and accessibility, and long distances to travel to pharmacies, particularly for First Nations individuals living in their home communities, hindering the applicability and adaptability of risk mitigation prescribing in Northern settings.

Some participants reported that going into town centres to access risk mitigation prescribing placed them in risk environments (Rhodes, 2002, 2009), where street drug scenes and peer groups are concentrated alongside medical and harm reduction services. Relatedly, having prescriptions cut-off due to consecutive missed dispensations (e.g., 1–3 days) and/or having to restart at a low induction dose was reported to have contributed to overdose and withdrawal risk. Although the stated aim of the RMG was to support people at risk of withdrawal and overdose to self-isolate and physically distance during the pandemic, provincial surveillance data of pharmacy dispensations reported that 94% of RMG medications were dispensed daily in the first year of implementation (BC Centre of Disease Control, 2022). The guidance further indicated daily dispensation should be facilitated by housing staff, outreach clinical support and pharmacy delivery to support adherence to COVID-19 public health orders, but this is demonstrative of an urban-centric bias and privileges those who are able to obtain supportive housing. Indeed, recent research by our group using linked administrative health data of all prescribers of RMG found that prescribing was concentrated in urban areas, predominantly Vancouver (Pauly et al., 2024). Most Indigenous participants in this study reported difficulty accessing any housing or clinical support. Clinical support and medication delivery was largely limited to a peer-led initiative in Quesnel that started during the pandemic, which has been identified as a culturally-safe promising practice for supporting retention and patient outcomes in rural communities (Partridge, 2023; Scow et al., 2023). This signals a need for investment into peer-led models to support greater geographic equity of RMG implementation.

Findings of facilitators of access to risk mitigation prescribing, including peer groups, virtual and telehealth services, and individual ‘harm reduction community champions’ (e.g., prescribers, pharmacists, community members) are consistent with prior research of healthcare access in rural settings, particularly in First Nations communities (Browne et al., 2016; National Collaborating Centre for Indigenous Health, 2019). Peers and drug user networks helped disseminate knowledge about, and, in some cases supported access to, risk mitigation prescriptions. Peer support has been previously identified as critical to facilitating access and safety in harm reduction services by providing wraparound and holistic care across social determinants of health (e.g., clothing, food, social assistance, healthcare, housing), translating medical information, providing harm reduction education, and sharing lived experiences (Greer et al., 2021; Kennedy et al., 2019; McLeod et al., 2020; Scow et al., 2023). Distributed during our study period, Fig. 3 shows a Northern peer group’s flyer disseminating knowledge of FNvSUPS as a pathway to access risk mitigation prescribing and offering peer support to complete clinical requirements (e.g., urine drug screens). Telehealth and virtual care services, like FNvSUPS, may provide confidential and culturally safe substance use care and help mitigate geographical barriers associated with living in Northern BC, and partnerships are underway to mitigate the digital divide that many face (Markham et al., 2021). Taken together, these findings demonstrate Northern ingenuity and the patchwork of actors and services needed to mitigate the inequitable implementation of risk mitigation prescribing in Northern BC in the absence of a health system structural approach.

Given the implementation issues that our analysis uncovered, future research into the needs and preferences of Indigenous people who use



Fig. 3. Northern peer group flyer disseminating knowledge and offering peer support with FNvSUPS and RMG (shared with permission by co-founder and co-author KC).

drugs with respect to safer supply is warranted. In 2022, our broader study team was funded to extend and expand the RMG evaluation to evaluate the BC Government’s prescribed safer supply (PSS) policy directive (Ministry of Mental Health & Addictions & Ministry of Health, 2021). The PSS evaluation includes an expanded role for people with lived and living experience and Indigenous-led study activities embedded throughout, including a new focus on the awareness, willingness, and needs of Indigenous communities without access to PSS. These expanded activities were driven by our research findings and ongoing engagement with people with lived and living experience, Indigenous stakeholders and FNHA leadership.

The study has several strengths and limitations. A strength is that our research was conducted in partnership with people with lived and living experience in a region that has not received adequate policy or research attention. However, despite our focus on BC’s Northern region, most participants were from the two largest town centres or received ‘one-off’ prescriptions from elsewhere, resulting in limited understanding of the RMG’s implementation in rural, remote, and Indigenous communities. Our recruitment strategy may have biased our sample toward participants with access to a phone or the internet and/or who were connected to drug user networks, therefore not capturing those without access or who received RMG prescriptions independent of peer support. Additionally, our study did not examine Indigenous-led safer supply models or explore the cultural beliefs and tensions surrounding harm reduction and substance use among First Nations communities, as these topics were outside the scope of the present study’s objectives. However, future research on these areas, including cultural perspectives on RMG prescribing, and the development of community/Nation-based, Indigenous-led models of safer supply, is warranted. Such research will be critical in advancing more culturally safe, effective, and responsive care for Indigenous communities. Lastly, some individuals in our sample are underrepresented, including gender diverse and LGBTQ+ individuals, which may limit the breadth of perspectives captured.

## Conclusions

The RMG represents the first population-level implementation of prescribed safer supply in North America. In the context of colonization, intergenerational trauma, and systemic racism, Indigenous Peoples are disproportionately impacted by the toxic drug crisis and experience persistent barriers to healthcare perpetuating health inequities, which are exacerbated in Northern, rural, remote and First Nations communities. In the present study, Indigenous people who use drugs reported limited availability, accessibility, and adaptability of risk mitigation prescribing in Northern BC, which was corroborated by health planner participants who confirmed geographic, healthcare workforce and political challenges to implementing the RMG. Both groups of participants identified the critical role of drug user organizations, people with lived and living experience and telehealth services in facilitating access. Peer models to support access to and retention of risk mitigation prescribing, as well as wraparound supports for those experiencing substance use, are a promising intervention for resource-constrained settings like Northern BC.

## CRedit authorship contribution statement

**Brittany Barker:** Writing – original draft, Supervision, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Alexa Norton:** Writing – review & editing, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Shawn Wood:** Writing – review & editing, Validation, Investigation, Formal analysis, Data curation. **Celeste Macevicius:** Writing – review & editing, Formal analysis. **Katherine Hogan:** Writing – original draft, Resources, Project administration. **Katt Cadieux:** Writing – review & editing, Validation, Project administration. **Louise Meilleur:** Writing – review & editing, Validation, Supervision, Resources, Project administration, Conceptualization. **Bohdan Nosyk:** Writing – review & editing, Project administration, Methodology, Investigation, Funding acquisition. **Karen Urbanoski:** Writing – review & editing, Resources, Project administration, Methodology, Funding acquisition, Conceptualization. **Bernie Pauly:** Writing – review & editing, Supervision, Methodology, Funding acquisition, Formal analysis, Conceptualization. **Nel Wieman:** Writing – original draft, Validation.

## Declaration of competing interest

There are no conflicts to declare.

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## Supplementary materials

Supplementary material associated with this article can be found, in

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