

PERSPECTIVE

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# Rural community-based participatory research with families of people who use drugs: key considerations from a multi-provincial research partnership

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## Abstract

**Background** North America continues to contend with an unregulated drug crisis that is impacting communities of all sizes. Community-based participatory research that meaningfully engages people who use drugs, families, and their wider communities is one way of advancing social justice and improving population health. As more community-academic partnerships are formed in this space, some organizations have launched guidelines and considerations for engaging in community-based participatory research (CBPR). However, to our knowledge, none provide guidance for engaging in CBPR with people who use drugs and their families in rural settings.

**Main body** This paper presents insights gained from our experiences collaborating to conduct CBPR with families providing unpaid support for people who use drugs in rural Canada. Key considerations are thematically organized in four sections: Dreaming (Building the team and setting a vision), Designing (Key definitions, budget and ethical consideration), Doing (Bringing research to life), and Disseminating (Moving research into action).

**Conclusions** By building on existing principles and guidelines for working with PWUD and their families, these considerations will be a valuable resource for other partnerships seeking to engage in community-based participatory substance use research in rural settings.

**Keywords** Community-based participatory research, Unregulated drug crisis, Rural, Family, Canada

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## Background

Canada is experiencing a drug poisoning crisis that has claimed the lives of nearly 50,000 Canadians since 2016 [1]. The drug poisoning crisis has been fueled by an increasingly toxic and unregulated street drug supply that has evolved to include fentanyl, nitazenes, xylazines, and benzodiazepines, among other substances [2, 3]. Most knowledge and public discourse surrounding the unregulated drug supply has centered on drug poisonings in major urban centres such as Vancouver and Toronto [4–6]. Relatively little attention has been paid to drug poisonings in rural Canada, despite evidence that rural communities are disproportionately affected by this public health issue. For instance, in 2023, the drug poisoning mortality rate was 1.6 times higher in British Columbia's Northern Health Authority region (a highly rural region characterized by low population density) than in the Vancouver Coastal region (a highly urban region) [7]. Recent modeling research also suggests that people who use drugs in rural British Columbia are 30% more likely to die from a drug poisoning event than those in urban areas of the province [8]. This may be due in part to the limited availability of harm reduction services in rural settings, the increased number of people using drugs in private settings due to limited local harm reduction services and desire to avoid stigma and judgement, and unique social and geopolitical barriers to accessing available services (e.g. isolation and limited social networks, geographic distance and transportation) [8–11].

Additionally, due to ongoing experiences of colonial violence, discrimination, and racism, Indigenous communities are disproportionately impacted by drug poisoning [12]. Often, Indigenous communities are in rural and remote regions. In the province of Alberta, First Nations people accounted for 6% of the provincial population in 2020, but 22% of drug poisoning fatalities [13]. Further, in 2020, the rate of apparent accidental opioid poisoning deaths per 100,000 was about seven times higher among First Nations people compared to non-First Nations people [13]. Similarly, in British Columbia, between January and June 2024, First Nations people represented 3.4% of the provincial population, but 18.9% of drug poisoning deaths [14]. The toxic drug poisoning rate during this time was 6.6 times higher among First Nations people compared to non-First Nations people and over 11 times higher among First Nations women compared to non-First Nations women [14].

It is important to acknowledge the impact of the unregulated drug supply in smaller settings. Though only 17% of Canadians live rurally on a national level, some provinces and territories have a majority of their population living rurally [15]. Canada also has the fastest growing rural population among all G7 countries [16]. Given the unique nature of rural places, there have been growing

calls for increased substance use research in these settings [17]. Increasing substance use research in rural settings is essential for advancing social justice; creating opportunities to document place-based socioeconomic and health inequities; amplifying voices of affected communities; promoting an understanding of rural life; and informing policy and practice change.

## Engaging communities in research

Community-based participatory research (CBPR) is not a research methodology, but rather an “orientation to research” that prioritizes the inclusion of the community being studied throughout the research process to address health disparities [18, 19]. CBPR draws from the schools of action research and participatory research, and is rooted in the belief that “outsider-expert’ driven research” is “poorly suited” to respond to complex health problems [20]. This approach to research is social justice-oriented and seeks to meaningfully engage and amplify the voices of people who are historically marginalized or silenced in research, practice and policy [21].

Employing CBPR approaches in substance use research can help shift power differentials and platform the needs of people who use drugs (PWUD) and their wider communities. Numerous CBPR partnerships have been developed globally with PWUD, their families, and community organizations [22–24]. There have been notable benefits from these partnerships, including better identification of emerging health issues, feelings of respect and appreciation among community partners, opportunities for community capacity building, and research that is more accountable to the community [25–27]. However, several ethical and logistical considerations have also been identified, including the need for fair and adequate compensation for non-academic community partners, technical barriers to engagement, and ownership of work [22, 28]. As a result, a number of organizations have launched guidelines for academics and community partners seeking to embark on CBPR with PWUD and their families [29, 30]. Yet, none of these guidelines have acknowledged the unique considerations when engaging in CBPR partnerships with PWUD and their families in rural settings.

This commentary extends the CBPR guidelines developed by some team members from their work with families of PWUD in Canada [24], with a specific focus on the unique challenges and opportunities presented by rural contexts. We share a series of key considerations and lessons learned from a multi-year qualitative CBPR project exploring the experiences of families providing unpaid support for PWUD in rural Western Canada. This project is a 5-year project (2021–2026) funded through the Canadian Research Initiative on Substance Use Matters (CRISM) Prairie Node. CRISM is a national substance use research network in Canada, funded by the Canadian

**Table 1** Thematic stages and considerations of rural Community-Based participatory research with families of people who use drugs

Stage	Considerations
1. Dreaming: Building the team and setting the vision	<ul style="list-style-type: none"> <li>• <i>Forming the team</i></li> <li>• <i>Building relationships through technology, communication and reciprocity</i></li> <li>• <i>Supporting engagement through flexibility</i></li> </ul>
2. Designing: Key definitions, budgeting and ethical considerations	<ul style="list-style-type: none"> <li>• <i>Defining vocabulary</i></li> <li>• <i>Budgeting considerations</i></li> <li>• <i>Research and interview question development</i></li> <li>• <i>Acknowledging ethical responsibilities</i></li> </ul>
3. Doing: Bringing research to life	<ul style="list-style-type: none"> <li>• <i>Recruitment of rural-dwelling participants</i></li> <li>• <i>Navigating participant screening in digital spaces</i></li> <li>• <i>Flexible data collection</i></li> <li>• <i>Centering place and experience in data analysis</i></li> </ul>
4. Disseminating: Moving research into action	<ul style="list-style-type: none"> <li>• <i>Integrating community-led efforts</i></li> <li>• <i>Navigating rigid policies and procedures</i></li> </ul>

Institutes of Health Research, with regional nodes across the country. Each node conducts research on topics that are most salient to that region to support the uptake of evidence-based substance use interventions. Participant recruitment involved the completion of a screening form and a short secondary screening interview to determine eligibility. Subsequently, over the course of the study, we conducted semi-structured one-on-one telephone and Zoom interviews with 31 families providing unpaid support to a loved one using drugs in rural Prairie communities.

When formal health and social services are not available or accessible, families will often provide unpaid care to support their loved one. However, very little is known about unpaid family care for people who use drugs, particularly in rural areas, and how this care may influence outcomes for PWUD. This project engaged academics, people with lived experience of substance use, families, and harm reduction organization staff across three Canadian provinces (Alberta, Saskatchewan, and Manitoba) to better understand family experiences. Our goal is to provide insights into our research process to support other academics and community partners interested in using CBPR to better understand substance use in rural settings.

### Key considerations

In this paper, we have thematically organized our considerations into four stages (Table 1). *'Dreaming'* encompasses pre-research considerations, such as team building and maintaining relationships. *'Designing'* highlights the importance of inclusive research design and addressing logistical challenges to support rural research partnerships. *'Doing'* reflects on the research process ranging from recruitment to data analysis, emphasizing meaningful engagement with team members and participants. Finally, *'Disseminating'* refers to sharing the research findings and supporting broader knowledge mobilization that responds to community needs.

### Dreaming: Building the team and setting the vision

#### Forming the team

Forming a strong research team with diverse experiences and areas of expertise is a critical first step. A strong locally connected team is particularly important for gaining legitimacy and building trust in rural settings, as there are often complex sociopolitical dynamics to contend with. The distance between universities and rural areas, combined with the decentralized and diverse ways these communities are organized, can make it difficult to identify and engage key community partners without pre-existing relationships. We leveraged existing professional connections and networks to assemble our team. We emailed a short paragraph about the proposed research to CRISM Prairie Node members (a large regional network of academic and community members interested in substance use interventions) and invited interested members to attend a virtual information session to learn more and share their ideas. We also invited past academic and non-academic partners to join the project.

Initially recruiting team members through established channels and past partnerships likely supported community interest and engagement. This was because some potential partners were already familiar with and trusted members of the research team, making it a good starting point for team building. As the project progressed, our network expanded. We connected with other family members and community-based organization staff in rural areas that were underrepresented on the research team, such as some Northern communities. These new partnerships were primarily made through word-of-mouth and evolving networks of existing team members. We acknowledge that forming new CBPR partnerships can be challenging.

Potential community partners in some communities might hesitate to engage with CBPR due to concerns about stigma, judgement and perceived lack of privacy in their communities. Where possible, we recommend leveraging existing professional networks and past

collaborations as a starting point for building research teams, as this can support a foundation of trust. However, it is also important to actively work towards creating new partnerships that can provide new perspectives, recognizing that this takes dedicated time, mutual respect and trust.

We centered diversity in our team composition, including representation from all three Prairie provinces, diverse racial and gender identities, and perspectives (e.g. family, people with lived experience of substance use, people working in the community, health professionals, academics). A few team members identified as First Nations and Métis. In total, we assembled a team of 16 individuals. Some individuals represented multiple perspectives; however, generally, the team comprised seven academics (including two graduate students), three community-based organization staff members, and six family members and/or people with lived experience of substance use.

#### **Building relationships through technology, communication, and reciprocity**

Building and maintaining relationships is essential to CBPR. Without the contributions of community partners, this work would not be possible. Although some of us had previously worked together in different academic and community spaces, many of us were new colleagues. The team's geographic dispersion across three provinces and COVID-19 public health restrictions at the beginning of the project meant few opportunities to interact in-person. To maintain regular communication and collaboration, we used technology such as Zoom for meeting and Google Drive for sharing documents. In our case, all team members had access to high speed internet, but this could be a barrier for other rural research partnerships, so alternative forms of communication should be explored. Throughout the project, we prioritized relationship-building through regular meetings. These gatherings served multiple purposes: collaboratively designing the research, sharing updates about our respective communities, and learning more about each other. Each meeting included a dedicated check-in time for non-research items, such as sharing personal updates, discussing other projects/initiatives, and troubleshooting or crowdsourcing feedback on emerging issues. This fostered a supportive environment and ensured open communication. To ensure transparency and keep everyone informed, we distributed meeting agendas and minutes before and after each meeting. Recognizing that different people communicate best in different ways, the lead researcher also offered flexible communication options, including one-on-one phone calls and Zoom meetings. These individual check-ins provided opportunities for team members to catch up on project developments, ask

questions, or offer ideas. This flexibility contributed to continued engagement for those who could not attend every meeting or preferred alternative communication methods.

Reciprocity was a core value of our partnership and was prioritized through community-guided knowledge mobilization activities (described later) and supporting team members' ongoing work in the community. This support ranged from advising or answering questions about external community-led projects (e.g. how to create an evaluation survey), attending in-person and virtual community events when possible, connecting team members to others within our personal and professional networks to support their work, and amplifying their events and initiatives through our own networks.

#### **Supporting engagement through flexibility**

Keeping the terms of engagement flexible was key to building relationships and supporting engagement. Many team members were balancing their participation in the research with other family, work and community responsibilities. Given the minimal resources in rural communities, the non-academic team members were 'wearing multiple hats' and were contributing to the research outside of their paid work or in addition to their work responsibilities. For example, many of the non-academic team members were providing programming and supports for families and people who use drugs in their communities, and were participating in the research team out of personal interest. Team members were able to step back from the research to navigate increased personal and professional responsibilities and rejoin when able. During these times, team members would still be included on update emails so they could stay informed. Team members were encouraged to participate in all aspects of the research but also had the flexibility to choose where to focus their contributions based on their interests, expertise, and capacity. Future partnerships should consider how best to support flexible, yet meaningful engagement. Strategies such as fair and appropriate compensation for community partners, planning meetings or large project milestones outside of busier times for community members (e.g. holidays, end of year reporting for community organization), respecting personal time (e.g. reducing meetings over the summer), and offering different ways of contributing to the research (e.g. by project stage, by partner interest) may support sustainable involvement.

#### **Designing: key definitions, budgeting and ethical considerations**

##### **Defining vocabulary**

Early in the design process, we had multiple discussions about defining key terms. We all agreed about using

non-stigmatizing, person-first language (e.g. people who use drugs), but we had many discussions about how to define ‘family’ and ‘rural’. The complexities of family life and importance of developing a “trauma-informed” definition of family is noted in early family CBPR guidelines [24]. For PWUD, ‘family’ can take many forms. We wanted our use of the term to reflect the reality that some PWUD may be estranged from biological relatives while others find kinship in “found” families. We also wanted to be inclusive of diverse family and kinship structures in Indigenous communities which are often located in rural and remote regions of Canada. Listing specific family structures (e.g., biological, chosen, street) risked excluding some people whose family structure may not be represented and ignoring the complex and personal ways people experience family. We decided to use the term ‘family’ as an inclusive term that encompasses all family structures. Where possible, such as in printed materials and presentations, we defined this term at first use.

We also struggled with coming to a consensus definition of ‘rural’. In Canada, there is no standard definition of rurality, and it can vary based on demographic, geographic, socioeconomic, political and cultural factors [31]. We discussed defining rural by population size or sociocultural factors (e.g. presence of primary industries like farming) but quickly realized the varying definitions of ‘rurality’ across place. For example, rurality has been referred to as communities “with less than 1000 people” by Statistics Canada [32], “a population of 5000 or less” by Saskatchewan Association of Rural Municipalities [33], and any of Alberta’s incorporated municipal districts and counties, incorporated specialized municipalities or Special Area Boards by Rural Municipalities of Alberta [34]. Because we were conducting research across multiple jurisdictions, we were concerned that setting firm parameters of ‘rurality’ may inadvertently exclude potential participants. Ultimately, we decided to let potential participants self-identify as living rurally based on their understanding of the term. During preliminary screening, they were asked whether they lived in a rural community and were asked to provide the first 3 digits of their postal code so that we could confirm they were not living in a major urban area (e.g. Edmonton, Winnipeg). During the interview, participants were asked to describe their rural community as an ice breaker question. Their responses provided greater insight into the variations in rural communities (e.g. population sizes, amenities, economy). In printed materials and presentations, we routinely describe the lack of standardized definition of ‘rurality’ across Canada and contextualize rurality with the experiences of participants. Future research partnerships should consider their own local context when defining rurality.

### **Budgeting considerations**

As acknowledged by other guidelines, appropriate compensation is vital for both participants and team members collaborating on this project outside of their paid work (e.g. families, people who use drugs) [24, 29, 30]. At the beginning of the project, we informed team members that they would be compensated for any contributions to the research taking place outside of their paid employment (e.g. attending meetings, contributing to knowledge translation materials). Participants also received compensation in recognition of their time and expertise. Being transparent about the amount and timing of compensation was important. The rate of pay was \$50 CAD per hour for community team members and \$50 CAD per interview for participants. This rate of pay was determined based on the rate of pay for previous CBPR projects with families led by research team members [24]. It was also significantly more than the provincial minimum wages, which ranged from \$15 to \$15.80 CAD per hour at the time of the study, as a reflection of our appreciation for community partners’ and participants’ time and expertise. The lead researcher coordinated paperwork required by the university for payments to alleviate administrative burden from community members. Both community team members and participants were paid in cash through direct bank deposit or electronic money transfer. Although it was not needed by any team members or participants for this project, we also gave everyone the option of having a cheque mailed to them if they did not have a bank account for direct deposit.

Rural-specific budget considerations were also made, mostly pertaining to travel. We budgeted for travel expenses related to data collection and knowledge translation (e.g. airfare to neighbouring provinces, car rental and gas expenses, accommodations and meals). Researchers wanting to do rural-based research may require larger budgets for data collection due to travel expenses, compared to urban-based research where data collection sites may be located closer to universities. Although we were unable to implement this due to budget constraints and COVID-19 restrictions, we encourage other research partnerships to also budget for team member travel to attend at least one in-person team meeting. This may be helpful at the beginning of the project to help plan the research and build strong partnerships. To ensure equitable access to research resources, our budget also included data analysis software licensing fees to support a team member involved in data analysis who lived several hours from the university, precluding on-campus access.

### **Research and interview question development**

Though we approached potential team members with a proposed research idea, the main research questions

were formed collaboratively. Several initial meetings were dedicated to understanding the important questions to ask and areas of knowledge that were valuable to families and those working in the community. These questions were also reflected in the interview guide. For example, our proposed questions initially only focused on the impact of providing support on the family member being interviewed. However, a few team members suggested that it was also important to ask about the impact on other family members (e.g. siblings, spouse, children). Their insights also helped us develop questions that were most salient to rural settings, such as questions about the availability and experiences of using virtual and evidence-based substance use services. Our team's personal and professional expertise was also crucial in wording and sequencing interview questions to ensure they resonated with participants, collected relevant data for community partners, and were sensitive to potentially difficult topics like criminalization, trauma and grief. For instance, we used 'supporting' instead of 'caregiving' in our interview questions because we learned it better resonated with families. We also prioritized a gentle interview flow by placing sensitive questions about criminalization and grief in the middle, and framing the beginning and end with more comfortable topics.

#### **Acknowledging ethical responsibilities**

Due to a legacy of colonization, racism, discrimination and intergenerational trauma, Indigenous peoples are disproportionately impacted by drug poisoning [12]. Although we did not set out to conduct Indigenous health research, we recognized that many Indigenous people live rurally and remotely and may participate in the research. In addition to following guidelines from Chap. 9 of the Tri-Council Policy Statement 2 [35] on research involving First Nations, Inuit and Métis peoples, we consulted with Indigenous research team members, other academics who specialized in Indigenous health research, CRISM's Indigenous engagement platform lead, and health practitioners and policy makers in the space to ensure the research was designed ethically and responsibly. The lead researcher completed augmented training from the First Nations Information Governance Centre on Ownership, Control, Access and Possession (OCAP) Principles [36] and Indigenous research partnerships through their institution. We also made connections with leaders in Indigenous organizations and communities to support the sharing of key findings. When engaging with Elders or knowledge keepers, we followed proper protocol.

Before launching recruitment and data collection, we obtained approval from a university research ethics board (REB). Somewhat surprisingly, we encountered no major challenges to receiving approval; though we acknowledge

the difficulties faced by many community-academic partnerships. In the past, for example, some academic team members have experienced REB resistance to cash honorariums for participants, with a preference for gift cards. The research team's extensive experience with CBPR and years of past advocacy during REB reviews for other projects likely contributed to a lack of challenges with this study, as it informed the REB's familiarity with CBPR. Additionally, the REB had developed guidelines for Zoom-based research post-COVID-19, which helped us proactively address potential challenges before seeking approval. Emergent community-academic partnerships should allot extra time for seeking REB approval to mitigate potential delays in obtaining approval. Partnerships should also be prepared to advocate for the importance of CBPR principles if questions or challenges arise during the review process.

#### **Doing: bringing research to life**

##### **Recruitment of rural-dwelling participants**

Community partners on the research team led recruitment by sharing the call for participants through their networks, email listservs, and social media. Having these connections helped build trust with participants and reach families in hard-to-reach areas. We mitigated ethical concerns about pre-existing relationships between community partners and potential participants by asking all potential participants to contact the lead researcher with questions, or complete the online screening form. Only the lead researcher and the research assistant had access to the screening form with identifying information to protect participant privacy.

We encountered recruitment challenges in one province, highlighting the importance of team representation and understanding local context. Our limited team presence in one province necessitated reaching out to other community organizations, research centres and community spaces to spread the word about the project. We identified key differences between this province and the other two provinces where recruitment went smoothly. First, most organizations supporting PWUD and their families in this province were in urban settings whereas the other provinces had fixed site and outreach teams in rural communities. Because there were fewer resources in rural communities in this province, it was harder to reach potential participants. Secondly, we learned from our calls with other community organizations that rural information networks are organized a bit differently in this province. Many rural citizens receive information from private social media groups, printed posters in libraries and veterinary clinics, and word of mouth, rather than newsletters, listservs and program websites that were successfully used to recruit participants in the other two provinces. We recruited a few more

participants once we shifted our recruitment methods to this context. Future research partnerships should ensure strong representation of team members from the areas where they are doing research. Recruitment strategies should also be tailored to the context of each community - recognizing that each community may require a different approach.

#### **Navigating participant screening in digital spaces**

Because we relied on recruiting participants in digital spaces, including social media, we had to navigate a number of challenges related to potential participant misrepresentation. Other substance use researchers using internet-based recruitment have noted similar issues [37, 38]. After launching recruitment, we noticed several aberrant submissions on our online screening form. Key concerns included email addresses that were similar in format (i.e. firstnamelast123), phone numbers with out-of-country area codes, and sociodemographic information that was incongruent with the region (e.g. many people self-identifying as Samoan or Hawaiian). To help verify the information provided, we asked for a secondary screening with potential participants via Zoom or phone. There were potential drawbacks to only doing secondary screenings via Zoom or phone, such as participant privacy concerns and challenges accessing technology. However, this method was suggested by other research teams and the REB to ascertain that we were speaking to unique individuals and not people posing as multiple individuals [37, 38]. As more research is conducted in virtual settings, the balance of safeguarding research and ensuring maximum flexibility for participants needs to be contended with. All potential participants who had provided aberrant information either did not reply to our emails or refused to do a follow-up screening. In the end, approximately 150 individuals contacted us about participating. Of these 150, over 100 were deemed to be potentially fraudulent participants, 17 were eligible to participate but did not for various reasons (e.g. lost to follow up, withdrew before their interview) and 32 were interviewed. Recruiting via social media is useful when trying to reach rural populations; however, research teams should implement safeguards to verify potential participant eligibility. Having knowledge of the community (e.g. correct area codes, postal code, general demographics) is important for upholding the integrity of the research.

#### **Flexible data collection**

Recognizing potential barriers to participation, such as stigma, lack of privacy and restricted digital connectivity, we offered participants the choice of a Zoom, telephone or in-person interview at a convenient community location. Interestingly, everyone requested a telephone or Zoom interview. This may speak to the sensitive nature

of talking about substance use in small towns, which some participants shared in their interviews. Because data collection occurred virtually, we were able to mitigate potential challenges that rural research partnerships may experience, including navigating weather and travel restrictions, field safety concerns, and finding private places for interviews in small communities. That being said, connectivity continued to be a challenge for some participants. Some participants had poor internet connectivity in their community and had challenges accessing Zoom. Having multiple cost-free communication channels, such as the option to call a toll-free phone number is important.

Given the sensitive nature of the interviews, we had an ethical responsibility to support the wellbeing of participants. The lead researcher, with advanced qualitative research training and years of interviewing experience on this topic in rural settings, conducted most of the interviews, with a few completed by a research assistant. We offered one of our community partners the option of conducting some interviews, but they declined due to the potentially high emotional toll of interviewing on this subject. To build rapport with participants in an online setting, the interviewers used several key strategies. First, when sharing the study rationale, the interviewers shared a little bit about themselves, including their rural upbringing. This resonated with many participants and helped establish a shared understanding of rural life, such as challenges with transportation and privacy concerns. Second, we strategically sequenced interview questions. We began with broad, positive questions about participants' communities. This question helped us understand their unique community context. We gradually transitioned to more sensitive topics, exploring their experiences providing support and the impact of providing support on their wellbeing. Finally, we concluded with broader questions about policy and program improvements for families and PWUD in rural Canada, and asked participants to share advice for other families. This allowed us to end the interview on a hopeful note, focusing on solutions and shared wisdom. Many participants expressed that the interview process was cathartic and one of the few times they could fully share their story without judgement.

Although the sequencing of questions helped build rapport with participants; it was not uncommon for participants to become emotional during their interview. We allowed them time to process their emotions, such as by crying or taking deep breaths. We reassured them that it was okay to take the time they needed. We also provided a list of resources that participants could access if they felt distressed. A key challenge was finding accessible supports for people living rurally in the three provinces. Most available resources were virtual services or

helplines which still may not be accessible to some people depending on their internet and phone connectivity. Not all rural communities will have access to supportive services, so research partnerships must carefully consider how best to support participants who may be distressed in these contexts before entering the field.

Interviewing on sensitive topics like substance use can also be emotionally demanding on interviewers. We implemented several support strategies, including limiting the number of interviews completed each day, scheduling breaks between interviews, and regular debriefing. The lead researcher made themselves available in-person or by phone after each interview completed by the research assistant, should they require further support. Future research involving in-person data collection in rural areas should consider the local context's impact on interviewer well-being, such as travel demands, pressure to complete a high number of interviews in a short period of time, and connectivity challenges. Strategies like larger interview teams and the use of phones, including satellite phones in some places, for debriefing could mitigate these challenges.

#### **Centering place and experience in data analysis**

Data analysis was led by the lead researcher, a research assistant, and a community partner on the research team. All three individuals lived or were currently living in rural communities. They also had varying experiences of either using substances and/or providing unpaid support for others. Before analysis, all interviews were transcribed and de-identified, including the removal of place names, ages and service names. This was a critical step to protect the privacy of participants, as some participants were from communities as small as 200 people and could easily be identified.

A reflexive thematic analysis approach was used to guide analysis [39]. This approach allowed the three researchers to incorporate their own knowledge of living and working rurally, substance use and providing unpaid support when making sense of the data. During the analysis process, the team members employed an exploratory approach. We met regularly to read through all interview transcripts, discuss the data and share knowledge to contextualize the data. For example, some of the interview transcripts referred to recent local policy changes regarding the funding of supervised consumption sites. Taking the time to read through each transcript as a group allowed us to pause and discuss emerging patterns, and discuss how we were seeing these policy changes play out in real time. We co-coded 10% of the transcripts to develop initial codes. Coding discrepancies were resolved by consensus and formed the codebook that was used to code the remainder of the interview transcripts. We continued to meet during the coding process to reflect on

the experience and work through any challenges. We also worked closely to develop the key themes from the data, including the naming and renaming of themes. As we proceeded with analysis, we regularly met with the larger research team to share emerging findings and hear their understanding of the data. Leveraging the vast academic and lived expertise of the research team was imperative to make sense of the findings with the context of the region. Incorporating diverse perspectives and local knowledge throughout data analysis should be prioritized by other research partnerships.

#### **Disseminating: moving research into action**

##### **Integrating community-led efforts**

A core value of our research was integrated knowledge mobilization throughout the research process, not just at its conclusion. For example, early in the project, some community partners highlighted the need for greater education about drug poisonings in rural communities. Based on this idea, we secured additional funds and hosted a virtual Café Scientifique on drug poisoning in rural Canada. The event featured a speaker panel and workshop-style discussion on how to address drug poisonings in rural communities [40]. It drew over 100 attendees from across Canada, including families, people with lived/living experience of substance use, decision makers, community workers, clinicians, and interested community members. A plain language community report was produced from the event, as well as an evidence brief on drug poisoning in rural Canada which was submitted to the House of Commons standing committee on health [41, 42]. Further, our knowledge sharing efforts have extended to presentations for a range of audiences, including federal government agencies, health authorities, municipalities, and community organizations. We are committed to shared ownership of our work, offering authorship opportunities to all team members. As we continue to share findings from this research, we are actively exploring community-based venues identified by research team members, such as community presentations, webinars and plain language summaries, in addition to academic papers and presentations.

##### **Navigating rigid policies and procedures**

Rigid institutional policies and procedures can inhibit CBPR and these challenges can be more pronounced in rural settings [43]. During our virtual café, a few community partners hosted 'satellite' events with PWUD in their rural and remote communities. We had allocated funds for food at each site; however, university reimbursement procedures created obstacles. For instance, one site purchased food from a local vendor who could not provide receipts meeting university requirements. We resolved this issue by having the community partner pay for the

food and then invoice us, but this placed undue pressure on the community partner to have funds readily available. This example underscores the need for greater flexibility within university systems to support community research partnerships.

## Conclusions

Engaging in CBPR with families and PWUD in rural settings is not only deeply rewarding, but also crucial for understanding diverse perspectives on the impacts of substance use. There is a substantial need for more knowledge about the impact of unregulated drugs in rural settings and engaging in CBPR may support increased knowledge generation. In this paper, we reflected on some of the key lessons learned from our own community-academic partnership in rural Canada, including the importance of building the team and setting the team's visions; co-designing all aspects of the project and taking ethical and budget considerations into account; navigating challenges during recruitment and data collection; and mobilizing knowledge together in academic and non-academic settings. By building on existing CBPR principles and guidelines for working with PWUD and their families to acknowledge rural-specific considerations, we hope this paper will be a valuable resource for other research partnerships seeking to engage in CBPR in other rural settings. Though many reflections are broadly applicable, we acknowledge the diversity of rural communities and emphasize the importance of context-specific adaptations for CBPR projects.

## Abbreviations

CBPR	Community based participatory research
CRISM	Canadian Research Initiative on Substance Use Matters
OCAP	Ownership, Control, Access, Possession
PWUD	People who use drugs
REB	Research ethics board

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## Author contributions

HM: Conceptualization, Drafting initial manuscript, Revising and editing manuscript; SA, ED, PS, AGO, TL, WM, JM, NM, EP, TS: Revising and editing manuscript; EH: Supervision, Funding acquisition, Revising and editing manuscript.

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## Data availability

No datasets were generated or analysed during the current study.

## Declarations

### Ethics approval and consent to participate

Not applicable.

### Consent for publication

Not applicable.

### Competing interests

The authors declare no competing interests.

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