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Advancing virtual primary care for people with opioid use disorder (VPC OUD): a mixed-methods study protocol

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ABSTRACT

Introduction The emergence of COVID-19 introduced a dual public health emergency in British Columbia, which was already in the fourth year of its opioid-related overdose crisis. The public health response to COVID-19 must explicitly consider the unique needs of, and impacts on, communities experiencing marginalisation including people with opioid use disorder (PWOUD). The broad move to virtual forms of primary care, for example, may result in changes to healthcare access, delivery of opioid agonist therapies or fluctuations in co-occurring health problems that are prevalent in this population. The goal of this mixed-methods study is to characterise changes to primary care access and patient outcomes following the rapid introduction of virtual care for PWOUD.

Methods and analysis We will use a fully integrated mixed-methods design comprised of three components: (a) qualitative interviews with family physicians and PWOUD to document experiences with delivering and accessing virtual visits, respectively; (b) quantitative analysis of linked, population-based administrative data to describe the uptake of virtual care, its impact on access to services and downstream outcomes for PWOUD; and (c) facilitated deliberative dialogues to co-create educational resources for family physicians, PWOUD and policymakers that promote equitable access to high-quality virtual primary care for this population.

Ethics and dissemination Approval for this study has been granted by Research Ethics British Columbia. We will convene PWOUD and family physicians for deliberative dialogues to co-create educational materials and policy recommendations based on our findings. We will also disseminate findings via traditional academic outputs such as conferences and peer-reviewed publications.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ This fully integrated mixed-methods project follows an integrated knowledge translation approach to assess changes to primary care access and patient outcomes following the rapid introduction of virtual care for people with opioid use disorder (PWOUD).
⇒ We will be guided by the expertise of our Study Council—including PWOUD, family physicians who provide care for PWOUD and knowledge users—to inform our data collection, analysis and study outputs.
⇒ We will use robust statistical approaches on population-based administrative data and are relying on existing, validated approaches to identify PWOUD that have been developed specifically for these data sets.
⇒ The use of deliberative dialogues to discuss findings from the qualitative and quantitative analyses will ensure the production of study outputs that are validated by the populations to which they will be targeted.
⇒ While this project will seek to recruit participants with diverse characteristics (both among family physicians and PWOUD) by using a variety of recruitment strategies, we recognise that we may encounter limitations in accessing certain populations of PWOUD. Likewise, we understand that physicians have been overwhelmed during the COVID-19 pandemic and have limited capacity to support research projects.

INTRODUCTION

In March 2020, when COVID-19 was declared a global pandemic and provincial public health emergency, British Columbia (BC) entered the fourth year of its opioid-related overdose public health emergency.[1 2] Illicit drug toxicity deaths had been in decline prior to COVID-19, with rates in BC falling from a high of 31.2/100 000 population in 2018 to 19.3/100 000 in 2019.[3] Since then, these rates have increased in BC to 34.3/100 000 in 2020, 43.0/100 000 in 2021 and 41.6/100 000 through 31 March 2022.[3] The pandemic has exacerbated harms for people with opioid use disorder (PWOUD), many of whom experience intersecting effects of criminalisation, discrimination and social

marginalisation.[4] Existing research suggests that the increasingly toxic supply in the unregulated drug market and an increased prevalence of illicit benzodiazepines, disruptions in access to and capacity of harm reduction and other health services and increased occurrences of solitary substance consumption are all contributing to the worsening of conditions for PWOUD.[4–13] Harms have also been exacerbated by increasing mental health challenges associated with increases in gendered violence, inability to socially isolate and loss of support networks due to social isolation and other factors.[14–16]

Moreover, restrictions that sought to minimise COVID-19 exposure altered access to health services for PWOUD in the process.[4 17] For example, emergency departments (EDs), which are often healthcare access points for individuals diagnosed with substance use disorders (SUDs), implemented COVID-19 restricted entry to minimise potential COVID-19 exposure risks.[7] Some formal substance use programmes and harm reduction services reduced in-person access or shut down entirely.[6]

At the same time that access to EDs and other substance use and harm reduction services were reduced, family physicians in Canada rapidly transitioned to virtual modalities of care—synchronous interactions between physicians and patients aided by telephone or video-conferencing—for all but 'essential urgent and emergency services'.[18–21] This transition challenged PWOUD affected by social and economic vulnerability including limited access to resources for video or telephone appointments.[22 23] Prescribers of opioid agonist therapy (OAT)–an important treatment for OUD[24 25]–were encouraged by Ministry of Health officials to use telemedicine and virtual service billing codes without addressing such barriers,[26] and had limited support for conducting needed clinical assessments remotely.[27]

The impact of displaced care for PWOUD requires investigation, particularly given the high prevalence of comorbid conditions among this population. For example, rates of HIV/AIDS, hepatitis C virus (HCV) and hepatitis B virus (HBV) are high among people with SUD.[28] Among people who inject drugs specifically, HIV, HCV and HBV coinfection or triple infection are common given that these viruses share routes of transmission via infected blood and the sharing of needles and drug paraphernalia.[29–31] Injection drug use also increases exposure to pathogens that may cause localised skin and soft-tissue infections or serious systemic infections, such as endocarditis and septic arthritis.[29] Socioeconomic and psychosocial conditions, including experiences of homelessness and mental illness, are closely related to substance use and increase the complexity associated with the treatment of SUDs and co-occurring morbidities, while raising important questions about both the accessibility to and suitability of virtual modalities of care.[30 32 33]

It is already known that consistent access to primary care teams and clinicians is vital to improve health outcomes for PWOUD.[34 35] For example, randomised trials have indicated greater patient uptake, retention and satisfaction with OAT when provided in primary care compared with specialised treatment centres.[32 34] There is limited evidence, however, on the use of telemedicine and video technologies in primary care for treatment and support of those with OUD. Despite greater uptake of virtual health services in the USA compared with Canada in general (high-performing health maintenance organisations such as Kaiser Permanente, Intermountain Healthcare and Mercy Health conduct the majority of primary care encounters via phone/video calls or text messaging[36–38]), uptake of virtual OUD care in the USA pre-pandemic remained low.[39 40]

While evidence is limited, it does suggest virtual modalities may be effective complements or alternatives to in-person care. For example, in a retrospective cohort analysis conducted across 58 Ontario Addiction Treatment Centers, nearly half (47%) of the patients who experienced the majority (>75%) of their physician interactions by telemedicine had a greater likelihood of being retained in OAT (methadone or buprenorphine) for longer than those treated in person.[41] Evaluations of experiences of introducing virtual care for clinically stable PWOUD during the pandemic in the USA also suggest positive patient experiences and increased treatment retention with the potential to reduce traditional barriers to care related to transportation, distance, stigma and privacy.[42 43] Further evaluations are necessary, however, to understand the appropriateness of implementation across populations and equity concerns that may exacerbate pre-existing barriers to healthcare, particularly where PWOUD lack access to the requisite communication technologies. Additional research is also necessary to explore the impact of virtualisation on access to and quality of other necessary primary care for PWOUD, such as treatment for HIV/AIDS, HCV, HBV and mental health challenges.

Given the alarming rise in opioid overdose deaths in BC (and nationally[44]), determining whether virtual care improves or impedes patient access to primary care deserves urgent examination. To date, no population-based studies have assessed the use of virtual primary care among PWOUD, and there is limited work documenting the experiences and perspectives of PWOUD on virtual care.

Objectives

The goal of this mixed-methods study is to characterise changes to primary care access and patient outcomes following the rapid introduction of virtual care for PWOUD. We focus specifically on synchronous interactions (telephone or video-conference) and consider initiation of and interruptions to OAT, as well as care for HIV/AIDS, HCV, and mental health and other conditions that frequently co-occur with OUD. We aim to:

1. Document the experiences and perspectives of (a) PWOUD navigating access to virtual visits and (b) family physicians providing virtual visits during the COVID-19 pandemic.

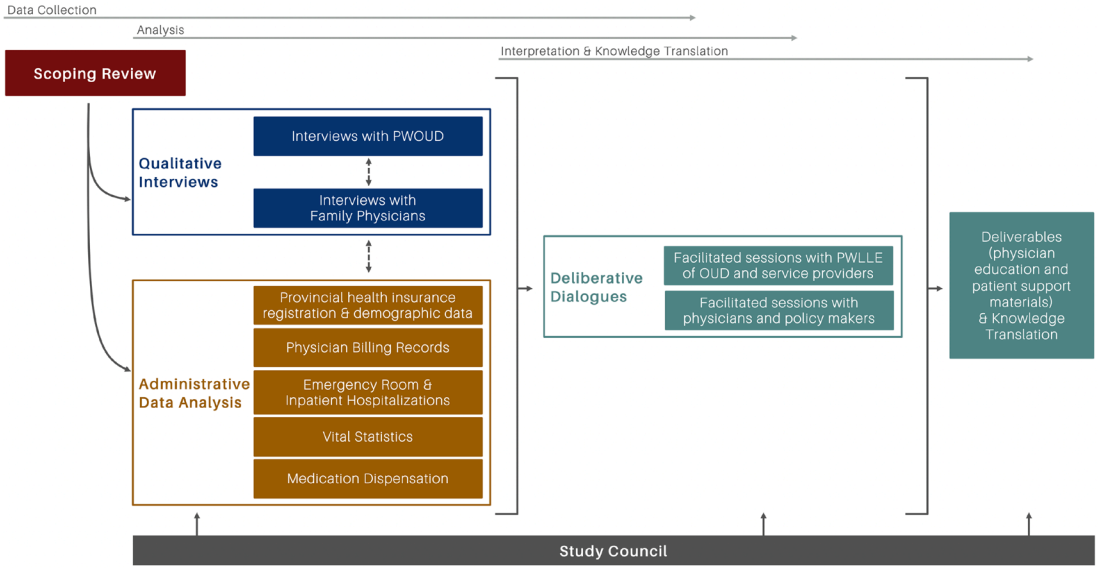

Figure 1 Overview of study methodology. PWOUD, people with opioid use disorder; PWLLE, people with lived/living experience.

2. Describe the uptake of virtual care, its impact on access to services and downstream outcomes for PWOUD.
3. Co-create educational resources for family physicians, PWOUD and policymakers that promote equitable access to high-quality virtual primary care.

METHODS

Overall study design

In this 2-year project, from September 2022 through August 2024, we will use an exploratory, fully integrated mixed-methods design in which findings from (1) qualitative interviews will assist with shaping and framing concurrent (2) quantitative administrative data analyses and vice versa[45 46] (figure 1). Semistructured qualitative interviews with PWOUD and family physicians will document experiences in accessing and delivering virtual visits, respectively. We will treat quantitative and qualitative data with equal weight. Qualitative and quantitative findings will be integrated in joint displays, which use visual means to bring data together to provide new insights beyond those gained from the separate results.[47] Displays will be provided to guide (3) two facilitated deliberative dialogues. Our Study Council will oversee all components of the project, provide guidance on participant recruitment, interview guides, quantitative analysis plans, interpretation of results, and the development and dissemination of knowledge translation materials. The Council will include researchers, PWOUD and family physicians (purposively recruited with the support of study collaborators and community partners), knowledge user representatives from the BC Centre on Substance Use (BCCSU), harm reduction organisations and policymakers.

Semistructured qualitative interviews

Recruitment

We will employ a purposeful maximum variation sampling strategy,[48] seeking to reach theoretical saturation.[45 49] For PWOUD (n=30), we will seek representation by sex/gender, age, geographical location (and rurality), housing and Indigenous ancestry. For family physicians (n=20), we will seek representation by sex/gender, age, years in practice, practice model (ie, community health centre, traditional physician-owned fee-for-service practice, addictions clinic) and practice location (rurality). We will use Zoom (Zoom Video Communications), telephone or in-person interviews (with pandemic safety protocols) based on participant preference.[50] Remote interviews have been shown to yield data with similar richness to in-person interviews[51]; however, we will also provide the option of in-person interviews to include participants who do not have stable access to phones or Zoom and to explore barriers to virtual care. In-person interviews will be conducted in spaces provided by our community partners at locations conducive to participants to ensure accessibility, privacy and safety. Our initial interview guides will be shaped by consultation with our Study Council and a scoping review of literature. Guides will be refined as we collect and analyse more data. The themes arising in the patient interviews will inform subsequent physician interviews and vice versa.

Family physicians

We will interview family physicians who provide care for PWOUD, recruited by our study partners, social media, snowball sampling, letters/faxes to primary care practices and direct outreach by family physician co-investigators. This multipronged approach has increased response rates in related studies.[52] To participate in an interview, family physicians must have an active licence to practise or be

enrolled in the Addiction Medicine Fellowship or Family Medicine Residency. They must have experience with providing primary care for PWOUD, either in person, virtually or both. We will exclude individuals who cannot read/understand English or provide informed consent. No exclusions will be made on the basis of individuals' ethnicity, gender or age.

Interviews will explore perceptions of (1) accessibility of virtual care approaches (video vs phone visits) for PWOUD; (2) management of OUD and related comorbidities using virtual approaches; (3) perceptions of liability and risk mitigation; and (4) impact of virtualisation on workflow, capacity and work satisfaction.

People with opioid use disorder

We will recruit participants using targeted outreach provided by collaborators, SOLID Outreach Society (https://solidvictoria.org), the BCCSU and other community partners. We will share study posters with our contact information with community and harm reduction organisations and family physicians and we will rely on snowball sampling where participants share the study information with others who may be interested. Recruitment will be monitored and strategies adapted to ensure the inclusion of all demographic groupings specified in 'recruitment' above. To participate in an interview, prospective PWOUD participants must self-report receiving a diagnosis of OUD, and/or be receiving oral outpatient pharmacological treatment for OUD (for example, methadone/kadian/buprenorphine/naloxone), and/or have attended a withdrawal management programme for opioid use. As with physician participants, we will exclude individuals who cannot read/understand English or provide informed consent. No exclusions will be made based on individuals' ethnicity, gender or age (so long as they are 19 years or older).

Interviews will explore the experiences of PWOUD in accessing virtual care during the pandemic, including: (1) whether virtual visits were a barrier or facilitator of care access; (2) perceptions of the impact of virtual visits on the quality of care; (3) the impact of virtual care on access to OAT and other medications as well as treatment for any co-occurring conditions such as HIV, HCV and mental health challenges; and (4) overall satisfaction with and interest in continuing to receive care virtually. We will specifically compare experiences with phone versus video consultations.

Analysis

Interviews will be recorded, transcribed and analysed using thematic analysis in NVivo software (QSR International).[53 54] Two team members with qualitative data analysis experience will independently read transcripts to familiarise themselves with the data, ensuring trustworthiness.[55] They will generate an initial set of codes, which will be combined into broader analytical themes. The themes will be compared across groups according to specific demographic, social and practice characteristics.

Administrative data analyses

Data sources and study cohort

We will use linked, population-based administrative data from January 2016 to the most recent data available (likely December 2021) through Population Data BC to examine the use of and outcomes from virtual visits among PWOUD. The study period captures a pre-pandemic window when virtual care provision was in place but uptake was limited.[56] These data sets are records from the province's single-payer, public health insurance system, which cover primary care services, hospital and emergency care, and pharmaceutical dispensations. Specific data sources include provincial health insurance registration and demographic data files, physician billing records (which include specific fee codes for virtual and in-person visits), emergency room and inpatient hospitalisation records, medication dispensations and vital statistics (table 1). We will also include data from the BC Centre for Disease Control's COVID-19 testing and case data. Data sets are linked at the individual level using Personal Health Numbers (a provincial government-issued lifetime personal identifier for BC residents) and other identifiers, which are then de-identified prior to provision to researchers and analysis.

Analysis

We will create a rolling cohort of individuals diagnosed with OUD during the study period using a case-finding algorithm developed for a previous study using these specific data sets[57] : three OUD-related Medical Services Plan physician billing records, one OUD-related hospitalisation in the Discharge Abstract Database or one OAT drug dispensation in PharmaNet between January 2016 and March 2019. We will also create an age-matched, sex-matched and morbidity-matched general population cohort[58–60] with which to compare our population of individuals with OUD. Morbidity level will be assessed using Johns Hopkins Adjusted Clinical Groupings.[61] In both cases, we will only include individuals who have a minimum of 1 year of continuous health insurance registration in the pre-pandemic era (prior to March 2020) and 1 year during the pandemic. Individuals who were under aged 19 years at the beginning of the study period will be excluded.

We will conduct a descriptive population-level analysis tracking the month-by-month volume and proportion of in-person and virtual visits in three time periods (figure 2): pre-pandemic (March 2019–22 March 2020), stay-at-home closure (23 March through June 2020), and ongoing mitigation (July 2020 onward) periods for PWOUD and for the matched general population cohort. Using an interrupted time series design, we will conduct segmented regression analysis with autoregressive integrated moving average models to estimate changes in the rate of virtual and in-person visits during the different pandemic periods, comparing PWOUD with the matched general population cohort.[58–60]

Table 1 Administrative data sources

Data source	Key data/variables
Medical Services Plan (MSP) Consolidation File[71]	Contains a record for each individual registered with their provincial health insurance programme, whether or not they received any care. Records include individual-level demographic data including age, sex and postal code (used to derive health region of residence and income quintile).
BC College of Physicians and Surgeons Registry File[72]	The College of Physicians and Surgeons is the provincial licensing body for the province of BC. Their registry file will be used to build a cohort of active primary care physicians within the study province who have provided care to people with opioid use disorder. We will draw data on physician demographics including age, sex, years in practice, specialty and location of training from this source.
Medical Services Plan Billings[73]	This includes data on all fee-for-service and shadow billed claims as unique provider–patient–date combinations. Each encounter includes services provided, and a most responsible diagnostic code which can be used to create summative measures of patient diagnoses and overall morbidity burden. Specific fee codes within the physician billings data sets will allow us to distinguish visits occurring face-to-face from those that happened virtually (via telephone or video).
Discharge Abstract Database (hospital separations file)[74]	Complete record of inpatient stays and outpatient hospital procedures. Records include date and length of admission, level of care, diagnostic and procedural codes, and most responsible physician.
National Ambulatory Care Reporting System Database (NACRS)[75]	NACRS contains records of hospital and community-based day surgery, outpatient procedures and emergency department usage. Coverage of provincial emergency departments is incomplete, with approximately 70% of BC's emergency departments included. Coverage for emergency departments is supplemented with records from MSP.
PharmaNet[76]	Records of all prescriptions dispensed within community pharmacies, linked to individual patients and providers. This data set includes hospital outpatient dispensations. It also contains flags for prescriptions dispensed under an income-assistance flag, which can be used as a proxy of economic stability.
COVID-19 testing[77]	BC Centre for Disease Control's COVID-19 case and testing data, including test results, materials/methodology and time of specimen collection and testing.
Vital Statistics[78]	Includes records of all deaths registered in the province.
BC Health System Matrix[79 80]	Population segmentation by health status assigns BC residents to 14 population segments that represent their healthcare needs in the fiscal year based on diagnoses or use of specific services over multiple or single years.

BC, British Columbia.

We will also conduct individual-level analyses using mixed-effects panel models stratified by the pandemic period that assess the monthly odds of having one or more primary care consultations at all, and the odds of having that consultation virtually (rather than in person) for PWOUD compared with the general population. Selected model covariates will be shaped by qualitative interviews and existing literature, but are likely to include patient age, sex, location (health authority and rurality), comorbidities, pandemic period and receipt of income assistance, all of which are measurable within the administrative data sets. We will also include length of time accessing OAT where applicable, as we hypothesise that it may have been easier to access virtual care to sustain OAT compared with accessing care to initiate or reinitiate OAT during COVID-19.

To assess the impact of virtual care on downstream health outcomes, we will restrict our data to the pandemic mitigation period (July 2020 forward) and assess interruption in OAT (defined as a gap in dispensed medication lasting 3–6+ days, depending on the specific medication[57]), and new diagnoses of common co-occurring conditions (eg, HIV, HCV, HBV, cellulitis) using mixed-effects logistic regression. Secondary outcomes include ED visits, in-patient stays and death. Our primary independent variable is the proportion of visits that occurred virtually over the period: all virtual, mostly virtual, mostly in person, all in person. Cut-off points between the categories will be data driven. As with previous models, covariates will include patient age, sex, location, health status and comorbidities, housing, receipt of income assistance and overall quantity of health services interactions (including ED visits and hospitalisation) during the study period. Statistical analyses will be conducted with two-sided alpha of 0.05. All outcomes and covariates are available or can be created from administrative data outlined in previous studies conducted by the team.[57 62 63]

Figure 2 Time periods for administrative data analysis.

Additional analyses will be defined in consultation with the Study Council, informed by the ongoing qualitative interviews with family physicians and PWOUD.

Deliberative dialogues

With the Study Council, and leveraging findings from our qualitative interviews and administrative data analyses presented in joint displays, we will hold two facilitated deliberative dialogues[64] to support the development of (1) an evidence-informed guide for PWOUD on accessing virtual care ('tips and tricks guide'); and (2) new content to be embedded in a BCCSU provincial education and training programme for physicians who provide care for PWOUD and who prescribe oral or injectable OAT.

Deliberative dialogues are facilitated discussion that provide background information to participants (in this case, the evidence gathered and generated as part of this project) and are designed to generate rich data and bridge research and action.[64] Additionally, they will allow participants to clarify their understanding of the results generated through the interviews and administrative data analyses, and to discuss and develop policy and practice recommendations to answer the question, 'What have we learnt about when and how virtual care works well for PWOUD?'

The first dialogue will focus on guiding the development of the 'tips and tricks' guide. We will invite PWOUD participants from our interviews and other persons with lived/living experience with OUD, as well as representatives from harm reduction organisations, to participate. The second dialogue will include family physicians and policymakers, and will build on learning from the initial dialogue, ensuring that the perspectives of PWOUD are included in the development of the virtual care content.

For both dialogues, we will aim for 10–12 participants from our list of interview participants to achieve diversity across characteristics identified for the qualitative interviews. The dialogue sessions will be audio-recorded, transcribed and led by an independent facilitator. Data will be analysed using interpretive description, with themes identified inductively.[53 65] The Study Council will use results from this exercise to create educational materials, which will be circulated back to attendees of the dialogues for feedback and validation before being shared with partner and external organisations. In addition to educational tools, for the end of grant knowledge translation, we will create a list of provincial policy recommendations to be shared with colleagues from the BC Ministry of Mental Health and Addictions.

Compensation

PWOUD and family physicians who participate in an interview or deliberative dialogues (or both) will be offered compensation in appreciation of their time. Additionally, Study Council members will be compensated in accordance with BC Mental Health and Substance Use Services' guidelines for patient partner compensation.[66]

Study rigour

We will prepare interview guides in consultation with our Study Council members and co-investigators who represent family physicians and PWOUD. This research will be conducted and reported following the appropriate reporting guidelines, including Standards for Reporting Qualitative Research.[67] Interviews will be conducted by experienced qualitative interviewers who will audio record and take field notes during interviews. We will keep detailed records of iteratively developed coding templates and discussions, including coding disagreements and their resolution. We will incorporate negative cases, thick descriptions[68] and illustrative quotes throughout our reporting. Study outputs for family physicians and PWOUD, informed by the deliberative dialogues, will be validated by dialogue participants prior to circulation to partner and external organisations.

The quantitative objective relies on population-based, administrative data which are frequently used for population health research. Our team, comprised of leading primary care and substance use researchers, knowledge users and PWOUD, has extensive experience accessing and conducting research through Population Data BC using these specific data sets, approaches and measures, within this population.[57 62 63 69] Additionally, we are relying on an existing, validated approach to identify PWOUD explicitly developed for these data sets.[57]

Patient or public involvement

Neither patients nor the public have been involved in the initial development of this protocol; however, through convening our Study Council, we will engage with and be advised by people with lived or living experience of OUD, family physicians, knowledge user representatives from the BCCSU, harm reduction organisations and policymakers throughout this project. This will begin with consultation in the development of our data collection tools and continue through supporting and informing quantitative and qualitative analyses and reporting. Additionally, the deliberative dialogues will provide opportunities for more in-depth engagement with physicians and people with lived/living experience of OUD toward the development of educational materials and clinical guidelines.[33]

ETHICS AND DISSEMINATION

Ethics approval, informed consent and confidentiality

We have obtained approval from the behavioural research ethics boards at Simon Fraser University, University of BC, and University of Victoria through Research Ethics BC (H22-00585).

For both interviews and the deliberative dialogues, the research coordinator will contact interested participants, provide them with the study information and consent document, and ask them to complete and return their signed consent forms. Alternatively, participants may opt to provide their consent orally, prior to starting their

interview. Participants will be informed that their participation in the study is voluntary, and that they may refuse to participate, refuse to answer any questions or withdraw from the study at any point up until their data have been combined with other participants' data for analysis. Participants do not waive any legal rights by signing the consent form.

All measures will be taken to reduce the risks of privacy breaches, including secure storage of study materials and protecting participants' identities. Participants' full name, email address and phone number will be used to schedule their interview, and their gender and information about physicians' practices will be used to ensure variation in our participants. The master list of identifying information will be kept securely and separate from participants' study data. Any identifying information that may be mentioned in interviews will be obscured during the transcription and transcript verification process. Though we are not intentionally recruiting physicians with their patients, we recognise that we may naturally end up with this overlap in participants. Further, because we are snowball sampling, we may include participants who know one another. All interviews will be conducted privately with up to two members of our research team and we will not disclose what individuals have shared in their interviews with other participants, nor will we attempt to link patients to physicians (or vice versa) during qualitative analyses. Interview audio files will be deleted once transcribed, de-identified and verified. No study participants will be identified in publications, reports or presentations.

Our letter of information and informed consent will also alert participants to the relevant privacy considerations of using Zoom (Zoom Video Communications) for remote interviews, and that data analysis will be conducted using NVivo (QSR International)—both of which are American companies—and that privacy laws which apply to these companies may not be the same as in Canada.

Quantitative administrative data will be housed in the secure research environment within Population Data BC. All data sets are de-identified prior to the study team obtaining access, with unique physician and patient study IDs used to analyse individual data over time. Only summary information will be removed from the data centres for the purposes of creating manuscripts and other knowledge translation products.

Knowledge translation

This study follows an integrated knowledge translation model,[70] having been borne from conversations between family physicians and researchers with expertise in primary care and substance use. To ensure continued inclusion of clinician perspectives, as well as those of people with lived experiences of OUD, we include family physicians, knowledge users, and PWOUD on our Study Council to inform our data collection, analysis, and dissemination. This integrated approach will be strengthened by the deliberative dialogues which will provide an opportunity for the study team to present our results and bring a larger group of people with lived experience of OUD and family physicians together toward the creation of policy and practical recommendations based on our findings.

We will generate high-quality evidence on how to structure virtual care services in ways that support equitable access for communities experiencing marginalisation both within and outside health emergencies. Our findings will be used to co-create and implement educational materials that will be hosted by the BCCSU and community partners, ultimately improving access to and quality of virtual care for PWOUD. We will leverage relationships with partner organisations and medical networks such as the BC Substance Use community of practice to share key findings. Finally, we will produce traditional academic outputs, including academic publications in multidisciplinary high-impact journals, and presentations at relevant conferences.

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Contributors The first author named is the lead and corresponding author. Contributions to the paper are described using the CRediT taxonomy (Brand *et al* (2015), Learned Publishing 28(2)). Writing (original draft)—LH. Writing (review and editing)—RM, SS, SN, EG, PB, JB, CC, KH, JK, ML, KM, BN, SP, CS, LT, SY, FC, RF, AG and NS. Conceptualisation—LH and RM. Methodology—LH, RM and JK. Supervision—LH and RM. Project administration—LH, RM, SS and SN. Funding acquisition—LH, RM, SS, SN, EG, PB, JB, CC, KH, JK, ML, KM, BN, SP, CS, LT, SY, FC, RF, AG and NS. All authors have read and approved the final manuscript.

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