Changemark
RESEARCH + EVALUATION

Provincial Evaluation
Registered Nurse and Registered Psychiatric Nurse Prescribing of OAT Initiative

Final Evaluation Report

Prepared for: Ministry of Mental Health & Addictions

Prepared by: Changemark Research + Evaluation

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Note: This initiative relates to an order issued by the Provincial Health Officer on September 16, 2020, titled *Registered Nurse and Registered Psychiatric Nurse Public Health Pharmacology*

Acknowledgement of Territory

With gratitude, we reaffirm that Changemark is located on the stolen land of the xʷməθkwəy̓əm (Musqueam), Sḵwx̱wú7mesh Úxwumixw (Squamish), and səl̓ílwətaɬ (Tsleil-Waututh) Nations. With humility and gratitude, our work also takes place on sovereign Indigenous lands and traditional territories across Turtle Island.

Changemark recognizes that an acknowledgement of territory is not enough but is an important social justice and decolonial practice that promotes Indigenous visibility and serves as a reminder that we are on settled Indigenous Land. We give thanks to the Peoples of these territories for their ongoing stewardship of the land since Time Immemorial and keeping it healthy and strong for future generations.

Authors and Contributors

This report has been prepared for the Ministry of Mental Health and Addictions by Changemark Research + Evaluation team members: Samantha Robinson RN MPH (Evaluation Lead), Kaitlin Callegari MPH (Evaluation Coordinator), Sarinn Blawatt PhD(c) (Qualitative Researcher), Huiru Dong PhD (Biostatistician) and Elder Sandy Lambert (Indigenous Elder Partner), who is a member of the Tallcree First Nation and has a relationship with Changemark offering teachings and guidance to contract teams.

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Executive Summary

In September 2020, the Provincial Health Officer (PHO) issued an Order to permit registered nurses (RNs) and registered psychiatric nurses (RPNs) in British Columbia to prescribe controlled drugs and substances to people at risk of an overdose due to the use of toxic and unregulated drugs. The initiative (referred to herein as 'nurse prescribing of OAT') was implemented as one way to increase workforce capacity in opioid use disorder (OUD) care and ultimately increase access points to opioid agonist treatment (OAT) for people with OUD interested in pharmacotherapy especially in more rural and remote areas of the province. In June 2023, Changemark Research + Evaluation was contracted by the Government of British Columbia to evaluate the implementation and impacts of the initiative.

Overview of RN and RPN prescribing of OAT

The PHO Order authorized RNs and RPNs to autonomously provide several services (including ordering and interpreting diagnostic tests, making a diagnosis of a problem substance use condition or substance use disorder, prescribing specific drugs and referring those diagnosed on to other specific health and social services) providing specific criteria were met. Required criteria included that the RN or RPN receive approval by the medical health officer with responsibility for that geographic area and that prescribing be conducted in accordance with the standards, limits and conditions established by the British Columbia College of Nurses and Midwives (BCCNM). Nurses were also required to complete mandatory training and education (online and preceptorship) offered through the British Columbia Centre on Substance Use (BCCSU).

Importantly, the initiative was implemented in phases according to the types of OAT medications that nurses could prescribe, to promote client safety. Phase one included buprenorphine/naloxone prescribing (initiations, continuations, titrations and re-starts - first prescription March 2021, ongoing); Phase 2 added the prescribing of slow-release morphine and methadone (restarts, continuations, and titrations only - implemented as of November 2021 with the first prescription written in March 2022 and ongoing). In April 2023, the Ministry of Health (HLTH) approved regulatory amendments and in September 2023 BCCNM approved new and amended standards, limits and conditions to create a new designation for certified practice in OUD. This established a certified practice for OUD prescribing as a permanent nursing practice outside of the PHO Order, and this new designation came into effect November 2023. As of November 30, 2023, RNs and RPNs must hold a certified practice designation to prescribe. Alongside the transition to Certified Practice in OUD (CP-OUD), updated education and training was released in November 2023 to include full scope prescribing of buprenorphine/naloxone, methadone and slow-release oral morphine.

Evaluation scope and aims

In June 2023, Changemark Research + Evaluation was contracted by the Government of British Columbia to evaluate the implementation and impacts of RN and RPN prescribing of OAT in British Columbia, from the time the PHO Order was issued in 2020 until December 2023.

This multimethod evaluation aimed to understand the implementation and reach of the initiative to date, including understanding facilitators and barriers to nurse prescribing of OAT. In addition, the evaluation aimed to explore several indicators of effectiveness, through the perspectives of RN and RPN OAT

prescribers, care team members working alongside nurse OAT prescribers and those who had received care from nurse OAT prescribers.

From the outset of the evaluation, it was clear that there was variability in terms of the approaches to implementation across the province, reflecting the diversity of regional settings, processes and priorities. As of December 2023, 124 RNs and 56 RPNs had completed the full education and training pathway to integrate OAT prescribing into their practice. In December 2023, there were 51 actively prescribing nurse OAT prescribers positioned across the province, providing care in a diverse array of clinical service settings.

Based on the findings, equipping nurses with the knowledge, skills and confidence to support people with OUD positively contributes to bolstering overall OUD system capacity. The findings demonstrate that nurse prescribing of OAT works well when prescribing is an extension of an existing role involving the care of people with OUD and with nurses experienced in providing substance use care. Nurse prescribing of OAT is further enhanced when nurse OAT prescribers are supported by an integrated clinical team with approaches that support team-based care, have access to mentorship from other prescribers, and have organizational or institutional support to maintain a manageable caseload. Care teams that were surveyed and service users who were interviewed viewed nurse prescribing of OAT as acceptable, and beneficial (e.g., increased access to OAT, greater flexibility in care provision). Overall, people who received care from nurse OAT prescribers described helpful aspects of the nursing role that kept them engaged in care and improved their care experience (e.g., continuity of the nurse-client relationship supported building or re-establishing trust in the health system and person-centered, nonjudgemental care from nurse OAT prescribers identified as critical to self-reported success on OAT).

While nurse prescribing of OAT was generally seen as beneficial by evaluation participants, some opportunities for improvement were identified. These include institutional policies and procedures that limit implementation in some settings, relational and power dynamics that needed to be navigated (particularly between the nurse OAT prescriber and other prescribers), a general lack of awareness of the initiative, and a lack of clarity regarding the role of nurse OAT prescribers and how they would fit into existing practice settings.

The findings highlight several key learnings that can be applied to future implementation of similar provincial initiatives.

Key learnings for implementing similar provincial initiatives

1. Prior to implementation, seek input on proposed policy changes from key target populations to ensure feasible and appropriate, including Indigenous communities and those servicing rural and remote settings
2. Prior to implementation, assess priority settings/communities for readiness to adopt the policy change (using indicators developed collaboratively with relevant key partners)
3. Building on traditional indicators of success (i.e., quantitative counts), develop targets and indicators that address more qualitative aspects of care, at initiative outset (determined through consultation and collaboration of health system partners)
4. Consider resourcing required prior to roll-out and work towards equitable access to resources (particularly in settings where inequities already exist, such as rural and remote locations,

communities at highest risk for toxic drug poisoning events, and deaths and locations with lower prescriber density)

5. Create and support the deployment of accessible and comprehensive communication plans at the health authority and site levels
6. Aim for greater involvement of affected groups and impacted communities from implementation outset
7. Utilize available levers to encourage regional and provincial health authorities to create implementation pathways in a timely way

In addition, several aspects of nurse prescribing of OAT emerged clearly from the findings that should be considered to maximize the benefits of nurse prescribing of OAT and address ongoing challenges.

Opportunities to sustain and amplify the benefits of nurse prescribing of OAT

1. Urgently remove barriers to full nurse prescribing of OAT practice scope in service delivery settings where limitations exist
2. Leverage technology to enhance the provision of virtual care by nurse OAT prescribers
3. Create mechanisms for ongoing support and mentorship for nurse OAT prescribers to reduce professional isolation
4. Improve communication and conduct more fulsome engagement to raise awareness about nurse prescribing of OAT
5. Consider expanding prescribing parameters to optimize the effectiveness of nurse prescribing of OAT to meet the needs of people with OUD
6. Consider prioritizing expansion to additional primary care and mental health and substance use (MHSU) sites independent of health authorities
7. Create provincial electronic clinical support tools to enhance adoption and explore opportunities for additional monitoring and evaluation (i.e., for quality improvement)

In conclusion, there is a clear and present need to expand access to the full spectrum of care for people with OUD as one critical component of tackling the ongoing and continually intensifying toxic and unregulated drug crisis in British Columbia and beyond. The findings contained herein indicate some clear benefits to nurse prescribing of OAT, such as opportunities for enhanced client engagement and OUD care continuity. Nurse prescribing of OAT continues to evolve, as evidenced by the new designation of Certified Practice in OUD for RNs and RPNs that came into effect in November 2023, and further evaluation efforts are warranted to continue to understand the benefits, limitations and opportunities for this new practice. In addition, continued and sustained efforts should be taken to better understand the needs of priority populations (i.e., individuals in rural and remote communities) to determine if and how similar policy changes should be implemented to reduce existing health inequities.

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Acronyms & Abbreviations

AMCT	Addiction medicine consult team
B.C.	British Columbia
BCCDC	British Columbia Centre for Disease Control
BCCNM	British Columbia College of Nurses and Midwives
BCCSU	British Columbia Centre on Substance Use
BCMHSUS	British Columbia Mental Health and Substance Use Service
BCNU	British Columbia Nurses' Union
CHSA	Community Health Service Area
CoP	Community of Practice
CP	Certified Practice
CSQ-8	Client Satisfaction Questionnaire-8
DST	Decision support tool
FNHA	First Nations Health Authority
FP	Family Physicians
HLTH	Ministry of Health
HSIAR	Health Sector Information, Analysis, and Reporting
MHSU	mental health and substance use
MMHA	Ministry of Mental Health and Addictions
MOA	Medical Office Assistant
NNPBC	Nurses and Nurse Practitioners of British Columbia
NP	Nurse Practitioners
OAT	Opioid agonist treatment
OUD	Opioid use disorder
PHO	Provincial Health Officer
PHSA	Provincial Health Services Authority
RAAC	Rapid Access Addiction Care
RN	Registered Nurse
RPN	Registered Psychiatric Nurse

Glossary of Terms

Buprenorphine: A long-acting synthetic opioid that acts as a partial mu (μ) opioid receptor agonist with a half-life of approximately 24 to 42 hours. Buprenorphine has a high affinity for the opioid receptor, but as a partial agonist, it also has a lower intrinsic activity or effect at the opioid receptor compared to full agonist opioids. These pharmacological properties create a "ceiling" on opioidergic effects—including respiratory depression—at higher doses. Buprenorphine's high affinity for the opioid receptor also confers an antagonistic effect on other opioids; it preferentially binds to the receptor and displaces other opioids if they are present, which can cause precipitated withdrawal. In Canada, buprenorphine is available in a combined formulation with naloxone (see below). Other formulations include the buprenorphine implant and depot injection.

Buprenorphine/Naloxone A 4:1 combined formulation of buprenorphine and naloxone, available commonly as a sublingual tablet in Canada. Naloxone is an opioid antagonist with poor oral bioavailability when swallowed or administered sublingually and is included to deter nonmedical injection and insufflation. When buprenorphine/naloxone is taken as directed sublingually, the naloxone component has negligible effects, and the therapeutic effect of buprenorphine predominates. However, if diverted for use via insufflation, subcutaneous, intramuscular, or intravenous routes, sufficient naloxone is absorbed to induce some withdrawal symptoms in physically dependent active opioid users. Buprenorphine/naloxone is generally taken once daily, but due to its favourable safety profile and pharmacological properties, it can also be prescribed at higher doses on alternate-day schedules. Buprenorphine/naloxone was the first opioid agonist treatment approved for nurse prescribing of OAT through the implementation of phase one of the B.C. RN and RPN Prescribing of OAT Initiative.

Certified Practice in Opioid Use Disorder: As defined by the B.C. College of Nurses and Midwives, Certified Practice (CP) is "a term used to describe a distinct BCCNM nursing designation for RNs and RPNs. Nurses who obtain the BCCNM-certified practice designation have an expanded scope of practice and are authorized to carry out activities in Section 6, 7, and 8 of the Regulation, if they meet BCCNM standards, limits and conditions."[1] CP nurses practice autonomously to diagnose and treat clients following certified practice decision support tools (DSTs) and use specific titles.

In April 2023, the Ministry of Health (HLTH) approved amendments to the *Nurses (Registered) and Nurse Practitioners Regulation* and the *Nurses (Registered Psychiatric) Regulation* to enable RNs and RPNs who have completed additional education and have been certified by their regulatory college to diagnose OUD and prescribe Schedule I and IA (controlled) drugs for the treatment of OUD. The BCCNM board then approved amendments to BCCNM bylaws to add CP in OUD in alignment with the amended regulations. In September 2023, BCCNM approved new and amended standards, limits and conditions to create a new designation for Certified Practice in OUD for RNs and RPNs. "RNs and RPNs who complete certification requirements can diagnose and treat opioid use disorder (OUD), including the prescribing of controlled drugs and substances. Additionally, they can issue orders that non-certified practice nurses can act on to compound, dispense, and administer drugs and Schedule I medications to clients for the treatment of OUD."[2] For more information on the new CP-OUD designation, standards, limits and conditions set out by BCCNM, please see: www.bccnm.ca.[1]

Culturally Safe Care: An outcome based on respectful engagement that recognizes and strives to address power imbalances inherent in the healthcare system. Culturally safe care results in an

environment free of racism and discrimination, where people feel safe.[3] The only person that can truly determine whether an interaction is unsafe is the patient or service user themselves.

Indigenous Cultural Safety and Humility: Cultural safety is an outcome based on respectful engagement that recognizes and strives to address power imbalances inherent in the health care system. It results in an environment free of racism and discrimination, where people feel safe when receiving health care.[4] Cultural humility is a process of self-reflection to understand personal and systemic biases and to develop and maintain respectful processes and relationships based on mutual trust. Cultural humility involves humbly acknowledging oneself as a learner when it comes to understanding another's experience.[4]

Methadone: A long-acting synthetic opioid that acts as a full mu (μ) opioid receptor agonist. It has a half-life of approximately 24 to 36 hours and is well absorbed. In Canada, it is most frequently administered as an oral solution, generally given as a single daily dose. Methadone tablets are also available in a limited context (e.g., for travel) in some jurisdictions.

Multimethod[5] approach: Employing more than one method of gathering empirical data to best answer a research question. This approach can foster greater confidence in rigor and validity. Multimethods can include any combination of quantitative and/or qualitative methods.

Nurse Prescribing of OAT: In September 2020, the Provincial Health Officer issued an Order to authorize registered nurses (RN) and registered psychiatric nurses (RPN) in British Columbia to prescribe controlled drugs and substances to people at risk of an overdose due to the use of toxic and unregulated drugs. The PHO Order authorized RNs and RPNs who met specific criteria to autonomously provide several services. This included ordering and interpreting diagnostic tests, making a diagnosis of a problem substance use condition or substance use disorder, prescribing specific drugs and referring those diagnosed on to other specific health and social services. Practice criteria included that the RN or RPN receive approval by the medical health officer with responsibility for that geographic area and that prescribing be conducted in accordance with the standards, limits and conditions established by the BCCNM. Nurses were also required to complete a mandatory training and education pathway (including an online course and in-person preceptorship) offered through the BCCSU. Several resources were developed to support nurses in this practice, including decision support tools (DSTs) that set out the activities within the defined scope of practice as well as situations where consultation or referral would be required (development led by BCCSU). Practice settings adopting nurse prescribing of OAT were required to have established escalation pathways to support nurses when consultation or referral was required. Phase one permitted buprenorphine/naloxone prescribing only (initiations, continuations, titrations and re-starts - first prescription March 2021, ongoing). Phase two added the prescribing of slow-release morphine and methadone (restarts, continuations, and titrations only - implemented as of November 2021 with the first prescription written in March 2022 and ongoing).

In September 2023, BCCNM approved new and amended standards, limits and conditions to create a new designation for Certified Practice in OUD for RNs and RPNs. Nurses practicing under the PHO order could transition to the new certified practice designation. After November 30, 2023, RNs and RPNs must hold a certified practice designation to prescribe. Nurses must meet certain criteria each year to continue to hold the designated certified practice title. (See above definition: Certified Practice in OUD)

Opioids: Opioids are substances (natural or synthetic) that behave like the bodies' own natural painkillers (endorphins) to reduce pain signals and create pleasurable feelings. This includes substances like heroin as well as medications such as hydromorphone, oxycodone, morphine, codeine, and related drugs.

Opioid Agonist Treatment (OAT): Medications prescribed for the treatment of opioid use disorder. OAT is typically provided in conjunction with provider-led counselling, long-term substance use monitoring (e.g., regular assessment), comprehensive preventive and primary care, and referrals to psychosocial treatment interventions, psychosocial supports, and specialist care as required.

Opioid Use Disorder (OUD): A pattern of opioid use leading to clinically significant impairment or distress that meets the DSM-5 Diagnostic Criteria for Opioid Use Disorder. OUD can involve the use of synthetic and/or naturally derived opioids. The DSM-5 terminology represents a deliberate shift away from DSM-IV terminology of "opioid abuse" or "opioid dependence", which may be considered pejorative and/or stigmatizing.

People Who Use Drugs: A broadly accepted term for people who use drugs. This term is used to recognize the humanity of people who use drugs, and to recognize that drug use is only one aspect their identity.

Person-centered: Puts patients at the forefront of their health and care, ensures they retain control over their own choices, helps them make informed decisions, and supports a partnership between people, families and health-care providers.[6]

Prescribed Alternatives to the toxic drug supply (also known as 'Prescribed Safer Supply' or 'Prescribed Alternatives'): Prescribed alternatives to the toxic drug supply are pharmaceutical grade drugs (i.e., opioids) that are prescribed with the goal of reducing substance use related harms including toxicity-related injuries (e.g., anoxic brain injury) and deaths; enhancing connections to health and social supports; supporting titration, stabilization and engagement onto treatment; and improving overall health and wellness for people who use substances.[7]

Service User: This document uses the terms 'patient,' 'client' and 'service user' interchangeably, to represent the term for individuals who have interfaced with the health system and sought substance use services, including treatment. 'Service user' was intentionally used in the context of the data collection tools and instruments to refer specifically to individuals who had received care from a nurse OAT prescriber.

Slow-release oral morphine: A 24-hour slow-release formulation of morphine, a full agonist at the mu (μ) opioid receptor, that is taken orally once per day. In Canada, slow-release oral morphine is available as a capsule containing polymer-coated pellets (to slow absorption and release) of morphine sulfate. Its elimination half-life is approximately 11 to 13 hours. It is currently approved for pain management in Canada, and its use for treatment of opioid use disorder would be considered "off-label".

Substance Use: The consumption of psychoactive (that is, mood-altering) substances. Many compounds have psychoactive properties. Regulated substances include things like alcohol, tobacco, cannabis and prescribed medications, while unregulated substances can include cocaine, heroin, fentanyl, crystal methamphetamine and other compounds. Many unregulated substances are criminalized, and this greatly impacts the dynamics of where, when, and how people use them. Humans

have used psychoactive substances throughout history for a variety of reasons, including spiritual or religious, cultural, social, medical, and scientific reasons, as well as for pleasure. The individual effects of substance use can vary greatly. For the purposes of this document, the terms ‘substance use’ and ‘drug use’ are used interchangeably and largely mean the use of unregulated substances or regulated substances (such as prescription medications) in ways other than as prescribed.

Trauma-informed: Services grounded in an understanding of trauma that integrate the following principles: trauma awareness; safety and trustworthiness; choice, collaboration, and connection; strengths-based approaches; and skill-building. Trauma-informed services prioritize safety and empowerment and avoid approaches that are confrontational.

Background

In Canada, opioid-related deaths contribute greatly to the burden of disease, with opioids accounting for over 42,000 deaths in Canada from January 2016 to September 2023.[8] The increase in opioid-related morbidity and mortality, largely driven by the emergence of potent, toxic, synthetic opioids (i.e., fentanyl and fentanyl analogues), has even slowed the increase in life expectancy in both Canada and the United States in recent years.[9,10]

In April 2016, the province of British Columbia (B.C.) declared a public health emergency in response to high rates of unregulated toxic drug deaths in the province. On March 17, 2020, B.C. declared a second public health emergency related to the COVID-19 pandemic. The intersection of these two public health emergencies has amplified the impacts on people who use drugs. The unregulated and toxic drug supply is highly unpredictable and continue to claim numerous lives with 2023 the deadliest year on record with an estimated 2,558 drug deaths related to the toxic and unregulated drug supply, equating to about 7.2 deaths per day in B.C. alone.[10] Unregulated drug toxicity is also the leading cause of death in B.C. for persons aged 10 to 59, accounting for more deaths than homicides, suicides, accidents and natural disasters combined.[12]

Nurse prescribing of OAT

In light of increasing overdose death rates related to the dual public health emergencies (the unregulated and toxic drug crisis and the COVID-19 pandemic) it was determined that additional health human resources were needed to increase access points to pharmaceutical alternatives to the toxic drug supply, including opioid agonist treatments for those with OUD and interest in starting treatment. In September 2020, the Provincial Health Officer (PHO) issued an Order to authorize registered nurses (RNs) and registered psychiatric nurses (RPNs) in British Columbia to prescribe controlled drugs and substances to people at risk of an overdose due to the use of toxic and unregulated drugs. The initiative (referred to herein as 'nurse prescribing of OAT') was implemented as one way to increase workforce capacity in OUD care and ultimately increase access points to OAT for people with opioid use disorder (OUD) interested in pharmacotherapy, especially in more rural and remote areas of the province.

The overall objectives of the RN and RPN Prescribing of OAT Initiative were to:

1. Increase the available workforce for substance use care across the province
2. Provide broader access to currently available pharmacotherapy to reduce unregulated drug toxicity harms and separate people from the toxic drug supply
3. Increase initiation and retention in treatment

The PHO order authorized RNs and RPNs who met specific criteria to autonomously provide several services. This included ordering and interpreting diagnostic tests, making a diagnosis of a problem substance use condition or substance use disorder, prescribing specific drugs and referring those diagnosed on to other specific health and social services. Practice criteria included that the RN or RPN receive approval by the medical health officer with responsibility for that geographic area and that prescribing be conducted in accordance with the standards, limits and conditions established by the BCCNM. Nurses were also required to complete a mandatory training and education pathway (including an online course and in-person preceptorship) offered through the BCCSU. Several resources were developed to support nurses in this practice, including decision support tools (DSTs) that set out the activities within the defined scope of practice as well as situations where consultation or referral would

be required (development led by BCCSU). Practice settings adopting nurse prescribing of OAT also had to have established escalation pathways to support nurses when consultation or referral was required.

Importantly, the initiative was implemented in phases, according to the types of OAT medications that nurses could prescribe, with the goal of safeguarding this novel practice and promoting client safety.

Phase one permitted buprenorphine/naloxone prescribing only (initiations, continuations, titrations and re-starts - first prescription March 2021, ongoing). Phase two added the prescribing of slow-release morphine and methadone (restarts, continuations, and titrations only - implemented as of November 2021 with the first prescription written in March 2022 and ongoing). A possible future phase involving the prescribing of alternatives to the unregulated and toxic drug supply (i.e., pharmaceutical grade opioids) has been discussed, but there are no plans to move this forward at the time of writing.

Transition to Certified Practice (CP) in OUD

Importantly, during this evaluation, the practice of nurse OAT prescribing continued to evolve and transitioned to a new certified practice designation (Certified Practice in OUD) in November 2023. As defined by the BCCNM, Certified Practice (CP) is "a term used to describe a distinct BCCNM nursing designation for RNs and RPNs. Nurses who obtain the BCCNM-certified practice designation have an expanded scope of practice and are authorized to carry out activities in Section 6, 7, and 8 of the Regulation, if they meet BCCNM standards, limits and conditions."[1] CP nurses practice autonomously to diagnose and treat clients following certified practice decision support tools (DSTs) and use specific titles.

In April 2023, the Ministry of Health (HLTH) approved amendments to the *Nurses (Registered) and Nurse Practitioners Regulation* and the *Nurses (Registered Psychiatric) Regulation* to enable RNs and RPNs who have completed additional education and have been certified by their regulatory college to diagnose OUD and prescribe Schedule I and IA (controlled) drugs for the treatment of OUD. The BCCNM board then approved amendments to BCCNM bylaws to create CP in OUD in alignment with the amended regulations. In September 2023, BCCNM approved new and amended standards, limits and conditions to create a new designation for Certified Practice in OUD for RNs and RPNs. Notably, this is the first CP available to RPNs.

"RNs and RPNs who complete certification requirements can diagnose and treat opioid use disorder (OUD), including the prescribing of controlled drugs and substances. Additionally, they can issue orders that non-certified practice nurses can act on to compound, dispense, and administer drugs and Schedule I medications to clients for the treatment of OUD."[2] For more information on the new CP-OUD designation, standards, limits and conditions set out by BCCNM, please see: www.bccnm.ca.[1]

RN and RPNs practicing under the PHO order could transition to the new certified practice designation. From November 30, 2023, onward, RNs and RPNs are required to hold a certified practice designation to prescribe. Alongside the transition to Certified Practice in OUD, updated education and training was released in November 2023 to include the initiation of methadone and slow-release oral morphine. RNs and RPNs must meet certain criteria each year to continue to hold the designated certified practice title.

While exploring the transition to CP in OUD is beyond this evaluation's scope, the findings offer valuable context and insights for consolidating the temporary initiative into a permanent practice in the province.

Additional Context: Prescribed Alternatives to the Unregulated and Toxic Drug Supply

Prescribed alternatives to the unregulated and toxic drug supply are pharmaceutical grade drugs (i.e., opioids) that are prescribed with the goal of reducing substance use related harms including toxicity-related injuries (e.g., anoxic brain injury) and deaths; enhancing connections to health and social supports; supporting titration, stabilization and engagement onto treatment; and improving overall health and wellness for people who use substances.[6] In practice, prescribed alternatives are often used alongside other medications for the treatment of opioid use disorder and to facilitate opioid agonist treatment initiation and retention, particularly for people with more severe OUD[13]. Thus, it is important to mention as one approach that for some, increases access to and feasibility of OAT initiation or continuation. While a full review of prescribed alternatives was out of the scope of the present document, it bears mentioning as an important component of the landscape of care for people with OUD in B.C.

Evaluation

Scope

The scope of this evaluation was limited to phases one and two of the RN and RPN Prescribing Initiative (as outlined above). This includes implementation from September 2020 when the PHO Order was issued to December 2023 and does not evaluate the transition of nurse prescribing of OAT to Certified Practice in OUD. While completing a full environmental scan was not in scope for this evaluation, the Changemark team (henceforth, 'the evaluation team') made efforts to meet with each of the main implementation team members within the Regional and Provincial Health Authorities to learn about implementation in their respective regions. To avoid duplication of existing evaluation efforts, evaluation of the BCCSU RN/RPN Prescribing education pathway (including satisfaction of learners, experiences of preceptors, etc.) was deemed out of scope.

Further, the evaluation team explored the opportunity to access population health datasets to evaluate patient-level health impacts of the initiative. Working closely with MMHA, it was determined that obtaining, cleaning and utilizing a population health dataset would not be feasible within the evaluation term. The evaluation team explored other avenues for ascertaining the impact of nurse prescribing of OAT on those receiving care through one-on-one semi-structured interviews and a satisfaction survey. Subsequently, the evaluation assessed process and outcome elements to better understand program functioning and implementation, and to gain insights from nurse OAT prescribers, their colleagues and people who have received care from nurse OAT prescribers, about their experiences with nurse prescribing of OAT.

Evaluation Aims

1. Understand the implementation and reach of the RN and RPN Prescribing of OAT Initiative to date

2. Determine the effectiveness of the RN and RPN Prescribing of OAT Initiative, including related to:
    a. Expanding equitable access to low-barrier substance use care, including medications for OUD and social services

b. Increasing health human resources to support people who use drugs
c. Increasing health system capacity for timely substance use disorder treatments
d. Providing person-centered and culturally safe care

3. Identify barriers and facilitators to RNs and RPNs prescribing of OAT

4. Increase understanding of the experiences of RN and RPN OAT prescribers, care team members working alongside RN and RPN OAT prescribers and the experiences of people who have received care from RN and RPN OAT prescribers.

Evaluation Team Positionality

The evaluation team brought diverse personal and professional expertise to the evaluation, including lived experience from various cultural backgrounds, gender representations, and related practical knowledge from directly engaging with individuals accessing and providing mental health and substance use services across Turtle Island. The team has training and expertise in quantitative and qualitative research, program evaluation, and policy implementation and has worked with interdisciplinary teams across multiple levels of government, healthcare settings, research, and non-profit service sectors. Elder Sandy Lambert of Tallcree First Nation walked alongside the team throughout the evaluation process by providing critical perspectives, supporting Indigenous ways of knowing, and informing the methods, instruments, and analysis.

Partnership, Collaboration and Engagement

The evaluation team prioritized the engagement of several key partners to ensure all evaluation activities were informed by those most impacted by the initiative and by those with knowledge and experience of implementing and evaluating nurse prescribing of OAT to date. The evaluation team identified key partners and mapped planned engagement activities using a well-established engagement framework. For an overview of key partners engaged, see Appendix A.

The evaluation team worked with the Ministry of Mental Health and Addictions (MMHA) to engage partners through existing channels and meeting structures, where possible, including leveraging the existing governance structure of the initiative. This included connecting with the initiative's Implementation Committee, Steering Committee, Evaluation Sub-Committee and Community of Practice (CoP) (whose membership included MMHA and HLTH representatives), each regional and provincial health authority, the BCCSU, B.C. Centre for Disease Control (BCCDC), BCCNM, NNPBC and BCNU. Along with presenting and sharing updates at scheduled committee and CoP meetings, the evaluation team also met one-on-one with most key partners at the outset of the evaluation to better understand implementation and evaluation priorities from a variety of perspectives. In response to a request from committee members, the evaluation team also prepared monthly dashboards to communicate status updates on all relevant evaluation activities (January – May 2024). This supported knowledge sharing for those unable to attend the pre-scheduled meetings.

Targeted consultation with those most impacted by the initiative

To ensure the evaluation would meet the needs of those most impacted by the initiative, the evaluation team identified a few key collaborators, including people who had direct experience with the RN and RPN Prescribing of OAT Initiative or who had been impacted by the initiative, to be consulted at several key time points throughout the evaluation. The evaluation team consulted with three registered nurses (one active nurse OAT prescriber, one program manager, and one involved in implementation of the initiative) and two people with lived experience of OUD and opioid agonist treatment (both working in a peer support capacity). Collaborator input was sought for various aspects of the project, including confirming key evaluation questions, informing the knowledge translation strategy and products, finalizing data collection strategies and instruments, and providing input and validation on data analysis and findings.

Collaboration with the project sponsor (MMHA)

The evaluation team met at least monthly with a small team from MMHA to provide regular updates on evaluation activities, troubleshoot any unanticipated challenges, and seek feedback on all aspects of the evaluation.

Coordination with existing evaluation teams

The evaluation team connected with other teams engaged in evaluating the initiative to align efforts and reduce duplication where possible. This included BCCSU's ongoing evaluation of the nurse education and training pathway, utilizing education completion data collected up to December 2023 to provide a snapshot of nurse prescribing of OAT in B.C. (see section 'A Snapshot of Nurse Prescribing of OAT in British Columbia' below). The evaluation team also met with project partners involved in FNHA's evaluation of nurse prescribing of OAT, to better understand some of the unique experiences of implementing nurse prescribing of OAT in First Nations communities in B.C. The evaluation team reviewed the internal FNHA evaluation report and utilized it to inform data collection instruments and validate the present evaluation findings. The evaluation team also met with Amanda Lavigne, a registered psychiatric nurse and clinical nurse specialist involved in implementation of the initiative in Interior Health Authority. Amanda's Master of Psychiatric Nursing thesis through Brandon University reviewed and analyzed nurse prescribing of OAT practice in British Columbia.[14] The evaluation team reviewed her thesis and used it when validating the provincial evaluation findings. In addition, the evaluation team met with PHSA's evaluation team who were in the early stages of evaluation planning to share approaches and discuss strategies.

Methods & Design

Approach and Conceptual Framework

A multimethod approach (i.e., using both qualitative and quantitative methods) was used to evaluate the implementation and outcomes of the RN and RPN Prescribing of OAT Initiative. The qualitative evaluation component focused on addressing region specific barriers, facilitators, challenges and opportunities for nurse prescribing of OAT through the collection of data from nurses engaged in OAT prescribing initiatives (interviews and demographic questionnaires), people receiving OAT from a nurse OAT prescriber ('service users') (interviews, demographic questionnaires and satisfaction surveys), interdisciplinary team members at nurse OAT prescriber sites (online survey), and implementation leads (meeting memos). The quantitative evaluation component focused on understanding the characteristics of nurse

OAT prescribers and prescribing practices, examining longitudinal trends of key process and outcome indicators, and quantitatively assessing service users' experience of receiving care from nurse OAT prescribers.

To support the multimethod approach, the evaluation team utilized the RE-AIM Framework and applied its five key dimensions for outcomes: reach, effectiveness, adoption, implementation, and maintenance. An extended version of RE-AIM[15] was selected as a guiding framework to allow the evaluation team to iteratively explore the dynamic contexts and 'evolvability' of program delivery over time and to help to make sense of program adaptations in real time. See Appendix B for the evaluation framework. The dimensions of the RE-AIM framework were further applied in the development of the evaluation instruments used in this project.

Evaluation Questions

The evaluation team sought to address the following evaluation questions (see Table 1), organized by the RE-AIM dimensions applicable to this project.

Table 1. Evaluation Questions

RE-AIM dimension	Evaluation Questions
Reach (individual)	• How many individuals received prescriptions by nurse OAT prescribers, by geographic location, prescriber type, Health Authority, and OAT drug, over time? • What is the number of pharmacies dispensing nurse prescriptions of OAT, by geographic location, prescriber type, and OAT drug, over time?
Effectiveness (individual)	• What has the experience of accessing OAT through nurse OAT prescribers been for people who use drugs? • What are the benefits and challenges (positives and negatives) to accessing and receiving care from a nurse OAT prescriber? • Do certain groups experience different levels of positives or negatives in accessing nurse prescribing of OAT?
Adoption (setting/ institutional)	• What is the total number of nurse OAT prescribers and how many of them are actively prescribing, by Health Authority, geographic location, prescriber type, and OAT drug, over time? • What are the characteristics of nurse OAT prescribers? • What does current nurse OAT prescribing practice look like? (Actual uptake/ implementation)
Implementation (setting/ institutional)	• What does current nurse prescribing of OAT practice look like? (fidelity to implementation plan) • What have the facilitators and barriers been to implementing nurse prescribing of OAT?
Maintenance (setting/ institutional)	• What has the experience of prescribing OAT been for nurse OAT prescribers • What adaptations might be needed to promote increased adoption and integration?

Ethical Review and Privacy Impact Assessment

The evaluation team consulted with Research Ethics B.C. to determine ethical review requirements prior to initiation of data collection. Research Ethics B.C. completed an assessment and advised the team that ethical review and approval were not required, given the nature of the project as a program evaluation. The completed ethics assessment by Research Ethics B.C. was distributed to key partners involved in the evaluation. A Privacy Impact Assessment was conducted and Changemark Research + Evaluation agreed and adhered to all requirements. The evaluation team made efforts to connect with each Health Authority to ensure all additional operational ethical and privacy requirements were met prior to conducting evaluation activities. If participating sites asked for specific ethical requirements prior to engagement in data collection, the Changemark team made every effort to follow suggested processes and meet site requirements.

Participant Eligibility and Recruitment

Given that the experiences of nurse prescribing of OAT are varied, the evaluation team sought to understand the perspectives of several different types of individuals who were impacted by this initiative, including 1) nurse OAT prescribers; 2) individuals who had received care from nurse OAT prescribers ('service users'); and 3) interdisciplinary care team members working alongside nurse OAT prescribers at three unique sites.

1) Nurse OAT prescribers included currently practicing RNs or RPNs who had completed the BCCSU's nurse prescribing training, spoke English, and were actively prescribing or had historically prescribed OAT or were working in other supportive roles. Nurse OAT prescribers were recruited through site leadership and community of practice calls. Recruitment material (i.e., posters and a one-pager with contact information) were distributed via email (see Appendix C – E for recruitment materials). A provisional sample size of 10-20 participants was identified, and ongoing data collection was based around maximum variation sampling, ensuring to recruit from each Health Authority and explore a range of perspectives. During the data collection stage, a need to address and contextualize critical information that came up in early interviews was identified. To provide appropriate context for the evaluation team, one nurse OAT prescriber who had just completed their preceptorship and one nurse OAT prescriber who had completed the training and preceptorship, but had moved into a different role, were recruited.

2) Service users included people who had received care from a nurse OAT prescriber, were 18 years or older, spoke English, and were currently receiving or had received an OAT prescription from an RN or RPN OAT prescriber. Service users were recruited through postering and front-line staff who provided recruitment materials to potential participants. A provisional sample size of 10-20 participants was identified using convenience sampling. During data collection, it became apparent that a counter-case perspective was needed and thus one service user, who was eligible for nurse prescribing but experienced barriers in receiving care, was included.

3) Interdisciplinary care team members working alongside nurse OAT prescribers at select sites: Three unique service delivery settings with at least one nurse OAT prescriber were selected for survey distribution. Sites selection occurred in consultation with MMHA and aimed to prioritize diversity in terms

of regional location and the care model. Eligible participants had current or past experience working alongside a nurse OAT prescriber, were 18 years or older, and were able to read and write in English.

Convenience sampling was used to survey health care and other service providers representing diverse disciplines at the selected sites. Eligible participants were contacted via email through site management with information about the evaluation and a link to the confidential survey. Participants completed a consent prior to starting the survey.

Data Collection Methods

This evaluation relied on a combination of consultations with implementation leads, one-on-one qualitative interviews, demographic questionnaires, and satisfaction surveys, as well as existing quantitative health systems data to obtain relevant process and outcome indicators.

Consultations with Health Authority Implementation Leads

To gain a better understanding of their roles and experiences related to the RN/RPN OAT Prescribing Initiative development and implementation, consultations with implementation leads were conducted from July to November of 2023. Administrative data collected by nurse OAT prescriber implementation leads and memos from partner engagement meetings were used to develop survey questions, shape the interview guides, and contextualize evaluation findings.

Qualitative Semi-Structured Interviews

To gather rich data on region specific barriers, facilitators, challenges, and opportunities for nurse prescribing of OAT, qualitative semi-structured interviews were conducted with nurse OAT prescribers and service users. Qualitative interviews were conducted from December 2023 to April 2024. Interviews consisted of open-ended questions that sought to answer both process and outcome indicators. See Appendix F and G for the semi-structured interview guides.

Nurse OAT prescriber interview guides were developed, created, and pilot-tested with key collaborators and evaluation team member input. Interviews lasted 45-60 minutes and were conducted remotely, via phone or online video call platform (i.e., Zoom). Nurse OAT prescriber participants were offered a $50 honorarium for their time and shared knowledge.

Service user interview guides were informed by researcher memos, available Health Authority data, feedback from people who use drugs, and guidance from Indigenous partners to determine the best way to gather stories and experiences and promote Indigenous ways of knowing. Interviews lasted 30 minutes and were held in person (where possible), over the phone, or through an online video call platform (i.e., Zoom). Service user participants were offered a $30 honorarium for their time and expertise.

Interviews were recorded on a handheld device and transcribed through NVivo software.[16] Transcripts were checked for accuracy by members of the evaluation team. All transcripts were de-identified and assigned a series of randomized letters to represent initials. The evaluation team did not use numeric identifiers to promote an increased sense of personalized feedback and remove any characteristics of participants interviewed.

Demographic Questionnaires

To capture demographic characteristics of interview participants, nurse OAT prescribers and service users were asked to complete a short demographic survey (see Appendix H and I).

Service user Satisfaction Surveys

In addition to interviews and the demographic survey, service users participating in interviews were asked to complete the Client Satisfaction Questionnaire-8 (CSQ-8),[17] a validated survey to measure service user satisfaction. Comprised of eight questions, the CSQ-8 asks for service user input on services they have received or are currently receiving. Recorded responses differ but are based on a 4-point score. A single score is calculated to capture overall service user satisfaction.[18]

Site Surveys

A survey was developed by the evaluation team to understand the experiences of those working alongside nurse OAT prescribers. Questions were guided by the RE-AIM framework and explored implementation, any challenges, successes and opportunities for improvement, and the feasibility of nurse prescribing of OAT to enhance workforce capacity building and improve access to substance use disorder care. Demographic questions as well as questions about their role, length of time in their role and length of time working with people with mental health and or substance use issues were also included. Likert scales and open comment boxes were used to elicit responses. See Appendix J for the site survey. Upon completion, survey respondents could opt-in to a draw for $50 by entering their preferred email address. A random number generator was used to determine the winner. The individual was contacted, and an electronic transfer was provided.

Health Systems Data

A data cut was obtained via the Ministry of Health's Health Sector Information, Analysis, and Reporting (HSIAR) division. This data was utilized to understand the implementation and the reach of the nurse prescribing of OAT to date, with a focus on access to OAT and the available workforce of nurse OAT prescribers. The key information included the monthly numbers of patients, new patients, prescribers, new prescribers, and pharmacies. This data can also be categorized by OAT drug, prescriber type, Health Authority, and Community Health Service Area (CHSA).

Qualitative Data Analyses

Interviews

Reflexive thematic analysis[19] was used to analyze interview transcripts. The qualitative lead (SB) read each transcript and wrote summary memos with a reflexive lens, examining the segments that stood out in relation to their experiential breadth and positionality. Additionally, Mi'kmaw Elder Albert Marshall's Two-Eyed Seeing approach[20] (*Etuaptmumk)* was used to integrate Indigenous ways of knowing throughout the analytic process. Initial codes were generated using both semantic (e.g., literal) and latent (e.g., interpreted) lenses, affording consideration of the communicated and constructed meaning of the participant and the interpretive perspective of the evaluators. Two experienced coders from the evaluation team, one Indigenous (ESL) and one non-Indigenous (SB), went through the first three transcripts by hand. An open-coding, segment-by-segment approach was used to code the data. Differences and similarities in viewpoints were discussed between ESL and SB and perspectives were woven together to generate the initial codes. Notes from the coding session were documented, and the

three transcripts were re-coded in Nvivo using a combination of codes from each coder. A second coding session was held with the evaluation lead (SR) who has experience in qualitative research and nursing. Three additional transcripts were coded in the same manner as the first but focused on expanding initial codes to include nursing perspectives. The qualitative lead (SB) coded the rest of the transcripts guided by feedback from Elder Sandy Lambert who provided critical input through co-coding additional transcripts. This undertaking allowed for an organic flexibility with the iterative process, weaving team member positionality throughout the analytic process. The codes were assembled into initial themes around central organizing concepts and reviewed with the team, reconstructing themes as needed after discussion before being finalized.

To support the analyses, memos were reviewed from meetings with 12 people including implementation leads and leadership from relevant institutional organizations who work with nurse OAT prescribers. Additionally, input was provided to the evaluation team by two key informants representing perspectives of nurse OAT prescribers and service users on the candidate themes. Their feedback was integrated into organizing and defining the final themes to promote credibility and confirmability of the findings. An honorarium ($30-$50) was offered for their support. While the RE-AIM framework was not relied on during coding, it informed the development of the interview guides. Finalized themes reflect aspects of the framework that will be further integrated in the discussion.

Client Satisfaction Questionnaire (CSQ-8)

Due to the small sample size, findings are reported descriptively only. An overall score is calculated by summing the rated responses for each participant.[18] Overall scores range from 8 to 32. Higher scores indicate higher levels of service user satisfaction.

Survey data

Descriptive statistics were derived from the collected survey data to summarize key demographic indicators concerning nurse OAT prescribers, service users and care team members. Site survey data was analyzed using descriptive statistics (Likert scale questions) and general content analysis was used to summarize the open text box comments.

Quantitative Data Analysis

To understand the implementation and the reach of the nurse prescribing of OAT to date, the evaluation team summarized the HSIAR data on the monthly frequencies of total and new RN/RPN prescribers who wrote prescriptions for OAT drugs that were dispensed, the total and new number of patients dispensed OAT drugs written by RN/RPN prescribers, and the number of pharmacies dispensing nurse prescriptions of OAT. The distribution of these RN/RPN prescribers, patients, and pharmacies by prescriber type, OAT drug, health authority region, and CHSA, was examined to understand the depth of the influence of the broader impacts of nurse prescribing of OAT. Mann-Kendall trend analysis was performed to examine whether the key process and outcome indicators have changed over time.

Findings

A Snapshot of Nurse Prescribing of OAT in British Columbia

Since September 2020, all health authorities have been working to implement nurse prescribing of OAT, including creating policies, procedures and work flows to support nurse prescribing of OAT in various settings. The timing for integration of nurse OAT prescribers into settings varied greatly and Health Authorities and implementation sites experienced success as well as a diversity of challenges and delays in having active nurse OAT prescribers embedded in service delivery settings.

In December 2023, there were 51 actively prescribing nurse OAT prescribers positioned in a diverse array of clinical service settings across the province.

As of December 31, 2023, 124 registered nurses and 56 registered psychiatric nurses had completed the full education and training pathway (including preceptorships) and an additional 65 RNs and 17 RPNs were in the process of completing training (email correspondence with BCCSU, June 19, 2024).

Nursing roles

OAT prescribing was incorporated into various nursing roles in practice. Position type and hours of work vary greatly, with some nurses in casual positions and others in 0.5, 0.6, 0.7 and 1.0 full-time roles.

To date, Health Authorities have played an integral role in identifying suitable sites for nurse prescribing of OAT, determining which medications can be prescribed by nurses (through institutional policies and procedures) and authorizing which nurses could complete the education and training pathway. As a result, most are positioned in settings that already provide mental health and substance use care.

Some nurse OAT prescribers work in large interdisciplinary teams with significant access to ancillary supports and services, such as physicians, nurse practitioners, nurses, social workers, counsellors, physiotherapists, dentists, peers and Medical Office Assistants (MOAs). Some sites have embedded programs focusing on Indigenous-specific supports (i.e., access to Elders, traditional medicine, cultural wellness programs) while others remain connected to Indigenous-specific community partners (e.g., Aboriginal patient navigators). Others work in settings with just one other prescriber and refer out to facilitate connection to other services. Some RNs and RPNs who have completed education for OAT prescribing contribute to roles other than prescribing, including leadership roles, supporting community readiness, providing education and other supports.

Service delivery settings

Nurse OAT prescribers work from a large and diverse array of clinical service settings, including:

- Community clinics
  - OAT clinic
  - Mental health and substance use clinic
  - Primary care clinic
  - Indigenous-focused primary care clinic
  - Infectious diseases clinic

    - Youth-focused clinic
- Community health centre servicing rural and remote locations
- Overdose prevention sites
- Outpatient detox service
- Correctional health services
- Intensive case management team
- Acute care settings
    - Rapid Access Addiction Care (RAAC) Clinic, based in hospital
    - Addiction medicine consult team (AMCT), based in hospital
- Virtual care
    - Completely virtual service delivery
    - Partial virtual service delivery, as needed

Many of these settings support walk-in appointments and have a range of hours of operation (most are open office hours, with limited or no weekend or evening hours). Service delivery settings may provide food and beverages, harm reduction education and supplies, and meeting spaces or 'drop-in zones' for people who use drugs to hang out and connect.

Quantitative Findings

Data sources

Utilization of OAT data was obtained via HSIAR Division, Ministry of Health. This data was extracted on February 2, 2024, from the Dispensing event table in PharmaNet, HealthIdeas, which captures information on prescription drugs and medical supplies and devices dispensed primarily from community pharmacies in B.C. Other outpatient health facilities may also be included, such as hospital pharmacies dispensing prescriptions to service users receiving outpatient care, and clinics performing Transaction Medication Updates. Pharmacy data for people enrolled in the First Nations Health Benefits Plan (Plan W) and other federally administered health benefits plan are also included in this dataset. However, the data does not include medications used in hospitals, office-use medication, or medications dispensed through the B.C. Cancer Agency, the B.C. Transplant Society, the B.C. Renal Agency, and special programs administered by Provincial Health Services Authority.

In this assessment, the evaluation team's primary focus was on patients who obtained OAT drugs from prescriptions written by RN or RPN prescribers and dispensed primarily at community pharmacies within B.C. The term "new prescribers" denotes the RN or RPN prescribers who wrote their first prescription of the OAT drugs that was dispensed at community pharmacies.

Outcomes

Increased workforce of OAT prescribers

As depicted in Figure 1, the initial observation of an RPN prescriber who had written a prescription for OAT drugs that was dispensed occurred in March 2021, followed by the first RN prescriber in April 2021. The trends illustrated in the figure represent the cumulative count of new prescribers over time. Demonstrating a markedly upward trajectory ($p\text{-value} < 0.001$), by December 2023, a total of 88 distinct RN or RPN prescribers had emerged. Among them, 32 were RPN prescribers and 56 were RN prescribers,

all of whom had issued prescriptions for OAT drugs to patients who filled their prescriptions at community pharmacies within B.C.

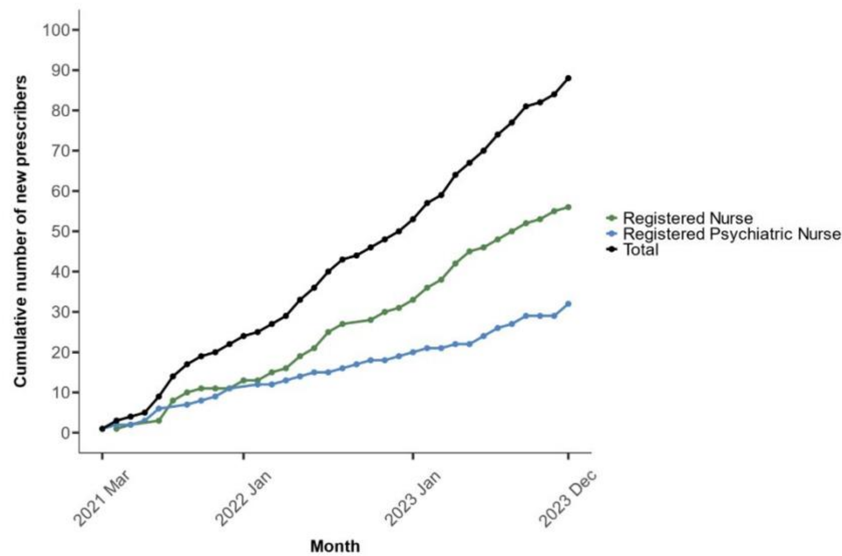


Figure 1. Cumulative new RN and RPN prescribers who wrote prescriptions for OAT drugs that were dispensed, by month and prescriber type

When analyzing the count of active RN and RPN prescribers involved in prescribing OAT drugs per month, depicted in Figure 2, a notable trend emerges. The number of RPN prescribers has shown a significant increase over time (p-value < 0.001). In the month of December 2023, this count reached 18 RPN prescribers actively engaged in prescribing OAT drugs. In comparison, the rate of increase among RN prescribers was even higher, with 33 RN prescribers actively prescribing OAT drugs in December 2023.

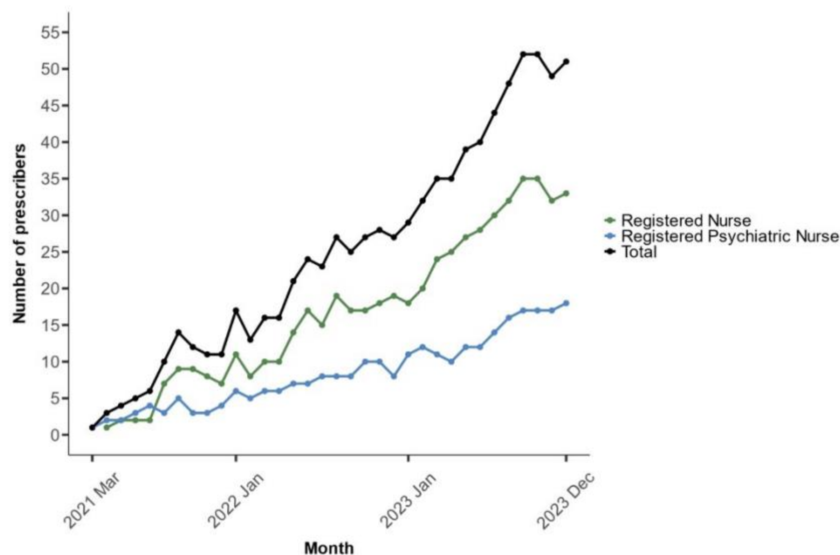


Figure 2. RN and RPN prescribers who wrote prescriptions for OAT drugs that were dispensed, by month and prescriber type

Figures 3 and 4 illustrate the trends in the number of prescribers who wrote prescriptions for OAT drugs that were dispensed in each month, further broken down by OAT drug type. Among RN prescribers (Figure 3), the initial month of dispensing methadone was January 2022, followed by slow-release oral morphine in March 2022. In March 2023, the count of RN prescribers who wrote methadone prescriptions that were dispensed for the first time exceeded those that were dispensed buprenorphine/naloxone.

Similarly, among RPN prescribers (Figure 4), the first month of dispensing methadone was March 2022, and slow-release oral morphine was February 2022. Throughout the observed period, the number of RPN prescribers who wrote prescriptions for buprenorphine/naloxone that were dispensed remained the highest compared to other drug types.

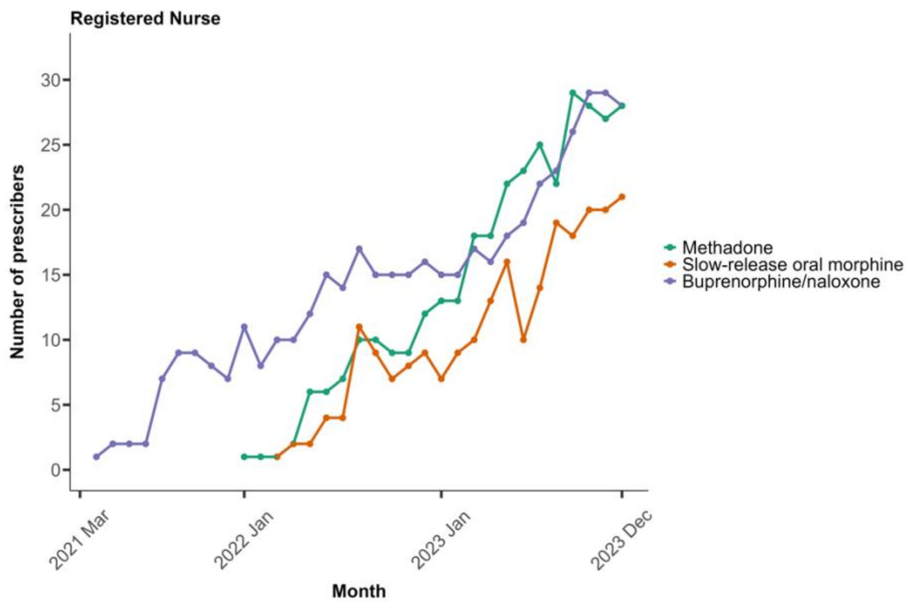


Figure 3. RN prescribers who wrote prescriptions for OAT drugs that were dispensed, by month, drug and prescriber type

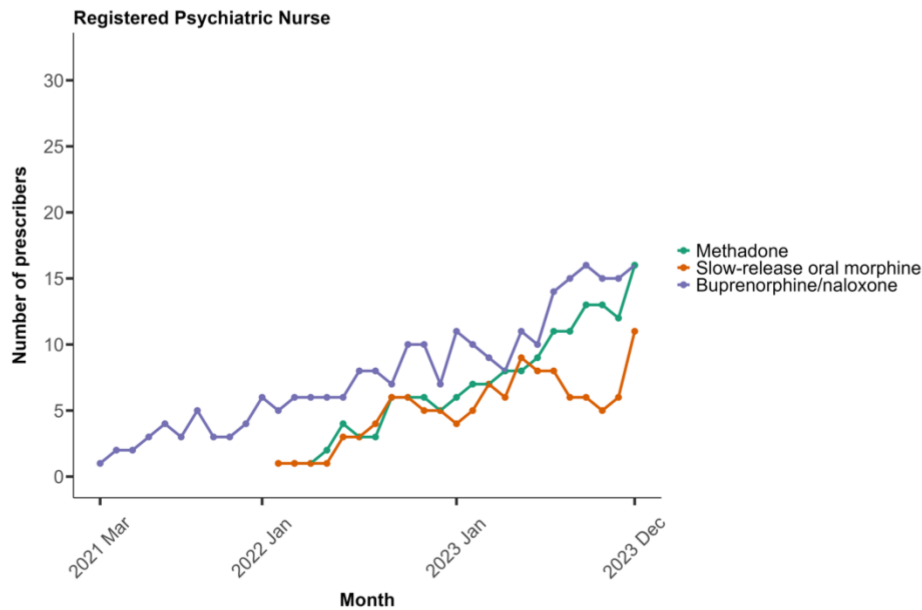


Figure 4. RPN prescribers who wrote prescriptions for OAT drugs that were dispensed, by month, drug and prescriber type

Increased access to OAT

Figure 5 illustrates the monthly count of B.C patients who were dispensed OAT drugs through prescriptions from RN and RPN prescribers from March 2021 to December 2023. Both groups exhibited substantial growth trends throughout the period. A notable acceleration in patient numbers from RN prescribers occurred, particularly evident around mid-2022 and in the second half of 2023.

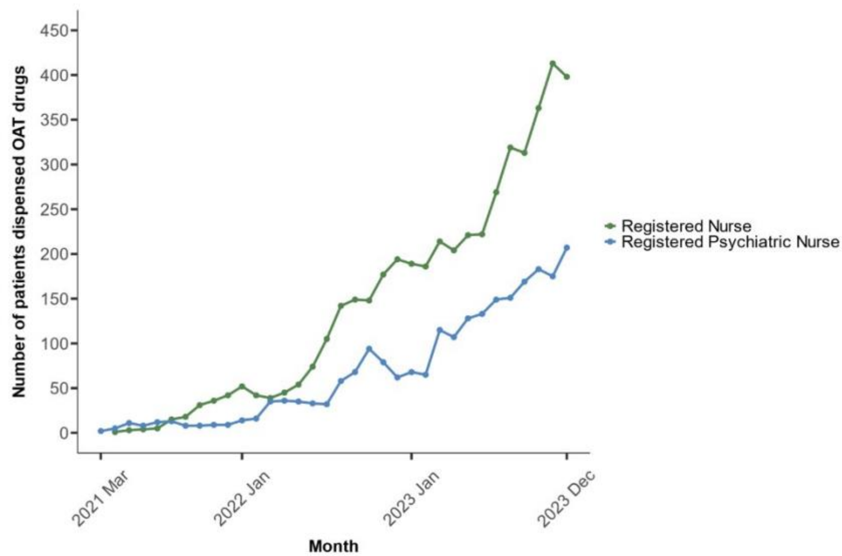


Figure 5. Patients dispensed OAT drugs, by month and prescriber type

Analyzing the trends by specific types of OAT drugs (Figures 6 and 7) reveals a discernible pattern. These trends reflect the phased implementation of the initiative based on the types of OAT medications that nurses could prescribe. Phase one, starting in March 2021, included buprenorphine/naloxone prescribing. Phase two, which implemented in November 2021 with the first prescription written in March 2022, added the prescribing of slow-release oral morphine and methadone (restarts, continuations, and titrations).

Due to the timing of scope expansion, the number of patients dispensed methadone prescriptions from RN prescribers experienced a sharp rise from early 2022, peaking at 245 in November 2023. This surge also mirrors the notable increase in the count of RN prescribers for methadone, as depicted in Figure 3, thereby contributing to the pronounced upward trend illustrated in Figure 6. In December 2023, the patient counts for those dispensed buprenorphine/naloxone were comparable between RN (99 patients) and RPN (89 patients) prescribers.

However, for slow-release oral morphine, the patient count remained relatively stable at around 20 from March 2023 for RPN prescribers, with a slightly increasing trend (p-value = 0.039) over time. In contrast, patient numbers prescribed by RN prescribers surged to 75 by December 2023, demonstrating a notably accelerated rate of increase (p-value < 0.001).

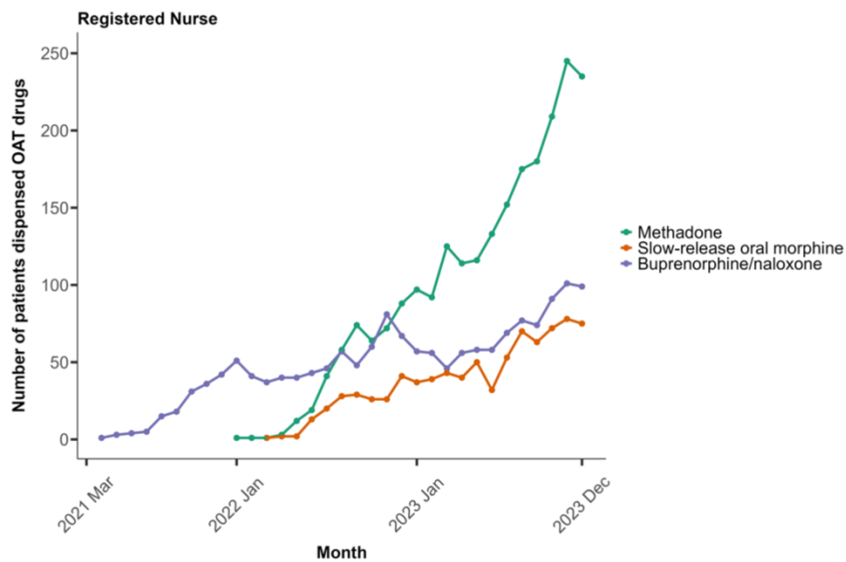


Figure 6. Patients dispensed OAT drug prescriptions written by RN prescribers, by month and drug type

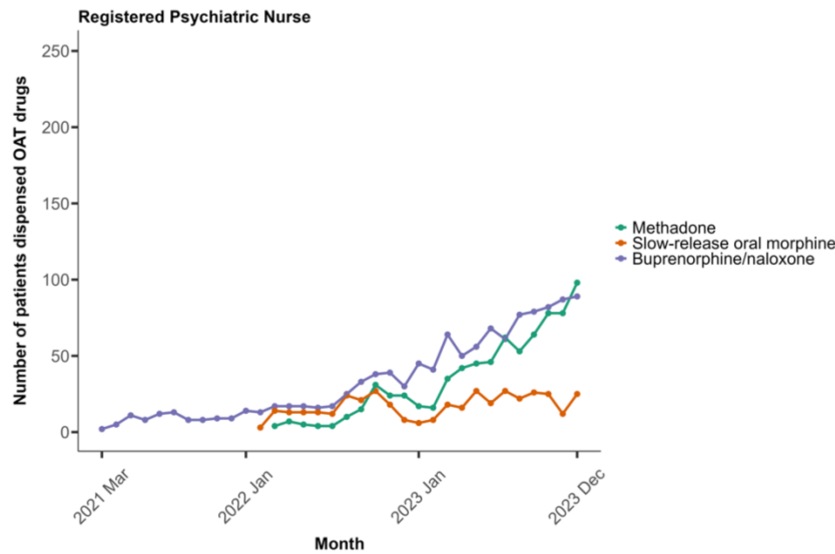


Figure 7. Patients dispensed OAT drug prescriptions written by RPN prescribers, by month and drug type

More equitable access in rural and remote

As shown in Figure 8, a notable increase in the count of pharmacies dispensing OAT drugs prescribed by RN or RPN prescribers is evident (p-value < 0.001). The peak number of pharmacies occurred in November 2023 with 146 for RN prescribers, and 87 for RPN prescribers in December 2023.

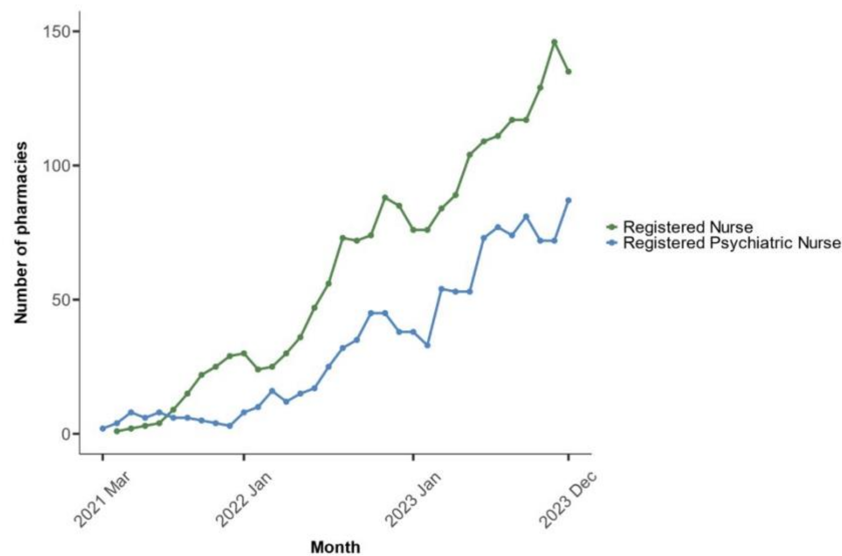


Figure 8. Pharmacies dispensing OAT drugs, by month and prescriber type

Patient counts across CHSAs in December 2023 were examined to assess OAT drug accessibility in rural and remote regions. Figure 9 depicts patients receiving OAT drugs prescribed by RN and RPN prescribers. The patient volumes in December 2021 and December 2022 across CHSAs are presented in Appendix K. Comparing these maps reveals a growing involvement of CHSAs over time, with notable increases in patient numbers across several CHSAs.

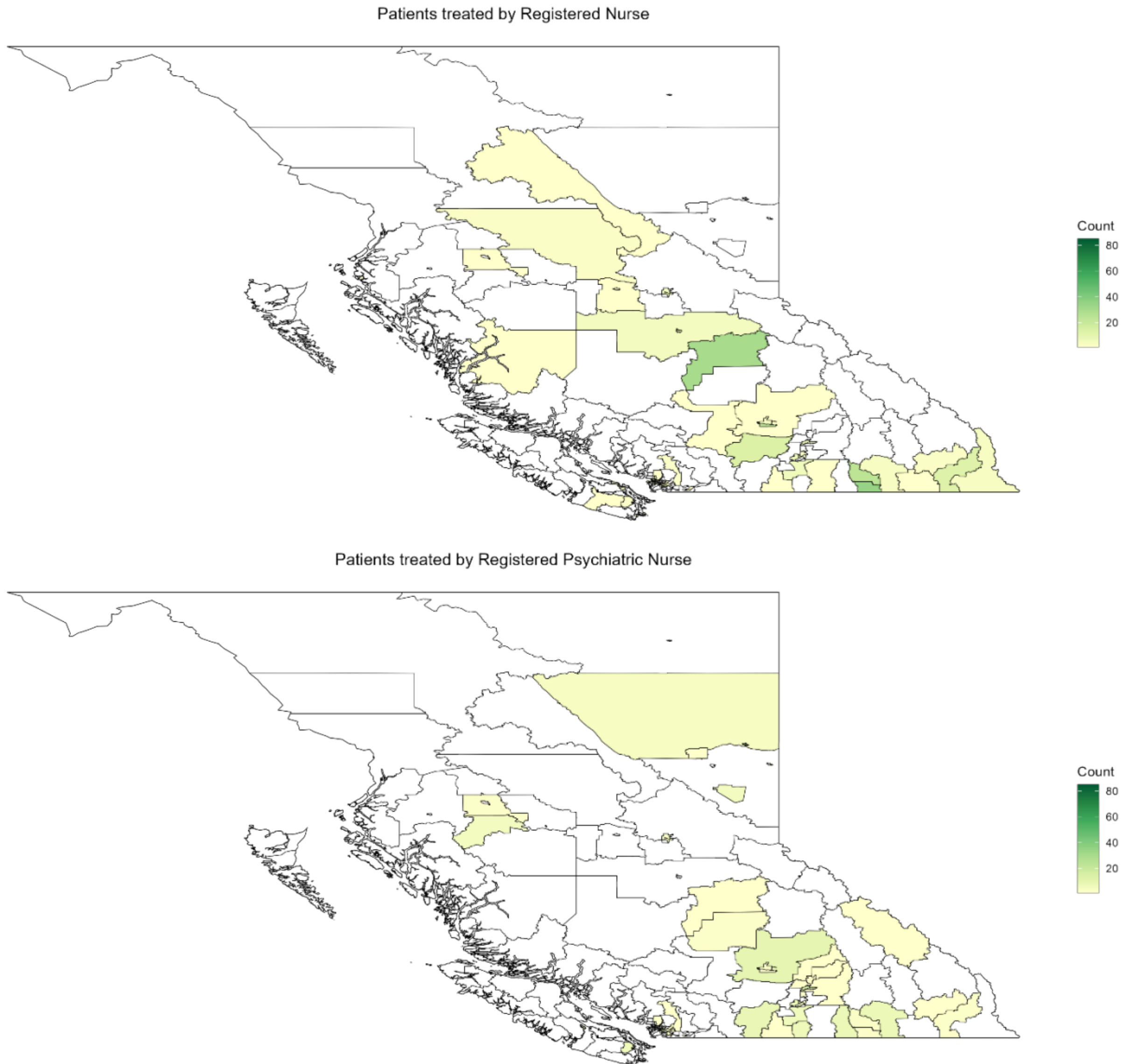


Figure 9. Patients dispensed OAT drugs from RN and RPN prescribers by Community Health Service Areas in December 2023

The same approach was used to examine the number of pharmacies per month, by prescriber type and CHSA (Figures 10 and Appendix K). Similarly, growing involvement of CHSAs over time was observed.

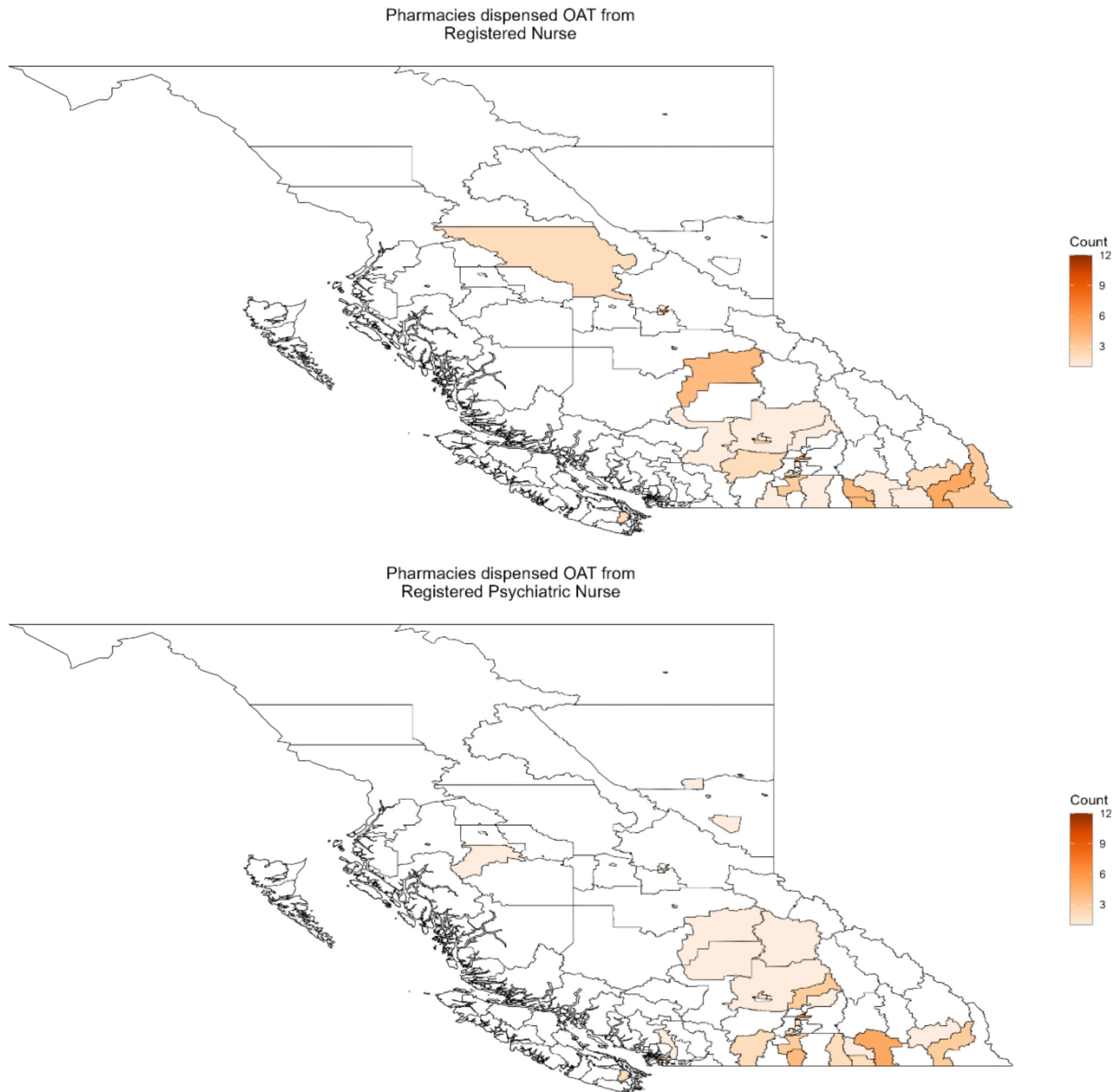


Figure 10. Pharmacies dispensed OAT drugs from RN and RPN prescribers by Community Health Service Areas in December 2023

Qualitative Findings

A total of ten service users were interviewed, including nine who received an OAT prescription from a nurse OAT prescriber and one who tried to access nurse prescribing of OAT but was currently receiving OAT from a different prescriber. Most were female (60%) and White (80%) with a mean age of 43.9 (range: 21,65). Service users had used pharmaceutical grade opioids for an average of 5.5 years (range 0.5,20) and had used toxic unregulated opioids for an average of 11.1 years (range: 0.5,37). Several (n=4) had

limited or no prior experience on OAT before engagement with the nurse OAT prescriber (e.g., received OAT through a withdrawal management service such as detox only).

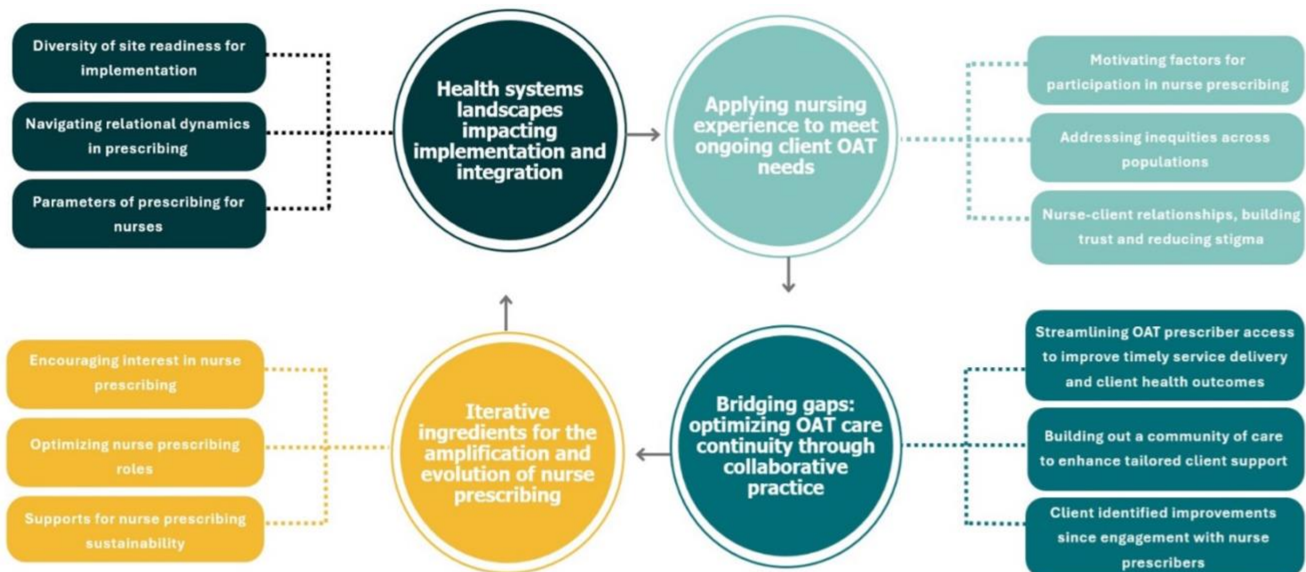
In total, 18 nurse OAT prescribers (13 RNs and 5 RPNs) were interviewed and included in the analysis with at least one nurse OAT prescriber from each Health Authority. Most were female (83%), and White (72%), with a mean age of 40.2 years (range: 26-55). Additionally,83% of nurse OAT prescribers had prescribed all three authorized medications and had a mean of 9.1 years working experience in substance use and/or mental health service provision. See Appendix L for sample demographics and characteristics.

To support the analyses, memos were reviewed for context from meetings with 12 people including implementation leads and leadership from each Health Authority in addition to other relevant institutional organizations and governing bodies who work with nurse OAT prescribers.

Outcomes

From the interview data, four overarching themes based on 12 subthemes were developed as indicated in the thematic map (Figure 9) below. The outcomes provide opportunities to understand unique aspects of the RN and RPN Prescribing of OAT Initiative related to its effectiveness at expanding equitable OAT access, increasing health human resources and capacity for timely treatment, the provision of person-centered care, and considerations to support effective change management.

Figure 9. Thematic Map



Theme 1. Health systems landscapes impacting implementation and integration

The roll-out of the RN and RPN Prescribing of OAT Initiative was impacted by several social and structural challenges. The vast geography of the province, regional diversity in culture and political dynamics related to substance use, structures within the medical system not traditionally accommodating nurses in prescribing roles, and a lack of supportive policies to enable OAT prescribing were all factors that impacted the implementation and uptake of nurse prescribing of OAT in the province.

Subtheme 1: Diversity of site readiness for implementation

The readiness of sites to adopt nurse prescribing of OAT varied considerably across the province. Implementation efforts were delayed due to understaffing and changes in leadership. In some cases, institutional settings with higher access barriers lacked an available prescriber to support the implementation process (e.g., offering escalation pathway support and facilitating preceptorships). Limited guidance on the creation of appropriate workflows for existing nursing roles also impacted the timeliness of implementation within the Health Authorities. In some rural and remote settings, feasibility of integrating nurse prescribing of OAT created significant challenges due to under-resourcing. In some settings, policy goals and community-identified needs were not consistently aligned leading to competing health and wellness priorities when trying to integrate nurse prescribing of OAT.

Overwhelmingly, nurse OAT prescribers identified that the ability to incorporate OAT prescribing into their practice was significantly delayed by several institutional processes beyond their control: *"How is it going? Well, it's not"* (Nurse OAT Prescriber PRA). Challenges cited most frequently include departmental reviews of nurse prescribing of OAT (i.e., risk management, professional practice) and the ongoing development of setting-specific policies and procedures within each Health Authority: *"the internal system slowed it down, and we were waiting and waiting to get it going"* (Nurse OAT Prescriber FJY). For example, nurse OAT prescribers working in hospital or correctional settings were (at the time of writing) only able to write OAT prescriptions at discharge, despite identified benefits of nurse prescribing of OAT over the course of a service users' care in these settings. Conversely, nurse OAT prescribers working in sites independent of a Health Authority indicated implementation was smoother and faster, in part due to support from leadership and streamlined processes that created *"less barriers because there's less giant policies and procedures they need to build"* (Nurse OAT Prescriber LLX) (n=3).

Subtheme 2: Navigating relational dynamics in prescribing

Participants indicated there was a notable lack of awareness and understanding of the role of nurse OAT prescribers in the greater context of substance use care. The knowledge gap created confusion amongst leadership, colleagues, and other OAT prescribers:

> *"There is a bit of a spectrum of care provided across the region, and I think that has a lot to do with the support from their leadership and the willingness of all of the prescribers at that site."* (Nurse OAT Prescriber MNA).

Without consistent messaging related to "*the ability of* [the nurse OAT prescriber] *role and then also articulating the limits to that role*" (Nurse OAT Prescriber FJY), nurse OAT prescribers were concerned about how service user relationships with nursing staff and their experience of mental health and substance use care might be impacted negatively. For example, nurse OAT prescribers identified the importance of discussing what they could and could not do for service users at the beginning of each interaction. This provided transparency, supported shared decision making, and outlined expectations from the outset of service user engagement to avoid misunderstandings:

> *"…when you're like, 'actually, I can't do this', then a lot of times people hear, 'I won't do this' or 'I don't want to do this.'"* (Nurse OAT Prescriber FJY)

Overwhelmingly, one of the greatest challenges presented to nurse OAT prescribers was navigating the relational complexities in their new roles with physicians prescribing OAT within and outside of nurse

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prescribing settings. Finding themselves *“more educating on what [the] job isn't than what it is”* (Nurse OAT Prescriber CHE), nurse OAT prescribers felt “*that the environment in the beginning was not really inclusive and [the OAT physicians] didn't really want us here”* (Nurse OAT Prescriber HGT). While it was understood that all parties were “*learning on the go*” (Nurse OAT Prescriber MNA), nurse OAT prescribers identified a *“need [for] more education for some of the physicians so that they can be on board with this and not be scared of it*” (Nurse OAT Prescriber VCB). Given the historical power dynamics and longstanding medical hierarchies that physicians and nurses practice within, where “*a nurse is a nurse - they can only do so much*” (Nurse OAT Prescriber ELP), 13 nurse OAT prescribers (72%) stated they experienced ongoing professional tensions with physicians in terms of collaboration, expectations, and engagement in various work environments.

> *“Each of the physicians treat us a little bit differently. They have different expectations of us. Different trust levels. So, it's all a little different that way too.”* (Nurse OAT Prescriber CHE)

Additionally, nurse OAT prescribers cited the potential impact of the fee-for-service compensation model on physicians’ willingness to support nurse prescribing of OAT at certain sites, especially those working in remote settings where “*it’s hard to get physician access*” (Nurse OAT Prescriber PRA) or shared care models where “*all of the providers that are on that day would have first dibs”* (Nurse OAT Prescriber HGT) for walk-in OAT service users before allowing the nurse OAT prescribers to engage.

> *“...we have a few physicians that are really pro-nurse prescribers because, you know, it's an opioid crisis that we're in. We want to provide the shared care model. And, you know, really, it's the nurse that really sees the client firsthand and does all those assessments. But then there are other physicians who are... they've kind of created a barrier because they see it as, you know, nurse prescribers are taking away from physician compensation when they write, when nurse prescribers write an OAT prescription.”* (Nurse OAT Prescriber TSL)

None of the nurse OAT prescriber participants identified tensions with nurse practitioners. Of note, three nurse OAT prescribers based out of independent sites (i.e., non-Health Authority sites) did not identify tensions with physicians from within their organizations.

Subtheme 3: Parameters of prescribing for nurses

Actual nursing practice did not necessarily align with the phased approach of initiative roll-out (i.e., phase 1 permitted prescribing of buprenorphine/naloxone only, while phase 2 permitted the additional prescribing of continuations and re-starts of methadone and slow-release oral morphine). Institutions could set further limits on practice. For example, nurse OAT prescribing practice was, at times, limited by institutional barriers, despite having met the educational and training criteria to prescribe other medications. Nurse OAT prescribers who were limited to prescribing buprenorphine/naloxone (n=6) found it difficult to gain practice experience and felt they were unable to meet service user needs when a presenting service user preferred another type of OAT:

> *“I could only do [buprenorphine] and very few of my clients are actually on [buprenorphine] or interested in it even.”* (Nurse OAT Prescriber IPJ)

> *“A lot of people don't want [buprenorphine]. And you know, it doesn't really matter what the reasons are. [...] medications should work for you - and if it is your medication that works for you the best, then that's what we should be providing.”* (Nurse OAT Prescriber VCB)

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Given the higher opioid tolerance among many people who use toxic and unregulated opioids, nurse OAT prescribers noted that the inability to provide rapid dose titrations made meeting new or returning OAT service users' needs a challenge. service users who were in an optimal position to initiate or re-start OAT were accustomed to faster dose titrations *"where [physicians] would start them at higher doses and prescriptions that automatically increase every three days without being seen"* (Nurse OAT Prescriber FJY). These conditions required nurse OAT prescribers to have prompt access to an OAT physician or nurse practitioner to better support service user needs: "*when they're on a higher dose, then I can kind of start doing that prescription"* (Nurse OAT Prescriber IPJ).

Additionally, nurse OAT prescriber participants drew attention to limitations around virtual prescribing. For example, there was variability across sites to support virtual care with visual contact (i.e., the ability of the site to use video conference calling) or a preference to see service users in person, despite virtual care being appealing and useful for OAT service users in rural or remote areas who were often faced with challenges related to travel. As a result, virtual appointments were more frequently provided to service users who were considered stable on their OAT medication. Only half (n=9) of the interviewed nurse OAT prescribers had provided OUD care virtually (i.e., video conference or phone calls), and had written less than 35 prescriptions virtually (n=7) at the time of interview.

Several service users interested in OAT were also prescribed alternatives to the toxic drug supply (i.e., hydromorphone) and this required nurse OAT prescribers to collaborate with another OAT prescriber. While frequency varied from setting to setting, many nurse OAT prescribers responded that *"Most of the clients that I see who are on OAT are also getting the safer supply prescriptions"* (Nurse OAT Prescriber IPJ), and over half (n=6) of the service users interviewed represented those with co-prescriptions (i.e., OAT and prescribed alternatives). Recognizing that "*the whole script is not finished until that hydromorphone is in with it*" (Nurse OAT Prescriber SQN), some nurse OAT prescribers who worked in shared care settings noted inconsistencies in service user care depending on the available OAT prescriber:

> *"I pretty much do the entire assessment, but it kind of puts you in a challenging position just because different prescribers have different takes on safe supply."* (Nurse OAT Prescriber AOZ)

Though *"not everybody wants to go on to safe supply"* (Service User SRG), four service users identified *"it would be helpful if they could do it ... if the nurses could do the [prescriptions for alternatives to the toxic drug supply] as well"* (Service User BRW). Nurse OAT prescribers, though unprompted, offered a range of perspectives on their inability to prescribe alternatives to the toxic drug supply in practice. Many nurse OAT prescribers (n=7) identified co-prescribing as a useful tool for some clients. Perspectives ranged from promoting non-abstinence-based forms of recovery, supporting service user comfort needs when transitioning onto OAT, having peer workers help support clients on alternatives to the toxic drug supply, and some considered it to be a *"golden ticket to help people stay connected with their primary prescriber [physician or nurse practitioner]"* (Nurse OAT Prescriber NJZ).

Theme 2. Applying nursing experience to meet ongoing client OAT needs

During the initiative, nurses were primarily hand selected by site management and implementation leads to take on OAT prescribing. Nurses best situated for prescribing practice were often already part of larger

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mental health and substance use care teams, had a solid understanding of both the limitations of the current systems of OAT service delivery and the complex health issues of people who use drugs. Given that the target population of this initiative (e.g., people with opioid use disorder) frequently experience various forms of stigma and discrimination due to their substance use, it was especially effective for nurse OAT prescribers to continue building and strengthening service user trust among those with existing service user relationships.

Subtheme 1: Motivating factors for participation in nurse prescribing

Throughout implementation, nurses were either identified and prioritized by site leadership and implementation leads for candidacy or expressed interest in the initiative and advocated for access to the training independently by seeking support from site OAT prescriber(s), colleagues, and organizational leadership. Nurses in existing mental health and substance use care roles felt those who were familiar with the service user population and able to provide non-judgmental care were best positioned to incorporate OAT prescribing into their practice (n=13). Most nurse OAT prescribers were already integrated into substance use care teams or were well informed on the provision of mental health and substance use care (n=17). As such, they noted the complementarity of nurse prescribing of OAT with the positions they held: "*it just goes with the work*" (Nurse Prescriber SQN).

> "*...it was closely aligned with the job that I already, or my role that I was already doing as an OAT nurse, that just for me, it was I wanted to expand. And it just seemed to make sense.*" (Nurse Prescriber PRA)

While some sites within and outside of the Health Authorities worked to secure funding to increase hours of existing nursing roles, other sites added OAT prescribing as an extra function within established roles with no additional hours. In cases where nurse prescribing of OAT was added to existing workloads, nurses expressed various challenges (i.e., time constraints, capacity limitations, and the need for workflow recalibrating) (n=3). Nurse OAT prescriber participants indicated that some nurses were not comfortable taking on the added responsibility of prescribing OAT. In certain cases, nurse OAT prescribers identified the lack of additionally trained nurses in OAT prescribing created staffing challenges at the site and individual level (i.e., the inability to find appropriate coverage when nurse OAT prescribers were off, vacant positions).

Overwhelmingly, service user participants were initially unaware they were going to receive OAT from a nurse OAT prescriber (n=5). Through sharing stories about their OAT journeys, service user participants described how they began receiving mental health and substance use care from their nurse OAT prescriber. Service users described the benefits of having established relationships with site staff (i.e., nurses, peer workers) and the convenience of access (i.e., nurse OAT prescribers present on site frequently). Connection to a nurse OAT prescriber occurred after service users initiated discussions around OAT formulation or dose with a familiar nurse contact on site (n=3), reinitiated OAT engagement (n=2), or had their care transferred from an OAT prescriber in a shared-care setting to the nurse OAT prescriber (n=2). At the time of engagement, most service users were working towards a self-defined form of stability with the goal of remaining on OAT (n=9) and "*not falling back and using drugs*" (Service User IWT) or minimizing their exposure to the toxic and unregulated drug supply.

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Subtheme 2: Addressing inequities across populations

Nurse prescribing of OAT was implemented to expand access to OAT, particularly to underserved populations and those most at risk of discontinuing OAT or being lost to follow up. Nurse OAT prescribers and service users provided a detailed and thorough snapshot of factors that have historically or continuously limited OAT access. For example, service users in need of more clinical oversight are often medically complex (i.e., comorbidities, concurrent disorders, polysubstance use) and lack

appropriate social supports (i.e., have limited access to phones, precariously housed), leading to inconsistent OAT engagement: "*I was missing appointments, and I was off and on my meds and unstable, and it was terrible*" (Service User TMS).

Even though some service users were already connected to a primary care provider (i.e., a family physician or nurse practitioner), they indicated they were unable to access OAT through those channels due to lack of OAT prescribing by that provider (n=2) or discomfort discussing their substance use for fear of negative repercussions (n=2): "*I'm a person who uses drugs, and I'm scared to have my health care taken away from me*" (Service User SRG). Even among primary care clinics that do provide OUD care and connections to OAT, several of the following identified barriers exist: requiring appointments often booked far in advance, being at capacity or having waitlists, significant healthcare worker staffing challenges, lacking an adequate number of OAT prescribers, and having limited office hours.

> "*...we do have such a doctor shortage in general, let alone addictions, doctors. And I mean, we see it firsthand in our clinic*." (Nurse OAT Prescriber RZI)
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> "*...we're at a point where, you know, we'd get someone a prescription, we'd have to contact the doctor and make that appointment...that could be days to get that appointment sometimes.... Finding the person and connecting them with the doctor isn't always easy. And people would have to wait sometimes for days to get a prescription. A lot of our people go to hospital to be sent away without a prescription. And that can set people back because they feel so ostracized and, you know, they feel the stigma. So, these are all things we're trying to change. And part of the nurse prescribing was to make it a little bit easier for people.*" (Nurse OAT Prescriber VCB)

For service users not connected to ongoing care, nurse OAT prescribers and service users discussed the barriers in accessing OAT care through emergency departments as they were not consistently equipped to appropriately support service users in immediate need of mental health and substance use care. Additionally, people who are incarcerated were identified as having complex needs with inadequate access to urgent OAT support (i.e., medication initiation, medication changes) due to limited prescriber availability (virtual appointments exclusively) and the differential prioritization of service user needs at the physician's discretion.

Those living in rural and remote settings tend to have limited access to OAT prescribers and are faced with barriers around travel, pharmacy access, and confidentiality. This is especially relevant for Indigenous service users living on or off reservations who experience disproportionate harms and deaths from the toxic and unregulated drug supply.[19] Further, Canada's history of colonization, ongoing colonialism and systemic racism in healthcare settings continues to impact Indigenous service users, who may not trust engaging with colonial or western forms of healthcare. Nurse OAT prescribers

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routinely identified the need to work more closely with Indigenous communities to open pathways to care:

> *"...we've been going to a really remote community near ours. It's a First Nations community that doesn't have very much health care. They don't have pharmacies or anything like that. So, I've provided care to people over there, which is sort of our vision for the next prescribing on our team is to reach those like really rural Indigenous communities who are underserved."* (Nurse Prescriber FJY)

> "*I think it's amazing to have in community, like I feel like already... I mean, I'm just one nurse and I've seen the successes brought in in just one reserve and it's quite incredible.*" (Nurse Prescriber ELP)

Subtheme 3: Nurse-client relationships, building trust and reducing stigma

Service users identified that the consistent presence of familiar nurse OAT prescribers and other members of the nursing team were integral to them feeling supported during their OAT journeys (n=5):

> *"It all started with the nurses. Like, it all started with the nurses welcoming me and making me feel like not uncomfortable and that it was okay that even though I screwed up, it was okay where I was at. And that we're going to work to fix this."* (Service User AHZ)

> *"I feel like she's like a support, and she doesn't even know it."* (Service User EJH)

Service users indicated they felt comfortable, heard and seen during appointments, creating a feeling of connection where service users could take comfort in interactions where "*They're not just pushing me out the door*" (Service User KLN).

> *"I haven't ever experienced any looks or been stigmatized or been made to feel uncomfortable. You know, when I... when I'm in the meeting with them, the focus is on you and you only there's no, you know, it doesn't ever feel like the nurse or anybody is distracted, which is nice."* (Service User RMM)

These conditions allow nurses to get to know service users intimately and provide person-centered care. Points of extended contact meant nurse OAT prescribers were familiar with the nuances of individual service users and their care as they had "*already seen them many, many times*" (Nurse Prescriber IPJ) before or during their prescribing practice. The continuity of the nurse-service user relationship alleviated the burden on service users to have to recount their history to new prescribers, leaving them feeling as though the "*shame and guilt about having to take OAT is totally erased*" (Service User KLN). The majority of nurse OAT prescribers interviewed maintained that the capacity to form and support the nurse-service user relationship provided service users consistent, positive interactions with healthcare and could lead to future service user engagement in other health care settings:

> *"I think with that, trying to just foster a better trusting, stigma free relationship with health care in general, because people come here, and they see and experience the care that they get here that might reduce perceived barriers to care that they might try and access at another point in time."* (Nurse Prescriber OEE)

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Through feedback given by nurse OAT prescribers and service users, it was revealed that service user comfortability varied when discussing certain aspects of care with a physician compared to a nurse OAT prescriber. Service users indicated that nurse OAT prescribers made them feel *"comfortable, and kind of like, feeling like you matter"* (Service User BRW).

> *"It's more efficient, I think - more laid back. You're not getting grilled with 100 questions. It's more friendly or, I guess, more human.* (Service User PWC)

Increased trust meant that nurse OAT prescribers observed they were able to gather more complete information from service users about their health and current substance use, which, in turn, better supported meeting service user needs, even in cases where nurses were required to consult with another OAT prescriber and "*advocate for them to get a little bit more [medication]*" (Nurse Prescriber BAS).

Theme 3. Bridging gaps: optimizing OAT care continuity through collaborative practice

The consistent availability of nurse OAT prescribers on site facilitated and streamlined connections to OAT prescribers in cases where consultation was needed (i.e., for service users with medical complexities). When nurse OAT prescribers collaborated with OAT physicians or nurse practitioners, and facilitated connections to additional supports in community, service users had the opportunity to receive more individualized care plans and experience optimized care continuity. Often, nurse OAT prescriber support relied on community connections and the ability to provide outreach to service users who were most at risk of discontinuing their OAT medications. This more complete form of wrap-around support may have acted as a safeguard and could improve quality of care for OAT service users. Nurse OAT prescribers were uniquely situated to support care coordination, establish community connections, and facilitate care continuity.

Subtheme 1: Streamlining OAT access to improve timely service delivery and client health outcomes

Whereas physician availability is considerably varied, nurse OAT prescribers are more consistently available to engage with service users on a regular basis through pre-scheduled appointments, community referrals, or walk-ins (when available) to "*provide that bridge between a client starting OAT and continuing*" (Nurse OAT Prescriber CJK). In cases where service users experience a sudden discontinuation of OAT (e.g., leaving a detox facility when a prescriber was not available, relocation, or missing an appointment for prescription renewal), they reported being able to see a nurse OAT prescriber faster than would have been possible with a physician or nurse practitioner, thereby reducing their likelihood of exposure to potential drug related harms. In all three reported cases, service users noted they were able to see a nurse OAT prescriber within 24 hours. Additionally, when service users were travelling or relocated to rural settings without appropriate substance use supports, nurse OAT prescribers reported they were able to maintain service user OAT care virtually (n=2).

Timeliness of service delivery is key to improving the mental and emotional wellbeing of OAT service users. Service users vocalized that spending less time waiting to receive care limited their exposure to environments that, at times, felt unsafe (i.e., exposure to people in community they did not want to be seen by), were triggering (e.g., exposed to active substance use), or created conditions that would increase the occurrence of negative symptoms associated with their concurrent disorders. The

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increased accessibility for service users to connect with nurse OAT prescribers also worked to minimize service user anxiety about prescription renewals overall (n=4).

> *"I think any anxiety around the medication and what's going on with my medication is probably definitely…definitely has a correlation to my anxiety I feel. […] I'm not worrying about that. So, I would say, yeah. The stability of the clinic and the nurse prescriber and the routine is definitely a positive on my mental health."* (Service User RRM)

Many nurse OAT prescribing roles included completing service user assessments alongside the provision of other forms of direct care. Both nurse OAT prescribers (n=7) and service users (n=3) discussed the added benefits of nurse OAT prescribers being available to conduct blood draws (e.g., venipuncture), STI screening, contraceptive management, and wound care, creating a total package of care for OAT service users who usually experienced barriers in arranging appointments for these various services. Additionally, the time spent with service users streamlined the pathway to seeing physicians or nurse practitioners for service users with more complex needs who required consultation or whose needs extended beyond the nurse OAT prescriber's scope of practice. In shared care settings, nurses contributed to streamlined workflows making the overall service user visit more efficient and establishing the groundwork for enhanced care continuity:

> *"…it's shared between myself and the physicians or whoever is available. The benefit of me having [prescribing abilities] is just low barrier care. But it just allows me to, you know, do those assessments […]. So that's usually what makes it streamlined and can help that person just like get what they need and have that continuity like that. They care about that, that that kind of like efficiency in their own care, I suppose"* (Nurse OAT Prescriber SQN)

Nurse OAT prescribers indicated that their familiarity with OAT service users also supported seamless care and minimized potential lengthy wait times in cases where OAT prescribers were out of office: "*they can refer the person to me. I can see [the client] and manage them in the meantime*" (Nurse OAT Prescriber FJY). Collaboration with OAT physicians and nurse practitioners is a critical piece to nurse prescribing of OAT success as it "creates that sense of teamwork and, and trust" (Nurse OAT Prescriber AOZ).

Nurse OAT prescribers who are well supported by other OAT prescribers can overcome prescribing limitations (i.e., service users who are co-prescribed alternatives to the toxic drug supply), improve service user stabilization on OAT (i.e., rapid titrations, longer prescriptions, take home doses), and feel greater confidence in their roles. Multiple nurse OAT prescribers mentioned their low prescription counts were attributed to their advocacy efforts to better meet service user needs:

> *"I'm sure there are lots more prescriptions I could be doing, but if there is something that would benefit the patient more to do a little more… aggressively. I'm very quick to refer it to our doctor because, you know, I don't need to do a prescription. I would rather they get more appropriate care"* (Nurse OAT Prescriber CHE)
>
> *"I think as long as you have that support of a physician in your team, many of the issues that would be, say, too complicated for a nurse prescribers' scope of practice, can be met very simply"* (Nurse OAT Prescriber MNA)

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Subtheme 2: Building out a community of care to enhance tailored client support

Care coordination is a common component of community nursing roles, and nurse OAT prescribers indicated they were able to facilitate coordination of care for OAT service users in many ways. With their continuous service user contact, nurse OAT prescribers could connect service users to other forms of medical care and psychosocial support (e.g., outpatient treatment, harm reduction services, infectious disease clinics, housing). In "*building a relationship with community services that offer very baseline social services*" (Nurse Prescriber LLX) and working closely with pharmacies, nurse OAT prescribers had a wealth of knowledge to create tailored care plans for OAT service users, including identifying which sites could provide their OAT service users with the most appropriate care. During the interviews, nurse OAT prescribers often discussed pharmacy engagement as being a critical facilitator of service user retention. In many cases, nurse OAT prescribers would help service users select pharmacies that would be convenient and that were familiar with OAT (e.g., known to provide destigmatizing care, had private spaces for witnessed doses on site to uphold confidentiality, prioritized OAT service users and offered medication delivery) to better support priority populations and complex service users: "*the amount of clients that are consistent with their medication has increased tenfold by the delivery of the medication to the shelters*" (Nurse Prescriber CJK).

Though all nurse OAT prescribers interviewed had participated in the SAN'YAS Indigenous Cultural Safety training, some sites prioritized the integration of Indigenous specific supports in all aspects of their service delivery (e.g., sites that were non-profits and existing outside of the Health Authority designation; n=3). Each site varied in its application or integration of Indigenous specific supports, though many (n=7) of the nurse OAT prescribers interviewed identified the inclusion of embedded supports for Indigenous service users, including access to Elders, cultural practices (e.g., smudging), and social groups (e.g., beadwork classes), while other sites had access to Indigenous liaisons (n=4) or referral pathways in community (n=6). Of the Indigenous service users interviewed, engagement with an Indigenous Elder was identified as being an integral form of psychosocial/spiritual support (n=2):

> "*The Elders are always somebody at this program to talk to you […] Yeah, that was a good thing, because when I needed them, they were there for me, and I was glad that they were there for me because who knows where I would be.*" (Service User LBK)

Nurse OAT prescribers felt a key ingredient in providing continuity of care for OAT service users from priority populations was engaging in outreach. The nurse OAT prescribers described outreach as increasing access to healthcare, supporting medication management, and encouraging service user retention on OAT for those who are most at risk:

> *"…it can be really difficult for somebody who is unsheltered, unhoused to, you know, keep track of their appointments, keep track of their pharmacy, keep track of their medication when they're running out."* (Nurse Prescriber RZI)

Going into the community gave nurse OAT prescribers an additional point of contact and allowed them to find OAT service users in their case load and follow up with service users at the request of other OAT prescribers.

Recognizing that "*each community is different*" (Nurse Prescriber ELP) and comes with its own nuanced barriers to OAT access, nurse OAT prescribers identified the need for outreach to work in partnership

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with Indigenous communities living in rural/remote areas, either on or off reserve, to begin the work of establishing connections and better support service user care:

> "*I feel like once nurses go into these communities and they start developing those professional relationships, the community members, they start to trust. They start to trust me, and they see me as a contact.*" (Nurse Prescriber ELP)

Nurse OAT prescribers (and in some cases peer workers) would have scheduled days to provide outreach to local shelters, drop-in centres, or community events to deliver OUD care and promote awareness of nurse OAT prescribing availability. This contact improved relationships with community members and even encouraged new service users to take interest in accessing OAT:

> *"For example, yesterday we started somebody [on OAT] who I had been handing out harm reduction to - you know - every week since September, and yet hasn't wanted to engage further than that. But then yesterday, it's like, 'Okay, when are we going to do this?' So, but I don't think we would get that if we had to make [them] come into the clinic. Like there is no way [they] would have. I can't see it happening at least this fast."* (Nurse OAT Prescriber JBW)

If pharmacies were not equipped to deliver medications, some nurse OAT prescribers performed this function, bringing OAT medication to service users, including in rural and remote settings where pharmacy access was limited. This was identified as being "*a huge lifesaver*" (Service User EJH) for OAT maintenance among some service users (n=3). As service users acknowledged significant challenges and limitations related to public transit, mobility, and accessibility when initiating OAT medication (n=4), if nurse OAT prescribers were unable to provide this service, workarounds included utilizing support staff to give service users rides to and from the site.

Subtheme 3: Client-identified improvements since engagement with nurse OAT prescribers

Multiple service users expressed a comfort in and appreciation of the ability to engage with nurse OAT prescribers and other supportive site staff, citing that they "*look forward to going there*" (Service user KLN) and that nurses being able to prescribe OAT makes sense because of their contact with service users: "*I think nurses already should be allowed to [prescribe OAT]. Yeah, because they're more in contact with more people*" (Service User BRW). One service user identified that they are "*a completely different person*" (Service User PWC) at this point in their treatment journey compared to when they initially entered care at the site providing their OAT. Others who had existing relationships with the site reported, "*since I've started coming here... I don't know how long they've been open now for 2 or 3 years, I guess? But I've had zero problems. Zero problems*" (Service User AHZ).

Receiving wrap-around supports and continuous care from a trusted nurse OAT prescriber appeared to improve service user stability through the consistent availability of OAT and related supports:

> *"I'm not out running around looking for a job and worrying about my prescriptions and when and how I'm going to get it and if I have to wait or anything like that. I just know*" (Service User TMS).
>
> *"...getting everything at this one clinic and having a contact person, a go to person there, and the pharmacy right across the street, especially when I didn't have a car... Like, I just think it's maybe given me time on other areas of my life to work on. Like I'm back working full time [...] Other things in my life have improved because that has just been kind of something that I just, I know it's taken care of. Like, I know it's taken care of. If I missed an appointment with [the nurse prescriber], I*

Note: All transcripts were de-identified and assigned a series of randomized letters to represent initials, to promote an increased sense of personalized feedback and remove any characteristics of participants interviewed.

> *know she'd call and that's....and fax the thing in for me. And I wouldn't have to stress myself out or go without for three days."* (Service User EJH)

The "*one stop shop"* (Service User EJH) approach in having as many necessary services under one roof as possible alleviated the burden of having to coordinate various aspects of care at several locations and may help service users feel more supported through critical aspects of health promotion, care continuity, and key contacts they build trust with over time:

> *"...there was so many components of support, like the nurses. There were the drivers. There was the cab. There was a doctor. There was, you know, it takes a lot to get me level and there's a lot of issues going on with my health."* (Service User AHZ)

Service users offered that, when integrated with outreach services, "*this care is amazing*" (Service User IWT). Between the connections shared with nurse OAT prescribers, other site support staff, and the collaborative care model, many of their substance use care needs were able to be met, including the ability to receive co-prescriptions for co-occurring substance use disorders (n=2).

Theme 4. Iterative ingredients for the amplification and evolution of nurse prescribing of OAT

Feedback from nurses and service users suggested several areas for improvement and optimization of nurse prescribing of OAT practice, including increasing prescribable medication options, reducing the requirements for consultation, embedding nurse OAT prescribers in higher-barrier settings to improve mental health and substance use care, and considering approaches to compensation that account for increased workloads for those without dedicated positions. Further, nurse OAT prescribers also suggested that increasing educational opportunities and supports may facilitate greater interest in nurse prescribing of OAT among eligible nurses by enhancing their understanding of OAT in general, which could support nurses working in mental health and substance use care regardless of their commitment to prescribing OAT in practice.

Subtheme 1: Encouraging interest in nurse prescribing of OAT

Nurse OAT prescribers reported that optimizing their scope of practice increased their competence, autonomy, and resulted in more meaningful work, leading to a greater sense of investment in their roles. To expand awareness and interest in nurse prescribing of OAT, those interviewed suggested several avenues. Notably, nurse OAT prescribers suggested exposure to aspects of substance use care, including increasing educational opportunities for nursing students to learn about mental health and substance use. To improve awareness and interest in the initiative, some suggested that nurses working in substance use and mental health roles could be offered to engage in shadow shifts with practicing nurse OAT prescribers.

> "*I hear a lot of nurses... when they talk about the job and they say, 'You know, I could never keep that job!' And my answer is, 'Well, with that attitude, you know, you can't!' They're going to experience a little bit and maybe check it out and see what it's about. Because it's not so bad, right? It's pretty damn rewarding sometimes.*" (Nurse OAT Prescriber VCB)

Visualizing nurse prescribing of OAT firsthand at well-established sites before enrolling in coursework has the potential to build camaraderie amongst nurses and address any misconceptions about the role.

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For nurses who enroll in the course, providing nurses with release time for training was reported to be a significant facilitator in content retention and timely coursework completion when compared to those who were required to complete coursework during regular working hours atop other responsibilities. Many nurse OAT prescriber participants (n=7) recommended expanding awareness of and access to the Provincial Opioid Addiction Treatment Support Program (POATSP), supporting eligible nurses to take the course without committing to "*the pressure of having your name on a prescription pad*" (Nurse OAT Prescriber IPJ).

> "*This course, I think, is invaluable because it just broadens your knowledge and your ability and confidence in the medications in general. So even if somebody isn't going to actively prescribe because that's just not their comfort level, I think that they should still know so they can counsel patients at the very least and discuss their options appropriately.*" (Nurse OAT Prescriber RZI)

Providing interested nurses paid work time to take the course without the commitment to prescribe was considered an investment that would create a more knowledgeable nursing workforce overall and has the potential to improve OAT care in many settings. For those who have taken the course, nurse OAT prescriber participants proposed that providing increased compensation for active nurse OAT prescribers would be a form of acknowledgement of the increase in workload and professional liability they have taken on as part of this work (n=8).

Subtheme 2: Optimizing nurse prescribing roles

Multiple suggestions came forward from both nurse OAT prescribers and service users on how to optimize nurse prescribing, including some recommendations that are being addressed through the transition to OUD certified practice. Nurse OAT prescribers expressed concern around current prescribing parameters and "*not doing people justice with the amounts that we can prescribe*" (Nurse OAT Prescriber RZI). To address this, nurse OAT prescribers expressed hope around the expansion of types of OAT medications, especially medications already being administered by nurses in OAT care settings (i.e., long-acting buprenorphine injection, fentanyl patch) and minimizing the requirement for additional consultation with an OAT prescriber for service users with existing co-prescriptions of prescribed alternatives to the toxic drug supply (n=5). Though nurse OAT prescribers are not authorized to prescribe safer alternatives to the toxic drug supply, service users suggest the ability to access these alternatives through nurse OAT prescribers would be of significant benefit (n=5).

Other suggestions included broadening prescribing parameters in order to meet service user OAT needs on a case-by-case basis. This could include attending to prescribing parameter barriers such as rapid titrations, the provision of extended prescriptions or take-home doses, and collaboratively working with other health care providers to better support stable service users in obtaining continuation prescriptions without necessitating direct contact. Though nurse OAT prescribers who engage in outreach activities identified a greater ability to locate at-risk service users, not all sites offer outreach support or have adequate ancillary staff to fill those gaps when they could (n=4). To facilitate better service user engagement at these locations, nurse OAT prescribers recommended the inclusion of people with lived and living experience of substance use in peer roles at current sites (n=3), and one service user spoke on the importance of peer representation for increased service user comfort within the sites themselves.

To address aspects of reach and effectiveness, nurse OAT prescribers spoke on the possibility of embedding more nurse OAT prescribers in higher barrier settings (i.e., hospital, corrections) (n=2), in

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rural and remote communities (n=2), and using nurse prescribing of OAT as a service user stabilization tool where OAT physicians or nurse practitioners could refer service users back to nurse OAT prescribers in cases where service users discontinue their OAT and require more intensive case-management support (n=2). Importantly, to provide more comprehensive service user care, nurse OAT prescribers recommended the inclusion of additional training for other forms of certified practice (where appropriate and where nurses express interest) further facilitating nurses meeting several service user health needs simultaneously and supporting comprehensive care (n=2).

Subtheme 3: Supports for nurse prescribing sustainability

In many cases, nurse prescribing of OAT has been added into existing roles and on top of pre-existing workloads, creating some challenges with time constraints, capacity, and workflow. To minimize feelings of being overloaded, nurse OAT prescribers suggested the creation of more designated OAT roles which would, in turn, increase the number of nurse OAT prescribers available to account for the necessary time to engage in case management and "*keep a close eye on [the] clients and caseload to see how they're doing and making sure they're not going off [of OAT]*" (Nurse OAT Prescriber NJZ).

> *"I think it would be great if we had more designated roles for OAT, and I think that comes down to a funding piece of are you a mental health substance use nurse prescriber. [...] we're spread so thin... like, often we feel like we're doing a half-assed job, but we're really like, I know that we're doing a good job for the community and stuff like that, but I just wish that there was more of us."* (Nurse OAT Prescriber CJK)

One nurse OAT prescriber suggested that the role should be considered a "*specialized function of nursing scope practice*" (Nurse Prescriber MNA) which could permit hiring more experienced nurses who understand the complexities of mental health and substance use clientele, thereby improving service user care.

Additionally, nurse OAT prescribers have indicated the need for active support in practice, including access to a list of clinical supports and mentors (e.g., physicians and nurse practitioners experienced in OUD care, other nurse OAT prescribers) who could provide support, expertise, and field questions as they come up. This is especially of particular importance for nurse OAT prescribers working in rural or remote areas where substance use resources are limited and where specific guidance for prescribing OAT in rural or remote contexts was missing from the training pathway, including their preceptorships.

Client Satisfaction Questionnaire - 8 Findings

In total, nine service user participants completed the CSQ-8. Given the small sample size, the evaluation team was unable to conduct any statistical analyses or locate an appropriate comparator. Findings are reported here descriptively by calculating an overall score through summing the rated responses for each participant. Overall scores range from 8 to 32. Higher scores indicate higher levels of service user satisfaction.

Overall, the majority of participants (55.6%) reported the highest possible score of 32 points in relation to service user satisfaction. The remainder of scores were still high, with 33.3% scoring 31 points and 11.1% scoring 30.

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Site Survey Findings

Survey sample

Three unique service delivery settings with at least one nurse OAT prescriber were selected for survey distribution. 20 interdisciplinary care team member participants provided survey input. One individual only answered the demographic questions (no answers provided for any other survey questions) and was excluded. An additional individual identified as a nurse OAT prescriber and, given the aim of the survey to reach those working alongside nurse OAT prescribers, their response was excluded from the findings. Most respondents were White (83%), female (61%) and middle-aged (mean: 44; range 33-64 years) (see Appendix M for survey sample demographics and characteristics).

Findings from site surveys

Overall knowledge of initiative and scope and role in practice setting

Many survey respondents heard about the initiative from within their workplaces, either from colleagues (56%) or their supervisor/team lead (17%) and the majority (94%) indicated they were aware of the role and scope of practice of the nurse OAT prescriber(s) at their site.

All respondents (100%) strongly agreed or agreed with the statement that "providing nurses with the knowledge and training to prescribe OAT has the potential to increase workforce capacity related to substance use disorder care" and most (89%) agreed or strongly agreed that having nurse OAT prescribers in their setting has resulted in increased access to substance use disorder care.

Impacts of nurse prescribing of OAT

The majority (89%) indicated there were benefits to having one or more nurse OAT prescribers providing services in their workplace. In describing the benefits of nurse prescribing of OAT, many noted increased capacity to provide OUD care, citing availability of nursing staff and more numerous nursing hours within the site. Several respondents noted the benefits of increased accessibility to OAT, especially for service users who may be harder to reach. In particular, outreach nurses offered harder-to-reach service user populations more flexibility in accessing and staying engaged in OUD care, among other benefits and supports. A few people also noted that nurse prescribing of OAT could alleviate some of the workload on primary care providers (family physicians [FP] and nurse practitioners [NP]) freeing them up to do other clinical work or support their patients in other ways. Concerns raised included that nurses may be filling in for FP/NP shortages, that nurse prescribing of OAT was not adequately supported and that the nurses prescribing OAT may increase the power dynamic between patient and provider.

Experience working with a nurse OAT prescriber

When asked to elaborate on their experience working with a nurse OAT prescriber, respondents used the words, 'amazing', 'collaborative', 'positive' and 'supportive' and indicated nurse OAT prescribers have been able to expand access to OAT with greater availability of nursing hours, compared to other prescribers, and described the nurse OAT prescriber as a resource for the team. Overall, the respondents indicated positive aspects of working with nurse OAT prescribers, such as good relationships between the nurse OAT prescriber and other prescribers on the team, their ability to facilitate more flexible and client-centered care and being advocates for patient needs. Some cited limitations to the practice in general, such as when patients need management of other chronic conditions or additional medications that the

nurse can't prescribe. In addition, one respondent indicated that not all nurses are interested in or comfortable with OAT prescribing and that this has limited its utility and expansion in one setting.

Barriers and challenges integrating nurse OAT prescribers into practice settings

When asked about integrating nurse prescribing of OAT into their setting, respondents were divided, with about half of respondents indicating there were no challenges or barriers. One respondent described the integration in their setting as 'seamless', as nurses were already supporting service user assessments and nurse prescribing of OAT was a natural extension of existing roles. Other facilitators included the availability of on-site preceptors and team interest and support.

Challenges cited included nursing-related barriers such as interest, willingness or time to complete the training. Some (17%) mentioned that fear or hesitancy around prescribing OAT among some nurses might impact engagement in the practice. Respondents suggested that added responsibility accompanying prescribing, lack of incentives, preferences among some for ongoing physician or NP oversight of prescribing and a broader challenge around conflicting opinions about OAT care and best practices were added complexities impacting integration. Finally, one respondent mentioned that stigma towards people who use substances is still prevalent in health care settings and limited nurses in the substance use field overall was an ongoing challenge.

Unanticipated impacts of nurse prescribing of OAT

When asked about any unexpected impacts of nurse prescribing of OAT, several respondents cited increased accessibility to initiate OAT and more flexibility in providing care, such as an opportunity to see more walk-ins and better meeting the needs of service users who may have challenges making appointments. Increasing the capacity to provide OAT was accompanied by streamlined workflows for all providers in some settings, while others noted concerns around increased workload for the nurses involved.

One respondent indicated that while nurse prescribing of OAT has improved accessibility to OAT, there are ongoing barriers to meeting the full spectrum of service user needs, such as challenges connecting service users to mental health or other health and social services, including housing.

Future expansion of nurse prescribing of OAT

The majority of respondents said they would be supportive of increasing the number of nurse OAT prescribers in their setting (89%). Among those in agreement, respondents indicated the existing gaps in capacity for OAT provision that nurse OAT prescribers could fill, stated that 'there was more than enough work to go around' and that there would be benefits to more clinicians having the knowledge about OAT – whether or not they were in a prescribing role. Some cited the benefits of forthcoming authorization to prescribe long-acting subcutaneous buprenorphine injection and the need to facilitate pairing OAT with prescribed alternatives to the toxic drug (e.g., prescribed alternatives to the toxic drug supply) where needed.

When asked if they would be supportive of the broad expansion of nurse prescribing of OAT, some were less supportive (84% strongly agreed or agreed, 10% strongly disagreed). Concerns mentioned included the need for better bridging between other services, including housing and employment services to meet the needs of patients more fully. Another respondent suggested more engagement was needed between

the service user and clinical service (i.e., substantial amount of time and resources spent locating and following up with patients).

Discussion

Nurse prescribing of OAT is a relatively new practice and the implementation in British Columbia (since September 2020) is a first-of-its-kind initiative in Canada. This evaluation sought to answer several evaluation questions pertaining to the initiative's implementation and effectiveness, utilizing the RE-AIM framework to guide the inquiry across its five domains: reach, effectiveness, adoption, implementation, and maintenance.

The first aim of the evaluation was to understand the implementation and reach of the initiative. While implementation approaches and timing varied, at the time of writing, there were active nurse OAT prescribers in all regional and provincial health authorities, providing service across a broad geographic area and positioned in many different types of service delivery settings (51 active nurse OAT prescribers as of December 2023).

The analysis of HSIAR data effectively addressed the evaluation questions under the **reach** and **adoption** dimensions of the RE-AIM framework. The findings underscore the progressive increase in the number of nurse OAT prescribers from early 2021 to December 2023. Monthly trends showed that the number of active nurse OAT prescribers continued to grow, with RN prescribers experiencing a notably higher growth rate. Examining the trends by the types of OAT drugs dispensed, there was a marked rise in methadone prescriptions by RN prescribers starting in early 2022. This period also saw a substantial increase in the number of patients dispensed OAT drugs with prescriptions from nurse OAT prescribers. These increases indicate an expanding workforce and growing accessibility to OAT drugs, in line with phase two implementation of the policy, expanding the types of OAT drugs nurses could prescribe to include methadone and slow-release oral morphine. Furthermore, the analysis highlights improved access to OAT drugs prescribed by nurses in some rural and remote areas over time. The number of pharmacies dispensing OAT prescriptions from nurse OAT prescribers increased steadily as well, peaking in late 2023. Regional analysis indicated notable rises in patient numbers in several CHSAs outside of urban areas, thereby enhancing accessibility in underserved regions.

While the RE-AIM categories were not used as central organizing concepts for the qualitative analyses, the evaluation team was able prioritize viewing the experiences of the RN and RPN Prescribing of OAT Initiative as having two contextual locations of assessment: external (setting/institutional) and internal (experiential/individual).

Another evaluation aim was to identify facilitators and barriers to nurse prescribing of OAT. This was achieved through the analysis of qualitative data (nurse OAT prescriber and service user interview data), memos with implementation leadership and site survey data. At the evaluation outset, it was clear that there was great variability in terms of the approach with respect to the RE-AIM framework dimensions of **implementation** and **adoption**. External factors, such as the health system landscapes in B.C., span diverse types of geography, culture and politics that influence substance use care broadly. These were found to impact implementation through site readiness (i.e., institutional barriers related to policy and procedures), relational dynamics with other OAT prescribers and the parameters of nurse prescribing of OAT in practice. At times, these external barriers contributed to significant delays during the roll-out of

the initiative. These challenges indicate implementation had low fidelity driven by a lack of awareness of procedural execution, independent decision-making processes within each Health Authority, and gaps in communication between government and relevant partners (e.g., physicians who prescribe OAT) regarding the role of nurse OAT prescribers and the intention to make nurse prescribing of OAT a permanent part of OAT care provision where possible. As the initiative made nurse prescribing of OAT available across different sites and settings all at once, it is critical to reflect on how the implementation approach may have experienced greater initial success if it had been applied with discretion at select sites and maximized opportunities for community engagement and consultation to anticipate additional challenges. Though the implementation took a phased approach to promote service user safety in the context of a novel prescribing practice, the focus on medication type (e.g., buprenorphine/naloxone) hindered nurse OAT prescriber ability to meet service user needs in some cases. This holds especially true for nurse OAT prescribers working in locations considered to be rural or remote, and Indigenous communities living on or off reserve. The Truth and Reconciliation Commission of Canada: Calls to Action 19 and 20[21] identify the need to be in consultation with Aboriginal peoples to "identify and close the gaps in health outcomes between Aboriginal and non-Aboriginal communities" and to "recognize, respect, and address the distinct health needs of the Metis, Inuit, and off-reserve Aboriginal peoples." Overall, though the initiative's intention was to provide OAT access to priority populations,[23] including Indigenous peoples, policy goals and community-identified needs were not consistently aligned. A better understanding of community health and wellness priorities and consultation at all stages of policy development could promote greater acceptability and uptake of future initiatives.

From a human resources perspective, a clear facilitator to the adoption of OAT prescribing was directly related to the individual nurses' prior experience. It is clear that nurses working in existing substance use care roles were best positioned to champion the initiative across the province. In addition to site leadership identifying appropriate nurses to receive training, many nurses acknowledged feeling an intrinsic motivation to add prescribing OAT to their scope of practice. Of note, all nurse OAT prescribers interviewed from sites operating outside of Health Authorities were self-motivated to expand their scope of practice, indicated support from leadership and did not report experiencing any tension from other OAT prescribers working alongside them.

Another major objective of the evaluation was to determine the effectiveness of the RN and RPN Prescribing of OAT Initiative related to several priorities, including how the initiative might expand equitable access to low-barrier substance use care, how it might contribute to increasing health human resources and health system capacity for timely substance use disorder treatment and how it might contributes to the provision of person-centered care and culturally safe care. The qualitative data (nurse OAT prescriber and service user interview data), memos with implementation leadership and site survey data all contributed to a greater understanding of how the initiative was operating in several service delivery settings and some of the key impacts.

While it is important to recognize the limitations in separating aspects of service user identified success as being a direct result of engagement with nurse OAT prescribing, the evaluation team considers measures of nurse prescribing effectiveness to be intrinsically tied to the site as a whole and deeply intertwined with the support service users received through ongoing nurse-service user relationships.

Equipping nurses with the ability to prescribe OAT did seem to contribute to greater and more timely access to OAT in many settings, given the consistency of nurse OAT prescriber schedules, their ability to

streamline pathways to OAT, and to optimize service user care continuity through ongoing engagement (e.g., outreach).

In terms of how the initiative provided person-centered and culturally safe care, our findings indicate that Nurse OAT prescribers helped to build and/or re-establish service user trust in the health care system, through more frequent contact with new or returning OAT service users (compared with other prescribers). This, in turn, had positive impacts, not only for the nurse-service user relationship, but could also lead to greater overall trust and willingness to seek future health services. Combined, these factors enhanced person-centered care and contributed to service user identified improvements since engagement. As a result, one of the initiative's successes involved reaching underserved populations who were most at risk of experiencing overdose and other drug related harms, including service users living in rural or remote areas and those who were notably street entrenched with multiple comorbidities.

While all service users identified experiencing aspects of person-centered care from nurse OAT prescribers that were critical to their self-reported success on OAT, Indigenous service users who identified as engaging with Indigenous specific program supports were either accessing Elders embedded in the site or were connected to preexisting supports in community. All nurse OAT prescriber participants discussed taking part in at least one form of Indigenous cultural safety training, which indicates efforts being taken to engage with a section of the 23rd call to action from the Truth and Reconciliation Commission of Canada: "Provide cultural competency training for all healthcare professionals."[21] However, only a handful of nurse OAT prescribers indicated that the provision of Indigenous specific supports was prioritized in their working environments, the majority of which existed outside Health Authority sites, suggesting that more work needs to be done to engage with the 22nd call to action: "recognize the value of Aboriginal healing practices and use them in the treatment of Aboriginal patients in collaboration with Aboriginal healers and Elders."[21] Given the feedback regarding challenges faced by Indigenous communities in regard to OAT access and the sovereignty of each Nation containing a variety of unique needs, the evaluation team is acutely aware of the challenges posed by prescriptive practices and encourage government to explore why the differential application of Indigenous specific resources is occurring across settings. Combined, these findings underscore that the RN and RPN Prescribing of OAT Initiative may expand equitable access to low-barrier substance use care, increase health human resources for people who use drugs, and provide person-centered and culturally safe care.

The final theme developed from interviews with nurse OAT prescribers and service users primarily speaks to sustainability and future scaling (RE-AIM dimension: **maintenance)** of the initiative. Taken together, the findings illuminate several adaptations that could promote increased adoption and integration – both for the present initiative and future, similar provincial policy changes.

In reviewing the findings, the evaluation team proposes the following as key learnings and suggestions that would support the planning and implementation of similar provincial initiatives in the future:

Key learnings for implementing similar provincial initiatives

1. **Prior to implementation, seek input on proposed policy changes from key target populations to ensure feasible and appropriate**
   - Work closely with target populations to understand needs and priorities, especially for Indigenous communities and those servicing rural and remote settings

2. **Prior to implementation, assess priority settings/communities for readiness to adopt the policy change (using indicators developed collaboratively with relevant key partners)**
   - Tailor planning and available supports needed, based on assessment of readiness
   - Consider piloting implementation at a few select sites with efforts to raise awareness among the service delivery teams
   - Consider intentional and dedicated supports for change management
   - Early wins in optimal settings could bolster support and energy for expanded implementation

3. **Building on traditional indicators of success (i.e., quantitative counts), develop targets and indicators that address more qualitative aspects of care, at initiative outset (determined through consultation and collaboration of health system partners)**
   - Work with partners to determine appropriate indicators
   - Acknowledge that success may look different for certain locations and communities (i.e., those that are historically under-resourced or face existing health inequities)

4. **Consider resourcing required prior to roll-out and work towards equitable access to resources, particularly in settings where inequities already exist (i.e., rural and remote locations, communities at highest risk for toxic drug poisoning events and deaths, locations with lower prescriber density, etc.)**
   - Release time for nurses to complete education and training
   - Dedicated funding teams could use to support the planning (time for coordinating review of policies and procedures, completing risk assessments, etc.) and implementation (i.e., identifying appropriate sites, creating and establishing workflows, building awareness among other interdisciplinary team members at sites)

5. **Create and support the deployment of accessible and comprehensive communication plans at the health authority and site levels**
   - This would help to build awareness and knowledge of the project and bolster buy-in of the initiative within teams and clinicians most impacted (i.e., existing prescribers)

6. **Aim for greater involvement of affected groups and impacted communities from implementation outset**
   - Consider opportunities for nurses and most impacted groups to be engaged around the logistics prior to implementation
   - Consider piloting at a few sites with engagement and buy-in of interdisciplinary staff and understand all perspectives
7. **Utilize available levers to encourage regional and provincial health authorities to create implementation pathways in a timely way**
   - Consider available levers to prioritize implementation of the initiative
   - Improve channels for rapid sharing of documentation (i.e., policies and procedures) to reduce duplication and delays (i.e., sharing across organizations and health authorities to reduce duplicated efforts)

In addition, several aspects of nurse prescribing of OAT emerged quite clearly from the findings that should be considered to amplify the benefits of the practice and respond to ongoing challenges.

Opportunities to sustain and amplify the benefits of nurse prescribing of OAT

1. **Urgently remove barriers to full nurse OAT prescribing practice scope in service delivery settings where limitations exist (i.e., corrections, hospital settings, etc.)**
   - Prioritize the creation of supportive policies, practices and team workflows (where applicable)
   - Explore ways to streamline and expedite existing delays (i.e., departmental review, risk management assessments)

2. **Leverage technology to enhance the provision of virtual care by nurse OAT prescribers**
   - This would support the initiative's objective of reaching people in rural and remote settings who are historically underserved and face challenges accessing OAT

3. **Create mechanisms for ongoing support and mentorship for nurse OAT prescribers to reduce professional isolation**
   - Identify prescriber (physician or nurse practitioner) champions who are supportive of nurse prescribing of OAT in all sites where the initiative is in place
   - Explore opportunities for ongoing mentorship and practice guidance with other prescribers in their local prescribing area (in addition to the ongoing Community of Practice)
   - Explore what additional clinical practice supports might support nurses in adopting OAT prescribing

4. **Improve communication and conduct more fulsome engagement to raise awareness about nurse prescribing of OAT**
   - A lack of awareness and understanding of nurse OAT prescribing practice was cited as a barrier to optimal collaboration with other site prescribers
   - Raising awareness broadly about the initiative could support better understanding among existing prescribers (physicians and nurse practitioners) and improve support and collaboration with nurse OAT prescribers

5. **Consider expanding prescribing parameters to optimize the effectiveness of nurse prescribing of OAT to meet the needs of people with OUD**
   - Permitting the prescribing of additional medications to better meet the needs of people with OUD (i.e., long-acting subcutaneous buprenorphine injection)
   - Enabling nurse OAT prescribers to offer faster dose titrations to support more timely OAT stabilization (especially for those re-starting OAT)

6. **Consider prioritizing expansion to additional primary care and MHSU sites independent of health authorities**
   - Compared to health authority implementation, nurse prescribing of OAT was adopted relatively quickly and smoothly in sites independent of the health authority (i.e., those with fewer bureaucratic systems to navigate)

- Nurse prescribing of OAT has been adopted more easily by nurses for whom prescribing is an extension of an existing community substance use role (i.e., they have experience providing care to people with OUD)

7. **Create provincial electronic clinical support tools to enhance adoption and explore opportunities for additional monitoring and evaluation (i.e., for quality improvement)**
   - Further monitoring and evaluation could explore client outcome data, utilizing indicators developed in collaboration with health systems partners

Some challenges that will need ongoing and site-specific assessment, especially in the context of a changing implementation process with the advent of OUD Certified Practice, include reviewing nursing roles and capacity to add in OAT prescribing, recalibrating workloads to accommodate OAT prescribing (if adding into existing roles) and considering new workflows for teams with several prescribers. In addition, it was clear that further discussion is warranted regarding compensation structures and potential incentives for nurses in roles with OAT prescribing, given the additional inherent liabilities of the practice. To fully understand the findings and their implications, several limitations warrant further discussion.

Variation in Health Authority implementation:

Implementation of nurse prescribing of OAT varied across regions, with notable differences in implementation timing and scale, implementation settings, nursing roles, data collected and funding for nurse positions across health authorities. While this allowed the evaluation team to explore the roll-out of the initiative across varied service settings and implementation strategies, this inconsistency hindered the evaluation team's ability to uniformly assess aspects such as financial feasibility, implementation efficiency and maintenance of the program across regions.

Standardization of data collection and further exploration of health outcome data is suggested:

Data collection pertaining to initiative implementation was not standardized across sites or health authorities. Future implementation of health system policies and programs would greatly benefit from a standardized approach to data collection, to aide future evaluation activities. In addition, future efforts should be made to explore population health datasets to understand medium and long-term impacts of the program on patient health outcomes. In tandem, the evaluation team would recommend a collaborative approach to the development and validation of meaningful indicators to measure program success, taking into consideration the involvement and feedback of those most impacted by the initiative (i.e., nurse OAT prescribers, those involved in implementation of the initiative, those with lived/living experience of OUD).

Recruitment challenges and bias:

Despite the deployment of low-barrier strategies for recruiting participants, the evaluation team encountered challenges connecting with service users to participate in the evaluation. Determining eligibility of service users to participate in the evaluation required significant time and effort, beyond what was anticipated. Service users were frequently unsure about who they had received their OAT prescription from and there was confusion regarding the various types of nursing roles (RN, RPN, nurse practitioner), causing delays in assessing eligibility and resulting in the extension of the recruitment and

data collection period. Additionally, the evaluation team relied heavily on nurses themselves to recruit participants. As a result, selection bias may be present in the sample.

In addition, the evaluation team wishes to note that there were limitations regarding representation. Some nurse OAT prescribers who were invited to participate, declined and expressed frustrations about the initiative (e.g., process and delays). Unfortunately, since these people did not participate, their views are not reflected in the analysis and thus contribute to self-selection bias. Furthermore, while strategies of maximum variation sampling were used, most participants across the qualitative components identified as White. As such, critical feedback from priority groups may not be adequately represented in this evaluation.

Further, this evaluation's scope focused on the experiences of nurse OAT prescribers, service users and those involved in implementation directly over a year. As a result, some perspectives were not captured. While efforts were made to hear from those working alongside nurse OAT prescribers in three unique settings using the site survey, this was limited to three sites. Sites were selected to be diverse (both in terms of services offered, geographic location and population served), however, sites with larger and more diverse teams were selected to support recruitment efforts and hear from a greater breadth of interdisciplinary respondents. Some of the relational dynamics between physicians who prescribe OAT and nurse OAT prescribers raised in the interviews could be further explored directly with physicians. This could be an opportunity to better understand how fee structures impact team workflows and to explore avenues for collaboration to optimize care delivery.

RE-AIM Framework application:

Challenges exist in using the RE-AIM framework in community settings, that warrant further discussion, particularly when using the framework to evaluate the impact of multiple community-based programs delivered by separate organizations.[24] Obtaining accurate and complete data for all dimensions can be difficult and resource intensive, especially where consistent data practices may not be in place. Further, aggregating data to evaluate collective impact of certain outcomes may not be possible if organizations are collecting slightly different data. By breaking down interventions into five dimensions, the framework may also oversimplify complex, multi-component interventions and may miss nuances in how different elements interact and affect outcomes. The evaluation team utilized the framework to guide the development of key evaluation questions and the data collection tools, but intentionally did not use the framework as a way of organizing or analyzing findings, given the variations in implementation and breadth of experiences captured.

Approximating numbers of nurse OAT prescribing restarts, titrations, etc.:

Nurse OAT prescribers participating in demographic questionnaires and interviews found it challenging to approximate the number and type of prescriptions they had written since initiating OAT prescribing. As a result, most answers were best estimates by nurse participants, based on the number of prescribing pads they had used. Consequently, the evaluation team was unable to include information such as the number of new starts, re-starts, continuations, initiations and titrations in this report. Information reported in Appendix N on the total number of prescriptions written (in-person and virtual) is likely subject to recall bias.

Conclusion

Nurse prescribing of OAT spans multiple settings and is integrated in several types of nursing roles across a broad geography in British Columbia. This one-year evaluation of the initiative (phases 1 and 2) highlights that nurse prescribing of OAT is acceptable to both service users and other mental health and substance use service providers and has the potential to increase the available workforce for substance use care across the province.

Implementation varied greatly across regions and between sites, and at present there are a limited number of active nurse OAT prescribers in B.C. Despite this, the findings indicate some clear benefits to nurse prescribing of OAT, such as opportunities for enhanced service user engagement and OUD care continuity.

Applying the key learnings and suggestions highlighted in the report may lead to increased implementation success for future similar programs. Similarly, the report outlines several key ingredients that are working well in sites that have successfully integrated nurse OAT prescribers. These could be amplified to continue to build on program successes and promote adoption in several high priority settings to optimize program impact.

Nurse prescribing of OAT is an evolving practice. The transition to Certified Practice in OUD will necessarily alter implementation mechanisms and ongoing evaluation efforts are warranted to continue to understand the benefits, limitations and opportunities for this new practice.

The evaluation team acknowledges the limitations inherent in a one-year evaluation of this size and with provincial reach. Further exploration is recommended to learn more about medium and long-term program impacts, including to better understand health outcomes and care trajectories of individuals receiving care by nurse OAT prescribers, that were out of scope in the present evaluation.

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