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ENVIRONMENTAL SCAN

Scan of Evidence and Jurisdictional Approaches to Safer Supply

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Key Findings

- Various options are emerging for people who use unregulated drugs to secure access to a regulated drug supply, including prescriber-based models, with or without a comprehensive program, and non-prescriber based models (e.g., compassion clubs, grassroots supply). Safer supply models are an approach to provide an alternative to the toxic unregulated supply.

- To date, there is little published literature on the outcomes of safer supply programs, but several evaluations are in progress. There is also little published evidence on non-prescriber models or safer supply models that are not part of a comprehensive program. Early evaluations of prescriber-based safer supply programs in Canada have been published and have reported increased connections to wrap-around supports, reduced reliance on an unregulated drug supply, and reduced engagement in criminal activity among participants.

- The jurisdictional scan identified and summarized ten safer supply programs and seven policy/program guidance documents in Canada, providing an overview of some of the current safer supply landscape. Information from these sources on the outcomes of safer supply programs in Canada report the following among participants: low rates of fatal overdose, increased engagement in health care and social supports, improved mental health and sleep patterns, reconnection with family, and an ability to exert control over their drug use.

- As treatment options, there is a well-established body of evidence that opioid agonist treatment (OAT) and injectable opioid agonist treatment (iOAT) are effective across several health and social outcomes including treatment retention, decreased use of drugs from an unregulated supply, less engagement in criminal activity and increased access to healthcare. Decreased risk of all-cause and opioid-related mortality has been demonstrated for OAT.

- Early evidence from Ontario and British Columbia suggests that prescription-based safer supply may be a viable option for those who do not tolerate, use, or desire available treatments as well as those who use drugs from an unregulated supply in addition to OAT. There are ongoing evaluations of several safer supply programs in Ontario and British Columbia, with results expected in 2022-23. Further research is recommended to support evidence informed decision-making on safer supply options, doses, and delivery methods.

Objectives and Scope

- The objective of this environmental scan is to summarize evidence on the health and social impacts of safer supply programs. This scan will also describe local, provincial/state, national or international examples of safer supply models.
- Safer supply programs of interest include those that provide a predictable source of a substances as an alternative to the street supply: opioid programs (e.g., unsupervised or supervised consumption of prescribed hydromorphone [HDM]), and non-opioid programs (e.g., stimulants, benzodiazepines).
- For context, the evidence review will synthesize review-level evidence of effectiveness of opioid agonist treatment (OAT) (e.g., methadone, buprenorphine) and injectable opioid agonist treatment (iOAT) (e.g., injectable hydromorphone, diacetylmorphine), and other opioid and non-opioid programs that provide pharmaceutical medications for substance use in a treatment model.
- The jurisdictional scan will focus on programs and models of safer supply programs (e.g., HDM tablets programs, or access to non-opioids such as stimulants), distinct from the OAT and iOAT treatment models.
- The PHO Library conducted the search for peer-reviewed literature in November 2021. A grey literature search was also conducted for the same time period. The information provided in this document is only current as of the date of the respective literature searches.

Background

Opioid-related Mortality in Canada and Ontario

High rates of opioid-related deaths in Canada have been a significant and longstanding national public health issue.[1] There were 6,265 opioid-related deaths across Canada in 2020, over 96% of which were accidental.[2] In Ontario, there were 2,426 opioid-related deaths in 2020, a 60% rise from 1,517 deaths the year prior.[3]

A large proportion of overdose fatalities in Canada and Ontario can be attributed to the current toxic drug supply (referred to by some groups and programs as a poisoned drug supply or drug poisoning crisis). In Canada, 87% of accidental opioid-related deaths involved fentanyl and 90% involved non-pharmaceutical opioids in early 2021.[2] Similarly in Ontario, the prevalence of fentanyl as a direct contributor to opioid-related deaths increased to 87.0% (N=1,720) between March to December, 2020 (up from 75.0% [N=871] between March and December, 2019).[3]

Defining Safer Supply

Harm reduction is an evidence-based, client-centred approach aiming to reduce the health and social harms associated with substance use, without requiring people who use substances from abstaining or stopping their drug use.[4] Using a harm reduction approach, safer supply is based on a moral foundation that the people who choose to use drugs have the right to do so.[5]

Traditionally, opioid agonist therapy (OAT) has been available in an addiction medicine model, and the goals of treatment may align with abstinence or a harm reduction focus. Health Canada defines opioid agonist treatment (OAT) as an evidence-based approach for treating opioid use disorder (OUD),

involving the use of oral or injectable medications (i.e., methadone, buprenorphine, slow release oral morphine [SROM]) to prevent withdrawal, cravings or other opioid use.[6] The primary goal of OAT and iOAT (i.e., treatment of OUD) differs from that of safer supply (i.e., to provide people with access to a consistent, non-toxic drug supply).

The Canadian Association of People Who Use Drugs (CAPUD) defines safer supply as "a legal and regulated supply of drugs with mind/body altering properties that traditionally have been accessible only through the illicit drug market."[5] Safer supply programs involve the prescription of medications to provide a safer alternative to the toxic unregulated drug supply for people who are at high risk of overdose. These services aim to prevent overdoses and connect people who use drugs to health and social services.[2] Non-prescriber safer supply models also exist (i.e., compassion clubs), in which community members aim to establish and distribute a supply of drugs as an alternative to the unregulated drug supply, as separate model from prescriber-based programs.[7]

Safer supply is a low-barrier model intended to reach people who are marginalized from other models of health care delivery as a result of structural barriers that prevent those impacted by homelessness, poverty, mental health issues, racism and stigma from accessing needed care.[8] It can be provided by primary care clinicians or addiction medicine specialists, and may be delivered out of Community Health Centres, primary care clinics, outpatient clinics or community services agencies (i.e., shelters). Safer supply programs do not focus on stopping drug use. Instead, the safer supply model focuses on meeting the needs of people who use drugs, reducing the risk of overdose by decreasing reliance on the toxic unregulated drug supply, and providing connections to health and social services where possible and appropriate.[6]

The College of Physicians and Surgeons of Ontario has recognized "safer supply" prescribing as a standalone harm reduction strategy, can enable physicians to support patients with opioid use disorder and reduce their risk of overdose and death.[9] On August 24, 2020, Canada's Minister of Health at the time, former Minister Patty Hajdu, recognized the importance of safer supply programs as a harm reduction measure that can support people who use drugs by reducing their risk of overdose, infection and withdrawal.[10] Health Canada currently supports a number of safer supply projects across Canada funded by the Substance Use and Addictions Program (SUAP).[6]

Given the public health importance of accidental overdose and opioid-related harms in the population, as well as an interest in expanded programs and policy options to support the health and well-being of people who use drugs, we sought to review the published literature on safer supply programs.

Methods

The methods for this document consist of a rapid review and a jurisdictional scan. The rapid evidence review was conducted to identify and summarize peer-reviewed and grey literature on the impact and effectiveness of safer supply. The jurisdictional scan aimed to document safer supply programs at the local, provincial/state and national level.

Note: Terminology used to describe safer supply models and outcome measures used to assess their impact varied between source materials. In the evidence review and jurisdictional scan summaries below, the source terminology was used.

Methods for Evidence Review

Public Health Ontario (PHO) Library Services conducted searches for peer-reviewed literature on the effectiveness and models for safer supply programs published from January 2011 onward in MEDLINE, Embase and PsychInfo on November 10, 2021. Additional records were also retrieved through referral by subject matter experts.

From these searches, we aimed to identify studies that evaluated the effectiveness and health impacts of safer supply programs. We also aimed to include evaluation protocols, to document evaluation measures and indicators used to examine approaches to safer supply. We also included review-level evidence on the effectiveness of OAT and iOAT programs in providing controlled medication in a treatment model for people who use opioids. Five team members completed title and abstract screening of the indexed literature. Two team members conducted independent screening of a 20% sample of all indexed literature and resolved differences to ensure inclusion and exclusion criteria was applied in the same manner throughout.

Methods for Jurisdictional Scan

In addition to the PHO Library search, a jurisdictional can was conducted using key word searches in Google Custom Search Engines as well as relevant government and organizational websites to document jurisdictional examples of and policy directions for safer supply programs. This search focused on documenting safer supply programs/models and the preliminary findings on the impact or outcome of these programs. OAT and iOAT programs were not in scope for the grey literature/jurisdictional scan portion of this document. Additional records were also retrieved through referral by subject matter experts.

Evidence Review

After title and abstract screening (n=965 records screened), 91 full text records were reviewed for eligibility. No primary or review-level records were identified through the PHO Library search on the impact or effectiveness of safer supply models/programs in the published literature. There were 28 review-level records identified that examined the effectiveness of OAT and iOAT, 27 of which were through the PHO Library search and one through subject matter expert referral. A majority of the included articles examined the impact or effectiveness of OAT (n=26) and comparatively few examined treatment outcomes of iOAT (n=7). For a full summary of included evidence on OAT and iOAT, see Appendix A. In addition to the records identified through the PHO Library search, six sources relevant to safer supply were referred for inclusion by a subject matter expert. For a full summary of these five sources, see Appendix A.

The majority of outcome measures used to examine the effectiveness and impact of OAT and iOAT were related to clinical or health benefits and harms of these treatment modalities. The most common outcome measures across the literature were: treatment retention, use of other/unregulated opioids, engagement in criminal activity, and fatal and non-fatal overdose events. Other outcomes used to examine the impact or effectiveness of OAT and iOAT include measures of social functioning (i.e., economic security, employment), connections to HIV or hepatitis C care, and cost-effectiveness. For a full list of outcomes and the articles that examined them, see Appendix B.

Details of the full literature search strategy are available upon request. Quality appraisal was not conducted on the included indexed literature.

Impact of Safer Supply Programs

There is limited peer-reviewed research on the impact, potential benefits and harms of safer supply programs, a finding corroborated by a recent review on this topic.[11] Qualitative research from British Columbia (BC) indicates that a HDM distribution program in Vancouver was effective in reducing the use of drugs from the unregulated street supply, which may reduce overdose risk.[12] Program participants also reported improvements to their health and well-being, including access to healthcare, reduced injection drug use, and increased economic security.[12] Participants noted that money they previously spent on acquiring street-purchased drugs could now be used to meet their basic needs (i.e., purchasing food, cell phone plan, visiting family).[12]

Early in the COVID-19 pandemic, Interim Risk Mitigation Guidance (RMG) was introduced in BC in response to the dual public health emergencies of rising overdose rates and the COVID-19 pandemic. RMG permits prescribed medication alternatives to the unregulated drug supply to support those at risk of overdose, withdrawal, craving and other harms. Preliminary data on RMG indicates that between March 27, 2020 to June 30, 2021, 8,939 people were dispensed RMG medications (opioids 58%, stimulants 17.7%, alcohol-withdrawal management medications 24.2%, and benzodiazepines 12.6%). Among this cohort of recipients of RMG medications, 183 died during the study period and only 11 individuals had an active RMG prescription at the time of death.[13] A recent protocol paper outlined the primary (i.e., fatal and non-fatal overdose), secondary (i.e., all-cause mortality, healthcare utilization, continuity of care for other conditions, income, substance use harms) and implementation (i.e., number of people receiving RMG medications, number of prescribers) outcomes that will be used to monitor the impact of this program.[14]

Among individuals in Ontario with OUD who were hospitalized for serious infection between 2013 and 2019, there was a slightly increasing trend of daily dispensed immediate-release HDM in the past 30 days among patients with infective endocarditis (IE) and skin and soft tissue infections (up to 4.3% of people with IE in 2019).[15] However, due to the study design the authors were not able to examine a causal link between injection of immediate-release HDM and infection risk, nor could they determine whether these findings are reflective of shifting prescribing patterns at the population-level or a risk of infections when injecting immediate-release HDM.

A recent Ontario study found that retention on immediate-release HDM was similar to that of methadone. Nearly half of the study cohort receiving a daily dispensation of immediate-release HDM tablets remained on the HDM tables for at least a year following initiation, which is similar to previously reported rates of methadone retention in Ontario.[16] Importantly, mortality was low with less than five deaths while receiving or within seven days of discontinuing the use of immediate-release HDM.

Results from a recent evaluation found that the provision of a safer supply program (HDM tablets, stimulants, benzodiazepines, and beverage-grade alcohol) was associated with low rates of adverse events including overdose, intoxication, and diversion or sharing in a COVID-19 isolation hotel shelter; No residents experienced an overdose during their isolation, and there was a high rate of completion of the mandatory isolation period. The dosage of medications generally fell within the RMG.[17]

Impact of OAT

Twenty-six reviews examined the health and social impacts of OAT.[18-39] The most common OAT medications examined were methadone and buprenorphine. Some studies also examined combination medications including an opioid with naloxone (i.e., buprenorphine/naloxone).

It was consistently reported that methadone and buprenorphine treatment programs greater treatment retention in treatment compared to no medication.[18,19,22,27,31,37] While three reviews reported similar retention rates between methadone and buprenorphine,[25,26,34] one review noted that when compared to methadone, buprenorphine consistently demonstrates significantly lower rates of retention.[19]

All eight reviews that examined the effectiveness of methadone programs on other drug use consistently concluded methadone programs led to a reduced use of drugs from an unregulated supply.[18,22,24,31,36,37,40,41] A similar association was found for buprenorphine treatment, which was associated with a reduction in unregulated opioid use.[19,24,37,41]

Methadone and buprenorphine were effective in improving various health outcomes, including reduced all-cause mortality,[19,29,31,38] and reduced sex- and drug-related HIV risk behaviors (e.g., the exchange of sex for money or drugs).[33] There is a positive association between recent/ever-receiving OAT and receiving HIV testing,[21] and hepatitis C virus testing.[23] It was also noted that buprenorphine can reduce the risk of acquiring sexually transmitted infections,[19,29] medical costs,[19,35] criminal activity,[28,37] as well as being associated with increased ratings on quality of life scales,[27,30] and improved overall mental health symptomology.[32]

OAT was found to be effective in reducing fatal and non-fatal drug overdoses in particular populations, including people experiencing homelessness and people recently released from incarceration.[29,31] One review reported no significant reduction in opioid overdose among methadone patients.[18] However, this may be explained by the low total number of overdose events and a lack of a placebo control group with which to compare.[18]

Overall, it was reported that adequate doses (i.e., higher rather lower doses) of methadone and buprenorphine predicted better effectiveness,[20,24] and supervised treatment found no benefit over unsupervised treatment with respect to retention in treatment, opioid use, mortality reduction, nor adverse drug events.[39]

Impact of iOAT

Seven reviews examined the health and social impacts of iOAT.[18,29,32,42-45] The two main iOAT medications examined were injectable diacetylmorphine (DAM) and injectable HDM. However, one review noted that further research on injectable HDM is needed to better understand this type of treatment.[43]

Overall, injectable DAM and HDM is effective for individuals with OUD who have not had a satisfactory response to standard treatment.[43] Across the literature reviewed, a positive association was found between DAM and greater retention in treatment,[18,42,43] as well as reductions in unregulated drug use.[18,29,42,43] Other notable outcomes of DAM were the reduction in criminal activity,[42,43] improvement with respect to emotional wellbeing (i.e., anxiety, anger, emotional excitement),[42] improvement in overall mental health symptomology,[32] and fewer cravings for other drugs (i.e., illicit heroin).[42]

Comparing OAT and iOAT

When compared to methadone or other treatments, patients prescribed injectable DAM were found to have a greater retention in treatment, reduction in the use of other drugs, reduction in criminal activities, and fewer criminal convictions and incarceration.[42,43] There was no statistically significant difference in mortality between treatments.[42]

Results from economic evaluations, which consider a lifetime time horizon and societal perspective, found that both DAM and HDM provided more benefits than methadone and at lower cost for individuals who previously used other treatment options.[42] Network meta-analyses showed that buprenorphine, DAM, and methadone were superior to waitlist/placebo in improving overall mental health symptomatology.[32] DAM also led to greater improvements to overall mental health symptomatology and psychiatric status improved more, when compared to methadone.[32]

When compared to methadone, DAM was associated with more overdose events,[18] and a greater number of adverse events (i.e., reactions).[18,42,43] However, authors have noted that this should not discourage use of such medications in individuals with refractory OUD,[18] and that adverse events can be managed in a supervised setting.[43]

Jurisdictional Scan

This section summarizes the findings from the jurisdictional scan, which aimed to document safer supply programs that are currently being implemented as well as position statements, plans, and guidance documents on safer supply models published by government and non-government associations.

Web searches were conducted in international government and public health databases and websites, however, the search only identified programs implemented in Canada. This section will summarize programs and models implemented in Canada, followed by a summary of position statements, plans and guidance. All safer supply models/programs identified through this scan were comprehensive, stand-alone prescriber-based safer supply. There is only one example of guidance from BC pertaining to a non-prescriber based safer supply model, “heroin compassion clubs”.

The information in this section is representative of documents that were retrievable through this search. There may be safer supply programs operating in Canada for which we did not identify publicly available information, which would therefore not summarized below. For a full list of the programs summarized below, as well as a full list of safer supply programs funded under Health Canada’s SUAP see Appendix C.

Safer Supply Models and Programs Implemented in Canada

LONDON INTER-COMMUNITY HEALTH CENTRE SAFER OPIOID SUPPLY PROGRAM (LONDON, ON)

Program Description

- This model creates stability for clients and supports their health and wellness. Social determinants of health are assessed with a care coordinator to provide other supports (i.e., housing, counseling). In addition, a peer advisory committee and peer mentorship are key elements of this program.[46]

Goals/Objectives

- To replace toxic supply, provide stability to clients, based on principles of harm reduction.[46]

Eligibility

- Regular opioid use over the last year, long term intravenous drug use, complications related to injection drug use (e.g., infections, abscess, HIV), high-risk of death without substitution therapy, capacity to consent, disengagement from health care and social services.[46] Participants in this safer supply program are people who have found that OAT does not work for them and who have injected opioids for many years.[47]

Type of Medication/Drug

- Oral immediate-release HDM tablets (an average of 116 milligrams per person per day) with or without daily observed SROM (an average of 300 milligrams per person per day).[11,48] For those receiving HDM tablets, most receive daily doses with a select number of participants receiving weekly take-home doses.[11]

- Unsupervised doses of HDM, people can pick up their doses daily and use them wherever they choose.[46] SROM doses are supervised.

Setting

- Weekly appointments at the community health centre with a physician to pick up prescription and provide urine samples.[46]

Evaluation, Monitoring and/or Reported Impacts

- Over 100 high-risk individuals reached from 2016-2019.[11] Between 2016 and 2019, among 118 program participants, there was a 90% retention rate and 0 fatal overdoses.[47] In this four-year period other positive outcomes include: increased engagement in primary care, increased engagement in hepatitis C testing and treatment, all participants with HIV were engaged in care and 90% had an undetectable viral load, reduction in homelessness from 62% to 38% of participants, reduction in survival sex work from 68% to 20% of participants, and a reduction in criminal activity to pay for drugs from 48% to 12% of participants.[47,48]

- A mixed methods evaluation was conducted of the program from 2020 to 2021. Between April 1, 2020 and September 30, 2021, there have been a total of 20,323 health care encounters by SOS clients with health care team (LIHC physicians, nurse practitioners and nurses), and 2,065 encounters with the social care team (system navigators, outreach workers and care facilitators). [49]

- Program benefits identified through the recent mixed methods evaluation include: reductions in fentanyl use and other drugs from an unregulated supply, reductions in overdose and overdose risk, increased access to health and social services, reduced emergency department visits and hospitalizations, increased feelings of safety, decreased contact with police, and improved relationships with friends and family members. [49]

DOWNTOWN EAST COLLABORATIVE SAFE OPIOID SUPPLY PROGRAM (TORONTO, ON)

Program Description

- Provides individuals who have OUD with a reliable pharmaceutical opioid of known quality and strength as an alternative to drugs found in the toxic street supply.[50,51]

Goals/Objectives

- To reduce risks of overdose and other harms stemming from the toxic drug supply. Connecting individuals to wrap around health and social services.[50,51]

Eligibility

- Services provided to people who use opioids daily with medical complications and lived experience with structural factors that lead to a high risk of overdose (such as people experiencing homelessness; Black, Indigenous, and People of Colour (BIPOC); or lesbian, gay, bisexual, transgender and queer (LGBTQ+) identity).[52]

Type of Medication/Drug

- Eight milligram HDM tablets. The number of tablets prescribed matches an individual's tolerance levels.[52]

- Unsupervised HDM doses; tablets can be supplied to a client who can take them away and use them without observation.

Setting

- Clients regularly meet with a nurse practitioner for assessment and prescription renewal. Case manager and a registered nurse provide access to harm reduction supplies and education, grief/trauma counselling, and access or referrals including: testing, housing, treatment and immediate health support.[50,51]

Evaluation, Monitoring and/or Reported Impacts

- Evaluation planned by Centre for Drug Policy Evaluation.[53] Evaluation partnership with community healthcare agencies in downtown Toronto. This evaluation aims to uncover the impact of safer opioid supply programs by measuring health, social, and legal outcomes.

KITCHENER-WATERLOO SAFER SUPPLY PROGRAM (KITCHENER-WATERLOO, ON)

Program Description

- Health practitioners prescribe pharmaceutical opioids to clients to replace the illicit and toxic street supply. Team-based, person-centred approach within a community-based model of care.[54,55]

- The program will only be accepting 20 referrals per month at this time. Aim to serve 200 people total over the 26 months of the program.[54,55]

Goals/Objectives

- The program aims to offer stability for clients by providing support around a client's substance use and other key social determinants of health.[54,55]

Eligibility

- This program is offered to high-risk individuals who use unregulated, street-level substances and are at high risk of overdose and overdose related death. Participants must reside in Kitchener-Waterloo.[54,55]

Type of Medication/Drug

- Type not publicly reported. Whether doses are supervised/unsupervised is also not publicly reported.

Setting

- Inner City Health Alliance, the Working Centre, and Sanguen Health Centre. Participants will be expected to attend weekly appointments with their doctor/nurse practitioner, submit weekly urine samples, and pick up their medication as directed at their specified pharmacy.[54,55]

Evaluation, Monitoring and/or Reported Impacts

- Not reported.

PETERBOROUGH SAFER SUPPLY PROGRAM (PETERBOROUGH, ON)

Program Description

- Led by the Peterborough 360 Degree Nurse Practitioner-Led Clinic, the initiative will pilot the use of a nurse practitioner to deliver safer supply to 10 patients in Peterborough. The project will provide evidence and guidance on how to expand safer supply programs to smaller communities and best meet their unique needs. This initiative will also connect patients with essential health and social services, including treatment, which may be more difficult to access during the COVID-19 pandemic.[56,57]

Goals/Objectives

- To increase the options people who use drugs have to treatment. It offers the opportunity to engage clients in a new, innovative, and positive manner, many of whom may not been connected to health care or any other services.[56,57]

Eligibility

- To be confirmed in year two of the project, in 2022. The program is a 27-month pilot funded through Health Canada.[56,57]

Type of Medication/Drug

- Type not publicly reported. Whether doses are supervised/unsupervised is also not publicly reported.

Setting

- Nurse-led clinic.

Evaluation, Monitoring and/or Reported Impacts

- Program will be piloted with 20 participants in the second year of the program (2022-2023).[56,57]

MYSAFE SOCIETY'S KIOSK MACHINES (VANCOUVER AND VICTORIA, BC; LONDON, ON; DARTMOUTH, NS)

Program Description

- MySafe is an automated kiosk which provides patients with a safer supply of HDM, a safer pharmaceutical alternative to fentanyl.[58,59] MySafe uses a biometric scanner (to recognize the unique vein pattern of an individual's hand) and can hold five days-worth of drugs for up to 48 participants.[11]

Goals/Objectives

- To provide patients with a safer supply of HDM, a safer pharmaceutical alternative to fentanyl.[58,59] Perhaps most importantly the machines allow patients to access drugs without interacting with another person, creating a space that is free of stigma and judgment.[60]

Eligibility

- Selected participants will undergo a full medical and social assessment, which includes current drug use patterns and their risk of overdose.[58,59]

Type of Medication/Drug

- A physician will prescribe HDM tablets that will be prepared by a selected pharmacy and pre-packaged to fit into the MySafe machine.[59,61]

- Kiosks dispense HDM tablets up to four times per day.[11] Unsupervised doses.

Setting

- Primary location is in the Downtown Eastside of Vancouver.[11] MySafe machines will be set up in three additional cities: Dartmouth, Nova Scotia; London, Ontario; and Victoria, BC.[60]

Evaluation, Monitoring and/or Reported Impacts

- Not publicly reported.

SAFER ALTERNATIVE FOR EMERGENCY RESPONSE – "SAFER INITIATIVE" (VICTORIA, BC)

Program Description

- The Safer Alternative for Emergency Response Initiative ("SAFER Initiative") will provide a flexible and low-barrier safer supply of pharmaceutical-grade opioids and stimulants to those most at risk of overdose death. Funded via SUAP.[62] SAFER has also expanded to provide a fentanyl patch program to its clients.[63]
- As a comprehensive model to support people living with substance use, the SAFER initiative offers more than prescriptions for drugs. The service also includes delivering safer supply directly to some participants for whom accessing a pharmacy may be a barrier to access.[64]
- The project also helps people navigate bureaucratic systems that are often difficult but necessary in order to get supports like housing or reconnect with their physicians.[64] Wrap-around supports for housing, employment and other health needs will be integrated into the clinic.[65]
- The project will hire outreach workers with lived experience in the unhoused community, which makes it stand out from existing programs.[64]

Goals/Objectives

- To affirm the lives of people who use drugs by providing safer, pharmaceutical alternatives to the highly contaminated unregulated toxic drug supply. The SAFER initiative is grounded in a harm reduction approach, combined with access to prescription medications.[62]

Eligibility

- Not specified, however, media reports suggest people who use a variety of substances are eligible.[65]
- The Fentanyl patch program is intended to meet the needs of people who use illegal opioids daily (intravenous, smoke, or insufflation/nasal), who have a high tolerance to opioids, and chronic pain.[63]

Type of Medication/Drug

- HDM tablets are the most commonly prescribed medication in this program. For those whom HDM does not help, injectable buprenorphine, and methadone are available to program participants.[65]
- Oxycodone immediate-release was also added as an alternative to HDM. Participants reported preference for oxycodone and having the agency to choose is consistent with core harm reduction principles and findings of the service user design.[62]
- SAFER expanded to also include fentanyl products: fentanyl tablets (sub-lingual), sufentanil (intravenous or sub-lingual), and a transdermal fentanyl patch program. The fentanyl patch is applied by the SAFER nurse according to a three times weekly schedule (Monday, Wednesday, Friday), with additional protocol guidance for missed doses.[63]

- Whether doses are supervised/unsupervised is also not publicly reported.

Setting

- SAFER is a collaboration between AIDS Vancouver Island (AVI) and SOLID outreach. Evaluation is being conducted by the Canadian Institute for Substance Use Research and the University of British Columbia's Co/Lab.[63]

Evaluation, Monitoring and/or Reported Impacts.

- As of February 4, 2021, SAFER was working with 89 people experiencing homelessness in Victoria, and was operating at full capacity with a waitlist.[64]

- Preliminary program data has confirmed that SAFER reduces the harms of the toxic unregulated drug supply and that participants are experiencing positive impacts to their physical and mental health. Fifty-three percent (29 men; 9 women) of SAFER participants reported at least one positive social or health outcome enabled by SAFER support. Fifty-four percent (32 men; 7 women) of SAFER participants reported that they had been able to reduce potential harms from substance use.[62]

- People accessing safer supply through the program have reported reducing their reliance on street fentanyl, reducing overall use of one or more substances. They also reported having fewer cravings and withdrawal symptoms, and less physical impacts of drug use, such as abscesses.[62]

COOL AID COMMUNITY HEALTH CENTRE (CACHC): RISK MITIGATION GUIDANCE (RMG) PRECRIPTION PROGRAM (VICTORIA, BC)

Program Description

- Multiple interventions are offered to the patient population that the CACHC serves including: new supportive housing options for many patients, risk mitigation prescribing (RMG), outreach services, embedded health care services in supportive housing with increased access to primary care and addiction medicine services.[66]

- The CACHC clinical team began offering RMG prescriptions to clients March 27, 2020. The Provincial RMG in BC permits prescribed medication alternatives to the unregulated drug supply to support those at risk of overdose, withdrawal, craving and other harms. Within the constraints of established standards of care and client needs, the Provincial RMG guided the prescribing practices of CACHC physicians.

Goals/Objectives

- The overall goal of RMG is to respond to the dual public health emergencies of the COVID-19 pandemic and overdose rates. This guidance was developed to assist health care providers to support clients to mitigate competing risks and enable social distancing and self-isolation measures, where possible, to reduce and prevent the spread of COVID-19.[66]

Eligibility

- RMG prescribing was made available to all clients with active, recent, and/or ongoing substance use disorders who are at risk of overdose, death, and harms associated with the use of substances from an unregulated supply, specifically opioids, alcohol, benzodiazepines, stimulants and nicotine.[66]

- Individuals were not eligible if they were already stable on OAT, were connected with another OAT provider or whose medications are prescribed by a psychiatrist (unless consent has been obtained from the client's OAT prescriber or psychiatrist).

Type of Medication or Drug

- Opioids (HDM 8mg oral tablets starting at 4-6 tablets per day), stimulants (up to 60 mg per day), benzodiazepines.[66] Efforts are made by CACHC prescribers to ensure that dose and medication were decided on collaboratively with each individual, in a shared decision-making process.

Setting

- The RMG guidance was implemented at the CACHC in late March 2020 by the clinical team at the CACHC and at several COVID-19 Sheltering Sites established by the province.

- For some clients, clinicians were able to identify local pharmacies that have delivery services and the capacity to transport medication to the client's place of residence.[66]

- **Evaluation, Monitoring and/or Reported Impacts**

  - Between March and August 2020, a chart review and interviews with staff and community researchers were conducted to explore the early implementation and impacts of RMG at the CACHC.[66]

  - A significant number of clients (53.4%, n=167/313) were previously under the care of CACHC clinicians while 94 clients (28.3%) were new to CACHC or had rarely or not been seen for years (13.4%, n=42/313).[66]

  - The majority of clients initiated RMG in April (18.8%, n=59/313), May (31.9%, n=100/313) and June (20.8%, n=65/313), slowing down by July (15.0%, n=47/313) and August 2020 (13.4%, n=42/313), the end of the available analyses. Just over half (53.7%, n=168/313) continued with RMG over the study period, while 139 (44.4%) have stopped. 136 clients (43.5%) were dispensed RMG without interruption, receiving from pharmacy at least 4/7 doses per week.[66]

  - Ongoing connection to health care was demonstrated to be important to RMG continued use in several ways. Clients who were already clients of the CACHC were more likely to continue on RMG (p=0.015), and having a prescription for mental health medication was also significant for both 60 days and ongoing continuance (p=0.001). Clients living with HCV antibodies were also more likely to use RMG for 60 days (P=0.005) and to continue on RMG (p=0.002).[66]

  - For clients prescribed opioid RMG, higher maximum daily doses of hydromorphone were more likely to stay on for 60 days (p=0.001) or to continue (p<0.001).[66]

ISLAND HEALTH/COWICHAN VALLEY SAFER SUPPLY PROGRAM (DUNCAN, BC)

Program Description

- The innovative project will provide pharmaceutical-grade medication as an alternative to the toxic street drug supply for people in Cowichan Valley who have not responded to other forms of treatment for OUD.[67,68]
- The patients will also receive critical wrap-around services, such as peer support, medical care, mental health support and a personal support plan.[67]

Goals/Objectives

- Goal is to provide pharmaceutical-grade medications as an alternative to the toxic drug supply. Island Health wanted to prioritize a smaller urban setting so that this pilot project would increase understanding of how a service like this might meet the needs of individuals in a smaller community.[67]

Eligibility

- Tablet iOAT (TiOAT) is prioritized for people who have not had success with other treatment services, such as OAT, and those deemed appropriate by the prescriber's clinical assessment. Up to 25 people can participate in this program. People will be screened for suitability and can be identified by local doctors and health-care providers, service providers and through self-referral.[67]

Type of Medication/Drug

- TiOAT will be provided as one or two eight-milligram HDM tablets up to five times each day.[67]
- All consumption will take place in a supervised setting.[67]

Setting

- Cowichan Valley Wellness and Recovery Centre.[67]

Evaluation, Monitoring and/or Reported Impacts

- This pilot will be evaluated by the BC Centre for Substance Use (BCCSU). Results not publicly reported.[67]

MOLSON OVERDOSE PREVENTION SITE SAFE SUPPLY PROGRAM (VANCOUVER, BC)

Program Description

- The Molson Overdose Prevention Site (OPS) in Vancouver co-locates a supervised consumption service, a drug-checking service, a service for iOAT and a HDM tablet distribution program. Factors that facilitate engagement in the safe supply program include its low-threshold model, co-location within the OPS and the flexibility and choice that the program offers to participants.[69]

Goals/Objectives

- Provide a regulated alternative for people at high risk of overdose from the fentanyl-contaminated, illicit opioid supply.[69] Staff monitor the injections of opioids and stimulants, recognize and reverse overdoses, and provide support and coordination of resources such as housing, healthcare and safe supply treatment to participants.

Eligibility

- Participants of the safe supply program are people who are not currently involved or interested in drug treatment approaches.[69]

Type of Medication/Drug

- Participants can receive up to two eight-milligram HDM tablets at a time and can come back for additional dosages up to five times per day, with a minimum one-hour waiting period in between.[69]

- Participants are supervised while consuming the tablets onsite (whether they take them orally, snort them or inject them).[69]

Setting

- HDM tablets are dispensed to program participants by nurses through a sliding window that connects the OPS to a nursing station on the other side. Participants are enrolled in the program through the clinic's primary care physicians, who also visit the OPS twice per week.[69]

- Delivered by Portland Hotel Society (PHS) Community Services Society in conjunction with Vancouver Coastal Health and British Columbia Centre on Substance Use.[62]

Evaluation, Monitoring and/or Reported Impacts

- A study that interviewed 42 program participants identified facilitators and barriers to program engagement.[69] Key facilitators include regular access to opioids and flexibility and choice in how to use the program (e.g., oral, intranasal, injection), which enables participants to exert more control over their drug use. Participants reported that the central, low-threshold, safe space where the program is hosted as another facilitator.

- Barriers included limited hours of operation, long wait times and hourly dose limits. There were also complaints about lower potency and difficulty injecting a generic brand of the HDM tablets that was used for a period when the brand-name HDM tablets were unavailable.[69]

- A recent evaluation study found that from September 2017 to August 2019, there were 128,944 visits to the Molson OPS, and staff responded to and reversed 770 overdoses. No overdose deaths occurred on-site.[70]

YUKON SAFE SUPPLY PROGRAM (YUKON TERRITORY)

Program Description

- Doctors will be able to assess individuals and if appropriate, prescribe them HDM.[71]

Goals/Objectives

- To remove the risk of overdose and uncertainty about the drugs people are taking.[71]

Eligibility

- Not reported.

Type of Medication/Drug

- HDM tablets.[71] Whether doses are supervised/unsupervised is not publicly reported.

Setting

- The clinic operates by referral, but drop-in services are also available in the Opioid Treatment Services Program.[71]

Evaluation, Monitoring and/or Reported Impacts

- Not reported.

Guidance, plans or positions on safer supply from governments and non-government organizations

This section provides information on eight sources with guidance, plans or positions on safer supply in the Canadian context. Information on the Interim Risk Mitigation Guidance (RMG) in BC is included in the evidence section above and not repeated in this section.[13,14]

SAFE SUPPLY CONCEPT DOCUMENT: CANADIAN ASSOCIATION OF PEOPLE WHO USE DRUGS (CAPUD)

Overview

- The purpose of safe supply is to provide a safer way for people to access what they are seeking in street drugs.[5]

Objectives

- Respect that people use drugs to provide euphoria, not just maintenance. If safe supply doses are too low, people will continue using street fentanyl. Models that allow for take homes doses would increase retention and should be considered if the opportunity permits.

Policy or Program Directions

- Safe supply programs should be developed in partnership with people who use drugs. The document also states that withholding drugs from someone in a program as punishment without a process that addresses the dynamics of the power imbalance between staff and patient is unethical.

Eligibility

- Not reported.

Type of Medication/Drug

- Regarding type of medication offered in safer supply programs, the medications provided should be the drugs that clients are seeking out.

Implementation or Monitoring Plan

- Not reported.

TOOLKIT FOR SUBSTANCE USE AND ADDICTIONS PROGRAM APPLICANTS: INCREASING ACCESS TO PHARMACEUTICAL-GRADE MEDICATIONS

Overview

- Health Canada launched a call for pilot projects in 2019, and this document provides guidance to applicants regarding the current evidence base for safer supply, considerations for establishing a safer supply program (i.e., service delivery design, processes for procuring drugs to dispense, operational/clinical protocols), guidance for designing a low-threshold program that addresses the social determinants of health, and approaches to evaluating safer supply pilot projects.[72]

Objectives

- Pilot projects that receive funding will provide prescription opioids to treat substance use disorder, with appropriate prescriber oversight, through models that provide more flexibility for clients (e.g., less restrictive eligibility requirements; more medication options).

- Safer supply models described in this guidance aim to: Reduce risks of overdose and harms; increase engagement with health and social services; provide primary care; reduce engagement in criminal activity; and reduce reliance on the illegal drug market. All models aim to engage with highly marginalized/at risk people who typically do not access health and social services.

Policy or Program Directions

- The document provides a review of evidence on safer supply, guidance for establishing safer supply programs, approaches to evaluation, and guidance on engaging with community stakeholders.

- The three key models of safer supply described in the guidance are: traditional (i.e., embedded in addiction treatment system, contingency management used), enhanced (i.e., similar to traditional but may offer multiple visits per day and wrap-around support) and flexible (i.e., low threshold, public health- and harm reduction-informed).

Eligibility

- The target populations for each of the three safer supply models described in the guidance vary slightly:
    - Traditional: People with substance use disorder who are seeking treatment.
    - Enhanced: People with substance use disorder, for whom traditional treatment has been unsuccessful.
    - Flexible: People who use illegal substances, whose needs are not met by highly-structured models.

Type of Medication/Drug

- The target populations for each of the three safer supply models described in the guidance vary slightly:
    - Traditional: OAT or iOAT.
    - Enhanced: Adapted iOAT/Tablet iOAT for safer supply. Multiple delivery options include comprehensive/dedicated (i.e., purpose-built clinic), integrated/embedded (i.e., embedded in an existing overdose prevention site), or the pharmacy model. These enhanced programs may also include the prescription of regulated stimulants.
    - Flexible: Daily dispensed; low threshold; self-titrated; observed and unobserved consumption.
- There no guidelines for prescribing stimulants or opioids as a pharmaceutical alternative to the illegal drug supply. Existing OAT and iOAT guidelines provide guidance for supervised/observed safer supply prescribing, including contingency management. In the absence of formal guidelines for prescribing controlled substances for safer supply, prescribers document how they: follow standards of care; use the evidence-base; follow research protocols approved by an ethics board; and/or consult with and follow practices of their peers.

Implementation or Monitoring Plan

- Process evaluations (also known and formative or implementation evaluations) are useful for assessing project operations and determining if the project is operating as intended. This is critical for safer supply projects, where evidence is needed to help ensure that the benefits outweigh the risks of harm or actual harms. Evaluations should include an expert peer-review committee and should draw on participatory and community-based research approaches.
- Primary outcomes of interest are connected to the goals of safer supply: to reduce illegal drug use and to reduce adverse events related to illegal drug use (including death, overdoses, and other health harms, as well as criminalization, involvement in petty crime, and sex work). Other outcomes of interest may include: attachment to primary care, connecting with additional health and social services, engagement in programming, reduced hospitalizations, reduced interactions with the criminal justice system.

SAFER OPIOID SUPPORT PROGRAMS: A HARM REDUCTION-INFORMED GUIDING DOCUMENT FOR PRIMARY CARE TEAMS

Overview

- The goal of the Safer Supply Opioid (SOS) program is to reduce the risk of overdose and overdose deaths by developing a community-based, harm reduction focused safer supply program.[8]

Objectives

- **Primary:** (a) To quickly respond to the ongoing overdose crisis by implementing and evaluating a community-based safer supply model that can be delivered by primary care providers with minimal resources. (b) To reduce the risk of overdose and overdose death by providing adults exposed to the contaminated illicit drug supply with low-barrier access to a safer drug supply.

- **Secondary:** (a) To engage participants who face barriers to accessing traditional models of healthcare, harm reduction and case management services. (b) To reduce harms associated with illegal activities required to access drugs though the street market. (c) To generate evidence of the safety and effectiveness of low barrier prescribing of HDM immediate release tablets for oral or inhalation or intravenous use with and without SROM.

Policy or Program Directions

- SOS is a low-barrier model intended to reach people who are alienated from other models of health care delivery as a result of structural barriers that prevent those impacted by homelessness, poverty, mental health issues, racism and stigma from accessing needed care. It is administered by a network of primary care clinicians and delivered out of Community Health Centres and primary care clinics.

Eligibility

- DSM-5 defined OUD, and opioid use consistent with OUD during the past 12 months.

- Self-reported regular illicit toxic drug use.

- Previous unsuccessful methadone, buprenorphine or SROM only or currently not interested in attempting methadone, buprenorphine, or SROM only.

- Urine drug screen positive for opioid(s) to confirm recent opioid use, especially heroin, fentanyl analogues, carfentanil or other substances in toxic street supply.

- Have the capacity to consent to ensure an understanding of risks and benefits.

Type of Medication/Drug

- For clients starting heroin/fentanyl/fentanyl analogues/carfentanil, the initiation protocol is as follows: HDM eight-milligram tablets (six to eight tablets) daily dispensed and daily observed SROM 30-60 milligram tablets should be offered. Titration protocols are also described in the guidance.

- For clients using a known dose amount of opioids: HDM, codeine, oxycodone, fentanyl should be offered.

Implementation or Monitoring Plan

Indicators of success include:

- Decreased use of street drugs.
- Decreased money spent on street drugs.
- Increased access to primary care.
- Decreased anxiety and an increased sense of control.
- Improved health status.
- Decreased withdrawal symptoms.
- Decreased overdose rates.

SAFE SUPPLY POLICY DIRECTION: GOVERNMENT OF BRITISH COLUMBIA

Overview

- Provide a public-health oriented, health system-level harm reduction intervention to separate people from the toxic drug supply by providing access to pharmaceutical grade alternatives.[73]

Objectives

- Decrease illicit drug use and injuries or death related to drug toxicity, improve equitable access to safe supply, ensure safe supply is provided in a culturally safe manner, deliver services in a manner that respects dignity, and mitigate potential harms of prescribed safe supply.

Policy or Program Directions

- Prescribers must participate in the evaluation/monitoring. Health authorities must support uptake of this policy through the development of programmatic or other clinical settings that can provide prescribed safer supply.
- Clients will not be required to engage in OAT or other treatment modalities if they do not want to, or are not ready.

Eligibility

- People who use substances can be prescribed a range of pharmaceutical grade alternatives to the toxic drug supply.

Type of Medication/Drug

- Initial implementation of this policy will focus on ensuring access to a priority list of opioids. A process for supporting the use of stimulants beyond those already prescribed according to existing guidance will be developed at a later date.

Implementation or Monitoring Plan

- Ministries of Health and Mental Health and Addictions, in collaboration with the Office of the Provincial Health Officer and key research and health system partners, will ensure ongoing monitoring and evaluation of access to prescribed safer supply including tracking (a) intended and unintended impacts (benefits and harms), (b) impact on health outcomes, and (c) challenges and benefits of implementation.

HEROIN COMPASSION CLUBS: BRITISH COLUMBIA CENTRE FOR SUBSTANCE USE

Overview

- Members-only cooperative model through which heroin could be legally obtained from a pharmaceutical manufacturer and securely stored in much the same way as it is already obtained and stored for heroin prescription programs, while also undertaking scientific evaluation.[7]

Objectives

- Reduce the public health consequences stemming from the poisoning of the illicit drug supply while also disrupting organized crime concerns, including the financial driver of the fentanyl–money laundering–real estate cycle.

Policy or Program Directions

- BCCSU's report proposes a cooperative approach through which heroin could be restricted to members and legally obtained from a pharmaceutical manufacturer and securely stored in much the same way as it is already obtained and stored for heroin prescription programs, while also undertaking scientific evaluation to assess impacts.

Eligibility

- People who use drugs would be involved in the compassion clubs, with no set eligibility criteria. Additionally, people who use drugs and people with lived experience should also be involved in the board aspect of this model.

Type of Medication/Drug

- Powder DAM (a form to prevent counterfeit pills) obtained from a pharmaceutical supplier through federal government legal means with secure storage and handling (i.e., pharmacy model).

Implementation or Monitoring Plan

- To ensure that there are no unintended consequences of the cooperatives model, a robust evaluation strategy should be established and implemented in parallel with the model.

INNER CITY HEALTH ASSOCIATES (ICHA): RISK MITIGATION/SAFER OPIOID SUPPLY IN SHELTER HOTELS

Overview

- This guidance aims to adapt the work of community safer opioid supply prescribers to create a living safer supply protocol document for use within the short- and medium-term hotel-based shelters (ESSP) in Toronto.[74]

Objectives

- The guidance is created in response to the City of Toronto experiencing an unprecedented number of overdose and substance use related deaths, a situation that has only worsened during the pandemic requiring urgent action. With fluctuations of COVID-19 case rates and primary care needs, the capacity of individual hotels to initiate and continue safer opioid supply prescribing will vary.

- ICHA offers a framework, however clinicians are encouraged to use clinical judgement in their approach and deviate from ICHA's suggestions as necessary. This document is intended for use conjunction with ICHA's substance use manual including ongoing use of other addiction medicine and harm reduction concepts and medications.

Policy or Program Directions

- The scope of this safer supply program is limited to the period which people are housed in these temporary facilities. This program attempts to leverage the enhanced support available in some shelter hotels accounting for unique staffing constraints, issues with observation and dispensing of medications, and continuity of care. This guidance should be considered a living protocol to be adapted and grown as more services are added to the hotels in question.

- Only the COVID recovery site has the ability to dispense and observe medications on site. Therefore, for the ESSP program the first segment of enrolled clients should be in the low barrier setting. Case-by-case exceptions in which clients are willing to visit local pharmacies more than once per day can be implemented at the provider's discretion.

Eligibility

- Client Qualifications: Daily non-prescribed opioid use leading to withdrawal with cessation, previous trials of OAT and/or not interested in only OAT; OR to support OAT titration for those with high tolerances to opioids.

- A standardized consent document should be discussed with each client that includes the protocols for missed doses, missed follow up etc. Complete cessation of street drug use and stabilization are not requirements of the program.

Type of Medication or Drug

- Initial dosing:

    - For clients whose substance use is known: HDM (2-4 8mg tabs), supervised SROM (100 mg), supervised methadone (10-20mg)

- For clients whose fentanyl use id <1g per day: HDM (6-8 8mg tabs), supervised SROM (200 mg), supervised methadone (30mg)
- For clients whose fentanyl use is >1g per day: HDM (12-14 8mg tabs), supervised SROM (200 mg), supervised methadone (30mg)

- Titration guidance, as well as guidance for recommended limits and missed doses can be found in the ICHA framework.
- All clients are encouraged to use on-site overdose prevention services if available. All SROM and methadone will be daily dispensed and supervised.

Implementation or Monitoring Plan

- Client follow-up: attempt to see clients 2-3 times per week in the first week of enrollment and initiation with a goal to be seen a minimum of once weekly. From week 2 and onwards, clients can be seen weekly until greater stability (either drug use, social or health) has been achieved. Once maintenance is achieved, clients in witch to 2-4 week appointments.

OVERDOSE ACTION PLAN STATUS REPORT 2021: CITY OF TORONTO BOARD OF HEALTH

Overview

- The Toronto Board of Health called for action relevant safer supply initiatives on June 14, 2021.[75] These were reiterated on November 23, 2021.[76] The overall goal relevant to safer supply is to support actions urgently needed to respond to the drug poisoning crisis and reduce overdose deaths in Toronto.

Objectives

- The June 2021 report recognizes the drug poisoning crisis as a public health crisis in the City of Toronto and commits the City to supporting actions that are urgently needed to respond to the crisis and reduce overdose deaths.[75]

Policy or Program Directions

- The June 2021 report includes several calls to action for the Federal and Provincial Governments.[75]
- With respect to providing a safer supply, the Federal Ministry of Health is called upon to support the domestic production of DAM to increase the accessibility of this medication and build on previous support provided that promotes the scale up of safer supply programs to meet the needs of people at high risk of overdose in Toronto.[75]
- There are also several calls to action for the Provincial Minister of Health. Related to safer supply, the City requested the Ontario Minister of Health support and fund the implementation of a spectrum of safer supply options, including listing iOAT medication on the Ontario Drug Benefit Formulary.[75]

Eligibility

- People at risk of experiencing a drug overdose in Toronto.[75]

Type of Medication/Drug

- The report calls for the domestic production and community access to DAM.[75]

Implementation or Monitoring Plan

- Not reported.

SUBSTANCE REPLACEMENT THERAPY IN THE CONTEXT OF THE COVID-19 PANDEMIC IN QUÉBEC

Overview

- Provide interim clinical guidance to prescribers to help support people who use substances in the context of the COVID-19 pandemic, including pharmaceutical alternatives to opioids, stimulants, cannabis, and alcohol. This guidance draws directly on the BC RMG.[77]

Objectives

- The goal of the guidance document is to mitigate the risks and harms for people who use substances during the COVID-19 pandemic. It aims to establish exceptional measures in response to the context of the COVID-19 pandemic.

Policy or Program Directions

- The guidance takes a harm reduction approach to prevent and reduce risks and harms, and emphasizes dialogue and collaboration with clients as experts in their own consumption.
- The guidance is not to be considered prescriptive. It encourages prescribers to use clinical judgement and adopt an approach that continuously assesses risks and benefits.

Eligibility

- People at risk of COVID-19, have tested positive for COVID-19, are waiting on test results for COVID-19 or may be infected (symptomatic, in self-isolation); history of ongoing psychoactive substance use; and deemed high-risk of substance use-related harms including withdrawal symptoms, craving, overdose, or other harms.
- Assessments for eligibility must include: assessment of active substance use; history and past treatments for substance use; withdrawal complications; history of overdose, naloxone use, emergency room visits and recent hospitalizations; comorbidities; use of prescriptions drugs; and current access to a prescriber.

Type of Medication/Drug

- For people for whom OAT is not an option or continue to use other opioid during OAT: HDM (4 or 8mg tablets starting at 4 tablets per day); HDM Contin (6-12 mg daily).

- Stimulants (short-acting methylphenidate tablets up to 100mg per day; dextroamphetamine max up to 40mg per day), benzodiazepines (long-acting formulations based on self-reported use).

Implementation or Monitoring Plan

- Prescriber to follow-up regularly to monitor and assess stability.

Discussion

There is little published literature on the outcomes of safer supply programs. However, evidence is forthcoming as these programs are newly implemented in Canada with many evaluation studies ongoing with results expected in 2022-23. Qualitative research from BC indicates that HDM distribution programs are effective in reducing the use of drugs from the unregulated street supply and improving participants' health and well-being.[12] Early evidence on the BC's safer supply initiative implemented in response to the COVID-19 pandemic (known as RMG) has found low mortality estimates among participants.[13,14] Similarly, a recent analysis from Ontario found that immediate-release HDM had similar discontinuation rates after one year as methadone, with low mortality among participants.[16]

There is an established body of review-level evidence demonstrating the effectiveness of OAT and iOAT. Common indicators of effectiveness of OAT include decreased risk of mortality and non-fatal overdose, decreased use of drugs from an unregulated supply, as well as various health (i.e., access to HCV or HIV testing and treatment) and social outcomes (e.g., engagement in criminal activity). Indicators of effectiveness or impact of iOAT similarly included treatment retention, health outcomes (i.e., improved emotional well-being) and social outcomes (e.g., reduced risk of incarceration).

The jurisdictional scan identified ten safer supply programs funded to operate in Canada. The most common type of drug or medication provided to participants is HDM tablets, with some programs also offering oxycodone (i.e., SAFER initiative), methadone (i.e., SAFER initiative) and SROM (i.e., London Inter-Community Health Centre). Some programs operated out of overdose prevention sites (i.e., Molson OPS) or community health centres/clinics (i.e., London Inter-Community Health Centre, Peterborough nurse-led clinic), and dispensed medications at pharmacies of the client's choosing. Programs may also offer a range of OAT medications, and medication options may vary by program and difference between provincial drug formularies.

There was limited information regarding the supervision of doses in the safer supply programs identified in the jurisdictional scan. Only four programs reported whether HDM doses were supervised or unsupervised. Two programs in BC (i.e., Island Health and Molson Overdose Prevention Site) provide supervised HDM doses and two programs in Ontario (i.e., London Inter-Community Health Centre and Downtown East Collaborative in Toronto) provide unsupervised doses of HDM. In addition, the London Inter-Community Health Centre reports that their program offers SROM doses (supervised at the pharmacy). One innovative model ("MySafe") involved dispensing HDM tablets through kiosks supplied by pharmacists in select locations in Ontario, Nova Scotia and BC. This model offered more flexibility to clients, who can exercise increased autonomy over when to retrieve their HDM tablets.

A key element of safer supply programs is the provision of wrap-around supports to clients. A majority of the programs included in this review aimed to offer clients health and social supports (e.g., health care, income support, and housing), in addition to the primary goal of providing access to a pharmaceutical supply of drugs. Early evaluations from these programs have observed that clients have increased connections to wrap-around supports including access to HCV testing and treatment, as well

as reduction in experiences of homelessness, reduction in the use of drugs from an unregulated supply, and a reduction in criminal activity.[47,48]

Early outcomes in the grey literature on safer supply consist of findings from monitoring provincial-level administrative data in Ontario and BC, and ad hoc reporting from non-governmental organizations. These findings suggest that safer supply programs observe few fatal overdoses (no reported fatal overdoses in London Inter-Community Health Centre's program over a four year period, and no reported on-site fatal overdoses at Molson OPS),[47] a decreased reliance on unregulated supply,[62] and increased engagement health care and social supports.[47,48] Clients have also reported more stable mental health, better sleep patterns, reconnection with family members,[64] and the ability to exert control over their drug use.[69] There are ongoing evaluations of safer supply programs in Ontario and BC, with results expected in 2022.

Across Canada, there are several documents providing practical guidance as well as policy and program directions for safer supply initiatives. Recent examples include guidance for primary care teams on implementing safer opioid supply programs,[8] guidance for the implementation of heroin compassion clubs,[7] and safer supply policy and program directions for municipal, provincial and federal governments.[5,73,75] These sources provide future directions for the design and implementation of safer supply programs in Canada to provide people who use drugs a more flexible model of support than existing treatment models.

Limitations

External subject matter experts reviewed this document to ensure key elements of the current evidence base were not missed. However, this document was not developed in consultation with people who use drugs and/or people with lived experience accessing safer supply or OAT/iOAT. Thus, important considerations, context and information on program effectiveness may have been missed.

In some cases, the details of safer supply programs summarized in the jurisdictional were not available in the published grey literature (i.e., types of medication provided, supervised vs. unsupervised, preliminary outcomes or evaluation plans). A key limitation is that our methods to gather information for the jurisdictional scan did not involve reaching out to program administrators to gather information that was not publicly available. Future projects aiming to report on the program details and outcomes of safer supply models in Canada may consider reaching out to program administrators to gather this information.

Conclusion

There are increasing calls to action at the local, provincial and national level in Canada regarding safer supply initiatives. There is limited published literature on the effectiveness of safer supply programs compared to the well-established evidence base on the effectiveness of OAT and iOAT, which was the expectation as safer supply programs are new and evaluation is underway. The literature on OAT and iOAT may be informative for planning safer supply programs; however, the primary goal of OAT and iOAT (i.e., treatment of OUD) differs from that of safer supply (i.e., to provide people with access to a consistent, non-toxic drug supply). Early evidence from Ontario and BC suggests that safer supply may be a viable option for individuals at high risk of overdose who do not tolerate, use, or desire available treatment models as well as for those who use drugs from an unregulated supply in addition to OAT. Further research is underway in Canada to support evidence-informed decision-making on safer supply options, doses, and delivery methods.

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Appendix A: Summary of Included Articles

Table A1 provides a summary of five sources referred by a subject matter expert, all of which cover safer supply outcome measures or reports of impact of safer supply programs in Canada. Table A2 provides a summary of each included review-level article on OAT and iOAT, identified through the PHO Library Search. The details of the articles that are summarized below are: the model or program examined (including the drugs prescribed in treatment), study population, indicators or metrics used to examine effectiveness, and findings.

Table A1. Summary of included records on safer supply, referred by subject matter expert (n=6)

Article citation	Model/program	Study population	Indicators/metrics	Findings
Ivsins A, Boyd J., Mayer S. et al. "It's Helped Me a Lot, Just Like to Stay Alive": a Qualitative Analysis of Outcomes of a Novel Hydromorphone Tablet Distribution Program in Vancouver, Canada. J Urban Health; 98: 59–69. 2021. https://doi.org/10.1007/s11524-020-00489-9	HDM distribution program (e.g., hydromorphone distribution and consumption, patient-provider interactions).	Program participants	Reduced use of street drugs, overdose risk, improvements to health and well-being, improvement to pain management, economic improvements	Reduced use of street drugs and overdose risk: decreased use of unregulated drug market which may help to reduce overdose risk. Participants reported the program addressed uncertainty associated with the unregulated market regarding the drug they receive. Improvements to health and well-being: program increased accessed to the program physician and nurses to address health concerns, such as wound care and pain treatment. Program staff also supported participants with connections to other medical services. Some participants described general improvements to their health and well-being (e.g., improved nutrition and sleep). Some participants reported less frequency of injecting drugs, and health improvements as a result. Improvement to pain management: While pain management is not a stated objective of the program, participants who experienced chronic pain emphasized HDM's role in managing their pain.

Article citation	Model/program	Study population	Indicators/metrics	Findings
				Economic improvements: access to hydromorphone through the program meant participants did not have to spend as much money on street-purchased drugs and could instead spend money on other basic needs (e.g., good, cell phone, saving money), Participants also reported not having to engage in criminalized forms of income generation (e.g., sex work, shoplifting).
Nosyk B, Slaunwhite A, Urbanoski K, et al. Evaluation of risk mitigation measures for people with substance use disorders to address the dual public health crises of COVID-19 and overdose in British Columbia: a mixed-method study protocolBMJ Open 2021;11:e048353. doi: 10.1136/bmjopen-2020-048353	Interim Risk Mitigation Guidance (RMG) in BC that permitted prescribing medication alternatives to substances, including opioids, alcohol, stimulants and benzodiazepines, an intervention sometimes referred to as 'safe supply'.	People who use drugs who are engaged in RMG will be part of the proposed study design (via observational study, cross-sectional survey, and qualitative interviews)	Primary outcomes: COVID-19 infection, fatal overdose, non-fatal overdose Secondary outcomes: all-cause mortality, all-cause acute healthcare utilization, treatment retention, continuity of care for chronic medical conditions, uptake of COVID-19 protective measures, substance use and related harms, income source. Implementation outcomes: number of people receiving RMG prescription, number of prescribers writing prescriptions, variation in access by geography and population sub-group, barriers, provider-readiness	N/A

Article citation	Model/program	Study population	Indicators/metrics	Findings
Palis H, Slaunwhite A, Zhao B. Provincial "risk mitigation guidance" for people at risk of overdose during COVID-19 [Internet]. Vancouver, BC: BC Centre for Disease Control; 2021 Oct 19. Available from: https://nexuswebcast.mediasite.com/Mediasite/Showcase/bc-cdc-showcase/Presentation/e3906522f31c4eeca8278faf3b56c9a71d	RMG in BC (see description above).	People who use drugs who are engaged in RMG	Outcome measures presented in this preliminary descriptive analyses: number of persons who were dispensed RMG prescriptions, mortality estimates.	Dispensed RMG prescriptions: 8,939 people were dispensed RMG medications from March 27, 2020 to June 30, 2021 (opioids dispensed to 58%, stimulants dispensed to 17.7%, alcohol-withdrawal management medications dispensed to 24.2%, and benzodiazepines dispensed to 12.6%). A majority of RMG medications are daily dispensations (94.5%). Most persons who received RMG opioid medications were already receiving OAT in the month prior to first RMG. Mortality estimates: Among 8,938 individuals, 183 people died during the study period (mortality rate = 16.3 deaths per 1,000 person-years), and only 11 people had an active RMG prescription at the time of death.
Gomes T, Kitchen SA, Tailor L, et al. Trends in Hospitalizations for Serious Infections Among People With Opioid Use Disorder in Ontario, Canada. J of Addiction Medicine: 2021. doi: 10.1097/ADM.0000000000000928	Daily-dispensed immediate release HDM, and OAT	People with OUD	Study reported the population-adjusted rate of hospitalizations for serious infections annually in Ontario (January 1, 2013 and December 31, 2019), stratified by type of infection and prevalence of prior OAT and HDM prescribing.	Overall, there was a relatively high prevalence of recent OAT that was trending upwards among all hospitalizations for serious infections. Among people with OUD, controlled-release (CR) HDM decreased slightly among all infection types, but only demonstrated a significant trend among people with infective endocarditis (8.3%–4.0%; P ¼ 0.02) and among skin and soft tissue infections (9.0%–5.3%; P < 0.01). In contrast, there was a small, but significant rise in having recently received daily dispensed immediate-release (IR) HDM (P < 0.01) among people with infective endocarditis and skin and soft tissue infections. Despite the increasing trend, only 4.3% of people hospitalized with incident infective endocarditis (13 of 299 hospitalizations) and 3.4% of people hospitalized for

Article citation	Model/program	Study population	Indicators/metrics	Findings
				skin and soft tissue infections (39 of 1155 hospitalizations) had received daily dispensed IR HDM in the past 30 days in 2019. Authors found a declining prevalence of CR HDM dispensing and slightly increased prevalence of daily dispensed immediate-release HDM over the study period. The declining trend in CR HDM could be reflective of changes in clinical practice in response to the evolving evidence of an association between CR HDM and incident infective endocarditis. Alternatively, the trend might be a result of shifts in clinical practice away from prescribing controlled-release HDM more generally. The findings related to recent HDM dispensing require further discussion. This study was not designed to identify a causal link between injection of immediate-release HDM and infection risk, therefore authors cannot determine whether these findings are reflective of shifting prescribing patterns at the population-level and changing treatment and harm reduction patterns among high risk individuals at the community level, or a risk of infections when injecting immediate-release HDM. Findings corroborated previous research in Canada that has demonstrated a high degree of ongoing injection drug use among people engaged in OAT, reinforcing this as an opportunity for clinicians to support access to harm reduction tools as a component of the treatment program.

Article citation	Model/program	Study population	Indicators/metrics	Findings
Young S, Kolla G, Campbell T, et al. Trends in Daily Dispensed Immediate Release Hydromorphone Prescribing Across Ontario: A Descriptive Analysis from 2016-2020. METAPHI Conference Presentation. Accessed via personal communication.	Immediate release HDM tablets for use via injection if desired	Patients receiving immediate release HDM	Retention, mortality	Nearly half of the cohort remained on immediate release HDM for at least a year following their first initiation, which is similar to previously documented rates of methadone discontinuation in Ontario. Mortality was low, with less than five deaths while receiving immediate release HDM or within seven days of discontinuation.
Brothers T, Leaman M, Bonn M, Lewer D, Atkinson J, Fraser J, et al. Evaluation of an emergency safe supply drug and managed alcohol program in COVID-19 isolation hotel shelter for people experiencing homelessness. medRxiv. 2022.	Daily dispensed immediate-release HDM tablets (use via preferred method), stimulant tablets, benzodiazepines, and alcohol in COVID-19 isolation hotel shelter	Residents staying at the COVID-19 isolation hotel shelters and referred to the medical team	Frequency of residents leaving the isolation hotel shelter before mandatory isolation period, overdose, intoxication, and diversion sharing, or selling of medications or alcohol	Of the 77 residents, 6 (8%) of isolation hotel residents left before mandatory isolation period; 4 people returned and stayed in isolation. Zero overdoses over 1,059 person-days in isolation. 6 documented intoxication concerns (0.005 events per person-day); 4 of these residents were provided alcohol and 4 with opioids (3 with OAT and HDM, one with only HDM). 3 documented concerns related to selling, sharing, or diversion (0.003 events per person-day); all three residents received multiple substances.

Table A2. Summary of included review-level evidence on OAT and iOAT (n=28)

Article citation	Model/program	Study population	Indicators/metrics	Findings
Bahji A, Bajaj N. Opioids on trial: A systematic review of interventions for the treatment and prevention of opioid overdose. Canadian Journal of Addiction. 2018 01 Mar;9(1):26-33. Available from: http://dx.doi.org/10.1097/CXA.0000000000000013.	OAT: methadone, levo-alpha-acetylmethadol (LAAM, discontinued in Canada), buprenorphine iOAT: injectable diacetylmorphine (DAM), injectable hydromorphone (HDM)	Patients with OUD	Treatment retention, illicit opioid use, overdose events	Methadone and DAM led to significantly greater retention in treatment. DAM and methadone led to significant reductions in illicit opioid use. Three trials showed no significant reduction in opioid overdose. Authors note this may be explained by the low total number of overdose events and a lack of a placebo control group with which to compare. In two trials comparing DAM to HDM or methadone in patients with treatment refractory OUD, there were significantly more overdose events with DAM. Authors note this should not discourage use of such medications in individuals with refractory OUD.
Banerjee S, Wright MD, Canadian Agency for Drugs and Technologies in Health. Injectable opioid agonist treatment for patients with opioid dependence: a review of clinical and cost-effectiveness. Ottawa: CADTH; 2020 May.	iOAT (DAM, HDM) alone or in combination with methadone or buprenorphine	People with opioid dependence	Retention in treatment, other drug use, drug cravings, criminal activity, social functioning (i.e., employment), mental health and emotional wellbeing, mortality, adverse events (i.e., allergic reaction), cost-effectiveness (e.g., incremental cost per health benefit or QALY gained)	Patients in injectable DAM (compared to methadone or other treatment) had significantly greater retention in treatment, reduction in other drug use, reduction in criminal activities, and fewer convictions and incarcerations; but no statistically significant difference in mortality and greater occurrence of adverse events. Statistically significant improvement after injectable DAM treatment compared to before treatment with respect to emotional wellbeing (i.e., anxiety, anger, emotional excitement and well-being), and statistically significantly less heroin craving with injectable DAM compared to injectable placebo. Injectable HDM was not inferior to injectable DAM with respect to other drug use.

Article citation	Model/program	Study population	Indicators/metrics	Findings
				Statistically significant greater number of adverse events related to the intervention in the injectable DAM group compared to the methadone group. An economic evaluation over a lifetime time horizon, both DAM and HDM provided more benefits than methadone and at lower cost.
Carroll KM, Weiss RD. The Role of Behavioral Interventions in Buprenorphine Maintenance Treatment: A Review. Am J Psychiatry. 2017 08 01;174(8):738-47. Available from: https://dx.doi.org/10.1176/appi.ajp.2016.16070792.	OAT: buprenorphine	People with opioid use disorder (OUD)	Treatment retention, other drug use, mortality, risk of HIV and sexually transmitted diseases	Office-based buprenorphine treatment has been a significant advance in broadening the availability of an effective treatment for opioid dependence. Numerous reviews and meta-analyses underscore the strong effectiveness of buprenorphine in enhancing treatment retention and reducing other opioid use with respect to placebo or no treatment. However, when compared to methadone maintenance, buprenorphine consistently demonstrates significantly lower rates of retention. Buprenorphine's important benefits also include reduced risk of HIV, sexually transmitted diseases, medical costs, and mortality.
Fareed A, Vayalapalli S, Casarella J, Drexler K. Effect of buprenorphine dose on treatment outcome. J Addict Dis. 2012 Jan;31(1):8-18. Available from: http://dx.doi.org/10.1080/10550887.2011.642758.	OAT: buprenorphine	People in buprenorphine treatment for three weeks or longer	Treatment retention, other opioid use, non-opioid drug use	The higher buprenorphine dose (16–32 mg per day) predicted better retention in treatment compared with the lower dose (less than 16 mg per day). Meta-analyses found that other opioid use predicted dropping out of treatment and retention in treatment predicted reduction in other opioid use. Several studies confirmed the relationship between the retention in treatment and reduction of other drug use in general. Retention in buprenorphine maintenance treatment is associated with better

Article citation	Model/program	Study population	Indicators/metrics	Findings
				treatment outcomes and dropping out is associated with poor treatment outcomes.
Ferraro CF, Stewart DE, Grebely J, Tran LT, Zhou S, Puca C, et al. Association between opioid agonist therapy use and HIV testing uptake among people who have recently injected drugs: a systematic review and meta-analysis. Addiction. 2021 07;116(7):1664-76. Available from: https://dx.doi.org/10.1111/add.15316.	OAT: methadone and buprenorphine	People who inject drugs	Recent (within the last year) HIV antibody testing, ever-received HIV antibody testing.	The comprehensive review found evidence from observational studies and one randomized controlled trial that current OAT use is associated with an increased uptake of HIV testing in the last year among people who inject drugs. Authors also found evidence to suggest that people who had ever taken OAT were more likely to have ever been tested for HIV.
Fullerton CA, Kim M, Thomas CP, Lyman DR, Montejano LB, Dougherty RH, et al. Medication-assisted treatment with methadone: assessing the evidence. Psychiatr Serv. 2014 Feb 01;65(2):146-57. Available from: https://dx.doi.org/10.1176/appi.ps.201300235.	OAT: methadone	People with OUD	Treatment retention, other drug use, mortality, non-opioid drug use, criminal activity, HIV and Hep C risk behaviours	Overall, there is a high level of evidence for the effectiveness of methadone maintenance treatment in improving treatment retention and decreasing other opioid use. Research findings regarding the impact of methadone maintenance treatment on mortality, drug-related HIV risk behaviors, and criminal activity, are less conclusive but suggest positive trends.
Grebely J, Tran L, Degenhardt L, Dowell-Day A, Santo T, Larney S, et al. Association Between Opioid Agonist Therapy	OAT: methadone or buprenorphine	People with recent injecting drug use (injecting in the previous 12 months, including	Hepatitis C virus (HCV) antibody testing, HCV treatment uptake,	Authors found evidence of an association between recent OAT and ever-receiving OAT on HCV testing and treatment uptake among PWID. This is

Article citation	Model/program	Study population	Indicators/metrics	Findings
and Testing, Treatment Uptake, and Treatment Outcomes for Hepatitis C Infection Among People Who Inject Drugs: A Systematic Review and Meta-analysis. Clinical Infectious Diseases. 2021 07 01;73(1):e107-e18. Available from: https://dx.doi.org/10.1093/cid/ciaa612.		active/ongoing/ current drug use)	anti-viral treatment uptake	consistent with literature demonstrating that OAT reduces harms across multiple health outcomes. Recent OAT was not associated with anti-viral treatment completion.
Hedrich D, Alves P, Farrell M, Stover H, Moller L, Mayet S. The effectiveness of opioid maintenance treatment in prison settings: a systematic review. Addiction. 2012 Mar;107(3):501-17. Available from: https://dx.doi.org/10.1111/j.1360-0443.2011.03676.x.	OAT: methadone and buprenorphine	Incarcerated persons with opioid dependence	Treatment retention, opioid use, risk behaviours, HIV and Hep C incidence, criminality, re-incarceration and mortality	OAT in prison is associated significantly with reduced heroin use, injecting and syringe-sharing in prison. An RCT carried out in Australia supports this finding, however, dosages need to be adequate (more than 60 mg). Some studies suggest that sufficient time is required to observe changes (e.g. six months). There appears to be little impact on other drugs, although few studies included this outcome. Reductions in heroin use and associated risk behaviours, especially when doses are higher and treatment time long enough, are all consistent with evidence of effectiveness in community settings.
Hochheimer M, Unick GJ. Systematic review and meta-analysis of retention in treatment using medications for opioid use disorder by medication, race/ethnicity, and gender in the United States. Addictive Behaviors. 2022	OAT: methadone, buprenorphine, naltrexone	People in medication-assisted treatment for OUD	Treatment retention (analyzed by race, medication type, gender)	Gender: When focusing on the different gender groups, the overall retention rate was the same for both females 0.57 (95% CI 0.49, 0.66) and males 0.57 (95% CI 0.51, 0.64). Both groups were similar in that the studies using naltrexone had lower retention rates than methadone or buprenorphine, though the differences were not statistically significant.

Article citation	Model/program	Study population	Indicators/metrics	Findings
01;124:107113. Available from: https://dx.doi.org/10.1016/j.addbeh.2021.107113.				Race: When comparing the three medications for OUD within the race/ethnicity groups, the African American group had an overall retention rate of 0.61 (95% CI 0.52 to 0.71) which was statistically significantly higher for buprenorphine and methadone than naltrexone. Hispanic and white groups had overall retention rate of about 0.55 (95% CI 0.44 to 0.67) and 0.54 (95% CI 0.45 to 0.64) respectively, with naltrexone slightly but not significantly lower than buprenorphine and methadone. Medication Type: Studies that measured retention on any of the groups by any of the medications. The overall retention rate for those treated with buprenorphine was 0.59 (95% CI 0.53, 0.65) with minimal differences when examined by gender or by race. Similarly, the overall retention rate for methadone was 0.61 (95% CI 0.53, 0.68), with no group differing by more than 0.02 except the African American group which had a retention rate of 0.68 (95% CI 0.58, 0.77).
Klimas J, Hamilton MA, Gorfinkel L, Adam A, Cullen W, Wood E. Retention in opioid agonist treatment: a rapid review and meta-analysis comparing observational studies and randomized controlled trials. Syst. 2021 08 06;10(1):216. Available from:	OAT: methadone and buprenorphine	People with OUD	Treatment retention	The findings of this rapid review and meta-analyses suggest similar retention rates for oral fixed-dose methadone and buprenorphine. Additionally, the findings indicate that the length of follow-up does not affect the retention rate.

Article citation	Model/program	Study population	Indicators/metrics	Findings
https://dx.doi.org/10.1186/s13643-021-01764-9.				
Korownyk C, Perry D, Ton J, Kolber MR, Garrison S, Thomas B, et al. Opioid use disorder in primary care: PEER umbrella systematic review of systematic reviews. Canadian Family Physician. 2019 05;65(5):e194-e206.	OAT: methadone, buprenorphine, naltrexone	People with OUD	Mortality, treatment retention, QOL, societal outcomes (i.e., crime, incarceration, employment, housing, transmission of infections such as hepatitis B and C)	Mortality: Findings from systematic reviews that examined observational studies/data suggest that ongoing use of OAT results in a reduction in mortality, however, the authors found no single RCT powered to investigate this outcome. Exploratory meta-analysis of the combined effects of buprenorphine, methadone, and naltrexone suggests that medication-assisted treatment might reduce mortality. However, adequately powered RCTs are needed for confirmation. Treatment retention: Meta-analysis demonstrated that retention in treatment improves when buprenorphine or methadone are used when OUD is treated in primary care, and when counseling is added to pharmacotherapy. Retention was improved with naltrexone and reduced with medication-related contingency management (e.g., loss of take-home doses as a punitive measure). QOL: Buprenorphine performed better than those on a waiting list for treatment on QOL scales. Societal outcomes: naltrexone performed better for reducing incarceration. Unsupervised (with up to 1 week carry) performed better for societal outcomes when compared to daily or near-daily supervised dosing.
Maglione MA, Raaen L, Chen C, Azhar G, Shahidinia N, Shen M, et al. Effects of medication assisted	OAT: Buprenorphine-alone, buprenorphine	People with OUD	Cognitive function (e.g., memory, reaction time, attention, vigilance),	Several of the individual studies that compared OUD patients who received treatment to those who did not reported significant positive effects on functional outcomes. However, in several studies,

Article citation	Model/program	Study population	Indicators/metrics	Findings
treatment (MAT) for opioid use disorder on functional outcomes: A systematic review. Journal of Substance Abuse Treatment. 2018 06;89:28-51. Available from: https://dx.doi.org/10.1016/j.jsat.2018.03.001.	+ naloxone, methadone, naltrexone		occupational function (e.g., return to work), physical function, social/behavioral function (criminal activity, arrests, family function), and neurological function	OAT patients performed significantly worse than matched healthy controls. Weaknesses in the body of evidence prevent any strong conclusions about the effects of treatment on functional outcomes or differences among medication types. Some studies that compared treatment patients to persons with OUD who did not receive treatment reported significant beneficial effects regarding criminal activity. However, in studies that compared patients to matched healthy controls, they performed worse on measures of aggression, working memory, and cognitive speed. Due to limited number and quality of the studies, the quality of evidence supporting significant differences is low or very low. The only exception is moderate quality evidence supporting a lower prevalence of fatigue with buprenorphine compared to methadone.
Magwood O, Salvalaggio G, Beder M, Kendall C, Kpade V, Daghmach W, et al. The effectiveness of substance use interventions for homeless and vulnerably housed persons: A systematic review of systematic reviews on supervised consumption facilities, managed alcohol programs, and pharmacological agents for	OAT (methadone, buprenorphine, naltrexone, LAAM) and iOAT (DAM, HDM)	People experiencing homelessness	Mortality, overdose, mental health, access to care, treatment retention	Several studies on pharmacological interventions demonstrated improved outcomes for mortality, acquiring HCV and HIV infection, psychological morbidities, and non-prescribed opioid use. Results suggest that buprenorphine and methadone are the most effective pharmaceutical agents to address all-cause mortality and overdose among people who use substances. People experiencing homelessness may face additional barriers when accessing opioid agonist therapy (i.e. accessing pharmacy daily, attending regular appointments)

Article citation	Model/program	Study population	Indicators/metrics	Findings
opioid use disorder. PLoS ONE [Electronic Resource]. 2020 15(1):e0227298. Available from: https://dx.doi.org/10.1371/journal.pone.0227298.				compared to those who use substances and are stably housed. Emerging evidence suggests that injectable DAM and injectable HDM are both acceptable and associated with improved outcomes for people who are treatment-refractory.
Main F, Kelly L. Systematic literature review on buprenorphine/naloxone use in outpatient opioid dependence treatment. Canadian Journal of Addiction. 2016 01 Feb;7(1):12-8.	OAT: buprenorphine/ naloxone combination	Outpatient buprenorphine/ naloxone patients	Treatment retention, opioid use, quality of life (QOL), mortality	Treatment retention: The most common length of time reported for retention was six months. At six months, from 36-78% of patients were retained in treatment with buprenorphine/naloxone. Opioid use: Between 40-85% of urine samples were free of opioids at six month end points. There appeared to be positive correlation between observer rated abstinence and urine results. QOL: Several studies showed significant improvement in quality of life and addiction related behavior during and after buprenorphine/naloxone treatment. No studies which examined these outcomes found negative results. Mortality: No significant or fatal increase in adverse events with buprenorphine/naloxone compared to other treatments was reported.
Malta M, Varatharajan T, Russell C, Pang M, Bonato S, Fischer B. Opioid-related treatment, interventions, and outcomes among incarcerated persons: A systematic review. PLoS Medicine / Public Library of Science. 2019	OAT: methadone, buprenorphine, buprenorphine/ naloxone, naltrexone	Adults with OUD who were incarcerated or recently released into the community (less that 90 days post-incarceration)	Mortality, opioid use, non-fatal overdose, criminal activity, treatment retention/adherence	People in a correctional facility with methadone maintenance treatment or buprenorphine/naloxone had lower rates of other opioid use, had higher adherence to OUD treatment, were less likely to be re-incarcerated, and were more likely to be working one year post-incarceration. Participants who received methadone maintenance treatment or buprenorphine/naloxone while incarcerated had fewer nonfatal overdoses and lower mortality. A key

Article citation	Model/program	Study population	Indicators/metrics	Findings
12;16(12):e1003002. Available from: https://dx.doi.org/10.1371/journal.pmed.1003002				finding in this review is that pharmacological interventions including methadone, buprenorphine/naloxone, and naltrexone have positive impacts on post-release mortality, substance use, treatment adherence, and criminal outcomes if treatment is administered during incarceration and continued upon release. Evidence from this review also suggests that incarcerated individuals who are exposed to OAT in correctional institutions are more likely to be engaged and retained in community-based treatments upon release. The main limitation is the high heterogeneity of studies.
Martins MLF, Wilthagen EA, Oviedo-Joekes E, Beijnen JH, de Grave N, Uchtenhagen A, et al. The suitability of oral diacetylmorphine in treatment-refractory patients with heroin dependence: A scoping review. Drug & Alcohol Dependence. 2021 10 01;227:108984. Available from: https://dx.doi.org/10.1016/j.drugalcdep.2021.108984.	iOAT: compares oral DAM to injected DAM	People with heroin dependence	"Rush" or "high" attained from oral DAM	Oral DAM prescription is unlikely to provide a significant 'rush' in most patients. Moreover, this effect was described as considerably lower than after intravenous DAM administration. Overall, these findings raise the question how oral DAM treatment could still be effective for patients with otherwise treatment-refractory heroin dependence. Among all oral DAM studies, a mild self-reported rush was mentioned only in one very small early open-label trial (old, published in 2000), involving just two patients receiving oral DAM. None of the other 10 studies provided any direct indication that a rush effect occurred with oral DAM. These findings are supported pharmacokinetically by the virtually complete absence of detectable DAM in plasma of patients after oral DAM administration, and by the fact that patients in two different, blinded trials were unable to distinguish the

Article citation	Model/program	Study population	Indicators/metrics	Findings
				subjective effects of oral DAM from those of oral methadone or morphine. Authors note that the findings suggest oral DAM might be effective only for (1) treatment-refractory patients with heroin dependence as maintenance treatment for those who never injected or inhaled opioids; (2) as maintenance treatment for those who want to switch from injection to oral administration of diacetylmorphine; and/or (3) to reduce opioid withdrawal symptoms.
Minozzi S, Amato L, Bellisario C, Davoli M. Maintenance treatments for opiate -dependent adolescents. Cochrane Database of Systematic Reviews. 2014 Jun 24;(6):CD007210. Available from: https://dx.doi.org/10.1002/14651858.CD007210.pub3.	OAT: methadone, buprenorphine, LAAM	People with opioid dependence	Drop out/treatment retention, abstinence, use of other substances, mortality	Drop-outs/Treatment retention: Use of primary substance (measured as number of participants with opioid-positive urinalysis during and at the end of treatment or using self-reported data, or both) risk ratio was 0.97 (95% CI 0.78 to 1.22) and there was no significant difference between the groups. Use of other substances: There was no significant difference between groups in alcohol and marijuana use. Time in treatment is the best predictor of reduced opioid use. At four- to six-year follow-up, methadone was associated with a substantial reduction in opioid use, but young people did poorly when non-opioid substance use, alcohol consumption, employment and productive activities were considered. Mortality: One death due to methadone overdose occurred in the maintenance group in a patient who dropped out after three doses.
Moazen-Zadeh E, Ziafat K, Yazdani K, Kamel MM, Wong JSH, Modabbernia A,	DAM, HDM, combination of	Patients with OUD	Mental health outcomes	Network meta-analysis showed that buprenorphine, DAM, and methadone were superior to waitlist/placebo in improving overall mental health

Article citation	Model/program	Study population	Indicators/metrics	Findings
et al. Impact of opioid agonist treatment on mental health in patients with opioid use disorder: a systematic review and network meta-analysis of randomized clinical trials. American Journal of Drug & Alcohol Abuse. 2021 05 04;47(3):280-304. Available from: https://dx.doi.org/10.1080/00952990.2021.1887202.	dihydrocodeine and methadone			symptomatology. Direct pairwise meta-analyses showed that overall mental health symptomatology improved more in DAM than methadone, and the same was true for psychiatric status. Depressive symptoms improved more in buprenorphine than waitlist or placebo, and the same was true for overall mental health symptomatology as well as mental health quality of life. For depression, there was a trend toward the higher effect of diacetylmorphine compared with methadone based on the results of two studies. From the 19 studies included in this review, 15 studies were used in the quantitative analyses (out of which 14 had a high overall risk of bias).
Moore KE, Roberts W, Reid HH, Smith KMZ, Oberleitner LMS, McKee SA. Effectiveness of medication assisted treatment for opioid use in prison and jail settings: A meta-analysis and systematic review. Journal of Substance Abuse Treatment. 2019 04;99:32-43. Available from: https://dx.doi.org/10.1016/j.jsat.2018.12.003.	OAT: methadone, buprenorphine, naltrexone	People who are currently incarcerated	Treatment engagement, opioid use, recidivism, and health risk behaviors following release from incarceration	Medication-assisted treatment provided during incarceration increased community-based substance use treatment engagement. Specifically, methadone treatment during incarceration decreased other opioid use and injection drug use post-release from incarceration. Buprenorphine and naltrexone were superior to methadone and to placebo, or were as effective as methadone in reducing other opioid use post-release.
Nguemo Djiometio JB, Buzuayew A, Mohamud H, Njoroge I, Kahan M, Nelson LE. Effectiveness of opiate	OAT: buprenorphine, methadone	African, Caribbean and Black people	Sex and HIV risk behaviours	A key finding in this review was that methadone and buprenorphine treatment programs reduce sex- and drug-related HIV risk behaviors among African, Caribbean and Black people. The quality of evidence

Article citation	Model/program	Study population	Indicators/metrics	Findings
substitution treatment in reducing HIV risk behaviors among African, Caribbean, and Black people: a systematic review. JBI Evid Synth. 2021 04 12;19(8):1887-914. Available from: https://dx.doi.org/10.1112 4/JBIES-20-00223.				ranged from high to very low, and emphasized the positive impact of opioid substitution programs in HIV risk reductions. Methadone programs significantly reduced the number of sex partners, the number of sexual encounters, frequency of unprotected sex, the exchange of sex for money or drugs, and the involvement in prostitution. Methadone also increased vaginal condom use and significantly reduced needle sharing. This review demonstrated that buprenorphine decreases sex and drug injection risks. This review also found that psychosocial interventions, such as psychological counseling, health education, group activities, social support, and skills training, provided with methadone and buprenorphine had some impact on better outcomes.
Nielsen S, Larance B, Lintzeris N. Opioid agonist treatment for patients with dependence on prescription opioids. JAMA. 2017 07 Mar;317(9):967-8. Available from: http://dx.doi.org/10.1001/j ama.2017.0001.	OAT: methadone, buprenorphine	People receiving OAT for opioid dependence	Other opioid use, treatment retention	There was moderate-quality evidence finding no significant differences in self-reported opioid use or opioid positive urine drug tests between methadone and buprenorphine. There was low quality evidence that there was no difference in retention between methadone and buprenorphine. As evidence did not favour either of these treatments, other clinician or treatment system factors may contribute to the choice of pharmacotherapy for patients, including patient preference, safety, and availability of medications.
Ontario Agency for Health Protection and Promotion (Public Health Ontario),	iOAT: DAM and HDM; all supervised.	People receiving iOAT for OUD	Treatment retention, drug use patterns, and social, health or other	This rapid review found evidence to support the effectiveness of supervised iOAT with DAM or HDM as a treatment for people with opioid use disorder

Article citation	Model/program	Study population	Indicators/metrics	Findings
Leece P, Tenenbaum M. Evidence Brief: Effectiveness of supervised injectable opioid agonist treatment (siOAT) for opioid use disorder. Toronto, ON: Queen's Printer for Ontario; 2017.			outcomes presented in the literature	who have previously not had a satisfactory response to standard treatment. It may also be an important approach for engaging people in treatment who continue to inject opioids and would not otherwise participate in treatment. The review found the available literature indicates supervised iOAT is effective for several outcomes compared with oral methadone alone including: treatment retention, reducing the use of street drugs, and reducing illegal activities. These studies were generally conducted among individuals who previously did not have a satisfactory response to medication-assisted treatment for opioid use disorder. Cost-effectiveness studies suggest supervised iOAT is cost-effective compared to methadone in this group due to decreased criminal activity. However, supervised iOAT is associated with increased serious adverse events that could be managed in a supervised setting.
Onuoha EN, Leff JA, Schackman BR, McCollister KE, Polsky D, Murphy SM. Economic Evaluations of Pharmacologic Treatment for Opioid Use Disorder: A Systematic Literature Review. Value Health. 2021 July;24(7):1068-83. Available from: http://dx.doi.org/10.1016/j.jval.2020.12.023	OAT: buprenorphine, methadone	People with OUD accessing OAT	Cost-effectiveness	Similar to a previous review, the authors continued to find evidence supporting the economic value of methadone compared with no pharmacotherapy. Much of the evidence from this review supports buprenorphine as a cost-effective treatment compared with no pharmacotherapy, whereas prior findings on buprenorphine were quite limited. Four studies focused on potential reductions in healthcare costs associated with treatment for OUDs. The results from these studies suggest that OUD pharmacotherapy leads to lower healthcare resource utilization and expenditures than non-

Article citation	Model/program	Study population	Indicators/metrics	Findings
				pharmacologic therapies. One study also found significantly lower criminal justice–related costs among participants who received methadone compared with those who received detoxification only.
Santo T, Jr., Clark B, Hickman M, Grebely J, Campbell G, Sordo L, et al. Association of Opioid Agonist Treatment With All-Cause Mortality and Specific Causes of Death Among People With Opioid Dependence: A Systematic Review and Meta-analysis. JAMA Psychiatry. 2021 09 01;78(9):979-93. Available from: https://dx.doi.org/10.1001/jamapsychiatry.2021.0976	OAT: methadone, buprenorphine	People with opioid dependence	Morality (eligible studies had to report mortality data for people with opioid dependence during and out of OAT)	This is the first study to document the association of OAT across different settings with both all-cause and cause-specific mortality. Authors synthesized 36 observational cohort studies that assessed mortality risk during and out of OAT, which represented a 3-fold increase in the amount of published evidence on all-cause mortality (previous review only included 19 cohorts). The findings suggest a potential public health benefit of OAT, which was associated with a greater than 50% lower risk of all-cause mortality, drug-related deaths, and suicide and was associated with significantly lower rates of mortality for other causes. The association was consistent across a range of participant and study characteristics.
Saulle R, Vecchi S, Gowing L. Supervised dosing with a long-acting opioid medication in the management of opioid dependence. Cochrane Database of Systematic Reviews. 2017 Apr 27;4:CD011983. Available from: https://dx.doi.org/10.1002	OAT: methadone, buprenorphine	People with opioid dependence	Treatment retention, abstinence/opioid use, mortality, diversion	At three or more months' follow-up, this review found no evidence on benefit of the supervised dosing with respect to keeping people in treatment, or reduce opioid use, mortality reduction and adverse drug events. One study found that supervised dosing led to a reduction of diversion. None of the studies assessed the effect of supervised dosing on pain symptoms, drug craving, days of unsanctioned opioid use, overdose and hospitalisation. We are unable to make any conclusion about the effectiveness of supervised dosing compared to dispensing of medication as take-home doses, in the context of OST. Further

Article citation	Model/program	Study population	Indicators/metrics	Findings
/14651858.CD011983.pub2.				research is required to determine the effectiveness of supervised or take-home dosing in OST.
Schwartz RP, Mitchell MM, O'Grady KE, Kelly SM, Gryczynski J, Mitchell SG, et al. Pharmacotherapy for opioid addiction in community corrections. International Review of Psychiatry. 2018 10;30(5):117-35. Available from: https://dx.doi.org/10.1080/09540261.2018.1524373.	OAT: methadone, buprenorphine	Criminal-justice-involved individuals	Other drug use, criminal activity	Methadone: data indicate that patients with opioid addiction under community supervision should be offered methadone treatment because they will likely reduce their other opioid use even if they may not reduce their risk of incarceration. Buprenorphine: limited data support the use of buprenorphine through drug treatment programs for individuals under community supervision. We note the lack of reports that examined provider office-based buprenorphine in this population.
Sigmon SC. Interim treatment: Bridging delays to opioid treatment access. Prev Med. 2015 Nov;80:32-6. Available from: https://dx.doi.org/10.1016/j.ypmed.2015.04.017.	"interim" use of methadone and buprenorphine while awaiting treatment	People awaiting maintenance treatment	Other opioid use, treatment retention, criminality and likelihood of entry into comprehensive treatment	Interim opioid treatment has been evaluated in four controlled trials to date. In three, interim treatment was compared to waitlist or placebo control conditions and produced improved outcomes on measures of other opioid use, retention, criminality and likelihood of entry into comprehensive treatment. In the fourth, interim treatment was compared to standard methadone maintenance and produced comparable outcomes in other opioid use, retention and criminal activity.

Article citation	Model/program	Study population	Indicators/metrics	Findings
Smart R, Reuter P. Does heroin-assisted treatment reduce crime? A review of randomized-controlled trials. Addiction. 2021 Jun 09;09:09. Available from: https://dx.doi.org/10.1111/add.15601.	Pharmaceutical-grade injectable heroin-assisted treatment (iOAT) compared to OAT (oral methadone)	People with OUD or opioid dependence	Criminal outcomes, social functioning	Randomized control trials from Switzerland, Germany and the Netherlands examining supervised injectable heroin-assisted treatment (HAT) found significant decreases in criminal activity among participants (vs. control group). Other studies found that criminal reduction was greater among HAT participants compared to control group, but not significantly. All but one trial found that HAT was successful in reducing other heroin use

Table A3. Summary of included records on safer supply referred by subject matter expert (n=5)

Article citation	Model/program	Study population	Indicators/metrics	Findings
Ivsins A, Boyd J., Mayer S. et al. "It's Helped Me a Lot, Just Like to Stay Alive": a Qualitative Analysis of Outcomes of a Novel Hydromorphone Tablet Distribution Program in Vancouver, Canada. J Urban Health; 98: 59–69. 2021. https://doi.org/10.1007/s11524-020-00489-9	HDM distribution program (e.g., hydromorphone distribution and consumption, patient-provider interactions).	Program participants	Reduced use of street drugs, overdose risk, improvements to health and well-being, improvement to pain management, economic improvements	Reduced use of street drugs and overdose risk: decreased use of unregulated drug market which may help to reduce overdose risk. Participants reported the program addressed uncertainty associated with the unregulated market regarding the drug they receive. Improvements to health and well-being: program increased accessed to the program physician and nurses to address health concerns, such as wound care and pain treatment. Program staff also supported participants with connections to other medical services. Some participants described general improvements to their health and well-being (e.g., improved nutrition and sleep). Some participants reported less frequency of injecting drugs, and health improvements as a result.

Article citation	Model/program	Study population	Indicators/metrics	Findings
				Improvement to pain management: While pain management is not a stated objective of the program, participants who experienced chronic pain emphasized HDM's role in managing their pain. Economic improvements: access to hydromorphone through the program meant participants did not have to spend as much money on street-purchased drugs and could instead spend money on other basic needs (e.g., good, cell phone, saving money), Participants also reported not having to engage in criminalized forms of income generation (e.g., sex work, shoplifting).
Nosyk B, Slaunwhite A, Urbanoski K, et al. Evaluation of risk mitigation measures for people with substance use disorders to address the dual public health crises of COVID-19 and overdose in British Columbia: a mixed-method study protocolBMJ Open 2021;11:e048353. doi: 10.1136/bmjopen-2020-048353	Interim Risk Mitigation Guidance (RMG) in BC that permitted prescribing medication alternatives to substances, including opioids, alcohol, stimulants and benzodiazepines, an intervention sometimes referred to as 'safe supply'.	People who use drugs who are engaged in RMG will be part of the proposed study design (via observational study, cross-sectional survey, and qualitative interviews)	Primary outcomes: COVID-19 infection, fatal overdose, non-fatal overdose Secondary outcomes: all-cause mortality, all-cause acute healthcare utilization, treatment retention, continuity of care for chronic medical conditions, uptake of COVID-19 protective measures, substance use and related harms, income source. Implementation outcomes: number of people receiving RMG prescription, number of prescribers writing prescriptions, variation in	N/A

Article citation	Model/program	Study population	Indicators/metrics	Findings
			access by geography and population sub-group, barriers, provider-readiness	
Palis H, Slaunwhite A, Zhao B. Provincial "risk mitigation guidance" for people at risk of overdose during COVID-19 [Internet]. Vancouver, BC: BC Centre for Disease Control; 2021 Oct 19. Available from: https://nexuswebcast.mediasite.com/Mediasite/Showcase/bc-cdc-showcase/Presentation/e3906522f31c4eeca8278faf3b56c9a71d	RMG in BC (see description above).	People who use drugs who are engaged in RMG	Outcome measures presented in this preliminary descriptive analyses: number of persons who were dispensed RMG prescriptions, mortality estimates.	Dispensed RMG prescriptions: 8,939 people were dispensed RMG medications from March 27, 2020 to June 30, 2021 (opioids dispensed to 58%, stimulants dispensed to 17.7%, alcohol-withdrawal management medications dispensed to 24.2%, benzodiazepines dispensed to 12.6%). A majority of RMG medications are daily dispensations (94.5%). Most persons who received RMG opioid medications were already receiving OAT in the month prior to first RMG. Mortality estimates: Among 8,938 individuals, 183 people died during the study period (mortality rate = 16.3 deaths per 1,000 person-years), and only 11 people had an active RMG prescription at the time of death.
Gomes T, Kitchen SA, Tailor L, et al. Trends in Hospitalizations for Serious Infections Among People With Opioid Use Disorder in Ontario, Canada. J of Addiction Medicine: 2021. doi: 10.1097/ADM.0000000000000928	Daily-dispensed immediate release HDM, and OAT	People with OUD	Study reported the population-adjusted rate of hospitalizations for serious infections annually in Ontario (January 1, 2013 and December 31, 2019), stratified by type of infection and prevalence of prior OAT and HDM prescribing.	Overall, there was a relatively high prevalence of recent OAT that was trending upwards among all hospitalizations for serious infections. Among people with OUD, controlled-release (CR) HDM decreased slightly among all infection types, but only demonstrated a significant trend among people with infective endocarditis (8.3%–4.0%; P ¼ 0.02) and among skin and soft tissue infections (9.0%–5.3%; P < 0.01). In contrast, there was a small, but significant rise in having recently received daily dispensed immediate-release (IR) HDM (P < 0.01) among people with infective endocarditis and skin and soft tissue infections. Despite the increasing trend, only 4.3% of

Article citation	Model/program	Study population	Indicators/metrics	Findings
				people hospitalized with incident infective endocarditis (13 of 299 hospitalizations) and 3.4% of people hospitalized for skin and soft tissue infections (39 of 1155 hospitalizations) had received daily dispensed IR HDM in the past 30 days in 2019. Authors found a declining prevalence of CR HDM dispensing and slightly increased prevalence of daily dispensed immediate-release HDM over the study period. The declining trend in CR HDM could be reflective of changes in clinical practice in response to the evolving evidence of an association between CR HDM and incident infective endocarditis. Alternatively, the trend might be a result of shifts in clinical practice away from prescribing controlled-release HDM more generally. The findings related to recent HDM dispensing require further discussion. This study was not designed to identify a causal link between injection of immediate-release HDM and infection risk, therefore authors cannot determine whether these findings are reflective of shifting prescribing patterns at the population-level and changing treatment and harm reduction patterns among high risk individuals at the community level, or a risk of infections when injecting immediate-release HDM. Findings corroborated previous research in Canada that has demonstrated a high degree of ongoing injection drug use among people engaged in OAT, reinforcing this as an opportunity for clinicians to support access to harm reduction tools as a component of the treatment program.

Article citation	Model/program	Study population	Indicators/metrics	Findings
Young S, Kolla G, Campbell T,et al. Trends in Daily Dispensed Immediate Release Hydromorphone Prescribing Across Ontario:A Descriptive Analysis from 2016-2020.METAPHI Conference Presentation. Accessed via personal communication.	Immediate release HDM tablets for use via injection if desired	Patients receiving immediate release HDM	Retention, mortality	Nearly half of the cohort remained on immediate release HDM for at least a year following their first initiation, which is similar to previously documented rates of methadone discontinuation in Ontario. Mortality was low, with less than five deaths while receiving immediate release HDM or within seven days of discontinuation.

Appendix B: OAT and iOAT Outcome Measures

The table (Table B1) below lists all outcome measures that were used to examine effectiveness or impact of OAT and iOAT programs across the 28 articles included in this review.

Table B1. Outcomes measures used to examine effectiveness or impact of OAT and iOAT in included articles

Outcome measure	References
Treatment retention	18-20,22,24-27,29-31,34,37,39-43
Mortality	19,22,24,27,29-31,38-40,42
Criminal activity or incarceration	22,24,27,28,31,36,37,41,42,45
Other/unregulated opioid use	18-20,22,24,29-31,34,36,37,41-43
Non-opioid drug use	20,22,40,43
Overdose	18,29,31,42
Social functioning (e.g., employment, housing)	27,42,43,45
Mental health or psychological/emotional functioning	28,29,32,42
Health and sexual risk behaviours	22,33,41
Health-related quality of life	27,30,42
Abstinence	39,40
Engagement in HIV and Hep B and C testing and care	21,23
Cost-effectiveness	35,42
HIV and Hep C incidence	24,27
Cognitive functioning (e.g., memory, attention, fatigue, insomnia)	28
“High” attained from treatment medications	44
Diversion	39

Appendix C: Safer Supply Programs in Canada

The Table below lists all safer supply programs that are summarized in the jurisdictional scan, as well as a full list of safer supply programs funded under Health Canada's SUAP.

Table C1. List of safer supply programs operating or funded to operate in Canada

Location	Program Name and/or Host Organization
Victoria, British Columbia	AVI Health and Community Services Society funded to deliver the SAFER initiative, in partnership with other agencies see jurisdictional scan for more information)[62]
Victoria, British Columbia	Vancouver Island Health Authority/Cowichan Valley Safer Supply Program (see jurisdictional scan for more information)[67,68]
Vancouver, British Columbia	Molson Overdose Prevention Site Safe Supply Program (see jurisdictional scan for more information)[69]
Vancouver, British Columbia	Vancouver Coastal Health Authority funded to deliver a program through Health Canada SUAP[78]
Vancouver, British Columbia	Providence Health Care Research Institute funded to deliver a program through Health Canada SUAP[78]
Vancouver, British Columbia	Kilala Lelum Health Centre (Urban Indigenous Health and Healing Cooperative) funded to deliver a program through Health Canada SUAP[78]
Yukon Territory	Yukon Safe Supply Program (see jurisdictional scan for more information)[71]
London, Ontario	London Inter-community health centre safer opioid supply program (see jurisdictional scan for more information)[46]
Toronto, Ontario	Downtown East Collaborative Safe Opioid Supply Program (see jurisdictional scan for more information)[50,51]
Toronto, Ontario	Parkdale Queen West Community Health Centre funded to deliver a program through Health Canada SUAP[78]
Toronto, Ontario	South Riverdale Community Health Centre funded to deliver a program through Health Canada SUAP[78]
Toronto, Ontario	Toronto Public Health funded to deliver a program through Health Canada SUAP[78]
Guelph, Ontario	Guelph Community Health Centre funded to deliver a program through Health Canada SUAP[78]

Location	Program Name and/or Host Organization
Kitchener-Waterloo, Ontario	Kitchener-Waterloo Safer Supply Program (see jurisdictional scan for more information)[54,55]
Peterborough, Ontario	Peterborough Safer Supply Program/Peterborough 360 Degree Nurse Practitioner-Led Clinic (see jurisdictional scan for more information)[56,57]
Ottawa, Ontario	Pathways to Recovery funded to deliver a program through Health Canada SUAP[78]
London, Ontario; Vancouver, British Columbia; Dartmouth, Nova Scotia	MySafe Society (see jurisdictional scan for more information)[11]
Fredericton, New Brunswick	River Stone Recovery Centre funded to deliver a program through Health Canada SUAP[78]

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