

McMaster Municipal Day of Action

Injectable Opioid Agonist Treatments & Managed Opioid Programs

Delegate Backgrounder

OCTOBER 2019

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KeepingSix
Hamilton Public Health and Dr. Elizabeth Richardson
Dr. Robin Lennox
Shelter Health Network and Dr. Tim O'Shea
Hamilton Urban Core Community Health Centre

Introduction to the Opioid Crisis

What are opioids?

Opioids are compounds that are used in the treatment of pain due to their analgesic and sedative effects.¹ Some opioids may also induce euphoria. Currently, they are commonly used in the treatment of acute pain.² Due to their high propensity for tolerance, abuse, and addiction, opioids are now less commonly used in the treatment of chronic pain.² Opioids consist of naturally derived compounds from the opium poppy (such as codeine, morphine, and heroin), semi-synthetic compounds (such as hydromorphone and oxycodone), or synthetic compounds (such as fentanyl and methadone).²

Narcotics refers to a broader class of compounds that designate a variety of controlled substances with abuse or addictive potential.¹ Opioids are a type of narcotic. However, the term narcotic is used predominantly by law enforcement and is uncommonly used by medical professionals.

Opioids exert their analgesic effects by binding to the three primary opioid receptors, μ (mu), κ (kappa), and δ (delta), thus modulating pain perception.¹ These receptors are found on the afferent nerves of the central, peripheral, and enteric nervous systems.¹

Both prescription and illicit opioids are commonly abused, resulting in increasing opioid addiction and overdoses. Opioid overdoses are characterized by the following features: respiratory depression, mental status depression, miosis, orthostatic hypotension, nausea, vomiting, itchiness, bronchospasm, decreased GI motility, and urinary retention.¹

Causes of the Opioid Crisis

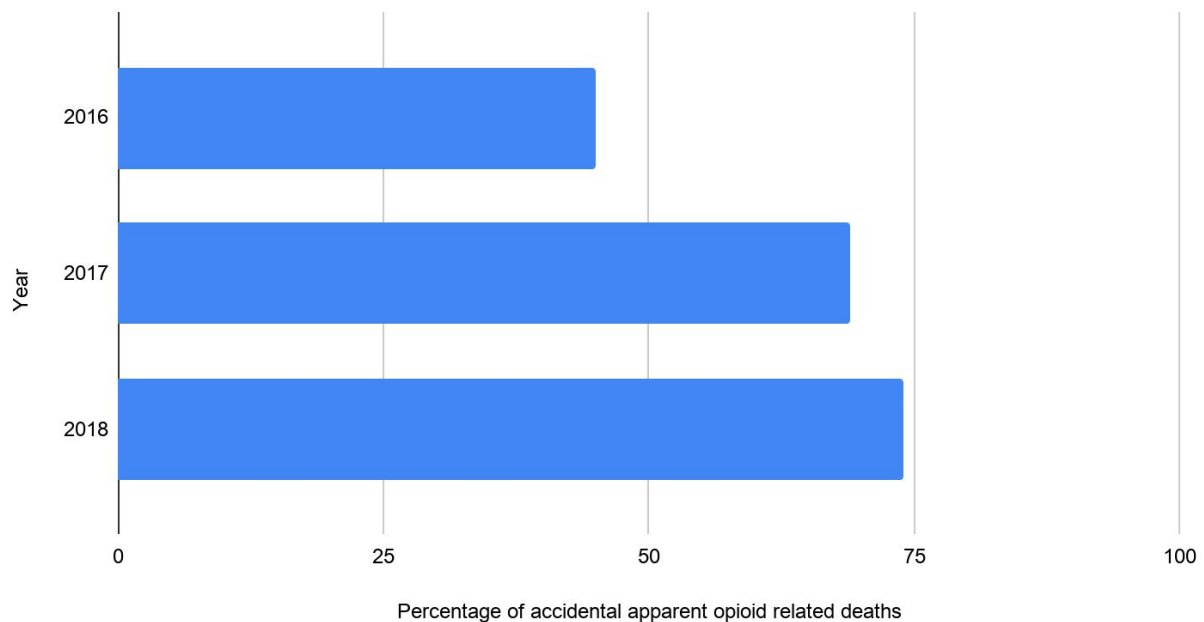
There are two factors that have heavily contributed to the development of the opioid crisis: overprescription of opioids and the rising prevalence of synthetic opioids in street drugs.³

Since 1980, the amount of opioids prescribed for pain management in Canada has increased by 3000% and in 2016, over 20 million prescriptions for opioids were dispensed.³ As such, Canada is the second-largest consumer of prescription opioids in the world, after the United States of America.⁴ The overprescription of opioids is largely due to the advent of drugs like OxyContin in the late 1990s and early 2000s, which were marketed heavily by pharmaceutical companies as less addictive than morphine, despite having a large potential for abuse.⁴ These opioids were prescribed for moderate pain conditions, such as back pain and wisdom teeth extractions. Over time, patients who were prescribed opioids were developing increased dependence and tolerance to these drugs as their bodies became less responsive to chronic stimulation of opioid receptors. Therefore, patients required increasingly strong doses and became unable to stop using the medications.⁵ Additionally, the rate of misuse of prescription opioids in Canada is high. Misuse involves using the prescription opioid for non-medical reasons. A Health Canada survey in 2017 found that one third of individuals who had used an opioid in the past year did not always have a prescription.³ Methods of allowing for prescription opioid misuse include sharing with family members, double doctoring/requesting opioid prescriptions from multiple doctors, prescription fraud and forgery, street market sales, thefts and robberies, and Internet purchases.³

Secondly, extremely potent synthetic opioids such as fentanyl, W-18, and U-47700, have become increasingly prevalent in street markets and are being mixed with other illicit drugs.³ Fentanyl and its analogues, such as carfentanil and furanylfentanyl, have been covered widely by the Canadian media due to their involvement in overdoses.³ The presence of fentanyl in Canada was first reported in 2011 and has now been detected in all Canadian jurisdictions. Between 2012 and 2016, the number of

opioid-related deaths involving fentanyl rose from 26% to 41%. In 2016, there were 867 apparent opioid-related deaths.³ On the other hand, the number of illicit drug overdose-related deaths has remained stable from 2012 to 2016 nationwide.³ Fentanyl can be up to 100 times stronger than morphine, and carfentanil is 100 times stronger than fentanyl. Carfentanil's involvement in opioid-related deaths is a growing concern in Canada, and has now been detected in Ontario, British Columbia, Manitoba and Alberta. In the first six months of 2017, there were 89 deaths involving carfentanil in Alberta.³ The reason why the presence of fentanyl and its analogues in street drugs is particularly concerning is that the mix of opioids of various strengths makes it hard for users to take an appropriate dose. Therefore, when someone takes a dose of a drug that they believe they can tolerate but it has been mixed with fentanyl, the effect on their body is much stronger and can more easily lead to an overdose.

Figure 1: Percentage of accidental apparent opioid-related deaths involving fentanyl or fentanyl analogues in Ontario



Federal and Provincial Impact of the Opioid Crisis

With the widespread increase in the use of opioids, both within Canada and globally, Canada has seen an increase in opioid-related harms. For example, excessive opioid use is associated with harms, including increased transmission of disease, economic burden, comorbid mental disorders, risky behaviour, and impaired social functioning.⁶⁻¹⁰

In particular, with the rates of opioid abuse growing during the crisis, there have been increasing rates of infectious diseases including HIV/AIDS, hepatitis, heart infections, and skin and soft tissue infections. As well, people who inject drugs are often at increased risk for contracting and transmitting a sexually transmitted disease due to elevated risky behaviours such as having unprotected sex, being with sex partners who are also injection drug users, or engaging in sex work.¹¹ In the United States, it was found that the rate of new hepatitis C infections rose by 249% between 2010-2016.¹¹ There was an increase in individuals diagnosed with HIV and co-infected with hepatitis C as well.¹² Similarly, in Canada, a majority of people who inject drugs are currently infected with hepatitis C.¹³

Furthermore, substance use is a significant cost to the Canadian economy. There are direct costs that impact the healthcare and criminal justice systems as well as indirect costs through lost productivity, illness, injury, and premature death. The Canadian Substance Use Costs and Harms project aimed to provide updated data on costs of substance use in Canada in 2014.¹⁴ It was found that healthcare costs associated with opioid-use were \$0.31 billion, lost productivity costs \$1.83 billion, criminal justice costs \$1.11 billion, and other direct costs \$0.23 billion. It can be expected that considering 2014 was still earlier on in the opioid crisis, the associated costs to the Canadian economy since then have substantially increased and accumulated.¹⁴

The opioid crisis has had a huge impact on Canada both federally and provincially. In 2018, there were 4,460 apparent opioid-related deaths reported in Canada, corresponding to a rate of 12.0 deaths per 100,000 people.¹⁶ This can also be conceptualized as one opioid-related death every two hours. 70% of these deaths involved fentanyl or its analogues.¹⁶ An apparent opioid-related death is defined as a death caused by an intoxication/toxicity (poisoning) resulting from substance use, where one or more of the substances is an opioid, regardless of how it was obtained (e.g. illegally or through personal prescription).¹⁶ In Ontario, there were 1,471 apparent opioid-related deaths in 2018.¹⁶

Between 2016-2017, hospitals across Canada reported 5,670 admissions for inpatient care related to significant opioid poisoning in 2016-17.¹⁶ This number is up from 3,344 in 2007-08.¹⁶ Those patients stayed in hospital for an average of 7 1/2 days.¹⁶ The figures do not include people treated in emergency departments and sent home.

Figure 2a: Number of total apparent opioid-related deaths in Canada

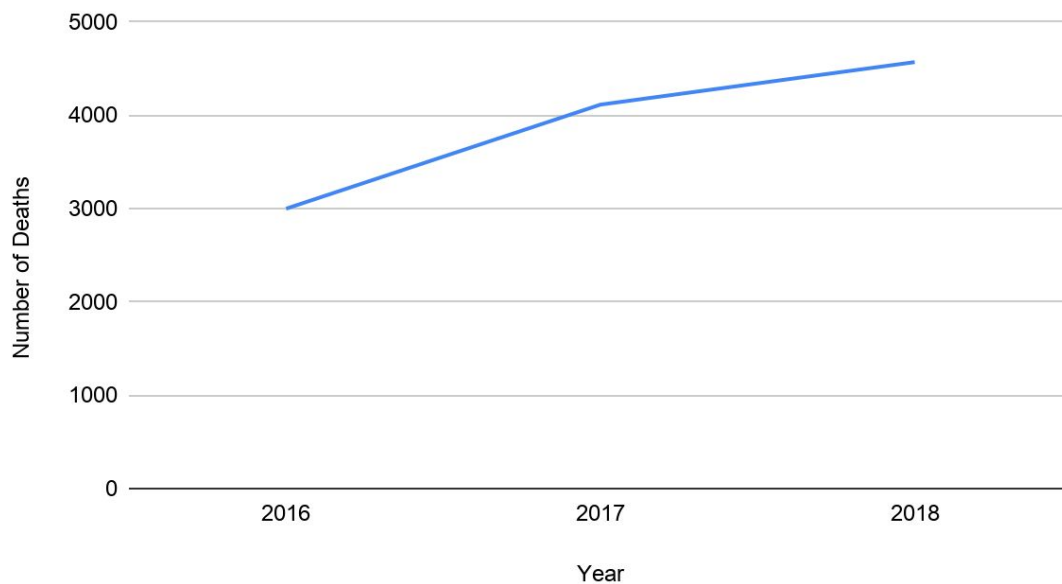
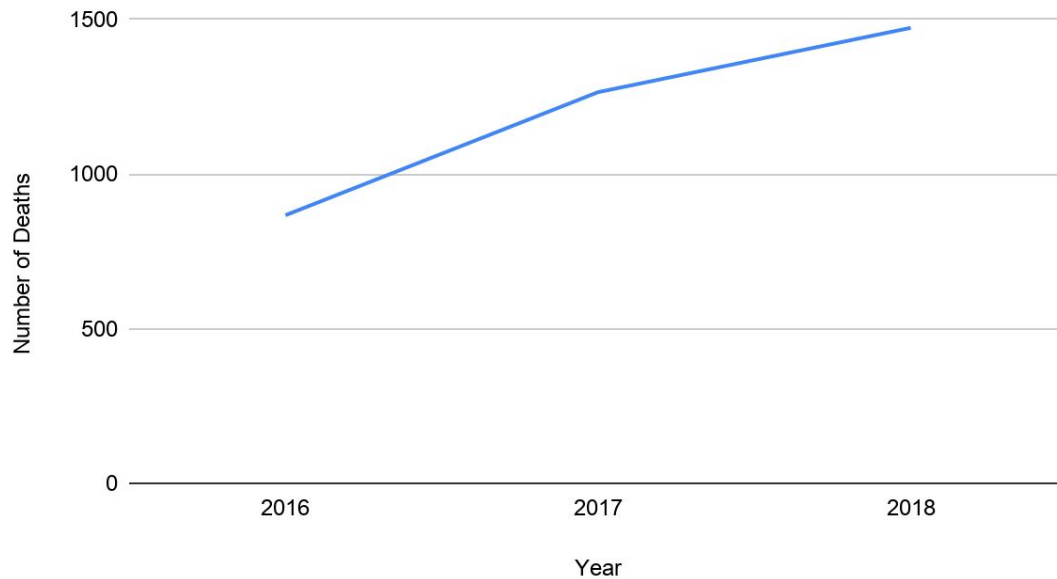


Figure 2b: Number of total apparent opioid-related deaths in Ontario



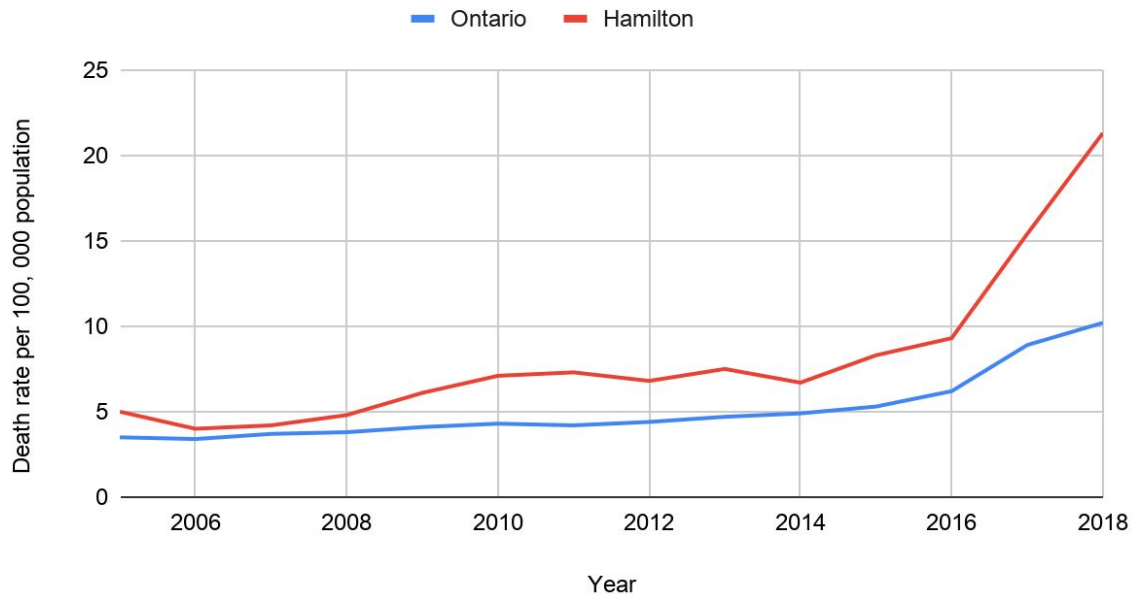
Local Impact of the Opioid Crisis

The Code Red project carried out by the Hamilton Spectator in 2009 demonstrated the disparities that exist between parts of the city that varied in wealth. Ten years later, they repeated the same work only to show that nothing has changed. Health outcomes in Hamilton have declined and the inequality still exists.¹⁷ It was shown that emergency room visits and hospital admissions are rising significantly across the city.¹⁷ In fact, the average lifespan had declined by 1.5 years, with the poorest part of the city having a lifespan less than 65 years of age.¹⁷ They suspect that this decline may be due to the rise in opioid-related deaths in Hamilton.¹⁷

This project demonstrates that Hamilton has been heavily impacted by the opioid crisis. In fact, the number of opioid-related deaths in Hamilton continues to increase each year. In 2018, there was a total of 103 opioid-related deaths in Hamilton, which is an increase from the 88 deaths in total from 2017.¹⁸ According to the CBC, Hamilton's paramedics have responded to 318 calls for suspected opioid overdoses since May 2019.¹⁸ As these numbers rise, the number of individuals who must cope with a loved one who has overdosed also do.¹⁹

Even in comparison to other cities within Ontario and across Canada, Hamilton has been particularly impacted. Based on a figure from the CIHI¹⁴, Hamilton was ranked fourth in the number of opioid poisoning hospitalizations in a metropolitan area within Canada. Between 2005 and 2017, Hamilton had a higher rate of opioid-related deaths than the provincial average (Figure 3). In fact, in 2016, Hamilton's opioid-related death rate was 48% higher than Ontario's, and this number increased to 72% in 2017.¹⁸ 4,757 doses of the opioid antidote, naloxone, helped revive people who inject drugs who were overdosed 589 times prior to May 2019. There have been small efforts to manage the opioid crisis but we are still seeing the impacts of opioid use today.¹⁹ More recent data shows that in May 2019, there were 89 emergency department visits and 8 hospitalizations for opioid poisoning.¹⁸ It is crucial that Hamilton continues to take action to reduce the harms that this crisis has inflicted on our city.

Figure 3: Opioid-related death rates in Hamilton and Ontario



Harm Reduction

What is Harm Reduction?

Harm reduction is defined by the World Health Organization as “a set of policies, programmes, services and actions that aim to reduce the harm to individuals, communities and society related to drugs.” Harm reduction does not necessarily aim to reduce drug consumption. Notably, harm reduction is crucial in the global response to prevent the spread of HIV amongst people who inject drugs and their sexual partners.¹⁹ Practices in harm reduction include education, opioid agonist therapy (OAT), needle/syringe distribution, emphasizing routes other than injection to administer drugs, counselling, naloxone distribution, STI services, testing, wound care, vaccinations, social assistance, and peer support.²⁰ Harm reduction has been found to be cost-effective and cost-saving through reducing the economic burden of adverse health and social outcomes, such as reducing healthcare costs from overdoses, preventing the spread of bloodborne illnesses (such as HIV and hepatitis C), reducing crime, increasing employment, and access to treatment programs and support services.²⁰

The Hamilton Drug Strategy (HDS), a collaboration of various community agencies in Hamilton, was formed to address substance use and its associated harms. Consistent with province-wide drug strategies, the HDS uses the Four Pillar Framework of the 2016 Canadian Drugs and Substances Strategy to guide its work. The pillars include: 1) Prevention 2) Treatment 3) Enforcement/social justice and 4) Harm reduction. Regarding harm reduction, the HDS aims to:

- 1) Increase access to harm reduction programs and services;
- 2) Improve coordinated care for individuals moving between institutions (hospitals and correctional facilities), and the community and for those receiving opioid agonist therapies;
- 3) Enhance training for service providers and healthcare professionals
- 4) Increase access to addictions specialists in temporary housing; and,
- 5) Provide stigma education to the general community.²¹

Best Practices in Harm Reduction

In Hamilton, the current harm reduction initiatives are:

- 1) **AIDS Network Needle and Syringe Program:** a local charitable organization that is active in HIV/AIDS prevention, education, and support. The program operates Monday–Friday, from 9 am–5 pm. The organization provides confidential, free education and harm reduction materials, aimed at promoting safer drug use and safer sex. Individuals who visit this location are able to access clean equipment such as: syringes, sterile water, alcohol swabs, safe inhalation kits, condoms, and dental dams. Referral services are also provided to connect individuals to other community services (e.g., addiction treatment, housing).²³ Other fixed needle exchange sites currently operating in Hamilton include the Elizabeth Fry Society (for women only), Hamilton Urban Core Community Health Centre, and Alcohol Drugs and Gambling Public Health Services.^{24, 25}
- 2) **AIDS Network Mobile Needle Exchange Service:** The AIDS Network also operates a mobile van that distributes clean drug supplies and collects used needles for safe disposal. The van strives to increase access to harm reduction services by operating during evening hours and providing outreach to those unable to travel to established needle exchange sites. The van hours are: Monday to Sunday, from 7–11pm. The van is entirely confidential and can be contacted by phone or text message to arrange a meeting.²³
- 3) **Hamilton Overdose Prevention & Education (HOPE):** The HOPE Program began in 2014, with the goal of delivering free naloxone kits to Hamiltonians. The program also educates the public on how to recognize the signs of overdose, and how to use drugs and administer naloxone safely. Naloxone kits can be picked up at various locations within the city, such as the Wesley Street Health Centre, The AIDS Network, the Urban Core Community Health Centre, City of Hamilton Sexual Health Clinics, The Van, and various pharmacies throughout the city.²⁶
- 4) **Street Health Clinics:** The City of Hamilton operates Street Health Clinics that provide free medical services (e.g., sexually transmitted disease tests, vaccinations, pregnancy testing, addictions counseling) and access to needle exchange and naloxone kits. Formal appointments and health cards are not required. Street Health Clinics are currently operating at the Wesley Centre (Mondays, Wednesdays, and Fridays; 9 am–1 pm) and Notre Dame House (Tuesdays, 3:30–5:30pm).²⁷
- 5) **Hamilton Opioid Information System – Opioid Surveillance and Monitoring Hamilton:** Public Health Services collaborates with Hamilton Paramedic Services, Hamilton Health Sciences, St. Joseph's Healthcare Hamilton, and community partners to collect and disseminate opioid-related information to the public. Information regarding naloxone distribution, opioid overdoses, opioid-related deaths, and emergency department visits and hospital admissions, can be found online.²⁶
- 6) **Overdose Prevention Site (OPS):** Hamilton's first temporary OPS opened on June 5, 2018 at the Urban Core Community Centre at 71 Rebecca St. The site was developed in collaboration with Urban Core and Hamilton's Shelter Health Network. Sufficient funding was provided by the Ministry of Health and Long-Term Care to keep the site open until November 30, 2018. The site is appropriately located near Wards 2 and 3: the most high-risk zones for opioid-related harms. The OPS operates on Tuesdays and Thursdays from 8–11pm, and on Mondays, Wednesdays, Fridays, and weekends, from 6–11pm. Those who use the OPS can access a volunteer physician, nurse, and support staff. Within the first two months, at least 400 clients have attended the OPS.²⁸ As of August 2018, De dwa da dehs nye>s Aboriginal Health Centre has submitted an application to Health Canada to open a permanent site in Hamilton; the open application is still under review.²⁹ Urban Core and Wesley Urban Ministries have also expressed interest in

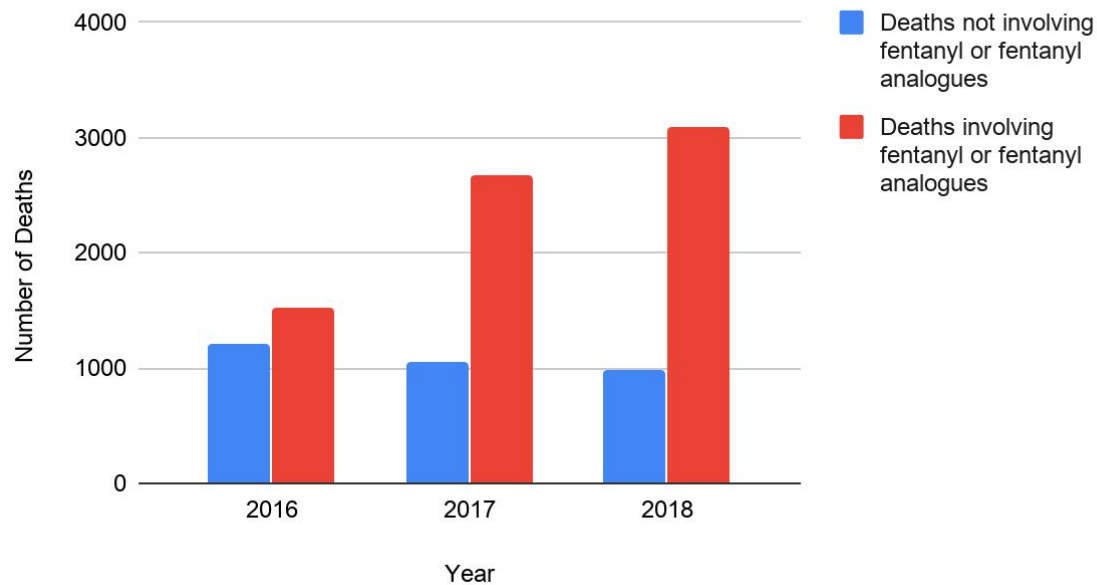
supporting a permanent site. The Urban Core site was approved to be a permanent facility in December 2018 with a unanimous vote from the government. Furthermore, the City Council believes that there is a need for two of these sites in Hamilton. Although there is support at the government level, this project has been at a stand-still due to issues with finding an appropriate location with a willing landlord.

The Opioid Poisoning Crisis

Fentanyl is a very potent opioid pain killer usually utilised in the hospital setting for the management of severe pain. It comes medically in a variety of forms including skin patches, injections and tablets. Fentanyl is 20 to 40 times more potent than heroin and 100 times more potent than morphine making the risk of accidental overdose very high. It is also odourless and tasteless making it difficult to detect when mixed with other drugs such as heroin and cocaine. Currently the most accurate way to test drugs for fentanyl contamination is via drug checking services offered at select supervised consumption site. Currently the Urban Core Community Health Centre, Hamilton's only OPS, does not offer drug checking services.^{25, 29} Alternatively there are fentanyl test strips available in stores and online but they are not specifically designed to check street drugs before consumption and may not detect fentanyl-like drugs including carfentanil.³⁰ This insidious nature of fentanyl and fentanyl analogue contamination puts those with opioid use disorder at increased risk for overdose.

One of the primary driving forces behind the overdose emergency is the contamination of the illicit drug supply with fentanyl and other fentanyl analogues. Of the drugs seized by the Ontario police service and tested by Health Canada's Drug Analysis Services, fentanyl or fentanyl analogues have become increasingly represented. In Ontario in 2016, heroin was the lead opioid identified at 1110 positive tests but by 2017 data showed fentanyl being the highest at 2052 positive tests.³¹ This data shows evidence of a trend toward the increased prevalence of these drugs on the streets. In 2016, 45% of accidental apparent opioid-related deaths in Ontario involved fentanyl or fentanyl analogues that percentage increasing to 74% by 2018. From 2016 to 2018 the number of accidental apparent opioid related deaths not involving fentanyl have remained somewhat stagnant with an overall increase being seen in accidental apparent opioid related deaths involving fentanyl (Figure 3).¹⁶ These patterns are reflected locally with preliminary data indicating that in Hamilton 82% of accidental opioid-related deaths were attributable to fentanyl or its analogues.³² This increase in fentanyl or fentanyl analogue contamination of street drug supply has been accompanied by the increased prevalence of opioid-related deaths both locally and provincially. In 2016, Ontario had 867 opioid-related deaths with this number increasing by 70% to 1473 in 2018.³¹ In 2018, Hamilton saw 103 confirmed deaths related to an opioid-related emergency with the opioid-related death rate remaining consistently higher than the provincial average. More recently, between January to April 2019, the Hamilton Paramedic Services responded to 280 cases of suspected opioid overdoses with the number of calls monthly doubling when compared to the same period in 2018. May 2019 was identified as being the highest volume month to date of paramedic calls for overdose³². The increased toxicity of the drug supply is driving increases in opioid-related deaths locally and across the country putting those with opioid use disorder at increased risk of overdose and death.

Figure 4: Number of accidental apparent opioid-related deaths involving or not involving fentanyl or fentanyl analogues in Canada



Current Opioid Agonist Therapies

Opioid Agonist Therapy (OAT) is the current first-line treatment for individuals 16 years of age or older, with an opioid use disorder. Patients are given oral long-acting opioid drugs such as methadone or buprenorphine/naloxone (Suboxone™) to help prevent withdrawal and provide long-term stable relief from opioid cravings. These medications are taken under the direct supervision of a trained healthcare professional and patients are subject to weekly urine tests to monitor treatment dose as well as screen for any illicit drug use. There is a large body of evidence that supports OAT as a treatment for opioid use disorder with both buprenorphine and methadone being included in the World Health Organization's list of essential medications.³³ According to Mattick et. al (2003) methadone is an effective intervention for the treatment of heroin dependence and has a higher retention rate than treatments that do not utilize OAT.³⁴ In a 2008 study done by by Kamien et al. in the United States, it was found that addiction and retention did not differ between individuals on methadone versus those on buprenorphine/naloxone making buprenorphine/naloxone a viable clinical alternative.³⁵

However, despite the benefits of the treatment, OAT has known limitations including patient intolerance to the treatment, side effects and long-term retention. In a study conducted by Bachhuber et al. in 2018 at the Stabilization Treatment and Engagement Program in Philadelphia, retention rates on a buprenorphine program was found to be 77%, 65%, 59% and 56% at three-, six-, nine- and 12 months follow-up respectively.³⁶ In another study by Braback et. al (2017) in Sweden, they reported retention rates of 94%, 89%, and 82% over three-, six-, and 12 months post follow up on methadone or buprenorphine treatment.³⁷ Certain patients continue to experience cravings despite optimal OAT dosing, while other patients are unable to reach a therapeutic dose. Side effects of these medications include drowsiness and lightheadedness, nausea and vomiting, excessive sweating and constipation, which some individuals are unable to tolerate. Patients must also submit to daily structured visits with their supervising health care

provider and conduct regular illicit drug screens with a positive test potentially leading to discharge from treatment. Individuals who do not benefit from these first-line therapies are at an increased risk of premature death, non-fatal overdose, blood-borne infectious diseases (e.g., HIV and hepatitis C), violence, and arrest.³⁸ Presenting an alternative to these patients who have not benefited from OAT treatments but are motivated to treat their opioid use disorder is crucial in preventing further opioid-related deaths.

Injectable Opioid Agonist Treatments and Managed Opioid Programs

The Evidence for Injectable Opioid Agonist Treatments

Injectable opioid agonist treatment (iOAT) is a high intensity treatment for individuals with opioid use disorder (OUD) who have not benefited from other treatments, including OAT.³⁸ Evidence and clinical use has demonstrated that iOAT is an effective treatment for OUD through significantly decreasing exposure to illegal opioids, thus reducing exposure to fentanyl and carfentanil-laced opioids, suggesting that iOAT may be an integral component in addressing the opioid crisis.³⁸

iOAT involves prescribing individuals with treatment-resistant OUD specific, injectable doses of hydromorphone or diacetylmorphine (pharmaceutical heroin).³⁹ These medications are prescribed by physicians or nurse practitioners. Managed opioid programs (MOPs) involve the provision of iOAT and other services such as case management and facilitated access to other supports such as housing, primary care, and trauma therapy.³² In MOPs, patients self-inject these medications under direct medical supervision.

There are a variety of factors contributing to an individual's inability to respond to first line OUD therapy, such as OAT. These include: cravings persisting despite optimal OAT dosing; patients being unable to reach a therapeutic dose; or opting not to initiate oral OAT (e.g., previous experience with oral OAT including side effects, intolerance, or insufficient reduction in craving and illegal drug use).³⁸ Individuals who do not respond to first-line therapy are at an increased risk of premature death, non-fatal overdose, blood-borne infectious diseases (e.g., HIV and hepatitis C), violence, and arrest.⁴⁰ The evidence has shown that in individuals who are treatment refractory to methadone, diacetylmorphine administered by medical professionals in a clinical setting is beneficial in terms of reducing illicit opioid use, treatment drop-out, criminal activity, incarceration, and mortality.³⁸ A 2011 Cochrane review showed that diacetylmorphine appears to be associated with slightly superior outcomes related to social functioning, in comparison with methadone treatment at established therapeutic doses in individuals previously unsuccessfully treated with methadone.⁴¹ It was found that 46-65% of patients discontinue methadone treatment in the first year and 40-70% of patients discontinue buprenorphine/naloxone treatment in the first six months.³⁸ Conversely, 67-88% of patients retained on diacetylmorphine in the first year and 77% of patients remained on hydromorphone in the first six months.^{38, 42}

The SALOME (Study to Assess Longer-term Opioid Medication Effectiveness) trial, was a phase 3, double-blind randomized controlled trial conducted in Vancouver, BC, that compared diacetylmorphine with injectable hydromorphone in a population of patients with long-term, treatment-refractory OUD.⁴² It found that hydromorphone was non-inferior to diacetylmorphine for long-term injection street opioid users not currently benefiting from available treatments.⁴² Both medications, delivered in identical conditions, have been shown to have positive outcomes such as high retention rates (over 85%), reduction of street opioid use (from daily to a few days per month) and illegal activities.⁴² Since diacetylmorphine has been shown to be superior to methadone, we can assume based on the findings of the SALOME trial that

hydromorphone would be superior to methadone as well.³⁸ This is beneficial because hydromorphone currently does not face the same regulatory barriers to expansion in Canada. As such, we hope to see more expansion in MOPs that provide a safe supply of hydromorphone in the near future, while simultaneously increasing availability of diacetylmorphine in Canada through official, regulated channels. A lifetime analysis of the SALOME trial showed that hydromorphone was estimated to provide individuals with more than three additional years of life, on average, compared to methadone alone.⁴³ Additionally, economic analysis indicated that over a lifetime, the provision of hydromorphone could save society \$140,000 per individual, with most savings occurring through reductions in associated property and violent crime.⁴³ The analysis did not include measured changes in the possession or dealing of drugs, disorderly conduct, sex work, major driving violations, or conditions imposed by the judicial system, which would demonstrate even greater cost savings.⁴³

Regarding the safety of MOPs, it is important to emphasize that iOAT must be administered in a structured, supervised clinical setting. Any frequently administered injectable treatment is associated with higher risks of cutaneous and infectious complications compared to its equivalent oral formulation and its intravenous or intramuscular route of administration means that the onset of action and duration to reach peak effects is shorter.³⁸ As such, iOAT should only be administered in designated clinical settings, with sterile supplies and in clean and safe conditions, and under the supervision of qualified staff trained to intervene in the event of an adverse event or emergency. However, the risk of experiencing adverse outcomes from injecting street drugs are significantly higher than iOAT. Studies in Europe and Canada have reported instances of significant respiratory depression events in people receiving injectable opioids, at an overall rate of about 1 in every 6000 injections, which is significantly lower than the risk present when injecting street heroin.³⁸ Each of these events were safely resuscitated and managed by trained medical staff. Serious adverse events associated with injection occur within minutes. Thus, a post-injection supervision period of only 15-20 minutes has been recommended in clinical guidelines.³⁸ Overall, the MOP model of managing treatment-refractory OUD is significantly safer than having these individuals inject illicit opioids.

Current Infrastructure of Managed Opioid Programs

Diacetylmorphine was previously only available in very limited amounts in Canada through the Special Access Program (SAP), which provides access to non-marketed drugs for practitioners treating patients with serious or life-threatening conditions when conventional therapies have failed, are unsuitable, or unavailable.⁴⁴ The only licensed manufacturer through which Canada imports diacetylmorphine is Switzerland. However, hydromorphone does not pose the same regulatory barriers in Canada, which is conducive to the expansion of MOPs. In May 2019, Canada became the first country in the world to approve the use of injectable hydromorphone as a treatment for adults with severe OUD, and added diacetylmorphine to the list of Drugs for an Urgent Public Health Need (UPHN).⁴⁵ This allows qualified healthcare professionals to access drugs to address an urgent public health need that are authorized for sale in certain other countries, but not yet authorized in Canada.⁴⁵ Thus, diacetylmorphine can now be imported and supplied in any province or territory in Canada to address the opioid crisis. The UPHN channel of importing diacetylmorphine is separate from SAP.

The Ontario Drug Benefit Formulary is a listing of prescription drug products that are covered by the Ministry of Health and Long Term Care (MOHLTC). The formulary itself exists to help practitioners, pharmacists, and professional committees reference which drugs are eligible for coverage.⁴⁶ To qualify for the Ontario Drug Benefit (ODB) program individuals must have a valid Ontario health card and at least one of the following:

- 1) Greater than 65 years old;
- 2) Resident of a long-term care facility or a Home for Special Care;
- 3) Enrollment in a Home Care program;
- 4) Have high drug costs relative to income and registered in the Trillium Drug Program; or
- 5) Receive social assistance through Ontario Works or the Ontario Disability Support Program.⁴⁷

The formulary currently lists medications used in OAT (methadone and suboxone).⁴⁶ Thus, the costs for these medications are covered for individuals who qualify for ODB. However, the concentrations of injectable hydromorphone required as treatment in iOAT for OUD (50mg/ml and 100mg/ml) are not listed on the Ontario Drug Benefit Formulary.³⁸

Managed Opioid Programs in Other Jurisdictions

Europe: In the United Kingdom, prescription diacetylmorphine has been readily available for the treatment of OUD for over a century.³⁸ In Switzerland, diacetylmorphine has been available since 1994.³⁸ In 2008, a national referendum led to a legalized diacetylmorphine program funded by Swiss national health insurance.³⁸ Recently, Germany, Denmark and the Netherlands also adopted supervised prescription diacetylmorphine treatment for those with severe, treatment-refractory OUD.³⁸ In these jurisdictions, MOPs also include comprehensive addictions care, with the aim of meeting as many of the patient's health and psychosocial needs as possible on-site.³⁸ There are stand-alone clinics and clinics co-located with or in close proximity to other addictions and psychosocial services.³⁸

Canada: MOPs have been piloted and successfully implemented in the following jurisdictions: Surrey and Vancouver, British Columbia; Calgary, Alberta; and a shelter-based program in Ottawa, Ontario.³⁸ In 2019, the MOHLTC received \$102 million from the federal government in a treatment funding agreement. While the allocation of these funds has not yet been announced, advocating for some of these funds to be allocated for the implementation of MOPs is crucial. In February 2019, the city of Toronto made recommendations to the MOHLTC to support rapid implementation of MOPs, add the required concentrations of hydromorphone to the Ontario Drug Benefit Formulary for the treatment of opioid use disorder, work with Health Canada to regulate the import and use of diacetylmorphine, and make MOPs universally accessible to all Ontarians in need.⁴⁷

Our Ask

We ask that the Hamilton City Council publicly support the implementation of managed opioid programs (MOPs) in Hamilton and throughout Ontario given the urgency of the opioid poisoning crisis and as part of the continuum of care for opioid use disorder. We ask that the Hamilton City Council write a letter to the Honourable Christine Elliott, Ontario Minister of Health for the Ministry of Health and Long Term Care (MOHLTC), in support of the following items:

- 1) Add injectable opioid agonist therapy medications at their required concentrations (50 milligrams/milliliters and 100 milligrams/milliliters hydromorphone) to the Ontario Drug Benefit Formulary for the treatment of opioid use disorder and ensure the accessibility of these medications to individuals with opioid use disorder;
- 2) Seek authority from Health Canada to import diacetylmorphine (pharmaceutical heroin) for use as a managed opioid program medication in Ontario; and
- 3) Ensure that managed opioid medications are universally accessible to all Ontarians who could benefit from these kinds of programs, and that cost is not a barrier.

We ask that Hamilton City Council, similar to Toronto, send a letter of support for the Ministry of Health and Long-Term Care to advocate for increased funding and action towards the implementation of MOPs in Hamilton and elsewhere in Ontario to mitigate the harms of injection drug use and improve health and social outcomes for individuals with opioid use disorder.

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Glossary

Carfentanil: Opioid medication used by veterinarians for very large animals. It is not intended for human use and can be 100 times stronger than fentanyl and 10,000 times stronger than morphine. Carfentanil has been found in recreational drugs.

Fentanyl: Opioid medication, that is similar to morphine and codeine, but can be up to 100 times stronger than morphine. It is most often prescribed as a slow-release patch to people with chronic, severe pain. Most illegal fentanyl is produced as a powder and can be mixed into other recreational drugs, such as heroin or cocaine.

Harm reduction: A strategy aimed at reducing the negative consequences and sequelae associated with drug use and risky behaviours. It is a philosophy built on social justice and advocates for the rights of people who use drugs.

Injectable Opioid Agonist Therapy (IOAT): Evidence-based treatment option for patients with opioid use disorder who have not benefited from other treatments. This treatment involves provision of a safe supply of injectable opioids, typically hydromorphone or pharmaceutical heroin (diacetylmorphine).

Managed Opioid Program (MOP): Evidence-based programs offering treatments proven to curb use of street drugs and decrease crime while increasing adherence and retention in opioid use disorder treatment. These programs include the provision of a safe supply of prescribed injectable opioids, typically hydromorphone or pharmaceutical heroin (diacetylmorphine). MOPs are proven to curb use of street drugs and decrease crime while increasing adherence and retention in opioid use disorder treatment.

Naloxone: A medication that can temporarily reverse the effects of an opioid overdose. It was made freely available in pharmacies, community organizations and provincial correctional facilities in 2016. Naloxone can be taken either as a nasal spray or as an injectable. Narcan is the trade name for naloxone.

Opioid agonist therapy (OAT): Currently the first line treatment for opioid use disorder. Medications, such as methadone or buprenorphine (Suboxone), are taken to prevent withdrawal symptoms and reduce cravings for opioid drugs. These drugs are long-acting opioids which allows them to prevent withdrawal for 24-36 hours without causing the drug related high.

Overdose Prevention Sites (OPS): Overdose Prevention Site: a temporary site where people can come and use drugs under medical supervision. These sites require federal exemptions so that drug users and employees are not criminalized. These sites are generally provincially funded by the Ministry of Health and Long Term Care, and function under renewable 3 or 6 month contracts.

Safe Injection Site (SIS): Safe Injection Site: a permanent site where people can use drugs, specifically injectables, under medical supervision. These sites require federal exemptions so that drug users and employees are not criminalized. SISs are generally provincially funded by the Ministry of Health and Long Term Care.

Safe Consumption Site (SCS): Safe Consumption Site: a permanent site where people can use any desired drug. Special ventilation is required if people are smoking drugs. These sites require federal

exemptions so that drug users and employees are not criminalized. SCSs are generally provincially funded by the Ministry of Health and Long Term Care.

Links/Resources

The AIDS Network

<https://www.aidsnetwork.ca/>

140 King St. E., Suite 101
Hamilton, ON L8N 1B2
905-528-0854

Hamilton Street Health Clinics

<https://www.hamilton.ca/public-health/clinics-services/street-health-clinics>

The Wesley Centre
195 Ferguson Avenue North
Hamilton, ON L8L 8J1
905-777-7852

Notre Dame Clinic

14 Cannon Street West
Hamilton, ON L8R 2B3
905-308-8090

Hamilton Opioid Information System

<https://www.hamilton.ca/public-health/reporting/hamilton-opioid-information-system>

Keeping Six Hamilton

<http://www.keepingsex.org>

Overdose Prevention Site

http://shelterhealthnetwork.ca/?page_id=983

Hamilton Urban Core Community Health Centre
71 Rebecca Street Hamilton, ON L8R 1B6

Overdose Prevention Site FAQs:

<http://shelterhealthnetwork.ca/wp-content/uploads/2018/04/Overdose-Prevention-Sites-FAQ.pdf>

The Honourable Christine Elliott
Ministry of Health and Long-Term Care
5th Floor
777 Bay St.
Toronto, ON M7A 2J3

October 21, 2019

Dear Minister Elliott and staff,

We, the Hamilton City Council, are writing to you to express our concerns on the opioid crisis and its impact on our city and the province of Ontario.

From the beginning of 2016 to March 2019, the opioid crisis has claimed the lives of **4,064 Ontarians**.¹ One major contributor to the opioid crisis is the rising prevalence of synthetic opioids, such as fentanyl and its analogues, in the illicit drug supply. Synthetic analogues are hundreds of times more potent than prescription opioids and often unknowingly added to street drugs, thus exponentially exacerbating the risk of overdose. In early 2016, 47% of apparent opioid-related deaths in Ontario involved fentanyl and its analogues. As of March 2019, the percentage of apparent opioid-related deaths involving fentanyl and its analogues has risen to **86%**.¹

Hamilton has been disproportionately affected by the opioid crisis. In 2017, our opioid-related death rate was **72% greater than Ontario's average**, with this percentage continuing to increase.² Preliminary data in 2019 indicates that 82% of accidental opioid-related deaths in Hamilton are related to fentanyl and its analogues.² The opioid crisis has accrued **massive economic costs for Ontario and its taxpayers**, such as increased emergency room visits and resuscitation costs, increased burden of bloodborne illnesses (eg. HIV and hepatitis C), criminal justice costs, and lost productivity costs.³

Methadone and suboxone are opioid substitution treatments that are most commonly prescribed as first-line therapy for individuals with opioid use disorder. While these treatments are effective, there are individuals who are refractory to methadone and suboxone treatment. Thus, more comprehensive treatment is necessary to address opioid use disorder.⁴ **Managed opioid programs (MOPs)** have been shown to increase retention in treatment, reduce street drug use and crime, and reduce mortality in individuals who are refractory to methadone.⁴ MOPs involve the provision of injectable opioid agonist therapy (iOAT) and other services such as case management and facilitated access to other supports including housing, primary care, and trauma therapy. iOAT consists of either **hydromorphone or diacetylmorphine**, which are prescribed by physicians or nurse practitioners and then self-injected by patients under direct medical supervision.⁴ **Hydromorphone and diacetylmorphine have better long-term retention rates and are more cost-saving than methadone and suboxone.**⁴ 67-88% of patients retained on diacetylmorphine in the first year and 77% of patients remained on hydromorphone in the first six months.⁵ Economic analysis indicated that over a lifetime, the provision of hydromorphone could **save society \$140,000 per individual**, with most savings occurring through reductions in associated property and violent crime.⁶

In May 2019, **Canada became the first country in the world to approve the use of injectable hydromorphone as a treatment for adults with severe opioid use disorder, and added diacetylmorphine to the list of Drugs for an Urgent Public Health Need (UPHN).**⁷ This allows healthcare professionals to access drugs to address an urgent public health need that are authorized for sale in certain other countries, but not yet authorized in Canada. Thus, diacetylmorphine can now be imported and supplied in any province or territory in Canada to address the opioid crisis. Hydromorphone is already currently available in all jurisdictions in Canada, but the required doses for iOAT are not listed in the Ontario Drug Benefit Formulary.⁸ Currently, MOPs have been piloted and successfully implemented in the following jurisdictions: Surrey and Vancouver, British Columbia; Calgary, Alberta; and a shelter-based program in Ottawa, Ontario.⁴

In February 2019, the city of Toronto made recommendations to the MOHLTC to support rapid implementation of MOPs,⁹ which were also received by the Hamilton Board of Health. In July 2019, the Hamilton Board of Health submitted its own Information Report regarding MOPs that looked favourably on implementation of MOPs in Ontario.¹⁰ With the **\$102 million that the Province of Ontario has received** from the federal government for drug treatment, the city of Hamilton believes that part of this funding should be used to support the implementation of MOPs.

The City of Hamilton calls upon the Province of Ontario to:

1. Add injectable opioid agonist therapy medications at their required concentrations (50 milligrams/milliliters and 100 milligrams/milliliters hydromorphone) to the Ontario Drug Benefit Formulary for the treatment of opioid use disorder and ensure the accessibility of these medications to individuals with opioid use disorder;
2. Work with Health Canada to import diacetylmorphine (pharmaceutical heroin) for use as a managed opioid program medication in Ontario; and
3. Ensure that managed opioid program medications are universally accessible to all Ontarians who could benefit from these programs, and that cost is not a barrier.

Signed,
The City Council of Hamilton

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10. City of Hamilton. Managed Opioid Treatment Programs (BOH19023) (City Wide). Hamilton; 2019.

The Opioid Poisoning Crisis in Hamilton

The number of opioid-related deaths in Hamilton continues to **increase** each year

There are two factors that have heavily contributed to the development of the opioid crisis: *overprescription of opioids and the rising prevalence of synthetic opioids such as fentanyl or fentanyl analogues in the illicit drug supply*. Since 1980 the amount of **opioids prescribed** for pain management in Canada has **increased by 3000%** and in 2016, over **20 million prescriptions for opioids** were dispensed. Patients who were prescribed opioids over time developed increased dependence and tolerance and the misuse of prescription opioids was and still is prevalent in Canada. Secondly extremely potent synthetic opioids such as fentanyl are contaminating the illicit drug supply. Fentanyl is **20-40 times more potent than heroin** and **100 times more potent than morphine**. In 2016, 45% of accidental apparent opioid-related deaths in Ontario involved fentanyl or fentanyl analogues and that percentage increased to 74% in 2018. From 2016 to 2018 the number of accidental apparent opioid-related deaths not involving fentanyl have remained somewhat stagnant with an overall increase being seen in accidental apparent opioid-related deaths involving fentanyl and its analogues. These patterns are reflected locally with preliminary data indicating that **in Hamilton 82% of accidental opioid-related deaths were attributable to fentanyl or its analogues**. Hamilton opioid-related death rate remains consistently higher than the provincial average.

Opioid Agonist Therapy (OAT) is the first line treatment for individuals with opioid use disorder. Patients receive oral long-acting opioid drugs under direct supervision of health care professionals. OAT is meant to provide long-term stable relief from opioid cravings. Although effective, OAT is limited by patient tolerance to treatment, side effects and long-term retention.

In a study conducted by Bachhuber et al. in 2018 at the Stabilization Treatment and Engagement Program in Philadelphia, retention rates on an OAT program was found to be 77%, 65%, 59% and 56% at three-, six-, nine- and 12 months follow-up respectively. In another study by Braback et. al (2017) in Sweden, they reported retention rates of 94%, 89%, and 82% over three-, six-, and 12 months. Certain patients continue to experience cravings despite optimal OAT dosing, while other patients are unable to reach a therapeutic dose. Side effects of these medications include drowsiness and lightheadedness, nausea and vomiting, excessive sweating and constipation, which some individuals are unable to tolerate. **Individuals who do not benefit from these first-line therapies are at an increased risk of premature death**, non-fatal overdose, blood-borne infectious diseases (e.g., HIV and hepatitis C), violence, and arrest. Presenting an alternative to these patients who have not benefited from OAT treatments but are motivated to treat their opioid use disorder is crucial in preventing further opioid-related deaths.

Injectable Opioid Agonist Therapy (iOAT) is a high intensity treatment for individuals with opioid use disorder who have not benefited from other treatment including OAT. Injectable doses of hydromorphone or diacetylmorphine (pharmaceutical heroin) are administered in a supervised clinical setting with sterile supplies. The risk of adverse outcomes from injecting street drugs are significantly higher than iOAT.

Managed opioid programs (MOPs) provide iOAT and other comprehensive addiction services such as case management and facilitated access to other supports such as housing, primary care, and trauma therapy. In the United Kingdom, Switzerland, Germany, Denmark, and the Netherlands, supervised prescription diacetylmorphine have been used to treat patients with severe, refractory opioid use disorder. Closer to home, **MOPs have been successfully piloted in Surrey, Vancouver, Calgary, and Ottawa**. Currently, iOAT doses of hydromorphone are not available to physicians on the Ontario Drug Benefit Formulary (list of prescription drugs covered by the Ministry of Health and Long Term Care). Diacetylmorphine as of May 2019 was added to the list of Drugs for an Urgent Public Health Need and is available through the Special Access Program but is not listed on the formulary. **iOAT has proven to be a valuable treatment for individuals with opioid use disorder who have not previously responded to treatment.**

October 2019 | **McMaster Municipal Day of Action**

Municipal Day of Action Lead: Sophie Ngana MD/PhD Candidate sophie.ngana@medportal.ca

The Opioid Poisoning Crisis in Hamilton

Hamilton was ranked 4th in **opioid poisoning hospitalizations** in Canada

In 2019, the MOHLTC received \$102 million from the federal government in a treatment funding agreement. While the allocation of these funds has not yet been announced, advocating for some of these funds to be allocated for the implementation of MOPs is crucial. **In February 2019, the city of Toronto made recommendations to the MOHLTC** to support rapid implementation of MOPs, add the required concentrations of hydromorphone to the Ontario Drug Benefit Formulary for the treatment of opioid use disorder, work with Health Canada to regulate the import and use of diacetylmorphine, and ensure that MOPs are universally accessible to all Ontarians in need.

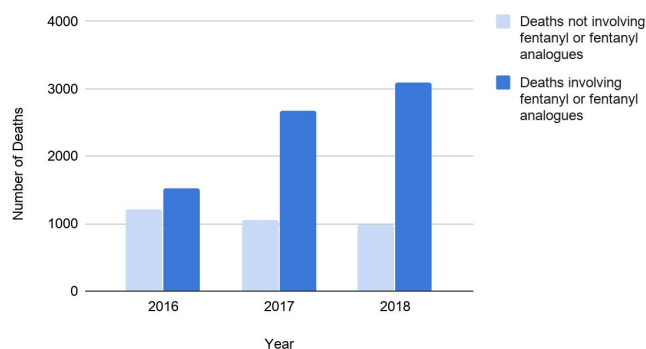
OUR ASK

We ask that the **Hamilton City Council publicly support the implementation of managed opioid programs in Hamilton** and throughout Ontario given the urgency of the opioid poisoning crisis and as part of the continuum of care for opioid use disorder. We ask that the **Hamilton City Council write a letter to the Honourable Christine Elliott**, Ontario Minister of Health for the Ministry of Health and Long Term Care (MOHLTC), **in support of the following items:**

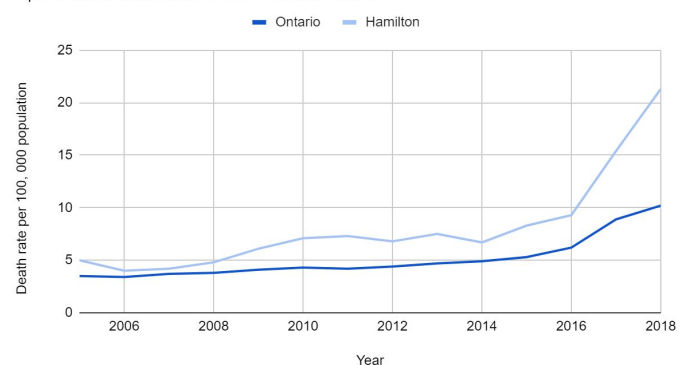
1. Add injectable opioid agonist therapy medications at their required concentrations (50 milligrams/milliliters and 100 milligrams/milliliters hydromorphone) to the Ontario Drug Benefit Formulary for the treatment of opioid use disorder and ensure the accessibility of these medications to individuals with opioid use disorder;
2. Seek authority from Health Canada to import diacetylmorphine (pharmaceutical heroin) for use as a managed opioid program medication in Ontario; and
3. Ensure that managed opioid medications are universally accessible to all Ontarians who could benefit from these kinds of programs, and that cost is not a barrier.

Prevent more Hamiltonians and Ontarians at large from **becoming a statistic**

Number of accidental apparent opioid-related deaths involving or not involving fentanyl or fentanyl analogues in Canada



Opioid-related death rates in Hamilton and Ontario



October 2019 | McMaster Municipal Day of Action

Municipal Day of Action Lead: Sophie Ngana MD/PhD Candidate sophie.ngana@medportal.ca