HAMILTON'S OPIOID EPIDEMIC

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HAMILTON'S ONGOING OPIOID CRISIS

For the past two decades, Hamilton, Ontario—like many Canadian cities—has faced an escalating opioid crisis. In 2021, there were 162 opioid overdoses that resulted in death, 43% higher than the provincial average.[1] In 2023, the Hamilton City Council declared opioid-related deaths an official emergency.[2]

The complex nature of opioid use disorder (OUD) in Hamilton necessitates a thorough investigation into its origins and a critical analysis of the current stratgies available to address this ongoing public health concern. Opioid addiction functions as both a clinical and social phenomenon, requiring contextualization of the opioid epidemic within the history of Hamilton. Against this backdrop, the clinical aspects of opioid use are multifaceted. Hamilton emergency responders face the challenge of rising rates of opioid-related overdoses, 911 calls, and managing opioid dependence in conjunction with other comorbidities. As a result, a comprehensive understanding of the clinical condition is vital for effective implementation of prevention, intervention, and treatment strategies. This article will explore the specific patterns of opioid use in Hamilton, at-risk populations, and health outcomes.

To respond to the epidemic, the municipal government and local nonprofits have designed a variety of interventions. Analysing these response strategies implemented in Hamilton has revealed their response strategies implemented in Hamilton has revealed their effectiveness on a local scale and areas for improvement. Whether through harm reduction initiatives, drug-replacement therapies, or community-based interventions, it is critical that policies are tailored to the unique needs of Hamilton's population. There are funding gaps that create barriers for users to receive treatment, and exacerbate challenges created by recent increases in polysubstance use, specifically when preventing overdoses.

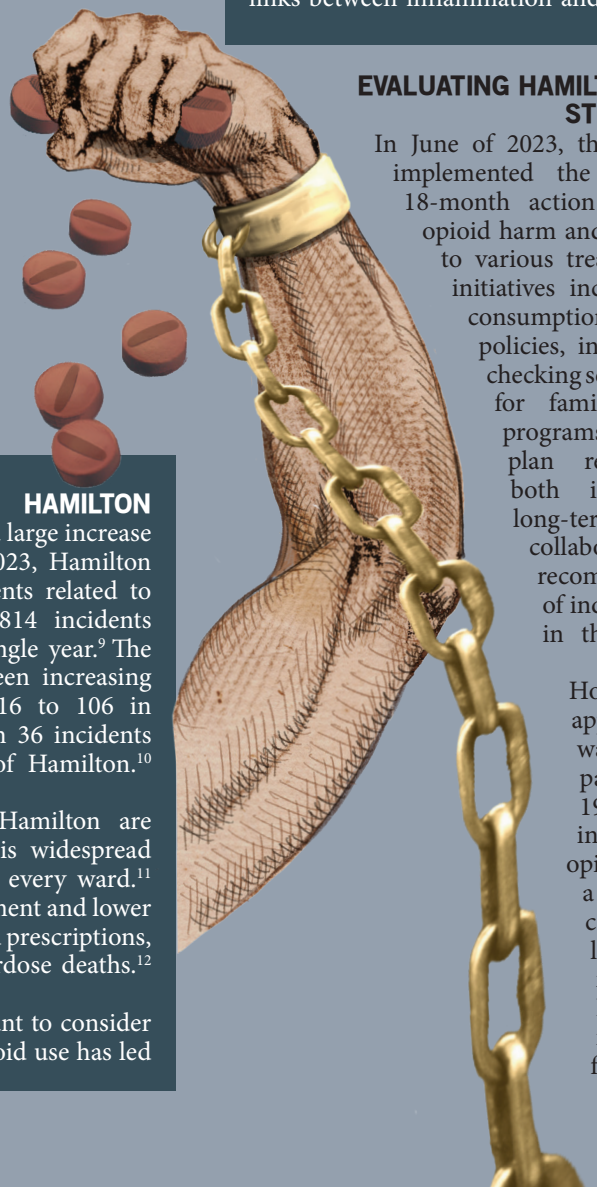
By elucidating the specific challenges faced by the community, this

article aims to contribute to the ongoing dialogue surrounding the opioid epidemic, providing a foundation for targeted interventions to address this pressing public health crisis in Hamilton.

INSIGHT INTO OPIOID ADDICTION AND OUD

According to the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders, OUD is a clinically diagnosed condition involving a harmful pattern of opioid use leading to significant impairment or distress.[3] OUDs are categorised as mild, moderate, or severe based on criteria such as tolerance, withdrawal symptoms, and impact on daily life. The repercussions of OUD on an individual's health are two-fold, are two-fold, affecting both mental and physical well-being. Individuals with OUD often struggle with mental health disorders, such as depression and anxiety, and face physical health challenges, including respiratory problems and a higher susceptibility to infectious diseases.[4,5] These complexities underline the critical need for holistic treatment strategies that concurrently address the physical and psychological facets of OUD.[6] The broader term 'opioid addiction' is often defined as a chronic and compulsive disorder that involves the uncontrollable use of opioids despite harmful consequences. Understanding OUD and differentiating it from the more stigmatised and historically used term 'opioid addiction' is crucial for encouraging open dialogue and promoting effective treatment.[1] Stigma, in the context of OUD, often stems from misconceptions about the disorder, which can lead to discrimination and social exclusion.[1] However, the term 'addiction' has evolved to bear social stigma and thus, replacing it with OUD supports the notion that this condition is a health issue rather than a personal shortcoming.[3]

In Hamilton, managing OUD presents challenges unique to the city. Hamilton is grappling with the need to balance evolving national and provincial chronic pain opioid prescribing guidelines with the increasing demand for chronic pain treatment and surging overdose deaths.[7] Furthermore, Hamilton's approach to OUD management needs to contend with the intertwined issues of homelessness, mental health, and substance abuse, highlighting the necessity for a comprehensive approach to controlling OUD.[8]



EPIDEMIOLOGY OF OPIOID USE IN HAMILTON

Within the past five years, Hamilton has seen a large increase in opioid-related incidents and deaths. In 2023, Hamilton Paramedic Services responded to 964 incidents related to suspected opioid overdoses, compared to 814 incidents in 2022, representing a 16% increase in a single year.[9] The number of opioid-related deaths has also been increasing annually from 52 confirmed deaths in 2016 to 106 in 2023. In January 2024 alone, there have been 36 incidents of suspected opioid overdoses in the city of Hamilton.[10]

The impacts of the opioid epidemic in Hamilton are profound. Geographically, the opioid crisis is widespread across Hamilton, with overdoses reported in every ward.[11] However, areas with higher rates of unemployment and lower median home values have higher rates of opioid prescriptions, opioid-related hospital visits, and opioid overdose deaths.[12]

The public health impacts are equally important to consider as the socioeconomic impacts. The rise in opioid use has led to an increase in emergency room visits, neonatal abstinence syndrome, and OUD treatment admissions.[13] Demographically, more than 65% of opioid deaths in Hamilton are among men aged 25 to 65.[11] Older adults also present a significant concern, with approximately 15% of Hamilton citizens over the age of 50 being exposed to opioids.[14] Overall, the opioid crisis has strained public health services, with Hamilton Paramedic Services and local hospitals responding to an increasing number of opioid-related incidents.[10]

The types of opioids used clinically in Hamilton are diverse. Codeine and tramadol are often the first-line opioids for mild to moderate chronic non-cancer-related pain.[15] If these prove ineffective, stronger opioids like oxycodone, hydromorphone, and morphine are prescribed. For the treatment of OUD, methadone or buprenorphine-naloxone are commonly used.[16]

The opioid crisis in Hamilton has also led to a rise in the number of children and young adults exposed to opioids. The City of Hamilton found that childhood risk markers predicting opioid use include male sex, tobacco use, depression, conduct disorder, cannabis use, having peers exhibiting social deviance, and elevated systemic inflammation. These factors contribute to the risk through a mix of social, psychological, and biological vulnerabilities, such as societal norms, dependence pathways in the brain, mental health issues, impulsivity, peer influence, familial instability, and potential links between inflammation and dependence vulnerability.[17]

EVALUATING HAMILTON'S OPIOID RESPONSE STRATEGIES

In June of 2023, the city's Public Health Board implemented the Hamilton Drug Plan, an 18-month action plan focused on reducing opioid harm and deaths and increasing access to various treatment options.[7] The specific initiatives included scaling up supervised consumption sites, developing safer-use policies, increasing availability of drug-checking services, and expanding support for families and youth prevention programs. This comprehensive plan reflects a commitment to both immediate and sustainable long-term solutions, emphasising collaboration, evidence-informed recommendations, and the inclusion of individuals with lived experience in the decision-making process.[7]

However, gaps exist in Hamilton's approach. The city's strategy was put on pause during the pandemic to focus on COVID-19-related relief, leading to an increase in deaths linked to opioids.[2] This suggests a need for a more resilient strategy that can adapt to external shocks like a pandemic. Additionally, most drug-related deaths in Hamilton occur in private residences, indicating a need for more community-based

interventions.[7] Private residences may lack immediate access to emergency services and overdose prevention tools like naloxone.[19] Community-based interventions could include educational outreach programs, increased resources, direct in-home support, as well as training for family and friends on how to respond to overdoses, which could be crucial in preventing fatalities.[7]

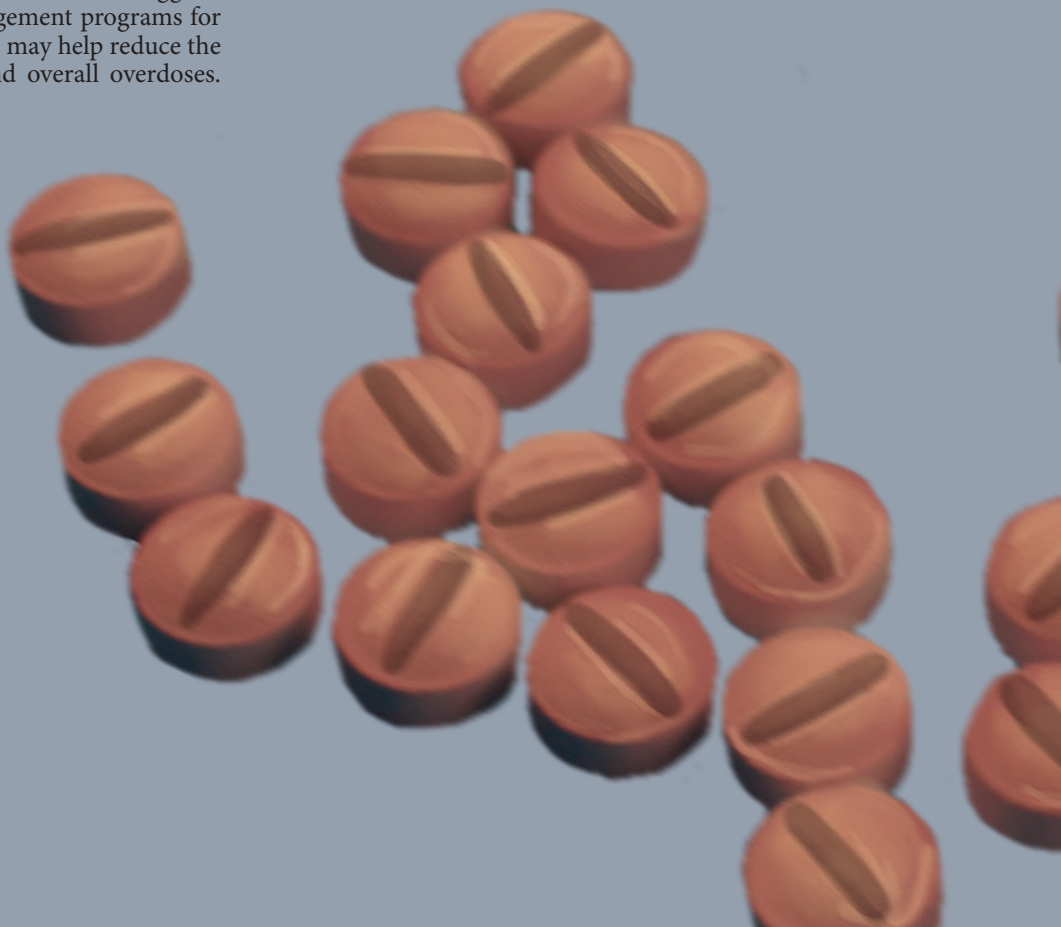
Comparatively, the opioid crisis is also a global issue, with different regions executing a variety of strategies which Hamilton can also implement. For instance, in the United States, strategies primarily involve targeted naloxone distribution and medication-assisted treatment.[6] In Europe, regulatory restrictions, drug policy measures, and large-scale implementation of opioid dependence treatments have been used.[18]

Moving forward, the City of Hamilton could adopt strategies proven successful in other countries. For instance, the U.S. emphasises specialised care, acknowledging different stages of OUD that specific citizens are facing, and promoting collaboration among community entities.[6] Europe's approach of better accessibility and full reimbursement of OUD treatments could also be beneficial to reduce the financial burden of treatment and incentivize more citizens to seek help.[18] By incorporating elements from both the American and European strategies, Hamilton can develop a more robust response to the opioid crisis that addresses various aspects of prevention, treatment, and recovery support.

In addition to the challenges mentioned, the rising use of other drugs along with opioids has created new issues. A 2023 report by Public Health Ontario notes that "opioids and stimulants in combination with each other made up the highest proportion of toxicity deaths during the COVID-19 pandemic (43.1%)."[20] They also reported that deaths in Ontario where the primary cause was alcohol, stimulants, or benzodiazepine use, over 80% also involved opioids. In many of these cases, people may be unaware that their drug supply is impure and could contain additional opioids or stimulants in their drug supply. Since polysubstance use is associated with higher fatality rates, this further suggests that Hamilton needs better substance management programs for all substances. Addressing polysubstance use may help reduce the number of deaths due to opioid-related and overall overdoses.

CONCLUSION

Opioid-related morbidity and mortality data has been collected in Ontario since 2004, and the City of Hamilton's opioid-related death rate has been consistently higher than the provincial average.[10] To respond to the recent surge in opioid-related deaths, the City has implemented various community-based initiatives through the Hamilton Drug Plan, which will tackle the emergency based on a comprehensive, evidence-based approach. The recent shift in the substance abuse landscape towards polysubstance abuse is poised to become a problem if the city does not address these concerns. Although there are still gaps in the City's response, only time will tell the effectiveness of ongoing initiatives. Nevertheless, the pressing need to reshape the narrative of stigma associated with opioid addiction and OUD still remains. It will take the collective efforts of the community, healthcare workers, and policymakers for a sustained response to the opioid emergency in Hamilton to be effective and successful in preventing deaths.



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1. Cheetham A, Picco L, Barnett A, Lubman DI, Nielsen S. The impact of stigma on people with opioid use disorder, opioid treatment, and policy. *Subst Abuse Rehabil*. 2022;13:1–12. Available from: doi:10.2147?SAR.S304566.
2. van den Brink W, Pierce M, van Amsterdam J. What lessons from Europe's experience could be applied in the United States in response to the opioid addiction and overdose crisis? *Addict Abingdon Engl*. 2022;117(5):1197–8. Available from: doi:10.1111/add.15839.
3. Diagnostic and Statistical Manual of Mental Disorders [Internet]. DSM Library. [cited 2024 Jan 31]. Available from: https://dsm.psychiatryonline.org/doi/book/10.1176/appi.books.9780890425596.
4. Santo T, Campbell G, Gisev N, Martino-Burke D, Wilson J, Colledge-Frisby S, et al. Prevalence of mental disorders among people with opioid use disorder: A systematic review and meta-analysis. *Drug Alcohol Depend*. 2022;238:109551.
5. Dydyk AM, Jain NK, Gupta M. Opioid Use Disorder. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 [cited 2024 Jan 31]. Available from: http://www.ncbi.nlm.nih.gov/books/NBK553166/.
6. Evidence-Based Strategies for Preventing Opioid Overdose: What's Working in the United States | Drug Overdose | CDC Injury Center [Internet]. 2022 [cited 2024 Jan 30]. Available from: https://www.cdc.gov/drugoverdose/featured-topics/evidence-based-strategies.html.
7. News · CN· C. Hamilton public health board moves forward with new opioid action plan | CBC News [Internet]. CBC. 2023. Available from: https://www.cbc.ca/news/canada/hamilton/opioid-crisis-action-plan-1.6873396.
8. News · SB· C. Hamilton set to declare state of emergency for homelessness, mental health and opioid addiction | CBC News [Internet]. CBC. 2023. Available from:https://www.cbc.ca/news/canada/hamilton/hamilton-state-of-emergency-homelessness-1.6804478.
9. Klimas J, Hamilton MA, Carney G, Cooper IR, Croteau NS, Dong H, et al. Characteristics and incidence of opioid analgesic initiations to opioid naive patients in a Canadian primary care setting. *Can J Addict*. 2022 Mar;13(1):43. Available from: doi: 10.14288/1.0407128.
10. Hamilton Opioid Information System | City of Hamilton [Internet]. [cited 2024 Jan 30]. Available from: https://www.hamilton.ca/people-programs/public-health/alcohol-drugs-gambling/hamilton-opioid-information-system.
11. Hamilton has seen an "exponential rise" in opioid deaths. Is it a "state of emergency"? [Internet]. CBC. 2023. Available from: https://www.cbc.ca/news/canada/hamilton/opioid-emergency-1.6713522.
12. Seltzer N. The economic underpinnings of the drug epidemic. *Popul Health*. 2020;12:100679. Available from: doi:10.1016/j.ssmph.2020.100679.
13. National Academies of Sciences E, Division H and M, Policy B on HS, Abuse C on PM and RS to APO, Phillips JK, Ford MA, et al. Trends tin Opioid Use, Harms, and Treatment. In: Pain Management and the Opioid Epidemic: Balancing Societal and Individual Benefits and Risks of Prescription Opioid Use [Internet]. National Academies Press (US); 2017. Available from: https://www.ncbi.nlm.nih.gov/books/NBK458661/.
14. Buckley N. The prescription opioid epidemic: a call to action for our profession. *Can J Anesth*. 2016;63(1):8–11.
15. Kahan M, Mailis-Gagnon A, Wilson L, Srivastava A. Canadian guideline for safe and effective use of opioids for chronic noncancer pain. *Can Fam Physician*. 2011;57(11):1257–66.
16. Srivastava A, Kahan M, Nader M. Primary care management of opioid use disorders: Abstinence, methadone, or buprenorphine-naloxone? *Can Fam Physician*. 2017;63(3):200–5. Available from: doi:
17. Shanahan L, Hill SN, Bechtiger L, Steinhoff A, Godwin J, Gaydosh LM, et al. Prevalence and childhood precursors of opioid use in the early decades of life. *JAMA Pediatr*. 2021;175(3):276–85. Available from:10.1001/jamapediatrics.2020.5205.
18. News · BH· C. Hamilton's opioid deaths during pandemic among worst in Ontario, report says | CBC News [Internet]. CBC. 2021 [cited 2024 Jan 30]. Available from: https://www.cbc.ca/news/canada/hamilton/hamilton-opioids-covid-19-1.5918251
19. Partnerships Between Public Health and Public Safety | Drug Overdose | CDC Injury Center [Internet]. 2023 [cited 2024 Jan 30]. Available from: https://www.cdc.gov/drugoverdose/strategies/public-safety.html.
20. Gomes T, Leece P, Iacono A, Yang J, Kolla G, Cheng C, Ledlie S, Bouck Z, Boyd R, Bozinoff N, Campbell, T, Doucette T, Franklyn M, Newcombe P, Pinkerton S, Schneider E, Shearer D, Singh S, Smoke A, Wu F. Characteristics of Substance-Related Toxicity Deaths in Ontario Stimulant, Opioid, Benzodiazepine, and Alcohol-Related Deaths. 2023; Available from: https://odprn.ca/wp-content/uploads/2023/09/Substance-Toxicity-Report-Final.pdf