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PRESCRIPTION OPIOID POLICY FRAMEWORK

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Collaborating Centre*

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About this document

The Centre for Addiction and Mental Health (CAMH) is Canada's largest mental health and addiction teaching hospital and one of the world's leading research centres in this field. CAMH is committed to playing a leading role in transforming society's understanding of mental illness and substance use and building a better health care system. To help achieve these goals, CAMH communicates evidence-informed policy advice to stakeholders and policymakers. This document is the seventh in a series of CAMH Policy Frameworks – documents that review the evidence, summarize the current environment, and propose evidence-informed principles to guide public policy.*

Canada is facing an epidemic of opioid addiction and overdose deaths. Governments recognize the urgency of this issue and have been working to address it, notably through First Do No Harm, a strategy to reduce prescription drug harms in Canada (2013), and Ontario's Narcotics Strategy (2010) – both of which CAMH participates in and supports. Despite these efforts, opioid-related harms have been increasing.

More recently, the Ontario government has announced a Strategy to Prevent Opioid Addiction and Overdose that spans prevention, treatment, and harm reduction as well as pain treatment. The federal government is expected to release an opioid strategy soon. These are welcome developments.

Our objective in releasing this document is to help inform the implementation of these provincial and federal initiatives and to propose some additional measures. The document summarizes the situation in Ontario, outlines the risks inherent in opioid policy, and, based on recent evidence as well as policies being implemented elsewhere, offers some high-level recommendations for a combined public health and clinical response to Ontario's opioid crisis.

* The other CAMH policy frameworks are on alcohol, cannabis, housing, mental health and criminal justice, primary care and problem gambling. They can be found by clicking [here](#) or by visiting our website under *About CAMH > Influencing Public Policy*.

What we know

Many Canadians experience pain – whether acute pain following an injury or surgery, pain caused by cancer or advanced terminal illness, or chronic non-cancer pain (e.g. as a symptom of conditions like arthritis, migraine, or fibromyalgia). Chronic pain is a serious, common, and undertreated medical issue: it is estimated that one in five Canadians lives with it, many of whom wait one year or more to receive care.^[1,2]

Prescription opioids are medications used primarily to treat pain. * While they share certain basic chemical characteristics, their potency varies greatly. They are available in different formulations including tablets or capsules, syrups, suppositories, transdermal or transmucosal preparations, and injectable solutions. They may be short-acting, with quick onset and short duration, or long-acting, with slow or gradual release and long duration.

Prescription opioid use is risky

When used as directed, possible adverse effects of prescription opioids range from relatively innocuous occurrences like dry mouth, nausea, constipation, weight loss, and lethargy to more serious ones:

- *Injury.* Because opioids can cause drowsiness, they increase the risk of accidental injury, including fall-related injuries and motor vehicle collisions.^[3]
- *Fatal overdose.* Overdose is an overlapping but separate issue from opioid addiction: it can occur even when prescription opioids are used as directed.^[4] Opioids act as depressants on the central nervous system, especially its respiratory centres. An overdose can cause death by respiratory failure or aspiration. It can also fatally slow the heart. In addition, opioid users develop a tolerance, meaning that the same dose produces less of an effect over time and users require higher doses to achieve the desired effect (whether therapeutic or “recreational”), raising the risk of overdose.^[4] This risk is especially high when someone stops using after developing tolerance, then resumes use at the same levels – as is often the case after release from a detoxification/ treatment centre or prison.
- *Dependence and addiction.* Prolonged use of prescription opioids can cause physical dependence. Withdrawal follows if use is discontinued; symptoms can include stomach cramps, diarrhea, vomiting, insomnia, anxiety, and cravings. There is also the risk of addiction (referred to in this case as opioid use disorder), the symptoms of which include “strong desire for opioids, inability to control or reduce use, continued use despite interference with major obligations or social functioning, use of larger amounts over time,

* Less frequently, they are used to control cough and treat diarrhea. Some opioids – notably methadone and buprenorphine – are also used to treat moderate to severe opioid use disorder. Although we use the term “prescription opioids” here, we recognize that some opium derivatives – most notably codeine preparations – are available over the counter. In this paper we will focus primarily on prescription opioid analgesics, the most common of which in Ontario are codeine, fentanyl, hydrocodone, hydromorphone, morphine, and oxycodone.

development of tolerance, [and] spending a great deal of time to obtain and use opioids.”^[5] Opioid use disorder is diagnosed as mild, moderate or severe.

Prescription opioids are often used non-medically, i.e. for purposes, or in ways, other than those directed by a prescriber – including taking them more frequently and/or in higher doses, taking them to achieve euphoria, or altering the method of ingestion. With non-medical use (often called misuse or abuse) of prescription opioids, the risk of harm increases:

- The “addictiveness” or abuse liability of a substance is partly a function of its route of administration: other things being equal, the faster the onset, the greater the probability of experiencing rewarding effects. Prescription opioids can be tampered with to override mechanisms that make short-acting drugs long-acting, for example by crushing them. Snorting, smoking or injecting prescription opioids intravenously makes for more rapid and intense intoxication and thus increases the risk of addiction and overdose.^[4] When used this way, the physiological effects and abuse liability of some prescription opioids are comparable to those of heroin.^[6]
- Injection – intravenous as well as intramuscular and subcutaneous – is associated with damage to skin, veins, and organs; increased risk of HIV, Hepatitis C and other blood-borne infections; and damage to heart valves.^[7]
- Overdose risk is heightened when opioid use is paired with other depressants (e.g. alcohol or benzodiazepines).^[8]

The line between medical and non-medical use is blurry. Regardless of how prescription opioids are obtained, they may be used to manage pain, to alleviate withdrawal symptoms, and/or to achieve euphoria. A 2009 study at CAMH’s medical withdrawal unit found that the majority of individuals who entered due to opioid dependence had significant comorbid pain.^[9] Similarly, a US study found that more than 50% of opioid users seeking treatment for opioid use disorder identified pain management as one reason for use and that many non-medical users began using opioid “medically” (i.e. via prescription).^[10] The use of prescription opioids non-medically but for health-related reasons like pain or withdrawal management has been referred to as “extra-medical use.”^[11] These patterns of mixed therapeutic and non-medical use can make it difficult to identify and treat opioid use disorder.

Social factors like poverty, homelessness and unemployment – often referred to collectively as social determinants of health – are associated with higher risk of substance use disorders, as are adverse childhood experiences and chronic stress.^[12-14] But prescription opioids are unique among drugs in one important way: liberal prescribing and the strong abuse liability of opioids have led to the “broad pervasiveness [of non-medical prescription opioid use] across socioeconomic groups.”^[15, p.285] Indeed, non-medical use of prescription opioids and associated harms are common among people who use street drugs as well as people with no connection (or no other connection) to the traditional illicit drug market.^[16]

Prescription opioid use is widespread and costly

Until relatively recently, prescription opioids were mainly used for acute pain and pain from cancer or terminal illness; prolonged use for chronic non-cancer pain was uncommon due to concerns about addiction.^[17] In the 1990s, pharmaceutical companies in North America developed and promoted a number of opioid formulations as low-risk, non-addictive, effective treatments for moderate pain. OxyContin in particular was aggressively (and misleadingly) marketed; in 2007 its maker pleaded guilty to criminal charges of misrepresenting and “misbranding OxyContin by claiming that it was less addictive and less subject to abuse and diversion than other opioids.”^[18, p.223; 19] By the mid-1990s prescription opioids were widely used as treatment for chronic non-cancer pain in North America. Canada and the United States now have the highest rates of prescription opioid use in the world.^{[20,21]*} Ontario’s dispensing levels per capita are five times higher than those in the United Kingdom and four times higher than those in Germany – even though between Canada and those countries there is “no tangible evidence for correspondingly different pain care needs or outcomes.”^[22; 23, p.61]

Across the country, consumption of prescription opioids increased by 50% between 2000 and 2004 and 70% between 2004 and 2011.^[24,25] In Ontario, self-reported past-year use of a prescription opioid pain reliever for any reason was 22% in 2013.^[26] Self-reported non-medical prescription opioid use, meanwhile, was reported by 8% of Ontario’s adult population in 2010 and 3% in 2013.^[26] It is higher among females than males and more common among youth and young adults: prevalence is about 7% among those aged 18 to 29 and 11% among high-school students.^[26,27] About 4% of the province’s high-school students – more than 40,000 youth – reported using prescription opioids non-medically frequently (six times or more) in 2015; only alcohol and cannabis rank higher among psychoactive substances used by Ontario high-school students.^[27] At least 70% of the Ontario teens who use prescription opioids non-medically access them in the family medicine cabinet.^[28]

At the population level, opioid dispensing levels correlate strongly with harm.^[29-31] For example in Europe, where prescribing opioids is more strictly limited to cancer pain and palliative care, harms are proportionately lower than in Ontario and other Canadian provinces.^[31] The harms of prescription opioids and their costs to society include:

Emergency department visits. Opioid use can lead to emergency department visits for injury, intoxication, withdrawal, or overdose. Between 2005 and 2014 there was a 72% increase in visits to Ontario emergency departments caused by opioid overdoses.^[32]

Neonatal Abstinence Syndrome. Infants born to mothers who used opioids during pregnancy can experience withdrawal symptoms after birth that can be fatal. One Ontario study found that Neonatal Abstinence Syndrome cases increased 15-fold between 1992 and 2011.^[33]

* The earlier version of this document stated that “Canada now has the highest rate of prescription opioid use in the world.” This change was made on November 10, 2016.

Addiction. The exact prevalence of opioid use disorder in Ontario is unclear. In 2012, the Expert Working Group on Narcotic Addiction estimated it to be 0.43% overall and over 1% among those aged 15 to 29.^[34] From data collected by Ontario addiction agencies, we know that the number of people seeking addiction treatment who had prescription opioids as a presenting problem substance increased 146% between 2004 and 2011.^[35]

Premature mortality. Opioid-related deaths increased 242% in Ontario between 1991-2010, from 127 deaths annually to 550.^[36] By 2014 it was known to be “one of the primary causes of preventable deaths from acute causes in the general population.”^[29, p.22] In addition:

- Among adults aged 25 to 34, 12% of all deaths (1 in 8) were opioid-related in 2010 – up from 5.5% in 2001.^[36] Because opioid-related deaths disproportionately affect youth and young adults, the health burden of opioids in Ontario as measured by years of life lost is higher than those for alcohol use disorders or pneumonia, and higher than HIV/AIDS and influenza combined.
- The majority of overdose deaths in Ontario are opioid-related. Relative to other drugs, opioid overdoses are less likely to be deliberate: up to two thirds of deaths from opioid-related causes are accidental.^[37]
- Other depressants are frequently involved in opioid-related deaths. A benzodiazepine was present in half of opioid-related deaths in Ontario between 1991 and 2010, and alcohol in about 40% of those deaths.^[38]
- Just 19% of opioid overdoses involved “inappropriate” administration (e.g. injection, inhalation, etc.).^[37]

This crisis has its roots in the health care system

It should be reiterated that pain is a serious and common medical issue that affects a large number of Canadians and can greatly diminish quality of life.^[1,2] Unfortunately, health care workers seeking to treat pain face numerous obstacles.

Pain management training in Canadian medical schools and in residency training is inadequate. A review of Canadian medical schools and veterinary programs found that mandatory pain management content was part of the curriculum of all the veterinary programs but just a third of medical schools – and that the veterinary programs offered about five times more pain management training.^[39] There is also a lack of investment in pain management – especially the interdisciplinary pain management approaches known to be most effective for chronic pain.^[2] So it is not surprising that prescribers in both hospital and community settings are ill-prepared to manage their patients’ pain, despite their best intentions. Indeed, surveys of Canadian family physicians and pharmacists have found significant gaps in their knowledge and uptake of evidence-based pain management and safe opioid prescribing guidelines.^[40-42]

The result is inappropriate prescribing, which frequently leads to harm. In a group of patients reporting non-medical opioid use, 59% reported that they were first introduced to opioids by filling a prescription – most often from an emergency department.^[43] Between 1991 and 2007, 56% of individuals who died of opioid-related causes in Ontario filled a prescription for opioids in the month before death.^[44] The vector in this epidemic is the health system, from emergency departments to primary care.

Research over the last 10 years has made it clear that prescribing characteristics (e.g., type of opioid, dose, duration) influence the risks of harm:

- The risk of overdose and addiction rises in a dose-response manner beginning at 20 milligrams of morphine equivalent (MME) per day, and recent research suggests doses above 100 MME “are disproportionately associated with overdose-related hospital admissions and deaths.”^[4, pp.1258-9; 45,46]
- Long-acting opioid formulations are associated with an increased risk of overdose.^[4,47]
- Long-term use of opioids is associated with an increase in the risk of overdose and addiction, with 8 weeks identified as the period beyond which there are “questionable benefits for individual patients” and “substantial public health risks.”^[4, p.1260]

Based on growing evidence, the Canadian Guideline for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain was published in 2010. It identified a “watchful dose” for opioids for the first time, set at 200 MME per day.^[48] Reversing the tide of increasing doses that had occurred during the past two decades has been challenging and overprescribing has remained a problem.^[21,49] A new guideline for prescribing opioids for chronic pain was released in the United States by the Centers for Disease Control and Prevention (CDC) in March 2016; it defines the threshold for high dosages requiring closer monitoring as 50 MME per day – and states that prescribers should avoid increasing dosage to 90 MME or more per day.^[50] The Canadian guideline is currently undergoing an extensive evidence review and revision process, with results to be released in 2017.

Meanwhile, evidence calling into question the efficacy and safety of opioids for chronic non-cancer pain continues to mount.^[51,52] Reviews have shown that the evidence “is insufficient to determine the effectiveness of long-term opioid therapy for improving chronic pain and function”^[45, p.276] and that while opioids can relieve pain in the short term, there is “no substantial evidence for maintenance of pain relief or improved function over long periods of time without incurring serious risk of overdose, dependence, or addiction.”^[53, p.1277] Moreover, up to one third of patients using prescription opioids for chronic non-cancer pain meet the criteria for opioid use disorder,^[17,54,55] and relative to other medications often used to treat chronic pain, long-acting opioids increase the risk of mortality from overdose and possibly also from cardiovascular, respiratory and other causes.^[56]

In sum, for most people with chronic non-cancer pain, prescription opioids may not yield positive outcomes in terms of pain management or physical functioning, and even when they do, the

harms may outweigh the benefits. For these reasons the CDC guideline states that “of primary importance, non-opioid therapy is preferred for treatment of chronic pain.”^[50, p.1264]

Opioids are being prescribed too frequently, at overly high doses and quantities, for longer periods of time than medically necessary, and in contexts that are not supported by evidence. This excess supply of opioids has resulted in harm to medical users while also facilitating the diversion of prescribed opioids to people seeking to self-medicate pain and/or experience euphoria. For these reasons it has been suggested that the opioid crisis is an “iatrogenic” epidemic – one that is created through medical treatment.^[57]

Policy interventions can have unintended consequences

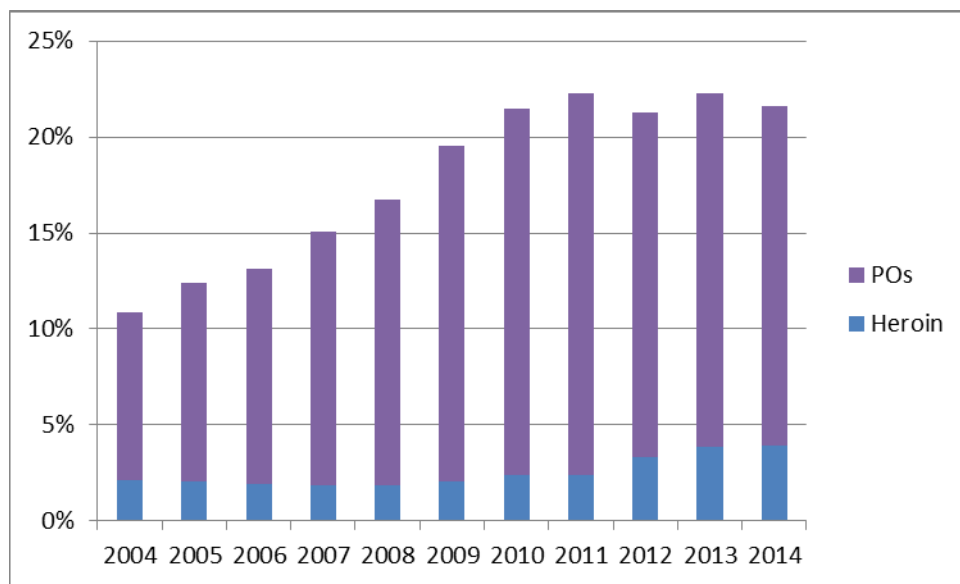
The federal and provincial governments have launched a number of initiatives to address opioid-related harms in the past few years, with more on the way. While strong action is certainly needed, the experiences of Ontario and other jurisdictions show that caution is warranted. When opioid policy targets only particular opioids or formulations (as opposed to opioids as a drug class), use patterns may simply shift, with targeted opioids merely replaced by others. Reducing the supply of one class or formulation of opioid does not address the availability, or preclude the misuse, of others – including more dangerous ones like fentanyl or street heroin. The risk, then, is that well-intentioned opioid policy can actually increase opioid-related harm. Oxycodone provides a case in point.

In 2012 the Ontario government removed OxyContin from public drug plans. OxyContin was discontinued by its manufacturer and replaced with OxyNEO, a “tamper-resistant” formulation designed to resist crushing into powder to prevent injection or snorting. Ontario limited OxyNEO to its Exceptional Access Program, greatly restricting access – but with no restrictions on other, similar prescription opioid formulations. Tamper-resistant formulations can have benefits insofar as they may discourage injection and snorting. But as mentioned above, less than one in five fatal opioid overdoses is related to “tampering.”^[37] Tamper resistance does not prevent people from taking greater amounts of the medication orally or using it with other depressants. There can be unintended consequences on prescribing as well: if prescribers believe tamper-resistant prescription opioid formulations are safer, they are more likely to prescribe them; and if prescribing of opioids increases, this approach may do more harm than good.^[58,59] Tamper resistance requirements have even less benefit when applied to just one class or formulation of opioid, as has been the case in Ontario. It does not prevent, and may in fact encourage, both medical and non-medical use of other (sometimes riskier) opioid formulations.

Oxycodone prescriptions have declined since 2010 but these reductions have to a great extent been offset by sharp increases in prescriptions of other formulations since 2010 – hydromorphone and fentanyl in particular.^[21] These two opioids account for increased harm in Ontario – especially prescription fentanyl, which is up to 100 times more potent than morphine and has been implicated in a rising number of deaths across Canada.^[60]

During this same period there has also been an increase in the use of street opioids and related fatalities. Although many fentanyl-related deaths in Ontario are related to diverted prescription drugs, there has been an influx of illicit fentanyl analogues, which are often cut into other street drugs or combined with other substances to make pills that are sold as OxyContin. Overdoses caused by illicitly produced fentanyl have been on the rise for several years and became the leading cause of opioid-related deaths in Ontario in 2016.^[60,61]

Heroin use also appears to be increasing again in Ontario after about a decade of relatively low availability and use. Admissions data from Ontario addiction agencies show that in 2004, 9% of new admissions had prescription opioids as a presenting problem substance. This number peaked in 2010 (20%) and by 2014 was back down to 2009 levels (18%).^[35] This might appear to suggest a recent decrease in opioid problems. But the slight decline in prescription opioid-related admissions between 2009 and 2014 was matched by a doubling of heroin-related admissions in that same time period, with the result that the proportion of new admissions with prescription opioids and/or heroin as a presenting problem substance have remained essentially level since 2010:^[35]



A relationship between these two patterns can reasonably be assumed. It would be consistent with the experience of the United States, where OxyContin's replacement by a tamper-resistant formulation coincided with a significant increase in heroin use and related harms.^[62-64]

In sum, although opioid prescriptions and oxycodone-related harms have decreased in Ontario since 2010, overall opioid-related harms, including fatal overdoses, have continued to rise. Events of the past few years serve to illustrate one of the key challenges of opioid policy: unless it addresses all opioids, use patterns may simply shift without a reduction in harm – or harms may even increase. This also points to the need for a comprehensive opioid strategy to include and emphasize accessible pain management, addiction treatment, and harm reduction services.

What we can do about it

To effectively reduce the harms associated with prescription opioids, a public health approach is needed.^[23,65,66] Such an approach is based on evidence-informed policy and practice. It addresses the underlying determinants of health and has health promotion and the prevention of death, disease, injury, and disability as its central missions.^[67] It assesses how diverse individuals and groups may be affected by public policy and seeks to maximize benefit for the largest number of people through a mix of population-based measures and targeted interventions.

Solving the opioid crisis will necessarily require reducing the availability of prescription opioids. In doing so we will face a serious challenge: ensuring that prescription opioids are available for medical purposes, with their use carefully restricted to evidence-supported instances and practices – without disadvantaging people who experience pain, including those who have current or past substance use disorders, and without causing harm to non-medical users of opioids. Thus a public health response will involve not only robust prevention measures but also accessible evidence-based treatment of both pain and addiction and scaled-up harm reduction services.

In this section we propose a framework for provincial and federal policy responses to Ontario's opioid crisis. They roughly fit under the rubrics of prevention, treatment, and harm reduction. Most of the recommendations below fall under provincial jurisdiction, and many are addressed in the Strategy to Prevent Opioid Addiction and Overdose announced by the Ontario government in October 2016.^[68] Some, especially in the area of harm reduction, are under federal jurisdiction. In all cases the support of the federal government will be essential.

Implement best practices for pain treatment and opioid prescribing

Limiting opioid availability to evidence-based contexts, doses, and amounts will require a variety of interventions and safeguards: a significant enhancement of availability and access to non-opioid pain treatment modalities, controls on opioid prescribing and dispensing, restrictions on particular opioid formulations, and educational supports for healthcare workers, patients, and families. The use of opioids as treatment for pain is well entrenched; discontinuation of this clinical practice will require coordinated action by many parties.

Enhance access to non-opioid and non-pharmacological treatment options for pain.

People experiencing acute and chronic pain need timely care. Providing it will require more robust pain management capacity across the system. Pharmacological and non-pharmacological treatments with good evidence of effectiveness have been under-funded and under-utilized in Ontario, as have interdisciplinary pain management approaches.^[2] The provincial government's commitment to making these treatments and approaches more accessible, with primary care managing the bulk of chronic pain, is welcome. This should be among the first steps taken by the Ontario government as it implements its opioid strategy. The federal government can assist by

establishing a research focus aimed at improving the state of evidence for chronic pain management – and by developing a National Pain Strategy.^[2]

Improve pain management and addiction education.

As noted in the provincial opioid strategy announcement, pain management and addiction education must be improved for all health professions, from undergraduate through postgraduate and continuing professional development programs. Curriculum should address pain management and addiction in people with mental illness and substance use issues as well as trauma. Curriculum should be developed independently from the pharmaceutical industry.^[69] Networks that provide mentorship and peer support to primary care practitioners in the areas of pain, mental illness and addiction should be expanded.^[70] There is also a need for patient education about pain, opioids, and addiction, as well as public education initiatives to promote awareness of the risks of co-using opioids and depressants and of opioid-impaired driving.

Update opioid prescription guidelines for chronic pain and improve their clinical uptake.

With overdose deaths and addiction on the rise, some provinces have adopted the guidelines recently released by the Centers for Disease Control and Prevention (CDC), which stipulate that opioids should not be first-line treatment for chronic non-cancer pain; that they should be prescribed in low doses, for short durations, and dispensed in small amounts; and that closer monitoring should begin at much lower dosage levels than current practice.^[50] At the time of writing, a review of the 2010 Canadian opioid guidelines is being conducted, with the release of new guidelines expected in 2017. Until then, clinicians in Ontario should follow the CDC guidelines. In addition, Health Quality Ontario (HQO) is developing quality standards for prescribing of opioids for pain. Once released, Ontario should endorse the new Canadian guidelines and regulatory colleges should endorse and enforce the HQO standards of practice. In the meantime, the provincial government should establish an evidence-based de-implementation program to guide these clinical changes and ensure their clinical uptake.^[71]

Restrict riskier opioid formulations and incentivize the use of less risky ones.

New opioid formulations should be assessed for risk of addiction and overdose prior to release. Health Canada should undertake a review of all currently available pharmaceutical opioids to determine whether some are too risky for their current level of availability. The provincial government's recently announced plan^[72] to remove high-dose opioids from the Ontario Drug Benefit formulary, with exceptions for palliative care and support for patients who may need to taper or switch medications, is a positive development. The relative cost structure of prescription opioids should also be adjusted via controls at the level of third-party payers – certainly public, but also private where possible – to favour the use of those that are less risky over those that are more.

Formalize a prescription monitoring program around the Narcotics Monitoring System.

Prescription monitoring programs – information systems that collect and monitor prescribing and dispensing data – can reduce problematic prescribing when appropriately designed and implemented.^[73] The Ontario Narcotics Monitoring System (NMS) was implemented in 2010 and there is evidence that, along with other controls launched that year through the *Narcotics Safety and Awareness Act*, it “led to substantial reductions of prescriptions for opioids and controlled substances that were highly likely to represent misuse.”^[74] However, this system can be greatly improved. Ontario should upgrade the NMS to bring it in line with the best practices identified in a recent review,^[73] most notably:

- including all prescription drugs that could be associated with misuse and addiction, and
- making up-to-date, full patient profiles available, confidentially and in real time to clinicians at point of care.

In conjunction with the other, more “upstream” interventions described here, this measure could have considerable preventative impact. In addition, while the focus to date in Ontario has been on the collection of prescription data via the NMS, there should also be a formal program developed around its use, functioning, and oversight. A clear mechanism should be implemented for determining how the data is analyzed and shared, and interventions undertaken (educational, regulatory, enforcement).

Monitor opioid marketing and promotion.

As discussed above, aggressive and misleading marketing by pharmaceutical companies played a major role in the genesis of the opioid epidemic.^[18,19] There should be strict oversight of marketing and promotion of prescription opioids – as well as the role and influence of the pharmaceutical industry in health professionals’ education and professional development.^[69,70]

Continue modernizing Ontario’s addiction treatment system

Opioid use disorders are treatable. The standard of care includes A) psychosocial treatment (inpatient and outpatient) in accredited facilities with trained staff and B) medication-assisted treatment, which includes opioid agonists such as methadone and buprenorphine/naloxone (also known as Suboxone) and opioid antagonists like naltrexone. Combined treatment approaches, for example opioid agonist therapy (OAT) plus psychotherapy and community supports, are often recommended. But treatment services are unavailable in many settings. This is particularly true of rural and remote areas as well as Aboriginal communities, many of which also lack culturally appropriate, community-based substance use treatment. There is also a lack of treatment options in jails and prisons, and an urgent need for developmentally appropriate treatment programs for youth.

Until now, certain aspects of the Ontario’s addiction treatment system have posed obstacles to evidence-based medication-assisted treatment. To enhance access to methadone maintenance treatment (MMT), in the mid-2000s the provincial government began underwriting treatment

programs by allowing physicians to bill the OHIP system for MMT delivery on a fee-for-service basis and offering additional incentives to community physicians and pharmacists delivering MMT.^[75] This remuneration system increased the availability of methadone, which was sorely needed, but also encouraged the establishment of stand-alone methadone clinics that do not offer psychosocial treatment in any consistent manner and in some cases impose onerous requirements with questionable benefits on their clients (e.g. overly frequent clinic visits and excessive urine testing).^[75,76] In addition, until October 2016 the costs of buprenorphine/naloxone were covered under the provincial drug program only if methadone was contraindicated or unavailable, or if the client had already “failed” methadone maintenance treatment. For these reasons, methadone became the “de facto first-line treatment” for people with opioid use disorder.^[75]

Both methadone and buprenorphine have been found to be effective treatments for opioid dependence, with benefits including treatment retention and reductions in opioid use.^[77,78] However, systematic reviews have shown that buprenorphine/naloxone has significant advantages over methadone, most notably in terms of safety.^[79] The two forms of OAT are comparable in terms of treatment outcomes, with some evidence for the superiority of buprenorphine/naloxone in particular populations, e.g. youth, pregnant women, and neonates in opioid withdrawal.^[80,81] But buprenorphine/naloxone is considerably less likely to cause respiratory depression or have other negative side effects; it is associated with lower overall mortality, including overdose; it is less likely to be misused or diverted; and treatment is less onerous than methadone, meaning that it does not interfere as much with the rest of the patient’s life.^[78,82] And finally, in some jurisdictions, buprenorphine/naloxone treatment has been found to generate greater cost savings than methadone treatment.^[83]

In the year prior to announcing its new opioid strategy the Ontario government made significant changes to the province’s opioid addiction treatment system, cutting certain OHIP billing codes associated with methadone delivery, launching a review of the methadone treatment system, and making buprenorphine/naloxone a general benefit under the Ontario Drug Benefit formulary.^[68] Along with quality standards for opioid use disorder currently being developed by Health Quality Ontario, these initiatives can go a long way towards improving quality of care in the addiction system.

Improve access to the full range of evidence-based therapies.

The provincial government should ensure that the full range of standard therapies for treatment of opioid use disorder is available across Ontario. Clinical practices will need to reflect new evidence of the advantages of buprenorphine/naloxone as first-line treatment for opioid use disorder. At the same time, the province must ensure that methadone remains available to those it may benefit, e.g. those with more severe opioid use disorder.* In addition:

* Maintenance treatment using diacetylmorphine (heroin-assisted treatment) can also be used as a “last resort” intervention for the minority of patients with severe opioid use disorder who respond poorly or not at all to standard therapies, via Health Canada’s Special Access Programme.

- The provincial government should continue to support HQO in its development of quality standards for treatment of opioid use disorder. Once the standards are released, regulatory colleges should endorse and enforce them to ensure uptake.
- The treatment system should be flexible to accommodate different severities of opioid use disorder, and patients should be able to move between treatment “levels” (e.g. from higher-intensity treatment to lower) as appropriate.^[80]
- The availability of youth-focused, developmentally appropriate withdrawal management and treatment services should be expanded.
- Treatment for opioid use disorder, including OAT, should be made available to individuals who are incarcerated, and individuals being released who are known to be at risk of overdose should be referred to treatment (and provided with take-home naloxone kits).
- Naltrexone should be added to the Ontario Drug Benefit formulary as a general benefit.
- Health Canada should consider making extended-release injectable naltrexone (i.e. Vivitrol) and the buprenorphine/naloxone sublingual film, which are used for opioid use disorder treatment in other countries, more widely available.

Integrate treatment into primary care and community settings.

Wherever possible, treatment for opioid use disorder should be provided in the community and in environments where primary care is also available – ideally via multidisciplinary teams. Addiction agencies funded by the province should not be allowed to require patients to taper off OAT as an admission requirement. And governments should follow the lead of Aboriginal organizations in developing initiatives to respond to the harmful use of prescription opioids in their communities, including in the area of treatment. In addition to offering standard therapies, this includes, as recommended by the Truth and Reconciliation Commission, “[recognizing] the value of Aboriginal healing practices and [using] them in the treatment of Aboriginal patients in collaboration with Aboriginal healers and Elders where requested.”^[84, p.2]

Scale up harm reduction services

Given the chronic and relapsing nature of addiction, the lethality of opioids, and the fact that some people with opioid use disorder are unable or unwilling to seek or remain in treatment, any strategy to reduce the harms of opioids must include a range of accessible, low-threshold harm reduction services. This will be particularly important in the context of reduced availability of prescription opioids.

Continue enhancing access to naloxone.

Naloxone, a medication that reverses the effects of opioids almost immediately by blocking opioid receptors in the brain, has been used as an antidote for opioid overdose in hospital and paramedic settings for decades. It is known to be safe, and in places where it has been widely distributed, naloxone has helped stem fatal overdoses.^[85] Beyond that, naloxone may also

decrease survivors' later frequency of injection and increase the likelihood that they will enter treatment.^[86] Recent initiatives by the federal and provincial governments to provide naloxone without a prescription to users of opioids as well as to family and friends are welcome, as is Health Canada's fast-tracking of intra-nasal devices. Broad distribution should continue, including in remote areas and in prisons. Other user-friendly formulations – especially the auto-injector – should be introduced as well.

Continue supporting needle exchange services and supervised consumption sites.

As discussed above, some users crush, dissolve, and inject prescription opioids. Given the potential harms associated with injection, needle exchange programs are an important component of Ontario's current harm reduction services. They should be widely available throughout the province. Similarly, supervised consumption sites, by offering hygienic environments in which pre-obtained drugs can be consumed, have been shown to reduce transmission of HIV, hepatitis C, and other blood-borne infections; to lower the incidence of fatal overdoses; and to increase referrals to treatment.^[87,88] These sites can also test street drugs to detect the presence of contaminants and toxic substances.^[89] Supervised consumption sites are not necessarily appropriate for all locations, but where warranted by drug use patterns,^{*} and as part of a broader strategy to reduce drug-related harms, they play an important role in reducing drug-related harms.^[90] Bill C-2, the *Respect For Communities Act*, imposed serious barriers to the establishment of such sites when it was passed into law in 2015 by the previous federal government. Though the current government has pledged its support for supervised consumption sites where supported by evidence,^[91] this portion of Bill C-2 should be repealed so it is not an obstacle in the future.

Pass “Good Samaritan” legislation.

Due to fear of arrest, people using illicit drugs who witness an overdose often do not call emergency medical services. So-called Good Samaritan legislation, by granting exemption from minor drug charges, can encourage witnesses to call 911 and thus prevent overdose deaths.^[92,93] A private member's bill currently before Parliament – Bill C-224, the *Good Samaritan Drug Overdose Act* – proposes to modify the Controlled Drugs and Substances Act to exempt individuals seeking emergency medical or law enforcement assistance for an overdose from charges of possession.^[94] The federal government should ensure that this bill passes.

Reinstate harm reduction as a pillar of Canada's drug strategy.

In 2007 the federal government restructured the National Drug Strategy, dropping its harm reduction pillar, transferring oversight from Health Canada to the Department of Justice, and renaming it the National Anti-Drug Strategy (NADS). In the following years, NADS approached substance use primarily as a criminal justice issue, spending about 70% of its budget on law enforcement.^[95] But evidence shows that while prevention, treatment, and harm reduction reduce drug-related harms, enforcement does not – nor do tougher penalties reduce drug-

* In Ontario, this includes (at the time of writing) the three sites approved for Toronto by its city council and the one being planned by health authorities in Ottawa.

related problems.^[96,97] Instead, this enforcement focus further stigmatizes people with substance use disorders, causes health harms, and exacerbates health inequities. It is incompatible with a public health approach. Health Canada should resume leadership of Canada's drug strategy, reinstate harm reduction as one of its pillars, and redistribute resources accordingly.

Conclusion

In Ontario as elsewhere there is a need for effective and timely pain care, and prescription opioids are appropriate treatment for some kinds of pain. They have a place in our healthcare system. However, they are being prescribed too frequently, at overly high doses and quantities, for longer periods of time than medically necessary, and in contexts that are not supported by evidence. This excess supply of opioids has fuelled an epidemic of overdose deaths and addiction.

A public health response is indicated: an approach that integrates prevention – primarily through a reduction in opioid prescribing – with enhanced access to pain management, addiction treatment, and harm reduction services. Action across all three of these areas will be needed; without a decrease in opioid availability, the incidence of addiction and overdose cannot be reduced, and without accessible treatment and harm reduction there will be collateral harms. Implementation of the Ontario government's recently announced opioid strategy, beginning with the improvement of pain treatment, will be a good start.

More broadly, Canada has an opportunity to bring its drug policy in line with evidence. With the National Anti-Drug Strategy expiring in 2017, the time is right for the federal government to explicitly commit to a public health approach that addresses opioids – and all psychoactive substances – through a health lens, not a criminal one. The more Canada can shift its approach to substance use to the public health sphere, the better our chances of reducing harm.

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