Chronic pain management and the development of opioid use disorder
Improving opioid stewardship among Canadian prescribers
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ABSTRACT
Chronic pain is a common condition that impacts quality of life and often precipitates the need for medical attention. Despite evidence that long-term opioid use provides limited relief, prescription opioid therapy remains a cornerstone in the medical management of chronic non-cancer pain. Presently, 13% of Canadians are prescribed opioids for pain management, and physicians play a crucial role in preventing the development of opioid use disorders. However, Canadian physicians lack knowledge of and comfort with evidence-based principles of opioid stewardship. In this article, we aim to highlight ongoing Canadian efforts to address physician discomfort and improve clinical practice. We focus on 2017 Canadian guidelines that provide clinicians with evidence-based recommendations for opioid use in chronic non-cancer pain management. In addition, we call attention to provincial efforts to implement physician accountability measures. In reviewing the existing literature, we uncover inadequacies in pain management curricula within the Canadian undergraduate and continuing medical education (CME) systems. We consulted the educational practices of the European Pain Federation and the Centers for Disease Control and Prevention to make recommendations for improvement to current Canadian pain curricula. Based on our findings, we recommend that (1) Canadian medical institutions expand upon current core pain curricula, (2) pain management education be made compulsory, (3) academic detailing be emphasized as a means of CME, and (4) multidisciplinary non-medical management of chronic pain be featured more extensively.

INTRODUCTION
In recent years, prescription opioid abuse has emerged as a growing epidemic across Canada. A leading cause of accidental death, substance use-related morbidity, and increased healthcare expenditure, prescription opioid abuse is inextricably linked to the management of chronic non-cancer pain. In Canada, chronic non-cancer pain plagues up to 19% of people, 25% of whom report having pain for greater than 20 years and 50% of whom report having pain for longer than a decade.1

Within the context of Western medicine, prescription opioids have become a mainstay in the medical management of chronic pain. In Canada, prescription opioid consumption increased by 155% between 2000 and 2011, and the number of annual opioid-related deaths – excluding those related to illicit opioid use – was 325% greater in 2010 compared to 1991.1,2 Additionally, one in every five hundred patients prescribed opioids for chronic pain died of opioid related causes at a median of 2.6 years after filling their initial prescription.3 The number of prescription opioid-related deaths rose to one in every thirty-two patients when more than 200 mg of morphine equivalent dose (MED) was prescribed daily.

Prescribers have a crucial role to play in preventing opioid related morbidity and mortality. However, Canadian physicians lack confidence in their knowledge of safe opioid prescribing practices, effective screening for addictive potential, and patient education regarding opioid abuse disorder.1 Herein, ongoing Canadian efforts to address deficiencies and improve opioid prescribing practices will be discussed. Additionally, we call upon strategies implemented in Europe and the United States to recommend improvements to Canadian medical education as it pertains to opioid use in chronic pain management.

CHRONIC PAIN MANAGEMENT AND PRESCRIPTION OPIOID ADDICTION IN CANADA
Opioid prescription practices underwent a paradigm shift at the turn of the 21st century. For many years, opioids were prescribed for acute pain, cancer-related pain, and terminally-ill patients.2 Beginning in 1996, however, Purdue Pharma falsely and aggressively marketed OxyContin to heath care providers as low-risk, effective, and of low addictive potential in the treatment of moderate pain. Consequently, opioids emerged as a principal tool in the management of chronic non-cancer pain. Despite charges laid against Purdue Pharma in 2007 for misrepresentation of OxyContin, opioid prescription practices based on this misinformation remain prevalent today.

Although individual prescribing practices vary widely, physicians have collectively contributed to Canada’s growing opioid epidemic. Despite a lack of evidence for effective treatment of chronic non-cancer pain using long-term opioid prescription, 13% of Ontarians report use of prescription opioids for pain relief, 5.5% of whom are expected to be at risk of addiction.4 As well, high-dose opioid prescribing has continued to rise despite the evidence that risks of fatal and non-fatal overdose increase substantially with dose size.1 Risk to the public is further exacerbated by physicians’ failure to recognize double-doctoring and consequent drug diversion.5 In a 2015 study conducted in collaboration with the Center for Addiction and Mental Health (CAMH), 37% of patients admitted for prescription opioid dependence reported having...
obtained opioids from physicians only, 26% used both prescribed and diverted opioids, and an additional 21% obtained prescription opioids from the street alone.¹

Consequences of poor opioid stewardship are numerous and often dire. Those who are prescribed opioids and develop opioid abuse disorder are at considerable risk of individual harms including motor vehicle collisions, fatal overdoses, opioid poisoning, and blood-borne infections among intravenous opioid users.²,³ Furthermore, destructive behaviours driven by addiction may lead to unemployment, fracturing of family units, housing instability, and incarceration. For these reasons as well as those related to health care expenditures, Canada has begun to invest in efforts to alter policy and empower physicians to improve prescribing practices.

ONGOING CANADIAN MITIGATION EFFORTS

In 2016, coordinated efforts between the Ministry of Health and Long-Term Care and nine provincial and territorial health ministers gave rise to a Joint Statement of Action to Address the Opioid Crisis, which emphasizes accountability and encourages improvement of clinical practice through programming.⁴ For example, 8,200 physicians in British Columbia were provided with reports comparing individual opioid prescribing practices to those of peers and best-practice guidelines. Sixty-six percent of targeted physicians found these reports helpful, and 50% intended to make changes to their practice. As well, Newfoundland and Labrador developed a safe prescribing program, which is now mandatory for completion by all license-seeking physicians and recommended for physicians currently in practice.

Evolution of Canadian prescribing practices began in 2007, when the Federation of Medical Regulatory Authorities of Canada formed the National Opioid Use Guideline Group (NOUGG) for development of clinical guidelines pertaining to opioid prescribing in chronic non-cancer pain.¹ The NOUGG guidelines have been criticized as non-specific and permissive, facilitating only a minor reduction in prescribing rates and failing to prevent an increase in high-dose opioid prescribing. Consequently, the Michael G. DeGroote National Pain Centre (NPC) was enlisted to revamp Canada’s clinical guidelines, and recently published the 2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain.

Several evidence-based amendments are reflected in the 2017 guidelines. First, it is now recommended that non-opioid therapy be optimized before instituting opioid use for chronic pain.¹ Second, more stringent limitations have been placed on eligibility for opioid therapy. Patients with concurrent or prior substance use disorder should not receive opioids despite persistent pain, and psychiatric patients must be stabilized before initiation of opioid therapy. When prescribed to the appropriate patient, it is now suggested that opioid dose be limited to less than 90 mg MED daily, and patients should be tapered to the lowest effective dose. Finally, to mitigate risks, NPC guidelines emphasize drug screening, continued use of treatment agreements, implementation of tamper-resistant formulations, fentanyl patch exchange, and co-prescription with naloxone.

EDUCATION STRATEGIES TO IMPROVE OPIOID STEWARDSHIP

Despite federal and provincial efforts to reduce opioid prescribing and mitigate prescription opioid abuse, Canada ranks second only to the United States in per-capita prescription of opioids, worldwide.⁵ In order to adequately resolve this multifaceted issue, Canada must improve in its undergraduate and continuing medical education (CME).

Canadian medical education on the topic of opioid stewardship is currently inadequate. In a 2009 survey of pain curricula across nine Canadian medical schools, it was found that, on average, undergraduate medical students received only 16 hours of mandatory pain content, while veterinary students received 87 hours.⁶ In 2013, the European Pain Federation (EFIC) found that 82% of medical schools across 15 European countries did not have mandatory pain management education for undergraduate students.⁷ To address this, the EFIC published the Pain Management Core Curriculum for European Medical Schools and now offers a Diploma in Pain Management.⁸ We, therefore, suggest that Canadian medical schools respond to current inadequacies in undergraduate medical education by expanding upon current core curricula in pain management, while simultaneously instituting policies that will ensure proper dissemination and mandatory implementation nationwide.

In the realm of CME, a strategy referred to as academic detailing is leveraged extensively by the EFIC and various organizations throughout the United States.⁹,¹⁰ Proven to be a cost effective educational method, academic detailing involves synthesis and propagation of up-to-date clinical knowledge through one-on-one educational sessions with practicing physicians.¹¹ In 2010 and 2013, respectively, the Dalhousie and BC Provincial Academic Detailing Services developed courses on opioid use in chronic non-cancer pain.¹²,¹³ In spite of individual provincial efforts, Canadian academic detailing on opioid use in chronic non-cancer pain does not appear to be widespread. We, therefore, recommend that licensed physicians in Canada who are currently prescribing opioids for chronic non-cancer pain be targeted for appropriate CME through academic detailing services.

Finally, we propose that future educational efforts emphasize multidisciplinary practices in the prevention of iatrogenic opioid addiction. The Centers for Disease Control and Prevention (CDC) has emphasized use of self-management skills, out-patient behavioural pain management programs, physical therapy, and counselling on expected course of pain before considering opioid therapy.¹⁴ In summary, expanding upon mandatory, tailored, and evidence-based pain content in undergraduate as well as post-graduate medical education is crucial to facilitating optimal opioid stewardship amongst prescribing physicians.

CONCLUSION

Despite the critical role of Canadian physicians in preventing opioid abuse, prescribers lack confidence and adequate training in opioid stewardship. The 2017 Canadian Guidelines for Opioids for Chronic Non-Cancer Pain aim to (i) address prescription rates
by emphasizing non-medical management of chronic pain and limiting eligibility for opioid prescribing, (2) prevent opioid abuse disorder by redefining optimal dosing, and (3) mitigate diversion and opioid related mortality by increasing drug monitoring efforts and promoting public health measures. To further address clinical deficiencies, undergraduate and continuing medical education on the topic of opioid stewardship must improve. Canadian medical institutions may wish to call upon European educational strategies when developing the pain curricula and implement policies to ensure ubiquity. Additionally, use of academic detailing for CME should be augmented and funds should be allocated for opioid related material development. To comprehensively address opioid abuse disorder, changes to clinical practice, public health policies, and funding allocation are surely required. Therefore, while improving prescribing practices alone is insufficient to mitigate opioid addiction, empowering physicians to prescribe appropriately will promote health and save lives.

REFERENCES