

Canadian
Forces
College

Collège
des
Forces
Canadiennes



A Prescription for Reduced Controlled Substances Harm: The Need for a Canadian Armed Forces Prescription Monitoring Program

Lieutenant-Colonel Sean Meredith

JCSP 46 DL

Solo Flight

Disclaimer

Opinions expressed remain those of the author and do not represent Department of National Defence or Canadian Forces policy. This paper may not be used without written permission.

© 2021 Her Majesty the Queen in Right of Canada, as represented by the Minister of National Defence.

PCEMI 46 AD

Solo Flight

Avertissement

Les opinions exprimées n'engagent que leurs auteurs et ne reflètent aucunement des politiques du Ministère de la Défense nationale ou des Forces canadiennes. Ce papier ne peut être reproduit sans autorisation écrite.

© 2021 Sa Majesté la Reine du Chef du Canada, représentée par le ministre de la Défense nationale.

CANADIAN FORCES COLLEGE – COLLÈGE DES FORCES CANADIENNES

JCSP 46 DL – PCEMI 46 AD
2019 – 2021

SOLO FLIGHT

**A PRESCRIPTION FOR REDUCED CONTROLLED SUBSTANCES HARM:
THE NEED FOR A CANADIAN ARMED FORCES
PRESCRIPTION MONITORING PROGRAM**

By Lieutenant-Colonel Sean Meredith

“This paper was written by a student attending the Canadian Forces College in fulfilment of one of the requirements of the Course of Studies. The paper is a scholastic document, and thus contains facts and opinions, which the author alone considered appropriate and correct for the subject. It does not necessarily reflect the policy or the opinion of any agency, including the Government of Canada and the Canadian Department of National Defence. This paper may not be released, quoted or copied, except with the express permission of the Canadian Department of National Defence.”

“La présente étude a été rédigée par un stagiaire du Collège des Forces canadiennes pour satisfaire à l'une des exigences du cours. L'étude est un document qui se rapporte au cours et contient donc des faits et des opinions que seul l'auteur considère appropriés et convenables au sujet. Elle ne reflète pas nécessairement la politique ou l'opinion d'un organisme quelconque, y compris le gouvernement du Canada et le ministère de la Défense nationale du Canada. Il est défendu de diffuser, de citer ou de reproduire cette étude sans la permission expresse du ministère de la Défense nationale.”

A Prescription for Reduced Controlled Substances Harm: The Need for a Canadian Armed Forces Prescription Monitoring Program

Opioid use and associated harms are so prevalent in Canada that some advocate for the Federal Government to declare the opioid crisis a national emergency and employ the powers contained within the *Emergencies Act*.¹ Since the Canadian Armed Forces (CAF) is a microcosm of the Canadian population, it is unlikely immune from the potential harms associated with opioid misuse.² There is currently no formal mechanism by which the CAF actively monitors Controlled Substance (CS) prescribing and dispensing for the purposes of identifying inappropriate clinical practices that lead to patient harm.³ Dr. David Juurlink, a former pharmacist and now a prominent Medical Toxicologist, is quoted as saying at a Standing Committee on Health session in 2016 that “you can’t fix what you’re not even measuring”.⁴ A Prescription Monitoring Program (PMP) collects information on prescription medications, most notably CS, in order to monitor and analyze patterns and to educate clinicians for the purposes of harm reduction.⁵ The purpose of this paper is to prove that there is a need for a CS PMP in the CAF to monitor for high-risk prescribing and dispensing patterns and to communicate with clinicians about CS best practices in order to reduce the harms associated with their misuse.

¹ House of Commons, *Government Response to the Report of the Standing Committee on Health Entitled Report and Recommendations on the Opioid Crisis in Canada* (Ottawa: House of Commons, 2016), 3.

² The harmful effects of opioids include addiction, withdrawal, injury and death while intoxicated, overdose, suicide, and psychosis.

³ Controlled Substances are listed in the Schedules to the Controlled Drugs and Substances Act and include a multitude of active pharmaceutical ingredients used in health care such as opioids (also called narcotics) like morphine and fentanyl, stimulants such as methylphenidate (Ritalin), and benzodiazepines such as diazepam (Valium). All opioids are controlled substances; but, not all controlled substances are opioids. The majority of Prescription Monitoring Program literature relates to opioids; however, there is occasionally overlap with controlled substance terminology. Controlled substances, narcotics, and opioids are used interchangeably throughout this essay to maintain the intent of the documents from which the content was extracted.

⁴ House of Commons, Standing Committee on Health, *Evidence*, no. 023, Thursday, 6 October 2016, 18.

⁵ Andrea D. Furlan et al., “Overview of Four Prescription Monitoring/Review Programs in Canada,” *Pain Research and Management* 19, no. 2 (2014): 102.

Finding a critical pathway to overcoming the opioid crisis constitutes a wicked problem whereby there are numerous stakeholders who agree that a problem exists; but, not necessarily on the solution.⁶ An evidenced informed PMP is one of many tools that can be employed to reduce CS misuse and subsequent harms. This paper is structured to demonstrate that opioid misuse is prevalent in Canada with cause-and-effect sequelae; but, that there is not currently a mechanism to quantify the issue specifically within the CAF. The remainder of the essay identifies the high impact clinical data that can be collected by a PMP and how that data can be utilised to reduce the harm associated with CS use in the CAF. While beyond the scope of this paper due to space constraints, the metrics collected by a PMP could inform the development of a CAF CS prescribing and dispensing policy that is currently absent.

Canadians are amongst the highest users of opioids in the world. The latest International Narcotics Control Board report published in 2020 lists Canada as the third highest global consumer of narcotics as a function of defined daily doses for statistical purposes⁷, behind only the United States and Germany.⁸ Up to one-third of Canadians experience chronic pain; however, up to one-half of patients have to wait six months or more to see a physician trained in pain management.⁹ This means that the majority of opioids are prescribed by primary care providers¹⁰ who lack extensive training in this speciality area conflated with a dearth of

⁶ Val Morrison, *Wicked Problems and Public Policy* (Montreal: National Collaborating Centre for Health Public Policy, 2013), 1.

⁷ Comparing different opioids must account for equivalent doses. While hydromorphone is a stronger mu receptor agonist than morphine, 1 milligram of hydromorphone is an equivalent dose to 5 milligrams of morphine. Defined daily doses for statistical purposes, milligrams of oral morphine equivalent per day (MEQ), morphine equivalent dose (MED), and morphine milligram equivalents (MME) enable opioid equivalent dose comparison and are used interchangeably throughout this essay.

⁸ International Narcotics Control Board, *Narcotic Drugs: Estimated World Requirements for 2020- Statistics for 2018* (Vienna: United Nations, 2020), 243.

⁹ National Advisory Council on Prescription Drug Misuse, *First Do No Harm: Responding to Canada's Prescription Drug Crisis* (Ottawa: Canadian Centre on Substance Abuse, 2013), 21.

¹⁰ The CAF health care system centres on a primary care model. Therefore, the fact that primary care providers prescribe opioids at an elevated rate should be of paramount concern to the CAF.

knowledge about addiction leading to increased opioid prescribing rates.¹¹ Furthermore, Dr. Juurlink postulated that “approximately 10% of prescribed opioids for chronic pain become addicted”.¹² Extensive North American research demonstrates a positive correlation between opioid associated morbidity and mortality and increased dispensing and availability of narcotics.¹³ The sequelae associated with high rates of opioid prescribing are prevalent in Canada. From January 2016 to September 2020, there have been 19,355 opioid deaths (12 per day) and 23, 240 hospitalizations for opioid related overdoses (14 per day).¹⁴ Table 1 shows the trend for Canadian apparent opioid-related deaths and hospitalization rates for the last five years.

Table 1- Crude rate of opioid-related harms in Canada per 100,000 population

Harm	2016	2017	2018	2019	2020 (Jan – Sept)
Apparent opioid-related deaths	7.8	10.7	11.8	10.2	16.0
Hospitalizations for opioid-related overdoses	16.8	18.4	17.6	15.5	17.1

Source: Government of Canada, “Federal Actions on Opioids to Date,” accessed March 27, 2021, <https://www.canada.ca/en/health-canada/services/substance-use/problematic-prescription-drug-use/opioids/federal-actions/overview.html>.

The National Advisory Council on Prescription Drug Misuse report identified that CAF personnel might be at risk for prescription drug misuse. Research is required to quantify the prevalence of prescription drug misuse and associated sequelae in that population.¹⁵ However,

¹¹ National Advisory Council on Prescription Drug Misuse, *First Do No Harm*, 21.

¹² House of Commons Standing Committee on Health (HESA), *Report and Recommendations on the Opioid Crisis in Canada* (Ottawa: Speaker of the House of Commons, 2016), 3.

¹³ Benedikt Fischer et al., “Correlations between Prescription Opioid Analgesic Dispensing Levels and Related Mortality and Morbidity in Ontario, Canada, 2005-2011,” *Drug and Alcohol Review* 33, (2014): 20.

¹⁴ Government of Canada, “Federal Actions on Opioids to Date,” accessed March 27, 2021, <https://www.canada.ca/en/health-canada/services/substance-use/problematic-prescription-drug-use/opioids/federal-actions/overview.html>.

¹⁵ National Advisory Council on Prescription Drug Misuse, *First Do No Harm*, 21.

the network and infrastructure to collect the metrics in real time does not exist. The most recent published data for CAF member use of non-medicinal drugs comes from the Health and Lifestyle Information Survey of Canadian Armed Forces Personnel published in 2016. This report found that 5.9% of all Regular Force CAF personnel reported using drugs for non-medical purposes in the previous 12 months. More specifically, 1.0% and 1.1% reported non-medicinal use of opioids and barbiturates respectively. The authors reflected that the prevalence of non-medicinal drug use in the CAF uncovered in the survey is likely an underrepresentation of actual use since respondents may have feared disciplinary repercussions for answering truthfully regardless of the anonymity of the survey.¹⁶ Additionally, an unpublished internal Canadian Forces Health Services Group research project authored by Ma and Meredith in 2016 used prescription drug claims data to compare the prevalence of prescription opioid dispensing in the Regular Force to an age and sex matched cohort from Ontario.¹⁷ The research project showed that 1 in 5.6 CAF personnel were dispensed an opioid in 2016 compared to 1 in 7 for the Ontario cohort.¹⁸ Despite the higher use of prescription opioid medications, CAF dispensing patterns were more congruent with contemporary guidelines for use of opioids in chronic non-cancer pain patients.¹⁹ For example, 86.4% of new users of immediate-release opioids in the CAF were dispensed 50 milligrams of oral morphine equivalent per day (MEQ) or less compared to 77.0% in the Ontario

¹⁶ National Defence, *Health and Lifestyle Information Survey of Canadian Armed Forces Personnel 2013/2014* (Ottawa: Department of National Defence, 2016), 199-200.

¹⁷ Study was approved by Defence Research and Development Canada Human Research Ethics Committee as protocol 2018-009 and endorsed by the Surgeon General's Health Research Program as endorsement ID E2018-01-211-004-002.

¹⁸ Janice Ma and Sean Meredith, *Technical Report: Comparison of Opioid Utilization among Regular Force Personnel of the Canadian Armed Forces and Residents of Ontario in 2016* (Ottawa: CF H Svcs Gp, 2016), 6.

¹⁹ Jason Busse, *The 2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain* (Hamilton: National Pain Centre, 2017), 5.

cohort.²⁰ There exists the possibility of inappropriate opioid prescribing and dispensing in the CAF regardless of the relatively favourable comparison to Ontario practice patterns and the apparent adherence to evidenced based opioid dosing recommendations. The absence of an active CS monitoring system means that there is no way to proactively intervene with clinicians and patients in order to avoid the harmful effects of opioids when inappropriately prescribed and dispensed.

The National Advisory Committee on Prescription Drug Misuse (NAC) stood-up in June 2012 to develop an evidenced based pan-Canadian Strategy to synergize the efforts of the Federal and Provincial Governments, medical experts, regulators, law enforcement, and industry to reduce the negative outcomes associated with prescription opioids.²¹ However, the 2016 Standing Committee on Health's Report and Recommendations on the Opioid Crisis in Canada found that despite the best efforts of the NAC and other stakeholders, that "national leadership, particularly in relation to monitoring and surveillance and co-ordination of an overall response" is required to find solutions to the ongoing and worsening opioid crisis.²² The Government's response to the report was to establish an opioid strategy that clustered the 38 recommendations into four pillars; prevention, treatment, harm reduction, and national leadership/national strategy.²³ Prescription monitoring was included in the prevention pillar "in order to help medical regulatory bodies to quantify the scope of over-prescribing, to influence prescriber behaviours, and to support best practices . . . [and to identify] high-risk patients who may benefit from early

²⁰ Ma and Meredith, *Technical Report*, 12. The recommendation from the Canadian Guideline for Opioids for Chronic Non-Cancer Pain to restrict patients who are beginning opioid therapy to less than 50 mg of morphine equivalents daily will be discussed in more depth later in the paper.

²¹ National Advisory Council on Prescription Drug Misuse, *First Do No Harm*, 12.

²² House of Commons Standing Committee on Health (HESA), *Report and Recommendations on the Opioid Crisis in Canada*, 7.

²³ *Ibid.*, 12-7.

interventions by their healthcare practitioner”.²⁴ The CAF has a role to play within the framework of the national strategy by the development and implementation of a PMP.

The purpose of a PMP within the CAF would be the “ongoing collection, analysis and dissemination of information to those who need to know in order to inform policy and practice”.²⁵ The collected data would signal inappropriate opioid prescribing and dispensing patterns by Canadian Forces Health Services (CFHS) prescribers, recognize where staff effort at all levels could be directed to ensure appropriate prescribing, and enable the design of interventions to limit harm or focus research.²⁶ The measurable outputs of a PMP would be better patient care, reducing the harms associated with CS, and limiting the diversion of CS to those without indications for their use.²⁷ The value of a PMP in the CAF could be realised by signalling inappropriate prescribing behaviour and reducing harm by monitoring and intervening on even a single opioid prescription. An article in press from 2021 showed that 4.4% of Ontario residents that were prescribed an opioid by a dentist became new persistent users of opioids.²⁸ Indicators of statistically significant increased risk of becoming a persistent opioid user that could be flagged by a PMP are high doses of initial opioid prescriptions, long duration of an initial opioid prescription, and a long-acting opioid being prescribed for a new user.²⁹

²⁴ House of Commons, *Government Response to the Report of the Standing Committee on Health Entitled Report and Recommendations on the Opioid Crisis in Canada*, 6.

²⁵ National Advisory Council on Prescription Drug Misuse, *First Do No Harm*, 42.

²⁶ *Ibid.*, 43.

²⁷ Beth Sproule, *Prescription Monitoring Programs in Canada: Best Practice and Program Review* (Ottawa: Canadian Centre on Substance Abuse, 2015), 3.

²⁸ Tonya J. Campbell et al., “Dental Opioid Prescription Characteristics and the Risk of New, Persistent Use,” *American Journal of Preventive Medicine* 0, no. 0 (2021): 2. Persistent user described as obtaining at least one other opioid prescription within 90 days from the index date of the first prescription, and another opioid prescribed within nine months after the subsequent prescription.

²⁹ *Ibid.*, 7.

Data collection for a PMP incorporates the patient, the medication, the prescriber, and the pharmacy from which the medication was dispensed.³⁰ Each patient, prescriber, dispenser, and pharmacy have unique numerical identifiers such as a service number for CAF members and professional registration numbers for clinicians which would be captured by the PMP and used to identify harmful opioid practices. The totality of this data, when analyzed and evaluated effectively, identifies opportunities for intervention and ultimately patient safety. Due to the harm and addiction potential associated with opioids, barbiturates, benzodiazepines and stimulants, especially when used together, the CAF should monitor all medications in the Schedules of the Controlled Drugs and Substances Act. The broad inclusion of all CS in a PMP decreases the incidence of doctor shopping compared to programs that collect data from across fewer schedules.³¹

The focus of the CAF PMP should be on CS activities associated with elevated levels of harm as well as metrics that are objective and easy to measure so that the success of the program can be evaluated.³² Obtaining multiple opioid prescriptions from multiple clinicians, known as double doctoring, and high initial dosing of opioids represent high risk activities that should be prioritized for monitoring.

Double doctoring occurs when a patient obtains “a prescription without informing the practitioner about every prescription or narcotic obtained within the previous 30 days”.³³ This behaviour represents harm to the individual since they are exposed to supratherapeutic doses of opioids for their indication and increases the risk of an overdose. Additionally, double doctoring

³⁰ Umair Majid and Nina Frey, “Prescription Drug Monitoring Programs : A Rapid Qualitative Review,” *Canadian Agency for Drugs and Technologies in Health*, (2019): 3.

³¹ Thomas Clark et al., *Prescription Drug Monitoring Programs: An Assessment of the Evidence for Best Practices* (Boston: The Prescription Drug Monitoring Program Center of Excellence, 2012), 12.

³² Sproule, *Prescription Monitoring Programs in Canada*, 12.

³³ Furlan et al., “Overview of Four Prescription Monitoring/Review Programs in Canada,” 104.

may be conducted by nefarious actors to obtain opioids for the purposes of diverting them to individuals for recreational use. British Columbia introduced PharmaNet in 1995, which is a centralized prescription database that enables prescribing clinicians and pharmacists to have real-time access to an individual's medication record. Physicians and pharmacists would refer to PharmaNet prior to prescribing and dispensing opioids respectively, and take action in the event that double doctoring was identified. Immediately following the introduction of PharmaNet there was a 32.8% and 48.6% reduction in inappropriate opioid and benzodiazepine prescriptions respectively.³⁴ A PMP improves patient safety by limiting a CAF member's ability to engage in double doctoring. Greater positive impact would be realised if the CAF's PMP was integrated with civilian health care systems.

High initial opioid doses can be targeted for risk reduction opportunities of a PMP. The risk of a fatal overdose increases as opioid doses escalate: 0.1% for < 20 mg Morphine Equivalent Dose (MED) per day; 0.14% for 20-49 mg MED/day; 0.18% for 50-99 mg MED per day; and 0.23% for \geq 100 MED/day.³⁵ It is for this reason that the Canadian Guideline for Opioids for Chronic Non-Cancer Pain recommend that for new opioid users that their initial dose be less than 50 mg MED per day.³⁶ A PMP could be used to identify prescribers who commonly initiate opioids at doses greater than 50 Morphine Milligram Equivalents (MME) daily. The risk reduction opportunities of a PMP in this regard are prevalent. A 2019 Canadian Institute for Health Information report showed that close to a quarter of all new opioid prescriptions in

³⁴ Colin R. Dormuth et al., "Effect of a Centralized Prescription Network on Inappropriate Prescriptions for Opioid Analgesics and Benzodiazepines," *CMAJ* 184, no. 16 (2012): E853. An inappropriate prescription was defined as filling the same active pharmaceutical ingredient within seven days of an incident prescription prescribed by another clinician and dispensed from a different pharmacy.

³⁵ Busse, *The 2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain*, 64.

³⁶ *Ibid.*

Ontario, Saskatchewan, and British Columbia exceed the 50 MME threshold.³⁷ A similar opportunity to avoid overdose deaths also exists within the CAF where 13.7% of new opioid users of immediate use formulations were greater than 50 MEQ.³⁸

Simply the collection of opioid prescribing and dispensing information is insufficient to prevent harm; targeted, appropriate, and evidenced based actions need to be taken with the information in order to prevent sequelae associated with inappropriate CS prescribing and dispensing. PMP data can be passive whereby clinicians refer to available databases at the point of care or it can be active through PMP driven interactions.

A systematic PMP model is ingrained in institutional policies and mandates that medication databases be referenced when prescribing CS.³⁹ Several jurisdictions within the United States have adopted the requirement to consult a PMP prior to prescribing or dispensing a CS.⁴⁰ Information that can be obtained by reviewing a PMP drug database include who previously wrote a CS prescription, where it was filled, which CS, and the amount of them that were prescribed.⁴¹ In this manner, a PMP can break the cycle of opioid abuse by not prescribing them to patients at risk. An American emergency department physician reflected that the value of a PMP is that “at the end of the day, if you’re concerned about somebody who’s at risk for opioid abuse it’s worth going in and checking it”, and subsequently not prescribing opioids to an at-risk individual.⁴² A systematic PMP model that requires that all clinicians refer to a database prior to

³⁷ Canadian Institute of Health Information, *Opioid Prescribing in Canada: How Are Practices Changing?* (Ottawa: Canadian Institute for Health Information, 2019), 34.

³⁸ Ma and Meredith, *Technical Report*, 12.

³⁹ Majid and Frey, “Prescription Drug Monitoring Programs,” 12.

⁴⁰ Andrea M. Garcia, “State Laws Regulating Prescribing of Controlled Substances: Balancing the Public Health Problems of Chronic Pain and Prescription Painkiller Abuse and Overdose,” *Journal of Law, Medicine and Ethics* 41, no. SUPPL. 1 (2013): 44.

⁴¹ Majid and Frey, “Prescription Drug Monitoring Programs : A Rapid Qualitative Review,” 10.

⁴² Sabrina J. Poon et al., “Usability of the Massachusetts Prescription Drug Monitoring Program in the Emergency Department: A Mixed-Methods Study,” *Academic Emergency Medicine* 23, (2016): 410.

prescribing a CS would be value added in the CAF to prevent harm associated with opioid prescribing and dispensing. However, an active PMP model that uses collected data to inform clinicians on their patterns and update them on best practices will have long term positive outcomes on the health and welfare of CAF members who require CS as part of their treatment plans.

The central aim of a PMP “should be to enhance the quality use of medicines rather than punitive or law enforcement aims”.⁴³ Unsolicited reports to clinicians meet this central aim by providing analysis of collected information on CS to prescribers, dispensers, and patients with a view to being educational, and to inform them on how to alter behaviours in the interest of best patient outcomes.⁴⁴ For a PMP to be effective in changing behaviour it is imperative that the information be provided to prescribers and pharmacists in a timely fashion and that trends be identified over time rather than solely identifying a single previous incident in the past.⁴⁵

Saskatchewan adopted the approach of reviewing patient profiles for the purposes of improving quality patient care and the use of opioids. The PMP in this jurisdiction promulgated letters to prescribers informing them on better prescribing practices and drug use, which in conjunction with other interventions, saw decreases in benzodiazepine, oral meperidine and pentazocine use as well as increased dosage form conversion to extended-release opioids from immediate use formulations for patients on a stable dose.⁴⁶ Furthermore, a study by Young et al. from Massachusetts showed that prescribers who were sent unsolicited reports of their CS prescribing patterns had statistically lower CS prescriptions, CS dosage units, days’ supply, total MME, and

⁴³ Roger Nicholas et al., “Beyond the Paper Trail: Using Technology to Reduce Escalating Harms from Opioid Prescribing in Australia,” *Australian and New Zealand Journal of Public Health* 37, no. 2 (2013): 145.

⁴⁴ Sproule, *Prescription Monitoring Programs in Canada*, 10.

⁴⁵ David B. Brushwood, “Maximizing the Value of Electronic Prescription Monitoring Programs,” *Journal of Law, Medicine and Ethics* 31, no. 1 (2003): 49.

⁴⁶ Furlan et al., “Overview of Four Prescription Monitoring/Review Programs in Canada,” 105.

average daily MME than prescribers who were not sent unsolicited letters over the same time period.⁴⁷ Unsolicited reports and educational letters could be sent to CAF prescribing clinicians in a similar fashion to what was done in Saskatchewan and Massachusetts in order to reduce questionable opioid prescribing practices and change long-term prescribing behaviour.

Quality Assurance monitoring would have to be conducted to ensure that the desired outcomes of a CAF implemented PMP are realised. An evaluation of outcomes by a time series analysis, as was done by Young et al., would compare the number of CS prescriptions, dosage units, days' supply and MME before and after the unsolicited reports were distributed.⁴⁸ Alternatively, a more comprehensive clinical scoring tool could be employed evaluating trends over time regarding adherence to clinical practice guidelines and reduced CS sequelae rates following the distribution of targeted educational material designed to alter prescriber behaviour.

The benefits of a PMP are not universally accepted and there are counter arguments associated with their use. A frequently reported implementation and utilization barrier is that some practitioners find them to be time consuming and difficult to use.⁴⁹ Some PMPs involve the requirement for multiple log-ins to multiple parallel information technology programs, which makes incorporating verifying prescription profiles into the patient care process difficult when they are already busy conducting other clinical activities. A clinician focused, user friendly, single PMP portal would increase routine utilization. The Canadian Medical Association is a strong proponent for the access to a real-time PMP.⁵⁰ Their public endorsement of the concept at a Standing Committee on Health is in line with Kotter's assertion that a powerful guiding

⁴⁷ Leonard D. Young, Peter W. Kreiner, and Lee Panas, "Unsolicited Reporting to Prescribers of Opioid Analgesics by a State Prescription Drug Monitoring Program: An Observational Study with Matched Comparison Group," *Pain Medicine* 19, (2018): 1402-3.

⁴⁸ *Ibid.*, 1400.

⁴⁹ Majid and Frey, "Prescription Drug Monitoring Programs," 13.

⁵⁰ Jeff Blackmer, *Opening Statement: House of Commons Standing Committee on Health* (Ottawa: Canadian Medical Association, 2016), 4-5.

coalition is required for successful change initiative to occur and will undoubtedly reduce dissension about their use within the medical community.⁵¹ There are unfortunately occasional unintended clinical consequences associated with PMPs. CS are a safe and effective therapeutic treatment modality for certain medical conditions and a PMP, when incorrectly and indiscriminately applied, may limit access to CS that are appropriately prescribed resulting in patients being untreated.⁵² Unsolicited reports to clinicians are valuable in overcoming this deficiency. They are educational in nature and balance the safe use of CS with ensuring patients receive the evidenced-based care they require. Overall, incorporation of medical practitioner, patient, and other actor input will, as outlined in the Walt in Gilson policy analysis framework, “make the difference between effective and ineffective policy choice and implementation” of a PMP in the CAF.⁵³

The opioid crisis requires a whole of Canada approach that includes government, industry, clinicians, regulatory bodies, professional associations, and most importantly patient stakeholders. Previous attempts to find opioid harm reduction strategies were not comprehensive enough, prompting the call to action by the Standing Committee on Health to formulate a nationally led program to overcome the wicked problem associated with opioid misuse. The CAF must be part of the all-inclusive national solution since CAF members are prescribed and dispensed opioids. While there is no overt signal that there is opioid misuse in the CAF, we cannot be certain since we are not actively conducting surveillance. The purpose of this paper was to prove that there is a need for a CS PMP in the CAF to monitor for high-risk prescribing

⁵¹ John P. Kotter, *Leading Change: Why Transformation Efforts Fail* (Cambridge: Harvard Business School Publishing Corporation, 2011), 7.

⁵² Dennis Ross-Degnan et al., “A Controlled Study of the Effects of State Surveillance on Indicators of Problematic and Non-Problematic Benzodiazepine Use in a Medicaid Population,” *International Journal of Psychiatry in Medicine* 34, no. 2 (2004): 117.

⁵³ Gill Walt and Lucy Gilson, “Reforming the Health Sector in Developing Countries: The Central Role of Policy Analysis,” *Health Policy and Planning* 9, no. 4 (1994): 355.

and dispensing patterns and to communicate with clinicians about CS best practices in order to reduce the harms associated with their misuse. The CAF must implement a PMP since they are an invaluable tool in the armamentarium to assist with opioid use risk mitigation. They provide real-time information that can, amongst other modalities, signal double doctoring and when high initial opioid doses are prescribed and dispensed. These signals of potential opioid harm are captured in patient medication databases that can be referenced at the point of care to prevent harm in the acute care setting and also inform unsolicited educational tools that can be forwarded to clinicians to change long term behaviour. Quality Assurance programs must be implemented to ensure that issues with the program are identified and appropriate solutions to overcome the issues are implemented. Also, the CAF has to ensure that there are no unintended consequences of a PMP such as creating barriers to appropriate CS use by patients by routine Quality Assurance monitoring. Finally, interaction with clinicians must happen to design and maintain the PMP so that they are user friendly since a program that is not employed by front line practitioners will not improve health outcomes.

Opioids are safe and effective when there is an indication for their use and prescribed and dispensed properly. A multifaceted CAF opioid policy is required to guide CFHS clinicians regarding appropriate prescribing and dispensing that limits the harms associated with opioid misuse. A PMP is an integral component to inform the development of the policy.

BIBLIOGRAPHY

- Blackmer, Jeff. *Opening Statement: House of Commons Standing Committee on Health*. Ottawa: Canadian Medical Association, 2016.
- Brushwood, David B. “Maximizing the Value of Electronic Prescription Monitoring Programs.” *Journal of Law, Medicine and Ethics* 31, no. 1 (2003).
- Busse, Jason. *The 2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain*. Hamilton: National Pain Centre, 2017.
- Campbell, Tonya J., Diana Martins, Mina Tadrous, David N. Juurlink, J. Michael Paterson, Muhammad M. Mamdani, David Mock, and Tara Gomes. “Dental Opioid Prescription Characteristics and the Risk of New, Persistent Use.” *American Journal of Preventive Medicine* 0, no. 0 (2021).
- Canadian Institute of Health Information. *Opioid Prescribing in Canada: How Are Practices Changing?* Ottawa: Canadian Institute for Health Information, 2019.
- Clark, Thomas, John Eadie, Peter Kreiner, and Gail Strickler. *Prescription Drug Monitoring Programs: An Assessment of the Evidence for Best Practices*. Boston: The Prescription Drug Monitoring Program Center of Excellence, 2012.
- Dormuth, Colin R., Tarita A. Miller, Anjie Huang, Muhammad M. Mamdani, and David N. Juurlink. “Effect of a Centralized Prescription Network on Inappropriate Prescriptions for Opioid Analgesics and Benzodiazepines.” *CMAJ* 184, no. 16 (2012).
- Fischer, Benedikt, Wayne Jones, Karen Urbanoski, Roger Skinner, and Jürgen Rehm. “Correlations between Prescription Opioid Analgesic Dispensing Levels and Related Mortality and Morbidity in Ontario, Canada, 2005-2011.” *Drug and Alcohol Review* 33 (2014).
- Furlan, Andrea D., Peter MacDougall, Denise Pellerin, Karen Shaw, Doug Spitzig, Galt Wilson, and Janet Wright. “Overview of Four Prescription Monitoring/Review Programs in Canada.” *Pain Research and Management* 19, no. 2 (2014).
- Garcia, Andrea M. “State Laws Regulating Prescribing of Controlled Substances: Balancing the Public Health Problems of Chronic Pain and Prescription Painkiller Abuse and Overdose.” *Journal of Law, Medicine and Ethics* 41, no. SUPPL. 1 (2013).
- Government of Canada. “Federal Actions on Opioids to Date.” Accessed March 27, 2021. <https://www.canada.ca/en/health-canada/services/substance-use/problematic-prescription-drug-use/opioids/federal-actions/overview.html>.
- House of Commons. *Government Response to the Report of the Standing Committee on Health Entitled Report and Recommendations on the Opioid Crisis in Canada*. Ottawa: House of Commons, 2016.
- House of Commons. Standing Committee on Health, *Evidence*, no. 023, Thursday, 6 October 2016, 18.
- House of Commons Standing Committee on Health (HESA). *Report and Recommendations on the Opioid Crisis in Canada*. Ottawa: Speaker of the House of Commons, 2016.

- International Narcotics Control Board. *Narcotic Drugs: Estimated World Requirements for 2020- Statistics for 2018*. Vienna: United Nations, 2020.
- Kotter, John P. *Leading Change: Why Transformation Efforts Fail*. Cambridge: Harvard Business School Publishing Corporation, 2011.
- Ma, Janice, and Sean Meredith. *Technical Report: Comparison of Opioid Utilization among Regular Force Personnel of the Canadian Armed Forces and Residents of Ontario in 2016*. Ottawa: CF H Svcs Gp, 2016.
- Majid, Umair, and Nina Frey. "Prescription Drug Monitoring Programs: A Rapid Qualitative Review." *Canadian Agency for Drugs and Technologies in Health*, 2019.
- Morrison, Val. *Wicked Problems and Public Policy*. Montreal: National Collaborating Centre for Health Public Policy, 2013.
- National Advisory Council on Prescription Drug Misuse. *First Do No Harm: Responding to Canada's Prescription Drug Crisis*. Ottawa: Canadian Centre on Substance Abuse, 2013.
- National Defence. *Health and Lifestyle Information Survey of Canadian Armed Forces Personnel 2013/2014*. Ottawa: Department of National Defence, 2016.
- Nicholas, Roger, Ann Roche, Malcolm Dobbin, and Nicole Lee. "Beyond the Paper Trail: Using Technology to Reduce Escalating Harms from Opioid Prescribing in Australia." *Australian and New Zealand Journal of Public Health* 37, no. 2 (2013).
- Poon, Sabrina J., Margaret B. Greenwood-Ericksen, Rebecca E. Gish, Pamela M. Neri, Sukhjit S. Takhar, Scott G. Weiner, Jeremiah D. Schuur, and Adam B. Landman. "Usability of the Massachusetts Prescription Drug Monitoring Program in the Emergency Department: A Mixed-Methods Study." *Academic Emergency Medicine* 23 (2016).
- Ross-Degnan, Dennis, Linda Simoni-Wastila, Jeffrey S. Brown, Xiaoming Gao, Connie Mah, Leon E. Cosler, Thomas Fanning, et al. "A Controlled Study of the Effects of State Surveillance on Indicators of Problematic and Non-Problematic Benzodiazepine Use in a Medicaid Population." *International Journal of Psychiatry in Medicine* 34, no. 2 (2004).
- Sproule, Beth. *Prescription Monitoring Programs in Canada: Best Practice and Program Review*. Ottawa: Canadian Centre on Substance Abuse, 2015.
- Walt, Gill, and Lucy Gilson. "Reforming the Health Sector in Developing Countries: The Central Role of Policy Analysis." *Health Policy and Planning* 9, no. 4 (1994).
- Young, Leonard D., Peter W. Kreiner, and Lee Panas. "Unsolicited Reporting to Prescribers of Opioid Analgesics by a State Prescription Drug Monitoring Program: An Observational Study with Matched Comparison Group." *Pain Medicine* 19 (2018).