Fischer et al. Substance Abuse Treatment, Prevention, and Policy
DOI 10.1186/s13011-016-0055-4

Substance Abuse Treatment, Prevention, and Policy

COMMENTARY Open Access

Treatment of prescription opioid disorders in Canada: looking at the 'other epidemic'?

Benedikt Fischer[1,2,3,4*], Paul Kurdyak[1,2,5], Elliot Goldner[4], Mark Tyndall[6,7] and Jürgen Rehm[1,2,3,8]

Abstract

The magnitude and consequences of prescription opioid (PO) misuse and harms (including rising demand for PO disorder treatment) in Canada have been well-documented. Despite a limited evidence-base for PO dependence treatment, opioid maintenance therapy (OMT) - mostly by means of methadone maintenance treatment (MMT) - has become the de facto first-line treatment for PO-disorders. For example in the most populous province of Ontario, some 50,000 patients - large proportions of them young adults - are enrolled in MMT, resulting in a MMT-rate that is 3–4 times higher than that of the United States. MMT in Ontario has widely proliferated towards a quasi-treatment industry within a system context of the public fee-payer offering generous incentives for community-based MMT providers. Contrary to the proliferation of MMT, there has been no commensurate increase in availability of alternative (e.g., detox, tapering, behavioral), and less intrusive and/or costly, treatments which may provide therapeutic benefits at least for sub-sets of PO-dependent patients. Given the extensive PO-dependence burden combined with its distinct socio-demographic and clinical profile (e.g., involving many young people, less intensive or risky opioid use), an evidence-based 'stepped-care' model for PO dependence treatment ought to be developed in Canada where MMT constitutes one, but likely a last resort or option, for treatment. Other, less intrusive treatment options as well as the best mix of treatment options should be systematically investigated and implemented. This case study has relevance and implications for evidence-based treatment also for the increasing number of other jurisdictions where PO misuse and disorders have been rising.

Keywords: Prescription opioids, Disorder, Treatment, Opioid maintenance treatment, Evidence-based care

By now, the detrimental extent and consequences of the 'epidemic' of prescription opioid (PO) misuse and harms in North America are well documented. Despite recent 'plateauing' effects, some 4.2 % of adults report non-medical PO use (NMPOU) and some 17,000 PO-related poisoning fatalities occur annually in the United States [1–4]. In Canada, NMPOU prevalence continues to be second only to cannabis among adults and adolescents when compared to illicit drug use. While PO-related poisoning deaths have shifted somewhat between different PO formulations (e.g., oxycodone to hydromorphone or fentanyl) their overall numbers continue to climb and are proportionally similar to those recorded in the US [5–7]. Ample evidence has also shown that the high levels of PO dispensing are the principal driver of the corresponding levels of PO-related harms in North America [1, 8, 9].

A related but commonly overlooked phenomenon concerns the realities of treatment for PO-related disorders. A recent report in the Lancet (2012) concluded that "research into the treatment for [PO] addiction has been chronically neglected. As a result, the evidence base that informs best practice is thin […] The 'standard treatment' for [PO] dependence is evolving, and [there is no] single current standard at this time" [10]. Yet, current Canadian treatment system realities seem to suggest the opposite. In Ontario, Canada's most populous province (~13.6 million pop.), the number of individuals enrolled in methadone maintenance treatment (MMT) has skyrocketed to just under 50,000 in 2014 (from a mere 3000 in 1996, and 29,000 in 2010), with the vast majority of recent enrollments presumed to be PO-related. This situation is in comparison to the United States (US), where there is a similar prevalence of opioid misuse, with opioid maintenance

* Correspondence: bfischer@sfu.ca
[1]Social and Epidemiological Research Department, Centre for Addiction & Mental Health (CAMH), Toronto, ON M5S 2S1, Canada
[2]Department of Psychiatry, University of Toronto, Toronto, ON M5T 1R8, Canada
Full list of author information is available at the end of the article

treatment (OMT) being the mainstay similar in design and delivery modes to Canada [11–13]. In the US, however, the total number of OMT clients has increased from some 230,000 (2003) to 340,000 in 2011 - an increase of about 50 % yet making for an OMT enrollment rate that is only about 25–30 % that of Ontario [14]. Importantly, while the number of MMT enrolments in Ontario continues to rise, 29 % of MMT patients (in 2014) were <30 years - and up to 1 in 5 were <25 years in some health regions. MMT patients in this age range likely had relatively short or only tangential involvement with PO misuse prior to treatment, yet likely will be involved in MMT for long periods of time given the lifelong nature of this treatment for many patients [15, 16]. Further, PO disorder patients are commonly more socio-economically integrated and feature lower clinical risk profiles (e.g., less severe addiction severity, less injecting and/or co-morbidities) than the profiles of (largely heroin using) patients that entered OMT pre-2000. Notably, the application of the new DSM-V criteria for PO-disorders is expected to further considerably increase the number of people initiated on OMT [17].

The above data reflect that OMT - mostly with methadone but some suboxone-based in exceptional cases - has proliferated as the de facto first-line treatment for PO-related disorders in Ontario. This is despite the fact that OMT is designed as long-term - in many cases for life - pharmacotherapy for most patients [18]. The predominant reliance on OMT for PO-disorder treatment is mainly based by research evidence from long-term heroin users, even though substantial, clinically relevant differences between heroin and PO users are documented [19–23]. Furthermore, this practice has evolved largely in the absence of an evidence-based stepped-treatment model for PO-disorders, even though evidence exists for benefits of treatment options less intrusive (and potentially less costly) than MMT. For example, several studies - including youth/adolescent patient samples - have shown good select effectiveness involving (buprenorphine-naloxone or naltrexone) medication-supported taper treatments for PO-dependence (with up to 50 % of good treatment outcomes at 3- to 6-months follow-up points) from which many patients would likely benefit [24–27]. Behavioral treatments have both shown some effectiveness as singular treatment interventions as well as in combination with medication-supported detoxification for opioid disorders yet remain under-explored [28–31]. Notably, there neither are any Canadian research studies systematically examining, nor are treatment guidelines universally integrating these alternative treatment modalities for PO-disorders despite the acute and expanding severity of this problem.

While the pharmaceutical industry's corporate greed and tactics have been popularly blamed - and legally punished - for the PO abuse epidemic (e.g., [32, 33]), economics within the health care system appear to exert an un-desirable dynamic in the realities of treatment for PO disorders. In addition to standard reimbursement for OMT care within Ontario's public fee-for-service-based health care system, the province introduced additional financial 'incentives' in 2011 to entice more community physicians and pharmacies into MMT delivery [34, 35]. In this context, an extensive proliferation of numerous 'for-profit' MMT-only clinics occurred focussing on economies-of-scale - i.e., large patient numbers - yet also featuring treatment quality problems (e.g., compromised patient care, inappropriate take-homes or "carries", excessive urine testing) [36–38]. While the MMT-focussed incentives have created a proliferation of MMT clinics and patients in Ontario, there has been no commensurate investment in short- or mid-term treatment interventions, for example with abstinence, where possible, as a main goal for potentially suitable patient sub-groups. While these treatment interventions may potentially be more care effort- or management-intensive in the acute treatment phase, they be less costly for the system - yet also provide less income for OMT providers or medications producers - in the long run. To illustrate: The current annual public expenditures - or reimbursement fees - for MMT alone in Ontario are estimated to exceed $250,000,000 [39].

Allow us to be perfectly clear: Our position is not 'anti'-OMT for PO-disorders. In fact, several of the present authors have actively argued for the expansion of OMT availability in Canada when this was still a highly restricted and scarce treatment for the treatment of opioid disorders not so long ago [15, 40]. We believe however that OMT's proliferation as the first-line-treatment for PO disorders has been propelled to excess by several of the wrong reasons and that an evidence-based stepped-care model - including non-pharmacotherapy/-maintenance components for initial treatment steps - is urgently required to provide a best and most patient-oriented treatment approaches on a system level. Stepped-care models have been promoted and/or implemented for other areas of mental health or substance abuse (e.g., alcohol or nicotine dependence) treatment [41–44]. In essence, what a stepped care model attempts to do is to align treatment from different options, and treatment intensity, based on key characteristics - e.g., based on comprehensive assessment information - that predict patient need, with an overall goal of employing least intensive but most promising treatment on a case-to-case basis. In the specific context of PO disorders, basic treatment options could, for example, include: brief/cognitive-behavioral interventions; medications-supported (short-term) detoxification/tapering; opioid maintenance treatment. If patients do not respond well to their initially assigned treatment, they would be stepped up to more intensive treatment options.

Unquestionably, there are a large number of individuals suffering from PO disorders in Canada who require

treatment. While OMT undoubtedly brings therapeutic benefits to many opioid-dependent people, and is the best available therapuetic choice for a large sub-group of patients with PO disorder it also implies the continued exposure of patients to potential correlated adverse effects (e.g., brain structure changes, depression, mortality) of chronic opioid intake - risks that should be minimized especially with young and non-severely dependent patients [45–50]. Long-term OMT should thus surely be an available treatment option in a continuum-of-care, but primarily for non-responders to less intrusive alternatives where these seem reasonably indicated as a first treatment option. In order to implement a stepped-care model for PO disorder treatment in Canada, comprehensive research needs to be conducted, including both on the socio-clinical characteristics of patients predicting success in the different categories of treatment options, as well as the best mix of varying - including non-maintenance - treatment options in a comprehensive stepped-care approach and system. In this context, we also noted with curiosity that the 'Executive Committee' of Canada's 'Prescription Drug Strategy' included a senior representative of Reckitt-Benckiser, the then pharmaceutical company manufacturing a principal OMT product (Suboxone) approved in Canada, and has been formally lobbying the Minister of Health for regulatory practice changes in explicit reference to opioid products from other pharmaceutical opioid manufacturers in this role [51]. This mixes competing interests too closely, and would not be acceptable in other comparable arenas of health care policy (see, for example, [52, 53]).

In summary, we urge policy-makers at relevant levels in Canada to both facilitate the development of an evidence-base - building on existent and facilitate the generation of new data required - for effective non-OMT options towards a comprehensive overall continuum-of-care for PO disorder treatment with OMT as a 'last resort'; related, we urge the correction of the predominant economic parameters in opioid disorder treatment that seem to have unduly influenced the recent excessive expansions of OMT in Ontario, towards a more and overall public health oriented approach to treatment and care. As the burdensome issue of PO misuse and disorders is increasing in other national system contexts [54, 55], the lessons from Canada may provide useful guidance for the development or shaping of treatment options and systems there as well.

Abbreviations

MMT: methadone maintenance treatment; NMPOU: non-medical prescription opioid use; OMT: opioid maintenance treatment; PO: prescription opioid.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

BF led the overall writing of the manuscript. All of the co-authors contributed critical thoughts, content and information, reviewed and revised iterative manuscript drafts, and approved the final manuscript submitted. All authors read and approved the final manuscript.

Funding

The authors acknowledge funding support for the present work from CIHR grants SMN-139150 and FRN-94814; Dr. Fischer furthermore acknowledges funding support from a CIHR/PHAC Applied Public Health Chair Award. None of the funders had any role in the study design or collection, analysis, and interpretation of data and in manuscript writing or content.

Author details

[1]Social and Epidemiological Research Department, Centre for Addiction & Mental Health (CAMH), Toronto, ON M5S 2S1, Canada. [2]Department of Psychiatry, University of Toronto, Toronto, ON M5T 1R8, Canada. [3]Institute of Medical Science, Faculty of Medicine, University of Toronto, Toronto, ON M5T 1R8, Canada. [4]Centre for Applied Research in Mental Health & Addiction (CARMHA), Simon Fraser University, Vancouver V6B 5K3, Canada. [5]Mental Health and Addictions Program, Institute for Clinical Evaluative Science (ICES), Toronto, ON M4N 3M5, Canada. [6]B.C. Centre for Disease Control (BCCDC), Vancouver, BC V5Z 4R4, Canada. [7]Department of Medicine, University of British Columbia, Vancouver, BC V5Z 1M9, Canada. [8]Dalla Lana School of Public Health, University of Toronto, Toronto, ON M5T 3M7, Canada.

Received: 21 December 2015 Accepted: 26 February 2016
Published online: 08 March 2016

References

1. Jones CM, Mack KA, Paulozzi LJ. Pharmaceutical overdose deaths, United States, 2010. JAMA. 2013;309(7):657–9.
2. Jones CM. Frequency of prescription pain reliever nonmedical use: 2002–2003 and 2009–2010. Arch Intern Med. 2012;172(16):1265–7.
3. Dart RC, Surratt HL, Cicero TJ, Parrino MW, Severtson SG, Bucher-Bartelson B, et al. Trends in opioid analgesic abuse and mortality in the United States. N Engl J Med. 2015;372(3):241–8.
4. American Society of Addiction Medicine. Opioid addiction disease: 2015 facts and figures. Chevy Chase: MD: American Society of Addiction Medicine; 2015.
5. Fischer B, Murphy Y, Jones W, Ialomiteanu A, Rehm J. Recent developments in prescription opioid-related dispensing and harm indicators in Ontario, Canada. Pain Physician. 2015;18(4):E659–62.
6. Gomes T, Mamdani MM, Dhalla IA, Cornish S, Paterson JM, Juurlink DN. The burden of premature opioid-related mortality. Addiction. 2014;109(9):1482–8.
7. Canadian Centre on Substance Abuse (CCSA). CCENDU bulletin: Deaths involving fentanyl in Canada, 2009–2014. Bulletin. Ottawa, Ontario: Canadian Centre on Substance Abuse and the Canadian Community Epidemiology Network on Drug Use (CCENDU); 2015.
8. Fischer B, Jones W, Urbanoski K, Skinner R, Rehm J. Correlations between prescription opioid analgesic dispensing levels and related mortality and morbidity in Ontario, Canada, 2005–2011. Drug Alcohol Rev. 2014;33(1):19–26.
9. King NB, Fraser V, Boikos C, Richardson R, Harper S. Determinants of increased opioid-related mortality in the united states and Canada, 1990–2013: A systematic review. Am J Public Health. 2014;104(8):32–42.
10. Holmes D. Prescription drug addiction: The treatment challenge. Lancet. 2012;379(9810):17–8.
11. Arfken CL, Johanson CE, di Menza S, Schuster CR. Expanding treatment capacity for opioid dependence with office-based treatment with buprenorphine: National surveys of physicians. J Subst Abuse Treat. 2010;39(2):96–104.
12. Jones ES, Moore BA, Sindelar JL, O'Connor PG, Schottenfeld RS, Fiellin DA. Cost analysis of clinic and office-based treatment of opioid dependence: Results with methadone and buprenorphine in clinically stable patients. Drug Alcohol Depend. 2009;99(1–3):132–40.
13. The American Society of Addiction Medicine. Advancing access to addiction medications: Implications for opioid addiction treatment. Chevy Chase, MD: The American Society of Addiction Medicine; 2013.
14. Substance Abuse and Mental Health Services Administration, Centre for Behavioral Health Statistics and Quality. The N-SSATS report: Trends in the use of methadone and buprenorphine at substance abuse treatment facilities: 2003–2011. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2013.

15. Fischer B. Prescriptions, power and politics: The turbulent history of methadone maintenance in Canada. J Public Health Policy. 2000;21(2):187–210.
16. Kurdyak P, Binu J, Zaheer J, Fischer B. Patterns of methadone maintenance treatment provision in Ontario: Policy success or pendulum excess? In Press. 2015
17. Degenhardt L, Bruno R, Lintzeris N, Hall W, Nielsen S, Larance B, et al. Agreement between definitions of pharmaceutical opioid use disorders and dependence in people taking opioids for chronic non-cancer pain (POINT): A cohort study. Lancet Psychiatry. 2015;2(4):314–22.
18. National Institute on Drug Abuse (NIDA). Principles of drug addiction treatment: A research based guide. NIH publication no. 12–4180. Thirdth ed. Bethedsa, MD: National Institute on Drug Abuse (NIDA); 2012.
19. Wu LT, Woody GE, Yang C, Blazer DG. How do prescription opioid users differ from users of heroin or other drugs in psychopathology: Results from the national epidemiologic survey on alcohol and related conditions. J Addict Med. 2011;5(1):28–35.
20. Moore BA, Fiellin DA, Barry DT, Sullivan LE, Chawarski MC, O'Connor PG, et al. Primary care office-based buprenorphine treatment: Comparison of heroin and prescription opioid dependent patients. J Gen Intern Med. 2007;22(4):527–30.
21. Handford C, Kahan M, Srivastava A, Cirone S, Palda V. Buprenorphine/naloxone for opioid dependence: Clinical practice guideline. Toronto, ON: Centre for Addiction and Mental Health (CAMH); 2011.
22. Kahan M, Srivastava A, Ordean A, Cirone S. Buprenorphine: new treatment of opioid addiction in primary care. Can Fam Physician. 2011;57(3):281–9.
23. Mattick RP, Breen C, Kimber J, Davoli M. Buprenorphine maintenance versus placebo or methadone maintenance for opioid dependence. Cochrane Database Syst. Rev. 2014;1-87.
24. Woody GE, Poole SA, Subramaniam G, Dugosh K, Bogenschutz M, Abbott P, et al. Extended vs short-term buprenorphine-naloxone for treatment of opioid-addicted youth: A randomized trial. JAMA. 2008;300(17):2003–11.
25. Fishman MJ, Winstanley EL, Curran E, Garrett S, Subramaniam G. Treatment of opioid dependence in adolescents and young adults with extended release naltrexone: Preliminary case-series and feasibility. Addiction. 2010;105(9):1669–76.
26. Weiss RD, Potter JS, Fiellin DA, Byrne M, Connery HS, Dickinson W, et al. Adjunctive counseling during brief and extended buprenorphine-naloxone treatment for prescription opioid dependence: A 2-phase randomized controlled trial. Arch Gen Psychiatry. 2011;68(12):1238–46.
27. Sigmon SC, Dunn KE, Saulsgiver K, Patrick ME, Badger GJ, Heil SH, et al. A randomized, double-blind evaluation of buprenorphine taper duration in primary prescription opioid abusers. JAMA Psychiatry. 2013;70(12):1347–54.
28. Linehan MM, Dimeff LA, Reynolds SK, Comtois KA, Welch SS, Heagerty P, et al. Dialectical behavior therapy versus comprehensive validation therapy plus 12-step for the treatment of opioid dependent women meeting criteria for borderline personality disorder. Drug Alcohol Depend. 2002;67(1):13–26.
29. Sees KL, Delucchi KL, Masson C, Rosen A, Clark HW, Robillard H, et al. Methadone maintenance vs 180-day psychosocially enriched detoxification for treatment of opioid dependence: A randomized controlled trial. JAMA. 2000;283(10):1303–10.
30. Bickel WK, Amass L, Higgins ST, Badger GJ, Esch RA. Effects of adding behavioral treatment to opioid detoxification with buprenorphine. J Consult Clin Psychol. 1997;65(5):803–10.
31. Veilleux JC, Colvin PJ, Anderson J, York C, Heinz AJ. A review of opioid dependence treatment: Pharmacological and psychosocial interventions to treat opioid addiction. Clin Psychol Rev. 2010;30(2):155–66.
32. Van Zee A. The promotion and marketing of OxyContin: Commercial triumph, public health tragedy. Am J Public Health. 2009;99(2):221–7.
33. Sullivan MD, Howe CQ. Opioid therapy for chronic pain in the United States: Promises and perils. Pain. 2013;154 Suppl 1:S94–100.
34. Glauser W. Is a large cut to methadone-providing doctors justified or putting patients at risk? Healthy Debate. 2015. http://healthydebate.ca/2015/09/topic/cuts-to-methadone-providing-doctors. Accessed 14 October 2015.
35. Luce J, Strike C. A cross-Canada scan of methadone maintenance treatment policy developments. Toronto, ON: Canadian Executive Council on Addictions; 2011.
36. Sibbald B. Tighten Ontario's methadone program states inquest. CMAJ. 2005;172(3):319–20.
37. Hart WA. Report of the Methadone Maintenance Treatment Practices Task Force. Toronto, ON: Methadone Maintenance Treatment Practices Task Force; 2007.
38. Leeder J, Donovan K. ON: Addicts at risk in drug scheme. The Toronto Star. 2006. https://www.google.ca/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CCIQFjAAahUKEwixw6iqhN7HAhVFmoAKHU4oC5Y&url=https%3A%2F%2Fwww.treatingyourself.org%2Fshowthread.php%3F10423-ON-Addicts-At-Risk-In-Drug-Scheme&usg=AFQjCNFfNvnywLylHAFn5Yq6E_jK40kfBQ. Accessed 2 September 2015.
39. Zaric GS, Brennan AW, Varenbut M, Daiter JM. The cost of providing methadone maintenance treatment in Ontario, Canada. Am J Drug Alcohol Abuse. 2012;38(6):559–66.
40. Popova S, Rehm J, Fischer B. An overview of illegal opioid use and health services utilization in Canada. Public Health. 2006;120:320–8.
41. Abrams DB, Orleans CT, Niaura RS, Goldstein MG, Prochaska JO, Velicer W. Integrating individual and public health perspectives for treatment of tobacco dependence under managed health care: A combined stepped-care and matching model. Ann Behav Med. 1996;18(4):290–304.
42. Bower P, Gilbody S. Stepped care in psychological therapies: Access, effectiveness and efficiency. Br J Psychiatry. 2005;186:11–7.
43. Drummond C, Coulton S, James D, Godfrey C, Parrott S, Baxter J, et al. Effectiveness and cost-effectiveness of a stepped care intervention for alcohol use disorders in primary care: Pilot study. Br J Psychiatry. 2009;195(5):448–56.
44. Sobell MB, Sobell LC. Stepped care as a heuristic approach to the treatment of alcohol problems. J Consult Clin Psychol. 2000;68(4):573–9.
45. Upadhyay J, Maleki N, Potter J, Elman I, Rudrauf D, Knudsen J, et al. Alterations in brain structure and functional connectivity in prescription opioid-dependent patients. Brain. 2010;133(Pt 7):2098–114.
46. Younger JW, Chu LF, D'Arcy NT, Trott KE, Jastrzab LE, Mackey SC. Prescription opioid analgesics rapidly change the human brain. Pain. 2011;152(8):1803–10.
47. Martins SS, Fenton MC, Keyes KM, Blanco C, Zhu H, Storr CL. Mood and anxiety disorders and their association with non-medical prescription opioid use and prescription opioid-use disorder: Longitudinal evidence from the national epidemiologic study on alcohol and related conditions. Psychol Med. 2012;42(6):1261–72.
48. Scherrer JF, Svrakic DM, Freedland KE, Chrusciel T, Balasubramanian S, Bucholz KK, et al. Prescription opioid analgesics increase the risk of depression. J Gen Intern Med. 2014;29(3):491–9.
49. Leece P, Cavacuiti C, Macdonald EM, Gomes T, Kahan M, Srivastava A, et al. Predictors of opioid-related death during methadone therapy. J Subst Abuse Treat. 2015;57:30–5.
50. Nestler EJ. Under siege: The brain on opiates. Neuron. 1996;16(5):897–900.
51. Canadian Centre on Substance Abuse. First do no harm: Responding to Canada's prescription drug crisis: Annual report 2013–2014. Ottawa, ON: Canadian Centre on Substance Abuse; 2014.
52. Casswell, S. Vested interests in addiction research and policy. Why do we not see the corporate interests of the alcohol industry as clearly as those of the tobacco industry?. Addiction. 2013;108(4):680–685.
53. Steinbrook, R. Controlling conflicts of interest - proposals from the Institute of Medicine. N Engl J Med. 2009;360:2160–2163.
54. van Amsterdam J, van den Brink W. The misuse of prescription opioids: A threat for Europe? Curr Drug Abuse Rev. 2015;8(1):3–14.
55. Roxburgh A, Bruno R, Larance B, Burns L. Prescription of opioid analgesics and related harms in Australia. Med J Aust. 2011;195(5):280–4.