

North America's fentanyl death crisis: Selected lessons for Europe's future?

Nordic Studies on Alcohol and Drugs
2024, Vol. 41(4) 464–468

© The Author(s) 2024

Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/14550725241253362

journals.sagepub.com/home/nad



Benedikt Fischer

Faculty of Health Sciences, Centre for Applied Research in Mental Health & Addiction, Simon Fraser University, Vancouver, British Columbia, Canada; Research & Graduate Studies, University of the Fraser Valley, Abbotsford, BC, Canada; Department of Psychiatry, University of Toronto, Toronto, Canada; Department of Psychiatry, Federal University of Sao Paulo, São Paulo, Brazil; School of Population Health, University of Auckland, Auckland, New Zealand

Didier Jutras-Aswad

Research Centre, Centre Hospitalier de l'Université de Montréal, Montreal, Canada; Department of Psychiatry & Addictology, Université de Montréal, Montreal, Canada

Bernard Le Foll

Department of Pharmacology & Toxicology, University of Toronto, Toronto, Ontario, Canada; Department of Family & Community Medicine, University of Toronto, Toronto, Ontario, Canada; Dalla Lana School of Public Health, University of Toronto, Toronto, Ontario, Canada; Translational Addiction Research Laboratory, Campbell Family Mental Health Research Institute, Center for Addiction & Mental Health, Toronto, Ontario, Canada; Waypoint Centre for Mental Health Care, Penetanguishene, Ontario, Canada

Tessa Robinson

Department of Health Research Methods, Evidence & Impact, Faculty of Health Sciences, McMaster University, Hamilton, Ontario, Canada

Keywords

drugs, Europe, fatality, fentanyl, interventions, North America, overdose, policy, public health, toxicity

Submitted March 20, 2024; accepted April 23, 2024

Corresponding author:

Benedikt Fischer, Faculty of Health Sciences, Simon Fraser University, 515W Hastings St., Vancouver, BC V6B5K3, Canada.
Email: bfischer@sfu.ca



Creative Commons Non Commercial CC BY-NC: This article is distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 License (<https://creativecommons.org/licenses/by-nc/4.0/>) which permits non-commercial use, reproduction and distribution of the work without further permission provided the original work is attributed as specified on the SAGE and Open Access page (<https://us.sagepub.com/en-us/nam/open-access-at-sage>).

For the past decade, North America ([NA]; i.e., Canada and the United States) has been experiencing an unprecedented public health crisis from drug-related toxicity deaths (DTDs) (Ciccarone, 2021; Fischer, 2023). After 2000, this crisis has claimed in excess of 1 million lives; this death toll is similar to that from the COVID-19 pandemic, but involves mostly younger ages, thus incurring a comparably higher burden of disease. In 2022, there were 109,680 (rate: 32.4/100,000) DTDs in the United States and 7525 (21.2/100,000) DTDs in Canada, representing the leading cause of death for many age groups (Ciccarone, 2021; Fischer, 2023). Importantly, the vast majority of recent DTDs in both countries have been caused by illicit, synthetic opioid (fentanyl/fentanyl-analogues [F/FA]) products. F/FA substances are highly potent and toxic, commonly mixed or contaminated with other drugs, resulting in extremely high risk for overdose fatalities (Cheema et al., 2020; Hayashi et al., 2021).

The European Union's (EU) recent DTD levels are substantially lower in magnitude (i.e., 6166 or 1.38/100,000 in 2021) compared with NA's exceptionally high DTD toll (EMCDDA, 2023). While there has been recurring speculation whether a similar F-/FA-related crisis may unfold in the EU, there is conflicting evidence towards the possibility of such a scenario. On the one hand, recent epidemiological data show that approximately three-quarters (74%) of DTDs in Europe were opioid-related. Although a minority of EU countries report that most of these DTDs were heroin-related, these deaths feature increasing involvement of both (pharmaceutical and non-pharmaceutical) opioids, including a small (<3%) – but mostly prescription-related – proportion of fentanyl-related DTDs recorded mostly in Germany and Northern Europe (EMCDDA, 2023). On the other hand, Europe overall has not experienced the markedly oscillatory patterns in prescription opioid dispensing that occurred in and contributed to vast supply reductions for medical and non-medical opioid use in NA, and therefore presumably facilitated the onset

and rapid proliferation of F/FA availability (Fischer & Robinson, 2024; Manchikanti et al., 2022). At the same time, the availability of heroin in Europe depends on imports from volatile global, illicit drug markets – a source that may quickly change or dry up, and so lead to supply gaps that may facilitate the proliferation of widespread F/FA availability and use.

The arguably quintessential lesson from NA's persistent F/FA crisis is that, despite extensive expansions of standard and implementation of new intervention strategies, these efforts have overall not effectively succeeded in reducing the related DTD toll (BCCDC, 2024; Fischer, 2023; Irvine et al., 2019). For example, in the province of British Columbia (BC), Canada's epicenter of the DTD crisis, a widely diversified menu of opiate agonist treatment (OAT; e.g., including different medication and/or administration options) has been made available. While up to approximately 25% of the population at risk for overdose are estimated to be OAT-engaged, especially long-term retention is low and/or co-use of other (opioid and non-opioid, including F/FA) drugs is common (Krebs et al., 2021; Piske et al., 2020). For targeted prevention, approximately 50 government-sanctioned (and more unofficial) supervised consumption/overdose prevention service sites (SCS/OPS) have been established. While illicit substance use at these facilities is considered DTD-protective, the existing SCS/OPS contingent cover only a marginal proportion of overall drug consumption episodes on the population level; moreover, most SCS/OPS do not accommodate non-injection (e.g., inhalation) use, the most common mode of use implicated in recent DTDs, therefore further limiting utilisation and protective impacts (Panagiotoglou, 2022; Parent et al., 2021). Similarly, point-of-care and take-away versions of "drug checking" services (e.g., for F/FA content) are available; however, their utilisation is considered sporadic, and effects on risk behaviors unclear (Ti et al., 2020; Tilhou et al., 2023). Finally, naloxone (antidote-based overdose reversal) is widely disseminated and frequently applied; yet, its mode of action is only reactive to

overdose, and its applied efficacy is increasingly compromised by both common solitary/isolated drug consumption and increasing F/FA potency and/or contamination with other drugs (Fischer et al., 2024; Lei et al., 2022; Pergolizzi Jr et al., 2021).

In consequence, while each of the interventions described provides substantive elements of protection, this, on the overall population level, has been insufficient to curtail BC's excessive and persistent DTD toll. These adverse circumstances raise fundamentally important questions as to the appropriateness, but especially inherent limitations of the intervention strategies presently available and relied on for a DTD-related public health crisis (EMCDDA, 2023; Fischer, 2023; Irvine et al., 2019). These questions are hypothetically while equally pertinent for Europe, where a reasonably good availability and coverage of related interventions, in conjunction with elaborate 'early warning' systems exist; however, in case of an acute F/FA-related crisis as recently experienced in NA, these may prove to be similarly insufficient to effectively address and halt the to-be-expected DTD toll.

A recent Canada-based innovation to reduce F/FA-related DTDs have been "safer opioid supply" (SOS) programs where, to date, a small proportion of at-risk users are provided with pharmaceutical-grade opioids (e.g., morphine, hydromorphone, fentanyl) to reduce illicit/toxic F/FA exposure and related overdose (Fischer & Robinson, 2023; Ledlie et al., 2024). While the SOS concept is controversial and concerns exist regarding possible diversion, initial results have shown notable improvements for drug use, overdose risk and health outcomes among participants, and so warrant further evaluation and evidence-informed ramp-up.

In conclusion, the odds of a F/FA-driven DTD crisis in Europe similar to NA's are hard to gauge. If it unfolds, the armory of existing intervention strategies, based on experiences described, may be expected to be insufficient, underscoring the need for anticipatory strategic

preparedness and advanced intervention development and establishment.

Data availability

All data in this manuscript are accessible in the public domain (e.g., in the form of journal articles, reports, websites).


Declaration of conflicting interests

The authors declared the following potential conflict of interest with respect to the research, authorship, and/or publication of this article: Dr. Fischer and Dr. Jutras-Aswad have held research grants and contracts in the areas of substance use, health, policy from public funding and government organisations (i.e., public-only sources) in the last 5 years; Dr. Fischer was temporarily employed by Health Canada (2021–2022). Dr. Jutras-Aswad has received study materials from Cardiol Therapeutics and Exka for clinical trials. Dr. LeFoll has obtained research support (i.e., research funding/in-kind supports or expert consultancy) from Pfizer, Inc. (GRAND Awards & medications), Indivior (clinical trial funding & consultancy), Aurora Cannabis Enterprises Inc., Bioprojet Pharma, Brainsway (Transcranial magnetic stimulation [TMS] study), Canopy Growth Corporation (research grants), Alcohol Countermeasure Systems (ACS), Alkermes, Universal Ibogaine, and Shinogi. Mrs. Robinson has no competing interests.

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: Dr. Jutras-Aswad acknowledges a clinical scientist career award from Fonds de Recherche du Québec (FRQS). This specific study was not supported by any sponsor or funder.

ORCID iD

Benedikt Fischer  <https://orcid.org/0000-0002-2186-4030>

References

- BC Centre for Disease Control (BCCDC). (2024). *Unregulated Drug Poisoning Emergency Dashboard*. <http://www.bccdc.ca/health-professionals>

- nals/data-reports/substance-use-harm-reduction-dashboard
- Cheema, E., McGuinness, K., Hadi, M. A., Paudyal, V., Elnaem, M. H., Alhifany, A. A., Elrggal, M. E. & Al Hamid, A. (2020). Causes, nature and toxicology of fentanyl-associated deaths: A systematic review of deaths reported in peer-reviewed literature. *Journal of Pain Research*, *13*, 3281–3294. <https://doi.org/10.2147/JPR.S280462>
- Ciccarone, D. (2021). The rise of illicit fentanyls, stimulants and the fourth wave of the opioid overdose crisis. *Current Opinion in Psychiatry*, *34*(4), 344–350. <https://doi.org/10.1097/YCO.0000000000000717>
- European Monitoring Centre for Drugs and Drug Addiction (EMCDDA). (2023). *European Drug Report 2023*. <https://data.europa.eu/doi/10.2810/161905>
- Fischer, B. (2023). The continuous opioid death crisis in Canada: Changing characteristics and implications for path options forward. *The Lancet Regional Health – Americas*, *19*. <https://doi.org/10.1016/j.lana.2023.100437>
- Fischer, B. & Robinson, T. (2023). “Safer drug supply” measures in Canada to reduce the drug overdose fatality toll: Clarifying concepts, practices and evidence within a public health intervention framework. *Journal of Studies on Alcohol and Drugs*, *84*(6), 801–807. <https://doi.org/10.15288/jsad.23-00195>
- Fischer, B. & Robinson, T. (2024). The marked oscillatory pattern in prescription opioid utilization in Canada since 2000: Selected observations and questions for outcomes and policy. *Pharmacoepidemiology and Drug Safety*, *33*(1), e5748. <https://doi.org/10.1002/pds.5748>
- Fischer, B., Robinson, T. & Jutras-Aswad, D. (2024). Three noteworthy idiosyncrasies related to Canada’s opioid-death crisis, and implications for public health-oriented interventions. *Drug and Alcohol Review*, *43*(02), 562–566. <https://doi.org/10.1111/dar.13796>
- Hayashi, K., Wood, E., Dong, H., Buxton, J. A., Fairbairn, N., DeBeck, K., Milloy, M.-J. & Kerr, T. (2021). Awareness of fentanyl exposure and the associated overdose risks among people who inject drugs in a Canadian setting. *Drug and Alcohol Review*, *40*(6), 964–973. <https://doi.org/10.1111/dar.13261>
- Irvine, M. A., Kuo, M., Buxton, J. A., Balshaw, R., Otterstatter, M., Macdougall, L., Milloy, M.-J., Bharmal, A., Henry, B., Tyndall, M., Coombs, D. & Gilbert, M. (2019). Modelling the combined impact of interventions in averting deaths during a synthetic-opioid overdose epidemic. *Addiction*, *114*(9), 1602–1613. <https://doi.org/10.1111/add.14664>
- Krebs, E., Homayra, F., Min, J. E., MacDonald, S., Gold, L., Carter, C. & Nosyk, B. (2021). Characterizing opioid agonist treatment discontinuation trends in British Columbia, Canada, 2012–2018. *Drug and Alcohol Dependence*, *225*, 108799. <https://doi.org/10.1016/j.drugalcdep.2021.108799>
- Ledlie, S., Garg, R., Cheng, C., Kolla, G., Antoniou, T., Bouck, Z. & Gomes, T. (2024). Prescribed safer opioid supply: A scoping review of the evidence. *International Journal of Drug Policy*, *125*, 104339. <https://doi.org/10.1016/j.drugpo.2024.104339>
- Lei, V., Ferguson, M., Geiger, R., Williams, S., Liu, L. & Buxton, J. A. (2022). Factors associated with take-home naloxone kit usage in British Columbia: An analysis of administrative data. *Substance Abuse Treatment, Prevention, and Policy*, *17*(1), 25. <https://doi.org/10.1186/s13011-022-00452-8>
- Manchikanti, L., Singh, V. M., Staats, P. S., Trescot, A. M., Prunskis, J., Knezevic, N. N., Soin, A., Kaye, A. D., Atluri, S., Boswell, M. V., Abd-Elseyed, A. & Hirsch, J. A. (2022). Fourth wave of opioid (illicit drug) overdose deaths and diminishing access to prescription opioids and interventional techniques: Cause and effect. *Pain Physician*, *25*(2), 97–124.
- Panagiotoglou, D. (2022). Evaluating the population-level effects of overdose prevention sites and supervised consumption sites in British Columbia, Canada: Controlled interrupted time series. *PLOS ONE*, *17*(3), e0265665. <https://doi.org/10.1371/journal.pone.0265665>
- Parent, S., Papamihali, K., Graham, B. & Buxton, J. A. (2021). Examining prevalence and correlates of smoking opioids in British Columbia: Opioids are more often smoked than injected. *Substance*

- Abuse Treatment, Prevention, and Policy*, 16(1), 79. <https://doi.org/10.1186/s13011-021-00414-6>
- Pergolizzi, J. V. Jr., Dahan, A., Ann LeQuang, J. & Raffa, R. B. (2021). Overdoses due to fentanyl and its analogues (F/FAs) push naloxone to the limit. *Journal of Clinical Pharmacy and Therapeutics*, 46(6), 1501–1504. <https://doi.org/10.1111/jcpt.13462>
- Piske, M., Zhou, H., Min, J. E., Hongdilokkul, N., Pearce, L. A., Homayra, F., Socias, M. E., McGowan, G. & Nosyk, B. (2020). The cascade of care for opioid use disorder: A retrospective study in British Columbia, Canada. *Addiction*, 115(8), 1482–1493. <https://doi.org/10.1111/add.14947>
- Ti, L., Tobias, S., Lysyshyn, M., Laing, R., Nosova, E., Choi, J., Arredondo, J., McCrae, K., Tupper, K. & Wood, E. (2020). Detecting fentanyl using point-of-care drug checking technologies: A validation study. *Drug and Alcohol Dependence*, 212, 108006. <https://doi.org/10.1016/j.drugalcdep.2020.108006>
- Tilhou, A. S., Zaborek, J., Baltés, A., Salisbury-Afshar, E., Malicki, J. & Brown, R. (2023). Differences in drug use behaviors that impact overdose risk among individuals who do and do not use fentanyl test strips for drug checking. *Harm Reduction Journal*, 20(1), 41. <https://doi.org/10.1186/s12954-023-00767-0>