

Strategies for Reducing Opioid-Overdose Deaths — Lessons from Canada

Evan Wood, M.D., Ph.D.

North America is in the midst of its most serious drug-overdose crisis in history. From 1999 through 2015, drug-overdose deaths approximately tripled in the United States, and the

majority of such deaths now involve an opioid. In 2016 alone, there were 64,000 drug-overdose deaths in the United States — more than the total number of U.S. military deaths during the Vietnam War. As a result, and despite gains in other areas of medicine and public health, the United States recently experienced its first major decline in life expectancy since 1993.

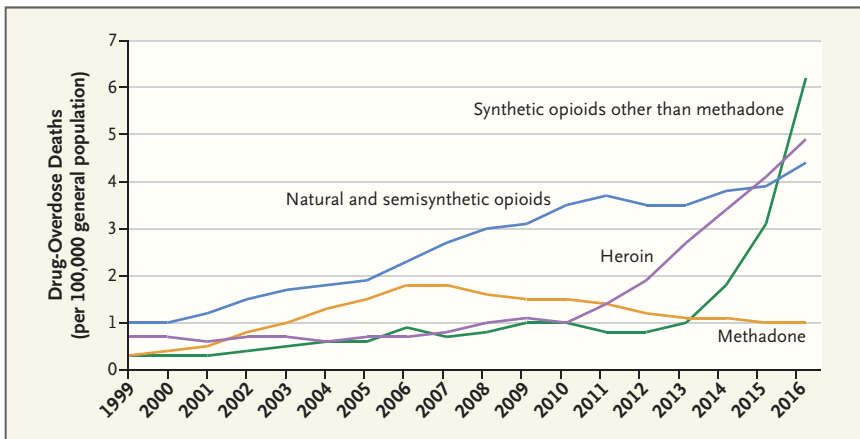
The origins of the opioid epidemic can be traced to overprescription of narcotic analgesics. But in recent years, deaths due to illicit synthetic opioids have outstripped deaths due to heroin and prescription painkillers. According to the Centers for Disease Control and Prevention, deaths involv-

ing synthetic opioids (excluding methadone) doubled between 2015 and 2016 (see graph). This upsurge can largely be attributed to the emergence of fentanyl and related analogues (e.g., carfentanil) in the illegal-drug supply. An examination of data from 10 U.S. states found that more than half the people who died of opioid-related overdoses during the second half of 2016 tested positive for fentanyl.

As the United States faces this unprecedented epidemic, there are lessons to be learned from Canada, which has taken bold action on a number of fronts with the aim of reducing deaths related to fentanyl, fentanyl analogues, and other opioids. For instance, in March

2016, the Canadian government made the overdose-reversal drug naloxone available without a prescription. Although naloxone is also increasingly available in many regions of the United States, laws in 14 states provide no immunity from criminal prosecution for health care providers who prescribe or distribute it to laypersons. Furthermore, in 36 states, existing laws make possession of naloxone without a prescription illegal.

The Canadian government has also passed legislation aimed at facilitating the development of medically supervised injection facilities, where people who use drugs can inject opioids they buy on the street under the supervision of health care staff. Although research has found that supervised injection facilities can reduce rates of fatal overdoses by more than 30% in communities with high rates of drug use¹ and can help



Drug-Overdose Death Rates, by Type of Opioid, United States, 1999–2016.

Data are from the National Center for Health Statistics and are age-adjusted. Deaths are classified according to the *International Classification of Diseases*, 10th revision. Deaths involving more than one opioid category are counted in both categories.

facilitate greater uptake of addiction treatment, there are few, if any, such programs in the United States. In recent months, however, public health officials in several U.S. cities, including San Francisco, Seattle, and Philadelphia, have endorsed plans to open pilot supervised injection programs to address increasing rates of overdose deaths.

Within Canada, British Columbia has been hit hardest by the fentanyl-overdose crisis and has been at the forefront of enacting strategies for preventing overdose deaths. After declaring opioid-overdose deaths a public health emergency in April 2016, the province developed enforceable prescribing standards to reduce unsafe prescribing of narcotic pain relievers and expanded access to naloxone, including making the drug available free of charge through community agencies and pharmacies. It has also developed guidelines for establishing federally sanctioned supervised injection facilities that have permitted the creation of a growing provincial network of such programs.²

To improve access to evidence-based treatment for opioid addiction, British Columbia has developed a comprehensive guideline for the treatment of opioid use disorder. This guideline includes recommendations regarding the safe provision of traditional opioid agonist medications (i.e., buprenorphine and methadone) and identifies interventions that should be avoided because of their associated higher risk of death from overdose, such as referring people to short-term inpatient withdrawal-management programs (i.e., “detoxification”) without providing continued addiction treatment or follow-up care.² The province also provides opioid agonist medications to middle- and lower-income people free of charge.

Because less than half the people who are prescribed traditional opioid agonist therapies continue taking them over the long term, the treatment guideline includes recommendations for the use of slow-release oral morphine when traditional first-line medications have been unsuccessful.² The provincial government


also created a guideline for the use of injectable opioid agonist treatment and has prioritized the establishment of clinical programs that provide pharmaceutical-grade heroin (diacetylmorphine) or hydromorphone in each provincial health region.² Those steps followed the release of findings from Canadian studies demonstrating that offering diacetylmorphine and hydromorphone by means of supervised injection in specialized clinics is an effective therapy for severe, treatment-refractory opioid use disorder.³

Most recently, British Columbia provided funding for publicly available anonymous drug-testing services, acknowledging that some fentanyl-overdose deaths are caused by fentanyl contamination of nonopioid street drugs (e.g., cocaine). The program will seek to allow drug users to test the contents of drugs before using them by means of technologies that can distinguish fentanyl from other opioids.² Similar programs were originally implemented in Europe in response to deaths caused by the contamination of illicit drugs associated with electronic dance music festivals (e.g., methylenedioxymethamphetamine [MDMA], or ecstasy).

Although countless lives are likely to have been saved thanks to the initiatives described above,¹ overdoses remain a pressing concern in Canada, and many lessons can be derived from the Canadian experience. First, many of these interventions and programs have not been brought to scale. For instance, despite federal regulatory changes, many hard-hit Canadian jurisdictions (with the exception of British Columbia) have been slow to implement accessible take-home naloxone programs and

supervised injection facilities. Similarly, although British Columbia has succeeded in greatly expanding the use of opioid agonist treatment, it has been slow to recognize the important role that extended-release naltrexone could probably play in improving outcomes for people with opioid addiction, particularly patients who may not wish to pursue treatment with agonist medications.

As in the United States, failure to invest in education for health professionals with regard to evidence-based treatment for addiction has hampered the development and staffing of treatment programs.⁴ Similarly, people with opioid use disorder, including those in recovery, have not always been adequately consulted in service-delivery planning. As a result, although regulatory changes have been made with the goal of fa-

 An audio interview with Dr. Wood is available at NEJM.org

facilitating the rapid expansion of opioid agonist medication programs, such measures haven't been accompanied by plans to augment British Columbia's large, publicly funded network of recovery programs and

to integrate these much-needed supports. Recovery programs and clinical addiction services in Canada — like those in the United States — continue to operate largely independently.⁵

Finally, as in other North American jurisdictions, there remains an overreliance on criminal-justice interventions for people with opioid use disorder in British Columbia and inadequate community-based care on release from jail. Although rates of criminal-justice involvement remain lower than rates in the United States, recent surveillance reports indicate that arrests for heroin possession in the province increased by more than 250% between 2010 and 2015. Furthermore, approximately one third of the 1854 people who died from overdoses in British Columbia between January 2016 and July 2017 were under community supervision (i.e., out of jail on bail or paroled) or had been released less than 2 years earlier.

Every indication is that North America's opioid-overdose crisis is not abating, and experts have recently estimated that overdoses

could kill more than half a million Americans over the next decade. Bold action on the part of policymakers will be required to support innovative evidence-based approaches and to assess and apply lessons learned from other jurisdictions.

Disclosure forms provided by the author are available at NEJM.org.

From the Department of Medicine, University of British Columbia, and the British Columbia Centre on Substance Use — both in Vancouver, Canada.

1. Marshall BD, Milloy MJ, Wood E, Montaner JS, Kerr T. Reduction in overdose mortality after the opening of North America's first medically supervised safer injecting facility: a retrospective population-based study. *Lancet* 2011;377:1429-37.
2. British Columbia Centre on Substance Use home page (<http://www.bccsu.ca>).
3. Oviedo-Joekes E, Brisette S, Marsh DC, et al. Diacetylmorphine versus methadone for the treatment of opioid addiction. *N Engl J Med* 2009;361:777-86.
4. Addiction medicine: closing the gap between science and practice. New York: National Center on Addiction and Substance Abuse, June 2012 (<https://www.centeronaddiction.org/addiction-research/reports/addiction-medicine-closing-gap-between-science-and-practice>).
5. Hickman M, Vickerman P, Robertson R, Macleod J, Strang J. Promoting recovery and preventing drug-related mortality: competing risks? *J Public Health (Oxf)* 2011;33:332-4.

DOI: 10.1056/NEJMp1800216

Copyright © 2018 Massachusetts Medical Society.

Suicide: A Silent Contributor to Opioid-Overdose Deaths

Maria A. Oquendo, M.D., Ph.D., and Nora D. Volkow, M.D.

As the toll of opioid-overdose deaths in the United States rises, we face an urgent need for prevention. But preventing such deaths will require a better understanding of the diverse trajectories by which overdoses occur, including the distinction between intentional (suicide) and unintentional (accidental) deaths, be they in patients with chronic pain who

overdose on their opioid analgesics or in those with a primary opioid use disorder (OUD). Interventions to prevent overdose deaths in suicidal people will differ from interventions targeted at accidental overdoses. Yet most strategies for reducing opioid-overdose deaths do not include screening for suicide risk, nor do they address the need to tailor interven-

tions for suicidal persons. Moreover, the inaccuracy of available data on the proportion of suicides among opioid-overdose deaths — which are frequently classified as “undetermined” if there is no documented history of depression or a suicide note — hinders deployment of appropriate prevention services.

In 2016, the Centers for Dis-