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Executive Summary

The United States and Canada are the largest consumers of prescription opioids worldwide, and both have faced long-running opioid epidemics. In recent years, fentanyl has played an increasingly significant role in the epidemic, driving hospitalizations and overdose deaths due to the high potency of fentanyl and the frequency with which it is laced into non-opioid substances. There are less data available for Mexico, but existing data suggests opioid use—and particularly fentanyl use—may be increasing there as well, especially near the border with the United States. Transnational criminal organizations (TCOs) in Mexico are also heavily involved in producing and trafficking fentanyl, contributing to the rise of fentanyl use across North America.

While direct measures of fentanyl use are generally unavailable, there are a wide variety of proxy measures—such as law enforcement drug seizures, urine screenings, wastewater surveys, drug checking data, hospital emergency department visits, and fatal overdoses. Each of these measures faces important caveats, but all point in the same direction—that there has been a major increase in fentanyl consumption in North America. Taken in combination, these measures suggest the need for robust policy responses to address fentanyl. National governments, and in many cases sub-national governments, have already implemented a range of policies to address fentanyl specifically and opioids more generally. Policy stakeholders should consider whether further policy actions are required.

Fentanyl and the Opioid Epidemic

The use, misuse, and consequences of prescription and illicit opioids is a long-running public health epidemic in North America. While the origins of the opioid epidemic extend to the 1990s, fentanyl has become one of the primary drugs of concern in North America since 2014. This brief reviews the impact of fentanyl in North America, defined here as composed of Canada, Mexico, and the United States. For each country, the brief explains fentanyl's place in the ongoing opioid epidemic; recent trends in fentanyl use, overdose, supply, and production; and policy responses undertaken by the government.

What is Fentanyl?

Fentanyl is a potent synthetic opioid, generally estimated to be 50 to 100 times more powerful than morphine.¹ Fentanyl is recognized as a legitimate pain medication for patients with extreme pain or high tolerance to opioids. Much like other prescription opioids, diversion and misuse of prescribed fentanyl has been a long-running concern; however, recent years have seen enormous growth in the production of illicit fentanyl in clandestine labs. This illicit fentanyl is primarily responsible for the surge in use and overdoses.² Illicit fentanyl is available in many forms—including pills, powders, lozenges, injectable solutions, patches, and blotter spots—and can mimic the appearance of prescription fentanyl or other prescription drugs.³

Due to its high potency, fentanyl is frequently used as an additive to cheaply strengthen other substances – including other opioids and, increasingly, non-opioid drugs. As a result, fentanyl is commonly found laced into other opioids (e.g., heroin) as well as drugs such as cocaine, methamphetamine, and MDMA.⁴ This lacing dramatically increases the likelihood that individuals may unknowingly and unintentionally consume fentanyl. These individuals can be at significant risk for experiencing an overdose because they may lack robust opioid tolerance. Addressing the risks of unintentional fentanyl use presents an additional challenge for public health officials.

1. U.S. National Institute on Drug Abuse (2021). Fentanyl DrugFacts. <https://nida.nih.gov/publications/drugfacts/fentanyl>

2. U.S. Drug Enforcement Administration (2020). Drug Fact Sheet: Fentanyl. https://www.dea.gov/sites/default/files/2020-06/Fentanyl-2020_0.pdf

3. IBID

4. U.S. National Institute on Drug Abuse (2021). Fentanyl DrugFacts. <https://nida.nih.gov/publications/drugfacts/fentanyl>

Fentanyl Trends in North America

The true rate of fentanyl use is difficult to measure. It is frequently consumed unintentionally or even unknowingly and in combination with other substances – presenting a challenge for self-reported survey data. Partly because of this challenge, neither Canada, Mexico, nor the United States has a single national measure of fentanyl use. All three countries rely on proxy measures or small sample studies to estimate use rates. The measures with the most robust data, which will be discussed in this brief, are law enforcement drug seizures, small-sample survey data, urine screenings, wastewater surveys, drug checking data, hospital emergency department visits, and fatal overdoses. Each of these metrics comes with important caveats and not all of them are available for each country. Despite their individual weaknesses, when taken together, they paint a consistent picture of significant growth in the scope of fentanyl use in North America.

Law enforcement drug seizures provide indirect information on the supply of fentanyl in the illicit drug market. The quantity of unseized fentanyl is unknown, so it is unclear what percentage of the total fentanyl supply the seizures represent. But major increases in seizures could suggest increased supply, and it would be unexpected for supply to increase and stay elevated without demand to sustain it.

Although there are no national-level surveys that ask about fentanyl, a variety of smaller studies have collected survey data on fentanyl use. These face the traditional challenges of assessing the accuracy of self-reported data, as well as questions about whether their samples are representative of national populations. Self-report studies are also unable to collect information on unknowing or unintentional consumption of fentanyl. But they can provide valuable insight into the extent of intentional use, when available.

Urine screenings, wastewater surveys, and drug checking data can be more reliable measures of substance use than self-reported data. This is especially true for fentanyl, where individuals may ingest it unknowingly. Yet people who provide urine screenings are not representative of the general population, cities that collect wastewater data may not be representative of national populations, and drugs submitted for checking may not be representative of overall supplies. Furthermore, there are no national surveillance systems for any of these data in North America. Instead, researchers must rely on targeted studies. Lastly, hospital emergency department visits and fatal fentanyl-involved overdoses offer additional insights into the scope of fentanyl use and its consequences, although it is likely that neither offers a representative picture of the general population and so also must be interpreted with caution.

As described in detail in the country-specific sections, these indirect measures suggest that fentanyl use has significantly increased over the past decade. Vital statistics data confirm that fentanyl-involved fatal overdoses have significantly increased in Canada and the United States. Less data are available for Mexico. These increases coincide with, and are likely driven by, major increases in the production and flow of illicit fentanyl and its precursor chemicals into North America.⁵ Numerous policies have been implemented across North America in response to the ongoing opioid epidemic; however, it can be difficult to attribute a particular policy response to fentanyl (rather than generically to “opioids”). Comparing policies implemented after the rise in fentanyl use with the policies in place prior may give some indication of the impact of fentanyl on policy development. Since fentanyl emerged as a public health issue, there have been significant expansions in harm reduction policies in Canada and the United States, particularly expanded access to naloxone—the opioid overdose reversal medication—and growing collaboration between Mexico and the United States to stop fentanyl trafficking.

5. U.S. Drug Enforcement Administration (2020). Fentanyl Flow to the United States.

[https://www.dea.gov/sites/default/files/2020-03/DEA_GOV_DIR-008-20 percent20Fentanyl percent20Flow percent20in percent20the percent20United percent20States_0.pdf](https://www.dea.gov/sites/default/files/2020-03/DEA_GOV_DIR-008-20%20Fentanyl%20Flow%20in%20the%20United%20States_0.pdf)

Canada

The Role of Fentanyl in the Ongoing Opioid Epidemic

The opioid epidemic has been an ongoing and growing issue in Canada over the last two decades, with increasing rates of use, hospitalizations, and overdose deaths. While initially driven by prescription opioid misuse, the epidemic has shifted more to the intentional and unintentional use of fentanyl within the last decade. Other opioids, such as heroin, have not played a significant role in the epidemic. Data from a 2019 national survey estimates lifetime heroin use among Canadian adults at less than one percent.⁶ In 2016, Canada was the second largest consumer of prescription opioids, after the United States. Fentanyl was first reported in British Columbia and Alberta in 2011. By September 2016, it had been detected in the illicit opioid supply in all Canadian jurisdictions.⁷ By 2021, fentanyl was involved in the vast majority of Canadian opioid-related overdose fatalities and a sizeable portion of opioid- and stimulant-related hospitalizations.⁸

6. Government of Canada. (2021, Dec 20). 2019 Canadian Alcohol and Drugs Survey. <https://www.canada.ca/en/health-canada/services/canadian-alcohol-drugs-survey.html>

7. Belzak, L et al. (2018). Evidence synthesis - The opioid crisis in Canada: a national perspective. *Health Promotion and Chronic Disease Prevention in Canada*. 38(6): 224–233. doi: 10.24095/hpcdp.38.6.02

8. Special Advisory Committee on the Epidemic of Opioid Overdoses. *Opioid- and Stimulant-related Harms in Canada*. Ottawa: Public Health Agency of Canada; June 2022. <https://health-infobase.canada.ca/substance-related-harms/opioids-stimulants>

Scope of Fentanyl Use in Canada

Canada does not report any direct measures of fentanyl use at the national level. Because fentanyl use is often unintentional or even unknown to the user, prevalence data have not been collected by national drug use surveys, including the Canadian Alcohol and Drugs Survey. Use must be assessed via proxy measures, such as the ones described in the introduction to this brief. Data are available from limited local surveys, drug checking data, wastewater surveys, and fatal overdoses, and law enforcement drug seizures (discussed in their respective sections) in Canada.

In one local survey, from 2018 in British Columbia (B.C.), data indicate that fentanyl was the third-most reported drug there. But among respondents whose urine tested positive for fentanyl, only 64 percent reported using it – suggesting that over one-third of respondents were unintentionally or unknowingly exposed to fentanyl.⁹ Drug checking data from B.C. also show that 14 percent to 36 percent of fentanyl exposure is unknown or unintentional. In Montreal, as much as 90 percent of fentanyl exposure is unintentional. Notably, drug checking services have also detected carfentanil – a more toxic fentanyl analogue – in samples expected to be fentanyl.¹⁰

Meanwhile, a wastewater survey of five major Canadian cities indicates major increases in fentanyl use between 2019 and 2020 in three cities. The per capita load of fentanyl increased substantially in Toronto, Ontario (from 1.8 to 6.6 grams per million people), Edmonton, Alberta (from 2.0 to 7.8 grams per million people), and Vancouver, B.C. (from 8.6 to 45.1 grams per million people) between March 2019 and December 2020. Levels in Halifax, Nova Scotia generally declined between early 2019 and the end of 2020 (0.6 to 0.0 grams per million people). Similarly, Montreal, Quebec reported 0.0 grams per million people at the end of 2020, down from 0.05 grams per million people. The survey also shows regional variation in per capita load, and thus, suggests regional variation in fentanyl consumption, with rates in Vancouver more than five times higher than the other four surveyed cities.¹¹

9. Canadian Centre on Substance Use and Addiction (2020). CCENDU Bulletin: Adulterants, Contaminants and Co-occurring Substances in Drugs on the Illegal Market in Canada https://www.ccsa.ca/sites/default/files/2020-05/CCSA-CCENDU-Adulterants-Contaminants-Co-occurring-Substances-in-Drugs-Canada-Bulletin-2020-en_0.pdf

10. Ibid

11. Statistics Canada. Table 13-10-0820-01 Drug metabolites in wastewater in select Canadian cities, by month. DOI: <https://doi.org/10.25318/1310082001-eng>

Rising Fentanyl-Involved Fatal Overdoses

Fentanyl was involved in 86 percent of the 7,560 apparent opioid-involved overdose deaths across Canada in 2021. Fentanyl is also heavily involved in Canada's overdose-related hospitalizations. National data¹² indicate that a third of all opioid-related and a quarter of stimulant-related poisoning hospitalizations involved fentanyl or fentanyl analogues.¹³

In 2016, the western provinces of B.C. and Alberta had the highest rates of opioid-related overdose deaths among Canadian provinces. Fentanyl was involved in 68 percent of illicit drug deaths in B.C. in 2016, up from four percent in 2012. That proportion continued to rise to more than 80 percent during 2017. Similarly, in Alberta, the proportion of illicit drug deaths involving fentanyl or an analogue increased from 26 percent to 63 percent between 2014 and 2016. By the first half of 2017, fentanyl accounted for almost 80 percent of illicit drug deaths.¹⁴

¹². Data on hospitalizations from Quebec are not included in the Discharge Abstract Database.

¹³. Special Advisory Committee on the Epidemic of Opioid Overdoses. Opioid- and Stimulant-related Harms in Canada. Ottawa: Public Health Agency of Canada; June 2022. <https://health-infobase.canada.ca/substance-related-harms/opioids-stimulants>

¹⁴. Belzak, L et al. (2018). Evidence synthesis - The opioid crisis in Canada: a national perspective. Health Promotion and Chronic Disease Prevention in Canada. 38(6): 224-233. doi: 10.24095/hpcdp.38.6.02

Fentanyl Supply and Production in Canada

Fentanyl was first reported in B.C. and Alberta in 2011. Since then, fentanyl and its analogues have become more prevalent across Canada and are increasingly combined with other controlled substances.¹⁵ Data from drug samples tested by law enforcement show widespread prevalence of fentanyl in the drug supply. In samples tested since 2020, data consistently find that roughly 70 percent of opioids were fentanyl or fentanyl analogues. In 2020, three percent of stimulant-containing samples also had fentanyl or a fentanyl analogue present.¹⁶

Canada is increasingly a destination for internationally trafficked fentanyl as well as the chemical precursors that illegal drug laboratories use to produce it. Canadian authorities seized more than double the amount of fentanyl at the border during fiscal year 2020-2021 than the year prior (7.4 kilograms vs. 3.0 kilograms).¹⁷ Authorities are also on alert for precursor chemicals entering the country. For example, a single inspection in July 2021 led to the seizure of 1,500 kilograms of precursor chemicals used in the production of fentanyl, which authorities estimate could have produced more than two billion fentanyl doses.¹⁸

¹⁵. Ibid

¹⁶. Health Canada, Drug Analysis Service. (2022, June 9). Analyzed Drug Report.

<https://www.canada.ca/en/health-canada/services/health-concerns/controlled-substances-precursor-chemicals/drug-analysis-service.html#drug>

¹⁷. Canadian Border Services Agency. (2022, July 20). Canada Border Services Agency seizures. <https://www.cbsa-asfc.gc.ca/security-secure/seizure-saisie-eng.html>

¹⁸. Canadian Border Services Agency. (2021, August 12). CBSA intercepts 1,500 kg of chemicals used to produce fentanyl [Press Release]. <https://www.canada.ca/en/border-services-agency/news/2021/08/cbsa-intercepts-1500-kg-of-chemicals-used-to-produce-fentanyl.html>

Canadian Policy Response

Most recent government efforts are aimed at the opioid epidemic generally, rather than fentanyl specifically;¹⁹ however, Canada has provided funding for the Canada Border Services Agency specifically to enhance their capabilities to detect, identify, and interdict fentanyl at ports of entry to reduce the supply entering the country.²⁰ In addition, many of Canada's broader opioid or substance use policies have the potential to affect fentanyl use.

Recognizing the overdose epidemic as a public health crisis, Canada is funding efforts to expand access to harm reduction services and increase access to a safer drug supply.²¹ In 2017, the Good Samaritan Overdose Act was enacted, providing some legal protection for people who experience or witness an overdose and call for emergency assistance.²² Additionally, naloxone kits are available without a prescription at most Canadian pharmacies, supervised consumption sites are open across the country, and safer supply services are in operation.^{23,24,25}

Supervised consumption sites allow individuals to bring and consume their drugs in the presence of trained staff who can provide medical assistance in the event of an accidental overdose. To operate a supervised consumption site, clinics must apply to Health Canada for approval; there are currently approximately 40 such sites actively operating across the country.²⁶ These sites provide access to clean drug use equipment. Some also offer drug checking services, which provide people who use drugs with timely and detailed information on the contents of their drug supply and can alert them to the presence of adulterants, like fentanyl. These sites can also serve as a connection to basic medical care, substance use treatment, and other social services.

19. Health Canada. (2022). Federal actions on opioids to date. <https://www.canada.ca/en/health-canada/services/opioids/federal-actions/overview.html>

20. Health Canada. (2018, March 26). Budget 2018 Funding for the Opioids Crisis. <https://www.canada.ca/en/health-canada/news/2018/03/budget-2018-funding-for-the-opioids-crisis.html>

21. Department of Finance Canada. (2021, April 19). Federal Budget 2021, Part 3: A Resilient and Inclusive Recovery. <https://www.budget.gc.ca/2021/report-rapport/p3-en.html>

22. Health Canada. (2021, November 23). About the Good Samaritan Drug Overdose Act. <https://www.canada.ca/en/health-canada/services/opioids/about-good-samaritan-drug-overdose-act.html>

23. Health Canada. (2022, March 17). Naloxone. <https://www.canada.ca/en/health-canada/services/opioids/naloxone.html>

24. Health Canada. (2021, July 22). Supervised consumption sites and services: Explained. <https://www.canada.ca/en/health-canada/services/substance-use/supervised-consumption-sites/explained.html>

25. Health Canada. (2022, March 17). Safer Supply. <https://www.canada.ca/en/health-canada/services/opioids/responding-canada-opioid-crisis/safer-supply.html>

26. Health Canada. (2021, July 22). Supervised consumption sites and services: Explained. <https://www.canada.ca/en/health-canada/services/substance-use/supervised-consumption-sites/explained.html>

In 2020, the Substance Use and Addictions Program at Health Canada funded ten time-limited safer supply pilot projects in three provinces (B.C., Ontario, and New Brunswick). Safer supply services prescribe medications to people who use drugs, overseen by a health care practitioner. These services allow medical practitioners to prescribe opioids, stimulants, and benzodiazepines, at their discretion, so that individuals can be confident that the drug they are using has not been adulterated with other unknown substances. They may also include providing or connecting individuals with other health and social services, including substance use treatment. Early findings from the pilot have found that participants experienced improved health, well-being, and quality of life; decreased overdose risk; and decreased use of street drugs. Practitioners have noted that the tolerance of individuals who use fentanyl presents a challenge, because prescription medicines are often not strong enough to match the fentanyl high, resulting in continued fentanyl use outside the program.²⁷ Despite this and other challenges, demand for safer supply services is outpacing capacity as the overdose crisis endures.

Beginning in 2023, British Columbia will experiment with decriminalizing small amounts of opioids, cocaine, methamphetamine, and MDMA for a trial period of three years. This will remove criminal penalties for people who possess a small amount of these illicit substances for personal use. Rather than being arrested, charged, and having their drugs seized, an individual will be provided with information on and referrals to health and social supports.²⁸ The Canadian Parliament is also considering (as of June 2022) a bill (Bill C-5) that would repeal mandatory minimum penalties for all drug offenses and require police and prosecutors to consider diversion, including treatment programs instead of charges, for simple drug possession.²⁹

²⁷. Health Canada (2022). Early findings from safer supply pilot projects.

<https://www.canada.ca/en/health-canada/services/opioids/responding-canada-opioid-crisis/safer-supply/early-findings-safer-supply-pilot-projects.html>

²⁸. Ministry of Mental Health and Addictions, Health Canada. (2022, May 31). B.C. receives exemption to decriminalize possession of some illegal drugs for personal use [Press Release]. <https://news.gov.bc.ca/releases/2022MMHA0029-000850>

²⁹. Department of Justice Canada. (2001). Addressing Systemic Racism in Canada's Criminal Justice System while maintaining public safety: proposed legislative amendments to the Criminal Code and the Controlled Drugs and Substances Act. <https://www.justice.gc.ca/eng/csj-sjc/pl-sr-rs/index.html>

Mexico

The Role of Fentanyl in the Ongoing Opioid Epidemic

Mexico has not historically faced high rates of opioid use – unlike Canada and the United States. Although overall levels remain low, Mexican heroin use is on the rise, particularly in northern border states, and evidence indicates that fentanyl use may be increasing as well.^{30,31} Mexico has somewhat limited epidemiological surveillance tools for drugs, rendering the true scale of opioid and fentanyl use harder to grasp. Historically, Mexico has been the site of production of illicit opioids (particularly heroin) that are trafficked to or through the United States. Shifting away from heroin, fentanyl production in Mexico has increased significantly in recent years, following policy changes in China.³²

30. Fleiz, C. et al. (2019). Opioid Crisis Along Mexico's Northern Border: Treatment Needs Mexican Opioid Crisis. *Archives of Medical Research*, 50(8), 527-534. doi: 10.1016/j.arcmed.2019.12.013

31. Fleiz, C. et al. (2020). Fentanyl is used in Mexico's northern border: current challenges for drug health policies. *Addiction*, 115(4), 778-781. doi: 10.1111/add.14934

32. The Report on Drug Supply in the Americas 2022. Inter-American Drug Abuse Control Commission (CICAD), Organization of American States (OAS), Washington, D.C. https://www.oas.org/en/sms/cicad/docs/CICAD_Report_on_Drug_Supply_in_the_Americas_2022.pdf

Scope of Fentanyl Use in Mexico

Mexico does not report any direct measures of fentanyl use at the national level. Use must be assessed via proxy measures, such as the ones described in the introduction to this brief. Limited data are available from local surveys, drug checking results, and fatal overdoses and law enforcement drug seizures (discussed in their respective sections) in Mexico. These data suggest that fentanyl use is on the rise in Mexico, and that its use is often unintentional. But they must be interpreted with caution, given their size and scope.

Fentanyl appears to be widespread in the heroin supply of Mexico's northern border cities. One study of heroin users in northern border cities found that 93 percent of tested samples of 'pure' white powder heroin contained fentanyl. Additionally, the individuals who provided those samples all believed them to contain only heroin, suggesting that fentanyl is often used unknowingly and unintentionally.³³ Another study of individuals at treatment centers in three northern border cities found that less than one percent reported using fentanyl, further supporting the idea that there is little intentional fentanyl use. It is unclear whether these trends are representative of the rest of the country or if the northern border cities are unique.³⁴

Rising Fentanyl-Involved Fatal Overdoses

No national data are available on the prevalence of fentanyl-involved overdoses in Mexico. A study in Mexicali, Mexico from June 2019 to May 2021 noted a 30 percent increase in reported overdoses from the period before the COVID-19 pandemic to the period after the pandemic was declared. Of these, 14 percent of the overdoses were attributed to fentanyl;³⁵ however, it is not clear whether these findings are representative of the entire country.

33. Fleiz, C. et al. (2020). Fentanyl is used in Mexico's northern border: current challenges for drug health policies. *Addiction*, 115(4), 778-781. doi: 10.1111/add.14934

34. Fleiz, C. et al. (2019). Opioid Crisis Along Mexico's Northern Border: Treatment Needs Mexican Opioid Crisis. *Archives of Medical Research*, 50(8), 527-534. doi: 10.1016/j.arcmed.2019.12.013

35. Goodman-Meza, D et al. (2022) Impact of an overdose reversal program in the context of a safe consumption site in Northern Mexico. *Drug and Alcohol Dependence Reports*, 2, 100021. Doi: 10.1016/j.dadr.2021.100021

Fentanyl Supply and Production in Mexico

Fentanyl has been present in Mexico for roughly the last decade, mainly in the Sinaloa region in the northwest. Fentanyl production has increased markedly in the past several years. According to CICAD's Report on Drug Supply in the Americas 2022, Mexico seized 961 kilograms of fentanyl between 2016-2020.³⁶ In a single incident in July 2022, the Mexican military seized a record 542 kg of fentanyl in Sinaloa state.³⁷

Most fentanyl produced in Mexico is trafficked north, and fentanyl use within Mexico appears to remain low. The supply chain frequently involves Mexican transnational criminal organizations (TCOs) importing fentanyl and fentanyl precursors, often from China and India.³⁸ Fentanyl gets pressed into pills or mixed with other drugs before being trafficked north across the border with the United States. Several of the states within the United States with the highest quantities of fentanyl seized are clustered along with Mexico-U.S. border.³⁹

Mexican Policy Response

Rates of opioid and fentanyl use are relatively low in Mexico but on the rise. One effective preventive measure to reverse overdose cases is naloxone; however, Mexico categorizes naloxone as a psychoactive substance and significantly regulates its use, making it largely unavailable for reversing overdoses.⁴⁰

Mexico's approach has been focused on law enforcement, due to the heavy involvement of Mexican TCOs in fentanyl production and trafficking.⁴¹ Because much of the fentanyl in the United States is produced in or flows through Mexico, the two countries have been working together to disrupt the production and supply under the Merida Initiative. Under the initiative, the two countries have focused on detecting synthetic drug laboratories in Mexico and increasing capacity to interdict cross-border fentanyl trafficking.⁴²

36. Goodman-Meza, D et al. (2022) Impact of an overdose reversal program in the context of a safe consumption site in Northern Mexico. *Drug and Alcohol Dependence Reports*, 2, 100021. Doi: 10.1016/j.dadr.2021.100021

37. The Report on Drug Supply in the Americas 2022. Inter-American Drug Abuse Control Commission (CICAD), Organization of American States (OAS), Washington, D.C. https://www.oas.org/en/sms/cicad/docs/CICAD_Report_on_Drug_Supply_in_the_Americas_2022.pdf

38. Secretariat of National Defense, Mexico. (2022 July 7). Mexican Army and National Guard carry out historical seizure of fentanyl in Sinaloa [Press Release]. <https://www.gob.mx/sedena/prensa/ejercito-mexicano-y-guardia-nacional-realizan-en-sinaloa-aseguramiento-historico-de-fentanilo>

39. The Report on Drug Supply in the Americas 2022. Inter-American Drug Abuse Control Commission (CICAD), Organization of American States (OAS), Washington, D.C. https://www.oas.org/en/sms/cicad/docs/CICAD_Report_on_Drug_Supply_in_the_Americas_2022.pdf

40. Chaparro, L. (2022 Mar 4). People Are Dying of Overdoses in Mexico Because They Can't Get Naloxone. <https://www.vice.com/en/article/epxkv4/mexico-overdoses-naloxone>

41. Realuyo, C. (2020). Countering the Evolving Drug Trade in the Americas.

[https://www.wilsoncenter.org/sites/default/files/media/uploads/documents/Countering percent20the percent20Evolving percent20Drug percent20Trade percent20in percent20the percent20Americas.pdf](https://www.wilsoncenter.org/sites/default/files/media/uploads/documents/Countering%20the%20Evolving%20Drug%20Trade%20in%20the%20Americas.pdf)

42. OCAMPOMI. (2021 Sept 7). The Merida Initiative. <https://mx.usembassy.gov/the-merida-initiative/>



United States

The Role of Fentanyl in the Ongoing Opioid Epidemic

The opioid epidemic in the United States can trace its roots to the 1990s, when opioid use began increasing as rates of opioid prescriptions increased dramatically.⁴³ The epidemic can be characterized by three waves, mirroring shifts in consumer preferences and policy responses. The first wave was a rise in prescription opioid misuse and overdoses in the 1990s, following the availability of new prescription opioids and the loosening of restrictions on prescription drug marketing. This was followed by a rise in heroin use and overdoses beginning in 2010. Heroin use spiked following the implementation of policies to prevent prescription opioid diversion and changes to prescription opioid formulations designed to deter misuse.⁴⁴ Lastly, a rise in fentanyl use and overdoses began in 2014. A confluence of factors contributed to this shift, including fentanyl's low production cost, ease of access to precursor chemicals, high potency, and availability to lace into other substances. Prescription opioid and heroin use have not ended, and they remain major—albeit reduced—public health challenges; however, fentanyl is now a major driver of the opioid epidemic.

⁴³. U.S. Centers for Disease Control and Prevention (2022). Understanding the Opioid Overdose Epidemic. <https://www.cdc.gov/opioids/basics/epidemic.html>

⁴⁴. Albert, A. et al (2018). Supply-Side Drug Policy in the Presence of Substitutes: Evidence from the Introduction of Abuse-Deterrent Opioids. *American Economic Journal: Economic Policy*, vol 10(4), 1-3.

Scope of Fentanyl Use in the United States

The United States does not report any direct measures of fentanyl use at the national level. The major national epidemiological surveillance tools—including the National Survey on Drug Use and Health, the Youth Risk Behavior Surveillance System, and the Monitoring the Future survey—do not report data on fentanyl use. Use must be assessed via proxy measures, such as the ones described in the introduction to this brief. Data are available from urine screenings, hospital emergency department visits, and fatal overdoses and law enforcement drug seizures (discussed in their respective sections) in the United States.

A large-scale study of 1.05 million urine screenings collected in health care settings from 2013 to 2019 reported a 333 percent increase in samples testing positive for fentanyl, from 1.1 to 4.7 percent of all samples tested.⁴⁵ There were also dramatic increases in the presence of fentanyl in samples that tested positive for another substance: 1280 percent among methamphetamine-positive samples, 530 percent among cocaine-positive samples, and 556 percent among heroin-positive samples. The same study found that heroin-positive samples peaked in 2016 (at 2.5 percent) and have been in decline since. These findings are mirrored in a smaller panel study of urine screenings of 316 people with opioid use disorder from 2016 to 2019.⁴⁶ That study found a 330 percent increase in fentanyl-positive samples, with 35 percent of all samples testing positive. These studies both point to increasing prevalence of fentanyl use, particularly among people using other substances.

Meanwhile, the primary surveillance system reporting emergency department (ED) drug use data in the United States, the Drug Abuse Warning Network (DAWN), was discontinued in 2011 and restarted in 2018. So far, data are only available for 2021.⁴⁷ While valuable, these data do not permit trendline analysis. DAWN shows an increase in fentanyl-related ED visits over 2021, with a total of 122,884 visits. This accounts for 10 percent of all opioid-related ED visits in the year. Visitors for fentanyl use were demographically similar to visitors for heroin use, though visitors for prescription opioid misuse were less likely to be male and more likely to be older adults.

45. Twillman, R. et al (2020). Evaluation of Trends of Near-Real-Time Urine Drug Test Results for Methamphetamine, Cocaine, Heroin, and Fentanyl. *JAMA Open Network* doi:10.1001/jamanetworkopen.2019.18514

46. Martinez, S. et al (2020). The Increasing Prevalence of Fentanyl: A Urinalysis-Based Study among Individuals with Opioid Use Disorder in New York City. *American Journal of Addiction* 30(1), 65-71 doi:10.1111/ajad.13092

47. U.S. Substance Abuse and Mental Health Services Administration (2022). Preliminary Findings from Drug-Related Emergency Department Visits, 2021- Drug Abuse Warning Network. https://store.samhsa.gov/sites/default/files/SAMHSA_Digital_Download/PEP22-07-03-001.pdf

Rising Fentanyl-Involved Fatal Overdoses⁴⁸

Fatal overdoses in the United States have increased significantly every year since 2014 and have further dramatically increased since the COVID-19 pandemic. The annual number of fatal fentanyl-involved overdoses nationally increased from 5,544 in 2014 to 56,516 in 2020 (and 70,404 provisionally in 2021), a 919 percent increase in seven years. As shown in Figure 1, fentanyl went from being involved in 19.4 percent of all fatal opioid-involved overdoses in 2014 to 82.3 percent in 2020.

Figure 1
Data

Year	Fentanyl Deaths	Total Opioid Deaths*	Percent Involving Fentanyl
2014	5,544	28,647	19.4%
2015	9,580	33,091	29.0%
2016	19,413	42,249	45.9%
2017	28,466	47,600	59.8%
2018	31,335	46,802	67.0%
2019	36,359	49,860	72.9%
2020	56,516	68,630	82.3%
2021**	70,404	80,200	87.8%

* This category includes fentanyl and all other opioids (such as morphine, codeine, hydrocodone, and oxycodone). **2021 data are provisional.

⁴⁸. All fatal overdose data has been retrieved from the National Vital Statistics System available at <https://wonder.cdc.gov/WarningNetwork>.

Figure 2 displays the growth in fentanyl’s presence in methamphetamine- and cocaine-involved fatal overdoses, illustrating the scope with which fentanyl is laced into non-opioid substances. By 2020, fentanyl was involved in 59 percent of such overdoses.

Figure 2
Data

Year	Total Stimulant Deaths	Stimulant Deaths with Fentanyl Present	Percent Involving Fentanyl
2014	9,395	869	9.2%
2015	12,122	1,969	16.2%
2016	17,258	5,029	29.1%
2017	23,139	9,262	40.0%
2018	25,877	11,516	44.5%
2019	30,231	14,627	48.4%
2020	40,643	23,782	58.5%
2021	70,404	80,200	87.8%

Fentanyl Supply and Production in the United States

According to the U.S. Drug Enforcement Administration (DEA), the presence of fentanyl in seized drug shipments increased more than 20-fold from 2014 to 2019.⁴⁹ The DEA seized a total of 3,138 kilograms of fentanyl and fentanyl-related compounds in 2019, and 17 of the 23 DEA Field Divisions across the United States report that fentanyl is “readily available.” The DEA further reports that domestic fentanyl markets overlap with almost all domestic heroin markets, and DEA Field Divisions in the Northeast (New England, New Jersey, New York, and Philadelphia) and Midwest (St. Louis and Chicago) report that fentanyl has surpassed the prior heroin markets in their areas.⁵⁰ Fentanyl seizures most frequently occur along the southwest border states of Arizona, California, and Texas, as well as Massachusetts, New Jersey, and New York. Fentanyl enters the US primarily from seaports and land crossings across the border with Mexico and is then distributed throughout the country. New York City is the largest market and distribution hub.

Chinese TCOs were a major source of fentanyl prior to 2019, when they were replaced by Mexican TCOs. Significant and ongoing bilateral negotiations between the United States and China—most importantly China scheduling fentanyl-related compounds in May 2019—preceded major reductions in fentanyl shipped directly from China to the United States.⁵¹ Since 2019, the Sinaloa Cartel and the Jalisco New Generation Cartel have become the dominant fentanyl sources, along with other Mexican TCOs. These TCOs produce fentanyl themselves, using precursor chemicals obtained from a variety of sources—including Chinese TCOs and legitimate companies.⁵²

49. U.S. Drug Enforcement Administration (2021). National Drug Threat Assessment. https://www.dea.gov/sites/default/files/2021-02/DIR-008-21_percent202020_percent20National_percent20Drug_percent20Threat_percent20Assessment_WEB.pdf

50. U.S. Drug Enforcement Administration (2021). National Drug Threat Assessment. https://www.dea.gov/sites/default/files/2021-02/DIR-008-21_percent202020_percent20National_percent20Drug_percent20Threat_percent20Assessment_WEB.pdf

51. Ibid

52. Ibid

U.S. Policy Response

Numerous policies have been implemented across the United States in response to the ongoing opioid epidemic at the national, state, and local levels; however, as discussed in this brief's introduction, it can be difficult to attribute a particular policy response to fentanyl (rather than generically to "opioids"). Following a temporal analysis of pre- and post-fentanyl emergence policies, the most significant difference is the increasing spread and public support for harm reduction that occurred throughout 2014 and 2015, possibly in response to the rapid rise in fentanyl-related overdoses. For instance, most U.S. states approved laws expanding access to naloxone in those two years, with only a handful acting in the years prior.⁵³ More recently, the federal government approved the use of grant funding to purchase fentanyl test strips, which enable people to check for the presence of fentanyl in illicit substances.⁵⁴ There have also been apparent changes in stakeholder attitudes towards harm reduction, such as law enforcement agencies participating in education and outreach campaigns that include information on treatment and harm reduction resources.⁵⁵

Beyond these, the United States has continued to implement a wide range of policies in response to the totality of the opioid epidemic, including fentanyl. These have included huge increases in funding for opioid prevention, treatment, and recovery support services, as well as interdiction, with over \$7.6 billion provided in FY2019 alone.⁵⁶ Federal and state agencies have also taken numerous steps to expand access to treatment services, especially medication for opioid use disorder treatment—such as easing requirements for health care providers to prescribe buprenorphine and allowing take-home methadone to be issued during the COVID-19 pandemic.^{57,58}

⁵³. Legislative Analysis and Public Policy Association (2020). Naloxone Access: Summary of State Laws.

<https://legislativeanalysis.org/wp-content/uploads/2020/10/Naloxone-summary-of-state-laws-FINAL-9.25.2020.pdf>

⁵⁴. U.S. Substance Abuse and Mental Health Services Administration (2021). Federal Grantees May Now Use Funds to Purchase Fentanyl Test Strips.

<https://www.samhsa.gov/newsroom/press-announcements/202104070200>

⁵⁵. U.S. Drug Enforcement Administration (n/d). Fentanyl Awareness #justKNOW. <https://www.dea.gov/fentanylawareness>

⁵⁶. Bipartisan Policy Center (2020). Tracking FY2019 Federal Funding to Combat the Opioid Crisis.

https://bipartisanpolicy.org/download/?file=/wp-content/uploads/2020/09/BPC-Opioids-Report_RV6-1.pdf

⁵⁷. SAMHSA (2021). HHS Releases New Buprenorphine Practice Guidelines, Expanding Access to Treatment for Opioid Use Disorder.

<https://www.samhsa.gov/newsroom/press-announcements/202104270930>

⁵⁸. SAMHSA (2021). SAMHSA Extends the Methadone Take-Home Flexibility for One Year While Working Toward a Permanent Solution.

<https://www.samhsa.gov/newsroom/press-announcements/202111181000>



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