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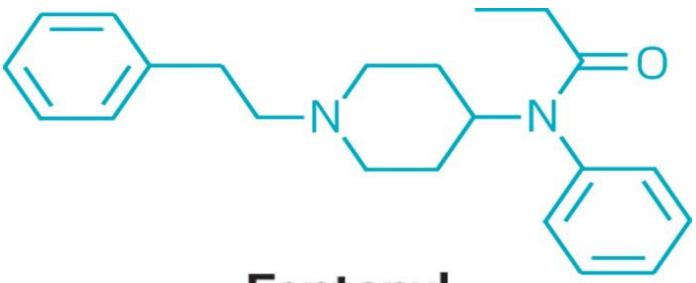
Synopsis of *The Future of Fentanyl and other Synthetic Opioids,* a Report by the RAND Corporation

In August 2019, the RAND Corporation (RAND) published an extensive, 265-page report on fentanyl entitled, *The Future of Fentanyl and Other Synthetic Opioids* (the Report).[1] According to RAND, the purpose of the Report is to: (1) provide a "systematic assessment of the past, present, and possible futures of fentanyl and other synthetic opioids" in the United States; and (2) provide policymakers "with insights that might improve their understanding of and responses to this problem."[2] The report contains a wealth of valuable information and analysis for state policymakers to consider; digesting a report of this size, however, is a substantial undertaking.

Considering the importance of the Report, the Legislative Analysis and Public Policy Association (LAPPA) designed this Fact Sheet to assist policymakers' understanding of the Report by distilling key aspects into readily digestible paragraphs. Page references to the Report are provided throughout. The Report appears to paint a fairly dire picture of future fentanyl and other synthetic opioid challenges for the United States. RAND's analysis suggests that the problem likely will get worse before it gets better, and simply tightening traditional supply-side drug policies (*i.e.,* tougher criminal penalties) alone may have little effect. The Report concludes that "it might be time to invent new approaches and be open to trying ideas that seemed too risky or too alien in the past."[3]



Fentanyl

What are Fentanyl and Other Synthetic Opioids[4]

An opioid is a substance that binds to opioid receptors and produces morphine-like effects. Traditional opiates, like morphine and codeine, are derived from the poppy plant. Unlike traditional opiates, synthetic opioids are chemically manufactured. Fentanyl is a synthetic opioid that is commonly used as an anesthetic in medical settings. Fentanyl is often prescribed due to its ability to work quickly and to be extremely potent, even in small amounts. In comparison to morphine, fentanyl is 50 to 100 times more potent. However, as powerful as fentanyl is, variations of fentanyl—termed analogs—such as carfentanil, can be up to 10,000 times as potent as morphine. The Report uses the term "synthetic opioids" to describe "fentanyl, its analogs, and other novel synthetic opioids that, in general, are illicitly manufactured."[5]

The Current Synthetic Opioid Outbreak is Different from Prior Ones[6]

Fentanyl was first synthesized in 1958, but it was not until 1972 that fentanyl was approved by the Food and Drug Administration (FDA) for use in the United States. The use of fentanyl skin patches and lozenges in outpatient medical settings for pain management in the 1990s led to increased concerns about the potential for fentanyl to be diverted and used illicitly. The Report identifies five "fentanyl outbreaks" in the U.S. since the 1970s. According to RAND, the first four outbreaks, spanning 1978 to 2007, mirrored each other in several ways in that they were geographically contained, relatively short-lived (no longer than two years), linked to a single clandestine lab, and caused relatively few deaths.

In contrast, RAND concludes, the current outbreak that began in 2013 is considerably different. Commentators have termed this opioid outbreak a "triple wave epidemic," with the first wave being prescription opioids, the second wave being heroin, and the third wave being synthetic opioids, specifically fentanyl.[7] As compared to earlier outbreaks, the Report identifies a number of characteristics making the current outbreak substantially more severe and longer, including: (1) large geographic spread, with variation in severity between regions; (2) fentanyl-dominated but also incorporating other potent synthetic opioids; (3) drugs imported (largely from China and Mexico), rather than manufactured locally; and (4) distribution via traditional market avenues and new methods (*e.g.,* mail order/internet).

The Unique Challenges Fentanyl Poses to American Drug Policy

In comparison to other illicit drugs, the Report concludes that fentanyl poses unique challenges to America's traditional drug policy framework, which RAND divides into four pillars: supply control, prevention, treatment, and harm reduction.[8] These challenges are summarized below.

Challenges to supply control efforts[9]

Because fentanyl is a synthetic opioid and its formulation is not dependent on the poppy plant, which is susceptible to drought, blight, and labor shortages, fentanyl can be produced more cheaply than traditional opioids. Additionally, fentanyl has a very high potency-to-weight ratio making it possible to ship small amounts cheaper than the potency equivalent amount of heroin. For these reasons, heroin dealers can use fentanyl to help lower costs. By cutting heroin with fentanyl, dealers can sell smaller amounts of product without decreasing the potency of the product.

Technological and shipping advancements exacerbate the sustained, widespread impact of this current opioid epidemic. The Internet allows the sharing of simple fentanyl synthesis methods, providing non-chemists with the ability to produce it in their homes. Additionally, the ease of online shopping streamlines drug transactions, eliminating the need for personal interactions or criminal intermediaries. Moreover, the use of cryptocurrencies, like Bitcoin, increases online privacy in illicit markets.

Traditionally, U.S. policymaker attempts at supply control involved efforts to keep drug prices high. However, the lower cost of fentanyl and other synthetic opioids lessens the effectiveness of a high price defense. Interestingly, RAND suggests that attempts to increase the price of heroin through supply controls might increase the use and attractiveness of fentanyl.

Challenges to prevention efforts[10]

In contrast to many drugs of abuse, the relatively lower cost of fentanyl and other synthetic opioids creates a supplier-led (*i.e.,* dealer-led) phenomenon in which dealers introduce fentanyl into the market themselves—in the form of adulterated heroin or prescription medication tablets—rather than relying on buyer demand. Because dealers are often not transparent in product disclosure, many buyers are not aware that they are receiving fentanyl-laced products. This information imbalance between buyer and seller hampers efforts to prevent people from ingesting fentanyl in the first place.

Additionally, a cornerstone of current U.S. drug prevention efforts are school-based prevention programs. However, with the data showing that most fentanyl-based overdoses are endured by people in their 30s and 40s, programs directed toward school aged children may do little to reduce the main fentanyl user demographic.

Challenges to treatment efforts[11]

While not a unique drug policy challenge *per se*, the fentanyl and other synthetic opioid outbreak highlights a crucial issue with current U.S. drug policy efforts—lack of treatment availability. RAND estimates that more than three million Americans over age 12 currently suffer from opioid use disorder (OUD); at this high level, it is unlikely that treatment will work as the sole method to fix the problem. U.S. substance use disorder treatment programs are not as well funded or readily available as they are in Western Europe, and thus, the current opioid use epidemic places added pressure on an already strained system.

Additionally, RAND theorizes that the 15-year survival rate for individuals with OUD who inject drugs would remain soberingly low (perhaps 75 percent, "slightly above that of kidney or colon cancer and well below that of breast cancer") even under an optimistic treatment scenario where medication-based treatment is widely available and reduces the risk of death by 70 percent. This is because treatment does not completely eliminate the risk of overdose death for such people, and individuals with OUD often cycle in and out of treatment.

The challenge of harm reduction efforts[12]

In RAND's view, fentanyl and other synthetic opioids do not necessarily pose a challenge to harm reduction itself but instead challenge U.S. policymakers' traditional acceptance of such strategies. Harm reduction is generally more controversial in the U.S. than it is in other developed countries. The result, in RAND's words, leaves the U.S. as a country that "does not have many programs or much variety."[13] Needle exchange programs are a common harm reduction strategy in the U.S., but only about 400 of these programs are operating nationally, and while they can reduce the spread of HIV and other bloodborne infections, the programs do little to reduce overdoses.

Potential Approaches for Addressing the Challenges Associated with Fentanyl

Ultimately, the Report concludes that the unique challenges that fentanyl and other synthetic opioids pose suggest that new, unorthodox policy approaches might be needed. The authors do not assert that traditional drug policy approaches be abandoned but instead that they should be expanded and paired with more unconventional methods, set forth below.

Reduce restrictions on methadone and buprenorphine[14]

In the United States, there are regulatory barriers to accessing certain medication-based treatment components (methadone and buprenorphine) that are not present in other countries. The regulations are in place for fear that treatment medications with a potential for abuse will be diverted into the illicit market. For example, a patient can only receive methadone from a specialty treatment center, and only a minimal number of doses that a person receives can be taken at home. Many doses must be taken by the patient at the clinic, under supervision.

With the benefit that medication-based treatment provides to those with opioid use disorder, RAND questions whether the concern over diverted treatment medications is worth restricting people's access to treatment.

The Report concludes that in an illegal drug market flooded with fentanyl, easier access to methadone and buprenorphine is vital; moreover, any additional harm caused by the existence of illicit methadone and buprenorphine present would likely be overshadowed by the fentanyl itself. Vermont is highlighted as an example where policymakers reduced restrictions on buprenorphine. Police in Vermont no longer arrest people who distribute buprenorphine on the illicit market, and in March 2019, Vermont decriminalized the possession of buprenorphine without a prescription.

Decriminalization of drug possession[15]

Another potential approach offered in the Report is to decriminalize drug possession for personal use. Decriminalization differs from legalization; with decriminalization, illicit drug possession remains against the law, but there are no criminal sanctions for the act. As an example, RAND reviews Portugal, which decriminalized drug possession for personal use in the 1990s. The Portuguese strategy involved funding a system of "dissuasion commissions" that were operated by the Portuguese Ministry of Health. Under this system, a person found possessing up to 10 doses of any drug without evidence of the intent to sell, had their drugs seized and the case sent to a dissuasion commission. The commission met with the person to discuss their drug habits and determine a course of action, which could include a referral for treatment, fines, drug education classes, bans from certain establishments, or a simple warning.

Implementing novel treatments[16]

In areas of high synthetic opioid use, increasing the number of people who receive medication-based treatment is essential. In addition, RAND concludes that U.S. policymakers might consider expanding the types of medications used in that treatment. In Canada and some European countries, heroin-assisted treatment is available to reduce patients' use of illicit heroin. Patients receiving heroin-assisted treatment inject pharmaceutical-grade heroin up to three times a day under clinical supervision.

The Report notes that this is not a first line of treatment, rather patients receiving heroin-assisted treatment tend to be long-term heroin users who have not had success with other treatments.

While it is illegal in the U.S. to prescribe heroin for the treatment of OUD, it is legal to conduct medically-supervised randomized controlled trials of heroin-assisted therapy. Besides heroin, other opioids could also be piloted for use in medication therapy. Canada has also used hydromorphone in medication therapy. Additionally, studies have been conducted suggesting that extended-release morphine could also work as a form of medication therapy for some patients with opioid use disorder.

Provide access to drug content testing[17]

Because fentanyl is often used to adulterate heroin or pressed into pills to look like other forms of prescription opioids, many users are not aware that they are using it or another potent synthetic opioid. Moreover, the authors suggest that some users might wish to avoid fentanyl due to its high risk of overdose and short duration. If users had the ability to test the composition of their drugs to determine if they contained fentanyl, then they would be able to know if a bag was contaminated and would have the option to discard it or to use the drugs with more caution. Allowing users to have access to detection technologies, such as test strips that can identify the presence of fentanyl, could help to mitigate risks associated with the unknown use of fentanyl.

This suggestion is tempered by the fact that current detection methods are imperfect, and research funding will be needed to improve existing drug testing technologies. For example, some tests on the market currently detect fentanyl but are not able to detect the newer fentanyl analogs. Additionally, tests can determine whether fentanyl is present in a sample but are unable to determine how much is present. The creation of cheaper, simpler detection methods will allow for detection systems to be established in social service outreach centers. It is also worth noting that detection programs will also allow for real time surveillance of what types of drugs are currently available in a local drug market.

Supervised consumption sites[18]

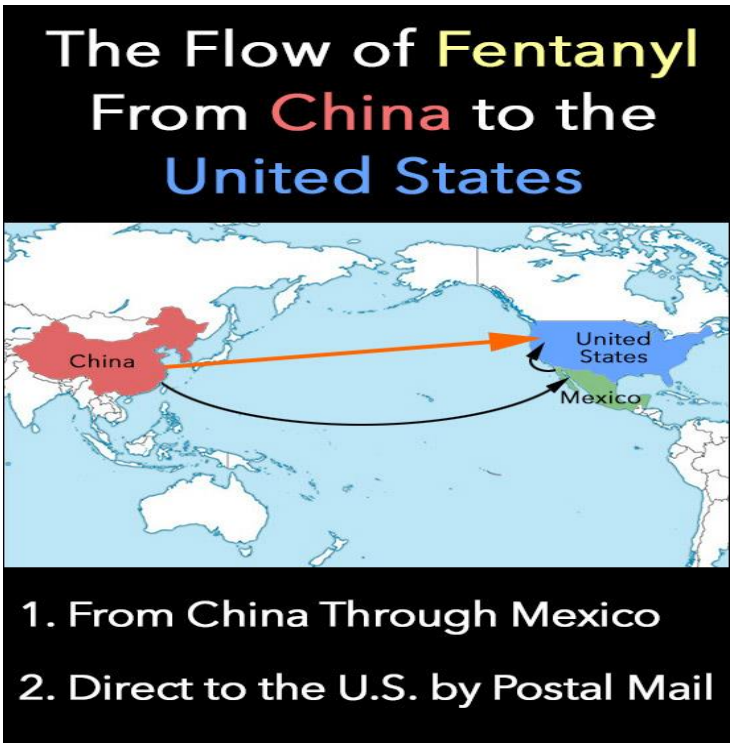
Supervised consumption sites are a form of harm reduction that permit people to use street-purchased drugs under medical supervision to greatly reduce the risk of overdose. While the legality of supervised consumption sites is still being argued in American courts, these programs currently exist in Australia, Canada, and Europe.

According to the Report, at supervised consumption sites in other countries, millions of drug injections have been supervised, and no overdose deaths have been reported. While supervised consumption sites are viewed as extremely controversial in the United States, the severity of the overdose crisis might make them a legitimate option.

Improve supply disruption[19]

As the introduction of fentanyl and other synthetic opioids into drug markets is primarily supplier-led, supply reduction strategies remain a helpful tool. That said, the Report concludes that common supply reduction strategies, such as mandatory minimums for drug crimes or drug-induced homicide laws for low-level retailers and couriers, are not likely to make much of a positive impact. Additionally, it is unlikely that the United States will be able to fully restrict synthetic opioid production anytime soon, most of which occurs in China. However, RAND believes targeting fentanyl importers and wholesalers would likely have more of a chilling effect than punishing street-level retailers.

Improving technologies to detect synthetic opioids through the mail should also help to disrupt supplies. The U.S. Drug Enforcement Administration (DEA) could also focus on disrupting fentanyl supplies by establishing fake drug selling websites and using them to perform stings on importers and distributors or to deliver inert powders instead of synthetic opioids. Other possible strategies include hacking and disabling drug selling websites or leaving poor reviews or false complaints on these sites.



Improved targeting of law enforcement efforts[20]

RAND notes that it is very difficult to shut down an established drug market; preventing the emergence of a drug market in an area might be a more manageable task. With this in mind, perhaps law enforcement should focus on areas where a growth in the fentanyl market is expected to occur, as opposed to areas where the fentanyl market is already established. RAND suggests that areas that are at high risk of becoming infected with fentanyl could be determined through social media data, interviews of users in nearby areas, wastewater testing, and drug use monitoring programs.

Resources

[1]Pardo, Bryce, Jirka Taylor, Jonathan P. Caulkins, Beau Kilmer, Peter Reuter, and Bradley D. Steain, The Future of Fentanyl and Other Synthetic Opioids (Santa Monica, CA: RAND Corporation, 2019)
[2]*Ibid*., vi.
[3]*Ibid.*, 152-53.
[4]*Ibid.*, 165-167 (source for this section).
[5]*Ibid.*, 166.
[6]*Ibid.*, 49-58 (source for this section).
[7]*Ibid.*, xv.
[8]*Ibid.*, 146
[9]*Ibid.*, 47, 59, 71, 127, 131, 146-47, 167 (sources for this subsection).
[10]*Ibid.*, 46, 121, 146-48 (sources for this subsection)
[11]*Ibid.*, 148-49 (source for this subsection).
[12]*Ibid.*, 150 (source for this subsection).
[13]*Ibid.,* 150
[14]*Ibid.*, 153-54 (source for this subsection).
[15]*Ibid.*, 155-56 (source for this subsection).
[16]*Ibid.*, 157-58 (source for this subsection).
[17]*Ibid.*, 46, 133, 158-59 (sources for this subsection).
[18]*Ibid.*, 160 (source for this subsection).
[19]*Ibid.,* 161-62 (source for this subsection).
[20]*Ibid.*, 163 (source for this subsection).

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