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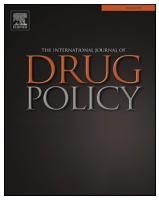

Commentary

How to improve the surveillance of the Taliban ban's impact on European drug markets

Luca Giommoni *

School of Social Sciences, Cardiff University, Cardiff, United Kingdom

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ABSTRACT

In April 2023, the Taliban banned poppy cultivation and the trade of all narcotics. This caused a 95% reduction in opium production. Usually, that would be good news. But there is a substantial worry: synthetic opioids might fill the void left by heroin. This is concerning because these drugs have led to health emergencies in areas where they are prevalent. This paper highlights the limitations of the current drug surveillance system in Europe and proposes improvements. It argues that reliance on secondary data is insufficient. Instead, we need to interview a sentinel group of people who inject drugs and adjust city-level sentinel systems, such as wastewater analysis, to specifically track the spread of synthetic opioids. Without these proactive steps, we risk only noticing a transition from heroin to synthetic opioids after it has occurred, with its harmful impacts already in place.

Introduction

In April 2023, the Taliban banned poppy cultivation and the trafficking of all narcotics in Afghanistan. We are now beginning to see the significant impact of this policy. The Afghanistan opium survey reports that poppy cultivation has plummeted by 95%, with production dropping from 6,200 tons in 2022 to a 20-year low of 333 tons in 2023. This drastic reduction has driven the average farm-gate price of dried opium to US$ 408 per kilogram, which is almost five times higher than the price before the Taliban's takeover 24 months prior (UNODC, 2023). While some farmers may rely on stockpiled inventories from previous years, the current opium supply for export is just a fraction of its former abundance.

This article explains how to improve the surveillance systems of countries that are the primary destinations of Afghan-produced opium, enabling them to quickly detect changes following the Taliban's ban. By examining the current system and its limitations, I explore necessary refinements to detect shifts in the heroin market driven by the Taliban's action. The article concludes by underscoring the importance of these adjustments.

Why we need to worry about the Taliban ban

While a shortage of heroin would usually be seen as positive, the rise of synthetic opioids makes this development potentially disastrous. Compared to heroin, fentanyl is approximately ten times cheaper per kilogram, twice as pure, and about twenty times more potent when gauged in morphine equivalent doses (Caulkins, 2021). Other synthetic opioids, like nitazenes and carafentanil, demonstrate even higher potency. As such, synthetic opioids can reduce the raw material costs for wholesale opioid dealers by over 99% (Pardo et al., 2019; Reuter et al., 2021). Should heroin become scarce or more expensive, dealers may turn to synthetic opioids, which are more advantageous from the perspective of illicit suppliers (Reuter et al., 2021).

This uncovers another disturbing reality – synthetic opioids can be significantly more deadly than heroin. Fentanyl and its non-pharmaceutical variants are active in sub-100 microgram doses (Suzuki & El-Haddad, 2017). This means that merely 0.0001 grams of fentanyl, roughly one-fifth the size of a single grain of salt, can achieve the desired effect. This positions fentanyl and synthetic opioids among the most potent medications in existence. However, they also pose a significant health risk when consumed in unregulated settings because a minute variation in dosing can be lethal. This trend is evident in the United States, where drug overdose death rates involving fentanyl soared by 279%, from 5.7 per 100,000 in 2016 to 21.6 in 2021 (CDC, 2023). Overall, the increased lethality of synthetic opioids has sparked a major public health crisis in regions where they are prevalent (Pardo et al., 2019; Reuter et al., 2021).

Europe's past heroin shortage sparked a surge in synthetic opioids. In the wake of the first Taliban ban in the early 2000s some European

* Corresponding author at: School of Social Sciences, Cardiff University, Glamorgan Building, King Edward VII Avenue, Cardiff CF10 3WT, United Kingdom.
E-mail address: giommonil@cardiff.ac.uk.

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countries saw the appearance and diffusion of fentanyl and synthetic opioids analogues (Reuter et al., 2021). Estonia and Finland are the most notable examples, but probably it affected other countries too (Griffiths et al., 2012). The initial opium ban lasted only a year and had a geographically confined impact, but a lengthier ban could potentially trigger wider and more severe disruptions.

The surveillance system in Europe

As Afghanistan's main market for heroin, Europe is in the most vulnerable position to bear the potential consequences of the Taliban's ban (UNODC, 2022). It is therefore crucial for European countries to swiftly detect opioid market fluctuations that this ban could prompt. This raises the question of what systems are currently in place within Europe to keep tabs on illicit drug markets.

The European Monitoring Centre on Drugs and Drug Addiction (EMCDDA) is the leading authority on illicit drugs in the European Union. Over the last two decades, it has excelled in consolidating European drug market data, earning recognition as a leading resource for drug-related information. Its monitoring system is based on three pillars: national secondary data, an early warning system (EWS) on New Psychoactive Substances (NPS) and city-level sentinel monitoring systems.

The European monitoring system predominantly relies on secondary data which includes epidemiological indicators on drug-related deaths, prevalence of drug use, treatment data as well as market specifics metrics like seizures, price, and purity. Table 1 details these indicators, explaining their roles in interpreting drug markets as well as their respective strengths and limitations, particularly when assessing the impact of the Taliban ban. For a more in-depth discussion on these indicators and their collection methodologies, refer to Mounteney et al. (2016) or consult the protocols on the EMCDDA's website. The EMCDDA also collects additional indicators, such as the prevalence of infectious diseases and the availability of syringe programmes. However, these are not included in this list because their primary role is to monitor the health implications of substance use and a country's response, rather than to track the spread of illicit substances themselves.

The EWS monitors and responds to NPS posing health or social risks in the EU. It is a network comprising the EMCDDA, 29 national systems, Europol, the European Commission, and other partners. National systems are crucial for identifying potential new substances, whereas the EMCDDA plays a central role in gathering, analysing, and distributing related data. Upon formal notification of an NPS, the EWS engages in monitoring and analysis, which may lead to intensive surveillance, risk communication, and initial reporting for further assessment (EMCDDA, 2019). As of December 2022, the EMCDDA is monitoring more than 930 NPS, of which 74 are new opioids (EMCDDA, 2023a).

City-level sentinel monitoring systems are the result of various projects and networks that collaborate with the EMCDDA, focusing on data collection and reporting within specific cities. These systems track a range of data, including:

- Drug-related emergency visits, which offer insights into cases of acute drug toxicity presented at sentinel hospitals across Europe (EMCDDA, 2020).
- Analysis of syringe residues, which examines the contents of syringes collected from seven European cities, providing a snapshot of the substances in circulation (EMCDDA, 2021).
- Wastewater analysis, which estimates community drug use by detecting drugs and their metabolic products in municipal wastewater systems (EMCDDA, 2023c).
- Drug checking services, which analyse the composition of drugs and share the results with service users to inform about the actual content of the drug samples (TEDI, 2023). For an analysis of the role of drug checking services in surveilling new synthetic opioids, see Laing et al. (2018).

Traditional monitoring systems that rely on secondary data are excellent for routine surveillance and analysing past trends, emphasised the EMCDDA's 2030 futures exercise (2023b). However, the same report notes 'These approaches are often necessarily reactive and therefore not sufficiently sensitive to detect emerging issues.' (EMCDDA, 2023b, p. 25)

Specifically, these systems have two substantial limitations, which become especially pertinent when tasked with scrutinizing the possible effects of this second Taliban ban. Firstly, there are delays between the initiation of drug use and the emergence of drug-related harm (Hando et al., 1998). Therefore, indicators such as drug-related deaths or demand for treatment provide delayed insights into emerging trends in illicit drug use (Commission on Combating Synthetic Opioid Trafficking, 2022). Secondly, there can be a considerable lag between the collection of secondary data and the time these data are disseminated (Dunn et al., 2011; Hando et al., 1998).

In addition, enhancing the collection and reporting of these data would require significant investment and substantial changes across various systems. Unfortunately, it is improbable that such improvements can be implemented within the short timeframe needed to monitor the impact of the Taliban ban. For example, no European country currently possesses the infrastructure to gather purity-adjusted prices, which are widely recognised as one of the most vital indicators for understanding drug markets (Bright & Ritter, 2010; Caulkins & Reuter, 1998). Creating a system and allocating resources to collect these data would take months, if not years. More crucially, it would be about a year and a half before purity-adjusted data could be disseminated. This implies that we would only become aware of a shift from heroin to synthetic opioids after it has already occurred, and its related harms have already taken root.

The implications of these limitations suggest that secondary data possess limited utility for promptly detecting fluctuations in the opioid market that may arise from this ban. Instead, new sources of information and sentinel monitoring systems represent the most effective tools to improve the current reporting framework.

Improving the sensitivity of the current surveillance system

The current monitoring system can be improved to swiftly and effectively detect emerging drug trends in two ways. First, by interviewing a sentinel group of people who inject drugs. Second, by customizing city-level sentinel monitoring systems to address the current threat, expanding upon the EMCDDA's existing framework. Table 2 details these actions and their significance.

The aim of interviewing a sentinel group of people who inject drugs

Table 1
EMCDDA's indicators.

Indicator	Description	Utility	Limitations
Drug-related deaths	Deaths from psychoactive substance use	- Gauge of harm from illegal drugs	- Underreporting - Reporting delays
Prevalence of drug use	Estimate people using heroin	- Identify people at risk of suffering drug-related harms	- Reporting delays - Limited change detection
Treatment demand	Number entering drug treatment	- Insight into drug use demographics & patterns in community	- Lag from start to harm emergence
Seizures	Drug quantity seized & seizure count	- Supply proxy - Track trafficking	- Little granularity - No purity info - Enforcement bias
Price	Cost per gram at retail	- Availability proxy	- Not purity-adjusted - No data for synthetic opioids
Purity	% of active ingredient	- Availability proxy	- Reporting delays - Sparse high-frequency data

Table 2
Actions to improve the current surveillance system.

Action	Description	Why it matters
Interview group of people who inject drugs	Survey on drug prices, patterns, and availability	- Deep insight into drug markets - Cost-effective - Quick
Wastewater analysis	Analyse drug metabolites in community wastewater	- Near-real time data - Quantifies drug consumption
Syringe Collection & Analysis	Chemical tests on residues in collected used syringes	- Bypasses respondent bias - Localised info - Reflects actual substance use
Drug checking data	Test submitted drugs for purity & content	- Chemical, not self-reported - Data within 6 months - Assesses user-level purity/content
Drug-related emergency visits	Presentations for acute drug toxicity or directly related to acute drug use	- Assess harm and toxicity - local & current data - Record age and sex demographics

is to primarily assess current drug prices, usage patterns, and availability (Hall & Degenhardt, 2009). This enables us to quickly detect shifts in drug availability using questions like 'how easy is it to obtain heroin at the moment?' Such question has been proven to detect heroin shortages (Price et al., 2023), shortages that can potentially pave the way for the emergence of alternative substances. Further exploration can uncover the preferences and experiences of both buyers and sellers, as well as the evolving dynamics of the drug market and supply.

These interviews, however, may provide limited insights into the use of synthetic opioids, as people who inject drugs may not be aware of the presence of synthetic opioids in the substances they consume (Mars et al., 2019). Nevertheless, this group can offer valuable perspectives on their own experiences and those of their peers. Due to their direct involvement with drug use and the black market, they can offer critical insights into the behaviours of drug market participants (Commission on Combating Synthetic Opioid Trafficking, 2022). Additionally, it is expected that any harm related to opioid use would first become apparent within this population.

Interviews with people who inject drugs is a pivotal feature of the Australia's Illicit Drug Reporting System (IDRS). Established in 1995, the IDRS has effectively tracked significant shifts in Australian drug markets, such as the heroin shortage in 2000 (e.g., Degenhardt et al., 2006), the increase in the use of GHB (Dunn et al., 2009), and the recent impact of the COVID-19 pandemic. This approach has been regarded as a brief, rapid, and cost-efficient way to obtain early warnings of emerging drug use trends (Dunn et al., 2011; Hall & Degenhardt, 2009; Hando et al., 1998).

It is crucial to highlight the necessity of engaging a population deeply rooted in illegal drug markets. This is the same rationale that has prompted several researchers to advocate for the revival of the Arrestee Drug Abuse Monitoring Program (ADAM) - a scheme that collected extensive drug market data, including urinalysis results, from thousands of individuals arrested for various offenses in the United States (Kilmer & Caulkins, 2014; Midgette et al., 2019; Pardo et al., 2019). Although the approach varies, the objective of the ADAM programme and interviews with people who inject drugs remains the same: to engage the individual most likely to detect and report shifts in opioid markets.

Secondly, we need to progressively integrate city-level sentinel monitoring systems into our epidemiological toolkit, tailoring them to analyse the impacts of the Taliban ban specifically. The EMCDDA's proactive approach has already addressed this challenge to some extent, yet there is room for improvement.

It is essential to refine wastewater analysis to accurately distinguish between various opioids, such as heroin, fentanyl, and other synthetics. Since 2011, the EMCDDA has been developing this technique, which recently extended to over 100 cities. Yet, the current methodology does not adequately differentiate between specific opioids. This omission likely stems from the difficulties in detecting NPS, such as the low prevalence of use, or because a key heroin marker breaks down quickly in wastewater (EMCDDA, 2023c). As a result, analyses often rely on the presence of morphine, a major but not exclusive metabolite of heroin. Relying on a non-specific biomarker makes it hard to tell the difference between heroin, other illegal opioids, and the medical use of morphine and codeine, because all of these contribute to the presence of morphine in wastewater. Not having specific markers can lead to a generalised view of opioid trends, overlooking the specific patterns of use.

In contrast, studies from Australia have made progress by successfully distinguishing between various opioids at 56 wastewater sites. By analysing specific metabolites, these studies revealed that the consumption of oxycodone, fentanyl, and heroin has been decreasing since 2020 (Australian Criminal Intelligence Commission, 2023). Furthermore, additional research has effectively tracked consumption patterns for heroin, fentanyl, and various synthetic opioids (Du et al., 2017, 2021; Gushgari et al., 2019).

Fine-tuned wastewater analysis stands out as one the most effective methods for monitoring the transition from heroin to fentanyl and other synthetic. This technique can offer timely insights into drug consumption trends and provide actual estimates of drug use in specific areas, rather than just the prevalence rates reported by traditional population surveys (Reuter et al., 2021). Additionally, projects are underway to explore the use of wastewater analysis in evaluating interventions on both the demand and supply sides and in assessing the local production of synthetic drugs (EMCDDA, 2016; Emke et al., 2014). It is indeed an ideal tool for providing timely information in short timeframes on temporal trends with geographical specificity, which is what we need to monitor the impact of the Taliban ban on European drug markets.

Existing city-level sentinel monitoring systems can cross-check and complement data gathered from wastewater analysis and interviews with people who inject drugs. Analysing residual drug contents in used syringes provides a refined approach to tracking the spread of synthetic opioids, even when individuals are not aware of their consumption (Brunt et al., 2021). Drug checking data reveal discrepancies between individuals' perceptions of the drug composition and its actual content, shedding light on retail-level drug marketing strategies (Giulini et al., 2023). Data from hospital emergency services aid in evaluating the burden of harm and toxicity associated with new synthetic opioids, stratified according to age and gender (Wood et al., 2014). Crucially, all this information is readily accessible locally and in a timely manner, enabling the understanding of regional differences in a relatively quick timeframe.

The recommendations detailed in Table 2 apply to any country importing heroin from Afghanistan. The analysis concentrates on the EU as it is the largest retail market for heroin produced in Afghanistan, and the EMCDDA as the leading authority on illicit drugs in the region. However, the Taliban ban presents the same challenges to non-EU countries such as the UK, Switzerland, and those along the so-called Northern Route, including the Russian Federation and Central Asian countries. For these countries too, reliance on city-level sentinel monitoring systems and interviewing sentinel groups of people who inject drugs is the best approach for swiftly identifying changes in the opioid market that may arise due to the Taliban's ban.

It is important to note that this is not an exhaustive list of indicators and measures for monitoring synthetic opioids. Instead, it is a selection of measures that can be implemented promptly and yield results in a short timeframe. The measures proposed aim not to comprehensively define the problem, but to highlight emerging concerns. This allows for timely intervention before synthetic opioids, and the associated harm, becomes widespread (Hall & Degenhardt, 2009; Hando et al., 1998).

Evidence indeed shows that disrupting illicit drug markets is easier during their formation, underscoring the urgency to act before they become firmly established (Caulkins & Reuter, 2010).

Conclusions

In their analysis of fentanyl's future, Peter Reuter and his colleagues argue that 'Predicting the arrival of a black swan is a fool's errand' (2021, p. 5). Although the Taliban ban meets the criteria for a black swan event, synthetic opioids may still not penetrate the European market. The ban may not last, production could move to smaller, more remote locations or even other countries, and existing stockpiles could compensate for any temporary reduction in supply. Nevertheless, we cannot just stand by and hope for the best.

Given the precedent set by the first Taliban ban and the devastation wrought by synthetic opioids in North America, it seems prudent to adopt a cautiously pessimistic stance and prepare for the worst-case scenario. This entails establishing a system capable of detecting minor shifts in opioid markets, and swiftly providing pertinent information. This approach will empower us to react before the resulting damage becomes extensive and severe. Just as vaccines were instrumental in mitigating the COVID-19 pandemic, testing was equally vital in tracing the spread of the virus. Equally vital is the vigilant tracking of synthetic opioids.

Achieving this is not feasible with secondary data alone. Engagement with individuals deeply involved in opioid markets and the tailored use of city-level sentinel systems are necessary. These methods offer the best opportunity to track emerging trends, allowing decision-makers to react promptly.

This does not represent a comprehensive set of measures to confront a synthetic opioid epidemic. Rather, it is an initial set of actions aimed at detecting early signs of heroin displacement, some of which have already been successfully implemented and refined by the EMCDDA. Should synthetic opioids replace heroin, a wider array of interventions will become necessary. For an in-depth discussion, see the Commission on Combating Synthetic Opioid Trafficking (2022).

Setting up this surveillance system will have costs for national and international institutions. However, these costs are minuscule compared to the potential toll if synthetic opioids were to replace heroin—a toll likely measured in thousands of lives. Access to up-to-date data is a critical factor in making informed decisions that could save many of these lives.

CRediT authorship contribution statement

Luca Giommoni: Writing – review & editing, Writing – original draft, Conceptualization.

Declaration of competing interest

None.

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