

DRUG CHECKING SERVICES AS AN ANSWER TO SHIFTING DRUG MARKETS

THE CONTEXT DRIVING THE
NEED FOR DRUG CHECKING
SERVICES (DCS)

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SUMMARY

Over the last 30 years, drug checking has been established as a method of harm reduction. It is known to many people who use drugs as a reliable source of information and advice to reduce harms associated with drug use. In addition, the drug checking services throughout Europe have built up significant expertise in the analysis of and risks posed by common and uncommon psychoactive substances, as well as their cutting agents. Drug checking organisations have also developed significant expertise in reaching people who use drugs with both national alerts and alerts targeted to specific population segments to prevent drug related harm and even death.

As drug markets shift quickly and significantly, it is all the more important to use the most appropriate methods and strategies to protect people who use drugs from the risks posed by dangerous and adulterated substances.

This document provides decision-makers with an overview of the biggest challenges currently facing people who use drugs and professionals in dealing with the current drug market, offers guidance on suitable analytical methods and techniques for setting up a drug checking service, and identifies channels through which questions can be answered and support obtained.

THE CURRENT SITUATION

The number of newly identified drugs is expanding at an unprecedented rate and many of the newest are associated with increased harm. Following a ban on opium production in Afghanistan¹, there is considerable concern about the replacement of heroin with synthetic opioids.

Within the category of synthetic opioids, we discern three groups:

1. **Fentanyl** and its derivatives, including carfentanil, acetylfentanyl and many others;
2. Benzimidazole opioids, known as **nitazenes**, encompassing metonitazene, isotonitazene, etonitazene, and many others.
3. Other opioids, e.g. u-47700

There are dozens of small modifications that can be made to give rise to dozens of subtly different drugs.

Nitazenes often exhibit significantly heightened potency, surpassing heroin by over 100 times in some cases.² It is likely that producers try to blend potent opioids with weak or inert substances to mimic the strength of heroin and maximise their profit margins, but this presents a significant technical challenge, and a badly mixed sample can easily have 2 or 200x the strength a person is used to consuming.

Nitazene-related overdoses and fatalities have surfaced all over the world. In 2022 the number of opioid related deaths in Canada was 7314.³ Recent signals from EU countries suggest a surge in availability and associated harms, including deaths. Some incidents reveal the presence of nitazenes in non-opioid drugs such as benzodiazepines⁴. In confronting the challenge of nitazenes and other synthetic opioids, coordinated and continuous efforts are essential to safeguard public health and mitigate the devastating consequences of opioid use.

¹ [Afghanistan opium survey 2023 - UNODC](#)

² [Nitazenes—heralding a second wave for the UK drug-related death crisis? - The Lancet, 2024](#)

³ [Modélisation des décès liés aux opioïdes pendant la crise des surdoses - 2023](#)

⁴ <https://www.wedinos.org/sample-results>

THE ROLE OF DRUG CHECKING SERVICES (DCS)

The major challenge extremely potent substances pose to Drug Checking Services (DCSs) is timely detection, ideally before consumption. To achieve this, it is necessary to engage with people using these substances to enable testing with sensitive equipment. DCSs can provide real-time information on the trend through reporting to early warning systems.

For this purpose, DCSs^{5,6} are prepared to tackle this challenge using their technical expertise in detecting Novel Psychoactive Substances (NPS) and having equipment sensitive enough to detect chemicals in low concentrations. Throughout the years, DCS have gained the trust of people who use drugs, and are able to reach them when it matters most. This trust-building advantage leans on knowledge of usage patterns, insight into the market and sharing of accurate and relevant information. This empowers people who use drugs to change their behaviour in response to alerts and even to further share alerts to their peer groups.

To implement effective DCSs, the Trans European Drug Information (TEDI) network would like to underscore the critical importance of technical requirements to detect synthetic opioids at low concentrations, avoiding potential false negatives that would only worsen the situation.

Furthermore, a direct link between DCSs and national early warning systems can guarantee the dissemination of alerts and warnings greatly contributing to national and European public health efforts in this field.

⁵ [More Information on what Drug Checking Services include can be found in the TEDI-Guidelines](#)

⁶ [Locations of DCS in Europe](#)

THE ROLE OF DRUG CONSUMPTION ROOMS (DCRS) AND OTHER HARM REDUCTION INTERVENTIONS

For over three decades, Drug Consumption Rooms (DCRs) have been vital in overdose prevention and improving health outcomes for people who use drugs. DCRs offer insights into drug availability, potency, adulteration, and effects while promoting safer usage and responding to overdoses and health emergencies.

As front-line services, they're crucial in the early detection of new drug trends. Adapting harm reduction tools like DCSs within DCRs is key, especially for people in vulnerable situations, and it brings the advantage of the earliest possible detection of emerging trends. Furthermore, we are convinced that consistent implementation of DCS in DCR can achieve dose stabilisation for people who use drugs, which in turn opens the door to psychosocial stabilisation with the well-known benefits of treatment with opioid agonists such as methadone.

In addition to the establishment of collaborative networks and engagement of communities, there is a need to upscale the development and implementation of key responses ⁷ to provide people with timely and accurate information and other means to reduce individual risk as much as possible; these include early warning and monitoring systems, drug checking, drug consumption rooms, naloxone and/or opioid agonist treatment.

⁷ Some examples of key responses can be found in these links:

<https://so-prep-project.eu/publications/>

https://www.drugs.ie/synthetic_opioid_preparation/

TECHNICAL GUIDELINES

To reduce the risk presented by substances of concern, any pharmacologically active substances present in a submitted drug sample must be detected, even if they are present at low concentrations.

To achieve this goal, the TEDI network recommends the implementation of DCSs that meet minimum requirements outlined in international forensic toxicological guidelines. ^{8,9,10} When carrying out analysis of psychoactive substances for the purpose of Drug Checking, the following criteria must be met by the analytical approach:

1. Detection of all substances of pharmacological or toxicological relevance
2. Identification of detected substances
3. Quantitative determination of pharmacologically significant components
4. Detection of active ingredients in various matrices, such as dissolved in water or mixtures of multiple substances (active and inactive cutting agents or adulterants)
5. Adaptability of the analytical proceedings is crucial to react to constantly changing drug markets
6. Principles and considerations of "general unknown screening" or "systematic toxicological analysis" are necessary since DCS are often the first to detect novel substances
7. Analytical procedures and result interpretation must be conducted by appropriately qualified personnel
8. Results must be delivered in the context of brief interventions and/or counselling

However, these points must be carefully balanced against the need for timely delivery of the test result. A service that only delivers test results after 21 days will suffer poor engagement from people who use drugs. In turn, poor engagement leads to an inability to monitor the market and an inability to promote individual and societal changes. The TEDI network encourages that for a service to be considered as truly engaging in drug checking, it must implement a method capable of effectively segregating substances and accurately detecting them, even when present in concentrations below 1%.

To meet these analytical challenges, The TEDI network advises DCS to implement several techniques based on complementary physical principles in parallel. In general, a separative technique coupled with a selective and sensitive detection technique, GC/MS, LC/UV and LC/MS, for example, have proven to yield reliable results.

Thin Layer Chromatography (TLC) is a low-tech but highly effective separative method that allows the operator to detect the number of substances present in a mixture and in some cases, to identify those substances. While it is inferior to modern computer-assisted analytical methods it can be invaluable for services that do not have other options. TLC can act as an ideal complement to non-separative methods which are unsuitable for drug checking when used in isolation.

⁸ Best Practice Manuals and Forensic Guidelines | ENFSI.

⁹ The international Association of Forensic Toxicologists - TIAFT, Laboratory Guidelines

¹⁰ Richtlinien der GTFCh zur Qualitätssicherung bei forensisch-toxikologischen Untersuchungen

NON-SEPARATIVE TECHNIQUES

There are several other techniques that, when applied alone or without substance separation, might fail to meet the minimum requirements but, if combined, may be considered suitable for drug checking. For a recent overview of suitable combinations, see ENFSI (2020) ¹¹.

Services are encouraged to develop analytical protocols based on the deployment of diverse methodologies. While technology like Fourier-transform infrared spectroscopy (FTIR), near-infrared spectroscopy (NIR), and Raman spectroscopy may contribute crucial information, their sole use bears the risk of producing false negative results, especially in light of the current threat of highly potent synthetic opioids entering the market.

Where available, test strips can serve as an auxiliary method to indicate the presence of certain synthetic opioids. Test strips are a good example of a method that can be used as valuable Harm Reduction tools even on their own, but as they are extremely selective for certain substance groups they do not meet the 6 requirements above when deployed alone and would therefore not be suitable for a full DCS.

As described above, user confidence in drug checking services is of fundamental importance. High standards are absolutely essential to maintain the credibility of drug checking results and of services engaging with people who use drugs. Procedures that do not fulfil these standards could damage the trust DCS have gained over the years. In these situations, the increased speed or reduced cost of the procedure becomes a false economy as the ability of services to reduce harm is damaged.

COMPREHENSIVE ANALYSIS ON A LIMITED BUDGET

While potent compounds present a serious challenge for low-cost analytical equipment, universities and hospitals are typically already extremely well equipped for complex chemical and toxicological analysis.

Partnerships between harm reduction services and laboratories already operating can provide an invaluable route to accessing sophisticated analytical techniques and expertise without needing to purchase, staff and maintain additional sophisticated laboratories.

¹¹ European Network of Forensic Science Institutes. Best Practice Manual (BPM) for controlled drug analysis. Reference code DWG-CDA-001, 2020.

<https://enfsi.eu/wp-content/uploads/2017/06/BPM-Control-drug-Analysis-final-version.-21-02-2020.pdf> Accessed 2024.03.22

CONCLUSION

Drug markets can move quickly and unpredictably. At the moment the TEDI network has deep concerns that highly potent and pharmacologically diverse substances may enter the European drug market to an unknown extent.

Therefore, the maintenance, implementation, and expansion of various harm reduction interventions and their adaptation to the new challenges, is necessary to reduce the risk of a public health crisis.

By ensuring that a wide range of harm reduction interventions such as Drug Checking Services and Drug Consumption Rooms are available and accessible, we can ensure regular contact with people who use drugs, target harm reduction measures and strengthen market monitoring efforts by increasing the number of opportunities to obtain samples for analysis.

Establishing a drug checking service allows a region to detect and monitor emerging threats and engage with the population to reduce health risks. With many services operating currently in Europe, there are many exemplary models to follow, accounting for regional characteristics and budgets.

Unlike North America, Europe is not in a public health emergency, and we consider it our responsibility to do everything possible to prevent it. When drug checking services are operated, it is important to be fully aware of minimum technical requirements necessary to provide a valuable service - especially sufficiently low detection limits for highly potent substances - to maintain the health of people who use drugs to promote public health and prevent potential outbreaks and public health emergencies. It has to be noted that the demands on harm reduction services and the technical requirements listed in this document might require further updates if Europe does not succeed in averting a crisis.

For further information, please review the [TEDI Methodological guidelines](#) ¹² or contact the TEDI network. ¹³

¹² <https://www.tedinetwork.org/guidelines/> TEDI Network - 2023

¹³ <https://www.tedinetwork.org/contact/>