

New Trends in Illicit Drug Markets and Laboratories – a Forensic Aspect

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According to the latest World Drug Report of the United Nations Office on Drugs and Crime (UNODC) we can see a global rise in synthetic drug consumption worldwide, the same way in Europe, also affected by the war in the Ukraine. The same trends can be seen in the latest report of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA).

Criminals need to find new ways of smuggling and trafficking drug to the EU using new routes. Illicit laboratories are mostly found in the Netherlands and Belgium, but as the European market expands new laboratories are expected to rise in other EU countries, so in Hungary. Criminal and forensic experts must be prepared for these new challenges. Looking at the trends it is only a question of time the Hungarian authorities will have to face this kind of issues. A well-equipped and trained team of experts will be needed to investigate on the crime scene, secure evidence and dismantle this kind of illicit laboratories.

Latest development of the criminal activities and illicit laboratories special education and equipment required will be shown in my presentation according to the newest standards and “best practices” of other countries in the EU. A special system of entering and securing evidence as well as dismantling such a lab is essential.

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I. Health issues of substance use – background information²

Drug use by drug treatment: opioids in most of Europe and most regions of Asia, cocaine in Latin America, cannabis in parts of Africa, and methamphetamine in East and South-East Asia. However, opioids remain the leading cause of death from fatal overdoses.

Different drugs place different burdens on health and health systems. Most substance use disorders are related to marijuana and opioids, which are the drugs that cause most people to seek medical treatment. However, opioids remain the deadliest drugs. Of all countries ranking drugs that cause substance use disorders, the majority (46% of countries) ranked cannabis first, 31% ranked opioids first, especially heroin, and 31% ranked opioids first. Amphetamine-type stimulants, especially methamphetamine, were first reported in 13% of countries.

Each country's ranking is determined primarily by two factors: prevalence of use and potential for addiction. There are clear regional differences in the main drugs people report in drug treatment: in most of Europe and most subregions of Asia, opioids are the most common main drug people report in drug treatment, while in Latin America it is cocaine. Marijuana in Africa, methamphetamine in East and Southeast Asia. However, opioids remain the leading cause of fatal overdose deaths³.

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² Source: UNODC World Drug Report 2023 (<https://www.unodc.org/unodc/en/data-and-analysis/world-drug-report-2023.html>)

³ In 2019, opioids were responsible for nearly 70% of the 128,000 deaths caused by substance use disorders. Opioid use disorders also account for the majority (71% of the 18 million years of healthy life lost to premature death and disability in 2019). Source: UNODC World Drug Report

Based on the latest data⁴ from the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), available at the end of 2022, an analysis of the supply indicators for illicit drugs commonly used in the European Union shows that all types of substances remain widely available, often with high potency or purity. These include new or novel substances, the health risks of which may be limited both in terms of consumer awareness and scientific knowledge. Substances may also vary in availability, form, and consumption patterns on the market.

Taken together, these developments increase the risk that the overall use of banned substances may increase and that the risks associated with certain substances may increase. Of particular concern is that people who use drugs are at greater risk of adverse health consequences, including poisonings or deaths, because they may unknowingly be consuming more potent or novel substances.

The globalisation of operational methods used by organised crime groups appears to be a major factor in the high availability of drugs in Europe. There is evidence that European drug producers and traffickers are becoming more closely intertwined with international criminal networks, leading to a more flexible flow of illicit drugs into and out of the European Union. South America, West and South Asia and various countries in North Africa remain important source countries for illicit drugs entering Europe, while China and India remain important source countries for new psychoactive substances, with India's role likely to become increasingly important for certain substances. It is also reported that drug precursors and related chemicals often originate from China.

II. Actual trends in illicit trafficking and laboratories

Large quantities of drugs in intermodal containers have continued to be seized over the past few years, suggesting that this form of trafficking has not been seriously disrupted during the pandemic and that EU ports and airports may continue to be an important source of supply⁵.

There are signs that the market has largely adapted to the disruption caused by the measures introduced during the pandemic, which are likely to stem from the current war in Ukraine. There is a general concern that drug trafficking operations are increasingly using the legal trade infrastructure involved in global trade, with documented attempts to infiltrate supply chains and to involve key personnel through intimidation or corrupt practices. This is reflected in the increasing importance law enforcement agencies are placing on countering this kind of threat.

In general, and particularly in countries from which large quantities of drugs enter Europe, and in European countries where production takes place, there is a growing recognition among policy makers and the public that tackling violence and corruption associated with drug market operations is an increasingly important issue.

A total of 434 illicit synthetic drug laboratories, including some large-scale facilities, have been dismantled in the EU in 2021. The review of these production sites has highlighted not only the significant synthetic drug production capacity in Europe, but also the increasing diversification of the production processes used for certain drugs.

⁴ Source: EMCDDA: European Drug Report 2023 (based on data available by the end of 2022) https://www.emcdda.europa.eu/publications/european-drug-report/2023/drug-situation-in-europe-up-to-2023_en

⁵ Source: Serious and Organised Crime Threat Assessment Report (Socta-report 2021) https://www.europol.europa.eu/cms/sites/default/files/documents/socta2021_1.pdf

In 2021, compared to 2020, the number of laboratories for the production of cocaine and methamphetamine increased, remained stable for amphetamine, while there was a slight decrease in the number of sites for the production of synthetic cathinones.

The scale and complexity of illicit drug production in Europe continues to grow and Europe remains a production region for cannabis and synthetic drugs; cannabis is generally produced for consumption in Europe, while synthetic drugs are also produced for markets outside the EU⁶.

Detection of MDMA sites also fell by a quarter, possibly reflecting a shift towards the production of other synthetic substances. However, these figures should be interpreted with caution, both because of the potential impact of the pandemic on police action and reporting, and because the relative effectiveness of law enforcement in detecting production sites may be affected by a number of factors. However, the detection of separate facilities for the production, extraction, cutting and packaging of cocaine suggests that cocaine production is now well established in Europe and that more innovative methods are being used to facilitate smuggling.

Innovation in production processes is also demonstrated by the recent seizure of some chemicals that can be used to manufacture precursor chemicals for amphetamine, methamphetamine and MDMA, thus circumventing the regulations put in place to reduce the availability of these drugs. There are also examples of chemically disguised synthetic cathinone derivatives being marketed, which are then transformed into cathinones suitable for sale as drugs in the European Union.

Although they are not common, combined laboratories or multi-drug production sites have continued to be detected between 2017 and 2020. These usually involve the production of several different stimulant drugs, such as amphetamine or MDMA in combination with methamphetamine, on the same site. Interestingly, in 2021, several EU Member States reported the dismantling of methamphetamine production sites and the seizure of precursors for their production, increasing the availability of the drug in a growing number of countries. It should be noted that methamphetamine is often produced for export to lucrative markets outside the EU. The increase in laboratory detections and precursor seizures suggests that Poland is likely to be an important location for the production of synthetic cathinone in Europe. The extent to which this production is directed towards European markets or for export to countries outside Europe remains unclear.

The use of a broader range of chemicals, both new substances and the use of known drugs in various synthesis processes, poses complex challenges for customs, law enforcement and regulation. Illicit synthetic drug production within the European Union for export and local markets continues to pose a risk to public health, both in terms of people consuming potentially dangerous substances and the local environmental damage caused by their production. As key logistics supply chains are key targets for infiltration by organised criminal groups, attempts to bribe workers and officials are an increasingly important component of the negative impact of illicit drug markets on communities through associated violence and corrupt practices⁷.

⁶ Source: EMCDDA Papers: Drug precursor developments in the European Union https://www.emcdda.europa.eu/publications/emcdda-papers/drug-precursor-developments-eu_en

⁷ Interpretation of drug seizure trends is complicated by the fact that they are influenced by police and law enforcement strategies and priorities, the success or failure of drug trafficking groups to avoid detection, and any underlying changes in availability and use. In the European Union, around 1 million seizures were reported in 2021, of which cannabis products were the most commonly seized, accounting for three quarters of all seizures.

In terms of numbers, fewer cannabis resin (-37%), plant cannabis (-6%), cocaine (-3%), amphetamine (-18%) and heroin (-40%) seizures were made in 2021 than in 2011. This may reflect changes in police practice rather than changes in consumption patterns or availability of drugs. The largest increases in seizures between 2011 and 2021 were observed for methamphetamine (+121%) and MDMA (+42%). (Source: EMCDDA European Drug Report 2023)

III. Latest trends in drug-related crime

Overall, the indexed trends show that the total amount of drugs seized in the European Union increased between 2011 and 2021, particularly over the last 5 years, although there has been some fluctuation in the amount of amphetamine and methamphetamine seized over the last 3 years⁸.

According to the latest data⁹, Captagon¹⁰ tablets destined mainly for Arab countries are produced in the Netherlands, where they are manufactured on a case-by-case basis with existing equipment. According to the Dutch police, one or two large Captagon production sites and pill manufacturing plants are found in the Netherlands each year. In three cases, in 2018, 2019 and 2020, these sites were linked to amphetamine production and tableting operations.

It is believed that the production of captagon tablets is not a common activity of synthetic drug producers in the Netherlands, but rather an opportunistic money-making opportunity when there is a specific order or demand. In 2019, in the largest case reported by the Netherlands, an estimated 3 million captagon tablets (534 kilograms) were found hidden in a concrete counterweight designed for heavy machinery such as cranes or excavators. Then, in 2021, a large shipment of around 2 million captagon tablets was found packed in sealed Quaker brand tins of oatmeal. The labels on the cans had Arabic text, so it is assumed that they were destined for Arabic-speaking countries, possibly the Arabian Peninsula. Also in 2021, an amphetamine production site in the Netherlands was dismantled; 63 kilograms of amphetamine and 37 kilograms of caffeine were found, as well as pill punches used to make captagon tablets. Although no pill-punching machines or captagon tablets were found at the site, the combination of amphetamine, caffeine and equipment indicated that they were intended to produce captagon tablets. In the Dutch cases, it was observed that the suspects were often linked to Middle Eastern countries, either by nationality or birth.

IV. Joint training on the dismantling of illicit drugs laboratories

Europol and Cepol have developed and regularly organise joint theoretical and practical training on the dismantling of illicit drugs laboratories for criminal investigators and technicians, in English. The aim of the training is to present special police activities, criminal investigations and good practices related to various procedures, enhancing the professional cooperation of the different

⁸ Key data and trends: between 2011 and 2021, the biggest increases were for cocaine (+416%), herbal cannabis (+260%), methamphetamine (+135%), heroin (+126%), MDMA (+123%), cannabis resin (+77%) and amphetamine (+42%). There are significant consumer markets for these drugs in Europe, but it is likely that the increase in seizures reflects, at least in part, the greater role of Europe as a production, export and transit destination for these drugs. (Source: EMCDDA European Drug Report 2023)

⁹ Source: EMCDDA Captagon Report (2023.09.24.) https://www.emcdda.europa.eu/publications/technical-reports/captagon-trafficking-and-role-europe_en

¹⁰ “Captagon® was the brand name of a psychoactive medicine produced in the 1960s by the German company Degussa Pharma Gruppe. It was sold as round, whitish tablets embossed with a characteristic logo comprising two half-moons. It was prescribed mainly as a treatment for attention deficit disorder and narcolepsy, and as a central nervous system stimulant. Its two main markets were Europe and the Middle East. Captagon® tablets contained 50 milligrams of fenetylline, a synthetic drug of the phenethylamine chemical family to which amphetamine also belongs. Fenetylline is synthesised from amphetamine and theophylline, a natural alkaloid, bronchodilator and mild stimulant from the same family as caffeine. ... Virtually all the contemporary information available suggests that the tablets seized on illicit drug markets in recent years are not diverted Captagon® tablets containing fenetylline, but clandestinely manufactured tablets containing amphetamine that are embossed with a logo similar to the original medicine” (Source: EMCDDA Captagon Report)

response forces between European countries, increasing knowledge on proactive security and action to avoid potential emergencies and to deal with them in the most appropriate way.

Participants have the opportunity to exchange and discuss solutions, good practices and experiences from other Member States. It will provide specific training for participants to improve the coordination and management of operations based on CEPOL and Europol standards and to help dismantle illegal drug laboratories, using personal protective equipment in practice.

I have personal experience of the training, which I had the opportunity to attend this year, and it was a success in terms of international criminal cooperation, it achieved its purpose, as the colleagues in the groups exchanged professional experience and trained each other during the exercises. This gave the opportunity to think together, to solve the problems encountered, to build teams, to study new trends in international and national knowledge in use, to talk informally with colleagues from different Member States and different fields of work, to get to know each other's activities. The training also has an added value through the personal and professional contacts built up.

V. Dismantling drug laboratories in practice¹¹

The training was very useful and practical, with the theoretical basics being taught online in e-learning format, but the emphasis was on practical training. It focuses on the production of synthetic drugs, process description and detailed substance information. During the exercise, attention was drawn to the dangers of detecting and dismantling cannabis cultivations and synthetic labs. When entering a laboratory or its associated warehouses, the most important aspects are avoiding personal injury, protecting oneself and others, and using personal protective equipment.

Experience shows that laboratories are very often guarded by armed criminals. Raiding units are at risk of being attacked by criminals. In Western countries, laboratories are equipped with booby-traps, dogs, locked doors protected by high-voltage electricity, remote-controlled explosive devices and video cameras.

Only enter the laboratory or site after measuring the gases escaping or leaking with a gas detector. When first entering, a gas mask must be worn and ventilation and adequate air flow must be ensured by opening and propping open windows and doors.

When handling chemicals or taking samples, members of law enforcement agencies may be exposed to a number of dangerous situations due to the nature of the chemicals. Dust and gaseous substances, solvent vapours, which may be carried in an illegal laboratory, can pose an additional hazard. The involvement of a chemical expert is always necessary in such sites, particularly in view of the reaction taking place and the chemicals involved. The expert's opinion should also be taken in consideration in case other chemicals stored on the premises, including the packaging, taking samples, as the chemicals stored may react with each other, which may also pose a hazard.

For example - officials can inhale high doses of toxic fumes if they are not protected by a gas mask or face mask. If their skin comes into contact with some of these chemicals, it can cause burns. Inhaling the vapours of some chemicals or getting chemicals on your skin can cause cancer. Spills of various chemicals during sampling can lead to the release of toxic or explosive gases.

At the same time, adequate escape routes should be provided. By moving any obstacles that may have been deliberately or inadvertently placed in the escape route.

In view of the above trends, it can be said that all EU countries are involved to some extent, but only to varying degrees at present. However, we need to be prepared for the possibility of such a

¹¹ Based on the information of Cepol and Europol training program

situation when we encounter a major drug laboratory or large quantities of drug precursors in our country, posing an unprecedented challenge to our technical and forensic colleagues.

VI. References

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