EUDA
EUROPEAN UNION DRUGS AGENCY

EMPACT

Ketamine in Europe

EMPACT situation report

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Contents

About this report

This report was prepared within the framework of Operational Action 1.5 of the 2024/2025 EMPACT Synthetic Drugs and New Psychoactive Substances action plan, entitled 'Intelligence picture on the trafficking of ketamine in the EU.' The action was led by Belgium and co-led by Germany and the European Union Drugs Agency (EUDA). It was initiated in response to concerns raised by several Member States regarding indications that ketamine may represent an emerging drug-related issue in Europe.

Increasing challenges related to the availability, supply, non-medical use and associated risks of ketamine have been observed at the global and EU levels. As ketamine is listed by the World Health Organization as an essential medicine and is not subject to international control, systematic reporting is not required in most jurisdictions, creating monitoring blind spots. Within this context, the operational action focused on supporting situational awareness, early identification of potential security risks and, where appropriate, suggesting possible ways forward.

This report is based on information contributions from 32 countries. Respondents included Member States (Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden) as well as other EMPACT participants from non-EU countries (Norway, Moldova, North Macedonia, New Zealand and the United Kingdom). These data were supplemented by insights shared during an expert meeting held in Lisbon in January 2025. Additional background information was drawn from EUDA monitoring activities. Information on prescription trends for ketamine in the Europe was provided by the European Medicines Agency (EMA) through a tailored DARWIN study (Study Report P3-C1-017).

The final situation report was consolidated at a co-production workshop held in Lisbon in January 2026, attended by representatives from Belgium, Germany, the Netherlands and the United Kingdom and chaired by the EUDA.

Funding

An expert meeting was held in Lisbon on 28 and 29 January 2025 at the premises of the Portuguese Judicial Police (Polícia Judiciária). A co-production workshop was held at the premises of the EUDA on 27 and 28 January 2026. Both meetings were funded by the European Commission under EMPACT (European Multidisciplinary Platform Against Criminal

Threats). EMPACT is a security initiative driven by Member States to identify, prioritise and address threats posed by organised and serious international crime.

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Key findings

1. The growth of the illicit ketamine market in the EU is reflected in rising imports in recent years, despite apparently stable medical and veterinary demand

Despite some limitations, the available evidence from the European Medicines Agency indicates that legitimate medical and veterinary demand for ketamine in the EU / European Economic Area has remained low and largely stable over the past decade, with no fluctuations that could plausibly justify the sharp increase in imports and seizures observed in recent years. There is a major knowledge gap around manufacturing (locations, volumes) and the volumes traded, as the supply chain is somewhat opaque in terms of reporting obligations. This limits the ability to establish a reliable benchmark for expected legitimate ketamine needs in the EU (i.e. whether imports reported by individual EU Member States exceed what would be anticipated from stable medical and veterinary demand). Regardless, indications suggest that the current patterns of imports are inconsistent with a purely demand-driven market and instead point to structural vulnerabilities in the legal supply chain.

2. Non-medical ketamine use remains low in the general population, but associated harms are rising in subpopulations and may be disproportionately high

The overall population prevalence of non-medical use of ketamine remains low, concentrated in specific populations, particularly those in nightlife and recreational settings, and often associated with polydrug use. In some areas, particularly in the United Kingdom, the use of ketamine among very young people is emerging as a serious health risk. Available indicators probably underestimate the true extent of ketamine-related harms. Nonetheless, treatment demand is clearly rising, and chronic urological and psychological harms are increasingly reported. In some countries, this has led to the establishment of specialised clinics to handle urologic complications associated with ketamine use, including severe ulcerative cystitis and long-term bladder dysfunction in chronic users.

3. Diversion from the legal supply chain is the primary source of illicit ketamine for onward smuggling and distribution by organised crime groups

Clandestine production of ketamine in Europe is very limited, with illicit production sites largely confined to crystallisation rather than synthesis from precursors. The illicit market is predominantly supplied through diversion from legitimate imports, while thefts play a minor role. According to the data available, large-scale importation of ketamine active pharmaceutical ingredient from India to Germany appears to be the main source of ketamine entering the EU for onward distribution to licit and illicit markets.

While it is clear that criminal networks have infiltrated legitimate supply chains to facilitate diversion, significant intelligence gaps remain. In particular, it is unclear whether those networks operate through quasi-legitimate pharmaceutical or front companies to source ketamine from wholesalers, or whether diversion occurs primarily due to inconsistent controls over downstream distribution within the EU.

4. Fragmented regulatory frameworks facilitate exploitation by illicit distribution networks

Ketamine is not under international control and is not evenly regulated across Member States. National approaches range from drug law scheduling to medicines-only or NPS legislation. This fragmentation creates law enforcement and judicial gaps, enables cross-border exploitation and complicates judicial cooperation, with trafficking cases sometimes pursued under medicines or economic crime legislation rather than drug laws.

5. Seizure data indicate an expanding illicit market

The number of ketamine seizures and the quantities intercepted across Member States have increased sharply over the last few years, reaching at least 3.5 tonnes in 2024 (and likely to be higher, given data uncertainties). Available data do not allow for a systematic distinction between seizures made at the external borders of the EU and those occurring within it.

High-volume seizures are concentrated in a small number of countries. Germany, as a major legitimate importer of ketamine, is likely to play an important role in initial distribution within Europe. The Netherlands emerges as a key primary distribution hub, reflected in high seizure volumes and low (and declining) wholesale prices, indicating increased availability. The United Kingdom also reports high import volumes, declining prices, and increased availability and consumption, despite increased seizures, alongside evidence of onward redistribution to non-European markets. Available information suggests that a significant share of illicit ketamine circulating in the EU and the United Kingdom is redistributed to markets outside Europe (e.g. Australia, Canada, New Zealand, the United States and some countries in Asia).

6. Ketamine trafficking is embedded in transnational and multi-drug criminal networks

Ketamine trafficking operates across international supply chains, using diversified routes, intermediate transit countries, postal and courier services (on a ‘little and often’ basis), and concealment within legitimate freight for larger bulk loads. Criminal networks exploit the low cost and high profit margins of ketamine, which appear to be contributing to rising imports and consumption. Distribution is facilitated through existing drug trafficking infrastructures and access to overlapping consumer populations, particularly within established markets for cocaine and synthetic drugs. Evidence shows that ketamine is trafficked with these drugs,

involving criminal networks with diverse national profiles. Digital marketplaces, encrypted communications and cryptocurrencies also facilitate distribution.

7. Knowledge gaps persist across health and security domains, adversely affecting understanding of the legitimate and illicit ketamine markets

Significant data gaps remain on legitimate ketamine manufacturing in the EU, import and re-export volumes, diversion pathways, enantiomeric profiling, and the scale of private or off-label therapeutic use. Information is fragmented across countries, and reporting systems, significantly limiting the development of a timely and coherent intelligence picture and responses.

Recommendations

1. Improve systematic information flow between law enforcement authorities, health ministries and medicines regulators

Establish formal, structured and sustained cooperation mechanisms between medicines regulators (human and veterinary), public health authorities and law enforcement (including customs) at the national and EU levels, for example through formal, permanent inter-agency task forces. Systematic information sharing should focus on identifying and addressing vulnerabilities within legitimate supply chains. Such mechanisms may also prove useful in addressing future threats emerging from other psychoactive medicines markets.

Enhanced alignment of regulatory obligations and oversight practices across EU Member States, even in the absence of full legal harmonisation, could contribute to reducing inconsistencies that can be exploited for diversion, while preserving legitimate medical access.

2. Comprehensively map the ketamine supply chain

Develop a coordinated national and EU-wide mapping of ketamine supply chains, covering manufacturing, import, intra-EU movement, legitimate use and re-export, and identify the critical control points. This should include a clear allocation of responsibilities among national authorities and a comparative overview of regulatory and enforcement frameworks across Member States and neighbouring countries.

3. Improve and harmonise data collection and reporting

Promote the systematic reporting of all ketamine seizures (understood as seizures by any competent authority such as the police, customs or border control) through a common national and EU reporting channel, regardless of national legal classification.

Acknowledging the fact that differences in legal frameworks, institutional responsibilities and data systems may limit coverage in some places, Member States could promote consistent reporting within clearly defined national scopes. Harmonised data on imports, seizures, purity, prices, harms and treatment demand are essential to close monitoring gaps and support timely responses.

4. Engage proactively with manufacturers and source countries

Promote structured engagement with pharmaceutical manufacturers, including public–private partnerships, to improve transparency on production volumes, distribution models and product characteristics. Engagement should also extend to wholesale buyers and their national competent authorities, to improve the transparency of purchasing volumes and downstream distribution within Europe, where legitimate and illicit procurement may intersect. Cooperation with key source countries should be coordinated at the EU level to avoid fragmented bilateral approaches and to reinforce regulatory oversight.

5. Increase the priority of ketamine in law enforcement and criminal intelligence operations

Given its increasing availability and associated harms, ketamine should be more consistently prioritised within law enforcement and criminal intelligence operations, even in jurisdictions where it is not classified as an illicit drug. Enhanced intelligence sharing on ketamine trafficking could result in better mapping of the criminal networks, routes and logistics involved and support the early detection of market displacement effects linked to intensified enforcement.

6. Reinforce prevention, clinical awareness and harm monitoring

Increase targeted prevention and risk communication efforts aimed at young people, students and nightlife-exposed populations. Increase clinical awareness of ketamine-related harms and risk minimisation measures, particularly regarding urological damage, and improve national data collection on serious adverse events, associated morbidity, treatment demand, treatment options and long-term outcomes.

7. Enhance forensic and analytical capacity

Support the development of advanced forensic profiling techniques, including enantiomeric determination and batch analysis, to identify and better differentiate between diverted pharmaceutical products and products from other sources, to strengthen intelligence on trafficking routes and to better map supply networks.

8. Anticipate displacement and secondary effects

Assess the potential unintended consequences of supply-side interventions, including displacement towards other substances or criminal activities (e.g. clandestine ketamine production) or alternative sources of ketamine supply (e.g. the Golden Triangle production zone). Ketamine should be systematically integrated into broader organised crime and drug

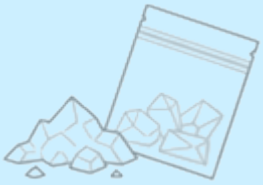
market analyses under European Multidisciplinary Platform against Criminal Threats (EMPACT) priorities, regardless of its legal status in individual Member States.

Background

Ketamine ('K', 'ket', 'keta' or 'special K') is a synthetic substance with a long-established role in human and veterinary medicine as an anaesthetic and analgesic. Developed in the 1960s as a safer alternative to phencyclidine (PCP), ketamine quickly found a use in emergency medicine, trauma care and field settings requiring rapid-acting, reliable anaesthesia. Given its reliability, affordability and chemical stability, it was included in the World Health Organization (WHO) model list of essential medicines, including the list for children (WHO, 2021a, 2021b). It is also indispensable in veterinary practice. Beyond its established anaesthetic profile, ketamine has gained renewed clinical attention over the past decade due to its rapid-acting antidepressant effects. Low-dose ketamine and, more recently, its *S*-enantiomer esketamine have been introduced in controlled therapeutic settings for the treatment of major depressive disorder, particularly in patients unresponsive to conventional therapies. While these developments have expanded legitimate medical interest and prescription pathways within EU health systems, they have also increased the visibility of ketamine across regulatory, pharmaceutical and supply chain infrastructure.

In parallel with its expanding potential in clinical settings, in the last decade, ketamine has become increasingly noted as a substance of interest within illicit drug markets. Its dissociative and hallucinogenic effects, its relatively low cost per dose and the perception among users that it carries a lower acute risk than some other illicit drugs may have contributed to its growing popularity, but supply-side dynamics may also be driving the market.

Crucially, an expanded ketamine consumer base across the EU is not without substantial harms. Ketamine is well known to be associated with a range of acute and chronic health harms, including intoxication, accidents and injuries linked to dissociation, impaired motor control and altered perception. Of particular concern for health systems are severe and often irreversible urological complications, most notably ketamine-induced cystitis, chronic bladder dysfunction and kidney damage. These conditions can lead to lifelong morbidity, repeated surgical interventions and sustained healthcare costs. Despite increasing clinical signals, such harms remain under-diagnosed and under-reported in many EU Member States, raising the risk of delayed treatment and avoidable long-term disabilities (Chan et al., 2022).

An essential medicine	An illicit commodity
• Pharmaceutical ingredient shipments and the exploitation of regulatory gaps An anaesthetic and analgesic in emergency and trauma care; affordable and stable. New uses in the treatment of depression • On the WHO essential medicines list • Not subject to international/UN control to prevent medical shortages in low-income settings • Supplied through pharmaceutical (regulated) markets	• A dissociative drug used non-medically in recreational settings; relatively cheap and increasingly accessible • Monitored as a new psychoactive substance at the EU level • Serious health harms associated with urological complications • Supplied through the diversion of active pharmaceutical ingredient shipments and the exploitation of regulatory gaps
	

In Europe, the scarcity of ketamine supply for the illicit market seems to have been a factor in limiting its non-medical use during the mid 1990s, despite media and moral panics suggesting otherwise (Dalgarno and Shewan, 1996). At present, based on the increase in seizures of ketamine in the EU and increasing signals of its non-medical use, this situation appears to have shifted, with ketamine now more widely available in the EU. A significant part of that availability seems to be driven by large imports of legally declared ketamine into the EU, particularly through certain Member States.

Despite persistent data gaps, the available evidence indicates that the legitimate European ketamine supply chain remains relatively stable and limited in scale. There is no indication of major fluctuations in medical or veterinary demand over the past decade that would justify a sudden or sustained increase in imports. Current indications suggest that legitimate medical and veterinary ketamine requirements in the EU / European Economic Area (EEA) remain relatively low, but the absence of comprehensive and harmonised reporting makes it difficult to determine an accurate baseline for expected licit demand. This uncertainty limits the ability to assess whether recent import volumes are proportionate to legitimate needs. Nevertheless, the scale and trajectory of importation patterns observed in recent years appear difficult to reconcile with the quantities required for documented medical and veterinary demand alone.

Taken together, these dynamics point to structural vulnerabilities in the European ketamine supply chain. Large legally declared imports combined with uneven national controls and gaps in reporting create conditions in which diversion can occur at scale and unnoticed. This creates a significant policy and operational challenge, as efforts to preserve legitimate medical availability and trade must be balanced against the need to reinforce oversight of supply chains that are increasingly vulnerable to exploitation. This report aims to strengthen the evidence base required to inform such measures.

The legitimate ketamine market

Despite significant data gaps, the available information indicates that the legitimate European ketamine supply chain remains stable and relatively limited in scale, with no major fluctuations over the past decade that would justify a sudden increase in imports. While some indicative assessments exist, the absence of comprehensive and harmonised reporting across countries prevents the establishment of a reliable estimate of legitimate annual requirements for the EEA.

Ketamine occurs as two enantiomers ([1]): *S*-ketamine ('esketamine') and *R*-ketamine ('arketamine'). In medicine, most long-established medicinal ketamine products are racemic formulations, containing a 50:50 mixture of both enantiomers (*R*- and *S*-). Within the EU, these products are authorised medicines for anaesthesia and procedural sedation, and they are used primarily in hospital settings and veterinary practice. They are typically administered as ketamine hydrochloride in solution for intravenous or intramuscular injection or infusion (products marketed under names such as Ketalar).

In clinical practice, racemic ketamine may also be used at sub-anaesthetic doses for pain management, including trauma-related and post-operative pain. Such uses are often off-label or based on established local or national clinical practice rather than EU-wide authorised indications.

From a regulatory perspective, racemic ketamine products are not centrally authorised by the European Medicines Agency (EMA). Instead, they are approved through national or mutual recognition procedures. Consequently, regulatory status, product availability, and manufacturers vary by Member State and there is no single EU-wide product authorisation dossier. According to the EMA, as of August 2024, at least three EEA jurisdictions ([2]) have reported nationally authorised medicinal products and manufacturers for racemic ketamine products.

In contrast to racemic ketamine, esketamine has received a central EU authorisation for psychiatric indications. Recent research has shown that the substance, when administered

([1]) Enantiomers are different 3D arrangements of the same atoms. They are often described as two versions of the same molecule that look exactly alike but are mirror images of each other. Given their different 3D arrangements, enantiomers 'fit' differently in receptors (targets) in the brain and body; this can result in them displaying different potency, effects, medical uses and, ultimately, risk profiles.

([2]) Austria, Portugal and the United Kingdom (Northern Ireland).

as a nasal spray and particularly when in combination with a selective serotonin reuptake inhibitor (SSRI) or selective norepinephrine reuptake inhibitor (SNRI), can relieve symptoms of treatment-resistant depression. The centrally authorised product is marketed in the EU under the name Spravato ([3]).

Given its centrally authorised status, esketamine has a broader and more harmonised authorisation footprint across the EU/EEA than racemic ketamine. Nationally authorised esketamine products and approved manufacturers are present in at least 16 EEA countries, including both EU and non-EU jurisdictions ([4]).

Clinics offering off-label (racemic) ketamine treatments associated with psychotherapy (often referred to as 'ketamine-assisted psychotherapy' and 'ketamine clinics') have been reported in Europe and other regions; many of which are private/commercial (Dart et al., 2024). In the EU, these services appear to generally operate within medical (or quasi-medical) settings, but there is currently not a publicly available mapping of how many of these exist and where they operate. In addition, some forms of ketamine therapy may be administered in unlicensed psychedelic practices or retreat settings. However, a recent EUDA mapping exercise of such practices suggests that ketamine is far less commonly administered in these settings than ayahuasca or psilocybin. Where ketamine is mentioned, it only appears occasionally in small, semi-structured or unstructured sessions (EUDA, unpublished).

Beyond its use in human medicine, racemic ketamine is a cornerstone of veterinary anaesthesia across a wide range of species, including domestic animals and wildlife, and remains one of the few injectable anaesthetics that is both well established and broadly safe in veterinary practice (FVE, 2015).

Overall, the (racemic) ketamine market is significant and commercialised far beyond traditional anaesthetic use, as an active pharmaceutical ingredient (API). Globally, its market size was valued at USD 213.2 million in 2025 and projected to grow to USD 354.8 million by 2032 ([5]) (66 % total growth over the forecast period) (24ChemicalResearch, 2025).

Notwithstanding the established regulatory pathways for authorised ketamine products, important knowledge gaps remain regarding the manufacturing landscape in the EU, including the extent to which production involves finished product formulation versus active substance synthesis.

([3]) https://www.ema.europa.eu/en/documents/product-information/spravato-epar-product-information_en.pdf.

([4]) Austria, Belgium, Croatia, Estonia, Finland, France, Germany, Iceland, Ireland, Latvia, Liechtenstein, the Netherlands, Norway, Slovenia, Sweden and the United Kingdom (Northern Ireland).

([5]) Using the average annual exchange rate, that means it was valued at EUR 180.4 million in 2025 and projected to grow to EUR 326.4 million by 2032.

Ketamine (racemic)	Esketamine (Spravato)
• Typically in injectable solutions • Contains *S*-ketamine and *R*-ketamine as hydrochloride salts (ketamine hydrochloride) • Uses: anaesthetic and analgesic (paediatric, human, veterinary) • Status in EU: nationally authorised 	• Typically in nasal sprays • Contains *S*-ketamine only • Use: treatment of depression • Status in EU: centrally authorised (stricter control) 
Settings: hospital use, primary care, veterinary care, psychiatric clinics (private and public), unlicensed psychedelic practices or retreats.	**Settings:** primary care, psychiatric clinics (private and public), self-administered (take-home product).

Legitimate ketamine needs in the EU

According to an EMA targeted study commissioned for the purposes of this report ([6]), legitimate use of ketamine in hospital (under prescription) in the EU and the United Kingdom has remained consistently low throughout 2014–2023, with no major fluctuations in demand over the past decade that could plausibly justify an increase in ketamine imports for patient care in the region. This suggests that any increase in larger imports of ketamine into Europe is not driven by legitimate medical use.

According to the study, medical exposure to racemic ketamine is predominantly confined to hospital settings, with primary care incidence staying below 1 per 1 000 person-years ([7]). Hospital-based prescribing shows only a modest increase after 2021. Esketamine use is

([6]) Data Analysis and Real World Interrogation Network study DARWIN EU® P3-C1-017: Prescription trends of ketamine and esketamine. This population-level cohort study provides the first EU-wide, multi-country baseline describing legitimate medical use of ketamine and esketamine across six major healthcare data sources (Denmark, Finland, France, Germany, Spain and the United Kingdom) from 2014 to 2023.

([7]) 'Person-years' denotes the number of people and the length of time for which they are observed, calculated as the sum of individual follow-up periods across the study population.

similarly relatively rare, with a notable but controlled and guideline-driven rise in Finland, rather than across the EU as a whole. No anomalies, outlier geographies or diversion-prone prescribing patterns emerge when comparing the data from different sources.

To provide a baseline against which to interpret the apparent rising availability of ketamine in the EU, the EUDA requested information from the EMA regarding the legitimate amounts of ketamine that may be imported annually into Member States. This included clarification on EU-wide and national legitimate requirements (i.e. quantities needed to ensure adequate medical, veterinary, scientific, research and industrial supply) and data on national sales volumes and prescription numbers, including any recent trends that could help determine if increasing medical demand could explain the increase in ketamine imports observed at EU borders.

In terms of legitimate medical requirements, there appears to be no EU-wide quota or standard cap governing ketamine imports. Instead, legitimate supply is met through licensed imports, domestic manufacturing, and sales, reflecting medical demand across both human and veterinary sectors and, in some Member States, strategic stockpiling policies. Several authorities explicitly note that no import limits apply.

A harmonised review of the information submitted by Member States to the EMA did not allow for the development of a reliable estimate of legitimate annual ketamine import needs. Despite efforts to interpret the available data, gaps and inconsistencies in reporting mean that no robust quantitative assessment can be established at this stage. The absence of comprehensive information on authorised manufacturing volumes, import ceilings and intra-EU trade flows prevents a precise quantification of expected legitimate needs.

As a result, while available evidence indicates that medical and veterinary demand has remained low and stable over the past decade, there is no robust reference point against which recent import volumes can be systematically assessed. This lack of a clear baseline further complicates efforts to determine the extent to which current import patterns reflect legitimate demand or structural vulnerabilities within the legal supply chain.

The illicit ketamine market: non-medical use in the EU and its associated risks

Non-medical ketamine use in Europe remains low at the population level but is becoming established within certain youth and nightlife settings, where emerging evidence of health and social harms indicates that its impact, while still localised, is gaining significance and warrants targeted public health responses.

Alongside its legitimate medical applications, ketamine has an established history of non-medical use in Europe, where it has typically been a niche substance shaped by limited availability and specific contexts. Although overall prevalence in the EU remains low, recent evidence points to a gradual consolidation of non-medical use within particular groups, especially young adults and those active in nightlife and party environments.

In some countries, particularly in the United Kingdom, use is increasingly visible among younger age groups, including school-aged children (approximately 11–16 years) and adolescents under 18, where patterns of frequent or intensive consumption and polydrug use heighten vulnerability to adverse outcomes. In these settings, ketamine may be misperceived as a cheaper and ‘safer’ alternative to other stimulants, or alcohol.

Epidemiological monitoring of people seeking treatment for ketamine addiction, ketamine-related emergencies and local intelligence suggests that the significance of ketamine-related harms is increasing in parts of Europe. Growing evidence of severe urological, psychological and social harms indicates that, despite being a substance with limited overall reach, substantial local and regional burdens can occur. Experience from city- and regional-level responses, particularly in the United Kingdom, shows that harms can escalate rapidly within defined environments, with delayed help seeking among adolescents and growing social vulnerabilities linked to unsafe consumption settings, exploitation and low awareness of the risks of chronic use.

Taken together, these developments raise concerns that non-medical ketamine use, while still niche in epidemiological terms, may represent a disproportionate and emerging risk within certain populations and contexts, with implications for public health responses, prevention strategies and cross-sector coordination at the EU level.

Prevalence and patterns of use

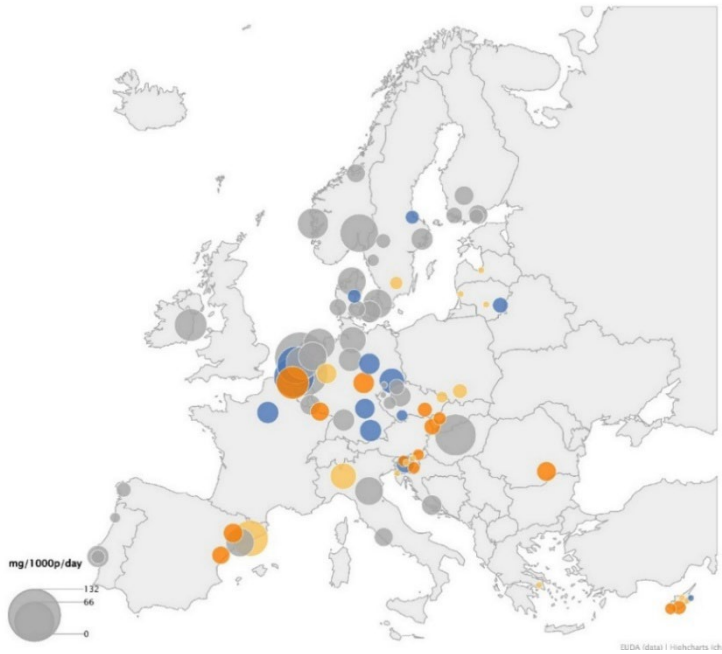
Non-medical use of ketamine has a relatively long history but has remained unevenly distributed across time, regions and user groups. Early use, from the 1960s to the mid 1980s, was largely confined to small groups with access to pharmaceutical preparations. From the late 1980s onwards, ketamine became more visible in international club and dance cultures, and in Europe the earliest reports of non-medical use date to the mid 1990s, notably in Spain (Ibiza) and the United Kingdom. During this period, use remained limited, probably reflecting constrained availability despite periodic media attention (Dalgarno and Shewan, 1996; Jansen, 2000). In contrast to developments in parts of Asia from the mid 2000s onwards, where ketamine use expanded more rapidly, non-medical use in Europe has remained comparatively low (UNODC, 2022). Recent epidemiological data, while limited, indicate some change in this situation.

In Europe, general population surveys continue to show low prevalence overall, with last-year use among young adults (aged 16–24) typically below 1 % in several countries and reaching slightly over 3 % in the Netherlands (EUDA, 2025a) and, outside the EU, in the United Kingdom (GMTrends, 2024). An increase in ketamine use was observed in the Netherlands between 2016 and 2020, coinciding with indications of increased ketamine seizures in Europe. In the United Kingdom, national survey data show that ketamine use among young adults tripled from 2006 to 2023 (GMTrends, 2024). In countries for which evidence is available (Ireland, the Netherlands and the United Kingdom), data also suggest that use is more prevalent among younger age groups and among people participating in nightlife and party scenes. This points to a market that is not broadly embedded in the general population but instead concentrated in specific social environments.

Findings from targeted studies, web surveys and wastewater analysis reinforce this picture. Higher prevalence among clubgoers and partygoers, combined with weekend peaks in wastewater signals ([8]) and the identification of urban hotspots (Figure 1), indicates that ketamine use in Europe is largely recreational, episodic and linked to nightlife activity.

([8]) In 2024, relatively low levels of ketamine residues in municipal wastewater were reported by 82 cities. Of the 42 cities that have data on ketamine residues for 2023 and 2024, 14 reported an increase, 15 a stable situation and 13 a decrease. The highest mass loads were detected in cities in Belgium, the Netherlands, Hungary and Norway. More than three quarters of cities showed higher loads of ketamine in wastewater during the weekend (Friday to Monday) than during weekdays, reflecting the predominant use of ketamine in recreational settings.

Figure 1: Changes in the mean weekly ketamine metabolites from wastewater analyses in selected European cities between 2023 and 2024



NB: Orange indicates increase; blue indicates decrease; yellow indicates stable; grey indicates no previous data.
Source: EUDA, 2025a.

Based on findings from the European Web Survey on Drugs (EUDA, 2025b) ([9]), the majority of users report consuming ketamine primarily 'to get high or for fun', with motivations related to self-medication or functional needs (i.e. to 'cope with daily life') being less common. Use is typically infrequent over the year, with most online respondents reporting use on fewer than 10 days in the past 12 months and only a small proportion having accessed treatment services.

Drug checking data indicate a wide range of dosages used in non-medical ketamine consumption, varying substantially by route of administration and body weight. For nasal use, doses can range from 15–25 mg at low levels to 75–170 mg at high levels, while oral administration generally involves higher quantities, reaching up to 450 mg at the upper end ([10]). Nonetheless, higher-frequency patterns of use and higher quantities are observed in some contexts. In the United Kingdom, some local studies describe daily or near daily use

([9]) The European Web Survey on Drugs provides an overview of key data from 61 732 individuals aged 18 or older who use drugs and live in one of the 24 Member States covered or Norway. The survey was conducted online across 24 Member States and 11 non-EU countries or territories between May and July 2024.

([10]) Data published by Drug Checking Berlin (https://drugchecking.berlin/substanzen/ketamin). These data are provided for descriptive and analytical purposes only and do not constitute recommendations for use. Dose tolerance and effects vary depending on individual health status, body weight, age, sex, general condition, tolerance development and contextual factors (drug–set–setting).

among a subset of users, often in the range of 1–7 g per day, with some individuals reporting consumption of up to 20 g per day (GMTrends, 2024).

Ketamine is most commonly used intranasally (snorting) and is frequently used in combination with alcohol and other illicit drugs, particularly stimulants. Users primarily obtain ketamine through informal social networks or direct contact with suppliers, and to a lesser extent via messaging applications such as Telegram, Viber or Signal (EUDA, 2025b; GMTrends, 2024).

Local-level studies from the United Kingdom suggest that ketamine may be perceived by some young people as accessible, cheaper, less risky and more socially acceptable than cocaine, with less of a comedown and fewer unpleasant after-effects (GMTrends, 2024).

Taken together, these findings indicate an illicit market that remains concentrated within specific populations and settings and is closely linked to recreational drug environments, although in some regions patterns of use appear to be intensifying. Interpretation of these results should be cautious, as epidemiological data on ketamine remain limited and cross-national comparisons are constrained by ketamine's absence from standardised survey instruments that are focused on scheduled substances.

Health and social risks associated with ketamine use

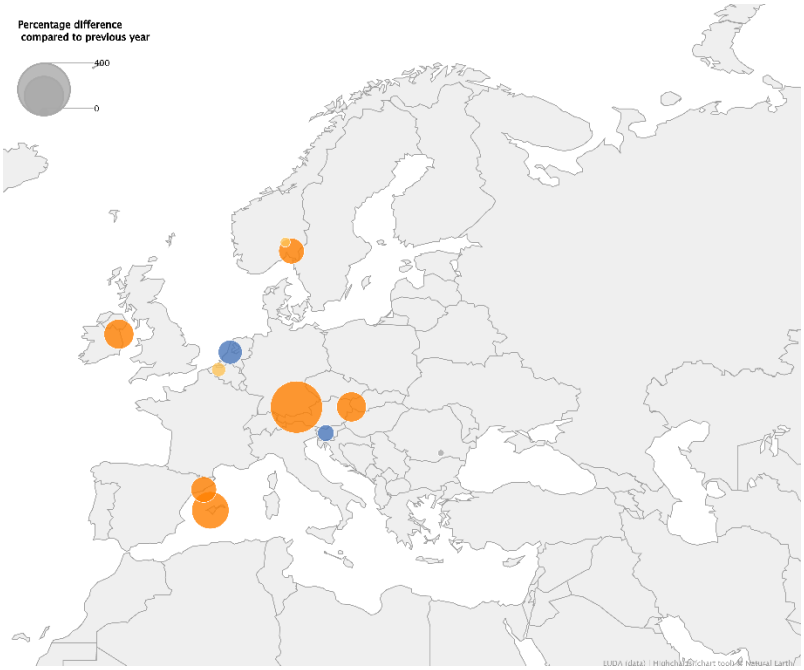
When administered in regulated medical settings, ketamine can be used safely, but risks remain, particularly with repeated or long-term exposure. These documented risks from the medical field hold true for and may be exacerbated in non-medical use. According to EMA pharmacovigilance assessments (EMA, 2025a, 2025b), long-term ketamine treatment has been associated with cystitis (including haemorrhagic cystitis), acute kidney injury, hydronephrosis and ureteral disorders, with these conditions reported after as little as one month of continuous therapeutic use. These risks are particularly pronounced in the context of abuse, misuse or escalating dosing patterns, even in originally therapeutic frameworks. Regarding esketamine nasal spray (Spravato), the EMA emphasises that drug abuse and dependence are significant risks, particularly for patients with any history of substance use disorders. Patients receiving esketamine must therefore be monitored for drug-seeking behaviour, signs of misuse, withdrawal symptoms or emerging cardiovascular concerns.

Medically supervised use of ketamine may also pose psychological risks. Dissociative experiences, perceptual distortions and transient emotional disturbances can occur and, although often clinically managed, they may destabilise individuals with certain psychiatric profiles. For this reason, the EMA recommends ongoing monitoring for worsening mood symptoms, risk of dissociation and persistent cognitive or perceptual effects. These risks

underscore the need for strict clinical oversight, structured administration protocols and screening for vulnerability to abuse or dependence, especially given emerging evidence of growing interest in unregulated ‘self-medication’ with ketamine for sleep, anxiety or mood disorders, which regulators have flagged as an area for continued monitoring.

The non-medical use of ketamine poses significantly higher individual health risks, largely because dosage, purity, adulterants, setting and route of administration are uncontrolled. In these settings, ketamine is associated with dose-dependent acute and chronic harms, including neurological and cardiovascular toxicity, mental health problems (e.g. depression and acute psychological distress) and severe urological complications, including bladder damage linked to high-frequency or high-intensity use (EMCDDA, 2002). Chronic harms often remain ‘unnoticed’ for long periods due to the drug’s anaesthetic effects, and dependent users may continue consuming ketamine while receiving repeated courses of antibiotics for urologic conditions, delaying diagnosis until bladder function is significantly impaired.

Figure 2: Changes in the number of emergency presentations associated with ketamine in selected European cities between 2023 and 2024



NB: Orange indicates increase; blue indicates decrease; yellow indicates stable. Source: EUDA, 2025c.

Acute harms occur most frequently at the weekend and in nightlife and polydrug settings. Ketamine-related emergency presentations accounted for 4 % of all drug emergencies in

2024 across 29 sentinel hospitals in 19 Member States and Norway ([11]), with 63 % of cases concerning those aged 25–45, 81 % involving male patients and a little under half also involving alcohol (EUDA, 2025c) (Figure 2). Patients typically remained in the emergency department for around four hours, and approximately 5 % required admission to critical care (EUDA, 2025c). Combinations with cocaine, MDMA, opioids, benzodiazepines or barbiturates can significantly increase toxicity, with depressant drugs raising risks of respiratory suppression, and stimulants increasing cardiovascular stress. Fatalities involving ketamine alone are rare and typically linked to intravenous or intramuscular overdose, but polydrug deaths demonstrate that interactions, rather than ketamine alone, typically drive fatal outcomes (EMCDDA, 2002).

The latest available monitoring data show a clear increase in the number of people seeking treatment for ketamine-related substance use disorders (EUDA, 2025a). Across Belgium, Germany, Italy and the Netherlands (2023 data) and Spain and France (2022 data), the number of clients entering specialised drug treatment services for problems associated with ketamine use increased from 289 in 2018 to an estimated 1 329 in 2023, indicating a growing clinical and public health burden linked to harmful patterns of use. In the United Kingdom, demand for treatment related to ketamine use has more than doubled in recent years (2021, 512; 2023, 1 201), indicating a rapidly growing need for specialist clinical support (Disparities, 2024).Social risks arise directly from ketamine's anaesthetic and dissociative properties, which can impair physical control and situational awareness, increasing vulnerability to accidents, exploitation or harms, particularly in nightlife or festival settings. The short duration of action, rapid onset of dissociation and introspective effects can trigger acute anxiety, disorientation, tension or psychological distress, especially when taken unexpectedly or in unfamiliar environments. A minority of users develop compulsive patterns of use. Dependence, while less common than with opioids, is well documented. These behavioural patterns can strain social relationships, disrupt employment or education and create patterns of isolation (EMCDDA, 2002). In some cases, ketamine use is associated with rising pressures on health, safeguarding and treatment systems due to frequent hospital attendances, urology referrals, safeguarding notifications and crisis point interventions, signalling broader social impacts on communities (GMTrends, 2024).

([11]) The proportion of ketamine in emergency presentations varies by country. When including data from Member States and non-EU countries, higher proportions are found in the United Kingdom, followed by Ireland, the Netherlands, Belgium and Switzerland (EUDA, 2025c).

Sources of ketamine on the illicit market

Ketamine circulating on Europe's illicit drug markets appears to originate mainly from the diversion of large-scale legitimate production outside the EU, especially in India, while domestic manufacture from precursors and pharmaceutical theft remain rare. Limited trade and regulatory data mean that diversion routes are only partially understood.

Ketamine circulating on Europe's illicit drug markets may, in principle, originate from three sources: the diversion of legitimate wholesale imports of API, the diversion of finished pharmaceutical products (including theft) or illicit manufacture from precursor chemicals.

Information from forensic and seizure data consistently points to diversion from legitimate wholesale production and trade as the dominant source, with domestic illicit manufacture remaining a marginal phenomenon. The majority of ketamine available in Europe is therefore believed to originate from large-scale pharmaceutical production outside the EU and is diverted through exploitable vulnerabilities along the licit supply chain.

Incomplete trade and regulatory data limit a full mapping of supply flows. While diversion pathways and trade routes are partially understood, significant intelligence gaps persist, reflecting limitations in regulatory oversight and data availability.

Diversion

Most of the ketamine seized in Europe continues to be imported from non-European countries, with India most frequently identified as the place of production and therefore appearing to be the primary point of origin.

The scale of industrial ketamine production in India, where the substance is manufactured as an API for legitimate use, creates a structural asymmetry whereby even limited diversion from licit volumes could supply a significant share of the ketamine on the European illicit market. However, the absence of comprehensive data on import volumes, distribution pathways, the actors involved and re-exports in the EU limits the ability to quantify the scale of diversion, fully map supply chains and assess the extent (and mechanisms) of diversion.

The largest legitimate manufacturer of ketamine globally, Supriya Lifescience Ltd, is based in India, with an estimated annual production of 150–200 tonnes of racemic ketamine. Available evidence indicates that a proportion of ketamine produced by this manufacturer for legitimate purposes subsequently appears on illicit markets. For example, ketamine has been frequently seized in packaging bearing the distinctive 'red label' associated with the manufacturer Supriya (Figure 3), indicating limited post-manufacturing modification. In addition, darknet monitoring identified advertisements explicitly referencing Supriya as a brand ([12]).

Figure 3: Pictures of ketamine seized in a motorhome, displaying the red label of manufacturer Supriya

Source: Yorkshire and Humber Regional Organised Crime Unit, United Kingdom.

The import of wholesale ketamine occurs through a limited number of countries. While data point towards Germany's role as a major legitimate importer of ketamine into the EU, there is no concrete evidence of Germany-based organised crime structures directly controlling or coordinating these diversion activities within the Member State. Existing indications instead suggest that the legal regulatory framework, under which ketamine is not subject to the same drug control measures as many other psychoactive substances, may create opportunities for exploitation. In this context, ketamine is legally imported by pharmaceutical companies and subsequently diverted through various channels, sometimes involving foreign intermediaries, before entering illicit distribution networks and ultimately reaching non-medical consumer markets.

To date, German authorities have not identified evidence that domestic pharmaceutical companies are knowingly involved in criminal activities; instead, the situation appears to

([12]) This was the case for 117 out of approximately 10 000 ketamine-related advertisements observed in 2024. Analysis is based on darknet listings (2023–2025), including only advertisements where ketamine was the primary product and shipped from Member States or 'Europe'. Please note that darknet markets are volatile, and figures reflect advertised listings rather than confirmed transactions or quantities.

reflect a lucrative grey area business model that can be exploited by criminal actors further along the supply chain. Nonetheless, Germany is the primary declared point of origin for ketamine shipments sold on darknet markets in Europe ([13]).

Available evidence indicates that ketamine seized on the illicit market is predominantly racemic rather than enantiomerically pure esketamine. Specialised chiral analysis conducted as part of an EU-funded project by the BKA confirmed that 316 out of 317 analysed samples were racemic ketamine ([14]), suggesting minimal diversion of authorised pharmaceutical esketamine products (e.g. Spravato).

Other sources

Unlike East and South-East Asia, where large-scale, sophisticated, clandestine ketamine laboratories have been found (UNODC, 2022), Europe shows only limited evidence of illicit ketamine production. Between 2020 and 2024, most of the laboratories dismantled in the EU were not synthesising ketamine, but rather they were crystallisation laboratories where ketamine powders were being transformed into needles or shards (aiming to obtain a higher price on the consumer market). Isotope profiling of a limited number of ketamine samples seized in the EU ([15]) supports this conclusion: the material appeared to originate from very-large-scale production environments, requiring industrial-level capacity and therefore unlikely to have been manufactured within the EU.

Theft of ketamine from licensed facilities remains a very limited but documented source of supply into illicit markets. Occasional incidents reported by national authorities and regulatory bodies ([16]) show that individuals with authorised access to veterinary medications have, on occasion, diverted controlled substances for personal use or onward distribution. These tend to be opportunistic rather than organised groups targeting veterinary supply chains, but they demonstrate that small-scale leakage from legitimate clinical and veterinary practices occurs.

([13]) An analysis of ketamine darknet listings (2023–2025) showed that, of the 6 790 listings that declared shipping from a Member State or Europe, 2 763 (41%) were linked to Germany.

([14]) Only Germany reported conducting enantiomeric excess analyses on seized ketamine samples.

([15]) This analysis was conducted by the BKA as part of an EU-funded project. By combining stable isotope ratio data with data from solvent profiling and/or synthesis impurity profiling, relationships can be established between samples from different ketamine seizures.

([16]) For example: https://www.vettimes.com/news/vet-nursing/wellbeing-at-work-vet-nursing/vet-nurse-admits-stealing-medication-from-north-wales-practice.

Trafficking and distribution within the illicit market

Ketamine seizures in Europe have surged in recent years, reaching at least 3.5 tonnes in 2024. High volumes are concentrated in Germany (initial distribution), the Netherlands (key distribution hub with falling wholesale prices) and the United Kingdom (which shows high imports, rising availability and onward trafficking). A substantial share of ketamine entering the illicit ketamine supply chain in Europe is re-exported to non-European markets, including Australia, Canada, New Zealand, the United States and some countries in Asia.

Seizure data are an important indirect indicator of drug availability and accessibility on the illicit market, but they require careful interpretation and context. Not all ketamine seizures reflect domestic retail or distribution activity, as large quantities may be linked to transit, storage or export along international trafficking routes rather than intended for local consumption. This means that large individual seizures may indicate the presence of international trafficking routes, storage hubs or logistical transit points, rather than quantities intended for local distribution.

In addition, ketamine is often not a priority target of law enforcement operations but is instead detected as an ancillary or incidental seizure. This may occur during operations primarily focused on other controlled substances or during searches of trafficking networks mainly involved in drugs such as cocaine, MDMA or amphetamine. Furthermore, ketamine is increasingly traded within a polydrug distribution environment, meaning it is stored, transported or sold alongside other psychoactive substances. These overlaps can complicate efforts to directly attribute seizure volumes solely to the scale of the ketamine market. As a result, seizure trends should be assessed in the broader context of trafficking structures, transit functions and mixed-drug enforcement activity, rather than read as a direct measure of ketamine market size or availability.

The available data suggest, however, that ketamine has been increasingly intercepted in Europe, with EU seizures rising markedly since 2018. Price patterns also vary and tend to be higher when not in proximity to key distribution hubs, which seem to be primarily Germany and the Netherlands. The wholesale trafficking of ketamine into and across Europe appears to operate through highly international, flexible and adaptive criminal networks.

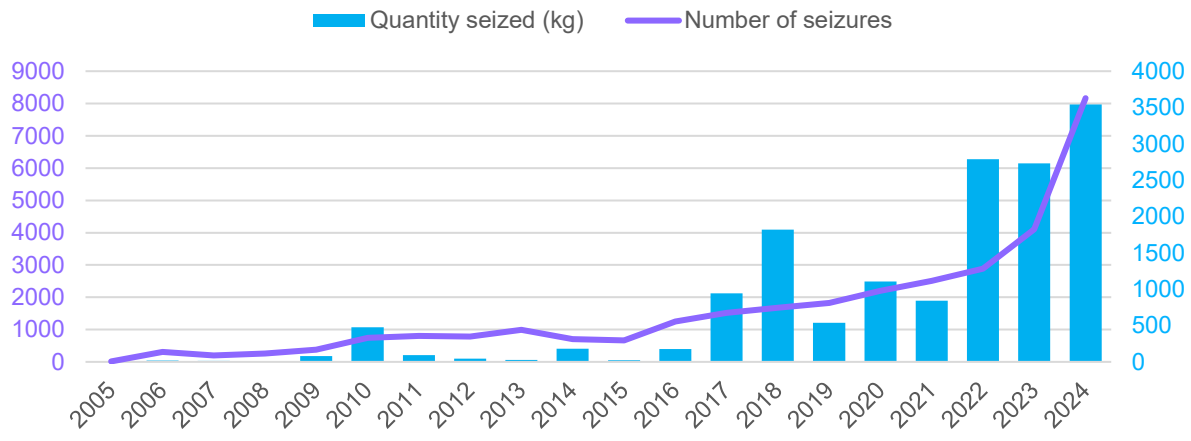
Trafficking routes differ significantly in their complexity and organisation, ranging from direct, point-to-point shipments to multi-leg smuggling chains that span several regions. Major non-European destinations include Australia, Canada, New Zealand and the United States, but reports also indicate shipments to Mexico and parts of Asia – with Hong Kong, Japan, Malaysia, South Korea, Taiwan and Viet Nam mentioned as examples – indicating the global reach of European ketamine trafficking networks.

Seizure trends

Interpreting ketamine seizure data is particularly challenging due to inconsistencies in legal classification and reporting. While ketamine is not scheduled at the EU or international level and is thus treated as a new psychoactive substance (NPS) at the central level, many Member States classify it as an illicit drug at the national level. As a result, seizures may be reported through different and sometimes parallel monitoring systems, limiting comparability. Overall seizure information remains fragmented and should be regarded as a best-available overview and minimum estimate rather than a comprehensive measure of seizures of ketamine in the EU.

Despite these limitations, the EUDA EU early warning system (EWS) provides the most comprehensive and authoritative data currently available on ketamine seizures. While incomplete, the data consistently indicate a clear upward trend in both the number of seizures and the quantities of ketamine intercepted over time, suggesting a steady increase in ketamine trafficking activity across Europe.

Figure 4: Seizures of ketamine in the EU: number of seizures and quantity (kg), 2005–2024



Source: EUDA, EU EWS.

Over the period covered by the available data (Figure 4), the number of ketamine seizures increased sharply, rising from practically negligible levels to more than 8 000 seizures in 2024. This growth accelerated from 2016 onwards, suggesting a sustained increase in street-level encounters, typically associated with small-scale distribution. Over the same period, the quantities seized rose steeply, increasing from under 200 kg in 2016 to more than 3.5 tonnes in 2024. These should be seen as minimum estimates, given the challenges in capturing complete seizure data. Overall, seizure data suggest an increasingly active retail and mid-market distribution network in Europe. This is confirmed by darknet monitoring, which shows a tenfold increase in EU-based advertisements, from 975 listings mentioning ketamine in 2023 to 9 957 listings in 2024.

Data collected from the United Kingdom, which does not report to the EU EWS but participated in this EMPACT exercise, indicate relatively high quantities of ketamine seized, notably 939 kg in 2023. In contrast, the number of seizures reported (217) is comparatively low.

Larger seizure quantities are typically concentrated in a few countries, notably the Netherlands (reporting 63 % of the total quantity seized in 2022–2024), Germany (14 %) and Spain (10 %). Higher numbers of seizures are reported by Spain, Sweden and Germany (Figure 5). Countries with fewer, larger seizures of ketamine are characterised as key locations for bulk handling, storage or onward distribution, while those with more frequent seizures and smaller quantities appear to primarily intercept ketamine at later stages of the supply chain, reflecting strong end market demand.

Figure 5: Country distribution of seizures of ketamine in the EU, 2022–2024 (left, quantity seized (kg); right, number of seizures)

Source: EUDA, EU EWS.

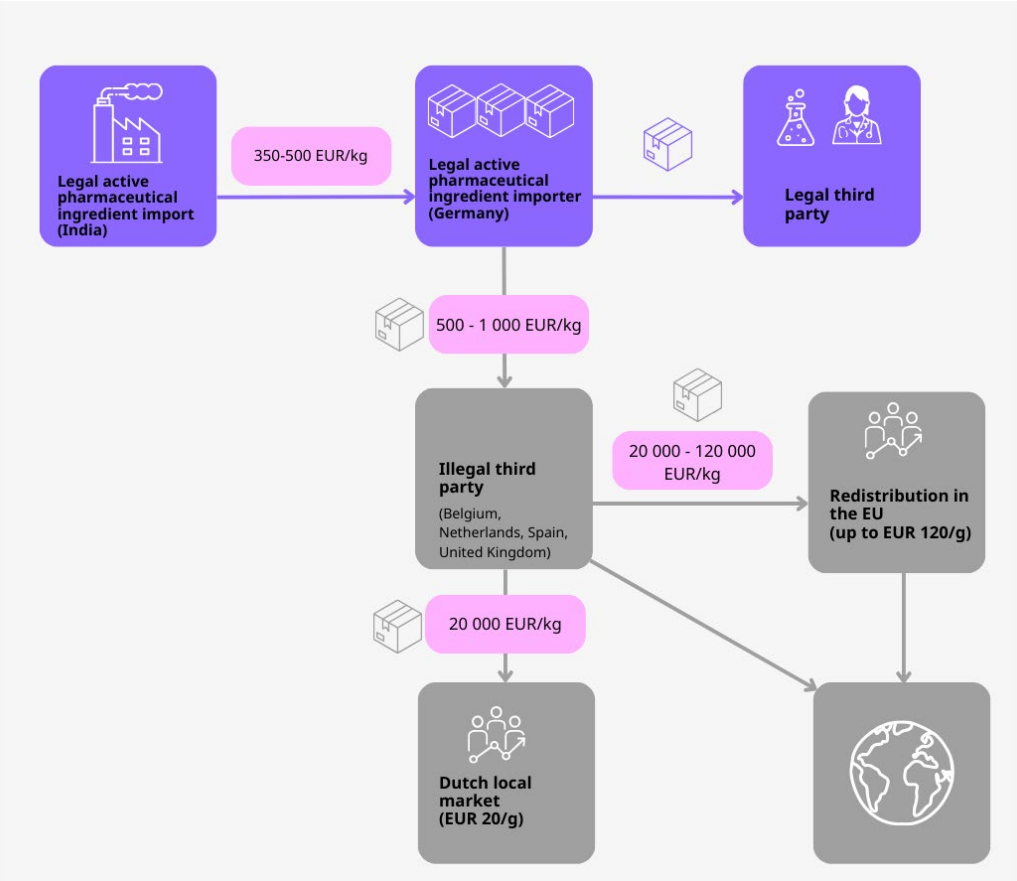
Price and purity

Price data submitted by the Member States show large price variations for ketamine across Member States and reflect a regionally diverse illicit market.

- Retail ketamine prices in Europe range from EUR 20/g in Luxembourg to EUR 75–120/g in Finland. Belgium and the Netherlands report values closer to the lower end of this spectrum, while Ireland reports higher prices of up to EUR 50–80/g, reflective of supply chain dynamics. Central and eastern Member States, like Hungary and Romania, indicate prices around EUR 40–60/g. Darknet monitoring indicated a low average retail price of EUR 18/g.
- Wholesale prices, albeit limited, also reflect a large regional variation, from EUR 2 970/kg in the Netherlands (2023 data) to EUR 9 350–21 250/kg in Norway (2023 data). Again, this indicates that the Netherlands is an important node in the illicit supply chain.

- The United Kingdom reports retail values of EUR 23–46/g (GBP 20–40/g) and wholesale values of EUR 2 320–5 220/kg (GBP 2 000–4 500/kg), aligning broadly with the mid-range to lower values reported across continental Europe.
- Notably, Germany provided data on the price of ketamine on the legal market. For legal imports, ketamine is available at EUR 350–500/kg, which gives an indication of possible profit margins when compared with illicit market prices (Figure 6) and points to Germany as the primary point of importation in the European supply chain.

Figure 6: Indicative prices and points of diversion in the ketamine supply chain from legal to illicit markets in Europe

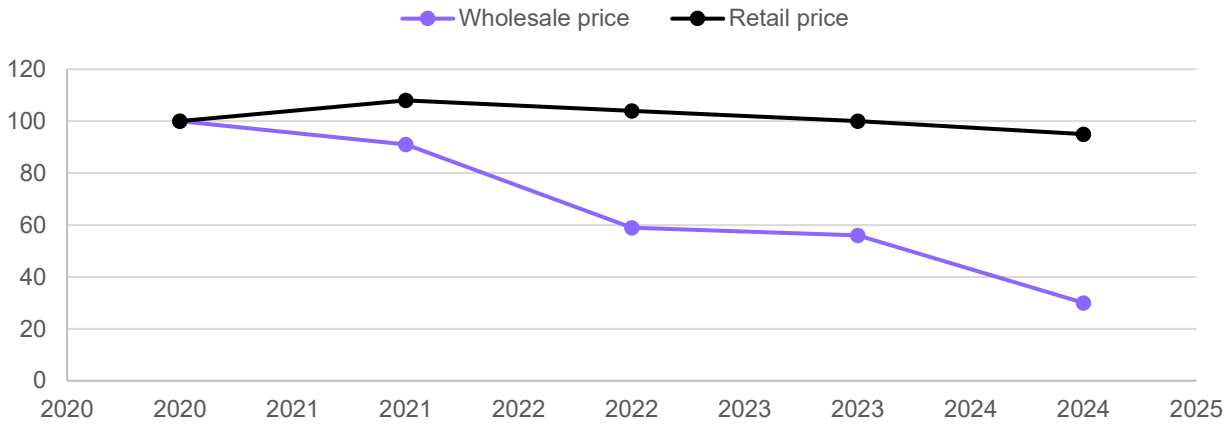


Trends in wholesale and retail ketamine prices were reported by the Netherlands (Figure 7). Between 2020 and 2024, wholesale prices in the Netherlands decreased steadily and

substantially from EUR 5 325 to EUR 1 605, with the most pronounced decline occurring between 2021 and 2022.

Such a downward trend may indicate shifts in supply conditions or increased market availability during this period. In contrast, retail (consumer dose) prices remained comparatively stable, fluctuating downwards only slightly, from EUR 21 in 2020 to EUR 20 in 2024. This stability suggests that changes observed at the wholesale level did not translate proportionately to user-level pricing, which may reflect differences in how the retail market absorbs upstream price movements, similar to other powder drug markets (e.g. cocaine).

Figure 7: Indexed wholesale and retail ketamine prices in the Netherlands (2020 = 100), 2020–2024



Source: Data provided by the Netherlands Police.

In terms of purity, the limited data on ketamine also vary considerably, indicating that purity, like price, remains largely heterogeneous across the limited number of Member States providing data. Most reporting Member States show values in the 70–85 % range. Ketamine seized in Europe is sometimes found mixed with a range of other substances, including common pharmaceuticals, cutting agents and, in some cases, NPSs such as cathinones and other dissociatives. In some cases, it appears in mixtures sold as ‘pink cocaine’ or ‘tuci/tucibi’ (Box 1).

Seized ketamine shows multiple physical presentations: crystalline needles, rocks and fine powder.

Box 1: Ketamine in 'pink cocaine' or tuci/tucibi mixtures

Although ketamine is most commonly encountered as a standalone crystalline powder, a small but notable number of samples in Europe have contained mixtures of ketamine and illicit stimulants such as cocaine, amphetamine or MDMA. These blends may appear as pink-coloured powders (or bricks/blocks of compressed powder), visually similar to products sold in parts of Latin America and the Caribbean as 'pink cocaine' or 'tuci/tucibi'. Despite the name, such powders typically do not contain 2C-B and rarely contain cocaine, with ketamine and MDMA being the most common combination.
Reports from participating EMPACT partners indicate that, although such mixtures have been detected, they do not currently appear to represent a widespread trend. Wholesale prices of these products in the Netherlands were considerably higher than for ketamine alone, ranging from EUR 8 438 (2022) to EUR 5 670 (2024).

Pink cocaine or tuci/tucibi bricks seized in the Netherlands, containing a mixture of substances, including ketamine

Source: Netherlands Police.

Trafficking

Seizure patterns, price trends, market intelligence and darknet monitoring, when taken together, indicate that ketamine trafficking in the EU has intensified in recent years and is structured around a limited number of key nodes linked to the diversion of legally produced ketamine into illicit distribution channels.

Germany, as a major importer of legitimate ketamine, appears to be the key point of initial diversion within Europe. The Netherlands emerges as a primary distribution node, reflected in high seizure volumes and declining wholesale prices (indicating increased availability). Both Germany and the Netherlands were frequently identified as sources by other Member States and non-EU countries, with the prominence of the Netherlands in the answers probably being influenced by its role as an intra-EU trafficking and redistribution node (see Box 2). Belgium and Spain are mentioned less frequently. The United Kingdom shows similar indications, reporting high import volumes, declining prices, increased availability and

increased non-medical use, alongside evidence of onward redistribution to non-European markets.

The wholesale trafficking of ketamine into and within Europe seems to take place within a highly international and adaptive framework, shaped by cross-border coordination, diversified transit routes and the exploitation of logistics. Trafficking routes show significant variation in complexity and scope, ranging from direct shipping from source to destination, to multi-leg, multi-region smuggling chains involving intermediate stops.

A notable dimension of ketamine trafficking involves the use of African countries, particularly Kenya, as intermediate transit points. Seizures and cases have revealed complex smuggling routes in which ketamine is routed through African countries – via air freight – before arriving in Europe or continuing on to final destinations elsewhere. This seems to be a deliberate strategy to exploit gaps in regulatory oversight, hide the drug's true origin and complicate interdiction efforts. In one notable case, a shipment mislabelled as glutamine transited through Kenya and Georgia before entering the EU. This logistical diversity highlights the operational flexibility of trafficking networks.

Across most countries, retail to mid-scale ketamine trafficking is primarily facilitated using postal and courier services. This method offers traffickers a relatively low-risk, high-volume channel for both small and large shipments. It also enables decentralised distribution, allowing traffickers to send packages directly to consumers or small-scale distributors.

Seizures across multiple countries show that traffickers rely on a wide range of concealment strategies, which use legal cover loads and port infrastructures. Some seizures involve fraudulent documentation, such as mislabelling substances or using forged customs declarations, further complicating interdiction. There are indications that traffickers also exploit pharmaceutical trade loopholes, particularly in countries where ketamine is legally available for medical or veterinary use.

Several countries report seizures involving polydrug shipments. These cases suggest that ketamine trafficking is often integrated into broader multi-drug smuggling operations, probably involving shared infrastructure and common supply chain actors. Organised criminal networks have been identified or are suspected in several cases. They seem to have multiple origins – for example, British, Bulgarian, Dutch and Slovenian individuals have been suspected of ketamine trafficking.

The most frequently reported non-European export destinations for ketamine include Australia, Canada, New Zealand and the United States. Reports also indicate shipments to Mexico and parts of Asia, with Hong Kong and Taiwan mentioned as examples. This suggests that ketamine trafficking networks based in Europe have a broad international reach.

Box 2: An example of ketamine trafficking in the Netherlands (December 2022 to January 2023) ([17])

Between December 2022 and January 2023, Dutch law enforcement dismantled an operation responsible for the large-scale illegal importation of ketamine from Germany into the Netherlands. This concerned a series of coordinated shipments managed by a transnational criminal network employing strategic logistics and advanced communication methods to evade detection.

The trafficking was carried out through a series of five shipments over three months, with the quantities transported in each shipment varying between 300 kg and 600 kg, ultimately amounting to 2 372 kg. The ketamine originated from two pharmaceutical suppliers in Germany and was transported into the Netherlands without the legally required authorisation. This was conducted through a company of one of the suspects, who did not have the necessary legal registration to import ketamine into the Netherlands. During the court case, it became clear that the organised crime group found it important to hide this modus operandi from customers and competition to prevent others from taking over the lucrative trafficking route or stealing their stashes.

The operation followed a consistent pattern: ketamine was collected at the companies in Germany, then transported using vehicles accompanied by escort cars tasked with monitoring the route and border crossings for law enforcement. Communication between members was conducted through the encrypted messaging platform. Shipments were ultimately delivered to a designated location in the Netherlands.

Investigation revealed that the criminal network's activities extended beyond ketamine. Dutch law enforcement picked up the group's trail after receiving information that the group was investing tens of millions of euros in cocaine shipments. The group was using similar communication and trafficking methods for both drugs. Additionally, money laundering was a component of their operation. At least one co-defendant was suspected of handling large sums of illicit proceeds, some of which he invested in real estate in Marbella, indicating a financial structure to manage the criminal earnings.

The network operated with a fluid structure, where roles such as drivers, scouts and coordinators were interchangeable. One key individual acted as a logistics coordinator and security driver, maintaining direct communication with the network's leadership and initiating improvements of their transport processes. According to one member of the criminal network, the motto of the group was 'take your time and stay safe'.

The case exposed several legal and enforcement frictions. Ketamine in this matter was treated as an API rather than as a controlled substance under the Dutch Opium Act. Because the case was not prosecuted under drug legislation, Dutch authorities pursued charges under the Medicines Act, which prohibits bringing active substances into or transporting them within the Netherlands without the required registration. A second technical point is that, under the Medicines Act, movement between Member States does not qualify as 'importing' from a non-EU (third) country under the statutory definition, a distinction that affects how certain offences are legally framed. In practice, this meant the Dutch authorities had to rely on the Medicines Act and economic crime provisions rather than those on drug-specific import/trafficking offences, which have different evidential and substantially more lenient sentencing regimes.

([17]) *Source:* The official website of the Dutch Judicial System (De Rechtspraak), which publishes court judgments, rulings and procedural information from courts and tribunals in the Netherlands: https://www.rechtspraak.nl.

Legal status of ketamine and its policy challenges

The coexistence of divergent legal approaches to ketamine regulation across Europe creates enforcement gaps, facilitates diversion and complicates judicial cooperation. Variability in national regimes can significantly shape trafficking routes, market dynamics and the outcomes of criminal investigations and prosecutions.

The central challenge surrounding ketamine regulation lies in protecting public health while ensuring access to an essential medicine. Concerns over non-medical use have prompted repeated discussions of the international scheduling of ketamine (in 2006, 2012, 2014 and 2015), but the substance has never been placed under UN control (Strang et al., 2012; UNODC, 2022). The primary argument against such control is that it would probably restrict availability for legitimate medical purposes in low-resource, humanitarian and emergency settings because international scheduling triggers stringent licensing requirements, import/export authorisations, quotas, reporting obligations and higher compliance costs. Experience with internationally controlled medicines such as fentanyl and morphine demonstrates that, even when these medicines remain accessible in well-resourced health systems, access is highly uneven globally, with many countries experiencing chronic shortages or limited availability of essential anaesthesia and pain relief.

Reflecting these concerns, WHO has consistently concluded that international scheduling would risk worsening avoidable morbidity and mortality by reducing access to ketamine and that any potential benefits from UN-level control could instead be achieved through proportionate national regulatory measures (Strang et al., 2012).

In Europe, ketamine underwent a risk assessment by the EMCDDA (now known as the EUDA) in 2000 following concerns about increased non-medical use in the late 1990s. However, it has never been subjected to EU-level control (EMCDDA, 2002; European Commission, 2000). Although EU-level scheduling does not automatically activate the full set of obligations required under the UN drug conventions, it may still influence global supply chains, given the EU's role as a major market and transit hub for chemicals and pharmaceutical products. Any EU-wide action therefore carries the potential to indirectly affect non-EU countries and humanitarian supply routes, reinforcing the importance of carefully balancing public health safeguards with continued access to medicines.

In the absence of centralised international or EU-wide legislation, decisions on ketamine control rest entirely with individual Member States. As a result, its legal status varies considerably across the EU, with significant implications for cross-border enforcement, market monitoring and public health responses. There is a lack of common understanding of what the 'control' of ketamine entails, which can, in turn, create uncertainty regarding joint policy development and implementation.

Based on the most recent information from national focal points, Member States fall into four main categories regarding ketamine control.

- **Controlled as a narcotic or psychotropic substance.** Ketamine is scheduled under national drug legislation, imposing strict controls on manufacture, distribution and possession.
- **Controlled under NPS-specific legislation.** Ketamine is restricted through broad NPS laws. Here, ketamine is restricted not because it appears in traditional drug schedules but because its psychoactive effects fall within wide NPS definitions. These measures often focus on supply reduction and may carry different, sometimes lighter, penalties than drug laws.
- **Not controlled or controlled only through medicines legislation.** A minority of Member States report no national legislative drug-law controls on ketamine or classify it simply within medicines legislation without additional restrictions.
- **Controlled through hybrid approaches.** Some Member States use a combination of NPS laws and medicines legislation to control ketamine.

Conclusions

Ketamine remains an essential medicine; however, the patchwork of legal approaches across Europe, combined with the large-scale availability of the substance from legitimate sources meaning that it can be imported and transited with limited oversight, has created vulnerabilities in the supply chain. These vulnerabilities are being systematically exploited by organised criminal networks, contributing to increased availability, declining wholesale prices and rising health harms.

Current trends indicate that the impacts observed today reflect the delayed effects of supply-side developments in previous years. In the absence of coordinated intervention, further intensification of criminal exploitation and associated harms can be expected in the short to medium term. The lack of harmonised legal frameworks, shared data systems and structured cooperation between health and law enforcement authorities continues to limit the EU's capacity to respond effectively.

Addressing the ketamine phenomenon therefore requires balanced, proportionate and coordinated action at the national and EU levels. Such action must preserve legitimate medical access while strengthening oversight, intelligence and enforcement across the entire supply chain.

Improvements in these areas would not only enhance responses to ketamine but also generate wider benefits for preventing the diversion and misuse of other substances with similar regulatory and market characteristics.

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