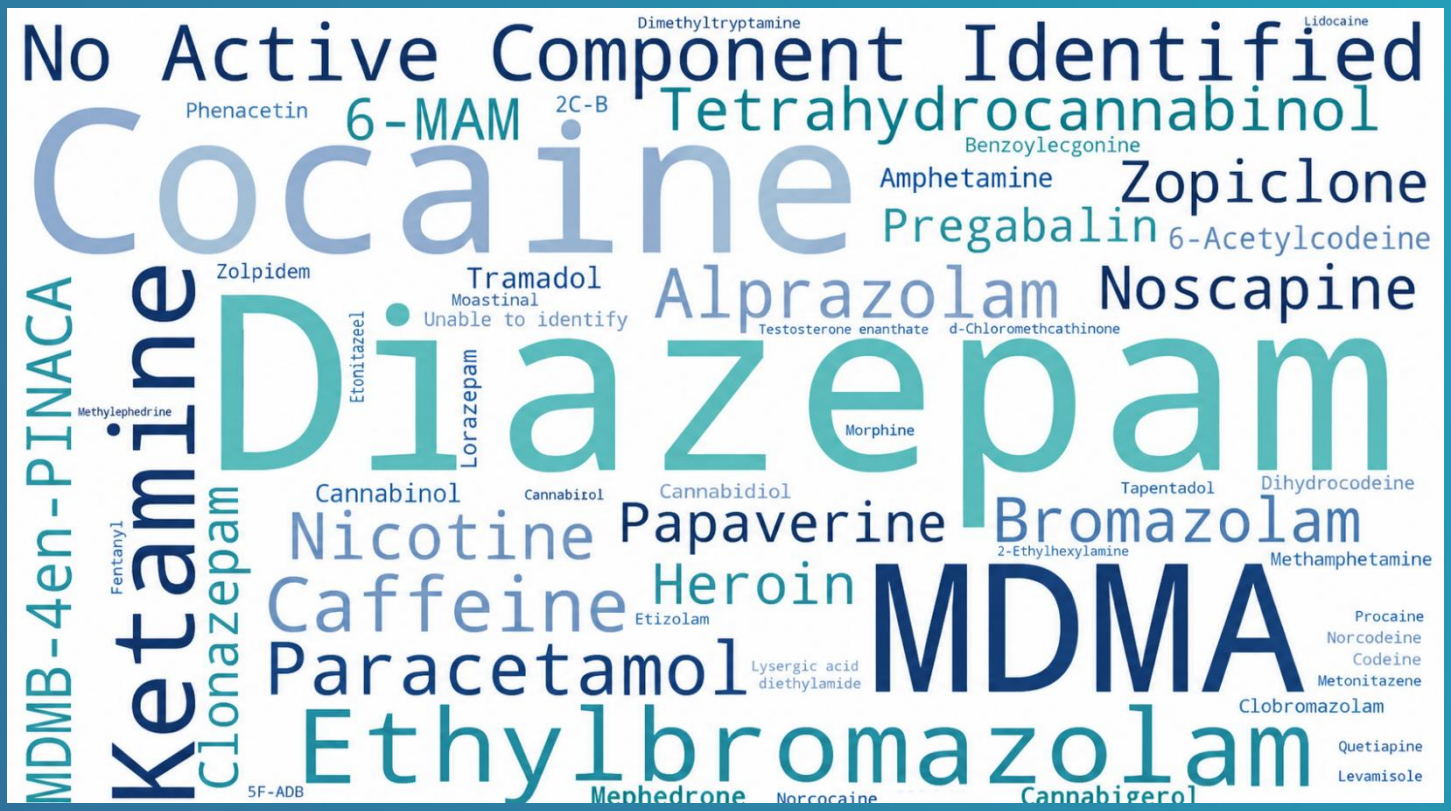
Iechyd Cyhoeddus Cymru
Public Health Wales



WEDINOS

Annual Report : April 2025 to March 2026

Version 1.0

Date: 25/08/2026

Mae'r ddogfen yma ar gael yn y Gymraeg/
This document is available in Welsh

Llywodraeth Cymru
Welsh Government

Cardiff University
Prifysgol Caerdydd

GIG CYMRU NHS WALES
Bwrdd Iechyd Prifysgol Caerdydd a'r Fro
Cardiff and Vale University Health Board

Contents

Headline Figures

- 8,209 samples analysed, up from 8,032 in 2024-2025.
- Community samples increased to 7,973 from 6,894.
- 238 substances identified, up from 206.
- Samples received from 103 different organisations, services, and Night-time Economy (NTE) venues as well as from individuals.
- Median age of sample providers was 36 years (range 11 to 88 years).
- As in the previous seven years benzodiazepines were the most identified class of psychoactive substance with 22 benzodiazepines identified, up from 19 last year.
- Diazepam was the most commonly identified substance overall.
- Cocaine was the most commonly identified substance in the NTE.
- Within Criminal Justice Settingss the Synthetic Cannabinoid Receptor Agonist (SCRA) MDMB-4en-PINACA was the most commonly identified substance.
- Synthetic Opioids - 110 samples contained nitazene(s) and 18 orphine analogue(s).
- Substitution and adulteration remain prevalent
    - 36.6% of samples did not contain the intended substance.
    - 7.7% of samples contained the intended substance alongside additional psychoactive substances.

Executive Summary

This report summarises findings from the WEDINOS programme between April 2025 and March 2026.

During this period, WEDINOS analysed 8,209 samples from community, Night-time Economy (NTE) and Criminal Justice Settingss. A total of 238 psychoactive substances were identified either alone or in combination.

As in previous years, benzodiazepines were the most commonly identified drug group. Diazepam was the most frequently identified substance overall. Novel benzodiazepines, including ethylbromazolam and bromazolam, continued to be identified, often in samples sold as other substances.

Synthetic cannabinoid receptor agonists (SCRAs) continued to be identified in products submitted as THC, CBD, cannabis and cannabinoid vape products. Of samples submitted as THC, CBD or cannabis vape products, 43% contained one or more SCRAs.

Nitazenes were identified in 110 samples. Most nitazene-positive samples were submitted as diazepam, heroin or oxycodone. WEDINOS also identified a number of emerging synthetic opioids, including cychlorphine and spirochlorphine.

Analysis of community samples continued to demonstrate substitution and adulteration within the illicit drug market. Excluding samples where purchase intent was unknown or unclear, 36.6% did not contain the expected substance, 7.7% contained the expected substance alongside additional psychoactive substances and 55.7% contained only the expected substance.

The findings highlight the continued value of drug checking services in identifying unexpected substances, supporting harm reduction and informing public health responses.

WEDINOS continues to provide surveillance, early warning intelligence and harm reduction information across Wales and the wider UK.

Unless otherwise stated, sample totals within this report refer to the total number of unique submitted samples analysed (based on submission key counts). Substance identification totals refer to cumulative identifications across the profile of samples (range is between one substance in isolation to twelve substances in a single sample) following laboratory analysis.

Overview of drug use and harm (Global, Europe, UK, Wales)

WEDINOS and UK drug checking intelligence (Wales, UK)

October 2025 marked the thirteenth anniversary of the WEDINOS programme. WEDINOS provides laboratory analysis of anonymously submitted substances and supports public health surveillance, harm reduction and early warning activity across Wales and the wider UK.[1]

Since 2013, WEDINOS has analysed tens of thousands of submitted samples and contributed to local, national and international monitoring systems. Findings are routinely shared with substance misuse services, healthcare professionals, public health organisations, the UK National Drug Alerts System, the Advisory Council on the Misuse of Drugs (ACMD), the Trans European Drug Information (TEDI) network and the United Nations Office on Drugs and Crime (UNODC).

WEDINOS functions as part of a wider UK and European early warning infrastructure for emerging synthetic drugs and adulterants.

Global estimates

According to the UNODC World Drug Report 2025, global drug use continues to rise over the long term:[2]

- 316 million people used drugs in 2023, approximately 6% of the global population aged 15–64. This represents a 28% increase over the past decade (from 5.2% in 2013)
- Over 64 million people have drug use disorders globally; while only around 1 in 12 people with drug use disorders receive treatment
- Approximately 14 million people inject drugs worldwide
- The burden of disease remains heavily concentrated in opioids, stimulants, and polysubstance use

The World Health Organization (2024) reports that:[3]

- Drug use caused nearly 600,000 deaths globally (2019 estimate)
    - Of these, opioids accounted for 450,000 deaths
- Drug-attributable mortality remains a major global public health burden

1 WEDINOS (2026) WEDINOS: Welsh Emerging Drugs and Identification of Novel Substances. Available at: https://www.wedinos.wales (Accessed: 28 May 2026).
2 United Nations Office on Drugs and Crime (UNODC) (2025) World Drug Report 2025. Vienna: UNODC. Available at: https://www.unodc.org/unodc/en/data-and-analysis/world-drug-report-2025.html (Accessed: 28 May 2026).
3 World Health Organization (WHO) (2024) Global status report on alcohol and health and treatment of substance use disorders. Geneva: WHO. Available at: https://www.who.int/publications/i/item/9789240096745 (Accessed: 28 May 2026).

Europe

The European Union Drugs Agency (EUDA) reports that drug use in Europe remains:[4]

- High but broadly stable in prevalence among adults
- Increasingly characterised by poly-drug use
- Marked by expanding availability of cocaine, synthetic stimulants, and new psychoactive substances

Key recent trends include:

- Rising cocaine purity and availability across multiple EU states
- Continued high prevalence of cannabis use
- Increased emergence of synthetic opioids (including nitazenes in some countries)
- Growing burden on emergency healthcare systems due to mixed-substance toxicity

England and Wales

According to the Office for National Statistics (Crime Survey for England and Wales, year ending March 2024, published Dec 2024):[5]

- 2.9 million adults (8.8%) aged 16–59 reported drug use in the last year
- 16.5% of 16–24-year-olds reported drug use

Drug-specific findings:

- Cannabis remains the most used drug
- Cocaine: 2.1% of adults aged 16–59 (stable trend)
- MDMA and hallucinogen use remained broadly stable
- No statistically significant change in overall prevalence compared with the previous year

4 European Union Drugs Agency (EUDA) (2025) European Drug Report 2025: Trends and Developments. Lisbon: EUDA. Available at: https://www.euda.europa.eu/publications/european-drug-report_en (Accessed: 28 May 2026).

5 Office for National Statistics (ONS) (2024) Drug misuse in England and Wales: year ending March 2024. Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/articles/drugmisuseinenglandandwales/yearendingmarch2024 (Accessed: 28 May 2026).

Wales

According to Public Health Wales (Data Mining Wales: Substance Misuse Profile 2023–24, published 2025):[6]

Estimated prevalence:

- 51,110 people (2021–22 estimate) classified as problem drug users (including non-service populations)

Treatment demand (2023–24):

- 15,959 substance misuse assessments (14,565 individuals)
    - 46.3% alcohol primary
    - 43.5% drug primary
    - 10.2% no substance recorded

Among drug primary presentations, opioids: 41.2% (heroin most common) accounted for the largest number of presentations. Cocaine (including crack) accounted for 25% (increasing share of presentations) with cannabis at 19.4%.

Health harms

- 3,850 hospital admissions for illicit drug poisoning (2023–24)
    - ↓ 10.6% from the previous year
- Opioids remain the leading cause of admission

Mortality

- 377 drug poisoning deaths registered in 2023
- 253 (67.1%) classified as drug misuse deaths
- Represents an 18.6% increase year-on-year

6 Public Health Wales (2025) Data Mining Wales: The annual profile for substance misuse 2023-2024. Cardiff: Public Health Wales. Available at: https://phw.nhs.wales/publications/data-mining-wales/ (Accessed: 28 May 2026).

Summary

Across all regions:

- Global drug use continues to rise (UNODC 2025), with treatment coverage remaining very low
- Opioids remain the dominant driver of global drug-related mortality (WHO 2024)
- Europe shows stable prevalence but increasing drug market complexity (EUDA 2024–25)
- England and Wales show stable prevalence (~9%) but persistent youth concentration of use (ONS 2024)
- Wales shows high and persistent drug-related harm, particularly:
    - rising cocaine/crack involvement in treatment
    - sustained opioid burden
    - increasing drug-related mortality despite some reductions in hospital admissions

WEDINOS
Collecting • Testing • Informing

DRUG USE AND RELATED HARM:
GLOBAL, EUROPEAN, UK AND WALES 2025–2026
THE LATEST EVIDENCE AT A GLANCE

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GLOBAL
UNODC 2025, WHO 2024

316 million
people used drugs in 2023
~6% of the global population aged 15–64

28% increase
in drug use over the past decade (from 5.2% in 2013)

Over 64 million
people have drug use disorders

Only 1 in 12
people with drug use disorders receive treatment

~14 million
people inject drugs worldwide (0.2% of the population)

DRUG-ATTRIBUTABLE DEATHS (2019)
~600,000 deaths globally
~450,000 due to opioids
(WHO 2024)

EUROPE
EUDA 2025

- Drug use remains high but broadly stable in adults
- High availability of cocaine, synthetic and meth/cathinone stimulants
- Increasing poly-drug use involving opioids, antidepressants and benzodiazepines
- Emerging synthetic opioids including nitazenes in some countries
- Continued impact on emergency healthcare and treatment services

Overall picture: stable prevalence but more potent, and dynamic drug markets across Europe

ENGLAND & WALES
ONS 2024/25

2.9 million adults (16–59) used drugs in the last year

16.5% of 16–24 year olds used drugs in the last year

Opioid prevalence **0.8%** of adults aged 16–59

MOST COMMONLY USED DRUGS (adults 16–59)

Cannabis 7.0% used commonly or more

Cocaine 2.1% used in last year

MDMA & hallucinogens broadly similar compared to previous year

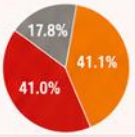
No statistically significant change in overall prevalence compared with the previous year

Source: Office for National Statistics (2025)
Adult Psychiatric Morbidity Survey, annual report 2024 to 2025
(Published 13 November 2025)

WALES
PHW 2025 (2023/24 data)

ESTIMATED PROBLEM DRUG USE (16–59 yrs)
~51,110 people
(0.7% CI: 34,780 – 69,340)
Including populations not in treatment services

TREATMENT DEMAND (2023/24)
15,963 presentations
(All ages combined)
- 17.8% Alcohol (n=2,842)
- 41.0% Drugs (n=6,533)
- 41.1% Non-substance (n=6,562)



AGING DRUG PRESENTATIONS (2023/24)
41.2% Aged 45+ years (↑ from 31.5%)
16.4% Cannabis (↑24%)
25% Cocaine (↑40%) (↑40%)
Increasing drug polysubstance

HOSPITAL ADMISSIONS FOR ILLICIT DRUG POISONING (2023/24)
3,850
Rate 131.0 per 100,000
16.6% Since 2016/17 (age-standardised rate)

DRUG POISONING DEATHS (2023)
377 deaths
18.8% increase in provisional rate
233 (61.7%) deaths in 'at risk' mature adults

Source: Public Health Wales (2025)
Public Health Outcomes Framework (PHOF) substance misuse 2025–26
Published October 2025

KEY MESSAGES

- Global drug use continues to rise and treatment remains gap
- Opioid overdose deaths remain a major concern
- Europe drug markets are dynamic and increasingly poly-drug
- England & Wales: stable trends with high cannabis use
- In Wales, drug-related harms increasing in older adults and polysubstance use is worsening

SOURCES

UNODC	UNODC (2025) World Drug Report 2025.	www.unodc.org/unodc/en/data-and-analysis/world-drug-report-2025.html
World Health Organization	WHO (2024) Global status report on alcohol and health and treatment of substance use disorders 2024.	www.who.int/publications/i/item/9789240096745
European Union Drugs Agency	EUDA (2025) European Drug Report 2025: Trends and Developments.	www.euda.europa.eu/publications/european-drug-report/2025
Office for National Statistics	ONS (2025) Adult Psychiatric Morbidity Survey, annual report 2024 to 2025 (Published 13 November 2025).	www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandlifeexpectancies/bulletins/adultpsychiatricmorbiditysurvey/2024to2025
Public Health Wales	Public Health Wales (2025) Public Health Outcomes Framework (PHOF) substance misuse 2025–26 (Published October 2025).	https://phw.nhs.wales/topics/latest-information-on-covid-19/phof/substance-misuse/

Timely data and intelligence are essential to support evidence-informed public health action and reduce drug-related harm.

Data saves lives.

Introduction to WEDINOS findings 2025-2026

Between 1st April 2025 and 31st March 2026 WEDINOS has analysed a total of 8,209 submitted samples collected from services and settings across the UK, in addition to samples submitted by individuals. These samples originate from three main categories:[7]

- Community settings
- Night-time Economy (NTE)
- Criminal Justice Settingss

The majority of samples were classified as community samples. Samples submitted by Gwent Police were categorised as originating from the Night-time Economy, while samples from HMP Parc and HMP Cardiff were classified as Criminal Justice Settings submissions.

Samples from NTE and Criminal Justice Settingss are primarily collected from amnesty bins or other non-attributable sources and, as such, often lack detailed information relating to purchase intent, user demographics, patterns of use, or associated effects.

Key Findings

Substances Identified

A total of 8,209 unique submitted samples were analysed, revealing 238 distinct psychoactive substances either individually or in combination.

As in previous years, benzodiazepines remained the most frequently identified drug group, with 22 different benzodiazepines detected. Several benzodiazepines were identified only infrequently, highlighting the continued diversity and volatility of the illicit benzodiazepine market.
Diazepam was the most frequently identified benzodiazepine and the most commonly identified substance overall, with 1,190 identifications.
Ethylbromazolam was identified in 460 samples, while bromazolam was identified in 277 samples, indicating the continued emergence and circulation of potent novel benzodiazepines within the drug market. Both substances were infrequently declared as intended purchases, suggesting they are commonly encountered as substitutes or adulterants.

Cocaine was the second most commonly identified psychoactive substance overall, with 634 identifications, influenced in part by submissions originating from the Night-time Economy.
Consistent with previous years, caffeine remained the most common bulking or cutting agent and was frequently identified in stimulant samples including amphetamine, MDMA and cocaine. Some samples submitted as MDMA were found to contain caffeine alone.

7 WEDINOS (2026) Programme analytical dataset, April 2025-March 2026. Unpublished internal WEDINOS laboratory and submission data.

	2025/2026	2024/2025
1	Diazepam	Cocaine
2	Cocaine	Diazepam
3	MDMA	MDMA
4	Ethylbromazolam	Bromazolam
5	Ketamine	Ketamine
6	No Active Compound	Caffeine
7	Caffeine	Alprazolam
8	Paracetamol	Cannabinol
9	Nicotine	Tetrahydrocannabinol
10	Alprazolam	MDMB-4en-PINACA

Table 1: Most identified psychoactive substance WEDINOS samples.

Community Samples Analysis

Since the launch of WEDINOS in 2013, findings have consistently demonstrated widespread substitution, adulteration, and variability within the illicit drug market.

Overall, the community sample data demonstrate an increasingly chemically heterogeneous illicit market characterised by widespread substitution, polysubstance mixtures and increasing prevalence of high-potency synthetic substances. Many samples contained multiple psychoactive substances from different pharmacological classes simultaneously, increasing unpredictability and overdose risk.

Among the 7,973 community samples, 238 psychoactive substances were identified either alone or in combination. Table 2 details changes in the most submitted substances (purchase intent) compared with substances identified following laboratory analysis; however, these do not represent direct one-to-one substitutions between the submitted and detected substances.

Samples classified as “unknown” either had unclear submission names or originated from healthcare or acute care settings where no purchase intent was recorded.

Number	Purchase intent	Post-analysis
1	Diazepam	Diazepam
2	Alprazolam	Cocaine
3	MDMA	MDMA
4	Cocaine	Ethylbromazolam
5	Ketamine	Ketamine
6	Heroin	No active compound
7	Zopiclone	Caffeine
8	Clonazepam	Paracetamol
9	THC	Alprazolam
10	Pregabalin	Nicotine

Table 2 Most common substances pre (perceived) and post (actual) analysis

The latest data from WEDINOS confirms ongoing challenges in the illicit drug market, including the prevalence of potent benzodiazepines like ethylbromazolam as substitutes, the presence of synthetic cannabinoid receptor agonists within cannabis vapes and the presence of xylazine, medetomidine and nitazenes and orphine analogues within the heroin market.

This substantial substitution of intended purchases and actual substance content highlights the risks users face, emphasising the need for continued harm reduction and education efforts.
The identification of xylazine and medetomidine alongside opioid-related submissions represents an important emerging harm signal within the UK drug market. These veterinary sedatives may contribute to profound and prolonged sedation, recurrent toxicity and reduced responsiveness to naloxone. Naloxone may reverse the opioid component of an overdose while significant sedation from xylazine or medetomidine persists.

Community Settings Analysis

WEDINOS receives samples from diverse community sources including education, healthcare (including Emergency Departments), mental health services, housing and homelessness services, substance misuse services and directly from individuals. Collaborations with Welsh prisons continue for samples that have no evidentiary value, with findings from these reported separately.

Sample provider demographics

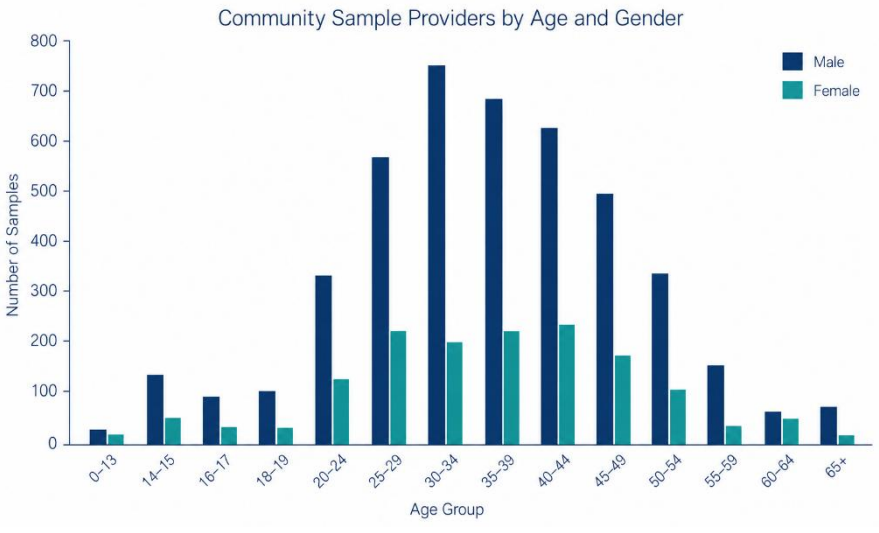
A total of 7,973 samples were submitted from community settings.

Demographic data relating to sex was available for 94% of community samples (7,485 samples). Among samples where sex information was available:

- 75% were submitted by males
- 25% were submitted by females

The median age across all community submitters with available age data was 36 years (range 11–88 years).

- Females: median age 36 years (range 11–88 years)
- Males: median age 36 years (range 11–81 years)



Community Samples Analysis…continued…

The following figures relate solely to samples submitted as community samples.

As in previous years, novel benzodiazepines remained prominent among the most commonly identified substances within community samples. However, unlike previous years, ethylbromazolam rather than bromazolam was the most prevalent novel benzodiazepine identified.

Ethylbromazolam was identified on 454 occasions, while bromazolam was identified on 275 occasions. Both substances were infrequently listed as the intended purchase substance, highlighting the extent to which potent benzodiazepines continue to be encountered as substitutes or adulterants within the illicit benzodiazepine market.

Among community samples purchase intent information was unavailable, unclear or recorded as "unknown" in a substantial proportion of submissions. These samples typically originated from healthcare settings, acute presentations or submissions where insufficient information regarding the expected substance was provided.

It may be argued that the relatively high prevalence of "unknown" purchase intent samples influences the degree of mismatch identified between intended and detected substances. However, even after excluding samples where purchase intent was unknown, analysis demonstrated that a substantial proportion of community samples did not fully contain the expected substance profile.

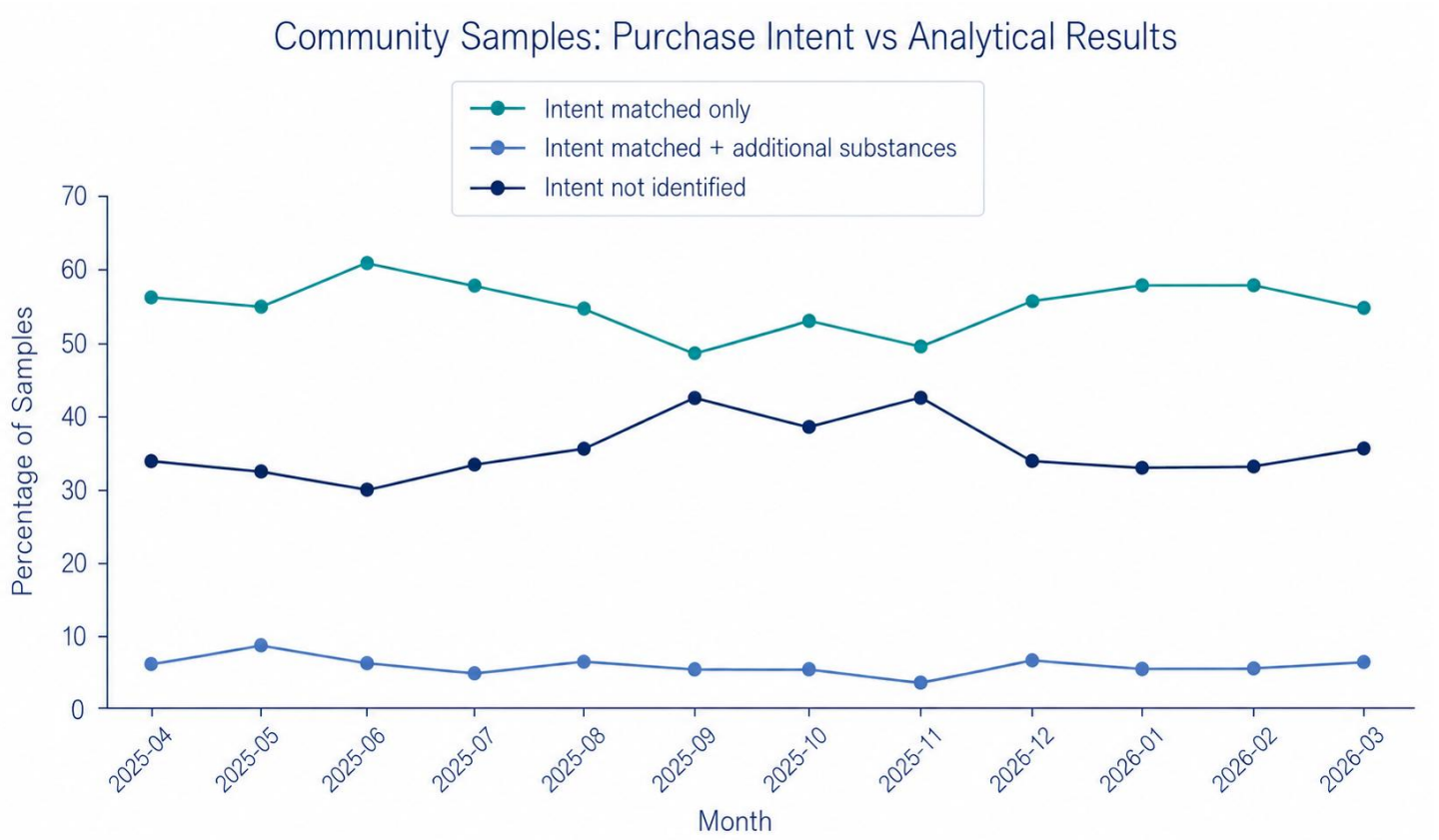
Some samples were found to contain the declared purchase intent alongside additional psychoactive substances. For example, samples submitted as heroin were identified as containing heroin in combination with xylazine following laboratory analysis. Other samples were found to contain entirely different substances than expected. Examples included samples submitted as diazepam that were subsequently identified as containing bromazolam and metonitazene.

For community samples only, excluding submissions where the purchase intent was unknown or unclear:

- 36.6% of samples did not contain the intended substance
- 7.7% of samples contained the intended substance alongside additional psychoactive substances
- 55.7% contained only the intended substance (including recognised metabolites)

This demonstrates that while the expected substance was identified in many submissions, adulteration, substitution and polydrug composition remained common within the illicit drug market during 2025–2026.

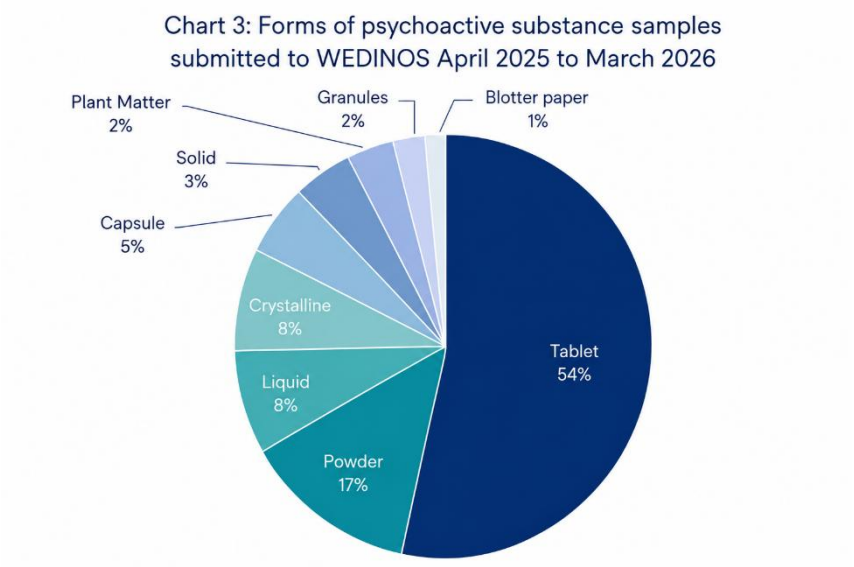
Month-by-month analysis demonstrated ongoing variability in concordance between purchase intent and analytical findings throughout the reporting period. Samples where the intended substance was identified without additional active substances remained the largest category overall. However, a substantial proportion of samples either contained additional psychoactive substances alongside the intended drug or did not contain the intended substance at all, reinforcing the continued unpredictability and complexity of the illicit drug market.


Community Samples: Purchase Intent vs Analytical Results
Intent matched only
Intent matched + additional substances
Intent not identified
Percentage of Samples
70
60
50
40
30
20
10
0
2025-04
2025-05
2025-06
2025-07
2025-08
2025-09
2025-10
2025-11
2026-12
2026-01
2026-02
2026-03
Month

Community Samples

Form of sample

WEDINOS requests the 'form of sample' for each submission to monitor and report the various forms in which substances appear on the market and potential differences in method of consumption.



As in the previous three years, we see a high prevalence in the number of tablets submitted. This is mirrored by the high numbers of samples submitted believed to be diazepam, alprazolam, clonazepam, zopiclone and MDMA.

Method of Consumption and Harm Reduction Advice

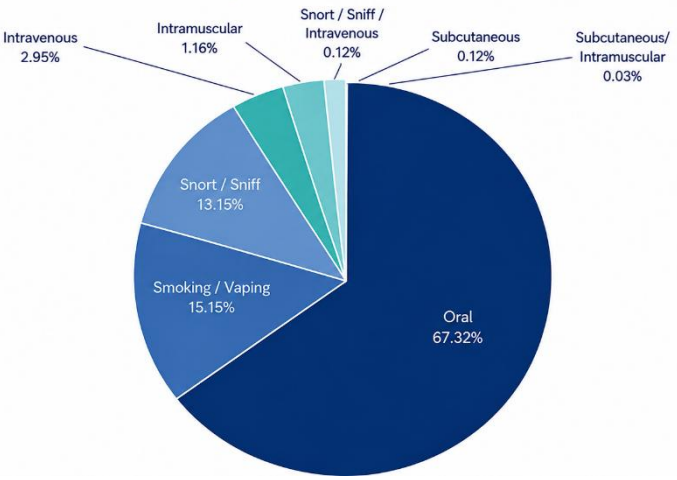
Assuming that all plant matter samples and vape liquids were intended to be smoked or vaped, the remaining samples (including tablets, powders, capsules, liquids, crystalline materials, granules and blotter papers) were consumed through a variety of administration routes.

Among community samples where a method of consumption was stated, the most common route of administration was oral consumption (swallowing or 'bombing'), accounting for 67.3% of samples. This high prevalence of oral use is associated with the large number of submissions purchased as benzodiazepines, particularly diazepam and alprazolam, alongside zopiclone and MDMA tablet submissions.

The second most reported method of consumption was smoking/vaping at 15.1%, followed by snorting/sniffing at 13.1%. Intravenous administration accounted for 3.0% of stated consumption methods, while intramuscular administration accounted for 1.2%. All other administration routes individually accounted for less than 1% of samples.

A substantial proportion of submissions did not include a stated method of consumption and were excluded from this analysis. However, the available data continue to demonstrate the diversity of drug administration practices within the community sample population and highlight the importance of targeted harm reduction messaging relating to oral, inhalational and intranasal drug use.

Chart 4: Method of consumption (samples submitted as tablet, powder, crystalline, capsule, solid, granules, blotter paper) April 2025 to March 2026



Just under 3 % of sample providers reported intravenous injection of substances, with a further 1.5 % reporting intramuscular or subcutaneous injecting.

All injecting, regardless of the substance, carries a significant risk of serious infection and other complications. Individuals who currently inject drugs, or have previously injected, should get tested for blood-borne viruses.

Injecting

Harm reduction advice for intravenous injecting

WEDINOS

Do not share any injecting equipment: this includes water, spoons and filters as well as needles and syringes. It is best practice to use a filter for drawing up.

Ensure you have enough needles for repeat injecting. Rotate injection sites.

Ensure any wounds are treated as soon as possible. If you experience heat or redness at an injecting site – seek medical attention.

Ensure that your equipment is correct for its intended use.

Injecting intensifies everything about the drug experience. Most New Psychoactive Substances are water soluble and do not require the addition of an acid (usually citric acid or ascorbic acid (Vit C)).

Safer injecting checklist

- Sterile water
- Sterile filter
- Sterile needles & syringes
- Sterile spoon or cup
- Safe disposal of used equipment

Looking out for your mates saves lives
Look after yourself and each other.

If you are worried about your health or someone else's, seek medical assistance.

Method of Consumption for Powders, Granules and Crystalline Materials

(Community samples only; excluding "Not Stated")

Method of Consumption for Powders, Granules and Crystalline Materials

(Community samples only; excluding "Not Stated")

Method of Consumption	Percentage (%)
Snort / Sniff	48.7
Oral	27.9
Smoking / Vaping	18.6
Intravenous	3.4
Intramuscular	1.0
Other / Multiple routes	0.4

These findings demonstrate that intranasal administration (snort/sniff) remains the predominant route of consumption for powders, granules and crystalline materials within community samples; although oral administration also remains common. Intravenous administration accounted for a smaller but clinically significant proportion of samples, reinforcing the importance of ongoing harm reduction messaging relating to sterile equipment use, overdose awareness and safer injecting practices.

Snorting/sniffing potentially caustic or toxic substances carries additional risks related to damage to the nasal passages, as well as potential transmission of blood borne viral infection when sharing snorting paraphernalia in the presence of nasal passage damage and blood.

Intranasal (Sniffing/Snorting)

Harm reduction advice for intranasal administration

WEDINOS

Always use clean devices (snorter).

Use your own device.

Do not share devices as there may be traces of blood on your equipment.

Snort high up the nostril to avoid the most sensitive soft tissue.

Clean out nasal passages after use with damp tissue or an ear bud.

Alternate nostrils to lesson damage to one side.

If your nose is bleeding – give it a rest.

Safer sniffing checklist

- Clean device
- Use your own
- Do not share
- Snort high up
- Clean nasal passages
- Alternate nostrils
- Rest if bleeding

Looking out for your mates saves lives

Look after yourself and each other.

If you are worried about your health or someone else's, seek medical assistance.

Nitazenes

Between April 2025 and March 2026, WEDINOS identified nitazenes in 110 samples. This represents approximately 1.3% of all submitted samples analysed during the reporting period and is unchanged from the previous year.

Nitazenes remain a significant public health concern due to their high potency, association with drug-related deaths and continued presence within products sold as other substances.

Nitazenes Identified by WEDINOS

Nitazenes Identified by WEDINOS

Nitazene Identified	Number of Identifications
Metonitazene	74
Protonitazene	12
Butinitazene	5
Isotonitazene	4
N-Desethyl Protonitazene	3
Protodesnitazene	3
Protonitazepyne	2
N-Desethyl Isotonitazene	2
Etonitazepyne	1
Isotonitazepyne	1
N-Desethyl Etonitazene	1
N-Pyrrolidino Isotonitazene	1
N-Pyrrolidino Protonitazene	1

Purchase Intent

Only four nitazene-positive samples were submitted with a nitazene listed as the intended purchase. Most nitazene-positive samples were submitted as:

- Diazepam (40.0%)
- Heroin (26.4%)
- Oxycodone (15.5%)

This suggests that most individuals exposed to nitazenes may not be aware that they are present within the products they are using.

The continued identification of nitazenes within products sold as benzodiazepines and opioid medicines remains a significant concern because users may unknowingly consume highly potent synthetic opioids.

What are Nitazenes?

Nitazenes are synthetic opioids belonging to the 2-benzylbenzimidazole group. They were first synthesised during the 1950s but were never approved for medical use.
In recent years, nitazenes have emerged within illicit drug markets in the UK, Europe and internationally.[8][9] WEDINOS first identified a nitazene in April 2021, detecting metonitazene within a white powder sample submitted from Wakefield, England.
In February 2025, the UNODC reported that 26 different nitazenes had been identified across 30 countries, with evidence suggesting continued global spread.[10]
Similarly, the European Union Drugs Agency (EUDA) has highlighted nitazenes as one of the most significant emerging synthetic opioid threats in Europe. The European Drug Report 2025 noted that seven new synthetic opioids formally notified to the EU Early Warning System during 2024 were all nitazenes, the highest annual number reported to date. Since 2019 at least 21 EU Member States have reported nitazene detections.

Nitazenes and the Law (United Kingdom)

In March 2024 the United Kingdom controlled 15 synthetic opioids, including 14 nitazenes, as Class A drugs under the Misuse of Drugs Act 1971. These included metonitazene, protonitazene, isotonitazene and several related analogues.[11]

On 15 January 2025, UK legislation was further strengthened through the introduction of a generic definition covering all nitazene analogues under Class A control.

Potency and Toxicity

Nitazenes act on the same opioid receptors as heroin, morphine and fentanyl.
Some nitazenes have been reported to possess potency similar to, or greater than, fentanyl. As a result, even small amounts may be associated with severe respiratory depression, unconsciousness and death.

A review of historical animal studies reported relative potencies ranging from approximately equal to morphine for flunitazene to hundreds of times more potent for isotonitazene and etonitazene. The reported rank order of potency among several analogues was:

Etonitazene ≥ Isotonitazene > Protonitazene ≥ Metonitazene > Butinitazene ≥ Etodesnitazene >> 5-aminoisotonitazene = Flunitazene > Metodesnitazene[12]

8 Stangeland, M. et al. (2025) 'Nitazenes: review of comparative pharmacology and antagonist action', Clinical Toxicology. Available at: https://www.tandfonline.com/doi/full/10.1080/15563650.2025.2504133 (Accessed: 28 May 2026).
9 European Union Drugs Agency (2025) *European Drug Report 2025: Trends and Developments*. Lisbon: EUDA. Available at: www.euda.europa.eu/publications/european-drug-report/2025_en (Accessed 1st 2026).
10 United Nations Office on Drugs and Crime (UNODC) (2026) Increasing nitazene and orphine analogues (synthetic opioids) reported to the UNODC Early Warning Advisory. Available at: https://www.unodc.org/LSS/Announcement/Details/e69b2ff5-5b91-4eea-8e1f-802ca7ad5080 (Accessed: 28 May 2026).
11 Home Office (2025) Circular 002/2025: The Misuse of Drugs Act 1971 (Amendment) (No. 2) Order 2024 and related regulations. Available at: https://www.gov.uk/government/publications/circular-0022025-the-misuse-of-drugs-act-1971-order-2024 (Accessed: 28 May 2026).
12 Advisory Council on the Misuse of Drugs (ACMD) (2022) A review of the evidence on the use and harms of 2-benzyl benzimidazole ("nitazene") and piperidine benzimidazolone ("brorphine-like") opioids. London: Home Office. Available at: https://www.gov.uk/government/publications/acmd-advice-on-2-benzyl-benzimidazole-and-piperidine-benzimidazolone-opioid

However, there remains limited information regarding their effects in humans, particularly regarding newer analogues and combinations with other depressant drugs.

The increasing presence of nitazenes within counterfeit medicines and mixed-drug samples substantially increases overdose risk, particularly where users are unaware of exposure.

The risks associated with nitazenes are increased where they are present in counterfeit tablets or mixed with other depressant drugs, including benzodiazepines, alcohol and gabapentinoids.

Nitazenes and Drug-Related Deaths

Nitazenes continue to be associated with drug-related deaths in the UK and internationally.

International monitoring systems, including the European Union Drugs Agency (EUDA) and the United Nations Office on Drugs and Crime (UNODC), continue to report increasing detections of nitazenes within illicit drug markets.

Nitazenes and Naloxone

Naloxone remains effective in reversing opioid overdose caused by nitazenes.

However, because some nitazenes are highly potent, repeated doses of naloxone may be required.

Anyone experiencing a suspected opioid overdose should receive immediate medical attention, even where naloxone has been administered successfully.

TOXBASE and the UK National Poisons Information Service recommend naloxone administration in any suspected opioid toxicity where respiratory depression, airway compromise or reduced consciousness is present. Prompt emergency medical assistance remains essential, particularly given the rapid onset and severity associated with some nitazene exposures.[13]

Harm Reduction Messages

- Assume any illicit tablet, powder or opioid product may contain unexpected substances
- Avoid using opioids alone
- Carry naloxone and ensure those around you know how to use it
- Avoid combining opioids with alcohol, benzodiazepines or other sedatives
- Start with a smaller amount than usual when using a new or unfamiliar substance
- Seek emergency medical assistance immediately if an opioid overdose is suspected

WEDINOS findings continue to demonstrate the importance of drug checking services in identifying unexpected synthetic opioids and supporting timely public health responses.

13 National Poisons Information Service (NPIS) (2025) TOXBASE guidance on opioid toxicity and naloxone administration. Available at: https://www.toxbase.org (Accessed: 28 May 2026).

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Collecting • Testing • Informing

NITAZENES

A GROWING THREAT IN OUR DRUG SUPPLY

Highly potent synthetic opioids now detected in the UK and across the world.

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WHAT ARE NITAZENES?

Nitazenes are a group of highly potent synthetic opioids belonging to the 2-benzylbenzimidazole class. First synthesised in the late 1950s, they were never approved for medical use and currently have no recognised therapeutic application. They are sometimes described as new synthetic opioids (NSOs) or new psychoactive substances (NPS).

A MAJOR GLOBAL CONCERN

UNODC reports **26** different nitazenes identified across 30 countries as of Feb 2025, with detections in Europe, North America, Oceania, and parts of Asia and South America. EUDA reports that since **2019**, at least 21 EU Member States have reported nitazene detections. In 2024, seven of the new synthetic opioids reported to the EU Early Warning System were nitazenes – the highest number to date.

WHAT WEDINOS IS SEEING

Between April 2025 and March 2026, WEDINOS identified nitazenes in **110 samples,** representing approximately **1.3% of all submitted samples analysed during the reporting period – unchanged from the previous year (110 samples; approximately 1.4%).**

WEDINOS has now identified 13 distinct nitazenes (up from 8 the previous year).

Nitazene-containing samples were submitted from across **mainland Great Britain.**

NITAZENES IDENTIFIED BY WEDINOS (RESULT 1–RESULT 12)

Nitazene Identified	Number of Identifications
Metonitazene	74
Protonitazene	12
Butinitazene	5
Isotonitazene	4
N-Desethyl Protonitazene	3
Protodesnitazene	3
Protonitazepyne	2
N-Desethyl Isotonitazene	2
Etonitazepyne	1
Isotonitazepyne	1
N-Desethyl Etonitazene	1
N-Pyrrolidino Isotonitazene	1
N-Pyrrolidino Protonitazene	1

Metonitazene remained the dominant nitazene, accounting for ~67% of all nitazene identifications.

Of the 110 nitazene-positive samples, only 4 (3.6%) were submitted with a nitazene listed as the purchase intent. This shows most people are unaware they are using nitazenes, which greatly increases overdose risk.

Nitazenes are most commonly found as adulterants or substitutes in counterfeit benzodiazepines and opioid medications, heroin and other illicit substances.

NITAZENES AND THE LAW (UNITED KINGDOM)

- March 2024: 15 synthetic opioids, including 14 nitazenes, aontrolled as Class A drugs under the Misuse of Drugs Act 1971.
- 15 January 2025: New legislation introduced a generic definition covering ALL nitazene analogues under Class A control.

WHERE NITAZENES WERE FOUND (PURCHASE INTENT)

Purchase Intent	Number of Nitazene-Positive Samples	Percentage of Nitazene Samples (%)
Diazepam	44	40.0%
Heroin	29	26.4%
Oxycodone	17	15.5%
Unknown / Not Stated	7	6.4%
Alprazolam	4	3.6%
Nitazene listed as intent	4	3.6%
Morphine	2	1.8%
Pregabalin	1	0.9%
Xanax	1	0.9%
Other	1	0.9%

These findings demonstrate that **nitazenes continue to be primarily identified within counterfeit benzodiazepines and opioid products rather than intentionally purchased.**

POTENCY AND TOXICITY

Nitazenes are highly potent μ-opioid receptor agonists – they strongly activate opioid receptors responsible for respiratory depression, sedation and euphoria. Some nitazenes may equal or exceed the potency of fentanyl, while certain analogues may substantially exceed it.

Animal studies suggest the following rank order of potency:

Etonitazene ≥ Isotonitazene > Protonitazene ≥ Metonitazene > Butinitazene ≥ Etodesnitazene >> 5-aminoisotonitazene = Flunitazene > Metodesnitazene

There is limited information on effects in humans, especially for newer analogues and when mixed with other depressant drugs.

NITAZENES AND DRUG-RELATED DEATHS

In 2024, there were at least **333 drug-related deaths** involving nitazenes in the United Kingdom (figure expected to rise as further testing and case reviews are completed).

Outbreaks of nitazene-related poisonings and deaths have been reported across Europe, including Ireland, France and the UK. Because standard opioid tests may **not detect all nitazenes,** the true scale may be underestimated.

HOW TO STAY SAFE

ASSUME EXTREME POTENCY
Any powder, pill or "heroin" may contain nitazenes – even in tiny, invisible amounts.

START LOW, GO SLOW
Use much smaller amounts than usual and avoid rapid re-dosing.

DO NOT USE ALONE
Use with someone who can respond, or use supervised consumption / spotting services where available.

CARRY NALOXONE
Naloxone still works, but multiple doses may be needed with potent synthetic opioids – keep giving it as instructed until help arrives.

AVOID MIXING DEPRESSANTS
Combining with alcohol, benzos, pregabalin/gabapentin, Z-drugs or other sedatives massively increases overdose risk.

WATCH FOR DELAYED TOXICITY
Sedation and respiratory depression can return after initial reversal. Stay with the person, keep them in the recovery position, and seek medical review.

USE DRUG CHECKING SERVICES
Services like WEDINOS can identify unexpected synthetic opioids; results can guide safer choices and inform local alerts.

WEDINOS – Collecting, Testing, Informing
An independent drug checking and early warning service working to reduce harm in our communities.
wedinos.org

If you are concerned about an overdose, call 999 immediately.

Naloxone saves lives.
Carry it. Know how to use it.
You could save a life.

CARRY NALOXONE SAVE A LIFE

Emerging "Orphine" Analogues in the Illicit Drug Market

Overview of Orphine Analogues

Orphines are a group of highly potent synthetic opioids structurally related to compounds including brorphine, chlorphine and spirochlorphine.

Although first synthesised several decades ago[14] [15], they have only recently begun to emerge within illicit drug markets. International monitoring systems, including the United Nations Office on Drugs and Crime (UNODC) and the European Union Drugs Agency (EUDA), have reported increasing detections of these substances in recent years.

Like other synthetic opioids, orphines act primarily on μ-opioid receptors and may cause respiratory depression, sedation, unconsciousness and death.

Orphines Identified by WEDINOS

At the time of writing, WEDINOS has identified six different orphine analogues:

- 5,6-dichloro desmethylchlorphine (SR-17018)
- 5-chloro desmethylchlorphine
- N-propionitrile chlorphine (cychlorphine)
- Etodezitramide
- Spirobrorphine
- Spirochlorphine (R-6890)

The identification of these substances is consistent with reports from UNODC, EUDA and UK early warning systems.

The emergence of multiple orphine analogues within WEDINOS submissions demonstrates the continuing diversification of the synthetic opioid market.

Why are Orphines Important?

Orphines are of concern because many are believed to possess potency comparable to, or greater than, fentanyl.

Although human data remain limited for many compounds, laboratory and animal studies suggest that some orphines may be active at very low doses. Therefore, small differences in quantity may

14 United Nations Office on Drugs and Crime (UNODC) (2026) Orphine analogues: substance group details. Available at: https://www.unodc.org/LSS/SubstanceGroup/Details/09f4734d-aadb-44a0-aa76-2e8816b1cc02 (Accessed: 28 May 2026).

15 Advisory Council on the Misuse of Drugs (ACMD) (2022-2026) Advice on 2-benzyl benzimidazole and piperidine benzimidazolone opioids. London: Home Office. Available at: https://www.gov.uk/government/publications/acmd-advice-on-2-benzyl-benzimidazole-and-piperidine-benzimidazolone-opioids (Accessed: 28 May 2026).

significantly increase overdose risk.

As with nitazenes, users are unlikely to know when these substances are present within products sold as heroin, opioid medicines or other drugs.

Another concern is that many currently available drug testing devices and routine toxicology screens may not detect all orphine analogues.

Public Health Concerns

The principal harms associated with orphines include:

- Respiratory depression
- Reduced consciousness
- Prolonged sedation
- Delayed or recurrent overdose
- Increased overdose risk when combined with other depressant drugs

The risks may be further increased when orphines are used alongside:

- Heroin
- Benzodiazepines
- Alcohol
- Pregabalin
- Gabapentin
- Xylazine
- Medetomidine

These combinations may produce additive or synergistic effects and substantially increase the likelihood of severe toxicity.

International Context

International monitoring systems continue to report increasing detections of emerging orphine analogues.

UNODC has reported growing numbers of detections[16] [17] [18] involving compounds including cychlorphine, chlorphine and spirochlorphine. Fatal overdoses involving some of these substances have also been reported internationally.

WEDINOS findings are consistent with these wider trends and demonstrate that emerging synthetic

16 United Nations Office on Drugs and Crime (UNODC) (2026) The emerging threat of cychlorphine: a new synthetic opioid raising concerns globally for public health. Available at: https://www.unodc.org/LSS/Announcement/Details/9403c3d1-12b9-49ac-8604-7da583d38d3b (Accessed: 28 May 2026).

17 United Nations Office on Drugs and Crime (UNODC) (2025) Emerging analogues of brorphine. Available at: https://www.unodc.org/LSS/Announcement/Details/55d787ca-cec7-4204-90b0-68236305dcaa (Accessed: 28 May 2026).

18 Colombo Plan Drug Advisory Programme (2026) Cychlorphine/Orphines Public Alert. Available at: https://colombo-plan.org/wp-content/uploads/2026/02/Cychlorphine-Orphines-Public-Alerts_2026-1.pdf (Accessed: 28 May 2026).

opioids continue to appear within the UK drug market.

The identification of these compounds suggests continued diversification away from fentanyl and nitazene analogues, increasing sophistication in clandestine opioid synthesis, and a rapidly evolving synthetic opioid market across both the UK and Europe.

Pharmacology and Toxicological Concerns

Comparative Potency

Available evidence suggests that many orphines possess potency broadly comparable to, or greater than, fentanyl.

However, several analogues have demonstrated exceptionally high receptor affinity and potent opioid activity in laboratory and animal studies. These properties are associated with severe respiratory depression, the principal cause of fatal opioid overdose.

Regardless of their exact potency, the identification of these substances within the illicit drug market presents a significant public health concern due to their potential to cause severe opioid toxicity at low doses.

A significant public health challenge associated with orphines is the difficulty of detecting them. Many currently available fentanyl and nitazene testing strips may not detect these compounds, while routine toxicology screening panels often fail to identify them altogether. Consequently, individuals may unknowingly consume orphines and healthcare professionals may be unaware of their involvement in cases of suspected overdose.

Current evidence indicates that some of these emerging compounds may overlap with the potency range reported for stronger nitazenes and, according to assessments undertaken by the UK Advisory Council on the Misuse of Drugs (ACMD), may potentially approach the extreme toxicity associated with carfentanil-like opioids. However, reliable human potency data remain scarce and caution should be exercised when making direct comparisons between substances.

From a public health perspective, the emergence of these compounds is particularly concerning because they may be substantially more potent than heroin on a milligram-for-milligram basis; potentially ranging from tens to hundreds of times stronger depending on the specific analogue. In addition, their pharmacology, toxicity and duration of action remain poorly understood compared with more established opioids. This uncertainty increases the likelihood of accidental overdose, particularly where users are unaware that synthetic opioids are present within a product.

Fatalities and Public Health Impact

Analysis of fatal cases indicates that orphines are frequently identified in the context of polysubstance use. Common themes include co-exposure to other central nervous system depressants, the presence of counterfeit pharmaceutical products and adulteration of heroin or other opioid-containing substances. In many cases, individuals were reportedly unaware that highly potent synthetic opioids were present within the products they had consumed.

These findings highlight several important challenges for public health and clinical services. The high potency of many orphines increases the risk of rapid respiratory depression, while the frequent involvement of multiple substances can complicate both diagnosis and treatment. Furthermore, because these compounds are not routinely detected by many toxicology screening methods, their contribution to overdose incidents may be under-recognised.

Taken together, the available evidence suggests that orphines have the potential to become an increasingly significant contributor to opioid-related harms in the UK and internationally. Continued monitoring through drug checking services, forensic laboratories, toxicology networks and international early warning systems will be essential to identify emerging trends, support harm reduction interventions and inform timely public health responses.

Harm Reduction Messages

For people who use opioids

- Assume extreme potency - Any powder, pill or “heroin” may contain orphines, nitazenes or fentanyls - even in tiny invisible amounts
- Start low, go slow - Use much smaller amounts than usual and avoid rapid re-dosing
- Do not use alone - Use with someone able to respond or use supervised consumption / spotting services where available
- Carry naloxone - Naloxone still works, but multiple doses may be required with potent synthetic opioids
- Avoid mixing depressants - Combining opioids with alcohol, benzodiazepines, pregabalin, gabapentin or Z-drugs greatly increases overdose risk
- Watch for delayed toxicity - Sedation and respiratory depression can return after initial naloxone reversal
- Use drug checking services - Services such as WEDINOS can identify unexpected synthetic opioids and support local warning systems

Substitution of CBD/THC and Cannabis Vape Products with Synthetic Cannabinoid Receptor Agonists (SCRAs)

Between April 2025 and March 2026, WEDINOS received 312 samples submitted as containing tetrahydrocannabinol (THC), cannabidiol (CBD), cannabis, cannabis concentrates or cannabinoid vape products intended for vaping.

Of these, 43% (n=134) were found to contain one or more synthetic cannabinoid receptor agonists (SCRAs) either instead of, or alongside, the expected cannabinoids. This represents a continued and significant level of substitution within the illicit cannabinoid vape market.

The most frequently identified SCRAs within these submissions included:

- MDMB-4en-PINACA
- 5F-ADB
- ADB-BUTINACA
- MDMB-INACA
- 4F-MDMB-BINACA

These findings are consistent with wider international trends identified by the United Nations Office on Drugs and Crime (UNODC), the European Union Drugs Agency (EUDA) and the World Health Organization (WHO), all of which have highlighted the continued evolution and diversification of the synthetic cannabinoid market.

Counterfeit Vape Products

WEDINOS findings continue to demonstrate that products sold as THC, CBD or cannabinoid vape products may contain substances other than those expected.

Some products marketed as cannabinoid vape products contained SCRAs rather than naturally occurring cannabinoids.

A study by Craft et al. analysed illicitly sourced vape products sold as cannabis-based products. Although the products were accompanied by certificates of analysis claiming the presence of semi-synthetic cannabinoids such as:[19]

- Hexahydrocannabinol (HHC)
- Hexahydrocannabiphorol (HHC-P)
- Tetrahydrocannabiphorol (THC-P)
- Tetrahydrocannabinol acetate ester (THC-O)

Laboratory analysis identified SCRAs within all analysed products rather than the advertised cannabinoids.

EUDA and UNODC reporting have similarly identified increasing availability of semi-synthetic cannabinoids and counterfeit cannabinoid products within European and international markets; with substantial concerns regarding mislabelling, product contamination and the inclusion of highly

19 Craft, S. et al. (2025) 'Detection and quantification of synthetic cannabinoids in seven illicit disposable vaping products', Addiction. Available at: https://onlinelibrary.wiley.com/doi/abs/10.1111/add.16671 (Accessed: 28 May 2026).

potent SCRAs.

This presents an important public health concern because individuals may unknowingly consume highly potent synthetic cannabinoids while believing they are using cannabis-derived products.

Synthetic Cannabinoid Receptor Agonists (SCRAs)

SCRAs currently represent one of the largest and most chemically diverse groups of novel psychoactive substances (NPS) monitored internationally.

The term "synthetic cannabinoids" refers to synthetic compounds capable of binding to one or both cannabinoid receptors, CB1 and CB2. However, despite often being described colloquially as "synthetic cannabis", SCRAs differ substantially from naturally occurring cannabinoids in both pharmacology and toxicity.

Unlike tetrahydrocannabinol (THC), which acts primarily as a partial agonist at the CB1 receptor, most SCRAs act as full agonists with substantially higher receptor binding affinity and efficacy. This results in stronger and often more prolonged cannabinoid receptor activation than that produced by cannabis.

Natural cannabis contains more than 100 cannabinoids, including THC and cannabidiol (CBD), which may modulate and partially counterbalance some psychoactive and adverse effects. In contrast, SCRA-containing products frequently contain only one or several highly potent synthetic compounds without moderating cannabinoids such as CBD. This contributes to their greater unpredictability and increased toxicity.

Peer-reviewed European toxicovigilance research comparing lone cannabis exposure with lone SCRA exposure demonstrated that SCRA exposure was associated with significantly higher rates of:[20]

- Agitation
- Seizures
- Coma
- Bradycardia
- Severe sedation and reduced consciousness

These findings reinforce evidence that SCRAs present substantially greater acute toxicity risks than natural cannabis.

Depending on the substance, formulation, and route of administration, SCRAs may also demonstrate a faster onset and longer duration of action than cannabis.

Vaping SCRAs (Knowingly or Unknowingly)

Vaping SCRAs may produce extremely rapid and potent effects. When inhaled through vape devices, aerosolised SCRAs are absorbed rapidly through the pulmonary circulation and enter the bloodstream directly, bypassing first-pass metabolism. This can produce sudden and intense

20 Tait, R.J., Caldicott, D., Mountain, D., Hill, S.L. and Lenton, S. (2016) 'A systematic review of adverse events arising from the use of synthetic cannabinoids and their associated treatment', Clinical Toxicology, 54(1), pp. 1-13. doi: 10.3109/15563650.2015.1110590.

intoxication within seconds to minutes.

Compared with smoking, vaping may deliver higher concentrations of active substances per inhalation, while offering limited sensory feedback to users regarding dose titration. This substantially increases overdose risk, particularly when users are unaware that the product contains a potent SCRA rather than cannabis or CBD.

Increasing international evidence suggests that vape cartridges purchased or marketed as containing THC, CBD or semi-synthetic cannabinoids may instead contain potent SCRAs. Adverse effects reported internationally include:[21]

- Severe anxiety and panic
- Psychosis
- Hallucinations
- Seizures
- Palpitations
- Syncope
- Vertigo
- Nausea and vomiting
- Cardiovascular complications

EUDA has highlighted increasing concerns regarding highly potent SCRAs appearing in vaping products due to their ease of concealment, rapid delivery and increased toxicity risk.

Vaping and Additional Risks

Vaping may deliver SCRAs rapidly and efficiently to the bloodstream.

Where SCRAs are present within vape products, individuals may inhale larger amounts than intended before recognising unexpected effects.

The combination of high potency, rapid delivery and uncertainty regarding product composition may increase the risk of severe intoxication.

Harm Reduction Messages

For individuals using cannabis or cannabinoid vape products:

- Be aware that products sold as THC, CBD or cannabis vape products may contain unexpected substances
- Start with a small amount when using a new or unfamiliar product
- Avoid using alone
- Avoid combining substances with alcohol or other drugs
- Seek medical attention if severe or unexpected effects occur
- Use drug checking services where available

21 Dines, A.M. et al. (2015) 'Acute recreational drug and new psychoactive substance toxicity in Europe: 12 months data collection from the European Drug Emergencies Network (Euro-DEN)', Clinical Toxicology, 53(9), pp. 893-900. doi: 10.3109/15563650.2015.1088157.

Summary

WEDINOS identified SCRAs in 43% of samples submitted as THC, CBD, cannabis or cannabinoid vape products.
These findings demonstrate continued substitution within the illicit cannabinoid market and reinforce the importance of drug checking, public awareness and harm reduction messaging.
The presence of SCRAs within products sold as cannabinoid vape products remains an important public health concern due to the potential for individuals to unknowingly consume highly potent synthetic cannabinoids.

MDMB-4en-PINACA

MDMB-4en-PINACA remained one of the most frequently identified SCRAs within WEDINOS submissions during the reporting period.

MDMB-4en-PINACA is a highly potent synthetic cannabinoid receptor agonist belonging to the indazole-3-carboxamide family. It forms part of a newer generation of SCRAs increasingly associated with severe toxicity events internationally.

Experimental and toxicological studies indicate that MDMB-4en-PINACA demonstrates extremely high affinity and efficacy at CB1 receptors and remains active at very low concentrations.
Because of its potency and full agonist activity, exposure carries significant overdose risk and may produce:

- Severe agitation
- Tachycardia
- Seizures
- Hallucinations
- Acute psychosis
- Loss of consciousness

WHO critical review documentation and peer-reviewed toxicology studies have associated MDMB-4en-PINACA with numerous hospitalisations and deaths internationally.

Within the United Kingdom, MDMB-4en-PINACA is controlled as a Class B substance under the Misuse of Drugs Act 1971.

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SCRAS IN CANNABIS & VAPE PRODUCTS

WHAT WEDINOS IS SEEING AND HOW TO STAY SAFE

Highly potent synthetic cannabinoids are increasingly being found in products sold as THC, CBD and cannabis vapes.

GIG CYMRU NHS WALES | Iechyd Cyhoeddus Cymru Public Health Wales

WHAT ARE SCRAs?

Synthetic Cannabinoid Receptor Agonists (SCRAs) are laboratory-made chemicals designed to activate cannabinoid receptors in the brain.

Although sometimes called "synthetic cannabis", they are not cannabis and can behave very differently.

HOW SCRAs DIFFER FROM THC / CANNABIS

CANNABIS / THC	vs.	SCRAs
THC is a partial agonist at CB1 receptors		Most SCRAs are full agonists
Usually contains THC, CBD and other cannabinoids		Often contains only one highly potent chemical
Effects more predictable		Effects highly unpredictable
Lower overdose toxicity risk		Much higher toxicity risk
Slower onset and easier to titrate dose		Rapid, intense effects possible

WHY SCRAs ARE RISKIER

SCRAs may cause:

- Severe anxiety and panic
- Hallucinations and psychosis
- Seizures
- Loss of consciousness
- Rapid heart rate and cardiovascular problems
- Severe sedation and coma

WHY VAPING SCRAs IS HIGH RISK

When inhaled through vape devices:

- Effects may occur within seconds
- Dosing is difficult to judge
- Products may contain very high concentrations
- Users may not realise the vape contains SCRAs

POTENTIAL EFFECTS INCLUDE:

Severe agitation · Psychosis · Hallucinations · Seizures · Collapse / loss of consciousness

Palpitations · Syncope (fainting) · Vertigo · Nausea and vomiting · Cardiovascular complications

EUDA has highlighted increasing concerns regarding highly potent SCRAs appearing in vaping products due to their ease of concealment, rapid delivery and increased toxicity risk.

Vaping SCRAs may deliver these substances more efficiently and more dangerously than traditional smoking routes. The onset of effects may occur before the individual fully recognises intoxication, increasing the risk of severe harm.

WHAT WEDINOS IS SEEING

Between April 2025 and March 2026:

- 312 samples were submitted as: THC, CBD, cannabis, cannabis concentrates or cannabinoid vape products.
- **43% (134 samples)** contained one or more SCRAs instead of – or alongside – the expected cannabinoids.

MOST COMMON SCRAs IDENTIFIED

- MDMB-4en-PINACA
- 5F-ADB
- ADB-BUTINACA
- MDMB-INACA
- 4F-MDMB-BINACA

KEY MESSAGE

Many people may believe they are vaping products containing:

THC · CBD · HHC · THC-P · THC-O

but laboratory analysis may identify potent SCRAs instead.

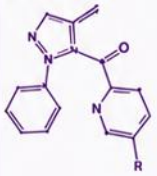
DECEPTIVE LABELLING IN ILLICIT VAPE PRODUCTS

Research shows products sold as cannabis-based or containing semi-synthetic cannabinoids (such as HHC, HHC-P, THC-P, THC-O) may contain entirely different psychoactive substances.

A study by Craft et al. found that all analysed vapes marketed as containing these cannabinoids actually contained SCRAs.

EUDA and UNODC also report increasing availability of counterfeit cannabinoid products, mislabelling and highly potent SCRAs.

MDMB-4en-PINACA: A KEY CONCERN



MDMB-4en-PINACA remained one of the most frequently identified SCRAs by WEDINOS.

- Extremely potent
- Active at very low concentrations
- Associated internationally with:
  - hospitalisations
  - seizures
  - psychosis
  - deaths

It is part of a newer generation of SCRAs linked to severe toxicity events worldwide.

HOW TO STAY SAFER

- Assume vape products may not contain what the packaging says.
- Start with a very small amount.
- Avoid repeated inhalations.
- Do not use alone.
- Avoid mixing with alcohol or other drugs.
- If someone collapses or has a seizure call emergency services immediately.
- Use drug checking services where available.

SEEK URGENT MEDICAL HELP IF SOMEONE EXPERIENCES:

Chest pain · Seizures · Severe agitation · Difficulty breathing · Loss of consciousness

KEY SOURCES

- United Nations Office on Drugs and Crime (UNODC)
- European Union Drugs Agency (EUDA) – European Drug Report 2025
- World Health Organization (WHO) – Expert Committee on Drug Dependence
- Craft et al. – Analysis of illicit cannabinoid vape products
- Dines et al. – European toxicovigilance data
- Adams et al. – Synthetic cannabinoid receptor agonists: Pharmacology and toxicology
- WEDINOS Drug Checking Service

For more information about SCRAs and drug checking visit: **wedinos.wales**

If you are concerned about an overdose, call 999 immediately.

Naloxone saves lives. Carry it. You could save a life.

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An independent drug checking and early warning service working to reduce harm in our communities.

The Illicit Benzodiazepine Market: Diazepam

Benzodiazepines are a widely prescribed class of psychoactive medicines used to manage anxiety, insomnia, seizures, muscle spasm and alcohol withdrawal. Diazepam is one of the best known benzodiazepines and is used clinically because of its anxiolytic, sedative, anticonvulsant and muscle-relaxant properties.

Benzodiazepines act as positive allosteric modulators at the GABA-A receptor, enhancing inhibitory neurotransmission in the central nervous system. This produces calming and sedating effects, but also contributes to risks including tolerance, dependence, withdrawal, impaired coordination, respiratory depression when combined with other depressants and overdose in polydrug use.

Diazepam

Diazepam has a relatively long duration of action and produces active metabolites, meaning effects may persist and accumulate with repeated dosing. Abrupt cessation after sustained use can result in withdrawal symptoms, including anxiety, insomnia, agitation and, in severe cases, seizures.

Benzodiazepines and the Illicit Market

Although benzodiazepines have legitimate therapeutic uses, the UK continues to experience a significant illicit market involving diverted medicines, counterfeit tablets and novel benzodiazepines. These products are commonly sold as diazepam, alprazolam, or other familiar medicines, but may contain different substances, different strengths or no active pharmaceutical ingredient at all.

The current WEDINOS dataset demonstrates continued evolution of the illicit benzodiazepine market, with increasing prevalence of counterfeit tablets containing novel benzodiazepines rather than diazepam itself. Ethylbromazolam overtook bromazolam as the dominant novel benzodiazepine

identified during the reporting period, suggesting continued diversification and adaptation within illicit manufacture and supply chains. These substances may differ substantially from diazepam in potency, onset and duration of action, increasing risks of excessive sedation, amnesia, impaired consciousness, falls, respiratory depression and delayed toxicity, particularly where combined with opioids, alcohol or gabapentinoids.

The European Union Drugs Agency has highlighted the continued availability of new and illicit benzodiazepines across Europe, including products sold as counterfeit medicines and substances used to enhance or prolong the effects of other drugs. The WHO Expert Committee on Drug Dependence has also reviewed emerging benzodiazepines such as bromazolam, noting evidence of clandestine manufacture, falsified pharmaceutical products and public health risk.

ONS Crime Survey data continue to show non-medical use of tranquillisers within the wider drug use picture in England and Wales. However, these data do not separately identify benzodiazepines as a specific drug class. The latest CSEW data report that 8.7% of adults aged 16–59 used any drug in the last year (year ending March 2025).

Benzodiazepine-Related Deaths

Benzodiazepines continue to contribute to drug-related mortality. ONS reported 5,448 deaths related to drug poisoning in England and Wales registered in 2023, the highest number since records began. Benzodiazepines and novel benzodiazepines are particularly concerning where they occur alongside opioids, alcohol, gabapentinoids or other central nervous system depressants.

Drug Substitution in the Illicit Diazepam Market

A critical feature of the illicit diazepam market is substitution. Samples submitted as diazepam frequently contain other benzodiazepines or novel benzodiazepine analogues. These include ethylbromazolam, bromazolam, etizolam, clonazolam, clobromazolam and others. These substances may differ from diazepam in potency, onset, duration and toxicity, creating significant uncertainty for people who believe they are taking diazepam.

Since 2023, WEDINOS has also identified nitazenes in some tablets submitted as diazepam or other benzodiazepines. Nitazenes are not benzodiazepines. They are highly potent synthetic opioids. Their presence in counterfeit sedative tablets is particularly concerning because people using the product may not expect opioid effects or carry naloxone. Public Health Scotland has similarly reported nitazenes being mis-sold as other drugs, including benzodiazepines.

WEDINOS: Samples Submitted as Diazepam, April 2025 to March 2026

Between 1 April 2025 and 31 March 2026, WEDINOS received 1,769 samples submitted as diazepam.

Within these samples, 42 substances were identified either alone or in combination. Diazepam was identified in 1,131 samples, representing 64% of samples submitted as diazepam.

The most commonly identified substances in samples submitted as diazepam were:

The **most commonly identified** substances in samples submitted as diazepam were:

Substance identified	Number	Percentage of diazepam submissions
Diazepam	1,131	64.0%
Ethylbromazolam	323	18.3%
Bromazolam	161	9.1%
No active component identified	38	2.1%
Paracetamol	36	2.0%
Etizolam	20	1.1%
Clonazolam	19	1.1%
Clobromazolam	16	0.9%
Metonitazene	9	0.5%

Ethylbromazolam[22] was the most frequently identified novel benzodiazepine substitute in samples submitted as diazepam, followed by bromazolam. This differs from the previous reporting period, where bromazolam was more prominent.

The emergence of ethylbromazolam as the dominant novel benzodiazepine identified by WEDINOS represents one of the most significant developments within the illicit benzodiazepine market during 2025–2026. The finding suggests ongoing adaptation of illicit manufacture and supply chains and highlights the increasingly dynamic nature of the counterfeit sedative market. Individuals purchasing substances sold as diazepam may be exposed to compounds with substantially different potency, duration of action and toxicity profiles, increasing risks of excessive sedation, amnesia, falls, dependence, respiratory depression and overdose, particularly when combined with opioids, alcohol or gabapentinoids.

WEDINOS also identified nitazenes in 9 samples submitted as diazepam, representing 0.5% of diazepam submissions. All nine contained metonitazene and all were identified alongside bromazolam. One sample also contained pregabalin and N-desethyl metonitazene.

Differences Between Nitazenes and Diazepam

Diazepam acts primarily through the GABA-A receptor system, producing sedative, anxiolytic and muscle-relaxant effects. Nitazenes act primarily at μ-opioid receptors and can produce profound respiratory depression. This pharmacological difference is critical, a person intending to take diazepam may be unintentionally exposed to a potent opioid and may not recognise the signs of opioid overdose.

Nitazenes are associated with severe toxicity and fatal overdose risk, particularly when combined with benzodiazepines, alcohol, gabapentinoids or other depressants. UNODC and EUDA have both highlighted the growth of synthetic opioids and new psychoactive substances as major public health

22 Advisory Council on the Misuse of Drugs (2026) *Ethylbromazolam: Review of the Evidence on its Use and Harms*. London: Home Office. Available at: ACMD Ethylbromazolam Review (Accessed 1st June 2026).

concerns.

UK Legislation on Benzodiazepines and Analogues

In the UK, diazepam and many established benzodiazepines are controlled as Class C drugs under the Misuse of Drugs Act 1971 and are listed under the Misuse of Drugs Regulations 2001. Several novel benzodiazepines have subsequently been brought under control as harms have emerged.

Potency, Onset and Duration

Potency refers to the amount of a drug required to produce an effect. Onset refers to how quickly effects begin after use. Duration refers to how long effects last. These properties vary across benzodiazepines and novel benzodiazepines.

In an illicit market where tablets are frequently substituted, people may unknowingly consume a substance that is stronger, faster acting, longer lasting or pharmacologically different from diazepam. This increases the risk of excessive sedation, blackouts, injury, dependence, withdrawal, polydrug toxicity and overdose.

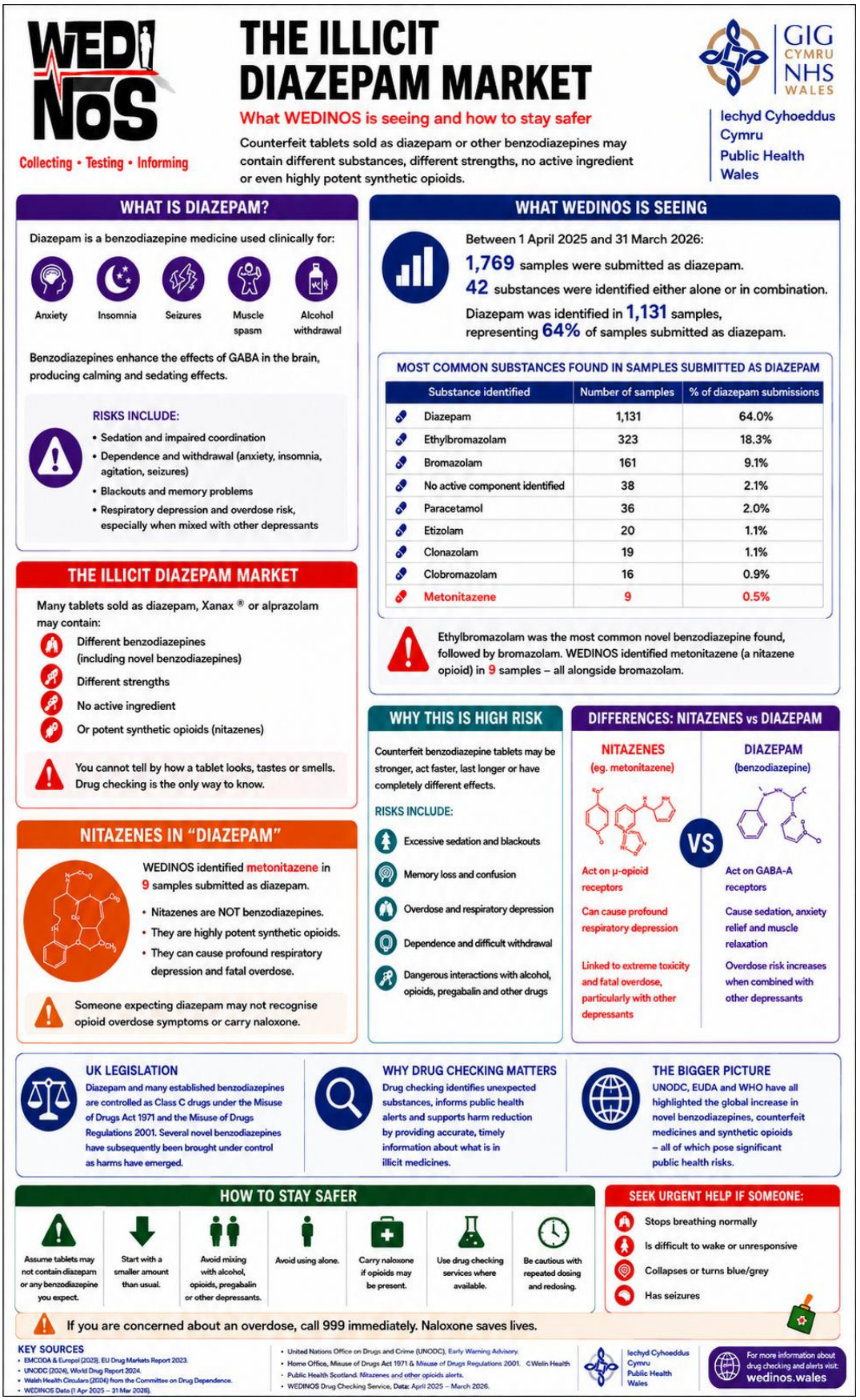
Public Health and Harm Reduction

The WEDINOS data demonstrate that samples purchased as diazepam frequently do not contain diazepam alone. Some contain other benzodiazepines, novel benzodiazepines, no active component, or more rarely, potent synthetic opioids such as metonitazene.

Drug checking services such as WEDINOS remain essential because they:

- identify dangerous substitutions and emerging substances
- inform public health alerts and clinical awareness.
- support harm reduction messaging
- provide intelligence to treatment, outreach and emergency care services

In an increasingly unpredictable illicit benzodiazepine market, accurate drug checking data are central to reducing avoidable harm.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THE ILLICIT DIAZEPAM MARKET
What WEDINOS is seeing and how to stay safer
Counterfeit tablets sold as diazepam or other benzodiazepines may contain different substances, different strengths, no active ingredient or even highly potent synthetic opioids.
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Iechyd Cyhoeddus Cymru Public Health Wales
WHAT IS DIAZEPAM?
Diazepam is a benzodiazepine medicine used clinically for:
Anxiety
Insomnia
Seizures
Muscle spasm
Alcohol withdrawal
Benzodiazepines enhance the effects of GABA in the brain, producing calming and sedating effects.
RISKS INCLUDE:
• Sedation and impaired coordination
• Dependence and withdrawal (anxiety, insomnia, agitation, seizures)
• Blackouts and memory problems
• Respiratory depression and overdose risk, especially when mixed with other depressants
THE ILLICIT DIAZEPAM MARKET
Many tablets sold as diazepam, Xanax ® or alprazolam may contain:
Different benzodiazepines (including novel benzodiazepines)
Different strengths
No active ingredient
Or potent synthetic opioids (nitazenes)
You cannot tell by how a tablet looks, tastes or smells. Drug checking is the only way to know.
NITAZENES IN "DIAZEPAM"
WEDINOS identified metonitazene in 9 samples submitted as diazepam.
• Nitazenes are NOT benzodiazepines.
• They are highly potent synthetic opioids.
• They can cause profound respiratory depression and fatal overdose.
Someone expecting diazepam may not recognise opioid overdose symptoms or carry naloxone.
WHAT WEDINOS IS SEEING
Between 1 April 2025 and 31 March 2026:
1,769 samples were submitted as diazepam.
42 substances were identified either alone or in combination.
Diazepam was identified in 1,131 samples, representing 64% of samples submitted as diazepam.
MOST COMMON SUBSTANCES FOUND IN SAMPLES SUBMITTED AS DIAZEPAM
Substance identified | Number of samples | % of diazepam submissions
Diazepam | 1,131 | 64.0%
Ethylbromazolam | 323 | 18.3%
Bromazolam | 161 | 9.1%
No active component identified | 38 | 2.1%
Paracetamol | 36 | 2.0%
Etizolam | 20 | 1.1%
Clonazolam | 19 | 1.1%
Clobromazolam | 16 | 0.9%
Metonitazene | 9 | 0.5%
Ethylbromazolam was the most common novel benzodiazepine found, followed by bromazolam. WEDINOS identified metonitazene (a nitazene opioid) in 9 samples – all alongside bromazolam.
WHY THIS IS HIGH RISK
Counterfeit benzodiazepine tablets may be stronger, act faster, last longer or have completely different effects.
RISKS INCLUDE:
Excessive sedation and blackouts
Memory loss and confusion
Overdose and respiratory depression
Dependence and difficult withdrawal
Dangerous interactions with alcohol, opioids, pregabalin and other drugs
DIFFERENCES: NITAZENES vs DIAZEPAM
NITAZENES (eg. metonitazene)
DIAZEPAM (benzodiazepine)
VS
Act on μ-opioid receptors
Can cause profound respiratory depression
Linked to extreme toxicity and fatal overdose, particularly with other depressants
Act on GABA-A receptors
Cause sedation, anxiety relief and muscle relaxation
Overdose risk increases when combined with other depressants
UK LEGISLATION
Diazepam and many established benzodiazepines are controlled as Class C drugs under the Misuse of Drugs Act 1971 and the Misuse of Drugs Regulations 2001. Several novel benzodiazepines have subsequently been brought under control as harms have emerged.
WHY DRUG CHECKING MATTERS
Drug checking identifies unexpected substances, informs public health alerts and supports harm reduction by providing accurate, timely information about what is in illicit medicines.
THE BIGGER PICTURE
UNODC, EUDA and WHO have all highlighted the global increase in novel benzodiazepines, counterfeit medicines and synthetic opioids – all of which pose significant public health risks.
HOW TO STAY SAFER
Assume tablets may not contain diazepam or any benzodiazepine you expect.
Start with a smaller amount than usual.
Avoid mixing with alcohol, opioids, pregabalin or other depressants.
Avoid using alone.
Carry naloxone if opioids may be present.
Use drug checking services where available.
Be cautious with repeated dosing and redosing.
SEEK URGENT HELP IF SOMEONE:
Stops breathing normally
Is difficult to wake or unresponsive
Collapses or turns blue/grey
Has seizures
If you are concerned about an overdose, call 999 immediately. Naloxone saves lives.
KEY SOURCES
• EMCDDA & Europol (2023), EU Drug Markets Report 2023.
• UNODC (2024), World Drug Report 2024.
• Welsh Health Circulars (2004) from the Committee on Drug Dependence.
• WEDINOS Data (1 Apr 2025 – 31 Mar 2026).
• United Nations Office on Drugs and Crime (UNODC), Early Warning Advisory.
• Home Office, Misuse of Drugs Act 1971 & Misuse of Drugs Regulations 2001. ©Welsh Health
• Public Health Scotland, Nitazenes and other opioids alerts.
• WEDINOS Drug Checking Service, Data: April 2025 – March 2026.
Iechyd Cyhoeddus Cymru Public Health Wales
For more information about drug checking and alerts visit: wedinos.wales

Naloxone

Naloxone is a short-acting opioid antagonist (a medicine that temporarily blocks opioids such as heroin, fentanyl or methadone from acting on opioid receptors in the brain) used to reverse opioid-induced respiratory depression. In Wales, take-home naloxone is available as Prenoxad intramuscular injection and Nyxoid intranasal spray.

Key messages

Take-home naloxone programmes are strongly supported by peer-reviewed evidence. A systematic review found that they reduce overdose mortality and have a low rate of adverse events. The Welsh take-home naloxone project also showed improved overdose knowledge and response among participants, supporting wider roll-out.[23]

Naloxone's limitation is duration. Its half-life (the time taken for the concentration of a drug in the body to reduce by approximately 50%) is commonly reported at around 30–80 minutes, while many opioids, including methadone, buprenorphine, fentanyl analogues and some potent synthetic opioids, may last longer. This creates a risk of recurrent or residual overdose after initial recovery, particularly when long-acting or high-potency opioids are involved. People should therefore seek emergency medical help after naloxone is used, even where the person appears to recover.[24]

Potent synthetic opioids, including fentanyl analogues, nitazenes and orphine analogues, increase the importance of rapid naloxone administration, rescue breathing, repeat dosing and ongoing monitoring. These substances can exhibit extremely high potency at the μ-opioid receptor, meaning very small amounts may produce profound respiratory depression. Recent peer-reviewed evidence indicates naloxone remains effective for nitazene poisoning, but multiple or repeated doses may be required because of high potency, delayed toxicity, co-use with other sedatives and the possibility that some synthetic opioids may outlast naloxone's duration of action. Cases involving synthetic opioids are also frequently complicated by polysubstance use, making clinical presentation and response to naloxone less predictable.

Xylazine and medetomidine

Xylazine and medetomidine are not opioids, so naloxone will not directly reverse their sedative, cardiovascular or respiratory effects. However, because they may be present alongside opioids, naloxone should still be given where opioid overdose is suspected[25]. Persistent sedation, slow breathing, bradycardia or hypotension after naloxone may reflect non-opioid sedatives and requires urgent medical assessment.

23 McDonald, R. and Strang, J. (2016) 'Are take-home naloxone programmes effective? Systematic review utilising application of the Bradford Hill criteria', Addiction, 111(7), pp. 1177-1187. doi: 10.1111/add.13326.
24 Moss, R.B. and Carlo, D.J. (2019) 'Higher doses of naloxone are needed in the synthetic opioid era', Substance Abuse Treatment, Prevention, and Policy, 14, Article 6. Available at: https://substanceabusepolicy.biomedcentral.com/articles/10.1186/s13011-019-0195-4 (Accessed: 28 May 2026).
25 Advisory Council on the Misuse of Drugs (2025) *Use and Harms of Xylazine, Medetomidine and Detomidine*. London: Home Office. Available at: ACMD Xylazine and Medetomidine Report (Accessed 1st June 2026).

Polydrug use and gabapentinoids

Polydrug use is a central risk in UK overdose deaths. Opioids combined with benzodiazepines, alcohol, gabapentin, or pregabalin can produce additive respiratory and central nervous system depression. Experimental evidence suggests gabapentin and pregabalin may reduce naloxone's effectiveness in reversing opioid-induced respiratory depression. Animal studies demonstrated that pregabalin and gabapentin dose-dependently reduced naloxone's ability to reverse heroin-induced ventilatory depression, meaning breathing recovered more slowly and less completely following naloxone administration. The mechanism is not fully understood but is thought to relate to gabapentinoids independently suppressing respiratory drive through non-opioid pathways. This is clinically important because naloxone only reverses opioid receptor-mediated toxicity, it does not reverse sedation or respiratory depression caused directly by gabapentinoids. Consequently, where gabapentinoids are co-used, individuals may appear to respond incompletely to naloxone or may require repeated doses, prolonged monitoring and additional respiratory support.[26]

Practical use

Use naloxone immediately, call emergency services, support breathing, place the person in the recovery position when appropriate and monitor closely. Give repeat naloxone doses if breathing does not improve or deteriorates again. Do not assume recovery is complete; potent synthetic opioids, longer-acting opioids, xylazine, medetomidine and gabapentinoids can all contribute to residual or recurrent toxicity.

26 Flynn, S.M. et al. (2023) 'Effects of gabapentinoids on heroin-induced ventilatory depression and its reversal by naloxone', ACS Pharmacology & Translational Science, 6(4), pp. 602-611. doi: 10.1021/acsptsci.2c00230.


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BRIEFING: NALOXONE
IN WALES AND THE WIDER UK
Naloxone saves lives. Use it immediately if someone is unresponsive and not breathing normally.
GIG CYMRU NHS WALES
Iechyd Cyhoeddus Cymru
Public Health Wales
WHAT IS NALOXONE?
Naloxone is a short-acting opioid antagonist (a medicine that temporarily blocks opioids such as heroin, fentanyl or methadone from acting on opioid receptors in the brain) used to reverse opioid-induced respiratory depression.
Prenoxad®
1 mg/ml
Solution for injection
Naloxone
For intramuscular use
1 ml
NYXOID®
1.8 mg
nasal spray
NALOXONE IN WALES
Take-home naloxone is available as Prenoxad® (intramuscular injection) and Nyxoid® (intranasal spray). Both are safe and easy to use. You don't need medical training to use naloxone.
KEY MESSAGES
Take-home naloxone programmes are strongly supported by peer-reviewed evidence. A systematic review found that they reduce overdose mortality and have a low rate of adverse events.
The Welsh take-home naloxone project also showed improved overdose knowledge and response among participants, supporting wider roll-out.
Naloxone's limitation is duration. Its half-life is commonly around 30–80 minutes, while many opioids may last longer. This creates a risk of recurrent or residual overdose after initial recovery.
Always call 999 after giving naloxone, even if the person appears to recover. Ongoing monitoring and medical assessment are essential.
WHY NALOXONE MAY NEED TO BE REPEATED
Many opioids last longer than naloxone. This includes:
• methadone and buprenorphine
• fentanyl analogues, nitazenes and orphine analogues
• long-acting or high-potency opioids
Naloxone's half-life: around 30–80 minutes
Opioid effects: may last several hours or longer
Use naloxone, support breathing and stay with the person. Give repeat doses if breathing does not improve or deteriorates again.
POTENT SYNTHETIC OPIOIDS
Substances such as fentanyl analogues, nitazenes and orphine analogues can be extremely potent – very small amounts may cause profound respiratory depression.
• Rapid naloxone administration can be lifesaving.
• Multiple or repeated doses may be required.
• High potency, delayed toxicity, co-use with other sedatives and long duration increase risk.
• Naloxone remains effective for nitazene poisoning, but close monitoring is essential.
• Cases are often complicated by polysubstance use, making response less predictable.
XYLAZINE & MEDETOMIDINE
Xylazine and medetomidine are not opioids, so naloxone will not directly reverse their sedative, cardiovascular or respiratory effects.
• Because they may be present alongside opioids, naloxone should still be given if opioid overdose is suspected.
• Persistent sedation, slow breathing, bradycardia or hypotension after naloxone may reflect these non-opioid sedatives.
• Urgent medical assessment is required.
POLYDRUG USE & GABAPENTINOIDS
Opioids combined with benzodiazepines, alcohol, gabapentin or pregabalin increase the risk of overdose.
• Pregabalin and gabapentin can reduce naloxone's effectiveness at reversing opioid-induced respiratory depression.
• Breathing may recover more slowly and less completely after naloxone.
• Gabapentinioids suppress respiratory drive through non-opioid pathways.
• Naloxone only reverses opioid effects – it does not reverse sedation or respiratory depression caused directly by gabapentinoids.
• May require repeated naloxone doses, prolonged monitoring and additional respiratory support.
PRACTICAL ACTION: WHAT TO DO
1. CALL 999 IMMEDIATELY
Get emergency help straight away.
2. GIVE NALOXONE
Use Prenoxad® (IM injection) or Nyxoid® (nasal spray).
3. SUPPORT BREATHING
Give rescue breaths if trained and able.
4. PLACE IN THE RECOVERY POSITION
If breathing returns, place the person on their side.
5. REPEAT IF NEEDED
Give repeat naloxone doses if breathing does not improve or deteriorates again.
6. MONITOR CLOSELY
Stay with the person until help arrives.
REMEMBER
Do not assume recovery is complete. Potent synthetic opioids, longer-acting opioids, xylazine, medetomidine and gabapentinoids can all contribute to residual or recurrent toxicity.
NALOXONE SAVES LIVES
Anyone can use naloxone. It is safe. It will not harm someone who has not taken opioids. Carry naloxone – you could save a life.
WHERE TO GET NALOXONE
Naloxone is available from community pharmacies, needle and syringe programmes, substance use services and some homelessness services across Wales. Ask for Prenoxad® or Nyxoid®.
KEY REFERENCES
• Ticktin, L. et al. (2018). Take-home naloxone and opioid overdose mortality: a systematic review. Drug Alcohol Depend. 192: 283–292.
• Welsh take-home naloxone evaluation. Public Health Wales.
• Dwyer, R. et al. (2020). Duration of naloxone action: evidence review. Addiction. 115(5): 760–789.
• Sari, F. et al. (2024). Naloxone for potent synthetic opioids (fentanyl analogues and nitazenes): a review. Ann Emerg Med. 84(4): 406–415.
• Moy, J.N. et al. (2017). Gabapentin and pregabalin reduce naloxone's ability to reverse opioid-induced respiratory depression in rats. Neuropharmacology. 120: 45–54.
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WEDINOS is an independent drug checking and early warning service working to reduce harm in our communities.
Iechyd Cyhoeddus Cymru Public Health Wales
If you are concerned about an overdose, call 999 immediately.
Naloxone saves lives.

Conclusion

The findings presented within the 2025–2026 WEDINOS Annual Report continue to demonstrate an increasingly complex, unpredictable, and rapidly evolving illicit drug market across Wales and the wider United Kingdom.

The current dataset highlights widespread substitution of expected substances, increasing prevalence of high-potency novel psychoactive substances and growing convergence between sedative, opioid, stimulant and cannabinoid markets. Counterfeit medicines and adulterated drug products continue to represent a substantial public health concern.

Particularly concerning developments identified during the reporting period include the continued emergence of nitazenes and orphine analogues within counterfeit sedatives and opioid-related samples, alongside increasing identification of veterinary sedatives such as xylazine and medetomidine. These substances may significantly increase overdose severity, prolong toxicity and reduce responsiveness to naloxone alone.

The continued dominance of novel benzodiazepines within counterfeit diazepam-type products, particularly ethylbromazolam and bromazolam, demonstrates ongoing evolution of the illicit benzodiazepine market. The findings suggest that individuals are frequently exposed to substances substantially different from those they believe they are consuming, often without awareness of potency, duration of action or associated risks.

The data also demonstrate continued high prevalence of synthetic cannabinoid receptor agonists (SCRAs) within products submitted as THC, CBD or cannabis vape products. This suggests the establishment of an increasingly deceptive counterfeit cannabinoid vape market, with potentially severe acute health consequences associated with unknowingly inhaling highly potent SCRAs.

Overall, the findings reinforce that the illicit drug market is becoming increasingly chemically heterogeneous. Many products now contain multiple psychoactive substances from different pharmacological classes simultaneously, significantly increasing unpredictability, overdose risk and adverse health outcomes.

The report further demonstrates the ongoing value of drug checking services[27] and early warning systems in identifying emerging substances, informing public health responses, supporting harm reduction interventions and improving awareness among healthcare professionals, drug services and the wider public.

Drug checking services such as WEDINOS provide an important mechanism for:
- identifying emerging threats rapidly
- monitoring changing drug markets
- detecting counterfeit and adulterated substances
- supporting targeted harm reduction messaging

[27] European Union Drugs Agency (2025) *Health and Social Responses to Drug Problems*. Lisbon: EUDA. Available at: https://www.euda.europa.eu/publications/health-and-social-responses-drug-problems_en (Accessed 1st June 2026).

• informing clinical preparedness
• contributing to wider public health surveillance and intelligence sharing

The findings within this report support continued investment in:
• drug checking services
• naloxone provision and training
• targeted harm reduction interventions
• toxicological monitoring
• rapid public health intelligence dissemination

Based on trends identified within WEDINOS data and wider international monitoring systems including the United Nations Office on Drugs and Crime (UNODC), the European Union Drugs Agency (EUDA), the World Health Organization (WHO) and peer-reviewed literature, several likely future developments may emerge over coming years.

These may include:
• continued diversification of nitazenes and other highly potent synthetic opioids
• increasing prevalence of novel benzodiazepines and sedative combinations
• further emergence of veterinary sedatives within opioid markets
• continued expansion of counterfeit cannabinoid vape products containing SCRAs
• increasing complexity of polysubstance mixtures
• more rapid adaptation of illicit markets to legislative and supply pressures

A notable feature of the illicit drug market is increasing convergence between previously distinct drug markets. Synthetic opioids, novel benzodiazepines, veterinary sedatives and synthetic cannabinoid receptor agonists are increasingly identified within products marketed as traditional substances. Consequently, risks are becoming less associated with individual drugs and increasingly associated with unpredictability of composition. This reinforces the value of drug checking services, toxicological monitoring and rapid public health intelligence systems capable of identifying emerging threats before they become established within local drug markets.

Collectively, these developments highlight the continued importance of maintaining agile, evidence-informed and harm reduction-focused public health responses capable of rapidly identifying and responding to emerging drug threats.

Authorship, acknowledgements and contact

This report has been compiled by Dean Acreman, Project Team Manager, Drugs Threats, Harms and Trends, alongside Professor Rick Lines, Head of Programme Substance Misuse and Mary-Eve Nelson, Administration & Resource/Notifications Officer.

Substance Misuse Programme, Communicable Disease Inclusion Health Programme, Health Protection Division, Public Health Wales

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Gweithio gyda'n gilydd i greu Cymru iachach

Working together for a healthier Wales