



# **Two-years of comprehensive toxicology testing in sentinel Australian emergency departments: type and frequency of novel psychoactive substance detections**

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# Acknowledgements & Disclosure

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# Novel Psychoactive Substances (NPS)

Diverse group of substances variably referred to as new, novel, designer or synthetic... or 'legal highs'.

Analogue of traditional illicit / pharmaceutical drugs or newly synthesised chemicals designed to mimic their effects.

Challenging to identify, monitor & respond to:

- Constantly evolving chemical structures & unknown potency & effects.
- Unwitting consumption by users.

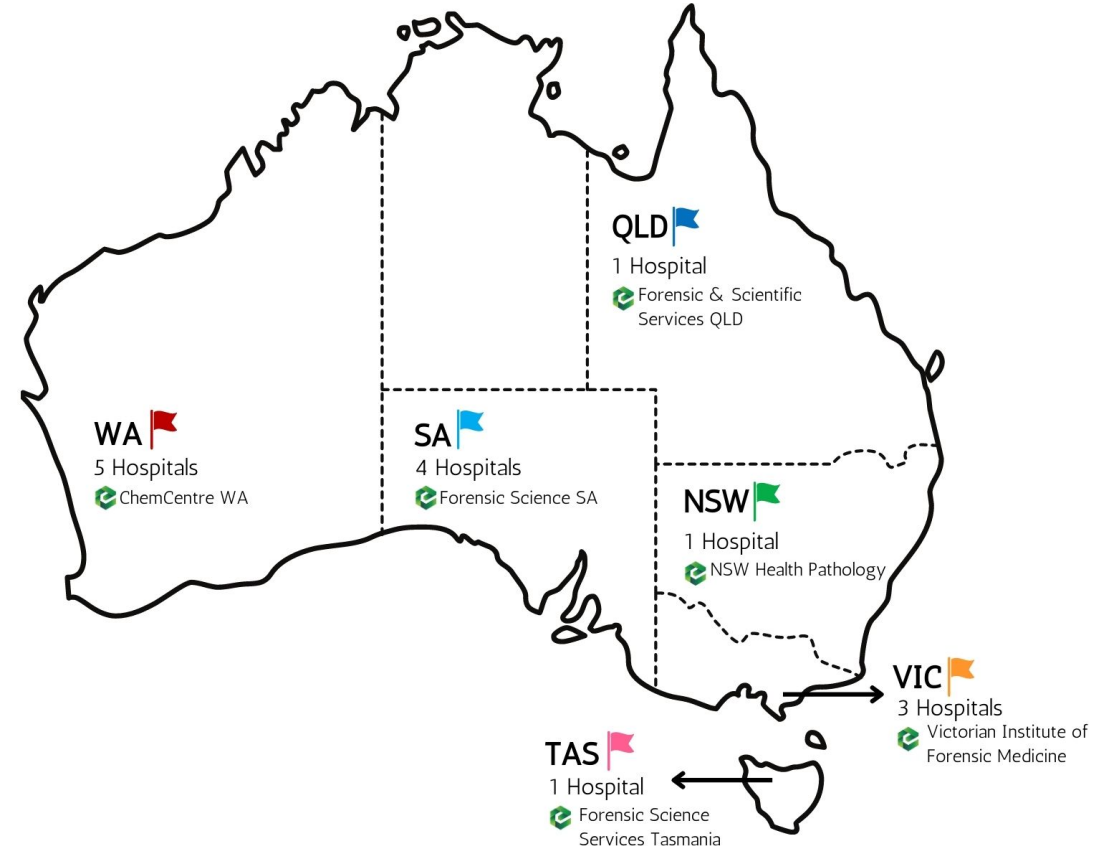


# Emerging Drugs Network of Australia (EDNA)

EDNA is a multi-centre toxicosurveillance system focused on identifying & monitoring illicit and emerging drug-related presentations in sentinel EDs.

## Sentinel Sites:

- Royal Perth Hospital (WA)
- Royal Adelaide Hospital (SA)
- Austin Hospital (VIC)
- Princess Alexandra Hospital (QLD)
- Royal Hobart Hospital (TAS)
- Liverpool Hospital (NSW)



# The EDNA Approach

Patients presenting with **severe/unusual** recreational drug toxicity or **clusters** of overdoses

Blood sample collection,  
storage & transfer

EDNA  
National  
Dataset

Analytical confirmation of  
compounds & metabolites

ED Triage Information

Drug Exposure

Clinical Findings

Management

Outcomes

Analytical Findings

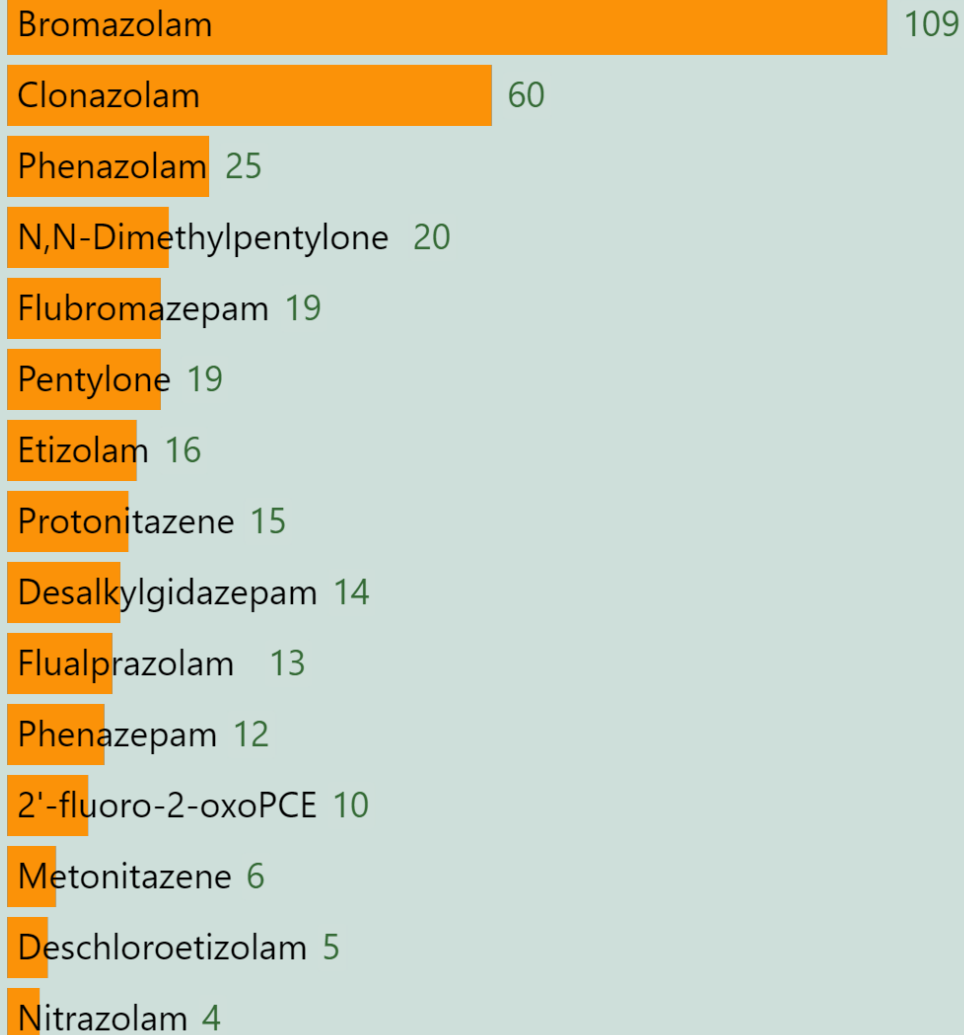
## Primary Aim

- To describe the type & frequency of analytically confirmed NPS reported by the EDNA between 2022-2023.

## Data Collection

- De-identified demographic & toxicology data from presentations with at least one confirmed NPS were extracted from the EDNA national dataset.

## Top 15 most frequently detected NPS

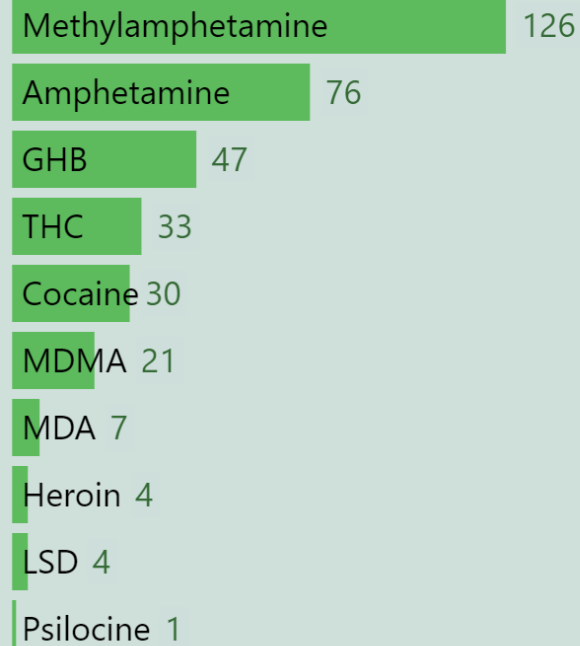


## Count of Presentations with NPS

**223**

## Co-detected traditional illicit drugs

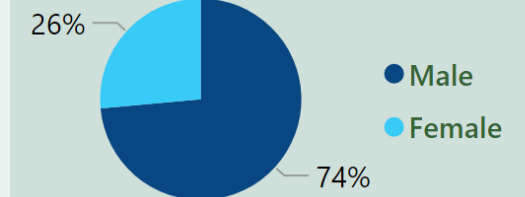
Count of Patients = 172



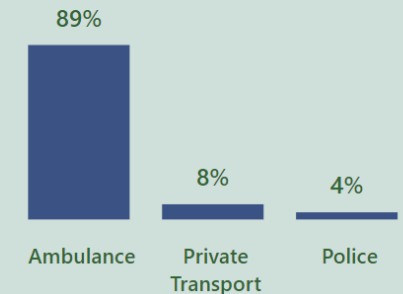
## Median Age

**26 Years**

## Sex



## Arrival Mode

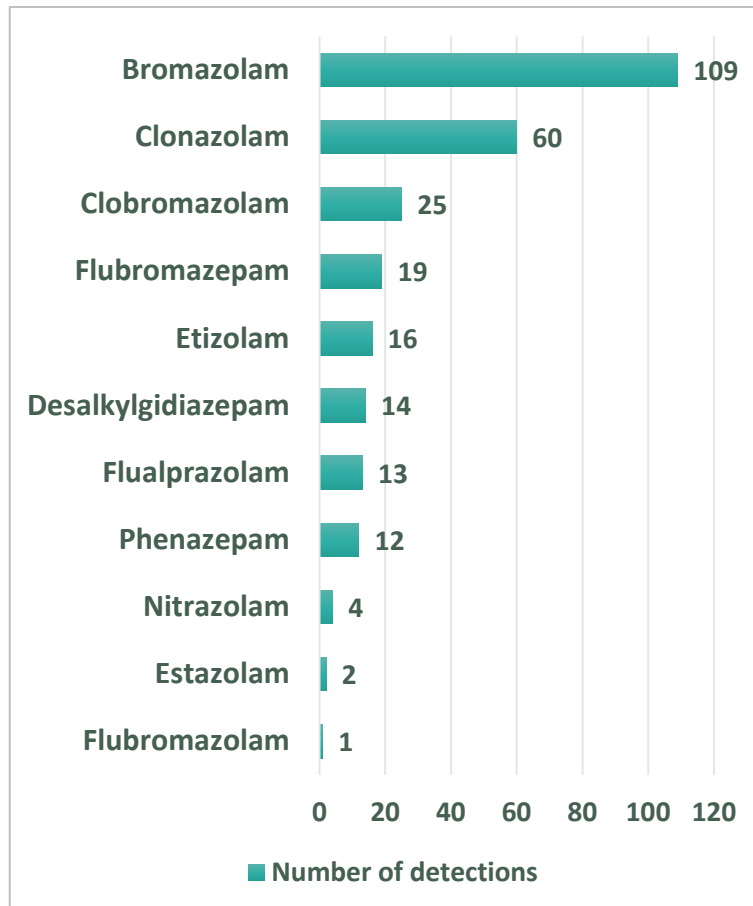


## Median Hours in ED

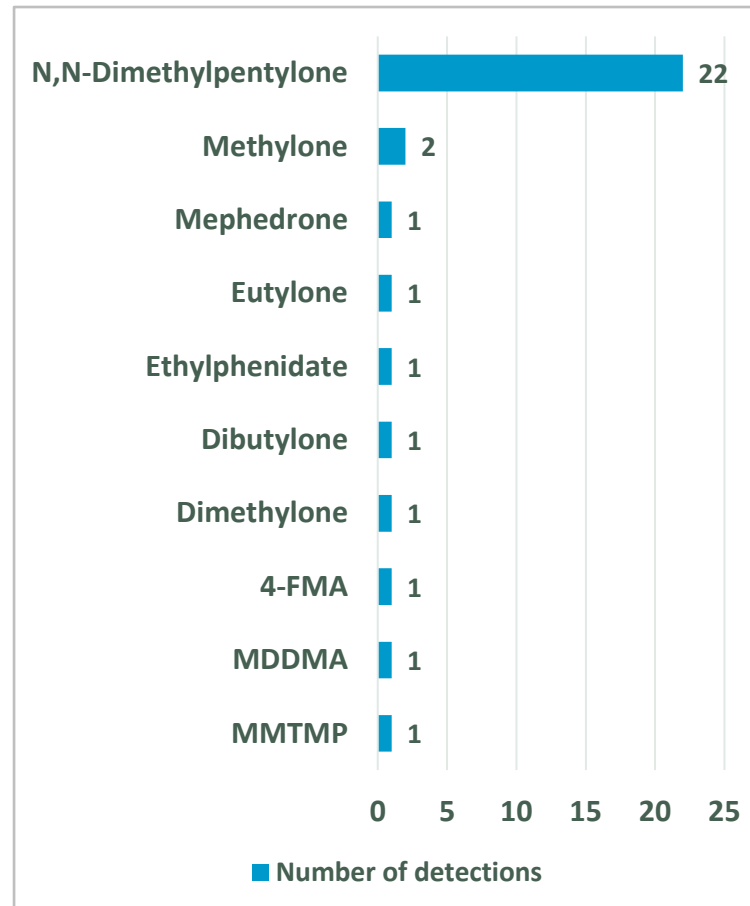
**5.6**

# NPS detections, 2022-2023

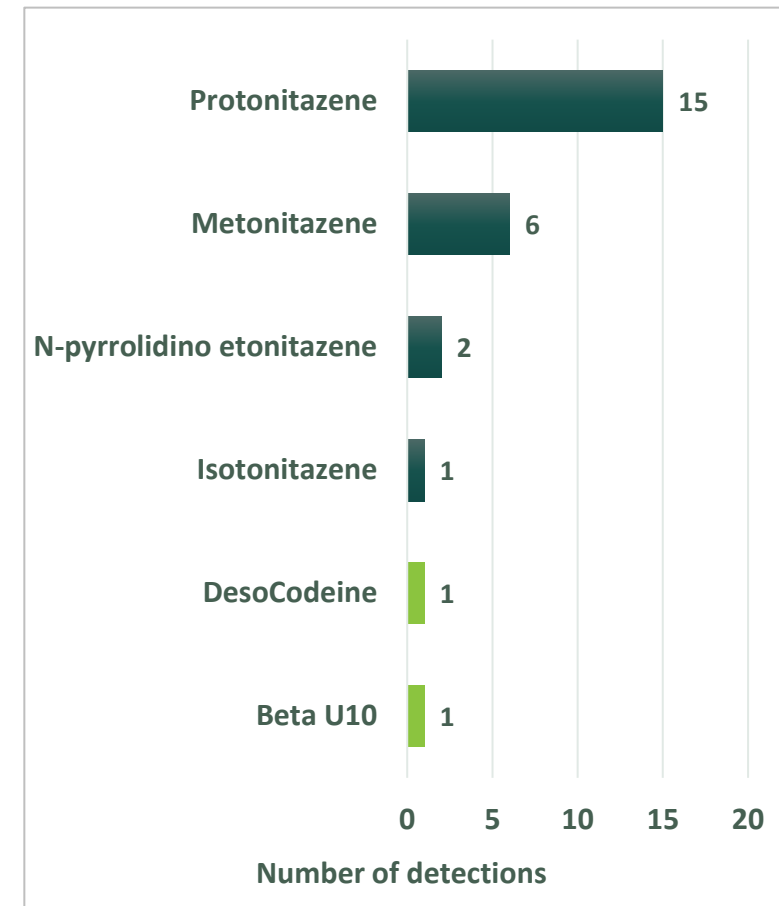
## Benzodiazepines



## Stimulants

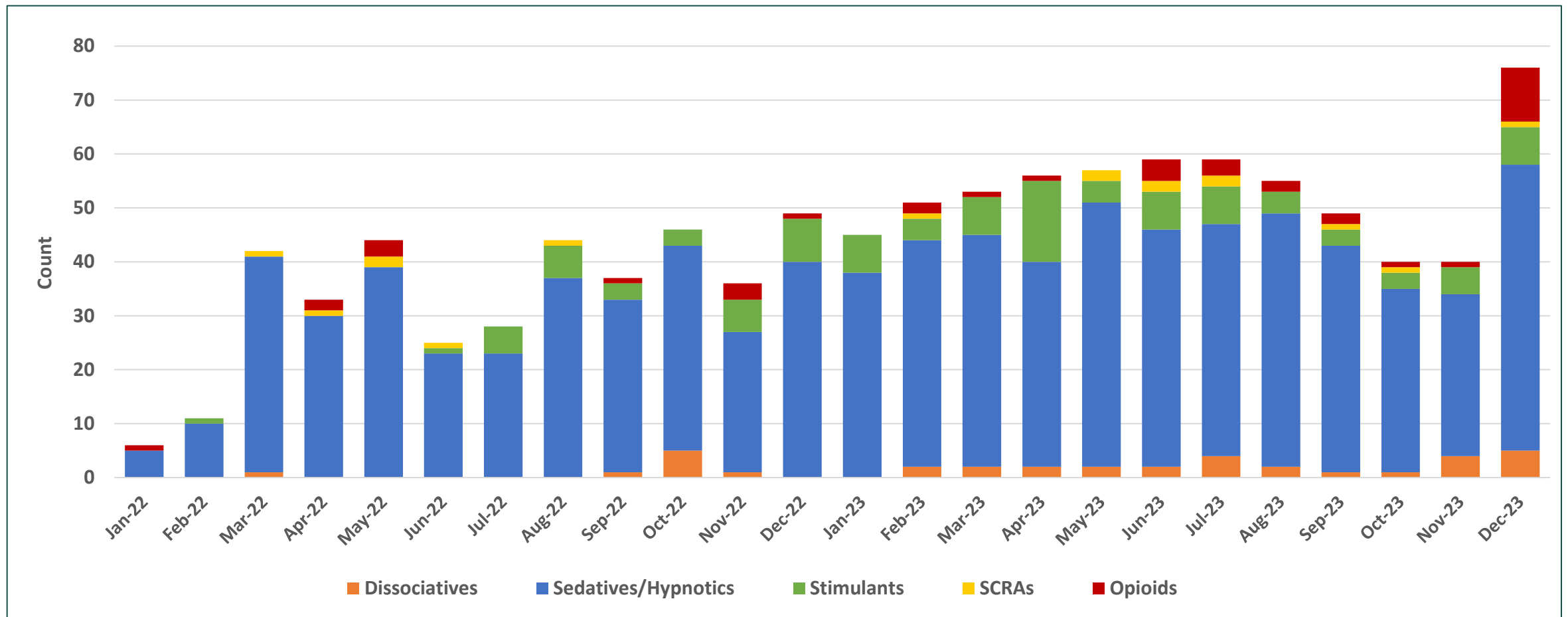


## Opioids





# NPS detections, EDNA & EDNAV 2022-2023



# Public Health Translation

## DRUG ALERT



**Warning:** The potent opioid 'protonitazene' has been detected in South Australia and could be present in methamphetamine or GHB.

### LOOKS LIKE:

**White powder.** Protonitazene could be mixed in with other substances. You cannot tell if protonitazene is present just by looking at your drugs.



## Drug alert

A white powder sold in Melbourne as cocaine contains the potent opioid 'protonitazene'.

Protonitazene is a novel synthetic opioid that can produce life-threatening toxic effects in very small amounts

Department of Health – Drug Advice (DA-14)  
Alert: Cocaine adulterated with protonitazene  
July 2024  
OFFICIAL

## Queensland Drug Warning Emerging Drugs Network Australia (QLD)

Queensland Health

Clinical Excellence Queensland

### Fake Xanax® tablets containing a strong opioid



There have been two recent deaths in Queensland related to the use of fake Xanax® tablets.

The counterfeit tablets contain **protonitazene** together with bromazolam, a benzodiazepine not available in Australia.

Protonitazene is a very strong opioid that works like heroin or fentanyl and can produce life-threatening toxicity in small amounts. Testing of different tablets from the same bottle indicated varying levels of protonitazene.

The counterfeit tablets do not have a score mark through the "N", which is present on Xanax® tablets. The tablets may be in labelled bottles that look genuine.



No score line on fake Xanax® tablets containing protonitazene



Score line on genuine Xanax® tablets (and many fake Xanax® tablets)

Navigation

How to use dashboard

Substances reported

Recent trends

Type of event

Polysubstance use

Concentration by matrix

Resources

Clear All Filters

Filters

Type of Event

All

Effect Group

All

Substance Group

All

NPS identified

All

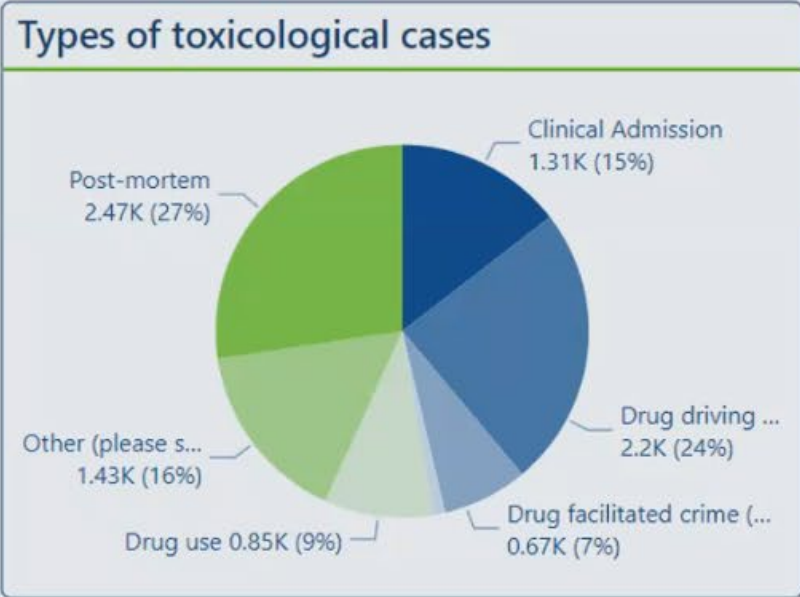
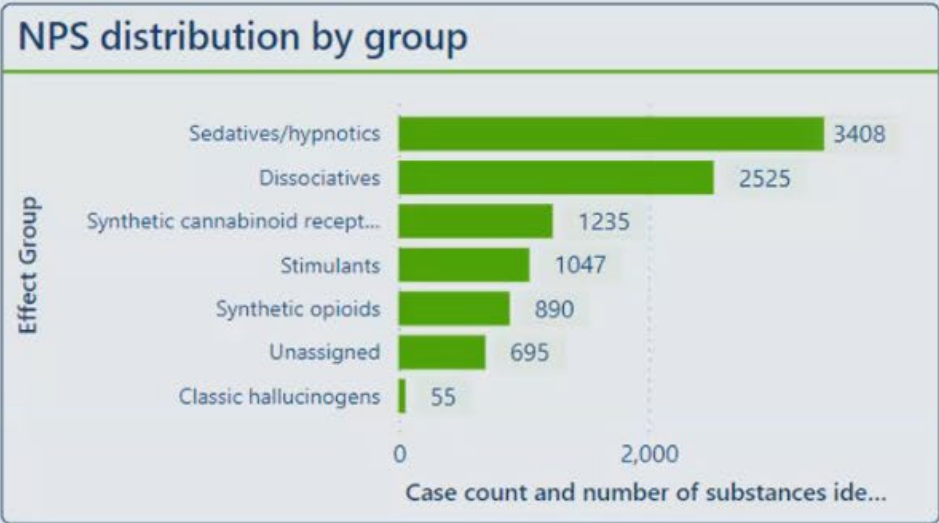
Matrix

All

# UNODC Early Warning Advisory Tox-Portal

Effect group

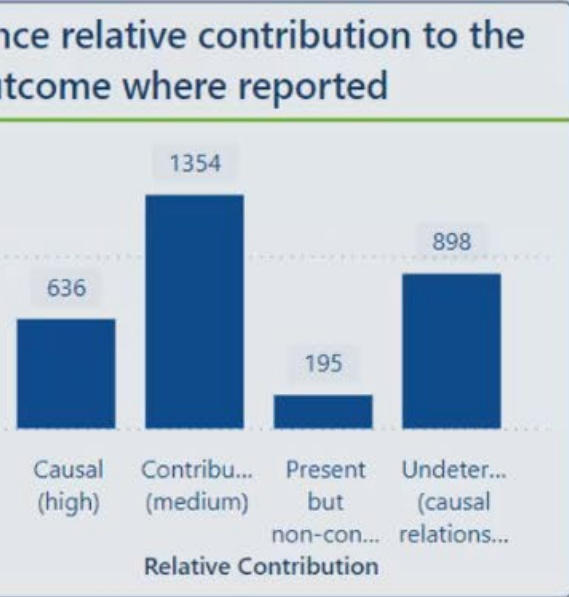
Substance group



2012

2024

Years



Substances identified

260

Total number of cases

9035

Country of notification	Number of cases
United States of America	3722
Republic of Korea	2472
Canada	803
Australia	547
Singapore	330
Finland	152
United Kingdom	150
Italy	135
Hungary	134
New Zealand	124

Substance identified	Number of cases
Ketamine	2428
Flualprazolam	931
Bromazolam	864
Etizolam	775
Kratom	635
Flubromazolam	492
Clonazepam	485
MDMB-4en-PINACA	412
Xylazine	255
ADB-BUTINACA	225
Acetylphenanthrene	168

# Concluding thoughts

“The future drugs of abuse will be synthetics rather than plant products. They will be synthesized from readily available chemicals, may be derivatives of pharmaceuticals, will be very potent, and...they will be marketed very cleverly. The ‘Designer Drug’ problem may become an international problem. A single gram of any very potent drug...could be synthesized in one location, transported to distribution sites worldwide, and then formulated into many thousand, perhaps a million, doses.”<sup>1</sup>

<sup>1</sup> Henderson GL. Designer drugs: past history and future prospects. J Forensic Sci. 1988;33:569–75.



# Acknowledgements

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# National collaborators



# Thank you... any questions??

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