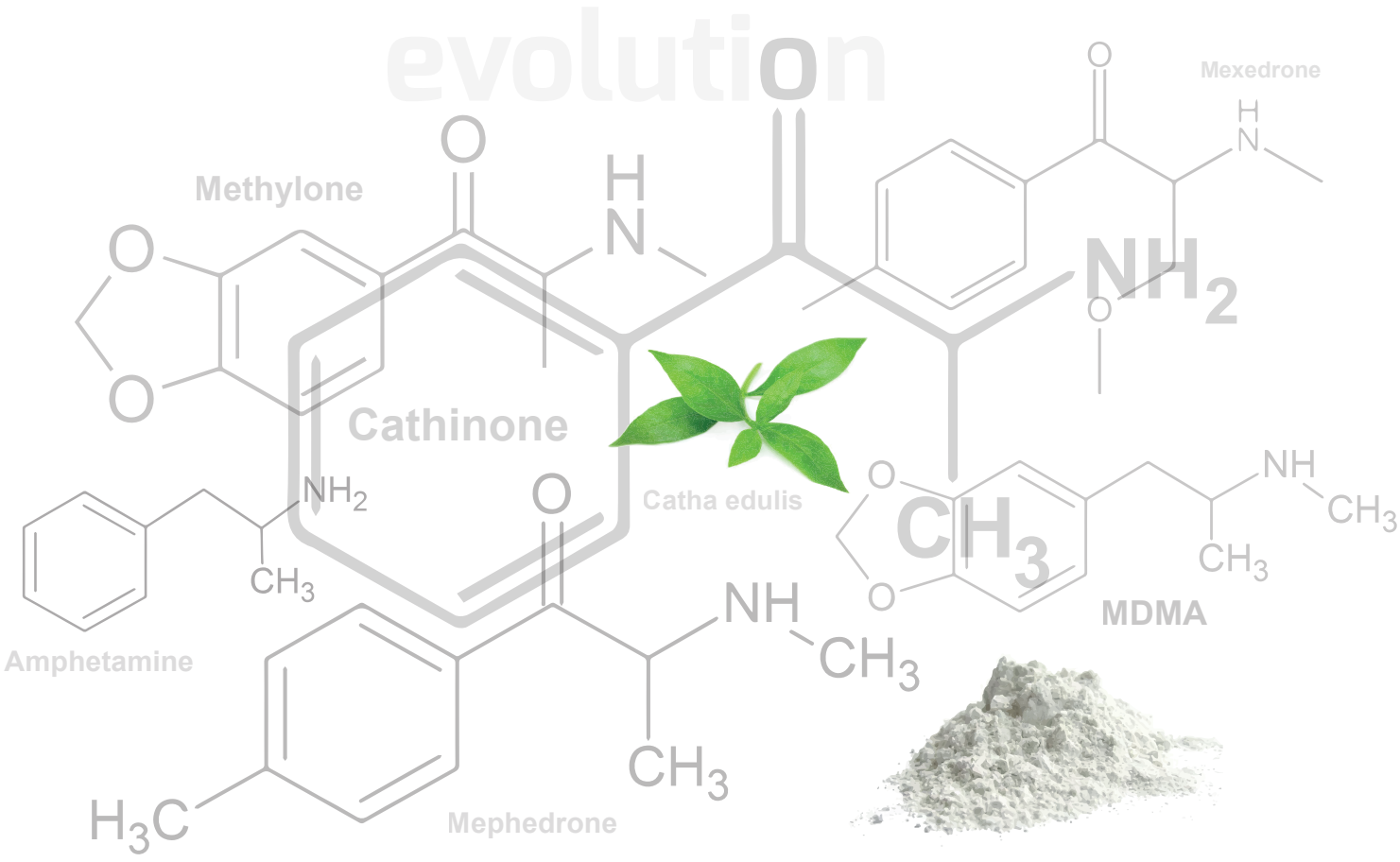
WEDINOS

PHILTRE



Annual Report

1st October 2015 - 30th september 2016

GIG CYMRU NHS WALES
Iechyd Cyhoeddus Cymru
Public Health Wales

Llywodraeth Cymru
Welsh Government

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Foreword

Substantial changes have been observed in the last year, both in control, with the introduction in the UK of the Psychoactive Substances Act 2016, and content of drugs, in terms of combinations, potency and patterns of use and harms.

Across Europe, consensus opinion indicates an increasing blurring of the once distinct groups of more traditional drugs (including opioids, cocaine, cannabis) and new psychoactive substances (NPS). This represents a challenge to all those working in the field, one that WEDINOS is well placed to respond to.

Evidence indicates a move to increasing potency of a range of drugs including synthetic opioids, MDMA and cannabinoids matched by associated harms including deaths. Arguably, it has never been so important to encourage all individuals using or considering use to be well informed, aware of what they may be taking and of ways to reduce harm to themselves and others.

This third annual report highlights new developments such as testing of festival samples sold as MDMA, in-reach support in prisons and increased engagement with those affected by severe adverse effects from use. We recognise the essential role of all the stakeholders involved in the success of this project and look forward to continuing this important programme of work.

Josie Smith
Health Protection
Public Health Wales

Headline Figures 2015-16

WEDINOS provides a mechanism for the anonymous submission and testing of samples of new psychoactive substances and the dissemination of pragmatic harm reduction advice

1,333 samples analysed by WEDINOS

336 compounds identified either in combination or isolation since project launch (September 2013)

Median age for all mind altering/ psychoactive sample providers was 36 years

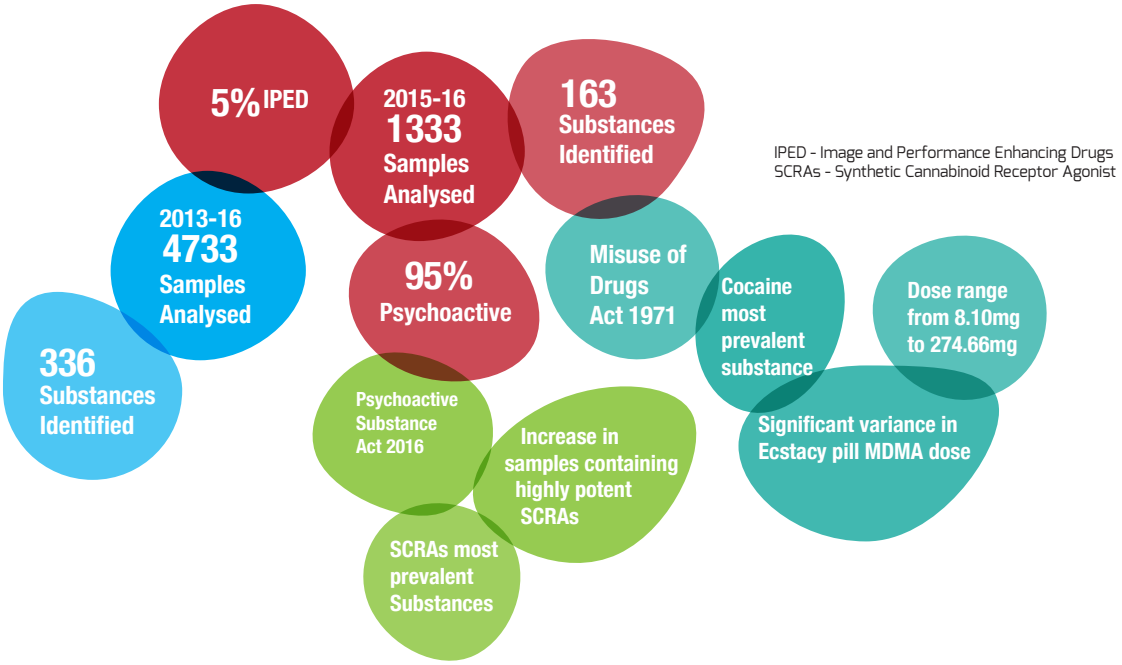
8 per cent of samples controlled under the Psychoactive Substances Act, contained substances controlled by the Misuse of Drugs Act 1971

6 per cent of samples controlled by the Misuse of Drugs Act 1971, contained substances controlled by the Psychoactive Substances Act 2016.

Cocaine was the most commonly identified substance controlled by the Misuse of Drugs Act 1971

Synthetic Cannabinoid Receptor Agonists were the most commonly identified substance controlled by the Psychoactive Substances Act

56 MDMA tablets tested for dosage: Average dose – 129.48mg (dose range: 8.10mg to 274.66mg)

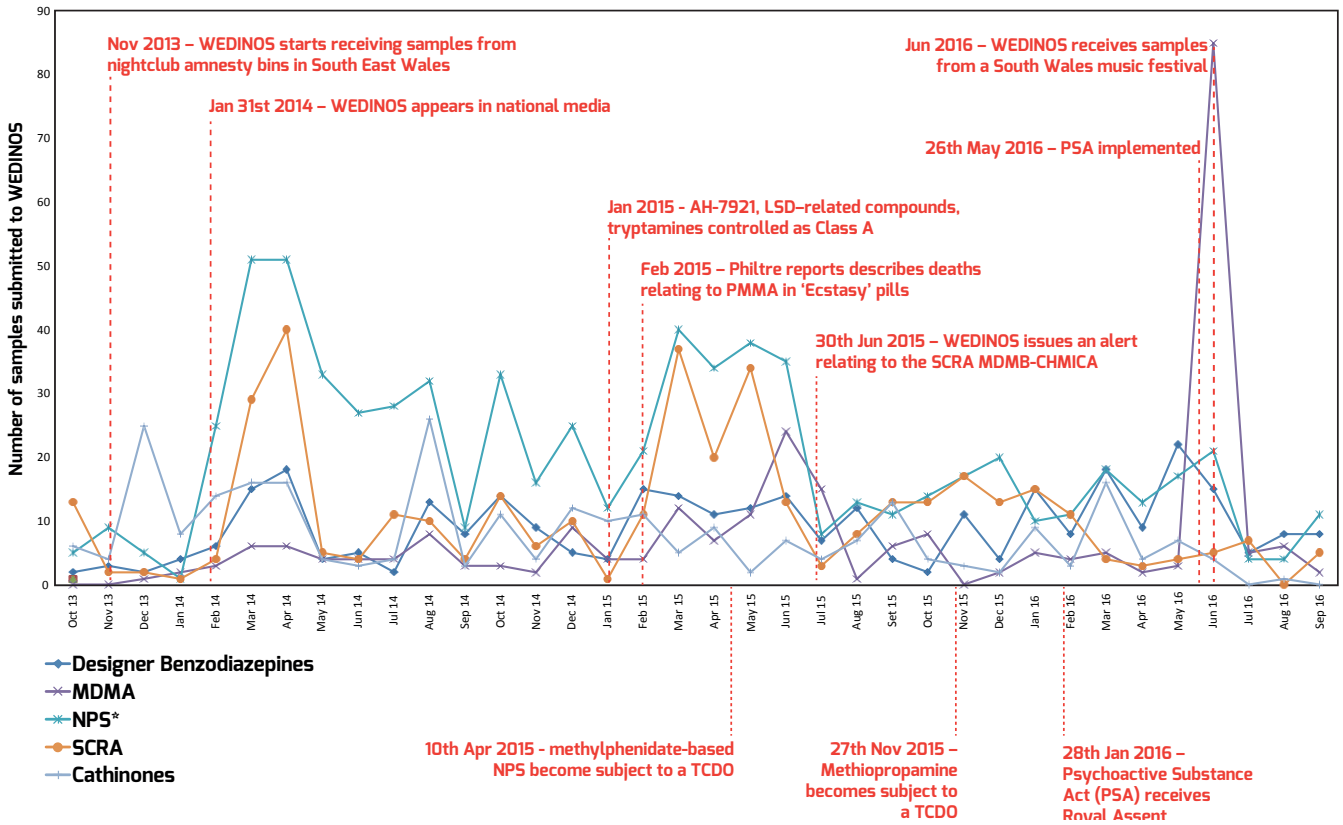


IPED - Image and Performance Enhancing Drugs
SCRAs - Synthetic Cannabinoid Receptor Agonist

WEDINOS... from the beginning

The WEDINOS project began on 1st October 2013 and was designed specifically for the collection and testing of psychoactive substances and combinations of new psychoactive drugs and, most importantly,dissemination via the website - **www.wedinos.org** - of pragmatic evidence based harm reduction information for users. Since then almost 5,800 samples have been submitted from 20 countries. 336 compounds have been identified and 34 reported to the European early warning system. The last 3 years has been an extraordinary time in the drugs and drug market field with changes both in legislation and control levels, patterns of drug use and the harms associated with use. WEDINOS has grown and adapted to these changes providing a unique service and source of information and evidence. Figure 1 below shows activity with key milestones over this period.

Fig 1. - New psychoactive substance (NPS) samples and MDMA received by WEDINOS by type



WEDINOS - developments in 2015-16

During 2015-16 WEDINOS project staff have been actively engaging with stakeholders not just within Wales, but the wider United Kingdom and Europe. This has included the dissemination of reports, face to face meeting and conference presentations. The positive benefit of this can been seen in the year on year increase in agencies that have provided samples to WEDINOS which now stands at 154 organisations and services across the United Kingdom.

In the summer of 2016 WEDINOS undertook a project looking at the content/dosage of MDMA within pills. These pills were received in collaboration with South Wales Police from a South Wales music festival. This piece of work was undertaken following increasing reports of a rise in MDMA content within Ecstasy pills and high dosed 'super pills'. Our findings are outlined in the section MDMA - Ecstasy and Apathy (pages 26-28).

Over and above samples received from individuals, WEDINOS now receives samples from a diverse range of services including health, emergency departments, substance misuse services, education, criminal justice, custodial settings, nightclub drug amnesty bins and festivals. This gives us a good picture of the substances being used at 'street level' and the substances that may be used for bulking / cutting. Alongside this we continue to build an anecdotal evidence base of the expected, unexpected and adverse effects experienced by sample providers through the completion of the WEDINOS sample and effects record.

In light of this enhanced pool of services providing samples WEDINOS has evolved and added to the expert panel that previously formed its programme board. The programme board works towards the project's ongoing development, monitors its effectiveness, provides advice with regard to clinical and information governance and the provision of relevant and robust harm reduction advice to the population.

The WEDINOS programme board now includes representatives from:

School of Pharmacy and Pharmaceutical Sciences, Clinical Pharmacology School of Medicine, Royal College of Emergency Medicine, Welsh Ambulance Service Trust, Royal College of Psychiatrists, Cardiff Toxicology Laboratories, Police, National Offender Management Service (NOMS), Service Providers and Public Health Wales.

Psychoactive Substance Use

New control measures

Since WEDINOS' launch in September 2013 the project has primarily focused on New Psychoactive Substances (NPS); and although this remains a large part of our work we must recognise the cross over between the former 'legal high' substances market and the established illicit market. This has been evidenced in our previous annual reports where samples purchased in the belief they were not controlled were found, following analysis, to contain controlled substances, and vice versa, and we will continue to monitor this following the implementation of the Psychoactive Substances Act 2016[1].

26
May 2016

On 26th May 2016 the Psychoactive Substances Act 2016 came into effect in the United Kingdom, placing a blanket ban on the sale, supply, importation and exportation of psychoactive substances (excluding those already covered by the Misuse of Drugs Act 1971, medicines and other listed substances) whenever they are intended for human consumption. Although, personal possession remains uncontrolled, possession within a custodial institution carries is illegal.

nps

This legislation was introduced following the 2014 expert panel New Psychoactive Substances Review[2] and an upward trend in the numbers of deaths involving NPS. Deaths involving NPS have increased sharply over the last 5 years, with 114 deaths registered in 2015 (up from 82 deaths in 2014), however, the mortality rate remains relatively low compared with heroin and/or morphine (1.9 deaths per million compared with 21.3 per million)[3].

1. Psychoactive Substances Act 2016
http://www.legislation.gov.uk/ukpga/2016/2/contents/enacted
2. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/368583/NPSexpertReviewPanelReport.pdf
3. Deaths related to drug poisoning in England and Wales: 2015 registrations
http://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/deathsrelatedtodrugpoisoninginenglandandwales/2015registrations#deaths-involving-new-psychoactive-substances-so-called-legal-highs-increase-again-in-2015

Prevalence of NPS

In 2015 the number of NPS reported for the first time to the European Union Early Warning System (EWS) fell from 101 in 2014 to 98, this was the first decrease in notifications since 2008, however, this figure is significantly higher than the 15 notifications in 2007.

11.6%

There remains very little evidence on the prevalence of NPS use in the UK. The Global Drugs Survey 2016 (GDS16), a self selecting survey, reported that 11.6 per cent of UK respondents reported the use of 'research chemicals / NPS use' in the last twelve months. This figure has increased from 8.6 per cent in 2015, but down from a peak of 20 per cent in 2011. Despite this the UK had the highest level of NPS use amongst countries participating in GDS16 [4].

The 2014/15 Crime Survey for England and Wales (CSEW)[5], a self report survey of England and Wales residents, included questions around the use of NPS among adults aged 16 to 59. For the context of the CSEW NPS relates to "newly available drugs that mimic the effect of drugs such as cannabis, ecstasy and powder cocaine, and which may or may not be illegal to buy, but are sometimes referred to as 'legal highs'".

Of respondents to the 2015/16 CSEW 0.7 per cent of adults aged 16 to 59 reported taking NPS in the last year, down from 0.9per cent in 2014/15 with 2.7 per cent stating that they had taken NPS at some point in their lifetime, a fall from 2.9 per cent in 2014/15.

4. 2016 Global Drug Survey (GDS2016)
5. Drug misuse: findings from the 2014 to 2015 Crime Survey for England and Wales

Young adults, aged 16 to 24, also reported a decrease last year NPS use from 2.8 per cent in 2014/15 to 2.6 per cent in 2015/16; for males 16 to 24 the figure was 3.6 per cent down from 4 per cent.

In 2014 the Harm Reduction Database for Wales, which monitors activity throughout Welsh Needle & Syringe Programmes (NSP) began to capture NSP activity from community pharmacy along with activity that had already been recorded from NSP providers based within substance misuse services.

In 2015-16 the Harm Reduction Database for Wales recorded 24,928 unique individuals accessing NSPs, with 335 (1.3%) primarily using NPS and 591 (2.4%) reporting any NPS use.

NPS injecting drug use, primarily Cathinones including Mephedrone, continued in an upward trend. Between 2011-12 and 2013-14 there was a substantial rise in the number of individuals reporting NPS as their primary drug of choice, from 76 to 206, rising to 271 in 2014-15 with the inclusion of pharmacy NSP data.

2015 to 2016

Samples Received - 1st October 2015 to 30th September 2016

Between the launch of the project on 1st October 2013 and 30th September 2016, the WEDINOS project analysed 4,733 samples, identifying 336 substances either in isolation or combination.

1333
samples analysed

For the year October 2015 to September 2016, 1,333 samples were analysed with 202 samples going through analytical process. These samples were submitted from 58 different organisations and services from across Wales, an increase from 53 in 2014-15 and 48 in 2013-14. Two services from across the wider UK also contributed this year.

Of the samples received from Wales, 88 per cent were submitted through participating organisations and 12 per cent from individuals accessing via the website: www.wedinos.org. This is a significant change from 2014-15 where figures were 76 per cent and 24 per cent respectively.

Reasons for Purchase

95%

Of those 1,333 samples, 95 per cent were mind altering / psychoactive substances; the remaining 5 per cent being Image and Performance Enhancing Drugs (IPEDs). This figure is comparable with the previous year in which 1,350 samples were analysed.

As stated previously, in July 2014 WEDINOS ceased accepting samples of Image and Performance Enhancing Drugs (IPEDs) from the general public. However, samples can and are being submitted and tested via approved sentinel providers to ensure contemporary evidence. This year 74 samples of IPEDs were submitted from across the UK.

Mind altering / psychoactive substances – The where, who, what and how

Where

Of the 1,259 mind altering / psychoactive samples, 71 per cent of samples were received from within Wales, 25 per cent from England, 2 per cent from Scotland, 1 per cent from Northern Ireland and the remaining 1 per cent was submitted from outside of the United Kingdom (the results of these samples analysis are not published).

19% increase

Within Wales, the Cardiff and Vale University Local Health Board (LHB) area contributed the highest proportion of samples, accounting for 28 per cent of all mind altering/psychoactive samples and 39 per cent of Welsh submissions. Cardiff and Vale University LHB submissions have increased year on year since project launch. This last year has seen a 19 per cent increase in annual submissions from 295 submissions in 2014-15 to 350 this year.

It should be noted that chart's 1 & 2 do not represent the spread, use or concentration of NPS use in Wales. They highlight the geographic variation in the engagement and proactive response of services with the WEDINOS project.

Chart 1:
Breakdown of Welsh submissions of mind altering / psychoactive samples by Local Health Board area

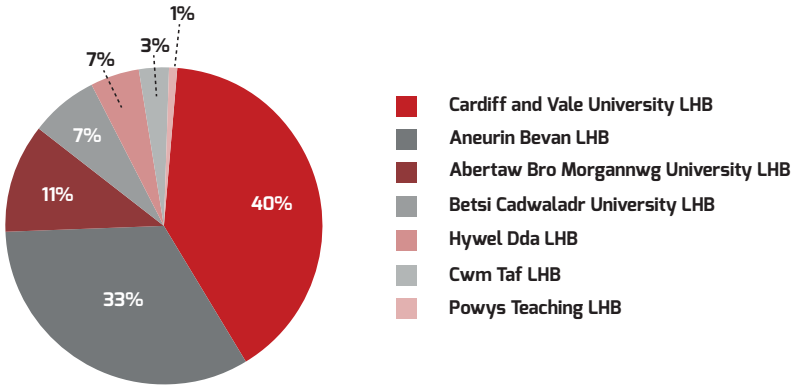
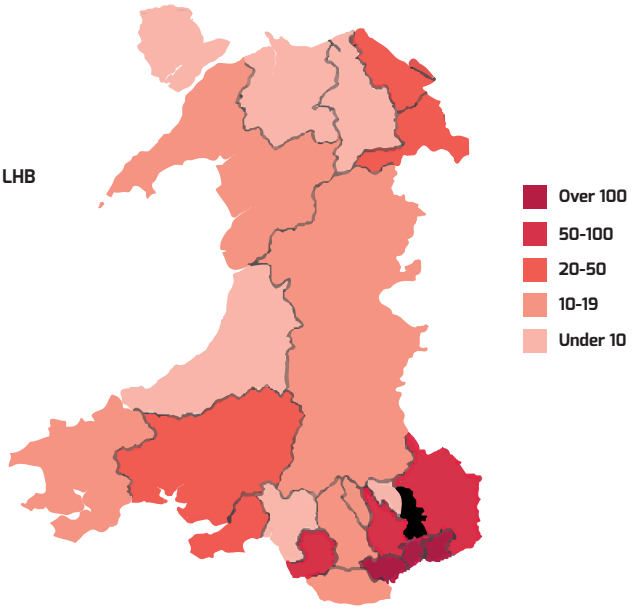
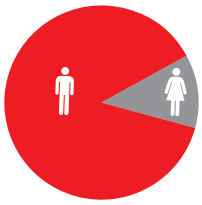


Chart 2:
Breakdown of Welsh submissions of mind altering / psychoactive samples by local authority area



Who

88% males



12% females

Of the 1,259 samples, demographic information was available for 62 per cent (n=784), with the remaining samples submitted from amnesty bins or by criminal justice services that had no evidentiary or forensic value, hence with no self-report effects form. Of those samples where demographic information was available 88 per cent of the samples submitted were males and 12 per cent by females.

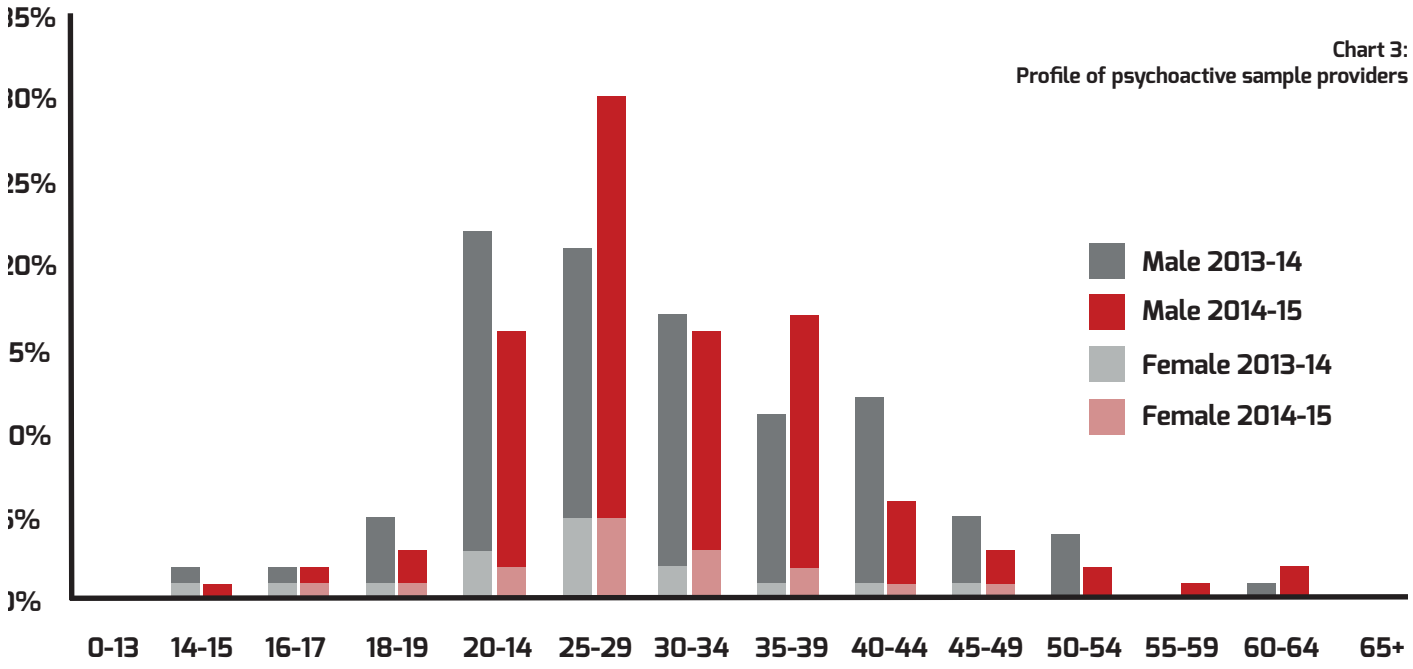
For mind altering / psychoactive samples providers, median age was 33 years (range 13-63) down from a median of 36 years (range 14-68) in 2014-15.

Females - median age was 30 years and an average age of 29 years (range: 16-51 years)

Males - median age was 34 years, with an average age of 31 years (range 13-63 years)

The largest proportion of submissions from males was provided by individual's aged 25-29, with a quarter of all psychoactive samples submitted by this group (Chart 3). For males, the largest proportion of submissions was provided by those aged 25-29 years, this represents a shift to slightly older people from previous years where it was 20-24 years. For females the highest proportion of samples was submitted by 25-29 year olds, consistent with previous years.

Chart 3:
Profile of psychoactive sample providers



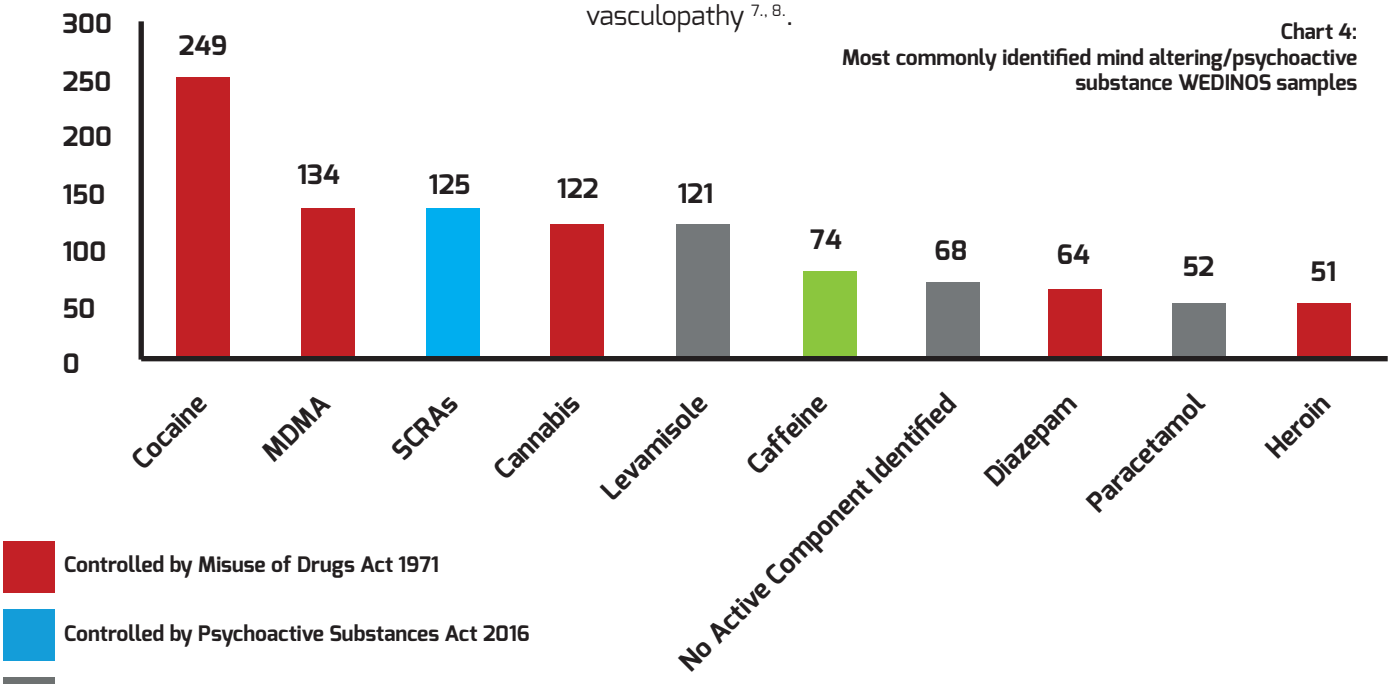
What

Most commonly identified substances

During the year where we saw the implementation of the Psychoactive Substances Act 2016, we have also seen the most movement within the WEDINOS annual and quarterly top ten since project launch. In a shift from Synthetic Cannabinoid Receptor Agonists (SCRAs) consistently being the most commonly identified substances as a group, they have fallen to third (excluding bulking/cutting agents) behind cocaine and MDMA, closely followed by cannabis (received as part of nightclub amnesty bin finds). In fact, when looking at SCRA's as single substances, for the first time since project launch, none feature in the top ten most commonly identified substances. Chart 4 shows the most commonly profiled psychoactive substances from WEDINOS.

As in 2014-2015 levamisole was the most popular bulking/cutting agent identified, and is still found exclusively in samples that also contained cocaine. There have been several recent studies relating to the adverse effects of levamisole following its consumption in conjunction with cocaine. Including evidence of levamisole-induced autoimmunity[6.] and vasculitis and vasculopathy [7., 8.].

Chart 4:
Most commonly identified mind altering/psychoactive substance WEDINOS samples



6. Oral Presentation - Neuroimmunomodulation of Neutrophils as A Novel Mechanism of Levamisole-Induced Vasculitis; P.C. Grayson et al.2016
7. Poster Presentation - Cocaine-Levamisole Induced Vasculitis: A Series of 11 Cases; C.H. Munoz et al.2016
8. Lara El Khoury, Nabil Zeineddine, Richard Felix, and Mark Goldstein, "Cutaneous Necrotizing Vasculitis and Leukopenia in a Cocaine User: Is Levamisole the Culprit?," Case Reports in Rheumatology, vol. 2016, Article ID 2685267, 4 pages, 2016. doi:10.1155/2016/2685267

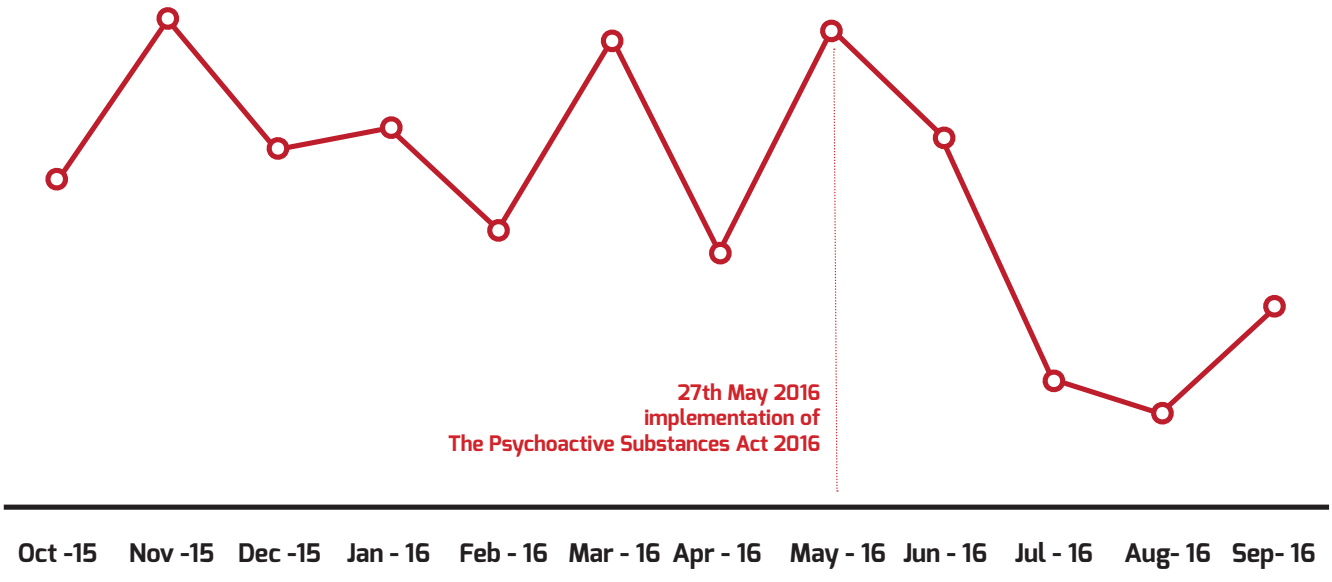
Caffeine was the second most commonly identified bulking/ cutting agent. However, as has been metioned in previous WEDINOS reports it is often identified in isolation in powder or tablet form. This may not be overly surprising as caffeine is the most widely consumed psychoactive substance in the world and probably one of the most commonly used stimulants in sports; and whilst rare, there have been reports of caffeine toxicity and adverse effects.

Most commonly identified New Psychoactive Substances

The most commonly identified NPS groups remain SCRAs, however submissions of designer benzodiazepines have risen above cathinones. Of the ten most commonly identified NPS profiled by WEDINOS in the last year, four are SCRAs and three benzodiazepines, as shown in Chart 5.

In the 2014-15 report we described a downward trend in the number of samples of particular substances being submitted to WEDINOS following their legislative control. What we have seen since the Psychoactive Substances Act receiving Royal ascent in January 2016 is a general overall reduction in the submission of NPS samples, with the exception of March 2016; it is our belief that this was as a result of the implementation of the Act being announced for April 2016. Now, four months later, we are beginning to see a rise in NPS submissions, this is something that we will continue to monitor; particularly alongside any evaluation of the Psychoactive Substances Act.

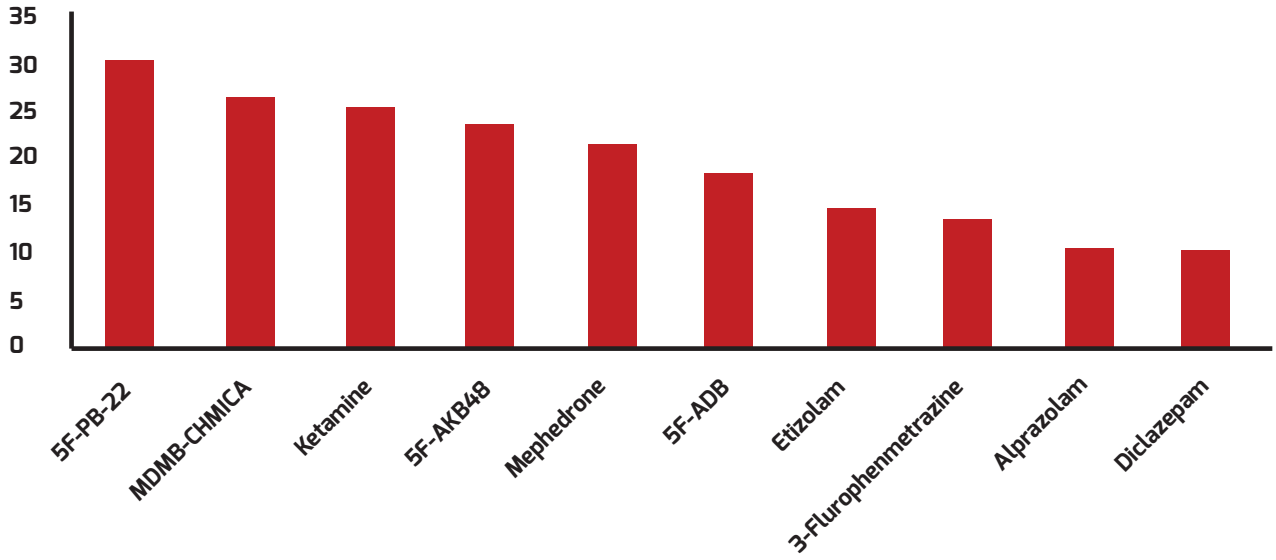
Chart 5:
Monthly NPS submission to WEDINOS



Within this reduced number of submissions what is evident is an increase in more potent and toxic substances such as the 3rd generation SCRA's MDMB-CHMICA and 5F-ADB, both of which have been the subject of European Early Warning System alerts as a result of being associated with fatal and non-fatal drug poisonings with Europe. This increased prevalence can be evidenced by both of these substances featuring in the 2015-16 top ten NPS substances identified (Chart 6).

2015-16 also saw a reduction in the number of branded products submitted to WEDINOS, with 15 samples coming in branded packaging e.g. Pandora's box (image from www.wedinos.org) of these samples 10 contained one substance with 5 containing two. The majority of NPS samples submitted to WEDINOS this year have been specific substances purchased as research chemicals, for example, 3fluoro-phenmetrazine.

Chart 6:
Most commonly identified New Psychoactive Substances



5F-PB-22, MDMB-CHMICA, 5F-AKB48 and 5F-ADB are synthetic cannabinoid receptor agonists. Ketamine is a dissociative. Mephedrone and 3-Fluorophenmetrazine are stimulants. Etizolam, Alprazolam and Diclazepam are designer benzodiazepine.

Top Ten

Position	2015/16	2014/15
1 – Non-mover	5F-PB-22	5F-PB-22
2 – Up six	MDMB-CHMICA	5F-AKB48
3 - New entry	Ketamine	Methiopropamine
4 – Down two	5F-AKB48	Mephedrone
5 - Non-mover	Mephedrone	Ethylphenidate
6 – New entry	5F-ADB	3-Fluorophenmetrazine
7 – Up three	Etizolam	MDMB-CHMICA
8 – Down One	3-Fluorophenmetrazine	Ethylone
9 – New entry	Alprozolam	Etizolam
10 - New entry	Diclazepam	Methoxphenidine

Legal Status

The following section relates to the 1,333 samples submitted to and analysed by the WEDINOS project between 1St October 2015 and 30th September 2016

Note: Substance legal status (perceived and actual), is for consistency, based on legislative controls at the time of writing and as such takes into consideration both the Misuse of Drugs Act 1971 and the Psychoactive Substances Act 2016.

8%

8 per cent of samples that were purchased / submitted in the belief that they were a controlled substance by the Misuse of Drugs Act 1971, upon analysis, were found to be non-controlled compounds; with a further 6 per cent controlled by the Psychoactive Substances Act 2016.

18%

Furthermore, overall 18 per cent of samples that were purchased / submitted in the belief that they were controlled under the Psychoactive Substances Act, contained substances controlled by the Misuse of Drugs Act 1971, a decrease from 21 per cent in 2014/15.

As in previous years this evidence of one substance being substituted for another continues to raise concerns around unexpected psychological, physiological and social effects to the end user including potential criminal justice impacts.

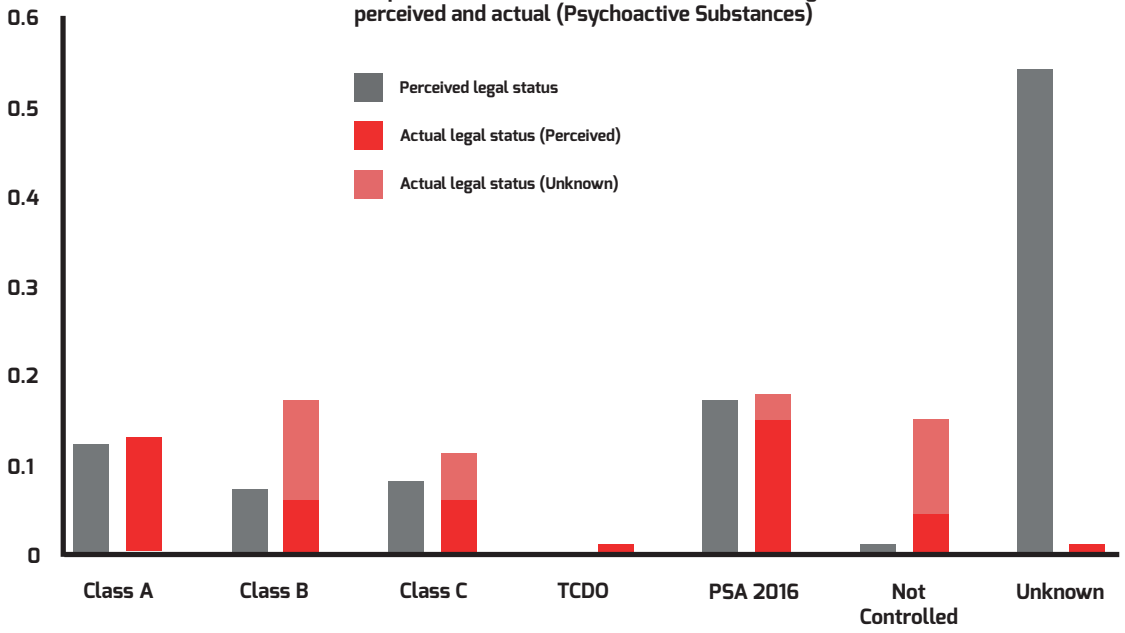
As the charts below clearly indicates, many samples had a different legal classification to that believed by the purchaser.

In terms of numbers, samples described as Class A increased from 163 samples to 168. Class B rose from 87 to 83. Class C decreased from 103 to 86, with the substitution of Diazepam with designer benzodiazepines covered by the Psychoactive Substances Act 2016 accounting for a large proportion of this. Samples subject to a TCDO rose from 6 to 12.

Examples of these changes include:

Believed to be...	Actual contents...
Methoxetamine	5-MeO-MiPT
LSD	25C-NBOMe
Cocaine	Ethylphenidate
Ethylphenidate	Cocaine
Cannabis	5F-PB-22 and 5F-AKB48
2C-B	Cocaine
Amphetamine	Caffeine
Diazepam	Diclazepam
Mephedrone	Mexedrone
Etizolam	AH-7921
Diazepam	Deschloroetizolam
Amphetamine	Methiopropamine
MDMA	Alpha-PVP
MDMA	Methoxphenidine
Heroin	Ocfentanil

Chart 7:
Proportion of controlled and not controlled / legal – perceived and actual (Psychoactive Substances)

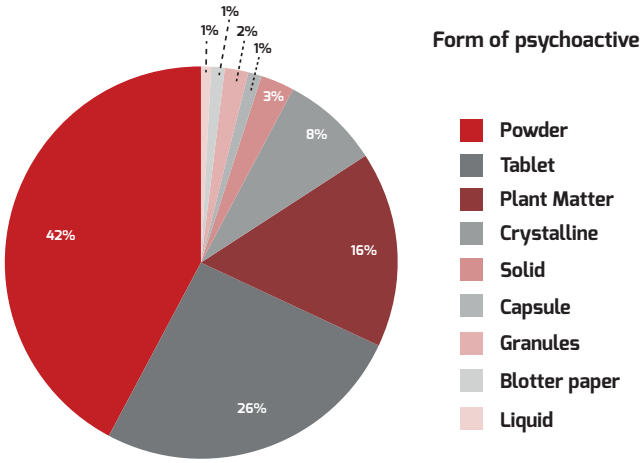


How

Form of sample

WEDINOS requests the 'form of sample' for each submission and analyses any differences in the forms of the same drug/compounds being submitted and routes of ingestion or use. This allows for the identification of emerging changes in the way that certain types of substances may be being used and assess and describe the relative harms as a consequence.

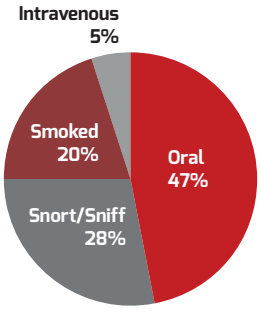
Chart 8:
Form of psychoactive samples



Method of Consumption

Assuming that all plant matter samples are smoked (unless stated otherwise, such as oral for Khat consumption or psychedelic mushrooms) and excluding samples where method of consumption was not described; samples included pills, liquids, tabs, granules with different patterns of use.

Chart 9:
Method of consumption: All psychoactive samples

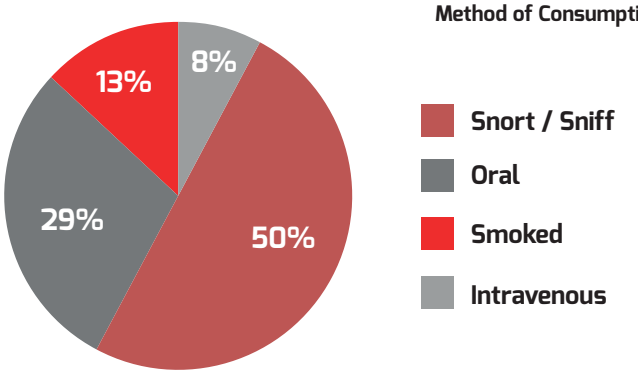


Consuming a substance orally (swallowing, bombing) was the most common method of consumption reported by 47 per cent (median age – 30 years, range 19-61), followed by snorting/sniffing reported by 28 per cent (median age - 29 years, range 19-63). 20 per cent reported smoking seen is the youngest cohort of providers (median age 30, range 14-56). 5 per cent reported intravenous administration with a median age of 29 years (range 22-35 years). Injecting drug use carries with it inherent risks of bacterial and viral infection over and above the risks/toxicity of the substance being injected.

Focusing on the method of use for powders, granules and crystalline materials, the most common method of consumption was snorting/sniffing with 50 per cent reporting this as shown in Chart 10. 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 precense of nasal passage damage and blood.

Of additional concern is the 5 per cent reporting intravenous injecting of powders / crystalline materials, this is a slight decrease from 6 per cent in 2014-15.

Chart 10:
Method of Consumption: Powders

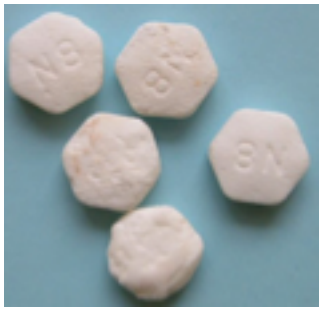


WEDINOS and Prisons in Wales

In November 2013 WEDINOS received its first sample from a prison in Wales. Since that time we have actively engaged with all Welsh prisons providing information and support to implement WEDINOS within each setting, as well as offering information and training on NPS and relevant harm reduction advice.

To 30th September 2016 WEDINOS had received 454 samples from Welsh prisons, identifying 73 substances either in isolation or combination. These samples are non-attributable and non-forensic / evidential finds.

Overall,10 per cent (n=49) of these samples contained no active compound. This was closely followed by buprenorphine (subutex – a partial opioid receptor agonist used as an opioid substitute treatment) as the next most commonly identified substance.



Buprenorphine tablets submitted to WEDINOS

However, if we were to count synthetic cannabinoid receptor agonists (SCRAs) as a group they would account for 17 per cent (n=76) of all prison samples received. Within this group WEDINOS identified 13 SCRAs either in isolation or combination; with one single sample of plant matter found to contain four SCRAs.

The identification of SCRAs in a custodial setting is of concern, and there are increasing reports of a rise in physical and mental health issues relating to Spice (a commonly used term to describe SCRAs) within prisons and the consequential hospitalisations and increasing levels of violence[9].; especially as just under 20 per cent of WEDINOS SCRA prison samples containing the potent SCRA's MDMB-CHMICA and 5F-ADB (see section on Synthetic Cannabinoid Receptor Agonists).


Legal highs 'destabilising prisons', chief inspector warns

http://www.bbc.co.uk/news/uk-36184617

Emergency services called out to prison incidents 'every 20 minutes'

http://www.bbc.co.uk/news/uk-36259747

9. Spice: The bird killer, What prisoners thinks about the use of spice and other legal highs in prison; User Voice; May 2016

Different populations, different trends?

Within Wales there are currently five male-only prisons with a new prison in North Wales, Berwen, due to open in February 2017. Berwen will be the largest prison in Europe with 2,100 inmates. The prisons can generally be classified as:

- Category B prison holding prisoners post sentence
- Category B prison holding prisoners on remand or those near to the end of sentence
- Category B/C prison holding prisoners on remand or those near to the end of sentence
- Category D open prison

What we can see from samples provided by these prisons is a distinct difference in the substances found when comparing each prisons Top 10 most commonly identified substances.

In our Category B prison holding prisoners post sentence six out of the ten most commonly identified substances are medications, compared to category B/C prisons where we see several substances controlled by the Misuse of Drugs Act 1971 and a high prevalence of buprenorphine.

Within Category D open prison there appears to be a more diverse range of substances identified, including medications, substances controlled by the Misuse of Drugs Act and the Psychoactive Substances Act 2016.

Image and Performance Enhancing Drugs were identified in all of the prisons and featured in all Top 10 most commonly identified substance lists.

Smoking ban

Following Welsh prisons going 'smoke free' in January 2016 there has been increases in the number of tobacco / nicotine contain plant matter samples submitted to WEDINOS. Since January we have seen tobacco enter the top ten most commonly identified substances list for Category B/C prison holding prisoners on remand or those near to the end of sentence; it has also moved into the 'All Welsh Prisons top ten most commonly identified substances'.

All Welsh Prisons top ten most commonly identified substances

1	**No Active Compound Identified**
2	**Buprenorphine (Subutex)**
3	**Paracetamol**
4	**5F-PB-22 (SCRA)**
5	**Cannabis**
6	**Quetiapine**
7	**Mirtazapine**
8	**5F-AKB48 (SCRA)**
9	**Methandrostenolone (Dianabol)**
10	**Nicotine**

With SCRAs being highly prevalent within prison samples and one of the methods used for nicotine replacement therapy within prisons including the use of e-cigarettes, we should consider these as an alternative route of administration not just for SCRAs, but also other types of substances. SCRA users in the community already report vaping as a method of consumption for SCRAs.

"You can adapt those e-cigs to smoke just about anything. Not just what you're supposed to."
Harry Shapiro, Drugscope [10.]

Within community samples WEDINOS have received so called c-liquids for e-cigarettes that have been found to contain SCRAs. Below is an example of one such liquid submitted to WEDINOS, along with the self reported effects described by the user.

10. E-cigarettes rigged by drug users to smoke hallucinogen DMTs, https://www.rt.com/uk/220551-vape-dmt-electronic-cigarette/

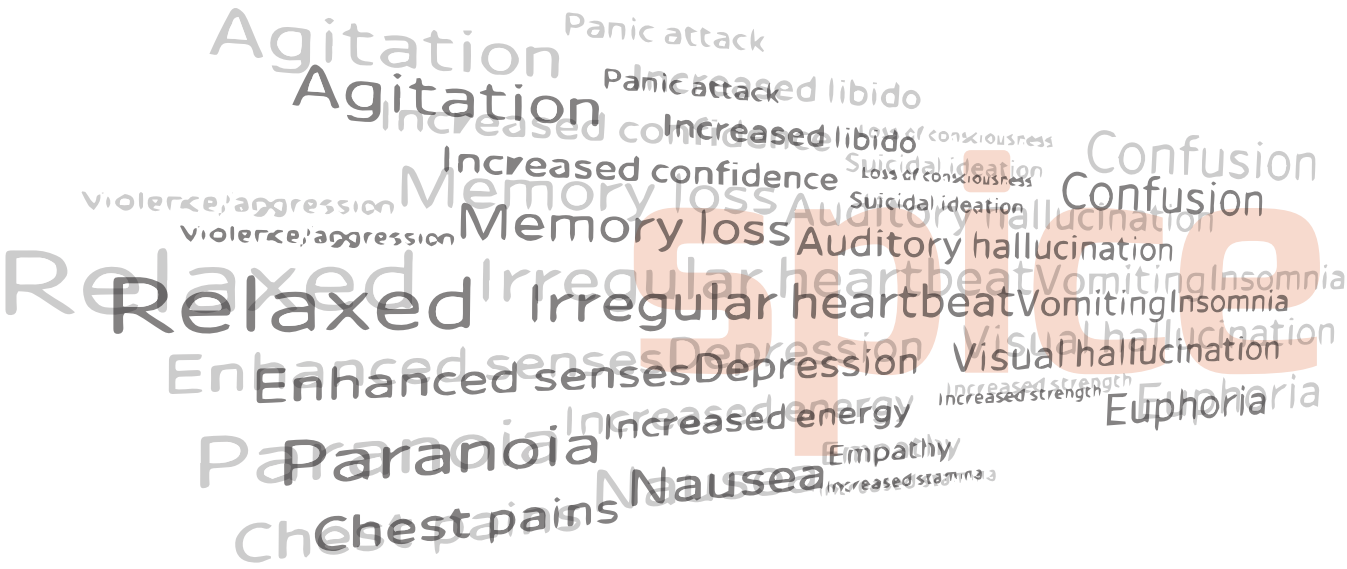
Budda Blues

Herbal e-liquid souvenir
5F-AKB48

Self-reported effects from these samples include:
Euphoria
Enhanced Senses
Empathy
Relaxation
Paranoia
Confusion
Agitation
Vertigo

It must be noted that to date WEDINOS has not received any samples from Welsh prisons that appear to be prepared for use with an e-cigarette.

Synthetic Cannabinoid Receptor Agonists (SCRAs)



A section on SCRAs has been present in each of the WEDINOS annual reports to date, initially due to prevalence, unexpected effects and the realisation that this was not anything like 'legal cannabis'.

In our second annual report (2014-2015) we saw increasing reports of users experiencing seizures with increasing evidence of this, for example in the Mella et al article in Neurology (April 6, 2015 vol. 84 no.14 Supplement P5.109)[11]. Added to this were reports of hospitalisations and deaths in both the United Kingdom and Europe.

In the United Kingdom last year, the reported lifetime use of 'Spice' (Spice is a used as a blanket term to describe SCRAs) in household surveys (age 16–64) was 0.2. The 2012 Global Drug Survey, reported last year prevalence levels of SCRA use as 3.3 % among all respondents from the United Kingdom and 5.0 % among regular clubbers from the United Kingdom

Following the implementation of the Psychoactive Substances Act 2016 WEDINOS there has been an increase in the prevalence of high potency SCRAs coupled with a decrease in the number of SCRA substances submitted to WEDINOS, therefore reducing the options available to users.

11. Mella D et al. (2015). Cannabinomimetic neurotoxicity. Neurology; 84 (14) Supplement P5.109. Available at: http://www.neurology.org/content/84/14_Supplement/P5.109

[Accessed 15th Dec 2015]

The SCRA substances 5F-AKB48 and 5F-PB-22, which have consistently been the most commonly identified NPS' appear to be falling in prevalence, this despite 5F-PB-22 being the most commonly identified substance, which can be attributed to its popularity pre-legislation.

MDMB-CHMICA

MDMB-CHMICA (methyl 2-[[1-(cyclohexylmethyl)indole-3-carbonyl]amino]-3,3-dimethylbutanoate) is a SCRA that has been detected in Europe since August 2014. WEDINOS has identified the SCRA MDMB-CHMICA on 56 occasions since September 2014.The National Poisons Information Service (NPIS) clinical management tool TOXBASE states that 'apparently (MDMB-CHMICA has a) greater toxicity than most other synthetic cannabinoids. In July 2016 the EMCDDA and Europol published a joint on MDMD-CHMICA.

With this substance, there appears to be a high frequency of adverse effects, with both users and suppliers warning of its high potency[12.]. This coupled with the the highly variable amounts of the substance in products represent a high risk of acute toxicity.

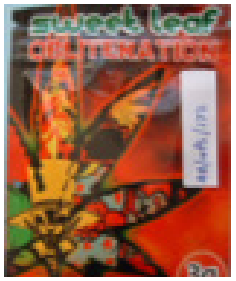
A total of 29 deaths associated with MDMB-CHMICA were reported by 5 Member States and Norway: Germany (5 cases), Hungary (3), Poland (1), Sweden (9), Norway (1) and the United Kingdom (10). Due to awareness of UK fatal and non-fatal drug poisonings associated with MDMB-CHMICA, Public Health Wales produced a film with a family personally affected by this drug. The film is called 'The Unknown Unknowns' and was produced with the aim of raising awareness and promoting harm reduction messages and advice. This video is available at: https://vimeo.com/167733331

12. MDMB-CHMICA: Availability, Patterns of Use, and Toxicity Associated With This Novel Psychoactive Substance Mark Haden, John R. H. Archer, Paul I. Dargan, David M. Wood

Clinical features, described from 25 acute intoxications across Europe included: Coma and unconsciousness,tachycardia, syncope, hyperemesis and/or nausea, mydriasis, seizures and convulsions, bradycardia, somnolence, serotonin toxicity, urinary and faecal incontinence, respiratory acidosis and metabolic acidosis. In 4 out of the 25 cases the patients were described as exhibiting aggression and/or severe disturbance of behaviour.

The joint report outlined 3,600 seizures of MDMB-CHMICA across 19 EU member states, Turkey and Norway; with 550 seizures being reported by the United Kingdom, this was second only to Turkey (656 seizures). At this time it had been identified in powder form as well as being present in ready to smoke mixtures. Ready to smoke mixtures / herbal material accounted for 90% of EU seizures. WEDINOS has identified this substance in both forms.

Examples of MDMB-CHMICA submitted to WEDINOS.



Routes of administration for MDMB-CHMICA include smoking, vaporising, oral and rectal administration[13].

MDMB-CHMICA is controlled under the Psychoactive Substances Act 2016.

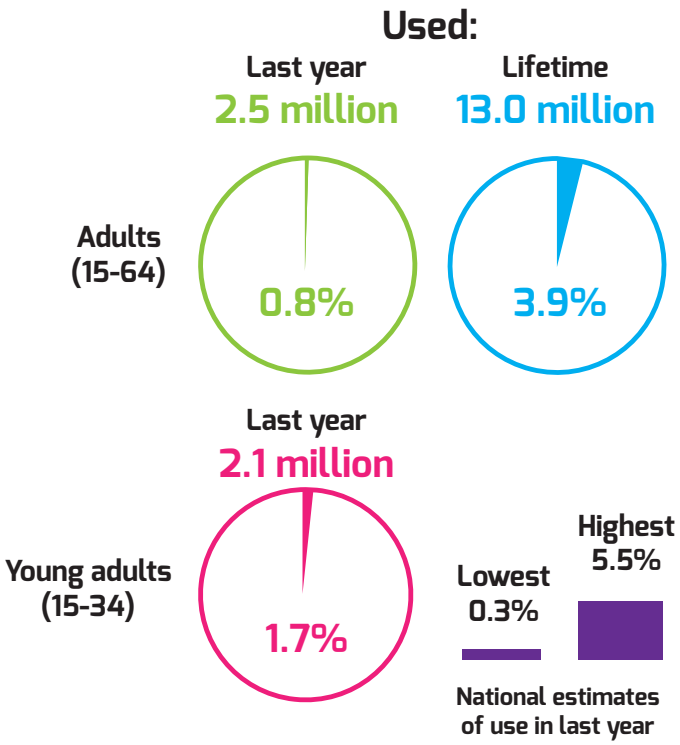
13. Risk assessment report on a new psychoactive substance: methyl 2-[[1-(cyclohexylmethyl)-1H-indole-3-carbonyl]amino]-3,3-dimethylbutanoate (MDMB-CHMICA), EMCDDA, Lisbon, July 2016

MDMA

Ecstasy and Apathy – Festival finds 2016

It is estimated that 0.8% of European adults (2.5million) aged 15 to 64 took MDMA in the last year, with lifetime prevalence rising to 3.9% (13million); with a market valued at 0.7billion euros and accounting for 3% of the illicit drugs market[1].

In the 2000s there was a decline in the production of MDMAcombined with a fall in the content of MDMA within pills. However, over the past few years this has reversed with both the production and content increasing[1].



Dosage - the picture to date

In the 1990s and 2000s the average MDMA content of pills was somewhere between 50–80 mg[2].
In April 2016 the averages were closer to 125 mg MDMA per pill, while there were also reports of 'super pills' found on the market in some countries with a reported range of 270–340 mg[3].

Due to concerns relating to this in 2014 the European Monitoring Council for Drugs and Drug Addiction (EMCDDA) and Europol issued a joint alert MDMA[4].

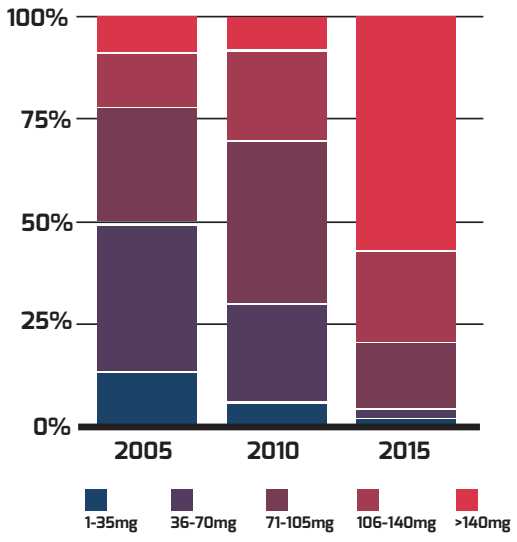
Ecstasy = MDMA

MDMA was the original chemical sold as 'ecstasy' and is still the substance most associated with 'ecstasy' pills.

In the last decade, however, many other substances have been identified in so-called ecstasy pills. Of 76 tablets submitted to WEDINOS as MDMA/Ecstasy tablets 40% (n=30) contained no MDMA. Within this sample, 20 substances (including MDMA) were identified either in combination or isolation within these pills.

Following a recent collaboration with South Wales police WEDINOS was received pills that were recovered from the site of a music festival in Summer 2016. The following outlines the results of our analysis:

- 56 tablets
- Average weight – 465.3mg (weight range: 318.8mg to 628.6mg)
- Average dose – 129.48mg (dose range: 8.10mg to 274.66mg)



1. Recent changes in Europe's MDMA/ecstasy market - Results from an EMCDDA trendspotter study, EMCDDA, Lisbon, April 2016 available at http://www.emcdda.europa.eu/system/files/publications/2473/TD0116348ENN.pdf [accessed 15th August 2016]
2. Wood DM, Stribley V, Dargan PI, Davies S, Holt DW, Ramsey J. (2011) Variability in the 3,4-methylenedioxymethamphetamine content of 'ecstasy' tablets in the UK. Emerg Med J 28:764–765
3. Recent changes in Europe's MDMA/ecstasy market - Results from an EMCDDA trendspotter study, EMCDDA, Lisbon, April 2016 available at http://www.emcdda.europa.eu/system/files/publications/2473/TD0116348ENN.pdf [accessed 15th August 2016]
4. Tablets with dangerously high levels of MDMA, EMCDDA / Europol Early Warning Notification 2014/6 file:///C:/Users/De123755/Downloads/ewn_high_concentration_mdma_feb_2014_-_public.pdf [accessed 18th August 2016]

Festival samples – Summer 2016

Dosage Range

1-35mg | 36-70mg | 71-105mg | 106-140mg | >140mg

Doses over 120mg MDMA should be considered as high and users should be aware that they are at increased risk of adverse effects. Adverse effects of MDMA use can include: visual hallucinations, confusion, agitation, hypertension, seizures and coma [1]. Fatalities have been described in individuals who have consumed 150mg MDMA [2]. Effects occur within 1 hour and last 4-6 hours after 75-150 mg, and up to 48 hours after 100-300 mg [3]. Health professionals: please refer to TOXBASE for current management advice.

Name/tablet branding: Silver Bar
Tablet weight average: 464.36mg (Range 460.9mg to 470.9mg)
Number of pills analysed: 3
Dose range: 1-35mg to 36-70mg

Name/tablet branding: Silver Bar Thin
Tablet weight average: 441.55mg (Range 434.8mg to 448.3mg)
Number of pills analysed: 2
Dose range: 71-105mg

Name/tablet branding: Go Pro
Tablet weight average: 369.4mg
Number of pills analysed: 1
Dose range: >140mg

Name/tablet branding: Minion
Tablet weight average: 318,8mg
Number of pills analysed: 1
Dose range: >140mg

Name/tablet branding: Owl with heart
Tablet weight average: 461.17mg (Range 458mg to 467.5mg)
Number of pills analysed: 3
Dose range: >140mg

Name/tablet branding: Peace sign
Tablet weight average: 400.8mg
Number of pills analysed: 1
Dose range: >140mg

Name/tablet branding: Boom
Tablet weight average: 511.88mg (Range 488.1mg to 544.2mg)
Number of pills analysed: 3
Dose range: 106-140mg to >140mg

Name/tablet branding: Darth Vader (Black)
Tablet weight average: 534.1mg (Range 487.9mg to 574mg)
Number of pills analysed: 7
Dose range: 71-105mg to >140mg

Name/tablet branding: Darth Vader (Grey)
Tablet weight average: 434.5mg (Range 423.8mg to 441.8mg)
Number of pills analysed: 3
Dose range: 71-105mg to 106-140mg

Name/tablet branding: Lego
Tablet weight average: 455.94mg (Range 449.3mg to 467.7.8mg)
Number of pills analysed: 5
Dose range: 36-70mg to 71-105mg

Name/tablet branding: MasterCard
Tablet weight average: 515.2mg
Number of pills analysed: 1
Dose range: >140mg

Name/tablet branding: The North face
Tablet weight average: 358.05mg (Range 340.3mg to 375.8mg)
Number of pills analysed: 2
Dose range: >140mg

1. R.C.Baselt. Disposition of toxic drugs and chemicals in man (fifth edition), Methylenedioymethamphetamine pg. 562-563, 2000.
2. G.p.Dowling, E.T. McDonough and R.O.Bost. 'Eve' and 'Ecstasy', a report of five deaths associated with the use of MDEA and MDMA. J.Am.Med.Asso.257: 1615-1617, 1987
3. www.toxbase.org (accessed 10th October 2016)

Festival samples – Summer 2016

Dosage Range

1-35mg | 36-70mg | 71-105mg | 106-140mg | >140mg

Name/tablet branding: Elderly People Crossing
Tablet weight average: 433.3mg
Number of pills analysed: 1
Dose range: >140mg

Name/tablet branding: Teenage Mutant Ninja
Tablet weight average: 619.45mg
(Range 610.3mg to 628.6mg)
Number of pills analysed: 2
Dose range: >140mg

Name/tablet branding: Red Bull
Tablet weight average: 472.9mg
Number of pills analysed: 1
Dose range: >140mg

Name/tablet branding: Saw face
Tablet weight average: 469.5mg
Number of pills analysed: 1
Dose range: >140mg

Name/tablet branding: Shaun the Sheep
Tablet weight average: 367.6mg
(Range 346.6mg to 382.5mg)
Number of pills analysed: 7
Dose range: 71-105mg to 106-140mg

Name/tablet branding: Shell
Tablet weight average: 437.1mg
(Range 430.9mg to 440.6mg)
Number of pills analysed: 3
Dose range: >140mg

Name/tablet branding: Tesla
Tablet weight average: 579.83mg
(Range 568.9mg to 588.9mg)
Number of pills analysed: 4
Dose range: 106-140mg

Name/tablet branding: Tomorrowland
Tablet weight average: 421.9mg
Number of pills analysed: 1
Dose range: >140mg

MDMA content varies from batch to batch and pill to pill. This coupled with the difference between dose range and time of onset for MDMA compared to the substituted substances; raises concerns for the wellbeing of individuals consuming what they believe to be MDMA.

Individuals who are determined to use should therefore not be apathetic in their approach. Be aware of doses, duration of effects, the effects themselves and potential risks.

- **Start with a low dose, quarter of a pill and wait for effects**
- **Some of the substances that MDMA is substituted for have a duration of onset up to two hours**
- **If it feels different from what you are expecting, or if you feel nothing after a long wait (which you should not from a MDMA pill), do not take any more in the hope that increasing the dose will increase the positive psychoactive effects**
- **Take time to relax regularly and cool down to avoid overheating**
- **Make sure you have more days where you don't use, than days where you use**
- **Use in a safe environment with trusted company**
- **Tell someone you are with what you are taking**

MDMA is a ring substituted derivative of methamphetamine. MDMA causes release of serotonin, and to a lesser extent dopamine, in the brain. First synthesised and patented by Merck pharmaceutical company in 1912 and 1914 respectively; MDMA was originally developed as Merck looked to develop a vasoconstrictor to help reduce bleeding. The exact timeline for MDMA becoming a recreational drug is unclear; however the drug gained prominence in late 1970's.

What Next?

In the ever shifting and evolving market of substances, coupled with changing trends in use and legislative responses it is difficult to say what we can expect in the future and what challenges it may hold.

What we can do is continue to work collaboratively with colleagues not only in the United Kingdom and across Europe, but further afield and share knowledge.

We have already made reference to the increasing potency of SCRA's and designer benzodiazepines that have been analysed by WEDINOS. This is alongside changes within the opioid market WEDINOS has analysed samples of white heroin as well as several containing fentanyls. In the Baltic regions heroin purity fell from 25% in 2010 to 13% in 2015, worryingly during the same period carfentanyl, a substance 100 times more potent than fentanyl was found on the illicit drugs market, there have also been reports from the United States of America of carfentanyl being mixed with low purity heroin.

In Wales and Hungary increases in injecting episodes have been documented amongst stimulant, more specifically synthetic cathinone injectors. This has led to more problematic use and can be linked to clusters of Hepatitis C infections in South Wales. In Hungary Hepatitis C prevalence doubled from 2011 (24%) to 2014 (49%) within the injecting drug using community.

Despite these changes and the emergence of new substances, established illicit substances (cocaine, heroin, MDMA, amphetamine, cannabis), remain prevalent; cannabis is the number one used substance within the UK. Within samples submitted to WEDINOS cocaine was the most commonly identified substance. However, within this market there have been changes also, as outlined in the section MDMA – Ecstasy and Apathy there has been an increase in the dosage within Ecstasy pills, WEDINOS has also seen cannabis samples that contained SCRAs. These changes can have adverse effects to the population using these substances and should be monitored.

WEDINOS will continue to analyse samples and collate self-report effects information, cascading our findings through stakeholders and the website www.wedinos.org; this alongside information relating to drug trends from across the globe allows us to build a picture of substance use and potential harms. We may not be able to exactly predict future changes or challenges, but we can be proactive in monitoring the markets, and as a result pragmatic, evidence based and relevant in the information and advice we provide