WEDINOS

Welsh Emerging Drugs & Identification of Novel Substances Project

PHILTRE

Annual Report

1st October 2013 - 30th September 2014

GIG CYMRU NHS WALES
Iechyd Cyhoeddus Cymru
Public Health Wales

Noddir gan
Lywodraeth Cymru
Sponsored by
Welsh Government

WEDINOS
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FOREWORD

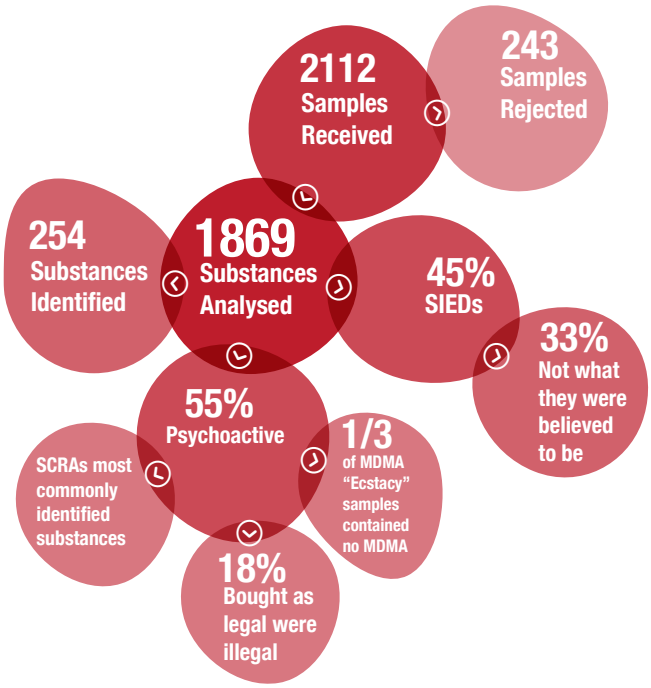
Foreword

"Public health faces new and evolving challenges in relation to identifying, evidencing and reducing the harms associated with drug use. There is growing availability, prevalence of use and diversity within the drugs market including new psychoactive substances (NPS). The widespread accessibility of such drugs via both online and offline retailers has led to a new and growing audience of people who use NPS.These compounds carry with them the potential for psychological, physiological and social harms. From a public health perspective, WEDINOS is well placed to support this work now and into the future and as such this first annual report of findings is most welcome."

Dr Marion Lyons,
Director of Health Protection,
Public Health Wales

HEADLINES

Headline Figures



SIEDs - Steroid & Image Enhancing Drugs
SCRAs - Synthetic Cannabinoid Receptor Antagonists

- WEDINOS provides a mechanism for the anonymous submission and testing of samples of new psychoactive substances and the dissemination of pragmatic harm reduction advice.
- 1,869 samples analysed by WEDINOS.*
- 254 compounds identified in either combination or isolation.
- Median age for all mind altering/psychoactive sample providers was 28 years.
- Median age for all SIEDs sample providers was 34 years.
- 18 per cent of samples believed to be 'legal' / not controlled contained a controlled compound.
- 8 per cent of controlled samples contained a non-controlled NPS compound.
- Synthetic Cannabinoid Receptor Agonists were the most commonly identified mind altering/psychoactive substance.
- Of the 31 MDMA / 'Ecstasy' samples - over one third did not contain MDMA.
- 53 per cent of samples containing 5-MeO-DALT (tryptamine/psychedelic stimulant)also contained Methiopropamine, Ethylphenidate or both (stimulants); highlighting the fact that many NPS and branded products are in essence poly drug use in a single packet.
- 33 per cent of SIED samples analysed with purchase intent data were found to be different from what they were believed to be at point of purchase.

* The total number of samples received by WEDINOS was 2,112. 243 samples were rejected based on our acceptance criteria.

Action in Wales for New Psychoactive Substances

The issue

Information from a range of sources in the UK including Wales indicates that people who use new psychoactive substances (NPS) may be at risk of a number of serious adverse effects on health. Principally these include the direct physical, psychological and behavioural effects from the broad range of drugs that people take. In addition there are indirect effects from increased burden on NHS resources in particular emergency services, primary care and mental health services. Whilst the impacts outlined above reflect the short term consequences, it is not possible to predict the extent of future harm.

The Response

In response to changes in drug use trends in the UK and Wales, Public Health Wales, in conjunction with Cardiff Toxicology Laboratories at University Hospital Llandough and the School of Pharmacy at Cardiff University developed the WEDINOS project. This national project is supported by Welsh Government and provides a framework for the collection and testing of samples of new psychoactive substances and combinations of drugs (hereafter referred to as "samples") along with information regarding the symptoms users experienced, both expected and unexpected. Collation of these findings along with identification of the chemical structure of the samples enables the dissemination of pragmatic evidence-based harm reduction information for those using new psychoactive drugs or considering use. The WEDINOS project began analysing samples on 1st October 2013, and to date has tested and profiled nearly 1900 samples from across Wales and the wider United Kingdom, including substances that are new to both the UK and Europe.

WEDINOS, whilst not providing a measure of the prevalence of use of NPS or SIEDs in the population, does provide vital information on trends in use, both geographically and demographically, and substances in circulation along with reported harms, toxicological evidence and advice. Whilst WEDINOS is supported by the four Welsh police forces and other criminal justice services; it remains an anonymous health focused, harm reduction service; providing impartial evidence based information and advice to all. No samples submitted to WEDINOS are analysed for forensic or evidential purposes.

http://www.journal-online.co.uk/article/11888-ideas_hub_forward_thinking_from_welsh_drugs

SUBSTANCES

What are New Psychoactive Substances?

The term "new psychoactive substances" has been legally defined by the European Union as a new narcotic or psychotropic drug, in pure form or in preparation, that is not scheduled under the Single Convention on Narcotic Drugs of 1961 or the Convention on Psychotropic Substances of 1971, but which may pose a public health threat comparable to that posed by substances listed in those conventions.[1]

NPS are drugs which mimic, or are reported to mimic, the effects of illegal drugs. There is a common perception that because such drugs are legal they are safe. None of them, however, have been subjected to the stringent testing procedures which are required before a new medicine for human use is granted a license and, therefore, there is a risk of short and long-term adverse effects resulting from their use.

Substances categorized as NPS according to the United Nations Office on Drugs and Crime (UNODC) classification include:

- Synthetic cannabinoids
- Synthetic cathinones
- Phenethylamines
- Piperazines
- Ketamine
- Plant-based psychoactive substances such as kratom, *Salvia divinorum* and khat
- Other substances, including
  - Tryptamines
  - Aminoindanes
  - Phencyclidine-type substances.

Prevalence of NPS and contribution of WEDINOS to the international evidence base

The types and combinations of NPS are continually evolving and increasing. The European Union Early Warning System (EWS) provides a mechanism to inform and share information on trends and new substances, along with reported harms. The EWS is one of the activities of the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA). A record 81 substances were notified to the EU EWS in 2013, a two fold increase in the number reported in 2010[2]. Since the launch of the project WEDINOS has submitted 19 reporting forms to the EU Early Warning System, specifically:

- Seven Phenethylamines
- Six Synthetic Cannabinoid Receptor Agonists
- Two Nootropics
- One Arylalkylamine
- One Benzodiazepine
- One Piperidine
- One Tryptamine

1. Council of the European Union decision 2005/387/JHA
2. EMCDDA - European Drug Report 2014: Trends and developments

There is very little evidence in terms of prevalence estimates for the use of NPS internationally. The Global Drugs Survey 2014[3], a self selecting survey, reported that 10.5 per cent of respondents to their survey declared the use of 'legal highs, research chemicals and synthetic cannabis use' in the last twelve months.

For the UK the 2013/14 Crime Survey for England and Wales (CSEW)[4], a self report survey of England and Wales residents, does provide an indicator of NPS use; however, it specifically asks about salvia and nitrous oxide. Of respondents to the 2013/14 CSEW 2.3 per cent of adults aged 16 to 59 had taken nitrous oxide in the last year and 0.5 per cent of adults aged 16 to 59 had taken salvia. For young adults, aged 16 to 24, 7.6 per cent had taken nitrous oxide in the last year; and 1.8 per cent had taken salvia. Although illicit, under the definition of NPS provided previously, Ketamine remains in this group of substance, the CSEW reports a statistically significant increase in last year ketamine use 0.4 per cent (2012/13) to 0.6 per cent in 2013/14. It would perhaps prove informative to add those NPS that are frequently reported by WEDINOS and other Early Warning Systems (EWS) to the CSEW to better evidence population prevalence of NPS use.

The Harm Reduction Database for Wales, which monitors activity throughout Welsh Needle & Syringe Programmes (NSP), shows a substantial increase in individuals who declared NPS as their primary drug of choice between 2011-12 and 2013-14; from 76 to 206, a rise of 171 per cent. This rise is also mirrored in the declaration of NPS listed as the secondary drug of choice, where an 81 per cent increase over the same period is evidenced. This may indicate NPS being added more frequently to the drug use repertoire of Welsh individuals accessing NSPs. NPS injecting as a proportion of all NPS activity in Wales rose from 1 per cent in 2011-12 to 2.3 per cent in 2013-14.

The ongoing development, diversification and increased accessibility of the NPS market and a lack of toxicological effects information makes it difficult for services working with users of NPS to identify and respond to risks. WEDINOS aims to address this by monitoring national and local trends in substance use and by profiling substances and their toxicological effects.

Samples received

The success of WEDINOS to date has been achieved through active engagement with stakeholders. A series of face to face events including training around NPS were undertaken, prior to launch, with very positive feedback and resulting in the recruitment of 71 contributing services. These services hold WEDINOS packs and accept samples for submission from service users and members of the public. Contributing organisations include services in substance misuse, housing & homelessness, mental health, criminal justice, police, young person services, ambulance and health.

3. 2014 Global Drug Survey (GDS2014)
4. Drug misuse: findings from the 2013 to 2014 Crime Survey for England and Wales

Chart 1: Individuals accessing NSP – Primary and secondary substance of choice (HRD 2014)

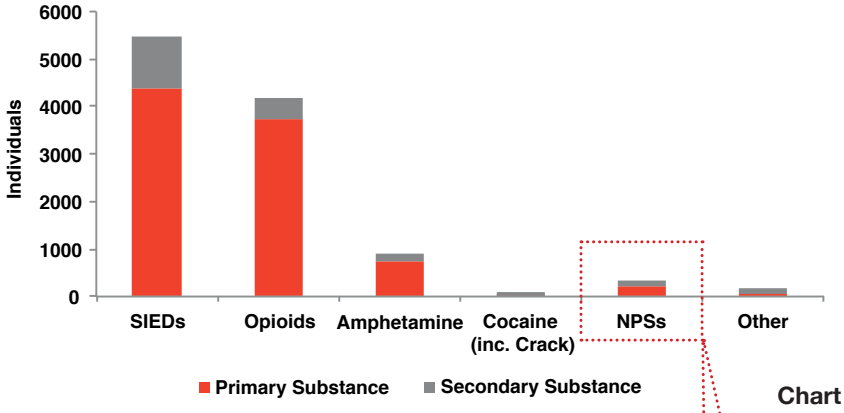
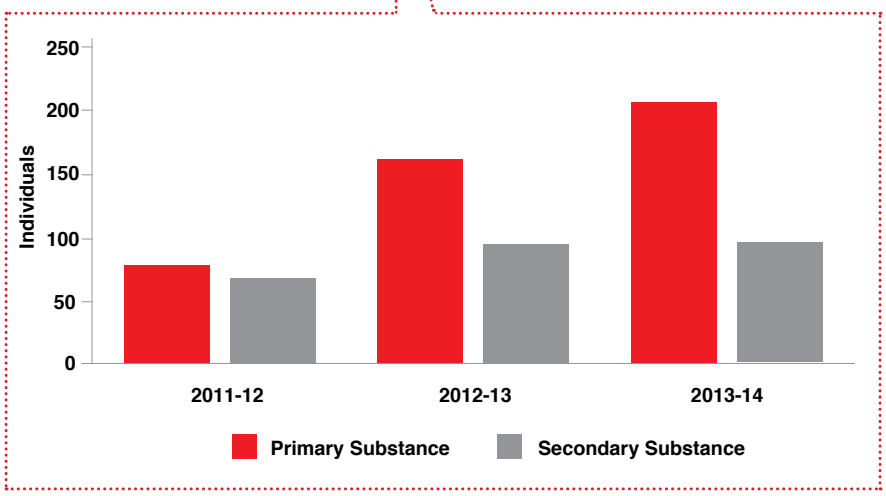


Chart 2: Individuals accessing NSP - declaring NPS as either primary or secondary substance of choice (HRD 2014)



ONE YEAR ON

1st October 2013 to 30th September 2014

Between the launch of the project on 1st October 2013 and 30th September 2014, the WEDINOS project analysed 1,869 samples, identifying 254 substances either in isolation of combination. These samples were submitted from 48 different organisations and services from across Wales and an additional four from across the wider UK.

Of the samples received from Wales 65 per cent were submitted through participating organisations and 35 per cent from individuals accessing via the website: www.wedinos.org. The highest contributing services and organisations were:

- Gwent Police – The majority of these samples are provided through the night time economy team via night club amnesty bins
- Newport City Trading Standards – samples were provided on a non-evidential basis with a focus on harm reduction. This enabled us to evidence the types of substances being sold within the locality
- South Wales Police
- Public Health Wales
- Kaleidoscope Project

Reason for Purchase

Of those 1,869 samples, 55 per cent were mind altering / psychoactive substances; the remaining 45 per cent being Steroids & Image Enhancing Drugs (SIEDs). For Wales the split was 80 per cent mind altering / psychoactive, 20 per cent SIEDs.

Mind altering/psychoactive substances – The Where, Who, What and How.

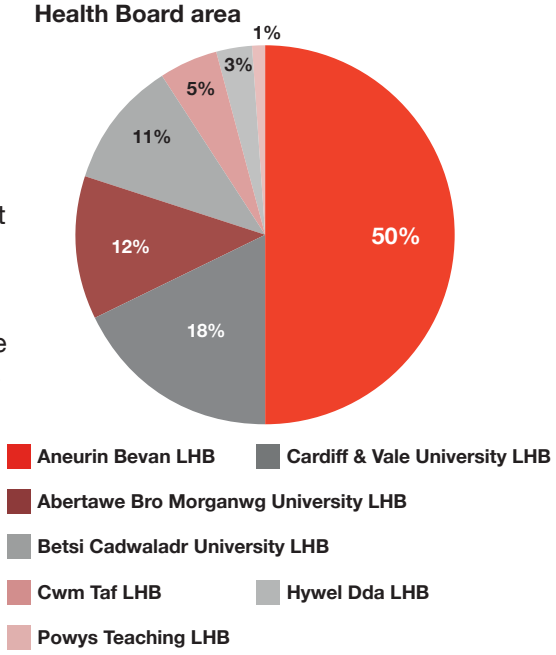
In the first year of the project samples were accepted from Wales and the wider UK in order to establish capacity. Of the 1,022 mind altering / psychoactive samples, 58 per cent of samples were received from within Wales, 36 per cent from England, 2 per cent from Northern Ireland, 1 per cent from Scotland. 2 per cent were received from undisclosed locations and the remaining 1 per cent was submitted from outside of the United Kingdom (the results of these samples analysis were not published).

Within Wales, the Aneurin Bevan Local Health Board (LHB) area contributed the highest proportion of samples, accounting for 29 per cent of all mind altering/psychoactive samples and 50 per cent of Welsh submissions.

Where ...

It should be noted that Chart 3 does not represent the spread, use or concentration of NPS use in Wales. It highlights the geographic variation in the engagement and proactive response of services with the WEDINOS project. The highest contributing organisation to the WEDINOS project is Gwent Police (who have responsibility for policing the Aneurin Bevan LHB area). Gwent Police provide the WEDINOS project with substances that have been forfeited at night club amnesty bins. This enables the WEDINOS project to monitor trends in use amongst the club going population and to inform services within the locality of compounds in circulation. This process is expected to be replicated by South Wales Police in the near future.

Chart 3: Breakdown of Welsh submissions of mind altering / psychoactive samples by Local Health Board area



Who ...

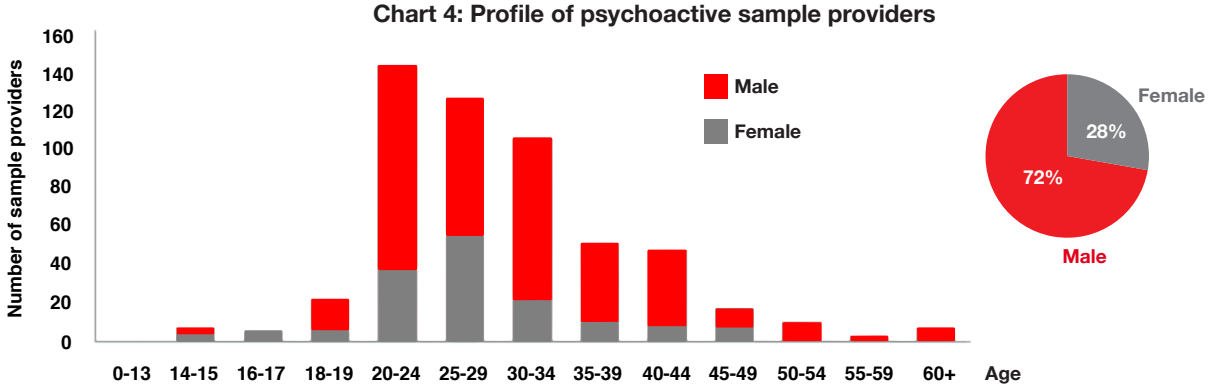
Of the 1,022 samples, demographic information was available for 72 per cent (n=729), with the remaining samples submitted from amnesty bins or by criminal justice services and trading standards that had no evidentiary or forensic value, hence with no self-report effects form. 72 per cent of the samples were submitted by males and 28 per cent by females as shown in Chart 4.

The overall median age for all mind altering / psychoactive sample providers (Wales and wider UK) was 31 years (average age was 28 years old):

- Females - median age was 28 years and an average age of 27 years (range: 14-49 years)
- Males - median age was 31 years, with an average age of 30 years (range 14-61 years)

The largest proportion of submissions from males was provided by individual's aged 20-24.For females the highest proportion of samples was submitted by 25-29 year olds.

Chart 4: Profile of psychoactive sample providers



What ...

Most commonly identified substances

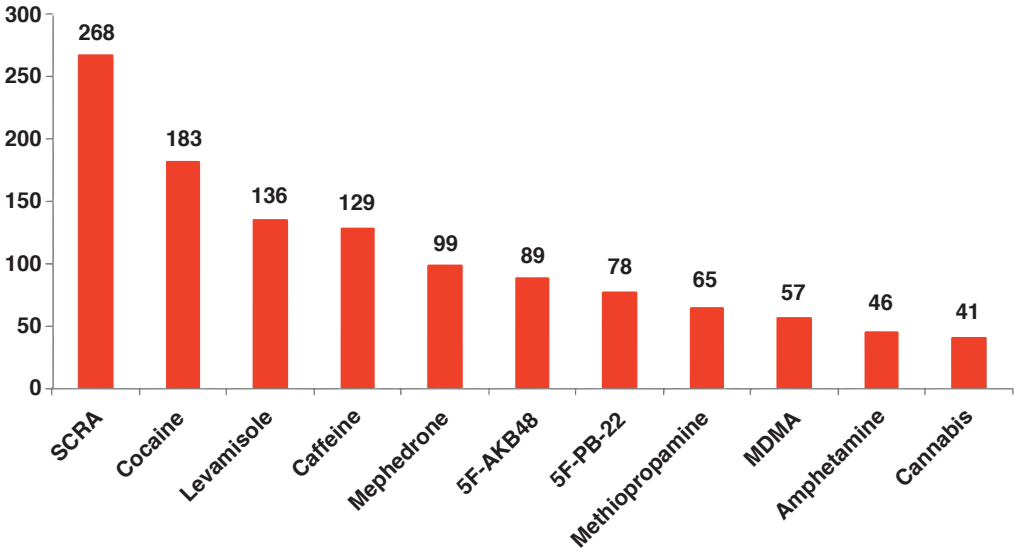
The most commonly identified chemical group of psychoactive substances were Synthetic Cannabinoid Receptor Agonists (SCRAs). To date the WEDINOS project has profiled 25 SCRAs. Cocaine was the most commonly identified psychoactive substance. The most common 'legal/ not currently controlled' substance was the SCRA: 5F-AKB48. Chart 6 shows the most commonly profiled psychoactive substances from WEDINOS.

Levamisole was the most popular bulking/cutting agent identified, however it was found exclusively in samples that also contained cocaine. Caffeine has consistently been found to be the most prevalent bulking/cutting agent, identified in samples that contained the following substances as major components:

- Heroin
- MDMA
- Amphetamine
- Cocaine
- BZP
- 5-MeO-DALT
- Methiopropamine
- Phenacetin
- Ephedrine
- Ethylphenidate
- Methylphenidate
- Mephedrone
- Mescaline NBOMe
- Methamphetamine
- Methoxphenidine
- TFMPP
- MDPBP

Over the past two quarters WEDINOS has seen a decrease in the proportion of Mephedrone (4-methylmethcathinone (4-MMC) samples submitted via night club amnesty bins; and a subsequent increase in the submission of samples found to contain 4-Methylethcathinone (4-MEC). Both are cathinones and Class B substances under the Misuse of Drugs Act 1971. However, NPS users report that 4-MEC is less euphoric[5].

Chart 6: Most commonly identified substances in mind altering/ psychoactive substance WEDINOS samples.



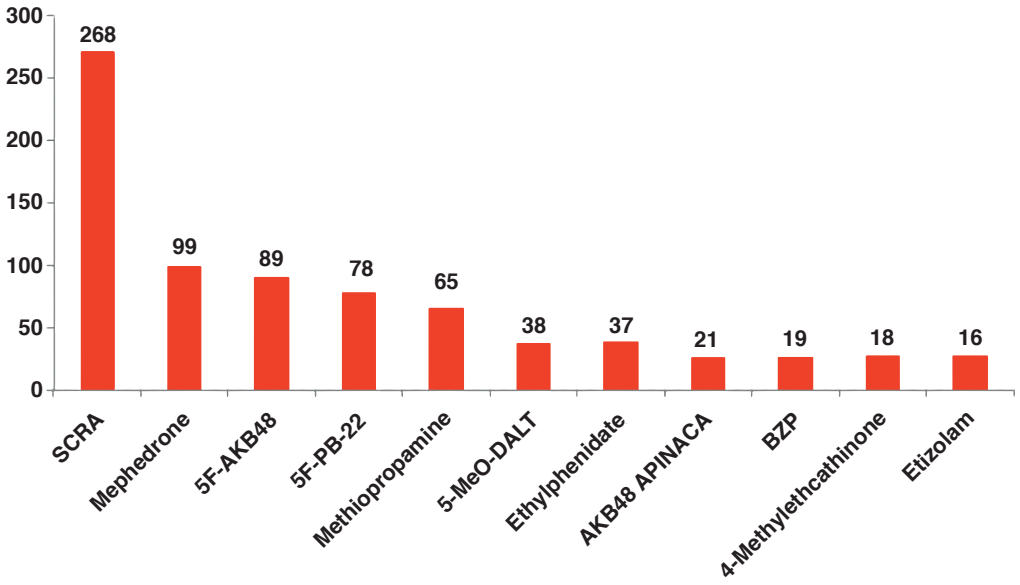
5. https://www.erowid.org/chemicals/4_methylethcathinone/4_methylethcathinone_effects.shtml

Most commonly identified new psychoactive substances

The most commonly identified NPS groups are SCRAs and cathinones. Of the ten most commonly identified NPS profiled by WEDINOS in the last year, three are SCRAs and two are cathinones, as shown in Chart 7. Over the quarters April-June 2014 and July-Sept 2014 there was an increase in the number of samples t contained the stimulants Methiopropamine, Ethylphenidate and the tryptamine 5-MeO-DALT. These substances have been profiled either in isolation or in combination. 53 per cent of samples that contained 5-MeO-DALT (a tryptamine / psychedelic stimulant) also contained Methiopropamine, Ethylphenidate or both (stimulants); highlighting the fact that many NPS and branded products are in essence poly drug use in a single packet.

Of the NPS samples that were purchased as branded products, 80 per cent contained at least two substances and 55 per cent contained at least three. Three samples (Chronic Haze, Nitracaine and Dizzle Dust) were found to contain a total of seven substances each.

Chart 7: Most commonly identified New Psychoactive Substances



SCRA total 268 shows all SCRA as a group. 5F-AKB48, 5F-PB-22 and AKB48 APINACA are synthetic cannabinoid receptor agonists. Methiopropamine, Ethylphenidate, Mephedrone and 4-Methylethcathinone are stimulants. 5-MeO-DALT is a psychedelic tryptamine. BZP a piperazine and Etizolam a benzodiazepine analogue.

Legal Status...

What has become increasingly evident is the cross over between the NPS drug market and the illicit drug market.

8 per cent of samples that were purchased / submitted in the belief that they were a controlled substance were, upon analysis, found to be non-controlled compounds. For example Diazepam, a prescription only medicine/benzodiazepine that was found upon analysis to be Etizolam, a short-acting benzodiazepine marketed in some countries, which is used for the treatment of insomnia and anxiety disorders. Likewise, overall 18 per cent of samples that were purchased / submitted in the belief that they were 'legal/not controlled', contained controlled substances.

Bought as legal...

- Ethylphenidate – found upon analysis to contain Amphetamine and BZP, as well as Caffeine
- The branded product B2 – found upon analysis to contain 4-Methylethcathinone
- The branded products Ivory Dove and Ivory Dove Ultra – both were found upon analysis to contain para-Chloroamphetamine and Amphetamine, as well as N-Ethylnorketamine and Benzocaine
- The branded product Explorers – found upon analysis to contain Methylone and Ethylone

The concerns around this substitution of licit drugs with illicit drugs and vice versa, include unexpected psychological, physiological and social effects to the end user including potential criminal justice impacts. As Chart 8 clearly indicates, many samples had a different legal classification to that believed by the purchaser. For example, a sample purchased as MDMA (Class A), upon analysis was found to contain BZP (Class C). Substances controlled as Class A increased from 132 samples to 294. Class B rose from 106 to 239, as did Class C from 64 to 72. However, several samples were re-classified into and out of these 'controlled' groups. Substances that are not controlled went from 314 to 403, based on the highest classified substance present. One sample was subject to a Temporary Drugs Controlled Order and 13 samples remain unknown due an insufficient amount of material to analyse or were plant matter with no psychoactive properties

Of all mind altering /psychoactive samples submitted to WEDINOS; where the intended purchase substance was listed:

- 132 samples were purchased in the belief that they were Class A substances
- 106 were listed as a Class B
- 64 were listed as a Class C
- 314 were believed be 'not controlled/legal'
- 406 samples were submitted without a listed purchase intent

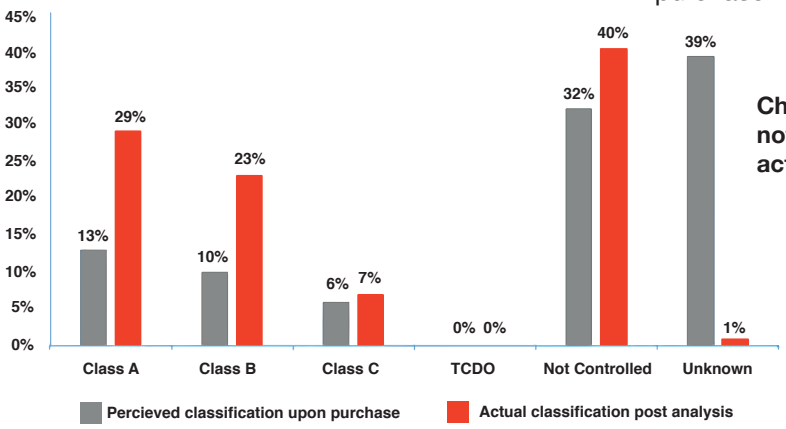


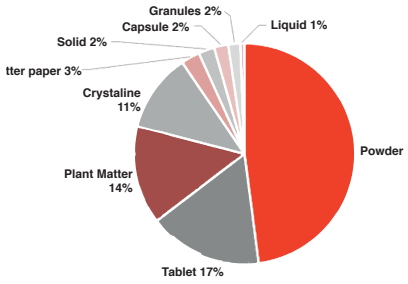
Chart 8: Proportion of controlled and not controlled / legal – perceived and actual (Psychoactive Substances)

How ...

Form of sample

WEDINOS requests the 'form of sample' for each submission for two reasons; to ensure that the substance received in the toxicology laboratory matches to the description given by the sample provided (as part of chain of custody process); and, to note any differences in the forms of the same drug/compounds being submitted from the population including mechanisms for ingestion or use. For example, WEDINOS has received samples of SCRA as plant matter for smoking but also as powder for snorting/sniffing. It is thus possible to identify 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 9: Form of psychoactive samples



Method of consumption

Assuming that all plant matter samples are smoked, the remaining samples (pills, liquids, tabs, granules etc) were ingested through a variety of methods, most common, 42 per cent was oral consumption (swallowing, bombing) followed by smoking at 29 per cent, as shown in Chart 10. Injecting drug use carries with it inherent risks of bacterial and viral infection over and above the risks/toxicity of the substance being injected. Overall, 3 per cent of the samples submitted, where method of consumption was known, were injected intravenously and relate to samples of Mephedrone, Amphetamine, Buprenorphine, Heroin, Methiopropamine, Ethylphenidate (although this was purchased as Amphetamine) and Thiofentanyl (purchased as Heroin). Injection of NPS, particularly Mephedrone, has already been linked to two ongoing outbreaks of hepatitis C infection amongst people who inject drugs in Wales. Further investigation is underway by Health Protection, Public Health Wales.

Chart 10: Method of consumption: All psychoactive samples

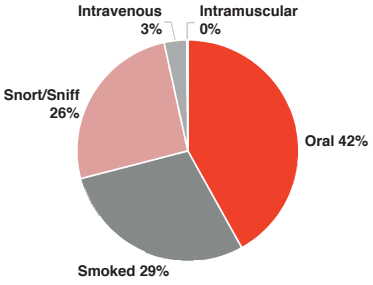
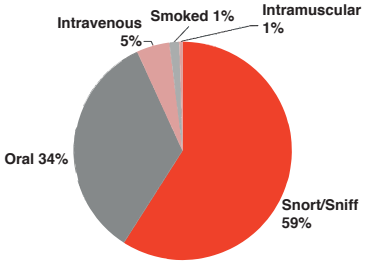


Chart 11: Method of consumption: Powders



Focusing on the method of use for powders and crystalline materials, the most common method of consumption was snorting/sniffing with 59 per cent reporting this as shown in Chart 11. 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, particulaly given the WEDINOS and other evidence of substitution of one substance for another within the branded and non-branded NPS market. There was also a single report of Ethylphenidate being administered intramuscularly in the Vale of Glamorgan (Cardiff & Vale UHB). Evidence based harm reduction advice should be provided to all individuals using or considering use of NPS and other drugs in relation to method of consumption.

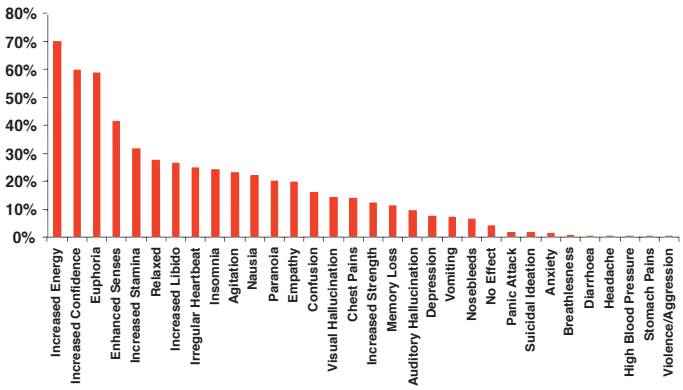
Effects and Harm Reduction

White powder effects

The Global Drugs Survey 2014 reports that 4.7 per cent of their whole sample group (n=78,819) had used a mystery white powder in the past 12 months. This figure rose to 10.9 per cent in United Kingdom responses (n=7,326)[6].

Of the 511 mind altering/psychoactive white powders submitted to WEDINOS to date, 38 per cent (n=192) were submitted with information relating to the effects experienced by the sample provider. Chart 12 displays the effects experienced and the percentage of users who experienced each effect. As expected, the effects that NPS powder forms (primarily cathinone stimulant compounds) are designed to mimic are experienced in over half of respondents, including increased energy and confidence. However, in addition to the expected effects, over 20 per cent reported experiencing irregular heartbeat/arrhythmia, paranoia, nausea, and agitation. Additional negative / unexpected adverse effects reported include chest pains, memory loss, vomiting, panic attacks and suicidal ideation.

Chart 12: Sample provider reported effects following consumption of a 'white powder'.



According to the Office for National Statistics, in 2013, there were a total of 52 deaths, 3 of which were in Wales, where the underlying cause was drug poisoning and an NPS was mentioned on the deaths certificate[7]. It is not possible currently to quantify the number of hospital admissions or Emergency department presentations that are due solely or in part to NPS as the current coding systems (ICD-10) does not code for NPS specifically.

WEDINOS is currently active in 8 of the 13 Emergency Departments across Wales, with the remaining Emergency Departments due to be recruited by the end of 2014. The Ambulance Service of Wales is an active and contributing partner in the WEDINOS Programme Board and operationally. WEDINOS has responded to the anecdotal reports of increases in psychoses, depression and suicidal ideation amongst users of NPS and will, in the forthcoming year, work closely with health colleagues to better evidence these adverse psychological effects along with the physiological health effects and implications to establish a more robust surveillance system and better target harm reduction information and training.

In addition to the risks outlined above, increased transmission of sexually transmitted infection and risky sexual behaviour has been reported associated with the sole use of NPS or use alongside other drugs. In Wales, increased syphilis infections and outbreaks, involving both men and women, have been recorded as have increased reports of risky sexual practices and sex for drugs. As shown in Chart 12, a commonly reported effect of ingestion of NPS powders/stimulants is that of increased libido. WEDINOS is currently working with colleagues in Sexual Health services and Substance misuse services to provide joint training on NPS and sexual health and to develop more robust information systems to better establish the risks associated with NPS use and tailor harm reduction advice and service improvement.

6. 2014 Global Drug Survey (GDS2014).
7. http://www.google.co.uk/url?url=http://www.ons.gov.uk/ons/about-ons/business-transparency/freedom-of-information/what-can-i-request/published-ad-hoc-data/health/october-2013/deaths-involving-new-psychoactive-substances.xls&rct=j&frm=1&q=&esrc=s&sa=U&ei=hL1oVI

Synthetic Cannabinoid Receptor Agonists (SCRAs)

The term 'synthetic cannabinoids' covers all synthetic substances that bind to one of the two known cannabinoid receptors (CB_1 or CB_2)[8]. Most of the compounds identified by the WEDINOS project have been found in ready-to-smoke products, but some have occurred only as pure substances in powder form, this trend is also reflected in the UNODC report: Synthetic Cannabinoids in herbal products[9].

Most synthetic cannabinoid receptor agonists found in ready-to-smoke / herbal products analysed to date higher affinities for the CB_1 receptor than Tetrahydrocannabinol (THC) and are full agonists of this site[10].THC in comparison acts as a partial agonist[11].

SCRA Headline Figures

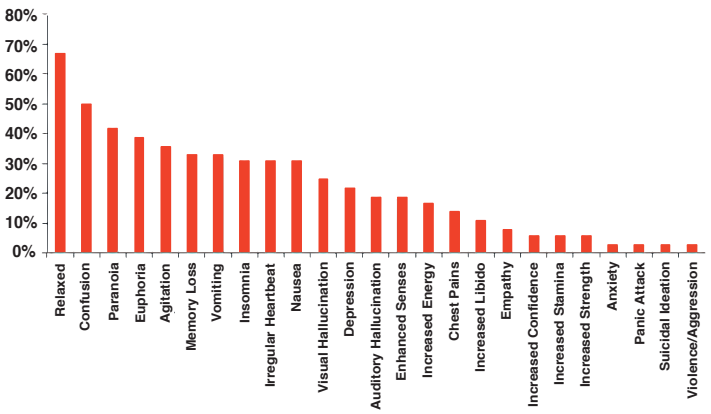
- **81** new psychoactive substances were reported to EMCDDA in 2013, **29** were SCRAs
- **105** synthetic cannabinoids in total monitored by EU Early Warning System (January 2014)
- **14** recognisable chemical families of SCRAs are known

Following the first notification to the European Union Early Warning System in 2008 (JWH-018 detected in Spice products), SCRAs now make up the largest chemical group monitored by the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA).

The EMCDDA states *'that these substances can be extremely potent, but are not chemically similar to cannabis, and therefore may result in different and potentially more serious health consequences. Although our current understanding of the health implications of consuming these substances remains limited, there is increasing concern about reports of acute adverse consequences associated with their use'* [12].

Of the 131 SCRA samples submitted 38 per cent (n=36) were submitted with information relating to the effects experienced by the sample provider (the remainder being submitted from amnesty bins etc). Chart 13 displays the self-reported effects experienced, and the percentage of users who experienced each effect. As with the powder NPS, the self-reported effects reflect both positive expected effects, relaxation (67 per cent) but far higher numbers of negative adverse effects: confusion, paranoia, vomiting and nausea, irregular heartbeat /arrhythmia, depression etc. The common misconception that these substances are harmless and 'like cannabis but legal' is resulting in a range of psychological and social harms and, to less extent, physiological harms.

Chart 13: Sample provider reported effects following consumption of a SCRA.



8. Synthetic Cannabinoid Receptor Agonists (Auwarter, Dargan and Wood)
9. UNODC: Synthetic cannabinoids in herbal products
10. Identification and quantitation of a benzoylindole (2-methoxyphenyl)(1-pentyl-1H-indol-3-yl)methanone and a naphthoylindole 1-(5-fluoropentyl-1H-indol-3-yl)-(naphthalene-1-yl)methanone (AM-2201) found in illegal products obtained via the Internet and their cannabimimetic effects evaluated by in vitro [35S]GTPγS binding assays (Nakajima, Takahashi, Nonaka et al)
11. Δ9-Tetrahydrocannabinol acts as a partial agonist/antagonist in mice (Paronis, Nikas, Shukla and Makriyannis)
12. EMCDDA - European Drug Report 2014: Trends and developments

Steroids and Image Enhancing Drugs (SIEDs)

Over the last few decades, the use of Steroids and Image Enhancing Drugs (SIEDs) has become more widespread[13., 14.]. Alongside this increase in use, there has been an associated rise in the number of reported infections and complications associated with SIEDs use[15.].

The term steroid refers to Anabolic and Androgenic Steroids (AAS) AAS are synthetically produced versions of the naturally occurring male sex hormone testosterone. The term "anabolic" refers to muscle-building whilst "androgenic" refers to increased male sexual characteristics; "steroids" refer to the class of drug. Whilst also used as Image Enhancing Drugs, the anabolic features possessed by steroids often mean that they are used by many as performance enhancing drugs.

The term Image Enhancing Drug refers to any substances (licit or illicit) which may be taken by an individual to perceptually enhance the way in which they physically look. As such these may include substances such as diet/fat-loss pills, injectable and oral tanning agents, botox and collagen fillers[16.]. In relation to SIEDs the WEDINOS project does not test Human Growth Hormone (HGH), Peptides, Pro-peptides or T3 and T4.

In the first year, WEDINOS accepted samples of steroids and image enhancing drugs which were tested as part of evidencing new drugs and combinations. However, after around 9 months, no new samples of steroids were being received and WEDINOS ceased accepting duplicate samples from the general public. WEDINOS was able to evidence that around one third of all samples did not contain the substances indicated on the vial or packaging. WEDINOS continues to accept samples of new steroids, steroids manufactured in new underground laboratories and samples from sentinel steroids leads across the UK.

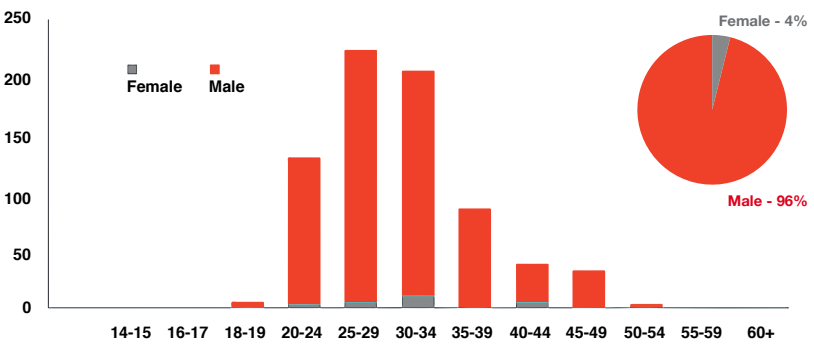
Between 1st October 2013 and 31st September 2014, 847 SIEDs samples were submitted and profiled. 17 per cent of SIEDs samples were received from within Wales, 76 per cent from England, 3 per cent from Scotland, 1 per cent from Northern Ireland. 2 per cent were received from undisclosed locations and the remaining 1 per cent was submitted from outside of the United Kingdom. Within Wales, the Cardiff & Vale LHB area contributed the highest proportion of samples, accounting for 5 per cent of all SIEDs samples and 30 per cent of Welsh submissions.

Who …

Of the 847 SIEDs samples submitted, 94 per cent (n=794) included demographic information as shown in Chart 14. 96 per cent of SIEDs samples were submitted by males. The median age for all SIEDs sample providers was 34 years (average age 30 years):

- Females - median age was 30 years and average age was 31 (range: 20-50 years)
- Males - median was 33 years and average age was 30 (range 17 – 52).

Chart 14: Profile of SIEDs sample providers.



13. McVeigh, J., Beynon, C., & Bellis, M. A. (2003). New challenges for agency based syringe exchange schemes: analysis of 11 years of data (1991 to 2001) in Merseyside and Cheshire, UK. International Journal of Drug Policy, 14 (5-6), 353–357.
14. Advisory Council on the Misuse of Drugs (2010) Consideration of the Anabolic Steroids. London (UK): The Stationery Office.
15. Prevalence of, and risk factors for, HIV, hepatitis B and C infections among men who inject image and performance enhancing drugs: a cross-sectional study (Vivian D Hope, Jim McVeigh, Josie Smith et al)
16. www.siedsinfo.co.uk

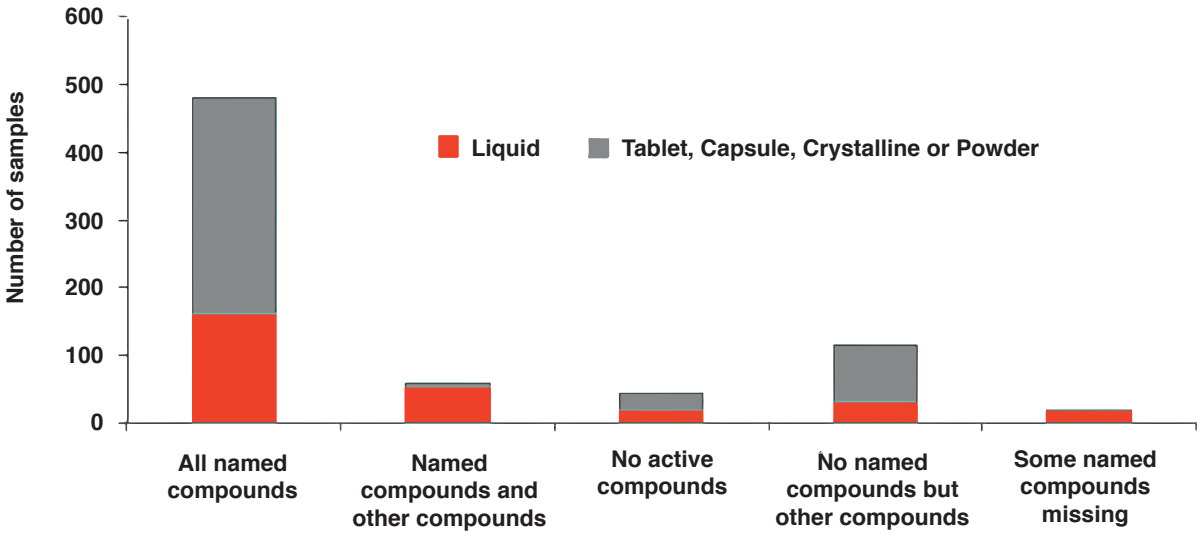
The largest proportion of submissions from males was provided by individual's aged 25-29.For females the highest proportion of samples was submitted by 30-34 year olds.

SIEDs... do users know what they are getting?

Based on the purchase intent information provided on sample effects record (86 per cent (n=725) of all SIED submissions):

- 482 (67 per cent) of the SIED samples analysed contained all of the expected/named compounds
- 21 (3 per cent) contained some, but not all compounds expected/named
- 59 (8 per cent) contained some of the named compounds, but also other compounds
- 117 (16 per cent) contained none of the named compounds
- 46 (6 per cent) contained no active chemical compounds.
- 33 per cent of SIED samples analysed with purchase intent data were found to be different from what they were believed to be at point of purchase.

Chart 15: SIEDs compounds found upon analysis – Liquid and Tablets, Capsule, Crytalline or Powder.



Focus on …

3,4-methylenedioxy-N-methylamphetamine (MDMA) = Ecstasy?

MDMA is a psychoactive substance chemically related to amphetamines. It acts as both a stimulant and psychedelic. MDMA mainly affects brain cells that use the chemical serotonin to communicate with each other. Serotonin helps to regulate mood, aggression, sexual activity, sleep, and sensitivity to pain.

'Ecstasy' usually refers to the synthetic substance MDMA. Tablets, powders and granules sold as 'Ecstasy', however, may contain any of a range of MDMA-like substances and unrelated chemicals. Following a decline in the number of MDMA seizures and laboratory closures between 2002 and 2010, there has slow increase in subsequent years; this upward trend is mirrored by the MDMA content in tablets analysed over the past three years[17]. There is also further evidenced in the UK focal point report 2013, which highlights an increase of 31mgs between 2011 and 2012 to 102mg, and an increase of 54mgs since 2006. These factors combined with an increase in the proportion of adults (16-59) using 'Ecstasy' in the last year[18] may be used to evidence a recent increase in the supply and demand for 'Ecstasy'.

However, the risk to the user is heightened by the contamination of MDMA or its substitution with other substances; as evidence by WEDINOS analysis of 31 samples that were purchased as MDMA or Ecstasy. A 36 per cent (n=11) of these samples did not contain MDMA, but other psychoactive substances including: BZP, MeOPP, Methylone, Cocaine, 6-MAPB, alpha-PVP and Finasteride.

A further 2 samples contained MDMA as well as other substances including Caffeine, Cocaine, and Levamisole.

The remaining 58 per cent (n=20) of MDMA / 'Ecstasy' samples submitted to WEDINOS contained MDMA only.

Effects reported by sample providers who believed they had purchased MDMA; that upon analysis were found to contain different compounds, include:

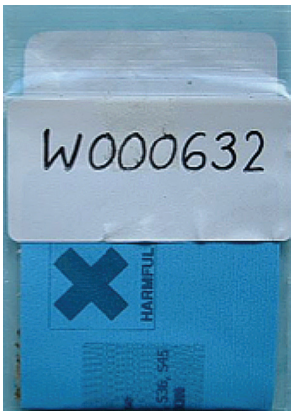
Irregular heartbeat	Euphoria	Insomnia	Nausea	Increased energy
Increased confidence	Paranoia	Enhanced senses	Chest pains	Increased stamina
Agitation	Empathy	Increased libido	Depression	Memory loss
Vomiting	Confusion	Panic Attack		

17. European Drug Report 2014: Trends and developments.
18. Home Office - Drug misuse: Findings from the 2013/14 Crime Survey for England and Wales.

Polydrug use in a single packet

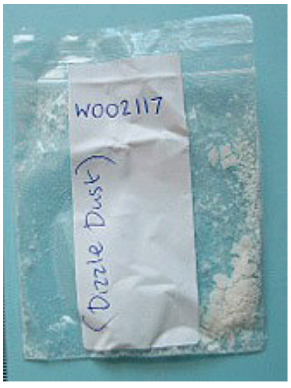
Polydrug use occurs when two or more drugs are used at the same time or on the same occasion; often with the intention of enhancing or countering the negative effects of another drug. Many of the branded products that WEDINOS has analysed over the past quarter have contained more than one substance, in fact 80 per cent of all branded psychoactive products were found to contain at least two substances following analysis; with 45 per cent containing at least three substances.

The Synthetic cannabinoid receptor agonist (SCRA) product "**Chronic Haze**" contained six SCRA's (BB-22, NNEI, AKB48 APINACA, 5F-PB-22, 5F-AKB48 and STS-135).



The white powder product "**Dizzle Dust**" contained six different substances.

- Ethylphenidate - a central nervous system stimulant and an analogue of methylphenidate.
- Methiopropamine - a stimulant chemically related to methamphetamine.
- 2-aminoindane – a stimulant
- Ephedrine – a stimulant
- Caffeine – a stimulant / possible bulking agent
- Lidocaine – a local anaesthetic and common bulking agent in illicit drugs.



Substances may interact in hugely different ways in the body, from not at all to creating highly toxic and dangerous reactions, for example alcohol and cocaine combining to create Cocaethylene. Certain substances have a long history of being used together, as in the example of cocaine and alcohol; whilst others are newer and their short, medium and long term effects have not yet been evidenced.

THE FUTURE

The Future

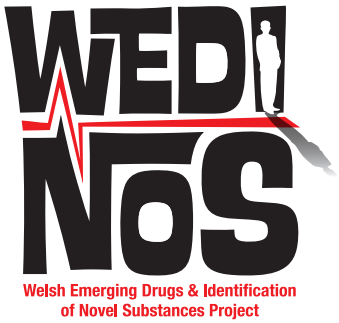
The first year of WEDINOS has been hugely successful with over 1800 samples received from a diverse range of individuals, services and organisations from across Wales and the wider UK. Since the initial launch events the project has been met with enthusiasm, proactive engagement and support. Within Wales samples have been received in relation to recreational drug use (i.e. samples submitted from nightclub amnesty safes); problematic drug use (those who are engaged with substance misuse services); and from individuals within a criminal justice/custodial setting. However, as has been evidenced earlier in this report some localities and services/organisations have engaged more quickly and have been very successful in proactively promoting WEDINOS. WEDINOS therefore recognises the need for continued promotion of the project, communication with key stakeholders and the provision of training as required.

To further enhance the projects ability to map trends and evidence existing and potential harms, the WEDINOS project is actively building on existing collaboration with Clinicians in Emergency Departments, primary care and other health care settings. At the time of print, WEDINOS has achieved collaborative agreement with 8 of the 13 Emergency Departments and it is expected that the remaining Emergency Departments will be on board and implementing WEDINOS by the end of the year 2014.

Across the wider United Kingdom and Northern Ireland, WEDINOS continues to work in collaboration with NPS service providers, specialists, academic institutions and relevant government departments. This positive collaboration is one that WEDINOS aims to foster, develop and strengthen in the future.

On a European level, as previously stated WEDINOS actively contributes to the EU EWS (EMCDDA) and will continue to do so. In 2015, WEDINOS will increase its activity within Europe and further strengthen its communication links with other European early warning systems by participating in a new project I-USED (Identification of User-Sourced New Psychoactive Substances and their Spread under Different Response Frameworks). The main aim of this project is to rapidly and proactively identify, monitor and assess the diffusion, composition and the health and social risks associated with the user-sourced New Psychoactive Substances on the Europe-wide market, and to assess the consequences of control of these substances within their legal as well as illegal circulation.

These developments and any future developments that arise will be reported on the WEDINOS website and through the quarterly Philtre bulletin. We at WEDINOS recognise the importance of partnership working and as such thank all those that have contributed through sample submission, feedback, suggestions and additional information. We will ensure that these positive relationships continue and develop.



Welsh Emerging Drugs & Identification of Novel Substances Project

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