



Home Office

Annual Report on the Home Office Forensic Early Warning System (FEWS)

A system to identify New Psychoactive
Substances in the UK

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Overview

This is the third annual report on the Home Office Forensic Early Warning System (FEWS). FEWS was set up to identify New Psychoactive Substance (NPS) more promptly to help enable Her Majesty's Government to take action before a harmful substance takes a foothold in the UK. FEWS is part of the Government's wider action, including the UK-wide Drugs Early Warning System, the New Psychoactive Substances Review, and the introduction of Temporary Class Drug Orders (TCDO) under the Misuse of Drugs Act 1971, to tackle the emergence of NPS. The 2011-12 and 2012-13 FEWS annual reports are available at;

2011-12

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/225840/fews.pdf

2012-13

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/225737/FEWS_Annual_Report_WEB.pdf

This report describes activities undertaken, and provides results of the analysis of samples tested under FEWS between April 2013 and March 2014. It reports the identification of new substances (4 NPS) not previously seen in the UK and, where appropriate, action taken by Government in response. The report also highlights key learning points from the results and key messages on the harms and risks associated with the use of NPS.

New substances identified in the UK are reported to the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) through submissions to the UK Focal Point. 2 of the substances highlighted in this report are reported in the EMCDDA 2013 Annual Report on the implementation of EU Council Decision 2005/387/JHA; the information exchange, risk assessment and control of new psychoactive substances.

The Government's New Psychoactive Substances Action Plan, published as an annex to the 2012 Drug Strategy Annual Review, sets out the Government's ambition and makes clear its determination to take effective action against NPS².

The Government continues to highlight the risks and harms associated with NPS. The Government's aim is to deliver its commitments under the Drug Strategy '**Reducing demand, restricting supply, building recovery: supporting people to live a drug-free life**' by reducing the demand for NPS, ensuring that statutory services are able to provide treatment effectively and support recovery from NPS misuse, encouraging individuals to take personal responsibility, and promoting the choice not to take unknown potentially harmful psychoactive substances.

The FEWS analysis continues to affirm Government messaging that; just because a substance is termed 'legal' does not make it safe or 'legal' and the contents of a package are probably 'not what it says on the tin'. Products marketed as 'legal highs' can also contain a number of different substances which increases the risk of harm to users.

1 http://www.emcdda.europa.eu/attachements.cfm/att_229598_EN_TDAN14001ENN.pdf

2 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/118345/drug-strategy2010-review-may2012.pdf

1. Introduction and background

The Home Office funded Forensic Early Warning System (FEWS) was set up in January 2011 in response to the emergence of NPS, often referred to as so-called 'legal highs'. NPS are mainly synthetic drugs manufactured in a laboratory or factory (mainly based overseas) to mimic the effects of already controlled drugs and are used mainly as recreational drugs in the UK, Europe and the rest of the world. The majority of NPS are sold in mixtures. The increased development and availability of NPS is changing the face of the drug scene and its "marketplace" with greater access via the internet for both their purchase and the sharing of information in forums and blogs. The EMCDDA reports that *"only a few years ago the issue of new psychoactive substances was regarded as having limited significance to drug policy. In the past few years, however, there have been phenomenal changes in this market"*³

The main aim of FEWS is to forensically identify NPS quicker and more effectively, to inform the Advisory Council on the Misuse of Drugs' (ACMD) considerations and the Government's wider response through UK health and other warning systems. FEWS results are also fed into the UK-wide Drugs Early Warning System⁴ to inform Government's efforts to tackle the threat from NPS.

Some of the drugs advertised for sale as NPS are already controlled or 'illegal' under the Misuse of Drugs Act 1971⁵ (the 1971 Act). So far the Coalition Government has controlled over 350 NPS, by group or generic definitions, including some not seen in the UK, under the 1971 Act. Also, not all NPS are "highs" or stimulants, some will cause paranoia, anxiety, narcosis or psychosis, so the term "legal high" is misleading and hence the term 'New Psychoactive Substances' (a new substance which affects the brain) has been adopted. Examples of NPS seen in the UK market in the past year are, AKB-48 (a synthetic cannabinoid), 25-B-NBOMe (a phenethylamine) and 4-MeO-PCP (a dissociative anaesthetic) as well as substances sold under branded names such as CRITICAL HAZE (containing 5F-AKB-48), SPARKLEE (containing MPA, 5-MeO-DALT, and 2-aminoindane) and Black Mamba (containing AM-2201, 5-MeO-DALT and JWH-081).

Most of the NPS being offered for sale have harms similar to the controlled drugs they have been manufactured to mimic. However, further research is needed to establish the full harms associated with these new drugs. The Government continues to be concerned about the harms posed by these drugs, and the number of reports linking the use of NPS to A&E presentations, hospitalisation and deaths.

The increased availability of NPS and the concerns around their emergence is not limited to the UK drugs market. The EMCDDA reported that 81 NPS were officially identified for the first time across the EU in 2013, compared to 74 in 2012, 49 in 2011 and 41 in 2010. It noted that *"Globalization and the new opportunities provided by developments in information technology have transformed many aspects of the new psychoactive substances market...Commerce and communication are no longer constrained by physical or geographical boundaries."*⁶ The EMCDDA also noted that this has *"meant that the back catalogue of chemicals substances developed by pharmaceutical and medical research industries, and whose psychoactive properties may make them attractive to consumers, is easily accessible to those wishing to identify such substances..."*

3 http://www.emcdda.europa.eu/attachements.cfm/att_229598_EN_TDAN14001ENN.pdf

4 An alignment of drugs early warning systems across health and law enforcement bodies at the local, national and international levels to ensure the ACMD has access to joined-up, evidenced and timely UK wide information to support the delivery of advice on drug harms and drug control.

5 The Misuse of Drugs Act 1971 ("the 1971 Act") controls drugs that are "dangerous or otherwise harmful" primarily under a three-tier system of classification (A, B and C) which provides a framework within which criminal penalties are set with reference to the harm a drug has or is capable of having when misused and the type of illegal activity undertaken in regard to that drug.

6 http://www.emcdda.europa.eu/attachements.cfm/att_229598_EN_TDAN14001ENN.pdf

New trends also diffuse more rapidly, and a market-place for psychoactive substances has been created that exists, to a large extent, outside the established regulatory frameworks.⁷

11 substances were reported for the first time to the EMCDDA by the UK this year (down from 13 in 2012, and lower than the 16 reported in 2010). Of these, 2 were encountered through FEWS analysis with the rest being reported by commercial forensic providers.

As a result of increasing availability and concerns around NPS, the EU Commission has recommended that Member States should subject four compounds – 25I-NBOMe, AH-7921, MDPV and methoxetamine – under national control measures. Three of these compounds – 25I-NBOMe (Class A), MDPV and methoxetamine (Class B) – are already controlled in the UK following ACMD advice informed by FEWS results and analysis. The EMCDDA report also noted “particular concern” at EU level around synthetic opioids such as “AH-7921, MT-45, carfentanil and ocfentanil – reported in the past two years”. The ACMD has recommended the control of the synthetic opioid AH-7921 as a Class A drug. The Government has accepted this advice.

The key to the effective action, including legislation, needed to tackle newly emerging drugs is prompt identification of substances before they take a foothold. FEWS brings together expertise from forensic laboratories and chemical standard suppliers⁸, UK-wide law enforcement agencies and experts in the field to develop a co-ordinated UK-wide approach to laboratory testing and analysis of law enforcement seizures and test purchasing to identify NPS more quickly.

The Home Office acknowledges the contribution of the FEWS project team based at the Home Office Centre for Applied Science and Technology (CAST) to the continuing success of the programme.

2. Aims and objectives of FEWS

The aim of FEWS was to create an improved national understanding and response by creating a “Forensic Early Warning System” for NPS through;

- bringing together expertise from operational forensic laboratories, a chemical standard supplier and law enforcement agencies;
- developing a protocol for the analysis of samples, the results of which are reported to the Home Office and the ACMD; and
- developing a synergy with the UK-wide Drugs Early Warning System.

3. FEWS programme 2013-14

During 2013-14 FEWS has collected samples from the internet and head-shops, music festivals, the police and the border to identify which NPS are present in the UK or being offered for sale in the UK market. The aims of the collection plans are to promptly identify NPS, monitor the existence of NPS and to note any further information on the physical and/or chemical properties of the sample and packaging.

7 EMCDDA-Europol 2013 Annual report on the implementation of Council Decision 2005/387/JHA

8 Suppliers of chemical reference standards used to identify samples seized by law enforcement agencies for use in prosecutions.

9 A headshop is a commercial retail outlet specialising in the sale or supply of NPS together with equipment, paraphernalia or literature related to the growing, production or consumption of cannabis other drugs. These outlets may also have online businesses, but those businesses solely based online would not fit within this definition

FEWS collection plans vary each year, and are often targeted at different elements of the NPS market, which means it is not possible to directly compare yearly data from each annual report.

4. Analysis, results and key findings

During 2012-2013 FEWS has:

- obtained 1387 samples from FEWS collection plans;
- provided support for the ACMD's ongoing monitoring of NPS;
- attended three UK festivals, some with on-site laboratories; and
- engaged with the Border Force to improve their capability to detect and detain suspicious substances in fast parcels.

A total of 4676 samples from the collection plans have been analysed under FEWS since inception. The results are summarised in Tables 1- 4 below and include NPS that are both controlled and non-controlled under the Misuse of Drugs Act 1971.

During 2013-2014, 2¹⁰ new NPS (down from 10 in 2012) have been identified under FEWS which have not been previously encountered in the UK or Europe, two additional substances were identified at only the UK level meaning that the total number of new samples identified through FEWS is now 31. Although the number of substances identified under FEWS in 2103/14 is low (4) compared to previous years (10 in 2012/13), it is worth nothing that FEWS also identified other substances reported at EU level as identified by commercial forensic providers. These are not reported as FEWS identifications as they were not reported by FEWS for the first time to the EMCDDA at EU level.

In some cases more than one substance was identified in each sample, making the total of the number of substances identified different to the number of samples collected. Some samples contained cutting agents such as caffeine, lidocaine and benzocaine and these are not accounted for in the table.

Table 1: Chemical groups of newly identified controlled and non-controlled NPS

Chemical group	Total number of substances identified through FEWS since 2011	Number of substances identified in 2013-2014
Synthetic Cannabinoids	10	2
Phenethylamines	3	0
Cathinones	3	0
Tryptamines	4	0
Others	11	2

¹⁰ The two new substances at both UK and EU level are mephtramine, LY2183240 and just at UK level are BB-22 and 3,4 dichloromethylphenidate.

Table 2: The number of NPS encountered for the first time in the UK through the different collection plans.

Total number of NPS since identified 2011			Number identified in 2013-2014	
Sample Collection Source	Controlled	Non-controlled	Controlled	Non-controlled
Internet	3	19	0	4
Head-shops	2	1	0	1
Festivals	0	0	0	0
Police non-casework	4	1	0	0
UKBF samples	0	1	0	1

Table 3: The total number of times controlled and non controlled drugs, including NPS have been reported through each of the collection plans since the beginning of FEWS.

Collection Source	No. of samples	Controlled Drugs (Traditional)			New Psychoactive Substances	
		Class A	Class B	Class C	Controlled	Non controlled
Internet	388	1	0	0	107	429
Head Shops	504	0	0	0	173	670
Festivals	2588	1216	526	200	606	100
Police Collection Plan	1086	271	44	58	777	595
Border Force Samples	110	0	0	49	27	31

Table 4: The number of times controlled and non controlled drugs, including NPS, encountered by FEWS were reported through each of the collection plans in 2013/14.

Collection Source	No. of samples	Controlled Drugs			New Psychoactive Substances	
		Class A	Class B	Class C	Controlled	Non controlled
Internet	162	0	0	0	6	197
Head Shops	352	0	0	0	24	534
Festivals	841	448	526	17	118	16
Police Collection Plan	22	16	44	0	11	4
Border Force Samples	10	0	0	49	27	31

Key Findings

Products advertised as 'legal' alternatives to already established drugs are not always 'legal', 19.2% of NPS found in the NPS samples collected by FEWS in 2013-14 contained controlled drugs.

A low proportion of controlled drugs were detected in NPS samples collected from headshops (4.3%) and the internet (3.0%), and a high proportion of controlled drugs were detected in NPS samples from festivals (88.1%). Of the samples analysed that contained NPS, about 91% have been identified as mixtures of either two (61%) or three (30%) different active components. One percent (1%) of samples have been identified as containing up to six different active components.

Products with the same brand name such as 'Black Mamba', CRITICAL HAZE and SPARKLEE, including those from the same suppliers, have been observed to contain mixtures of different components.

5. Actions taken by Government to tackle NPS

Government action to tackle the threats posed by NPS is outlined in the New Psychoactive Substances Action Plan. The ACMD, as advisors to Government, continues to monitor the latest evidence and trends in emerging new psychoactive substances including those already identified under FEWS. However, specific action taken as a result of, or informed by FEWS work is as follows;

Legislation

FEWS results supported the temporary, and subsequent permanent, control of compounds from the N-BOMe and benzofuran families. These compounds and a large number of related substances were brought under the control of the 1971 Act on 10 June 2014 as Class A and B drugs respectively.

FEWS results also supported the ACMD advice to control AH-7921 as a Class A drug, and the extension of the tryptamine generic definition under the 1971 Act to capture additional tryptamine compounds, including AMT and 5-MeO-DALT, which currently fall outside the control of the 1971 Act. The Government has accepted the ACMD's advice on these drugs and legislation has been laid before Parliament to implement this decision.

Health Information

Updates to FRANK service

The Government funded FRANK service recognises that to reduce the demand for all drugs, young people in particular need quality education on the effects and harms of drugs and to develop the skills and confidence to reject them.

FEWS has provided facts about new drugs such as AMT, 5-MeO-DALT and AH-7921 for both the FRANK website and the FRANK helpline. More information on the range of the FRANK service can be found at www.talktofrank.com.

Reference Standards:

Development of new drug reference standards¹¹

Thirty-three (33) new chemical reference standards were synthesized or purchased under FEWS during 2013-14 to aid identification of new substances and enable enforcement partners carry out their duties. This brings the total number of chemical reference standards developed under FEWS, since inception, to sixty-four (64).

Reference Library

FEWS continues to maintain a library of chemical identification data, managed by the FEWS project team, to which NPS spectra are added. This, together with the chemical reference standards, allows the forensic scientist to rapidly identify substances when they occur in casework.

Enforcement activities

FEWS has continued to work with Police, Border Force and Trading Standards officers to tackle the importation and sales of NPS in 'head shops' by providing support with the forensic analysis of NPS samples. A key element of this was 'Operation Highstreet', which ran during Spring 2014. This involved FEWS liaising with the Trading Standards Institute and trading standards officers across the country to test NPS being sold at high street 'head shops'. 345 products in total were tested, with the results helping to inform future trading standards enforcement activity. Further activity with law enforcement agencies to tackle NPS sales in "headshops" is expected in 2014-15.

6. Looking Forward

The introduction and availability of NPS in the UK, across the EU and all over the world continues to be of major concern to the Government. The Government's response to the threat from NPS has to be swift and effective in order to protect the public from the harms posed by these drugs. FEWS is a valuable tool which enables the Government to monitor the availability of NPS in the UK. More importantly, it gives us the advantage of identifying substances more promptly to inform the Government's independent experts, the ACMD, and their advice to Government on new substances, including where necessary advice on subjecting substances to temporary control.

In conjunction with CAST, the Home Office have developed an enhanced package of activities for 2014/15. FEWS will continue to identify and monitor NPS through collection plans, with a particular focus on maintaining the UK's capability to identify new substances, obtaining drug reference standards for identification of new substances, and maximising the benefits from FEWS findings by merging with other relevant data such as toxicology and pathology. FEWS will also continue to develop and maintain national and international collaborations to encourage the sharing of information and data on NPS. The collection plans will include a survey of products bought from the internet and "headshops", and UK summer festivals.

As a result of increasing concerns around the availability and use of NPS in prisons, FEWS activities in 2014/15 will be expanded to Her Majesty's Prisons and will involve the analysis of seized inbound samples to identify the types of NPS being smuggled into prisons.

¹¹ Certified drug reference standards which generate a reference spectrum against which an evidential sample can be compared for identification. Drug reference standards are needed to identify substances in order to establish that an offence has been committed under UK laws in relation to a controlled substance.

This will provide added capability to prisons as current testing equipment is unable to identify very novel psychoactive substances.

FEWS will also continue to build on the good working relationship it has with the EMCDDA, other European partners and the United Nations Office on Drugs and Crime to share best practice and scientific data on NPS.

The Government will continue to take action to tackle the threat from new psychoactive substances. The Minister for Crime Prevention is currently leading a review, by an expert panel, to look at how the UK's response to new psychoactive substances can be enhanced beyond the existing measures. The panel are expected to report their recommendations to Home Office Ministers shortly.

