

Emerging Drug Trends In DUI Cases



 **2013 Washington DRE In-Service**
Chuck Hayes
International Association Chiefs of Police

Emerging Drug Trends

- CNS Depressants
- CNS Stimulants
- Hallucinogens
- Narcotic Analgesics
- Dissociative Anesthetics
- Cannabinoids



Emerging Drug Trends

DRE National Tracking System
 (Pharmaceuticals 2010 – 2013):

Depressants: 1) Alprazolam (Xanax), 2) Clonazepam, 3) Carisoprodol, 4) Diazepam, 5) Zolpidem

Stimulants: 1) Adderall, 2) Methylphenidate (Ritalin, Concerta), 3) Phendimetrazine (Bontril)

Narcotic Analgesics: 1) Oxycodone, 2) Hydrocodone, 3) Buprenorphine, 3) Oxymorphone

13 State Survey of DUI Labs

Compound	Number of Laboratories Reporting This Compound/Class in Their Top 20
THC and metabolites	13
Alprazolam/Alpha-Hydroxyalprazolam	13
Diazepam/Nordiazepam	13
Cocaine and metabolites	13
Morphine	13
Oxycodone	12
Hydrocodone	12
Carisoprodol/Meprobamate	11
Zolpidem	11
Methamphetamine	9
Clonazepam/7-aminoclonazepam	9
Amphetamine	9
Methadone	9
Lorazepam	9
Codeine	7
Diphenhydramine	6
Tramadol	6

Emerging Drug Trends



“Designer Drugs”

1st used in 1960’s when analogs of mescaline first appeared.

Used again in the 90’s when referring to underground chemists designing a new molecular compound that replicated the effects of an illegal drug.

Also commonly referred to as “Club drugs” but can include about any new synthetic drug.

Emerging Drug Trends

“Designer Drugs”



Best defined as a synthetic analog of a legally restricted or prohibited drug, devised to circumvent drug laws.

A more accurate term - “legal loophole drugs”

Emerging Drug Trends

CNS Depressants



Emerging Drug Trends

CNS Depressants

Tetrahydropalmitine



Jin Bu Huan – Chinese herb used for centuries as a mild sedative and analgesic. Recently marketed for insomnia. Detected in various smoking mixtures containing synthetic cannabinoids.



Emerging Drug Trends

CNS Depressants

Versed (Midazolam)

Benzodiazepine -
Used to produce sleepiness or drowsiness and to relieve anxiety before surgery or certain other procedures.

Commonly prescribed for children, but can be abused by adults.

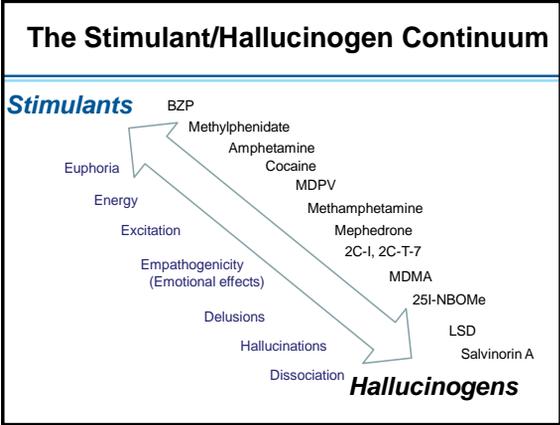
Liquid drinkable and injection form.



Emerging Drug Trends

CNS Stimulants





NMS Labs Drug ID Casework (2012)

Single Drug Products	e.g.	
Methylone	THUNDA CAT ZOOM 2 Plant Food	
MDPV	Vanilla Sky	
α-PVP	Vanilla Sky Omise	
BTCP	Blue Triangular Pills	
Isopentdrone/pentadrone	ZZ-1	
MDMA Methylene Homolog	Unknown powder	
Multiple Drug Products	e.g.	
4-MEC, JWH-073, JWH-200, JWH-018	ZX-1	
4-MPPP, α-PVP	Unknown powder	
Pentylone, pyrovalerone, benzocaine, caffeine	Unknown powder	
Tetrahydropalmitine		

Mephedrone DUI Research

Cosbey SH, Peters KL, Quinn A, Bentley A. Mephedrone (methylnmethcathinone) in toxicology casework: a Northern Ireland perspective. J Anal Toxicol. 2013 Mar;37(2):74-82.

- 32 DUID cases, including nine with mephedrone as the only drug present.
- Weaving within and out of lane
- Dilated pupils, poor SFST performance, slurred speech.
- Blood concentrations ranged up to 0.74 mg/L (n=9; mean 0.21, median 0.10) although the most common value encountered is likely to lie between 0.2 and 0.3 mg/L.

Stimulants/Hallucinogens

- Alpha-PVP
- Methylone
- MDPV
- DMAA
- 4-MEC
- 25I-NBOMe
- 25C-NBOMe
- 25H-NBOMe
- 25B-NBOMe



Emerging Drug Trends

Hallucinogens



Hallucinogens

The Synthetics –

2C compounds (27 known*)

NBO-Me compounds (33 known*)

DOX compounds (19 known*). Most common: DOB, DOC, DOI, DOM

Plant compounds (Derived from Kratom, Kanna)

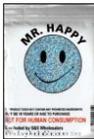
* DEA Report June 2013



Hallucinogens

2CI, 25-I-NBOMe and 2C-I-NBOMe

- Taken orally
- Encountered on blotter paper and in dropper bottles
- Effects seem to combine MDMA with LSD
- "N-BOMB" – "Smiles"



Hallucinogens

"Molly"

Powder or crystal form of MDMA



Short for "Molecule" it is considered a pure form of 3, 4-Methylenedioxyamphetamine (MDMA), the drug in Ecstasy

Also known as Mandy, Misty, Legal X, or Legal E

Not normally laced with other ingredients such as caffeine and methamphetamine sometimes found in Ecstasy

Hallucinogens

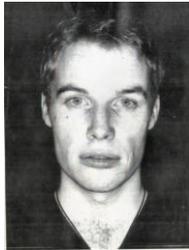
5-MeO-DMT

- 5-Methoxy-N, N-dimethyltryptamine
- Naturally occurring psychedelic present in numerous plants and the venom of the Bufo alvarius toad.
- Not the same as DMT



Narcotic Analgesics

- Tapentadol (Nucynta)
- Acetyl Fentanyl
- AH-7921(Doxylam)
- Desomorphine (Krocodil)



Narcotic Analgesics

Nucynta (Tapentadol)

- Schedule II C.S.
- High risk for abuse



50 mg, yellow round tablet, printed with "O-M" and "50"



75 mg, yellow-orange round tablet, printed with "O-M" and "75"



100 mg, orange round tablet, printed with "O-M" and "100"

Acetyl Fentanyl – “Fire”

New injectable synthetic opioid

A fentanyl analog

At least 5 times more potent than heroin

Same color, consistency and packaging as heroin

Not approved by the FDA and not commercially available

Involved in numerous deaths in Rhode Island and Pennsylvania (2013)



AH-7921

- First synthetic opioid research chemical.
- 80% potency of morphine.
- White powder.
- Available online (Isomerism)
- Marketed as AH-7921 or “Doxylam”

“AH-7921 is an exciting new chemical and an opioid analgesic, with approximately 80% potency compared with Morphine based on its chemical structure.”

(Internet – Sold as a “Research Chemical”)



Desomorphine

- Commonly known as “Krokodil”
- Name comes from the green, scaly appearance of the user’s skin
- Originated in Russia as a cheap substitute for heroin
- Synthesized from Codeine (Also includes gasoline, paint thinner, iodine, hydrochloric acid and red phosphorus)
- Allegedly causes massive tissue necrosis at injection sites from impurities and by-products
- FBI Alert April 2013. 1st U.S. appearance – Arizona Sept.



Emerging Drug Trends

Dissociative Anesthetics



Ketamine Derivative

- Methoxetamine (MXE) 
- 2-(3-methoxyphenyl)-2-(ethylamino)cyclohexanone
- Street names: Mexxy or MXE
- Effects range 5 – 7 hours
- Legal form of Ketamine



Emerging Drug Trends

Cannabis / Synthetic Cannabinoids

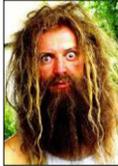


Cannabis/Synthetic Cannabinoids

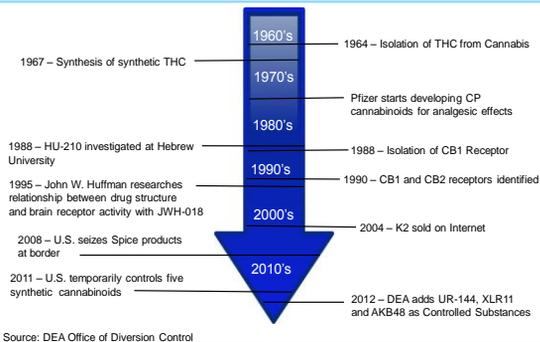
A "cannabinoid" is a class of chemical compounds in the marijuana plant that are structurally related.

"Synthetic Cannabinoids" are a large family of chemically unrelated structures functionally (biologically) similar to THC.

May have less, equivalent or more pharmacologic (psychoactive) activity than THC. Many unknowns.



Synthetic Cannabinoids Timeline



Synthetic Cannabinoids Evolution

2010	2011	2012
JWH-018	AM-2201	AM-2201
JWH-073	AM-694	AM-694
JWH-019	JWH-018	JWH-018
JWH-250	JWH-019	JWH-019
	JWH-073	JWH-073
	JWH-081	JWH-081
	JWH-122	JWH-122
	JWH-200	JWH-200
	JWH-210	JWH-210
	JWH-250	JWH-250
	RCS-4	RCS-4
	RCS-8	RCS-8
		JWH-203
		JWH-022
		JWH-018 Ci-analog
		UR-144
		XLR-11
		AM-2233
		AM-1248
		A-796260

NMS Labs Synthetic Cannabinoids Testing

New Compounds:
PB-22
AKB-48
AB-PINACA

Synthetic Cannabinoids (After April 2013)

- *Decline in UR-144, AM-2201, JWH-122*

- *XLR-11 stable*

- *On the rise:
PB-22, FPB-22, F-AKB-48*

Compound	Positives
FPB-22	6
PB-22	8
AKB-48	2
F-AKB-48	4
AB-PINACA	2
STS-135	1

Synthetic Cannabis DUI Cases

Yeakel JK, Logan BK. Blood Synthetic Cannabinoid Concentrations in Cases of Suspected Impaired Driving. J Anal Tox (In Review, 2013).

- 12 cases of suspected impaired driving involving synthetic cannabinoids. Other drugs and alcohol ruled out.
- Attitude of the drivers was described as cooperative and relaxed, speech was slow and slurred, and coordination was noted to be poor. Pulse and blood pressure were generally elevated. The most consistent sign noted was a marked lack of convergence in all cases where it was assessed.
- JWH-018, JWH-081, JWH-122, JWH-210, JWH-250, and AM-2201 detected.

Synthetic Cannabinoids DUI Cases

Musshoff F, Madea B, Kernbach-Wighton G, Bicker W, Kneisel S, Hutter M, Auwärter V. Driving under the influence of synthetic cannabinoids ("Spice"): a case series. Int J Legal Med. 2013 May 1.

- DUI cases involving AM-2201, JWH-018, JWH-019, JWH-122, JWH-210, JWH-307, MAM-2201 (JWH-122 5-fluoropentyl derivative), and UR-144).

- Analytical results and signs of impairment documented by police or physicians.
- Findings: Consumption of synthetic cannabinoids can lead to impairment similar to typical performance deficits caused by cannabis use which are not compatible with safe driving.
- Deficits include centrally sedating effects and impairment of fine motor skills necessary for keeping the vehicle on track.

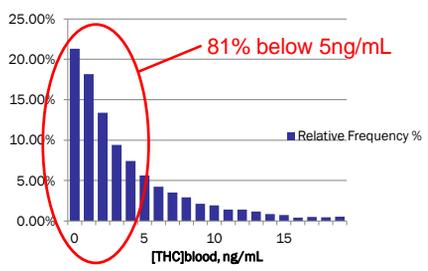
Cannabis/Synthetic Cannabinoids

Other Issues:
5 ng/mL per se for THC

Impairment is Impairment!

Impact of 5 ng/mL THC Per Se Law (WA & CO)

10,144 Marijuana DUID /DRE cases testing positive for THC and/or metab.



Questions - Comments

Chuck Hayes
International Association of Chiefs of Police
Drug Evaluation and Classification Program
P.O. Box 4597
Salem, OR 97302
503-585-0055
chayesiACP@msn.com