

United States Senate
Committee on The Judiciary
Hearings on
Deadly Synthetic Drugs:
The Need to Stay Ahead of the Poison Peddlers
Tuesday, June 7, 2016

Testimony
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Synthetic drugs or what are known internationally as Novel Psychoactive Substances (NPS) are a major emergency drug problem of the 21st Century along with the nonmedical misuse of pharmaceuticals. The numbers of NPS include 131 synthetic cannabinoids, 60 synthetic cathinones, 19 2-C phenethylamines, 12 piperazines, 19 tryptamines, and approximately 200 narcotic analgesics including 15 possible fentanyl analogues.

Classes of Novel Psychoactive Substances (NPS)

- **Cannabinoids**
- **Tryptamines - Psilocin, DMT, Serotonin**
- **Piperazines – BZP and TFMPP**
- **Opiates – Non-Rx Fentanyl, U47700, W-18, et al**
- **Benzodiazepine Analogs – Etizolam et al**
- **Phenethylamines - includes Methamphetamine**

Types of Synthetic Phenethylamines Stimulants/Hallucinogens

- **Phenethylamines**
 - Amphetamines
 - Methamphetamines
 - 2-C Series (“NBOMe”) – 23 types
 - 3,4-METHYLENEDIOXYMETHAMPHETAMINE (MDMA)
- LSD
- Other Phenethylamines
 - Including 34+ Cathinones

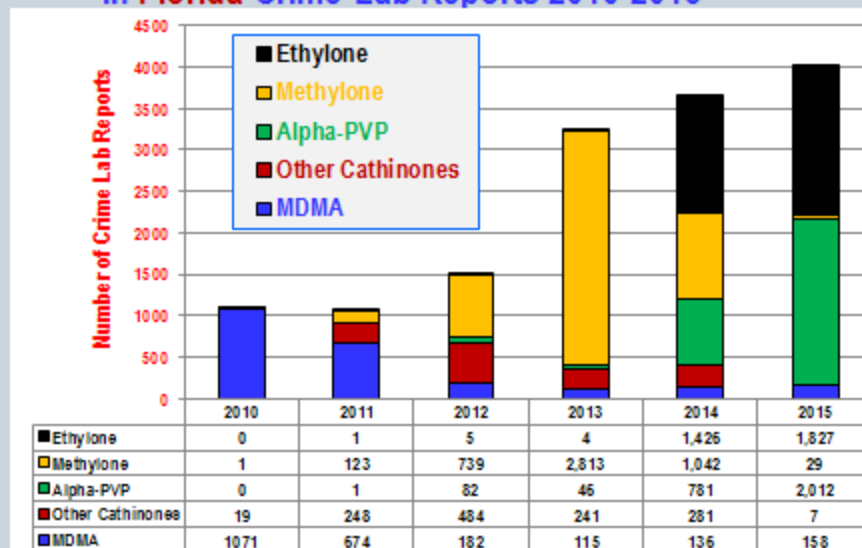
MAJOR Synthetic Cathinones 2014-2016

- **Cathinones – Synthetic Khat**
 - MDPV
 - 4 MEC
 - Methylone
 - **Alpha-PVP**
 - Ethylone
 - Dibutylone
 - Others



This testimony will provide examples of the impact of these substances on communities and the State of Florida and will also address the vital role of surveillance epidemiology in the early identification and spread of these substances in the United States and around the world.

The Changing Face of Ecstasy, Molly, Flakka, et al in Florida Crime Lab Reports 2010-2015



Source: US DEA - National Forensic Laboratory System Data Queried Jan 19, 2016

In the autumn of 2014, Broward County, the Ft. Lauderdale area of Florida was hit with an epidemic of medical emergencies and deaths from the synthetic cathinone, alpha-PVP, sold as the street drug “Flakka.” It cost as little as \$3.00 to \$5.00 a dose. It was a powerful and addictive stimulant that produced cognitive impairment with users stating, “they could not even think” after taking the drug.

“Flakka”

- **Flaca** – Skinny
- **Flaka** – Beautiful, elegant woman who charms all
- Elsewhere called **“Gravel”**

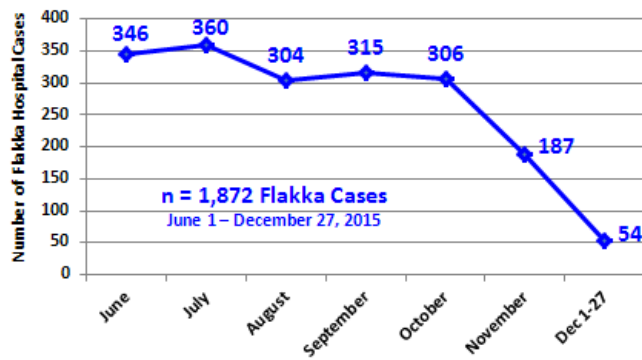


alpha-PVP

a-pyrrolidinopentiophenone

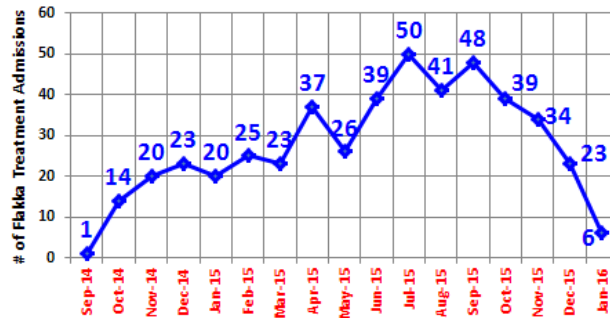
Flakka was related to in 63 deaths in Broward County alone and produced thousands of excited delirium medical emergencies. Users' body temperature climbed to 105°F and they became extremely paranoid running into the street believing they were being chased by people or imaginary wild animals about to attack them. Their adrenaline-like strength required 6-7 law enforcement officers to restrain them and once restrained required immediate emergency medical attention or they faced death. It gained the reputation of "\$5.00 insanity." Purchased online by midlevel dealers from chemical suppliers in China and shipped by world-wide delivery services, a single kilogram cost \$1,500 and produced 10,000 doses. The frenzy of Flakka united the community under the leadership of County government and the Broward Commission on Substance Abuse, the local drug prevention coalition of the United Way. Their rapid and extensive response brought worldwide media attention and pressure on the government of China to ban the production and sales of *alpha*-PVP and 115 other synthetic drugs effective October 1, 2015. Within two months Flakka was gone from the streets of Ft. Lauderdale demonstrating how a community working together across multiple agencies and organizations can impact a global problem.

**Flakka Hospital Cases Broward Health
Medical Centers: June 1 – December 27, 2015
n = 1,872 Flakka Cases**



Source: Broward Health Medical Centers

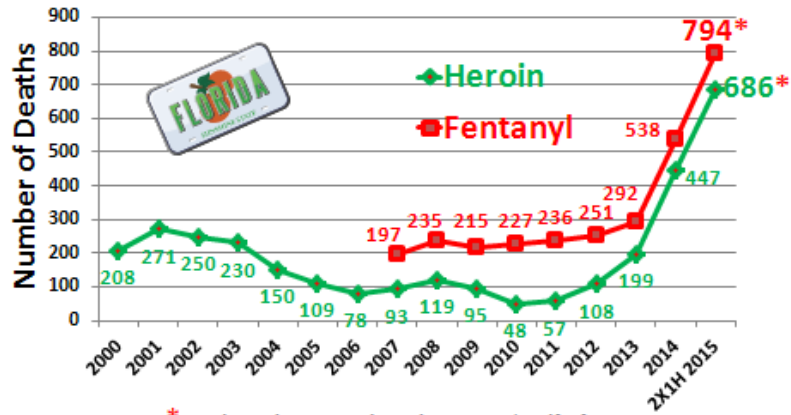
**Broward Addiction Recovery Center
Flakka Treatment Admissions
September 2014 – January 2016 n= 469**



Source: Broward Addiction Recovery Center (BARC)

Over the past two years, non-pharmaceutical fentanyl analogs produced in clandestine labs in China and probably Mexico have been linked to the majority of more than 1,300 fentanyl deaths in just the State of Florida. The non-pharmaceutical fentanyl has been sold as street heroin or used as an adulterant mixed with heroin and more recently has been disguised as counterfeit medications including fake “Xanax,” Oxycodone, or Hydrocodone pills.

Number of Heroin and Fentanyl Deaths in Florida: 2000 to 2015*

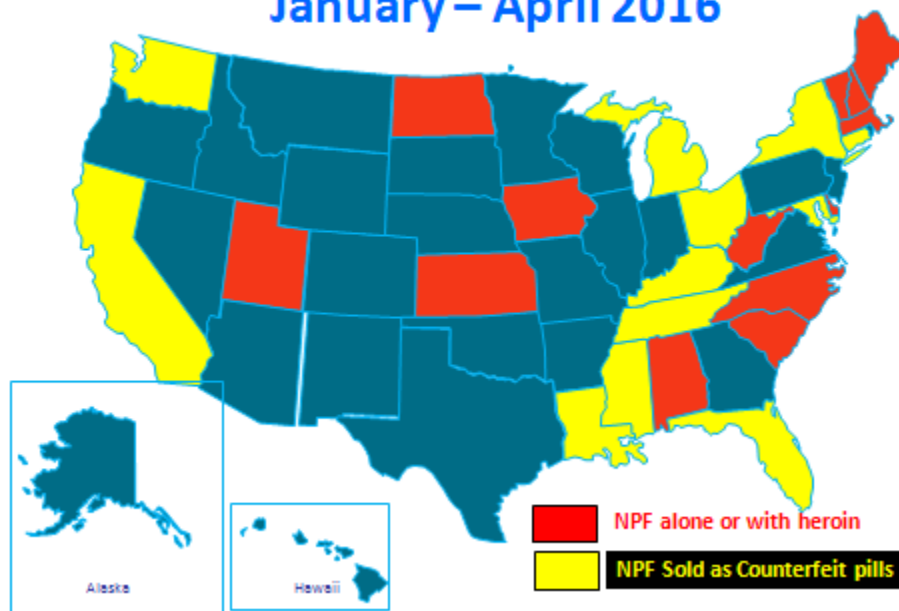


* Projected Increase based on 2 X 1st Half of 2015

Source: Florida Medical Examiners Commission 2015 Interim Report

Counterfeit medications containing non-pharmaceutical fentanyl have been identified tragically after people have died in at least a dozen US States as well as in Canada.

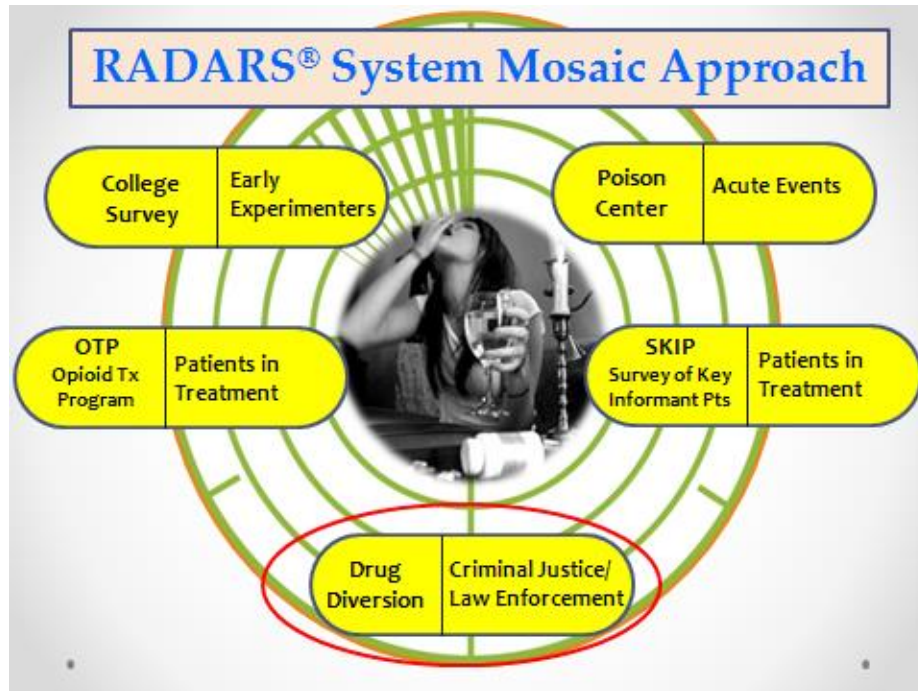
Non-pharmaceutical fentanyl (NPF) January – April 2016



A vital surveillance system for Nova Psychoactive Substances is the two-year old National Institute on Drug Abuse (NIDA) National Drug Early Warning System (NDEWS) based at the University of Maryland. Its website www.ndews.org provides special reports on synthetic drugs, webinars from the US DEA and NIDA's Designer Drug Research Unit, a list-serve linking 1,200 scientists and criminal justice professionals from 12 nations in real time.

The image is a screenshot of the NDEWS website. At the top, there is a red banner with the text "UNIVERSITY OF MARYLAND". Below this, the NDEWS logo is on the left, and the main title "NDEWS National Drug Early Warning System" is in large blue letters. Underneath the title, it says "Funded at the Center for Substance Abuse Research by the National Institute on Drug Abuse". A red navigation bar contains the following links: "About Us", "Research", "Project Publications", "Sentinel Sites", and "Resources". The main content area features a blue background with a white powder pile and a white pill. A white banner with the text "www.ndews.org" is overlaid on the powder. To the right of the image, the article title "Acetyl Fentanyl Temporarily Scheduled as Schedule I Drug" is displayed in orange. The article text begins with "On July 17, the U.S. Drug Enforcement Administration (DEA) issued a rule to temporarily schedule the synthetic opioid acetyl fentanyl (N-(1-phenethylpiperidin-4-yl)-N-phenylacetamide) into Schedule I of the Controlled Substances Act. According to the notice: *The DEA is currently aware of at least 39 fatalities associated with acetyl fentanyl. These deaths have been reported in 2013 and 2014 from six states including California, Louisiana, North Carolina, Oregon, ...". A "Read More" button is located at the bottom right of the article. At the bottom left of the screenshot, there is a red navigation bar with numbers 1 through 6, where the number 4 is circled.

The ONDCP High Intensity Drug Trafficking Areas' network of Investigative Support Centers track emerging drug threats across the nation including trafficking of Novel Psychoactive Substances. The European Monitoring Center for Drugs and Drug Addiction (EMCDDA) is currently monitoring more than 560 Nova Psychoactive Substances including 98 new NPS identified for the first time in 2015. This total included 24 new synthetic cannabinoids, 26 new synthetic cathinones, and 19 new synthetic opioids (including 11 fentanyl analogues). The RADARS system operated by Denver Health and the Rocky Mountain Poison Information Center tracks prescription drug abuse and has recently identified counterfeit pills containing non-pharmaceutical fentanyl analogues in 12 US States and across Canada.



States have enacted legislation to address emerging synthetic drugs, but the current Federal Controlled Substance Analogue Act needs to be updated to streamline the classification of constantly changing new substances to facilitate prosecution of criminal activity associated with them. The priority issue to cut the supply of toxic synthetics is for China to ban their production, online sales and exportation. The most important strategies to reduce the demand for drugs of abuse including the opiate epidemic are (1) prevention particularly at the community level and (2) a massive expansion of addiction treatment nationally.

The 2016 Florida Designer Drugs Enforcement Act
Takes effect July 1, 2016

- Banning synthetic drugs by their **pharmaceutical action** in the brain **rather than their chemical molecular structure.**
- **Makes new substances illegal even before they appear.**
- Proposes a class system for designer drug groups currently of a threat in Florida including:
 - **synthetic cannabinoids,**
 - **substituted cathinones,**
 - **substituted phenethylamines,**
 - **N-Benzyl phenethylamines,**
 - **substituted tryptamines, and**
 - **substituted phenylcyclohexylamines.**

Novel Psychoactive Opiate-Like Substances

- W-18
- AH -7921
- U-47700
- MT-45
- Expired patents

W-18

- Developed at the University of Alberta – 1980s
- Part of a class of 32 compounds, referred to as W-1 to W-32 or the 'W-series'.
- Never pursued as potential pharmaceutical analgesics. Therefore there is little information available about W-18 and the other compounds in the series.
- Lack of pharmacological data means that assessments about potency and toxicity of W-18 are also speculative.

W-18

- **No receptor binding studies done with this compound**
- **W-18 is suspected to be highly toxic and thus should be considered a potentially very dangerous opioid until the appropriate pharmacologically has been conducted.**
- **Police in Edmonton, Alberta, rushed to warn the public and emergency departments about W-18 after they seized four kilograms of the drug in powder form.**
- **DEA agents in South Florida intercepted an international priority mail package with more than 1,000 blue fentanyl pills and other drug packages, including W-18, that were shipped from an inmate in a prison near Montreal.**

AH-7921

- **Synthetic opioid developed as a possible analgesic drug by the British pharmaceutical company Allen & Hanbury in 1974.**
- **AH-7921 is a μ -opioid receptor agonist**
- **No studies that have assessed its pharmacology and toxicology in humans**
- **16 deaths have been associated with AH-7921 in Sweden, the United Kingdom, Norway, and the USA, and 2 deaths in Canada.**

U-47700

- **Pharmaceutical analgesic that was never brought to market**
- **Synthetic μ -opioid agonist that was developed in the 1970s by the Upjohn.**
- **Analogue of AH-7921**
- **Potency is estimated to be 7-8 times that of morphine.**
- **No published studies assessing the effects of U-47700 in humans**

MT-45

- **A synthetic opioid patented in 1975 by a Japanese pharmaceutical company**
- **No human studies conducted to assess its pharmacological or behavioral effects**
- **Potency is estimated to be comparable to morphine**
- **Associated with hearing loss among users**
- **At least 28 deaths in Sweden between 2013 and 2014 and two in the USA**