## Substance Abuse Treatment and Mental Health Services Integration Taskforce (SATMHSIT) presents

Synthetic Drugs: Myths, Facts, and Strategies

A Symposium

February 19, 2013

## Planning Committee

Criminal Justice Coordinating Council
Court Services and Offender Supervision Agency
Addiction Prevention and Recovery Administration
District of Columbia Department of Health
Pretrial Services Agency
United States Parole Commission
Metropolitan Police Department



## Synthetic Drugs: Myths, Facts, and Strategies

## A Symposium

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#### **CJCC PRIORITIES**

JUVENILE JUSTICE
TRUANCY

JUVENILESTAT

JUVENILE DETENTION
ALTERNATIVE INITIATIVE

**COMPLIANCE MONITORING** 

REENTRY

**GUNSTAT** 

In-Custody Treatment Programs

JUSTICE INFORMATION
SYSTEM ENHANCEMENTS

**CENTRAL BOOKING** 

PAPERING REFORM

SUBSTANCE ABUSE TREATMENT &
MENTAL HEALTH
SERVICES INTEGRATION

WARRANTS

**CONTINUITY OF OPERATIONS** 

February 19, 2013

Dear Symposium Attendees:

The Criminal Justice Coordinating Council's (CJCC) Substance Abuse Treatment and Mental Health Services Integration Taskforce (SATMHSIT) was pleased to present *Synthetic Drugs: Myths, Facts, and Strategies*, a symposium designed to bring law enforcement, criminal justice, health, human services, and business leaders together to raise awareness about the increase of synthetic drug use in the District of Columbia.

CJCC's SATMHSIT was convened to improve the treatment options available to District residents who are involved in the criminal justice system with mental illness, substance abuse disorders, and co-occurring disorders. One of SATMHSIT's strategic priorities is to facilitate cross-system educational opportunities between the criminal justice and behavioral health systems.

We hope that, beyond providing new information and raising awareness about the emergence of synthetic drug use in the community, the symposium has generated a dialogue geared towards engineering a comprehensive and coordinated approach to address the issue.

Thank you for your participation at the symposium. We look forward to working with you to build on the ideas that arose from the discussions.

Sincerely,

Mannone A. Butler

**Executive Director** 

## Substance Abuse Treatment and Mental Health Services Integration Taskforce (SATMHSIT) presents

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A Symposium

February 19, 2013



## SYNTHETIC DRUGS: MYTHS, FACTS, AND STRATEGIES

A Symposium

The Synthetic Drug Symposium will bring law enforcement, criminal justice, health, human services, and business leaders together to raise awareness about the proliferation of synthetic drug use in the District of Columbia. Local and national subject matter experts will describe how synthetic drugs affect the mind and body; report about the local and national prevalence and impact of synthetic drugs; and examine policy efforts underway to address this problem at the local, state and federal levels. In addition to informing leaders about synthetic drugs, the Symposium will also serve as the beginning of a dialogue on local response strategies. The multidisciplinary group will be able to consider a comprehensive and coordinated approach that balances the public health and public safety concerns of synthetic drug use in the District of Columbia.

February 19, 2013

### SYMPOSIUM AGENDA

#### 9:00 WELCOME

Mannone A. Butler, Executive Director, Criminal Justice Coordinating Council

Paul A. Quander Jr., Deputy Mayor for Public Safety and Justice

### 9:10 VIDEO VIGNETTES

Jordana Randall, Program Coordinator, United States Parole Commission

Karen Johnson, Supervisory Community Supervision Officer, Court Services and Offender Supervision Agency

### 9:20 SYNTHETIC DRUGS 101

A presentation of what synthetic drugs are and information that has been gathered to date on the impact of these drugs on the body.

Alan Santos, Associate Deputy Assistant Administrator, Office of Diversion Control, Drug Enforcement Administration



Synthetic Drugs: Myths, Facts, and Strategies

Symposium Agenda

#### 10:00 STATE AND FEDERAL RESPONSES TO SYNTHETIC DRUGS

An overview of federal and state legislative policy, best practices, and enforcement efforts, including responses to supply control, demand reduction, national health trends, treatment, and guidance.

Moderator: Cedric Hendricks, Associate Director of the Office of Legislative, Intergovernmental, and Public Affairs, Court Services and Offender Supervision Agency

Jane Erisman, Senior Attorney, Office of the Chief Counsel, Drug Enforcement Administration

Richard Baum, Chief of International Policy, Office of Supply Reduction, Office of National Drug Control Policy

**Dr. Anthony Campbell**, Clinical Specialty Consultant, Substance Abuse and Mental Health Services Administration

#### 11:10 BREAK

#### 11:20 LOCAL PUBLIC HEALTH & TREATMENT OVERVIEW

An overview of the District's current and emerging responses to synthetic drugs from a public health perspective.

Moderator: Keela Seales, Chief of Policy and Planning, Addiction Prevention and Recovery Administration

Todd Menhinick, Chief of Quality Assurance, Addiction Prevention and Recovery Administration

Javon Oliver, Director of Treatment, Addiction Prevention and Recovery Administration

**Dr. Nura Green**, Strategic Prevention Framework State Incentive Grant Coordinator, Wards 7 & 8 DC Prevention Center, Addiction Prevention and Recovery Administration

## 12:00 LOCAL IMPACT OF SYNTHETIC DRUGS (LUNCH PANEL)

An overview of the multi-systemic impact of synthetic drugs in the District of Columbia, which will generate a community dialogue about it.

Moderator: Terrence Walton, Director of Treatment Programs, Pretrial Services Agency

Melvin Scott, Commander, Metropolitan Police Department

Adrienne Poteat, Deputy Director, Court Services and Offender Supervision Agency

Bonita Bantom, Clinical Specialist, District of Columbia Public Schools

Frederick Weisberg, Judge, District of Columbia Superior Court

Charles Dark, Director, DC Prevention Center Wards 5 & 6, Sasha Bruce Youthwork



### 1:00 Breakout Session: Case Study Review Workgroups

An interactive session to conduct a subject matter specific review of a case study, identify issues, and provide recommendations.

Moderator: Charisma Howell, Deputy Executive Director, Criminal Justice Coordinating Council

Karen Johnson, Supervisory Community Supervision Officer, Court Services and Offender Supervision Agency

Sharon Banks, Program Analyst, Pretrial Services Agency

Keela Seales, Chief of Policy and Planning, Addiction Prevention and Recovery Administration

Michen Tah, Policy Analyst, Criminal Justice Coordinating Council

### 2:30 BREAK

#### 2:40 DISTRICT'S RESPONSES TO SYNTHETIC DRUGS

A forum for the District's public safety and health leaders to discuss current and future strategies.

Moderator: Paul A. Quander Jr., Deputy Mayor for Public Safety and Justice

Cliff Keenan, Director, Pretrial Services Agency

Nancy Ware, Director, Court Services and Offender Supervision Agency

Melvin Scott, Commander, Metropolitan Police Department

Nicholas Majett, Director, Department of Consumer and Regulatory Affairs

Saul Levin, Director, Department of Health

Dr. Jason Kolowski, Director of the Forensic Science Laboratories, Department of Forensic Sciences

**John Dominguez**, Lead Taskforce Attorney for the Organized Crime Drug Enforcement Taskforce, *United States Attorney's Office* 

Terri Odom, Director of the Family Court Social Services Division, District of Columbia Superior Court

### 4:00 CLOSING REMARKS

Mannone A. Butler, Executive Director, Criminal Justice Coordinating Council



## Substance Abuse Treatment and Mental Health Services Integration Taskforce (SATMHSIT) presents

Synthetic Drugs: Myths, Facts, and Strategies

A Symposium

February 19, 2013



## Synthetic Drugs: Myths, Facts, and Strategies

## Symposium Summary

Synthetic Drugs: Myths, Facts, and Strategies was a symposium presented by the Criminal Justice Coordinating Council's Substance Abuse Treatment and Mental Health Services Integration Taskforce to bring law enforcement, criminal justice, health, human services, and business leaders together to raise awareness about the proliferation of synthetic drug use in the District of Columbia. Beyond raising awareness and given the public health and public safety concerns related to the emergence of synthetic drug use in the community, the purpose of the symposium was also to generate a dialogue geared towards engineering a comprehensive and coordinated approach to address the issue.

During the Synthetic Drugs 101 presentation, symposium attendees learned about what synthetic drugs are and information that has been gathered to date on the effect these drugs have on the body. The State and Federal Responses to Synthetic Drugs panelists provided an overview of federal and state legislative policy, best practices, and enforcement efforts, including responses to supply control, demand reduction, national health trends, treatment, and guidance. The Local Public Health and Treatment Overview provided information about current and emerging responses to synthetic drugs from a public health perspective. The panelists on the Local Impact of Synthetic Drugs panel explored the multi-systemic impact of synthetic drugs in the District of Columbia. During the breakout session, symposium attendees collaborated with each other to identify issues raised in a case study and provide recommendations for addressing those issues. The District's Responses to Synthetic Drugs panel served as a forum for the District's public safety and health leaders to discuss current and future strategies for quelling the proliferation of synthetic drug use in the community.

Synthetic drugs, which include synthetic cannabinoids and synthetic cathinones, are perceived as being "legal" alternatives to drugs like marijuana, cocaine, methamphetamine, and MDMA (Ecstasy). Manufacturers of synthetic drugs mine scientific literature to create these substances, which are produced to mimic the effects of controlled substances. Synthetic cannabinoids are a large family of chemically unrelated structures that are designed to be functionally similar to THC, the principal psychoactive constituent of marijuana. Colloquially referred to as K2 or Spice, synthetic cannabinoids are sold in retail stores and on the internet as "herbal incense" or "potpourri." People who smoke synthetic cannabinoids may experience adverse health effects affecting the psychological, neurological, cardiovascular, metabolic, gastrointestinal, and autonomic systems. Synthetic cathinones are structurally and pharmacologically similar to amphetamine, Ecstasy, and other related substances, which stimulate the central nervous system. Synthetic cathinones are sold in retail stores and on the internet as "bath salts," "plant food," and "jewelry cleaner." People who have consumed synthetic cathinones may experience adverse health effects affecting the cardiovascular,

psychological, neurological, musculoskeletal, gastrointestinal, pulmonary, and otolaryngological systems.

The availability of synthetic drugs for purchase through internet sales, head shops, and smoke shops, as well as their promotion on discussion boards, has fostered the increasing popularity of synthetic drugs among recreational drug users. Synthetic drugs, which are also referred to as "designer drugs," are usually marketed to teens and young adults and are readily available in retail environments and via the internet. These drugs contain unknown ingredients, are not tested for human consumption, and interact in the body with other drugs and alcohol in a way that has not been studied. There is no consistency in the manufacturing process or regulation of the locations in which they are produced, so their potency and composition can vary from batch to batch and manufacturer to manufacturer. Public safety concerns raised by synthetic drug use include fatalities caused by users driving under the influence, homicides, suicides, overdoses, and abuse of these drugs in order to evade drug screens.

The DEA National Forensic Laboratory Information System (NFLIS) systematically collects results from drug chemistry analyses conducted by state and local forensic laboratories across the country. The NFLIS reported exponential increases in law enforcement seizures of synthetic cannabinoids and synthetic cathinones since 2009. For synthetic cannabinoids, the figures jumped from 23 in 2009 to 3,285 then 22,989 and 32,504 in the succeeding years, respectively. For synthetic cathinones, the figures rose from 26 in 2009 to 729 then 6,772 and 11,275 in the succeeding years, respectively. These numbers reflect a proliferation in the supply of synthetic drugs throughout the country. In 2009, law enforcement seized 2 varieties of synthetic cannabinoids and 4 varieties of synthetic cathinones. As of January 2013, law enforcement has seized 51 varieties of synthetic cannabinoids and 31 varieties of synthetic cathinones, an increase that reflects the cunning of manufacturers in altering the chemical composition of synthetic drugs in order to sidestep laws banning the substances.

At the federal level, efforts underway to take on the issue of synthetic drugs include permanent scheduling, temporary scheduling, new legislation, the Controlled Substance Analogue Act of 1986, and law enforcement efforts like Operation Logjam.

Locally, there are programs underway geared toward addressing substance abuse by youth or by individuals involved in the criminal justice system. DCPS announced a partnership with DMH in an evidence-based, data-driven effort to address youth substance abuse in a natural setting. Providers have been trained in 13 high schools, and training will begin in middle and elementary schools next year. Additionally, Sasha Bruce Youthwork highlighted its multi-tiered work with youth, which includes organizing protests directed towards places that sell synthetic drugs.

Panelists throughout the day acknowledged the challenges facing the community, substance abuse treatment practitioners, and law enforcement in efforts to get ahead of this burgeoning issue. For instance, in light of the inability to test for synthetic drug use, CSOSA is not able to adequately place client who may be addicted to those substances. Likewise, it is difficult for law enforcement to make arrests related to synthetic drug possession and distribution because there are no field tests to

determine what the substance is and the turnaround time for offsite laboratories with testing capacity is lengthy. In schools, these substances hinder the ability to learn.

The general sentiment was that a concerted and multi-faceted effort is required. Four proposed solutions arose out of the discussions at the symposium: (1) develop legislation to ensure that synthetic drugs are illegal, (2) create disincentives for retailers who sell substances that are known to be synthetic drugs, (3) develop and improve methods to detect synthetic drugs, and (4) increase public awareness about synthetic drugs and its impact on the individuals who consume them.

The Council of the District of Columbia ("DC Council") recently passed the Omnibus Criminal Code Amendments Act ("Bill 19-645"), which, among other things, made many synthetic drugs illegal in the District of Columbia. Bill 19-645 is currently undergoing congressional review. In the meantime, provisions of Bill 19-645, including those regarding synthetic drugs, were adopted on an emergency basis through the Omnibus Criminal Code Amendments Emergency Amendment Act of 2012 ("DC Act 19-599") and went into effect on January 14, 2013.

Another suggestion that arose from the symposium centered on the business community. Synthetic drugs are often sold in gas station convenience stores and "head shops" as potpourri, incense, or plant fertilizer. They are sold in brightly-colored packages, with names such as Scooby Snax, and are geared to a younger demographic. Anecdotal evidence was presented at the symposium indicating that shop owners are aware of the demographic likely to purchase these products as well as how they are used once purchased. Therefore, it was suggested that an agency, such as the Department of Consumer and Regulatory Affairs, impose fines or other disincentives on retailers to discourage the sale of items known to be consumed as synthetic drugs.

A third challenge facing those trying to stem the rising prevalence of synthetic drug use in the District of Columbia is the difficulty in detecting the substances. This challenge is not only problematic on the treatment front, but also with respect to law enforcement and general regulatory efforts. Although tests exist to detect synthetic drugs, they are costly and are not widely available. As with legislation, changes to the composition of synthetic drugs are currently outpacing advances in detection. The desire to develop additional testing is twofold. First, less expensive testing options are needed. Second, testing options, including field tests, need to be made more widely available to professionals who encounter individuals who may have used synthetic drugs.

Finally, symposium attendees and panelists concluded that increasing public awareness about the issue of synthetic drugs is imperative. To this end, it was suggested that a group be convened to develop an informational campaign (television, radio, print, and/or social media) about synthetic drugs in order to empower youth and the community at large to tackle the issue of synthetic drug use.

This symposium and the proposed solutions that arose from our discussions are merely the first steps to tackling the emergence of synthetic drug use in the District of Columbia. As many of you noted in your feedback about the symposium, we must continue the conversation about synthetic drugs, we must follow up on the action items, and we must make every effort to get ahead of this issue quickly.

Substance Abuse Treatment and Mental Health Services Integration Taskforce (SATMHSIT) presents

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# **PRESENTATIONS**

# Synthetic Drugs: Myths, Facts, and Strategies

Video Vignettes

## **Bath Salts Craze Caught on Tape**



**Posted By** 

**ABC News** 

**Duration** 

2:07

**Date** 

June 4, 2007

Link

http://youtu.be/bXo-0iFj8Ys

## **CBS News – Synthetic Marijuana**



**Posted By** 

jwkindestin

**Duration** 

2:51

**Date** 

August 7, 2010 (aired May 2010)

Link

http://youtu.be/CtmrMuehC6w



## SYNTHETIC DRUGS 101: TRAFFICKING & ABUSE TRENDS







February 19, 2013

Synthetic Drugs Symposium, Substance Abuse & Mental Health Services Integrated Task Force, Washington, D.C.

Alan G. Santos, Associate Deputy Assistant Administrator,
Operations Division, Office of Diversion Control,
U.S. Drug Enforcement Administration



# Outline

- Synthetic Cannabinoids
- Synthetic Cathinones
- Other Synthetic Compounds
- Scope of the Problem
- Control Efforts: State, Federal, & International



## Designer Drugs

These drugs are perceived as being 'legal' alternatives to marijuana, cocaine, methamphetamine, and MDMA.



# Designer Drugs: Where did they come from?

A highly regarded Medicinal Chemist Dr. F. Ivy Carroll and colleagues stated in a recent publication:

Throughout the drug discovery process, pharmaceutical companies, academic institutions, research institutions, and other organizations publish their studies in scientific journals, books, and patents. This information exchange, which is essential to the legitimate scientific enterprise, can be, and is, used by clandestine chemists who duplicate the technical sophistication used by the research community to manufacture and market a seemingly endless variety of analogs of so-called designer drugs.



# Designer Drugs: Novel Psychoactive Substances

- Clandestinely produced to mimic the effects of a controlled substance (a substance with an abuse potential)
- Scientific literature excavated to identify substances
- No industrial or medical use for these substances
  - Substances rejected due to poor therapeutic potential
  - Characterization as being "research chemicals," the only research being undertaken is to their abuse liability and toxicity
- Challenge
  - Change public misperception as to legality and hazards
  - Minimize appeal, a result of devious and aggressive marketing







# Proliferation of Designer Drugs

- Increasingly popular among recreational drug users
- Internet sales
- Head shops/Smoke shops
- Promoted by discussion boards – self studies



Armed with medical research and fueled by Chinese factories And YouTube, a band of outlaws has Created a dangerous multibillion-dollar industry



# Synthetic Cannabinoids

U.S. Drug Enforcement Administration / Operations Division / Office of Diversion Control



# 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, the active principle of marijuana.
- They may have less, equivalent or more pharmacologic (psychoactive) activity than THC.



# Synthetic Cannabinoids

- Synthetic Cannabinoids are sold in retail stores, on the internet, and in "head shops" as "Herbal Incense" or "Potpourri"
- Smoked alone or as a component of herbal products
- Abusers report a potent cannabis-like effect



U.S. Drug Enforcement Administration / Operations
Division / Office of Diversion Control



# Cannabinoid Timeline

DEA)	1960s	1964 – Isolation of THC from Cannabis
1967- Synthesis of synthetic THC	1970s	Pfizer starts developing CP cannabinoids for analgesic effects
1988- HU-210 investigated at Hebrew —— University	1980s 1990s	1988- Isolation of CB1 Receptor
1995- John W. Huffman researched the relationship between drug structure and brain receptor activity with JWH-018	2000s	1993- CB1 Receptor discovered
2008- U.S. seizes Spice products at border		2004- K2 sold on the Internet  2009- European countries begin
2009- USAFE bans spice 2011- U.S. temporarily controls five synthetic cannabinoids	2010s	controlling K2/Spice  2012- Synthetic Drug Abuse & Prevention Act



## Adverse Health Effects: Cannabinoids

Abusers are presenting at Emergency Departments and also seeking treatment for dependence and withdrawal.

Multiple deaths have been connected to the abuse of these substances alone and with other substances on-board.

Psychological	Anxiety, aggressive behavior, agitation, confusion, dysphoria, paranoia, agitation, irritation, panic attacks, intense hallucinations
Neurological	Seizures, loss of consciousness
Cardiovascular	Tachycardia, hypertension, chest pain, cardiac ischemia
Metabolic	Hypokalemia, hyperglycemia
Gastrointestinal	Nausea, vomiting
Autonomic	Fever, mydriasis
Other	Conjunctivitis

4/10/2013



# Synthetic Cannabinoids

- Unregulated and unlicensed industry (many manufacturers)
- Full disclosure of ingredients typically not present
- Batch to batch variance (i.e. "Hot Spots")





# Synthetic Cathinones

U.S. Drug Enforcement Administration / Operations Division / Office of Diversion Control



# Synthetic Cathinones

- Structurally and pharmacologically similar to amphetamine, Ecstasy (MDMA), cathinone, and other related substances.
- Are central nervous system (CNS) stimulants and have stimulant and psychoactive properties similar to schedule I and II amphetamine type stimulants.
- Synthetic cathinones are sold in retail stores, on the internet, and in "head shops" as "bath salts", "plant food", or "jewelry cleaner"



## Adverse Health Effects: Cathinones

Synthetic cathinone users commonly report cardiac, psychiatric, and neurological signs and symptoms with death.





Cardiovascular	palpitations, tachycardia, chest pain, vasoconstriction, my0cardial infarction
Psychological	Aggressive behavior, anger, anxiety, agitation, auditory and visual hallucinations, depression, dysphoria, empathy, euphoria, fatigue, formication, increased energy, concentration, panic attacks, paranola, perceptual disorders, restlessness, self-mutilation, suicidal ideation
Neurological	Seizures, tremor, dizziness, memory loss, cerebral edema, headache, lightheadedness
Musculoskeletal	Arthralgia, extremity changes (coldness, discoloration, numbness, tingling), muscular tension, cramping
Gastrointestinal	Abdominal pain, anorexia, nausea, vomiting
Pulmonary	Shortness of breath
Ear Nose Throat	Dry mouth, nasal pain, tinnitus



# Synthetic Cathinones

- Like the cannabinoids, unregulated and unlicensed industry (many manufacturers)
- Full disclosure of ingredients typically not present
- Significant batch to batch variances "Hot Spots"





# Other Synthetic Compounds

U.S. Drug Enforcement Administration / Operations
Division / Office of Diversion Control



# Categories

- 2C Series
  - Category of phenethylamines
  - Contain 2,5-dimethyoxy
- Piperazines
  - Used as industrial chemicals
- Tryptamines
  - Occur naturally in plant species
  - Produced synthetically
- Arylcylohexamines



## 25I-NBOMe and 25C-NBOMe

- Hallucinogens, abused orally
- Encountered on blotter paper and in dropper bottles
- Possibly mistaken for LSD
- Linked to recent deaths
- "N-BOMB", "Smiles"



Piperazines

- Stimulant and hallucinogenic properties
- Often referred to as amphetamine-like
- Examples:BZP, TFMPP, mCPP, andMeOPP
- Tableted
- BZP-TFMPP combination abused to mimic the effects of ecstasy





# **Tryptamines**

- Hallucinogenic
- "reality distorting"
- Powders, tablets, or blotter paper
- Examples: 5-MeO-DALT, 5-MeO-DIPT, AMT and many more.....



### Methoxamine (MXE)

- Dissociative (mind altering effects) and depression of pain
- Sold as a "ketamine derivative" (Ketamine- schedule III)
- Effects similar to PCP
- Effects range 5-7 hours
- First reported to NFLIS in 2011
- Deaths attributed to the substance

**CBP Photo** 



## Methylhexanamine (DMAA)

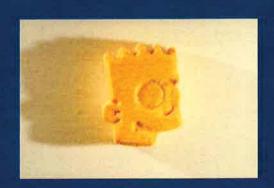
- Stimulant
- Encountered on designer drug market as a cathinone replacement. Also found on the dietary supplement market
- Deaths attributed to the substance
- April 27<sup>th</sup>, FDA challenges marketing of DMAA products for lack of safety evidence





#### Problems with All Synthetic / Designer Drugs

- Marketed to teens and young adults
- Easily attainable in retail environments and via the internet
- Unknown ingredient(s)
- No consistency in manufacturing process
- Not tested for human consumption / Unknown short & long term effects!!
- No known dosage not FDA approved
- Synergistic effects likely when mixed with other drugs or alcohol







- Marketed to teens and young adults
- Easily attainable in retail environments and via the internet
- Unknown ingredient(s)
- No consistency in manufacturing process
- Not tested for human consumption / Unknown short & long term effects!!
- No known dosage not FDA approved
- Synergistic effects likely when mixed with other drugs or alcohol



## Scope of the Problem

U.S. Drug Enforcement Administration | Operations Division | Office of Diversion Control



## NFLIS Participating Laboratories





#### Identified Synthetic Compounds in the U.S.

As of January 31, 2013, the NFLIS system shows U.S. law enforcement encountering:

- 51 cannabinoids
- 31 cathinones
- 76 "other" compounds (i.e. amphetamines, tryptamines, piperazines, etc.)



#### 'Spice' makers alter recipes to sidestep state laws banning synthetic marijuana



Rob Ostermaier/Daily Press - Police show what they suspect is "spice," confiscated during a raid on Outer Edge Gifts in Hampton, Va., on April 5.



"I told the police straight up what we were selling was legal," the man said. "We had results from a DEA-registered lab."

A raid in which \$10,000 worth of synthetic marijuana was seized from a Newport News hookab bar has not resulted in charges, either. The owner did not return calls, but he told a local newspaper in September that he was selling a new version of spice.

State Sen. Mark R. Herring (D-Loudoun), who wrote Virginia's spice law, said it has helped educate people about the dangers of the drug and encouraged reputable retailers to stop selling it. But he said that more needs to be done. He said legislation is being written that would add six compounds to the banned list.

Lawmakers on the federal level are also taking a more comprehensive approach by seeking to ban spice compounds, as well as classes of chemical structures on which synthetic marijuana compounds are commonly built.

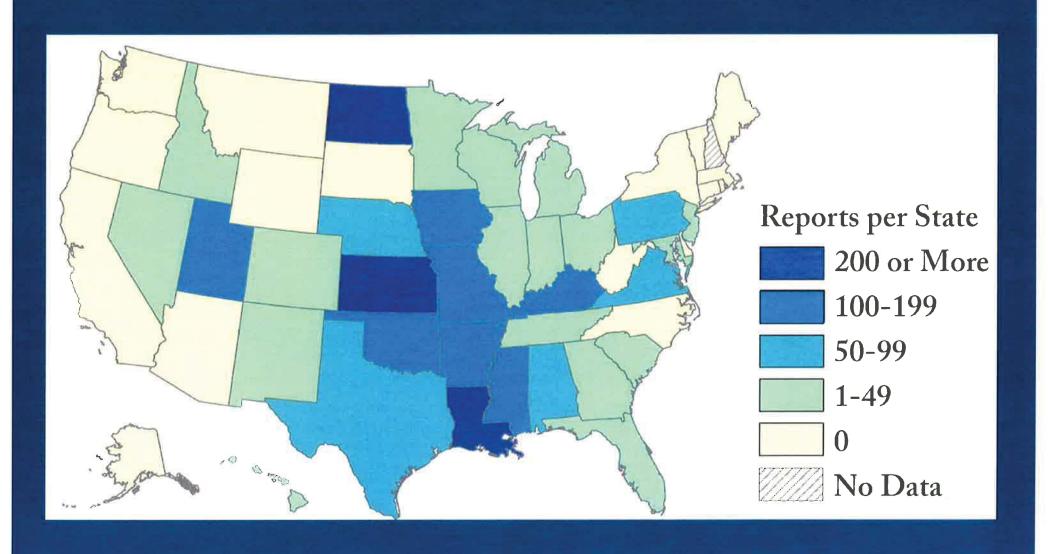
The initial appeal of spice was as a legal high, but it remains popular because most drug tests will not pick it up and it is readily available from dozens of Web sites.

"We had guys with Pentagon security clearance badges coming in to buy it," said Alan Amsterdam, co-owner of <u>Capitol Hemp</u> in Adams Morgan. Although he stopped selling spice, he is dubious about efforts to control it.

"The government is one step behind science," Amsterdam said. "It's here to stay."

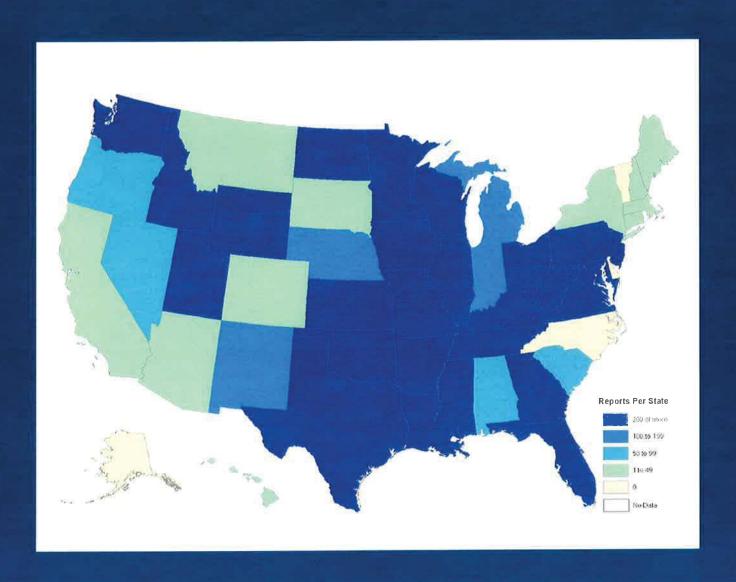


## Synthetic Cannabinoids, by State, 2010



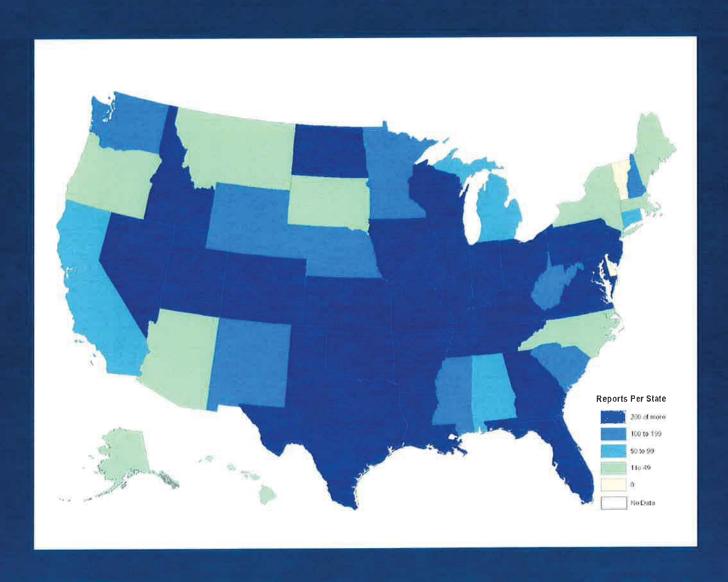


## Synthetic Cannabinoids, by State, 2011





## Synthetic Cannabinoids, by State, 2012





#### AM-2201 Public Health and Safety Concern

- Many products encountered found to be laced with AM-2201
- These products are being abused by adolescents
- Emergency department presentations:
  - Agitation
  - Anxiety
  - Intense hallucinations
  - Psychosis
  - Seizures
  - Unresponsive
- Toxic effects are a medical concern



AM-2201 laced on plant material



## Synthetic Cathinones

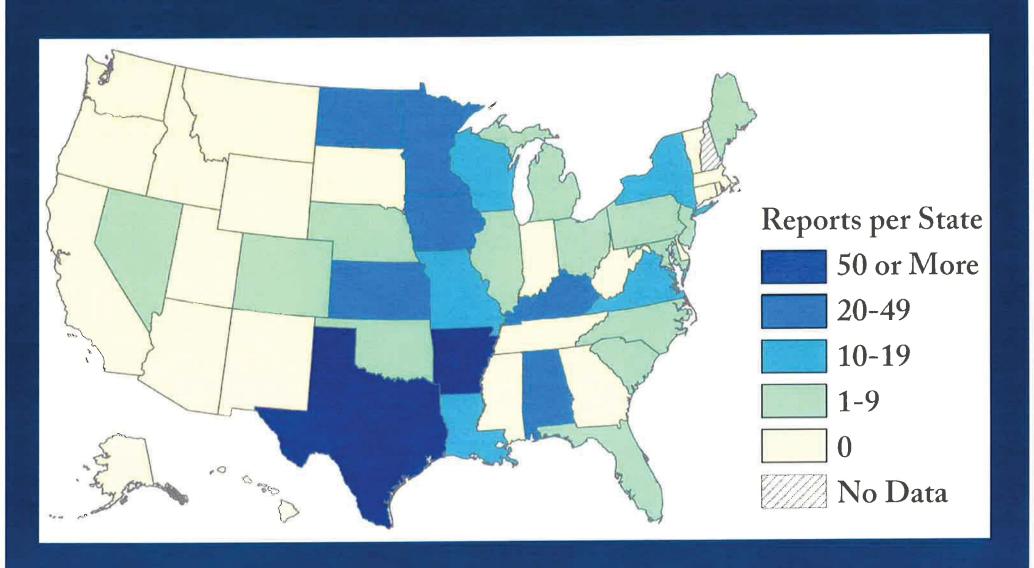
- 3,4-DMMC
- 3-MEC
- 4-FLUOROISOCATHINONE
- 4-MEC
- 4-MePPP
- 4-METHYLBUPHEDRONE
- alpha-PBP
- alpha-PVP
- BUPHEDRONE
- BUTYLONE
- DIBUTYLONE
- DIMETHYLONE
- ETHYLCATHINONE
- ETHYLONE
- FLUOROMETHCATHINONE

- MABP
- MDPBP
- MDPPP
- MDPV
- MEPHEDRONE
- METHEDRONE
- METHYLONE
- MOPPP
- MPHP
- NAPYRONE
- N-ETHYLBUPHEDRONE
- PENTEDRONE
- PENTYLONE

ISOPENTEDRONE

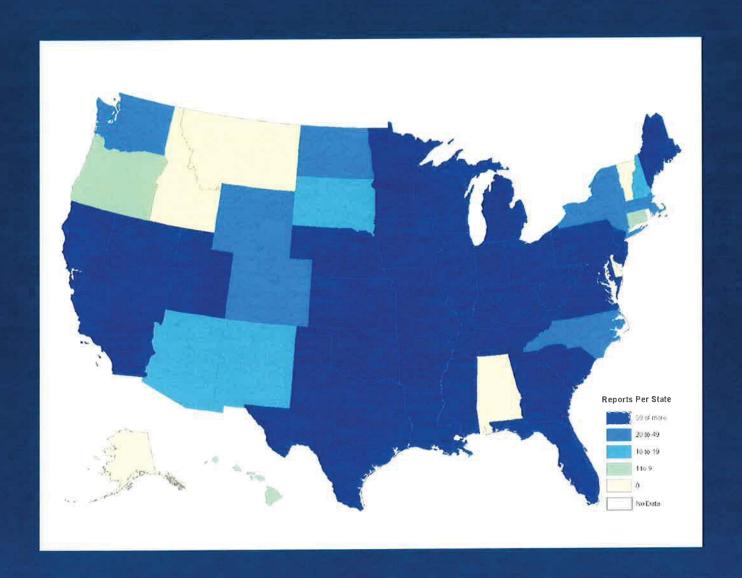


## Synthetic Cathinones, by State, 2010



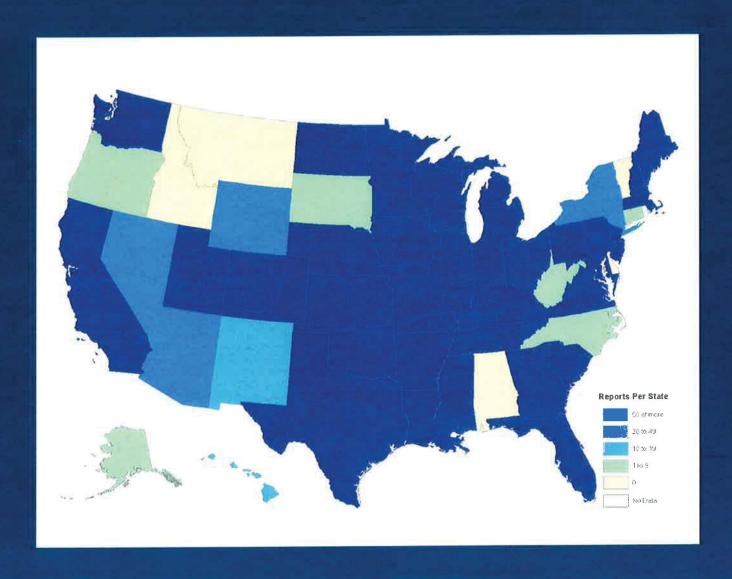


## Synthetic Cathinones, by State, 2011





## Synthetic Cathinones, by State, 2012





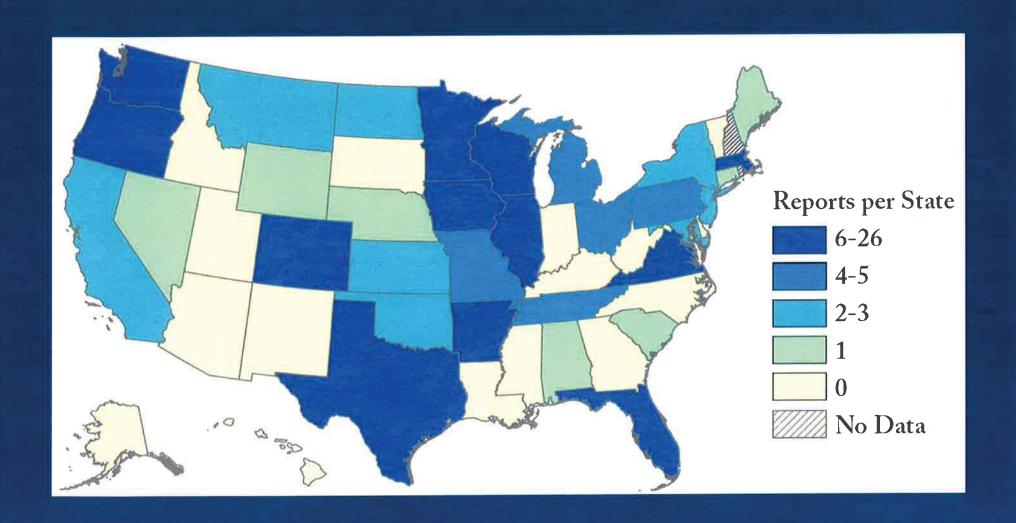
## 2C/25 Series

- 2C-B
- 2C-B-Fly
- 2C-C
- 2C-D
- 2C-E
- 2C-G
- 2C-H
- 2C-I
- 2C-N
- 2C-P

- 2C-T-4
- 2C-T-7
- 2C-T-21
- 25B-NBOMe
- 25C-NBOMe
- 25D-NBOMe
- 25E-NBOMe
- 25G-NBOMe
- 25H-NBOMe
- 25I-NBOMe

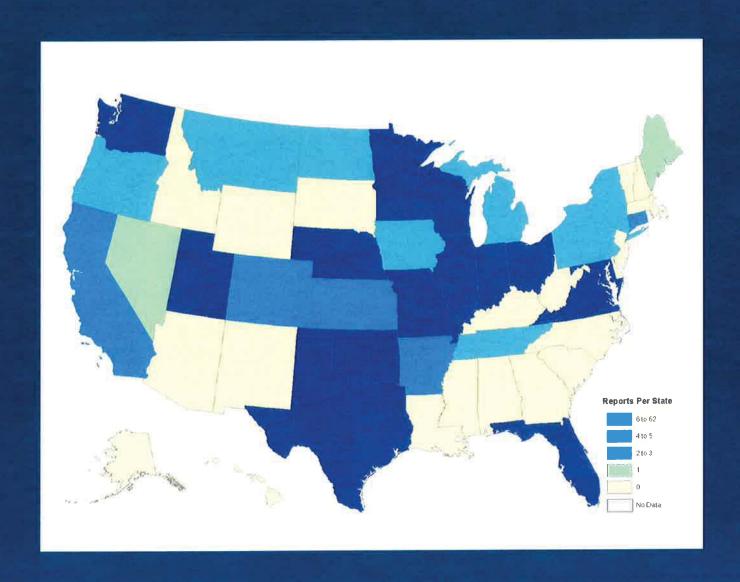


#### 2C-Phenethylamine Reports, by State, 2010





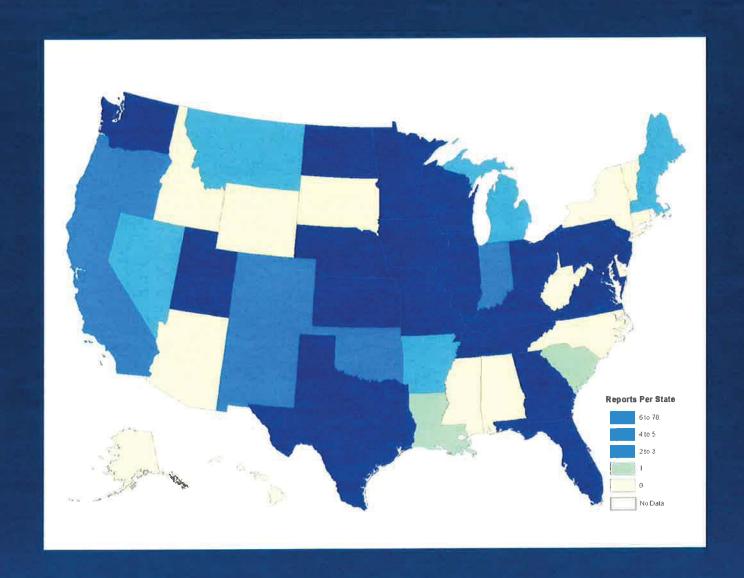
### 2C-Phenethylamine Reports, by State, 2011



Source: NFLIS



### 2C-Phenethylamine Reports, by State, 2012

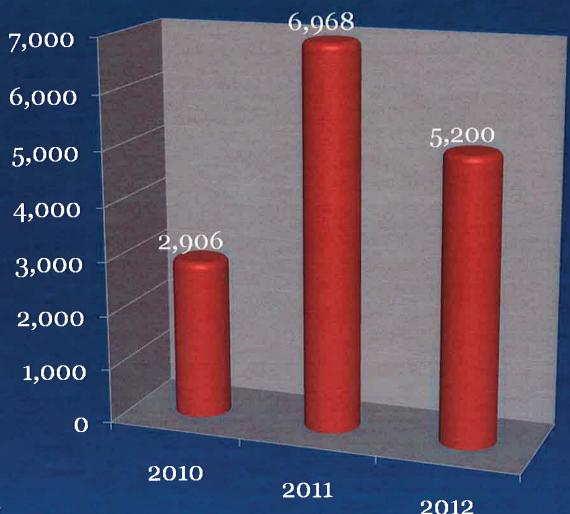




# Calls to U.S. Poison Control Centers

American Association of Poison Control Centers (AAPCC) Reporting

Calls to poison centers for human exposures to synthetic marijuana (synthetic cannabinoids)





# Calls to U.S. Poison **Control Centers**

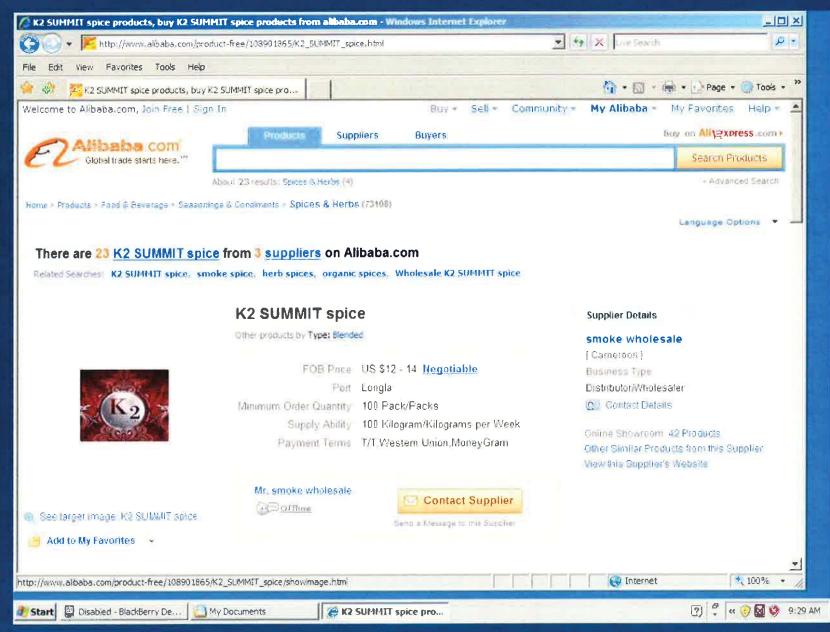
American Association of Poison Control Centers (AAPCC) Reporting

Calls to poison centers for human exposures to bath salts (synthetic cathinones)



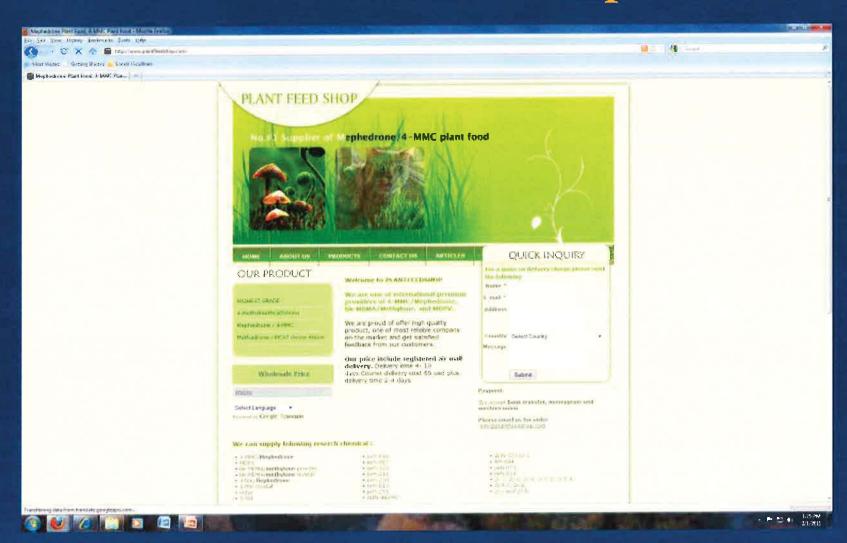
AAPCC as of December 31, 2012.





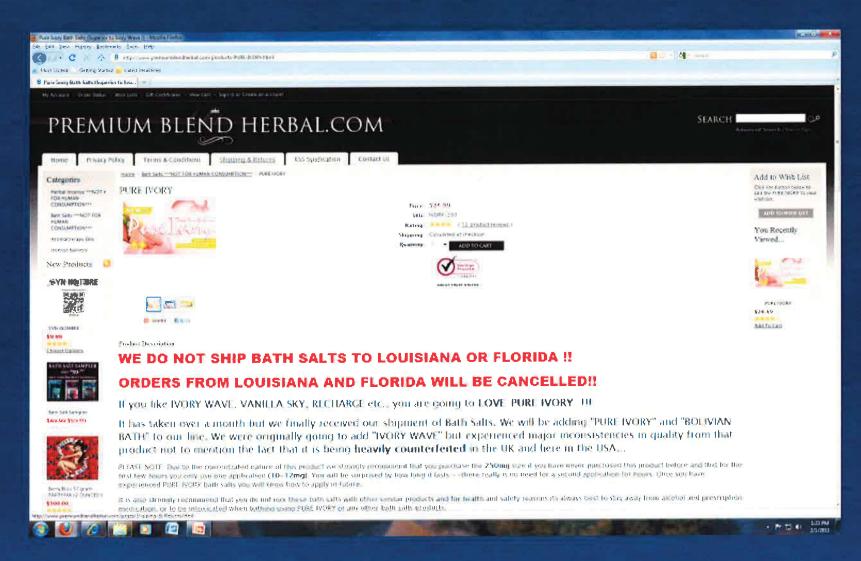


## "The Plant Feed Shop"





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## Public Safety Concerns

- Driving Under the Influence of Drugs (DUIDs) with fatalities
- Suicides
- Homicide-Suicide
- Overdoses
  - Emergency Department visits
  - First Responders
- Drugs abused to evade drug screens

lice.



## Warning!

#### Bangor Daily News

Bangor man on bath salts carried assault-style rifle through city, police say

By , BDN Staff Posted July 27, 2011, at 12:50 p.m.

the man's ex-girlfriend told police at about 7:30 p.m. Tuesday that he had used bath salts and was "stating that people were coming out of his mattress,"

When Bangor pole Walter Street apar Police searched th Street a few minut "When questioned he stated that the two pieces wrappe .223 [caliber] amm He did not tell pothe gun."

A local agent of the interviewed the suspect.

Colt M4 5.56mm Carbine

, went into the man's

orn found the man on Buck

did in fact find an M4 rifle in e and 18 separate rounds of

said, adding, "we did confiscate

ng with police,

The man was released Tuesday evening. The case is being reviewed for possible state and-or federal charges, Edwards said.



## First Responder Encounters

- Altered mental status presents as severe panic attacks, agitation, paranoia, hallucinations, and violent behavior (e.g., self-mutilation, suicide attempts, and homicidal activity). (Spiller et al., Clinical Toxicology 2011)
  - climbing into the attic of the home with a gun to kill demons that were hiding
  - breaking all the windows in a house and wandering barefoot through the broken glass
  - jumping out of a window to flee from non-existent pursuers; requiring electrical shock (Taser) and eight responders to initially subdue the patient
  - repeatedly firing guns out of the house windows at "strangers" who were not there
- Bath salts use tied to three Bangor (Maine) deaths. (Richter, JEMS 2012)
- Bath salt abuse: new designer drug keeps EMS crews busy nationwide. (Nevin, *JEMS* 2011)



## First Responders (Cont.)

#### Drug Endangered Children:

- Leaving a 2-year-old daughter in the middle of a highway because she had demons (Spiller et al., Clinical Toxicology 2011)
- A drug-intoxicated couple hallucinated they were being burglarized, began shooting into walls. Officers found weapons in every room, and a paranoid parent huddled inside the bathroom with two young children and a loaded .357 Magnum (Macher, American Jails 2011)
- Northeast PA, couple charged with multiple offenses for stabbing at "90-people living in their walls" with 5-year old present (Times-Leader.com, Mar 21, 2011)

51



#### Incidents Involving Synthetic Cathinones and Cannabinoids

Oct-10	Missouri	29-yr old man commits suicide by gun shot to head
Nov-10	Louisiana	21-yr old man cuts throat then shoots himself
Dec-10	Louisiana	Man gets lost in attic; tries to shoot his way out with .38 revolver
Dec-10	Louisiana	Woman in tub thinks she trapped in cage; young child unattended
Dec-10	Mississippi	Deputy Sheriff shot and killed
Dec-10	Mississippi	Man repeatedly stabs his face and stomach; survives
Dec-10	New Jersey	Marine falls from 2 <sup>nd</sup> story window with sword; Woman about to jump holding child
Dec-10	Kansas	University student killed after running into head-on traffic



Jan-11	Florida	Daughter attacks sleeping 71- yr old mother
		with machete in attempt to behead her
Jan-11	Florida	Man tears radar unit out of police cruiser with
		his teeth
Feb-11	Florida	Man arrested for battering girlfriend
Feb-11	Louisiana	Overdose death of 47-yr old woman
E-1. 11	Danasalaania	Two overdose deaths including former State
Feb-11	Pennsylvania	Trooper
Feb-11 Mar-11	West VA Kentucky	Man violates domestic violence protective
		order
		Mother leaves 2-yr old on busy interstate;
		found wandering in median carrying 5-yr old
Mar-11	Kansas	50-yr old man found in pajamas out of gas
		along interstate threatening to harm girlfriend



Mar-11	Texas	Man enters police station, believes someone hiding under car
Mar-11	NJ	Rutgers student murdered by longtime boyfriend
Mar-11	PA	25-yr old man breaks into monastery and stabs priest
Mar-11	PA	Man jumps from 3 <sup>rd</sup> story window fleeing from non-existent person
Mar-11	PA	Couple destroy home walls trying to stab imaginary people; Arrested for endangering 5-yr old child
Mar-11	PA	Man arrested 3 times in 3 days; chased and entered cars
Mar-11	PA	Man flees car, believes it was melting and that he was

being chased by electricity



Mar-11	Pennsylvania	2 women arrested after reckless driving with 1
		and 3 yr old children in vehicle
Mar-11	West VA	19-yr man arrested for pointing 3 rifles at
		family members
Apr-11	Pennsylvania	Two men found dead in Allegheny National
		Forest
Apr-11	Pennsylvania	Man arrested carrying machete in public
Apr-11	Pennsylvania	Woman driving with toddler arrested for traffic violations after driving erratically and
		repeatedly banging head against steering wheel
Apr-11		



DEA		
Apr-11	Pennsylvania	45-yr old man subdued by taser arrested, believed demons were after him
Apr-11	Pennsylvania	Man arrested on burglary charges after breaking into a house during early morning hours while the family was there
Apr-11	Illinois	Overdose death of woman
Apr-11	Illinois	Man arrested for disorderly conduct eats dirt while handcuffed
Apr-11	Ohio	3 arrested after shot is fired with infant and 3-yr old in house
Apr-11	Washington	Man shoots and kills wife then self during high speed car chase; 5-yr old son later found dead with

plastic bag over head at their home



May-11 West VA

Teenager sexually assaults and kills neighbor's goat with knife

May-11 N. Carolina

Man rams stolen car through front door of convenience store; Steals packets of bath salts

May-11 Pennsylvania

Over 50 rounds fired during shootout by 3 high on bath salts and a man who came to steal their bath salts

May-11 Kentucky

Man arrested at grocery store after damaging merchandise and drinking hand sanitizer

Jun-11 West VA

Man breaks into house at 1:30 a.m.; Breaks

police vehicle window on way to jail

36-year old commits suicide; Lost 50 pounds in

2 months

Jun-11 Indiana



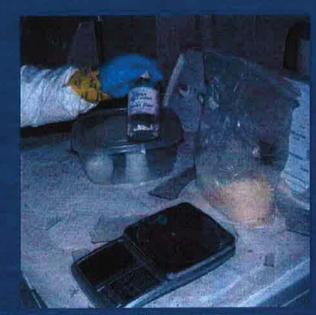
Jun-11	Pennsylvania	3 arrested after robbing taxi driver and restaurant for money to buy bath salts
Jul-11	West VA	Woman scratches herself "to pieces"
Jul-11	Maine	Woman breaks into house and locks herself in bathroom
Jul-11	Maine	Man makes series of 911 calls; thought he was being chased by people with rifles
Jul-11	Maine	Man attempts "suicide by cop" wanting police to shoot him



### Synthetic Drug "Manufacturing Facility"?









U.S. Drug Enforcement Administration / Operations Division / Office of Diversion Control



### **Control Efforts**

U.S. Drug Enforcement Administration / Operations Division / Office of Diversion Control



### Synthetic Drugs: State Controls





# Federal Scheduling & Rescheduling Procedures

Placement of a substance into one of the CSA schedules can be done by statute or through the administrative process.

- **Statute:** Congress may designate a substance a controlled substance or reschedule a drug within the scheduling hierarchy by passing legislation. This, by far, is the easiest method in which to add, remove or transfer a substance between schedules.
- Administrative Process: The Attorney General, by rule, (using his administrative authority) to add, remove or transfer a substance between schedules. The legal definition of control, "...means to add a drug or other substance, or immediate precursor, to a schedule...whether by transfer of another schedule or otherwise". 21 USC 802(5)



### Federal Temporary Scheduling

- Because of the lack of effective legislative controls to combat the synthetic problem early on, federally we looked to temporary scheduling as a solution
- Requires an AG finding (delegated down to DEA) that the scheduling of a substance in schedule I on a temporary basis is necessary to avoid an imminent hazard to the public safety
- ...and the substance is not listed in any other schedule in Section 21 USC 812 or no exemption or approval is in effect under the FDCA



### Federal Temporary Scheduling (Comprehensive Crime Control Act of 1984)

As set forth under 21 U.S.C 811(h), three factors (4, 5 &6) under the CSA (21 U.S.C. 811(c)) are to be considered in the evaluation

- 1. Its actual or relative potential for abuse
- 2. Scientific evidence of its pharmacological effects
- 3. The state of current scientific knowledge regarding the substance
- Its history and current pattern of abuse
- The scope, duration, and significance of abuse
- What, if any, risk there is to the public health
- 7. Its psychic or physiological dependence liability
- 8. Whether the substance is an immediate precursor of a substance already controlled

## Federal Temporary Scheduling Actions to Date Relative to Synthetic Drugs

- 5 Synthetic Cannabinoid Compounds Notice of Intent – November 24, 2010
- 3 Synthetic Cathinone Compounds
   Notice of Intent September 8, 2011



#### Synthetic Drug Abuse Prevention Act of 2012

• On July 9, 2012, the President signed the Synthetic Drug Abuse Prevention Act of 2012 (Public Law 112-144), into effect

The law controlled 26 compounds into schedule I

• Provides language which defined the term "Cannabimimetic Agent" [the term means any substance that is a cannabinoid receptor type 1 (CB1 receptor) agonist as demonstrated by binding studies and functional assays within any of the five structural classes named in the statute]



#### Synthetic Drug Abuse Prevention Act of 2012

- The legislation also extends the maximum time that DEA may temporarily control a substance pursuant to 21 U.S.C. 811(h), which is often referred to as the "emergency scheduling" provision.
- Under the new law, the initial time period for temporary scheduling has been increased from 12 months to 24 months, and the extension period has been increased from 6 months to 12 months.
- The maximum total amount of time a substance may remain temporarily scheduled is now three years



#### Synthetic Drug Abuse and Prevention Act 2012

#### Cannabinoids

- 1) AM2201
- 2) AM694
- 3) CP-47,497
- 4) CP-47,497 C8 homologue
- 5) JWH-018
- 6) JWH-073
- 7) JWH-081

- 8) JWH-200
- 9) JWH-019
- 10) JWH-250
- 11) JWH-122
- 12) JWH-203
- 13) JWH-398
- 14) SR-19
- 15) SR-18

#### **Cathinones**

- 1) Mephedrone
- 2) MDPV

#### **Phenethylamines**

- 1) 2C-E
- 2) 2C-D
- 3) 2C-C
- 4) 2C-I
- 5) 2C-T-2
- 6) 2C-T-4
- 7) 2C-H
- 8) 2C-N
- 9) 2C-P



# Why are these synthetic compounds marketed the way they are (i.e. not for "Human Consumption")?

- Synthetic cannabinoids are sold as "potpourri" or "incense" products at retail outlets and on the Internet
- Synthetic cathinones are sold as "bath salts", "jewelry cleaner" and "plant food" at retail outlets and on the Internet



# To Try to Defeat the Controlled Substance Analogue Act!!

21 USC 813 – A Controlled Substance Analogue, shall, to the extent intended for human consumption, be treated for the purposes for any Federal law as a controlled substance in Schedule I

21 USC 802(32) – chemical structure is substantially similar to a controlled substance in schedule I or II and has a similar pharmacologic effect.





### Proving Substantial Similarity

- Requires proof of substantial similarity both with respect to *chemical structure* and actual or represented *pharmacological effect*. The "intended for human consumption" requirement is often demonstrated by law enforcement investigations.
- The substantial similarity standard often results in a battle of the experts, which is resource intensive and highly unpredictable.
- Constitutional issues (e.g., vagueness) also often come into play.



### OPERATION LOG JAM Results of Operation

- 97 Arrests
- 265 Search warrants
- 73 Consent/Knock-talk contacts
- 1,085 Pounds raw synthetic cathinones
- 167,712 Packets of synthetic cathinones
- 5.3 million Packets of synthetic cannabinoids
- 1,909 Pounds Raw synthetic cannabinoids
- 10,487 Pounds of treated plant material
- 48,253 Pounds of untreated plant material
- More than \$40,000,000 US Currency/bank accounts
- Vehicles/value 57/\$1,973,500
- Other Assets \$5,688,500
- Firearms 47
- 1096 gallons of acetone seized



### The Way Forward on the International Front

- Working to identify major foreign based sources (Obscure middlemen, trading companies, & exporters)
- Working to sensitize source countries regarding the threat and the need for international controls (*Insufficient regulations & legislation*)
- Working through the UN process to look at coordinated global outreach and cooperation (expanding upon UN CND Resolution 55/1 "Promoting international cooperation in responding to the challenges posed by new psychoactive substances")



### Thank You / Questions



U.S. Drug Enforcement Administration / Operations
Division / Office of Diversion Control

# Challenge and National Response to Synthetics Drugs

The Synthetic Drug Symposium

Criminal Justice Coordinating Council

February 19, 2013



Richard Baum
Chief, International Policy Branch

Rbaum@ondcp.eop.gov

### A Rapidly Emerging Threat

- Addressing the threat posed by these new Synthetics is a major priority of the Obama Administration.
- We are working with our Federal partners to employ Federal authorities to take action and gather as quickly as we can.
- State and local agencies also play a vital in responding to this threat –
  in fact it is essential that they use their State health, safety, and
  agricultural authorities to get these products off the shelves.
- Synthetic cannabinoids in herbal incense products were first detected in the United States in November 2008, by DEA's forensic laboratory.
- According to the American Association of Poison Control Centers,
   2,906 calls relating to human exposure to synthetic marijuana were received in 2010.
- Twice that number (6,959) were received in 2011, and 639 had been received as of January 2012.
- The number of calls related to bath salt exposure received by poison control centers across the country increased by more than 20 times in 2011 alone, up from 304 in 2010 to 6,138.

### THC-like Substances "Spice" / K2







- An herbal mixture called "Spice" and K2 is sold in European countries and in the U.S. via the Internet, head shops, tobacco shops and other retail venues.
- "Spice" and K2 are found to contain substances with marijuana-like psychoactive effects (e.g., HU-210, HU-211, JWH-018, JWH-073 and CP

47,947 & homologues) and it is abused by smoking.

### Ivory Wave / Vanilla Sky

- Sold on Internet and in headshops as "bath salts"
- Chemical(s): MDPV & methylone
  - MDPV similar to MDMA
    - Methylenedioxypyrovalerone AKA "Sonic"
    - <u>4x</u> more potent then methylphenidate
    - Dopamine reuptake inhibitor
  - Methylone is stimulant with psychoactive properties
    - 3,4 Methylenedioxymethcathinone



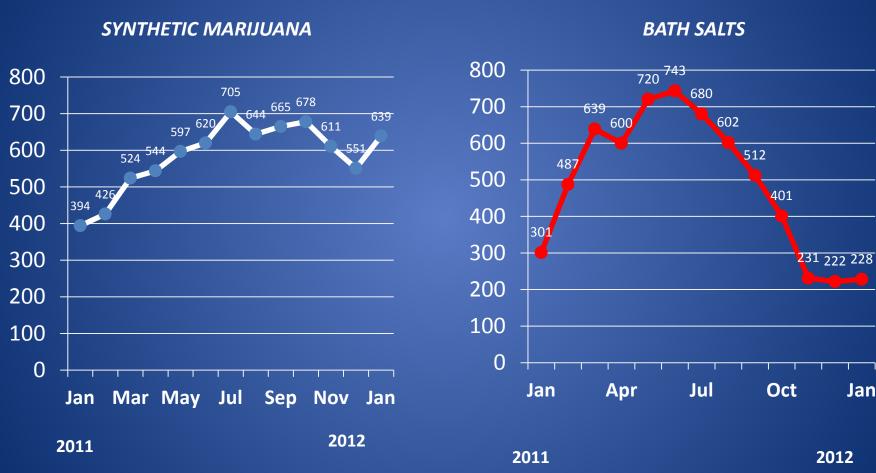
- tachycardia, hypertension,
- dopamine depletion,
- dilated pupils, convulsions







### Calls Received by Poison Control Centers for Human Exposure to Synthetic Marijuana, 2010 to January 2012



<sup>\*</sup>Numbers may change as cases are closed and additional information is received.

Source: American Association of Poison Control Centers, Synthetic Marijuana Data, Updated February 8, 2012 (Preliminary data).

### Overview and History

- Synthetic marijuana (often known as "K2" or "Spice") and bath salts products are often sold in legal retail outlets as "herbal incense" and "plant food," respectively, and labeled "not for human consumption" to mask their intended purpose and avoid FDA regulatory oversight of the manufacturing process.
- Synthetic marijuana consists of plant material that has been laced with substances (synthetic cannabinoids) that mimics THC, the primary psychoactive active ingredient in marijuana, and are marketed toward young people as a "legal" high.
- Use of synthetic marijuana is alarmingly high. According to data from the 2011
   Monitoring the Future survey of youth drug-use trends, 11.4 percent of 12th
   graders used Spice or K2 in the past year, making it the second most commonly
   used illicit drug among seniors.
- Bath salts contain manmade chemicals related to amphetamines that often consist of MDPV, mephedrone, and methylone, also known as substituted cathinones.
- The Administration has been working over the past 24 months with Federal, Congressional, State, local, and non-governmental partners to put policies and legislation in place to combat this threat, and to educate people about the tremendous health risk posed by these substances.



### Risk to the Public Health

- Health warnings have been issued by numerous State and local public health authorities and poison control centers describing the adverse health effects associated with the use of these new synthetic drugs.
- The effects of synthetic marijuana include agitation, extreme nervousness, nausea, vomiting, tachycardia (fast, racing heartbeat), elevated blood pressure, tremors and seizures, hallucinations, and dilated pupils.
- Similar to the adverse effects of cocaine, LSD and methamphetamine, bath salt use is associated with increased heart rate and blood pressure, extreme paranoia, hallucinations, and violent behavior, which causes users to harm themselves.
- Key to remember is that a user never knows what they are ingesting —
  as shown by the poison control calls, many are unpleasantly surprised
  by the strong negative impact of these substances on their bodies.



### Sources and Continuing Availability

- According to U.S. Customs and Border Protection, a number of synthetic marijuana and bath salts products originate overseas and are manufactured in the absence of quality controls and devoid of governmental regulatory oversight.
- Law enforcement personnel have also encountered the manufacture of herbal incense products in such places as residential neighborhoods.
- These products and associated synthetic cannabinoids are readily accessible via the Internet.
- The large profits from sales, plus the fact that these chemicals can be easily synthesized to stay one step ahead of control, indicate there is often limited incentive to discontinue retail distribution of synthetic cannabinoid products under the current statutory and regulatory scheme.



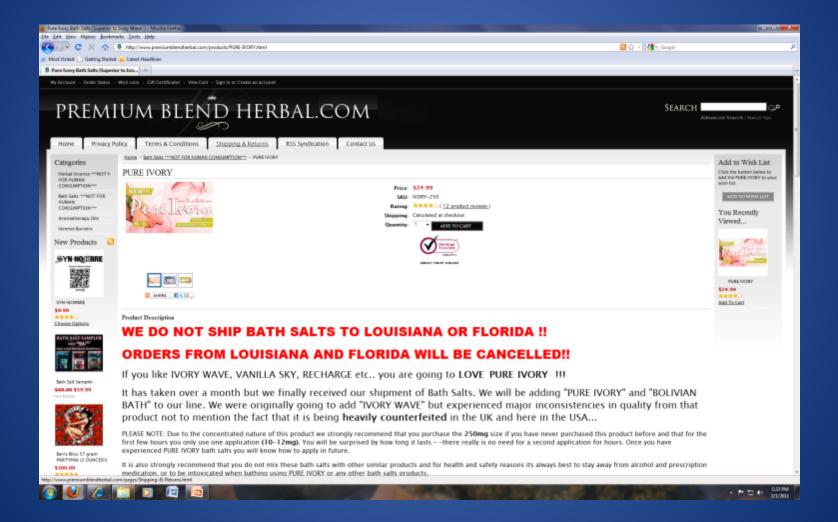
# Government Efforts to Ban Synthetic Drug Products

- The DEA and State drug control agencies have recognized the need to monitor and, when necessary, control these chemicals. The Comprehensive Crime Control Act of 1984 amends the Controlled Substances Act (CSA) to allow the Attorney General to place a substance temporarily in Schedule I when it is necessary to avoid an imminent hazard to the public safety (21 U.S.C. § 811(h)).
- On October 21, 2011, DEA exercised its emergency scheduling authority to control some of the synthetic substances used to manufacture bath salts; these synthetic stimulants are now designated as Schedule I substances.
- In March 2011, five synthetic cannabinoids were temporarily categorized as Schedule I substances under the CSA.
- The temporary scheduling of these five synthetic cannabinoids was due to expire on February 29, 2012, but was extended by DEA until August 29, 2012 or until rulemaking proceedings are completed, whichever comes first.
- At least 38 states have taken action to control one or more of these chemicals.
   Prior to 2010, synthetic cannabinoids were not controlled by any State or at the Federal level.

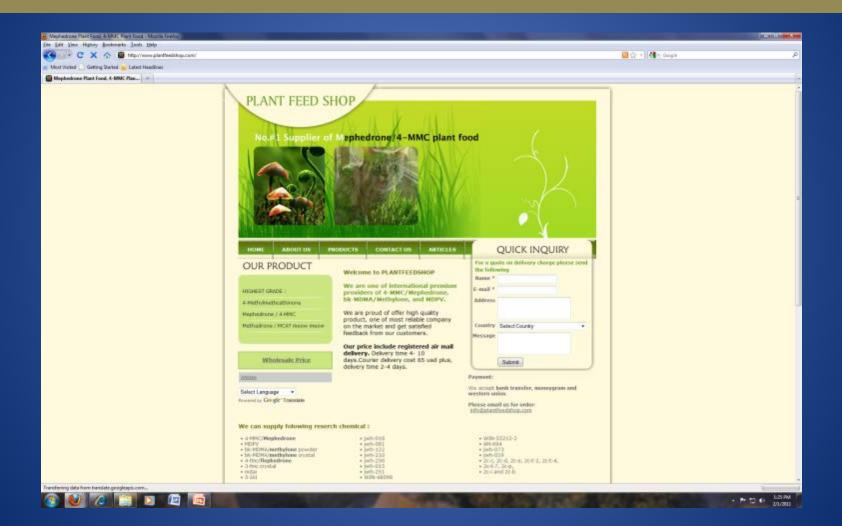
#### **International Efforts**

- Many of the substances used to make synthetic drugs sold in the United States are manufactured and distributed in other countries. The USG has worked bilaterally (with China primarily) and multilaterally to address this threat.
- The U.S. Government engaged with other nations to pass a resolution on synthetic drugs at last month's meeting of the United Nations Commission on Narcotics Drugs in Vienna, Austria.
- The resolution promotes broader international cooperation and, more specifically, calls on the World Health Organization to review synthetic substances for possible international scheduling—the first step in tightening international controls on synthetic drugs. The resolution also calls for:
  - --Improved research, forensic analysis, and monitoring of internet sales;
  - --Countries to address the synthetics threat via emergency scheduling and the use of consumer protection, health, and hazardous substances legislation;
  - --Enhanced criminal sanctions to prevent illicit manufacture and trafficking;
  - --Enhanced collection and sharing of information on these substances through existing and new mechanisms, including consideration of the creation of a UNODC "watch list" that could serve as an international early warning advisory system for new psychoactive substances.

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### PLANTFEEDSHOP.COM



#### Resources

- Drug Policy Information: http://www.whitehouse.gov/ondcp
- Drug Enforcement Administration: http://www.justice.gov/dea/pubs/pressrel/pr030111.html
- National Institute on Drug Abuse: http://www.drugabuse.gov/infofacts/Spice.html
- American Association of Poison Control Centers: http://www.aapcc.org/dnn/default.aspx
- Congressional Research Service: http://www.fas.org/sgp/crs/misc/R42066.pdf

