What's New on the Streets Smoked or Salted

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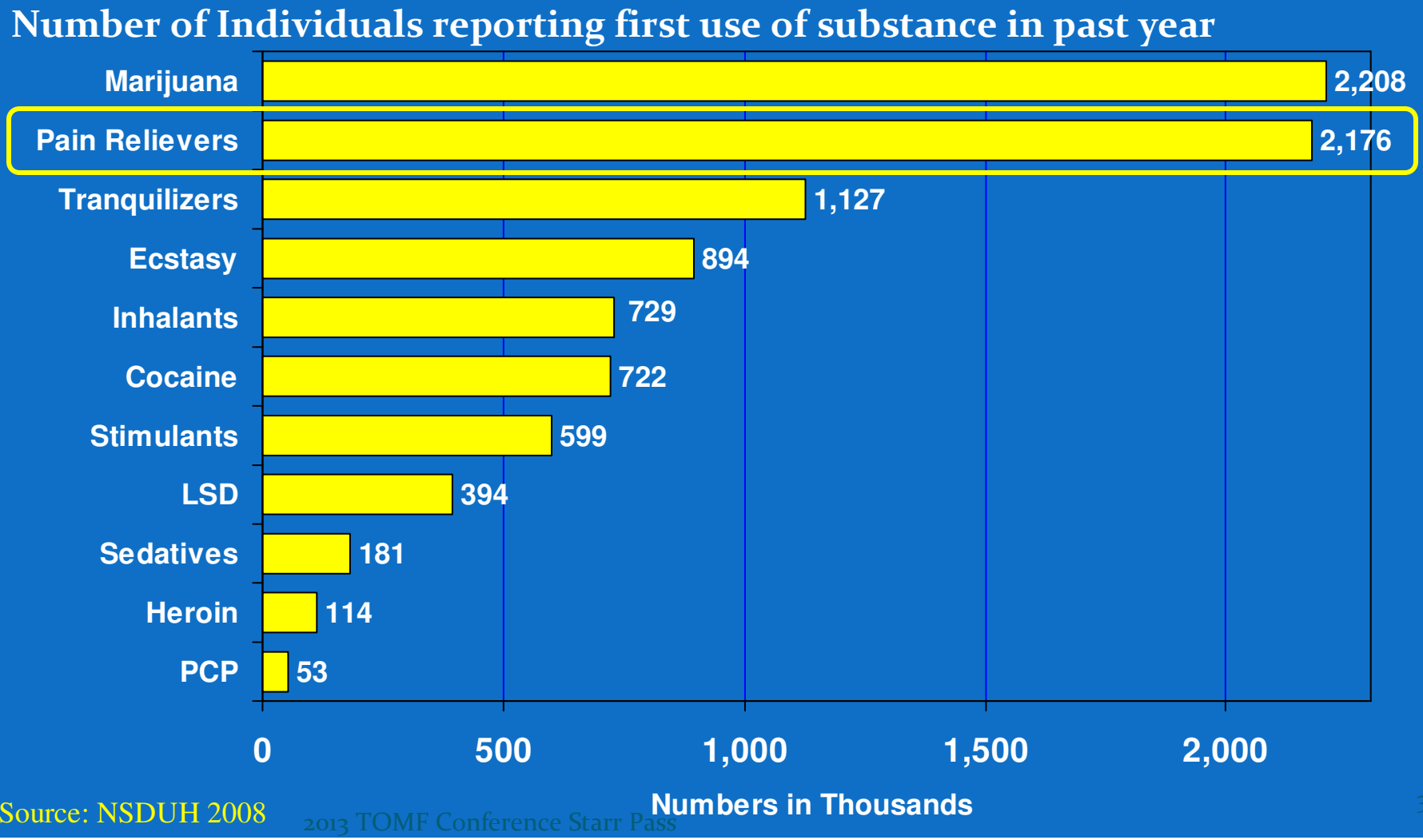
Disclosure

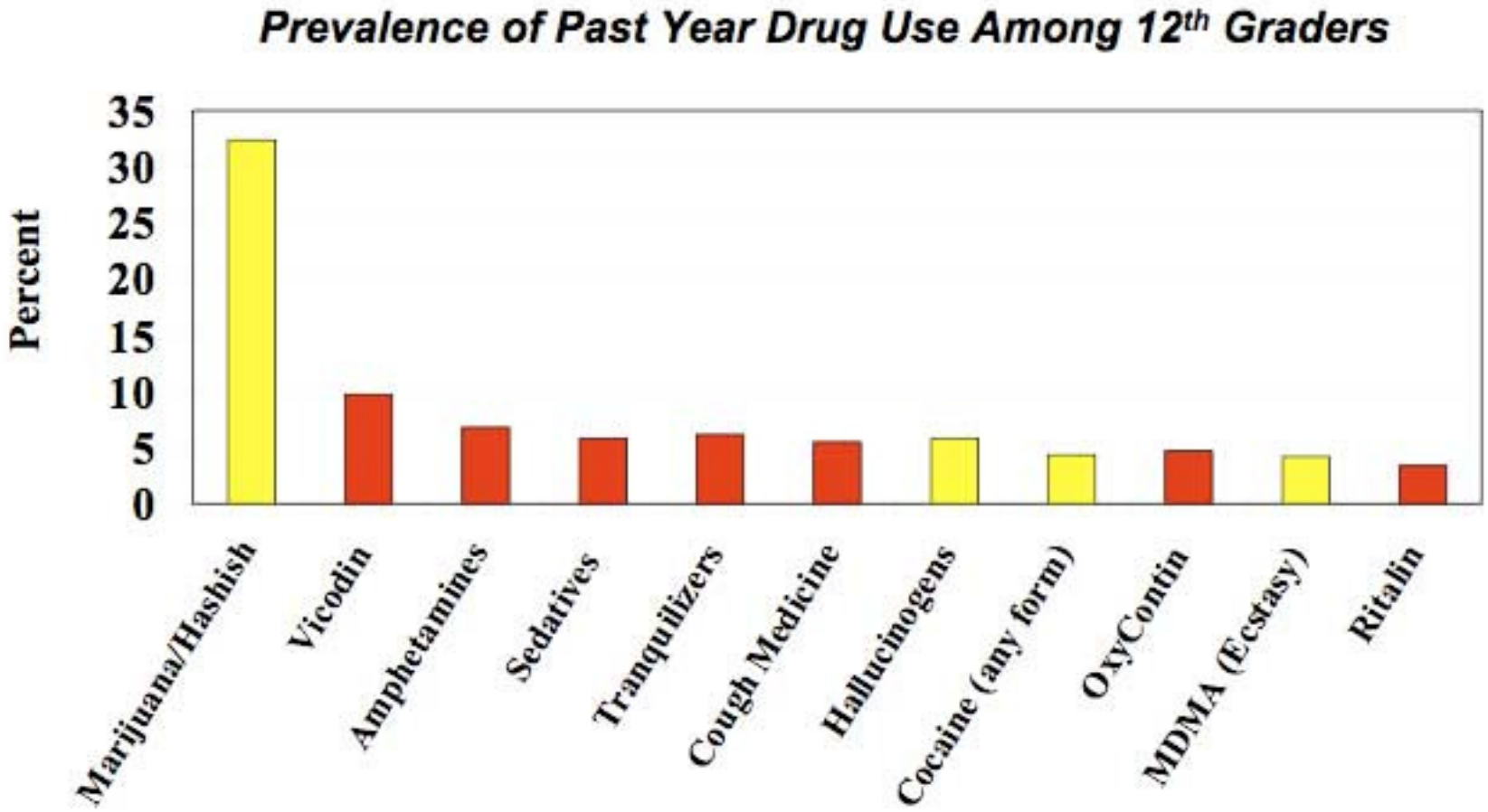
- Anthony Dekker, DO has presented numerous programs on Chronic Pain Management and Addiction Medicine. The opinions of Dr Dekker are not necessarily the opinions of the DoD, Indian Health Service or the USPHS. Dr Dekker has no conflicts to report.

Past Year Initiates for Specific Illicit Drugs among Persons Aged 12 or older: 2008



Source: NSDUH 2008

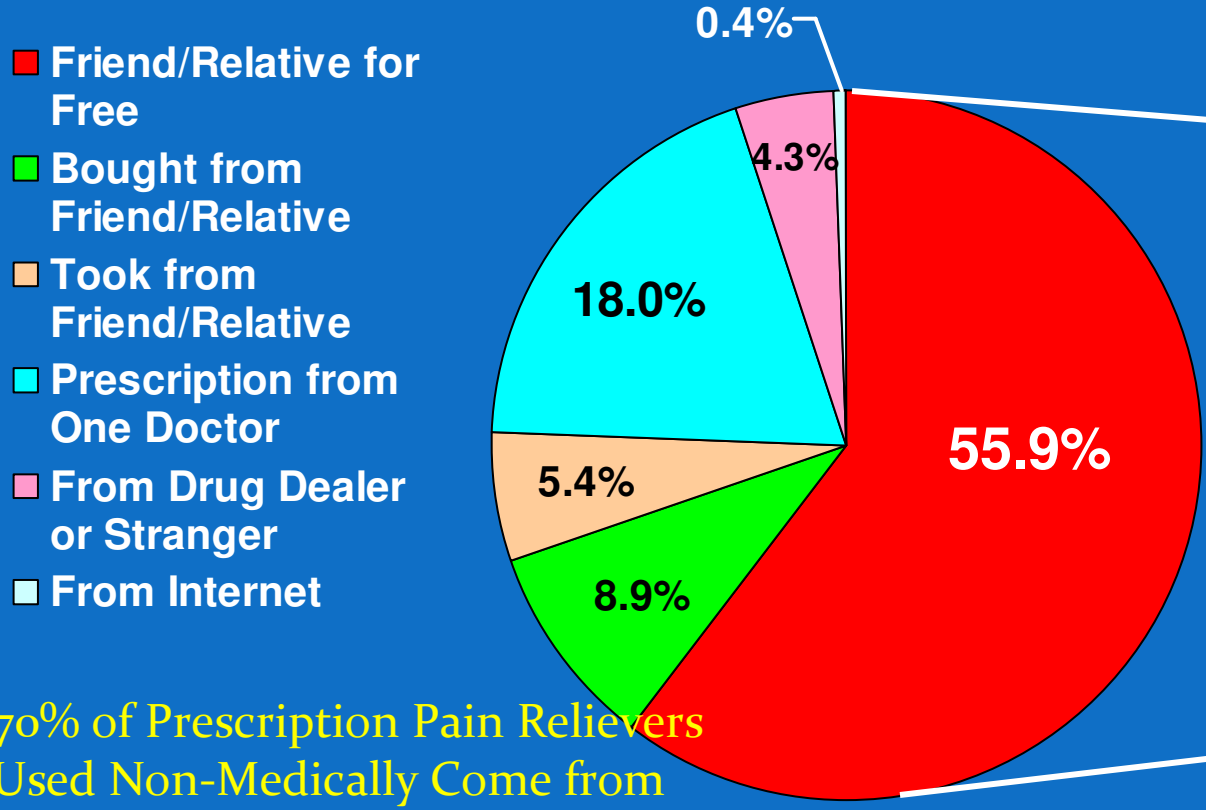
Prescription/Over-the-Counter Drugs Account for 7 Out of 11 of the Most Frequently Abused Drugs



In 2008, 15.4% of 12th graders reported abusing prescription drugs within the past year.

SOURCE: University of Michigan, 2008 Monitoring the Future Study

Source Where Pain Relievers Were Obtained for Most Recent Nonmedical Use among Past Year Users Aged 12 or Older: 2008



81.7% of pain relievers obtained from friend/relative for free were obtained from one doctor. **1.6%** were obtained from a drug dealer.

70% of Prescription Pain Relievers Used Non-Medically Come from Friends or Relatives

Note: Totals may not sum to 100% because of rounding or because suppressed estimates are not shown.
Source: NSDUH 2008

Question

- Is early intoxication at age 15 correlated to an increase in the likelihood of alcohol dependence significantly?
- A. Yes
- B. No

Age at Onset of Alcohol USE

- First use of alcohol at under 15 y.o. predicts a fourfold increase in lifetime risk for alcohol dependence
- Data gathered from US general population
- Each year that first use is delayed results in decreased risk of alcohol dependence
- Native American communities have varying but LOWER age at onset

AI Age at First INTOXICATION

Age <12	No probs 3%	Abuse 5%	Dependence 92%
13	7%	13%	80%
14	11%	19%	70%
15	19%	22%	59%
16	15%	22%	63%
17	32%	22%	46%
18	39%	20%	41%
19	22%	17%	61%
20	29%	43%	29%
21 and up	72%	15%	12%

Age at onset of alcohol DEPENDENCE

- 2001-2002 NIAAA study
- 40.000 face to face interviews
- 4778 alcohol-dependent patients
  - 15% diagnosable <18 y.o.
  - 47% diagnosable <21 y.o.
  - 66% diagnosable <25 y.o.
- Earlier onset predicts LESS likelihood of ever seeking treatment and MORE severe course

Neurobiology of Alcohol

- Ralph Hingson, Boston University School of Public Health and its Youth Alcohol Prevention Center. "This analysis suggests that interventions that delay drinking onset may not only reduce the acute consequences of drinking among youth, but may help reduce alcohol dependence among adolescents and adults"

Findings

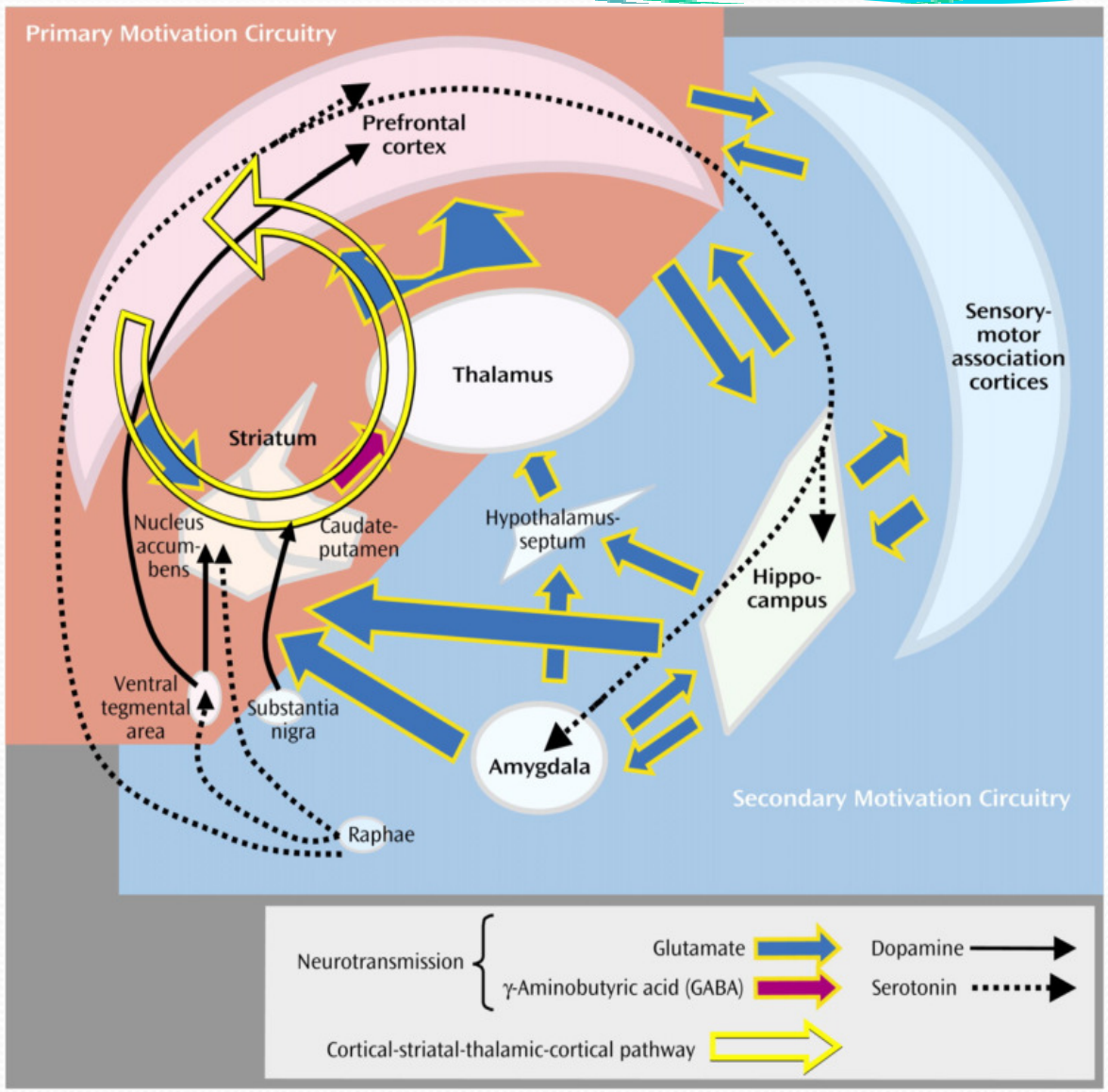
- 47% of who drank before age 14 developed alcohol dependence compared to 9% of those who started after age 21.
- Survey with 43,000 adults
- Reference:
  Hingson, R. W., Heeren, T., Winter, M. R. (2006) Age at Drinking Onset and Alcohol Dependence Age at Onset, Duration, and Severity. Arch Pediatr Adolesc Med., 160(7): 739-746.

What do we mean by effective parenting?

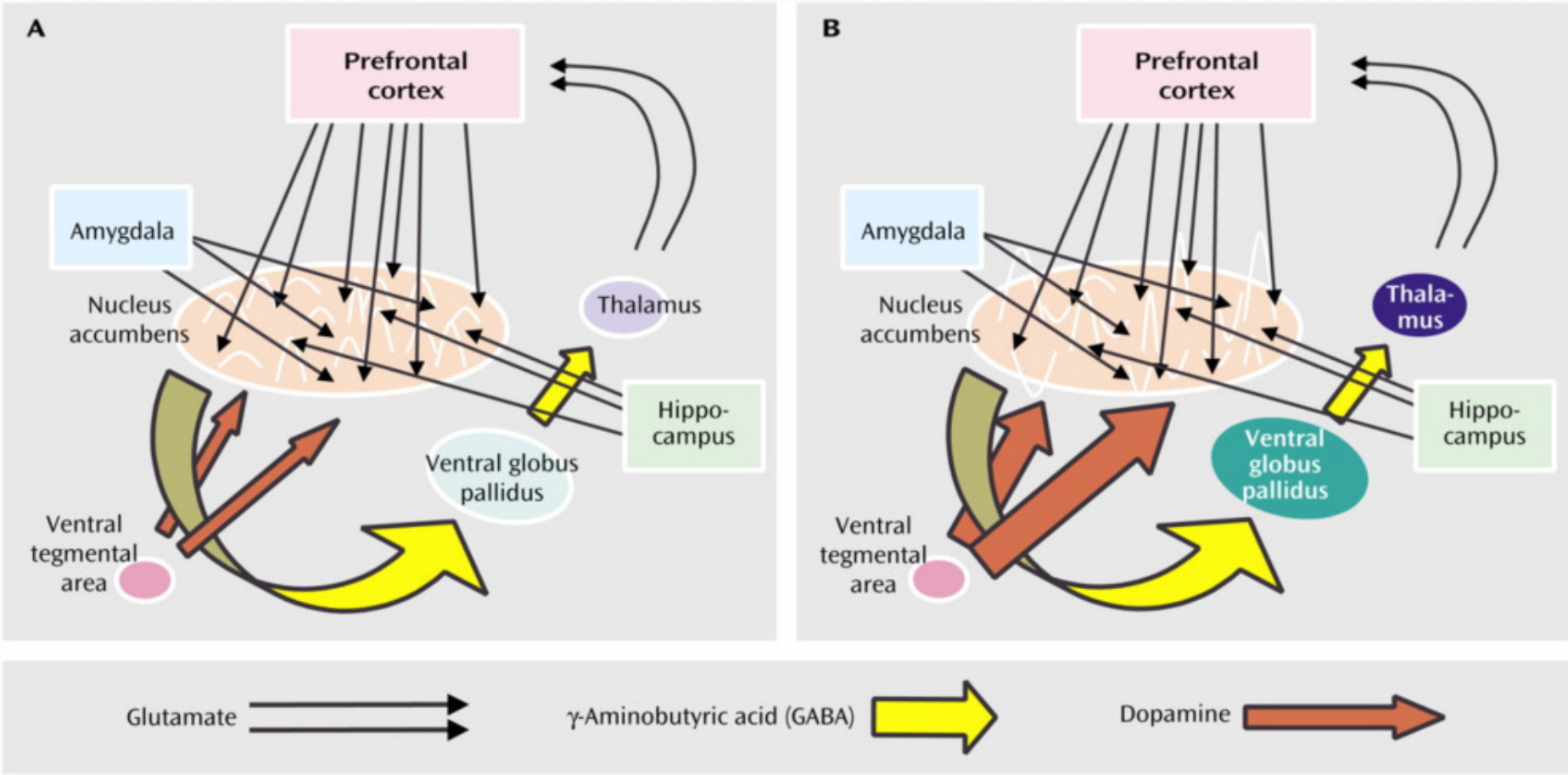
Seven key components

1. Providing basic needs
2. Appropriate role modeling
3. Building a warm and supportive relationship
4. Monitoring and supervision, setting boundaries
5. Maintaining awareness of peer relationships
6. Understanding your child's individual risk level
7. Establishing appropriate parent-child communication

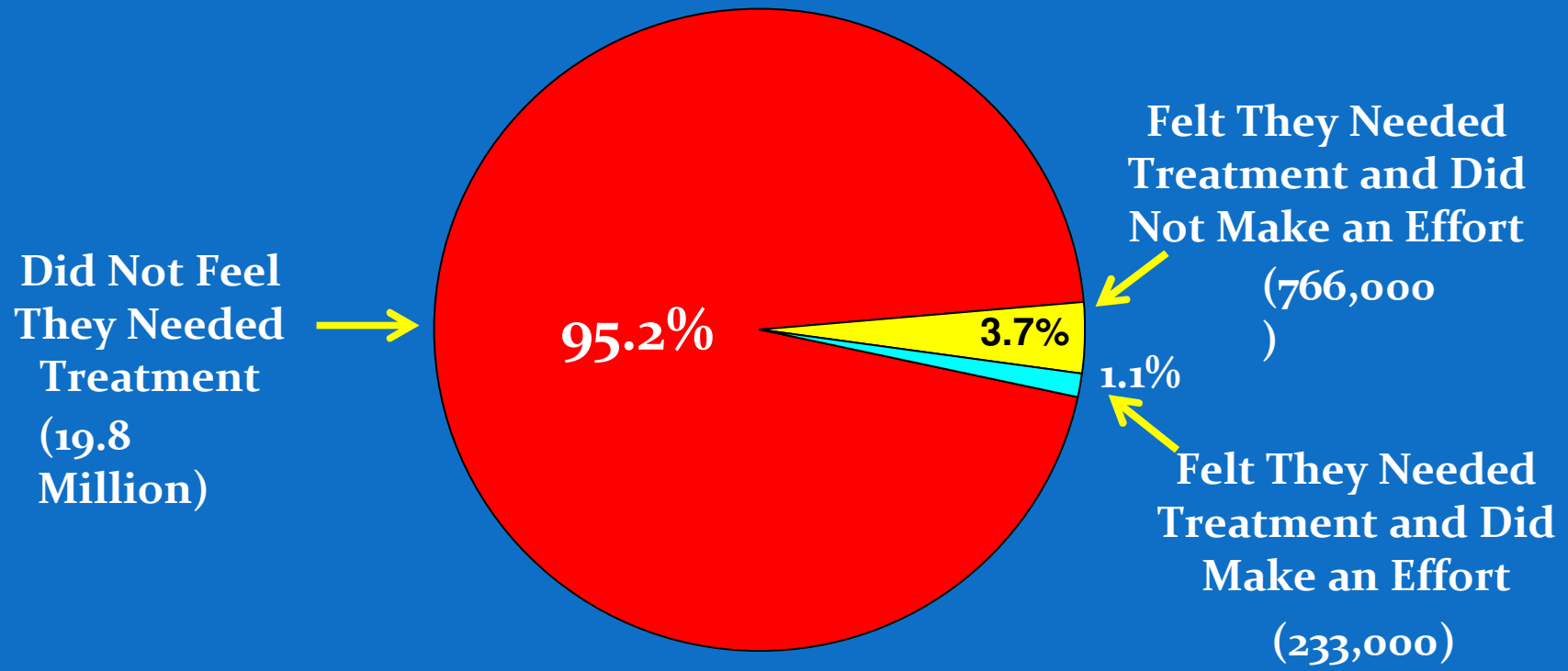
Neurology of Addiction



Developmental Neurocircuitry



Past Year Perceived Need for and Effort Made to Receive Specialty Treatment among Persons Aged 12 or Older Needing But Not Receiving Treatment for Illicit Drug or Alcohol Use: 2008



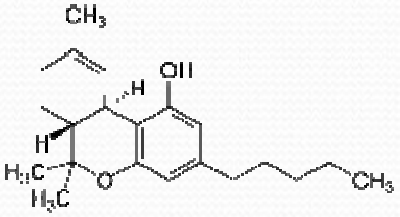
20.8 Million Needing But Not Receiving Treatment for Illicit Drug or Alcohol Use

Source: NSDUH 2008

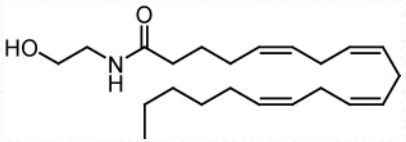
Spice

- **Spice Diamond**
- **Spice Gold**
- **K2**
- **BlondeK2**
- **XXXXXX**
- **Black Box**
- **Smoke “nn”Skulls**
- **Zombie•**
- **Cannabis s**

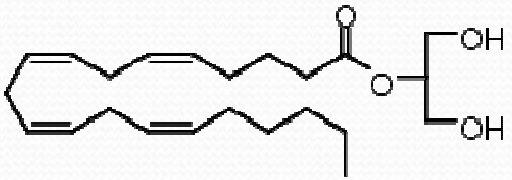
How similar are the synthetic cannabinoids to naturally occurring cannabinoids?



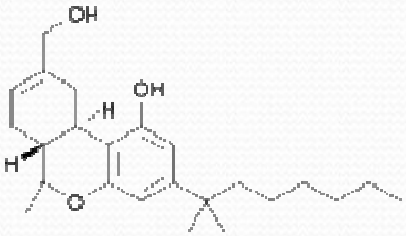
THC



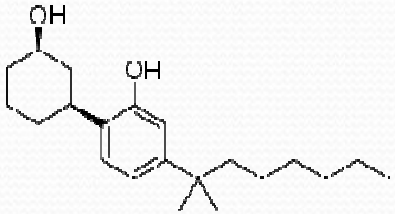
AEA
(Endocannabinoid)



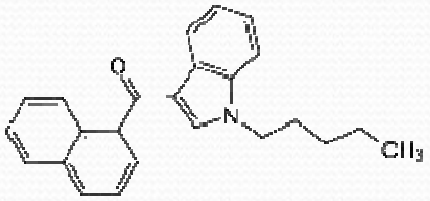
2-AG
(Endocannabinoid)



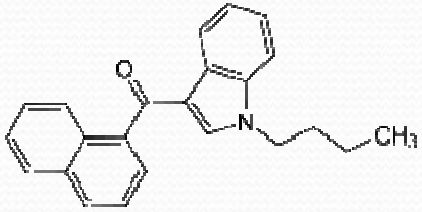
HU-210



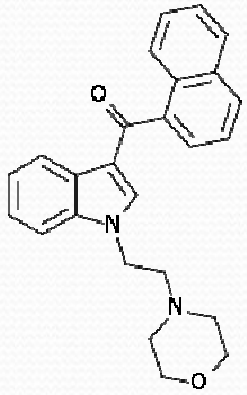
CP 47,497



JWH-018



JWH-073



JWH-200

Product Marketing

- **Sold as similar to cannabis:**
- **Euphoria**
- **Sociability**
- **Anxiolytic**
- **Relaxation**
- **"Natural"**
- **Not for human consumption**

SC Promotion

- **Distribution:**
- **Convenience stores**
- **Gas stations**
- **Head shops**
- **Internet**
- **No age restrictions**

SC use issues

- **Cost: $30-45 per 3gm**
- **•Route: pipes, water pipes, cigarettes, blunt, vaporizer**
- **•Contents: inert plant material sprayed with SCs**
- **–JWH-018, JWH-073, JWH-250, CP-47,497, HU-210**
- **–Inter/Intra-product variability**
- **SC**

SC Symptoms

- **Anxiety**
- **Paranoia**
- **Psychosis**
- **Panic**
- **Headache**
- **Diaphoresis**
- **Seizures**
- **Dry mouth**
- **Vomiting**
- **Tolerance**
- **Physical dependence**
- **DSM dependence**
- **Suicide attempts**
- **Reports of death**
- **Injected conjunctiva**
- **HR increase**
- **Duration 6--12 hr**

SC Pharmacology

- **100s of SCs developed for research over 40 yrs JWH-compounds(Aminoalkylindoles)**
- **JWH-018•JWH-073CP-compounds (Cyclohexylphenols)**
- **CP-47,497•CP-55,940 Classical cannabinoids (Dibenzopyrans)**
- **HU-210•HU-243 Fatty Acid Amide**
- **Oleamide•JWH-200**
- **JWH-250•Cannabicyclohexanol (ECMDDA, 2009)**

SC Pharmacology

- **Detailed pharmacology not yet elucidated**
- **Full CB1agonist vs. partial agonist**
- **Greater potency (dose may be < 1mg)**
- **Lipid soluble**
- **Variable duration**
- **Urinary metabolite excretion, but not readily detectable**
- **(ECMDDA, 2009; Pertwee, 2007)**

SC International Data

- **2006 Available in Europe**
- **2008 Japan forensic analysis: 5 SCs**
- **2009 EU Survey: 21/30 countries with Spice**
- **2011 Internet survey of SC users**
- **• 13 countries; 42 of 50 U.S. states**
- **• 55% past month use**
- **2011 Phone survey cannabis/tobacco users**
- **• 50% ever tried; 24% past month use**
- **Global and U.S. Trends(ECMDDA, 2009; Uchiyama 2010; (Vandrey, 2011; Gunderson, unpublished data)**

Non-treatment seeking case report and survey data:

- **Curiosity**
- **Cannabis Cannabis-like high**
- **Relaxation**
- **A friend was using it**
- **Pass drug test**
- **Cannabis substitute, possible THC cross-tolerance**
- **Often used with other drugs**

Legal Status

- **2009: Restricted in the UK, EU**
- **11/24/2010: DEA Notice of Intent to temporarily ban 5 SCs**
- **3/1/2011: Five : SCs Designated Schedule I**
- **JWH-018, JWH-073, JWH-200, CP-47,497, cannabicyclohexanol**
- **Effective for one year**
- **July 10, 2012 Pres Obama signed the Synthetic Drug Act making these Schedule I**

Poison Control Data

- **Minimal global or national prevalence data**
- **U.S. Poison Control Centers**
- **Synthetic cannabinoids :**
- **– 2009: 13 calls**
- **– 2010: 2915 calls**
- **– 2011: 5083 calls (Sept)**
- **Marijuana :**
- **– 2008: 4009 calls, with 1020 for marijuana alone**
- **Global and U.S. Trends (Wehrman, 2010; AAPCC, 2011; Bronstein, 2009)**

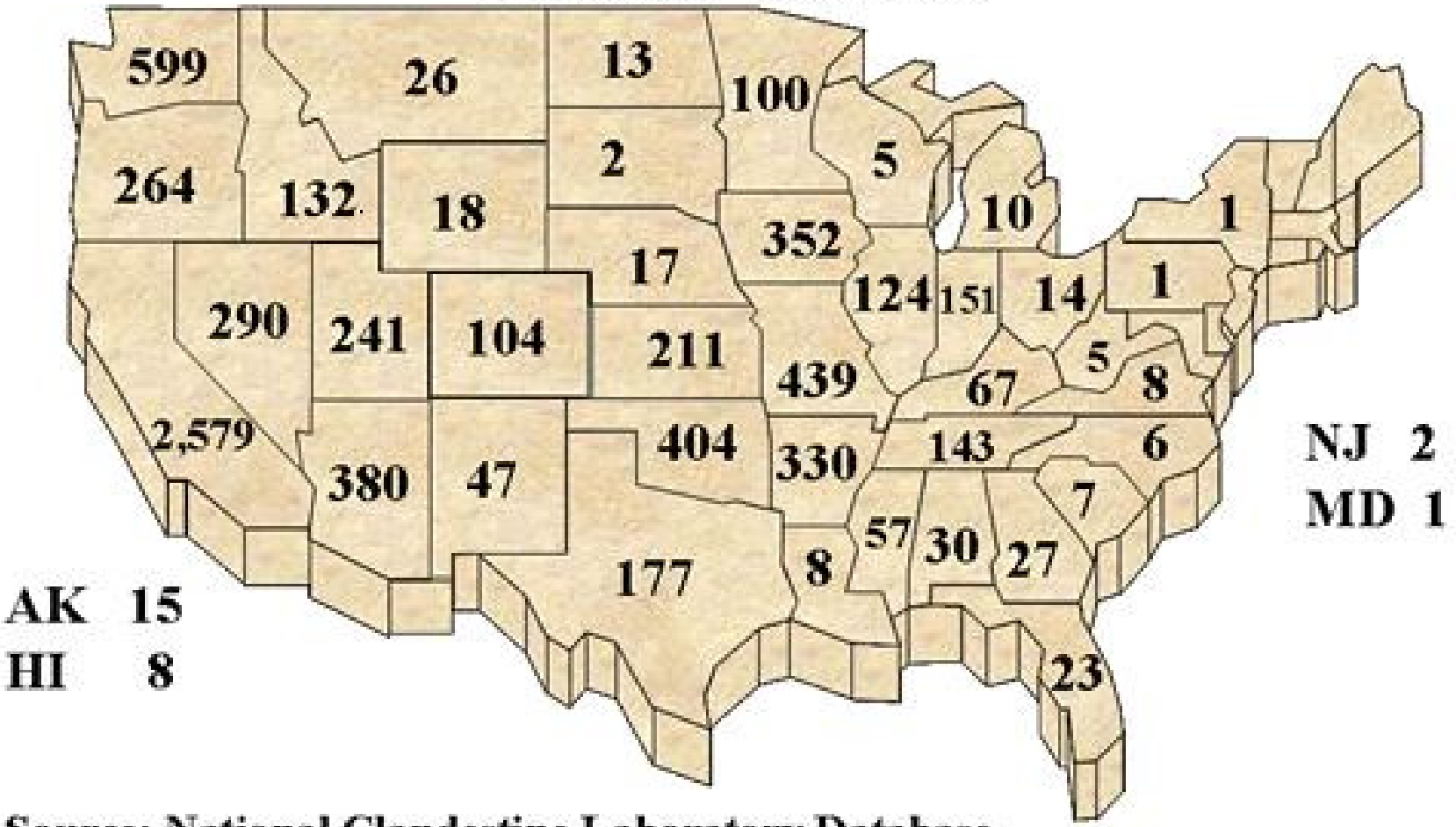
16 yr old with acute mania

- ER presentation with agitation and mania
- Parents admit friends revealed they were smoking AK-47 a legal synthetic cannabinoid from a local smoke shop
- Blood alcohol was 0.08
- Will the UDS be positive or negative?
- Will the JWH-018 LCMSMS be positive or negative?

Total of All Meth Clandestine Laboratory Incidents

Including Labs, Dumpsites, Chem/Glass/Equipment

Calendar Year 1999



Source: National Clandestine Laboratory Database

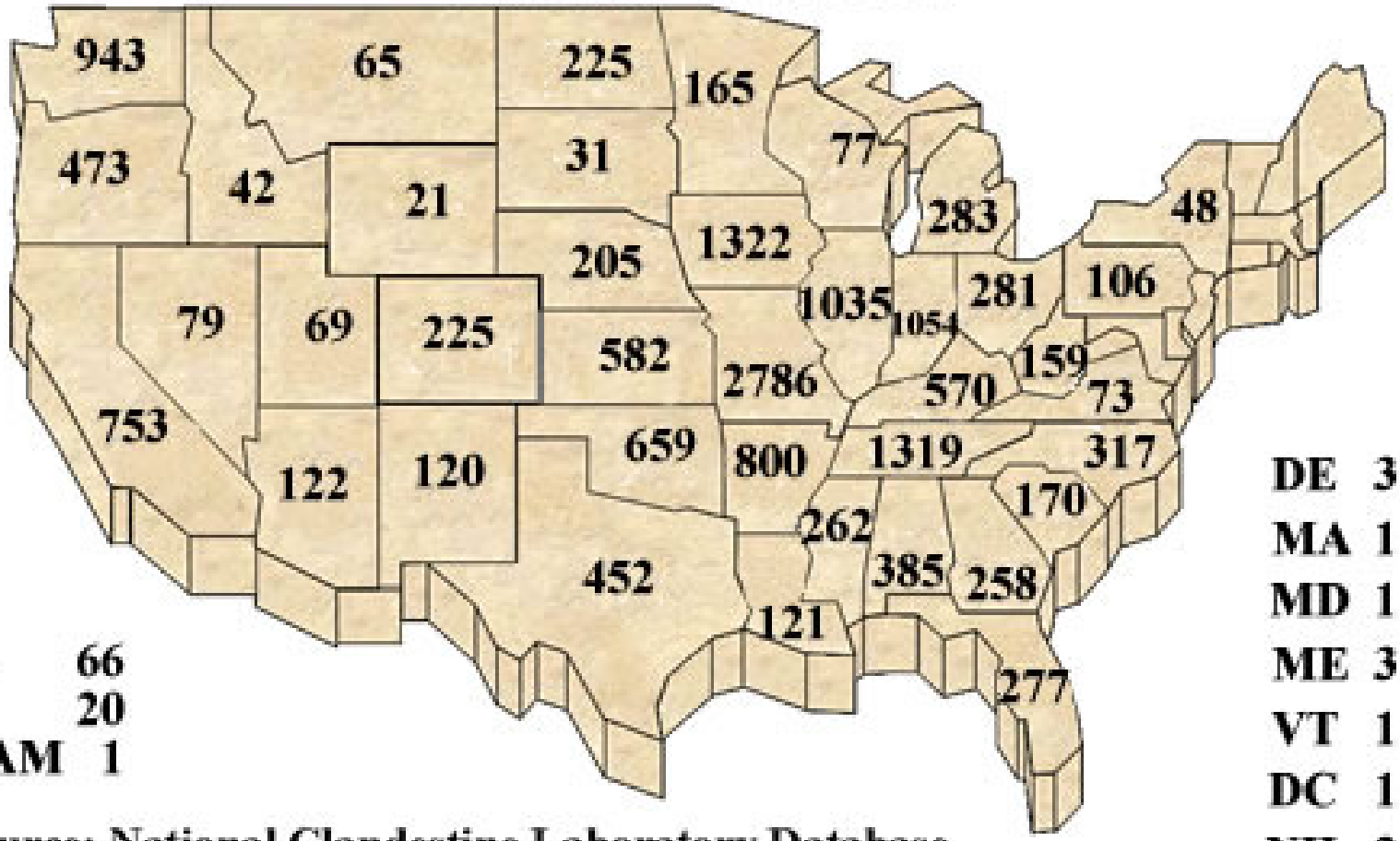
Total: 7,438 / 43 States Reporting

Dates: 01/01/99 to 12/31/99

Total of All Meth Clandestine Laboratory Incidents

Including Labs, Dumpsites, Chem/Glass/Equipment

Calendar Year 2004



AK	66
HI	20
GUAM	1

DE	3
MA	1
MD	1
ME	3
VT	1
DC	1
NH	2

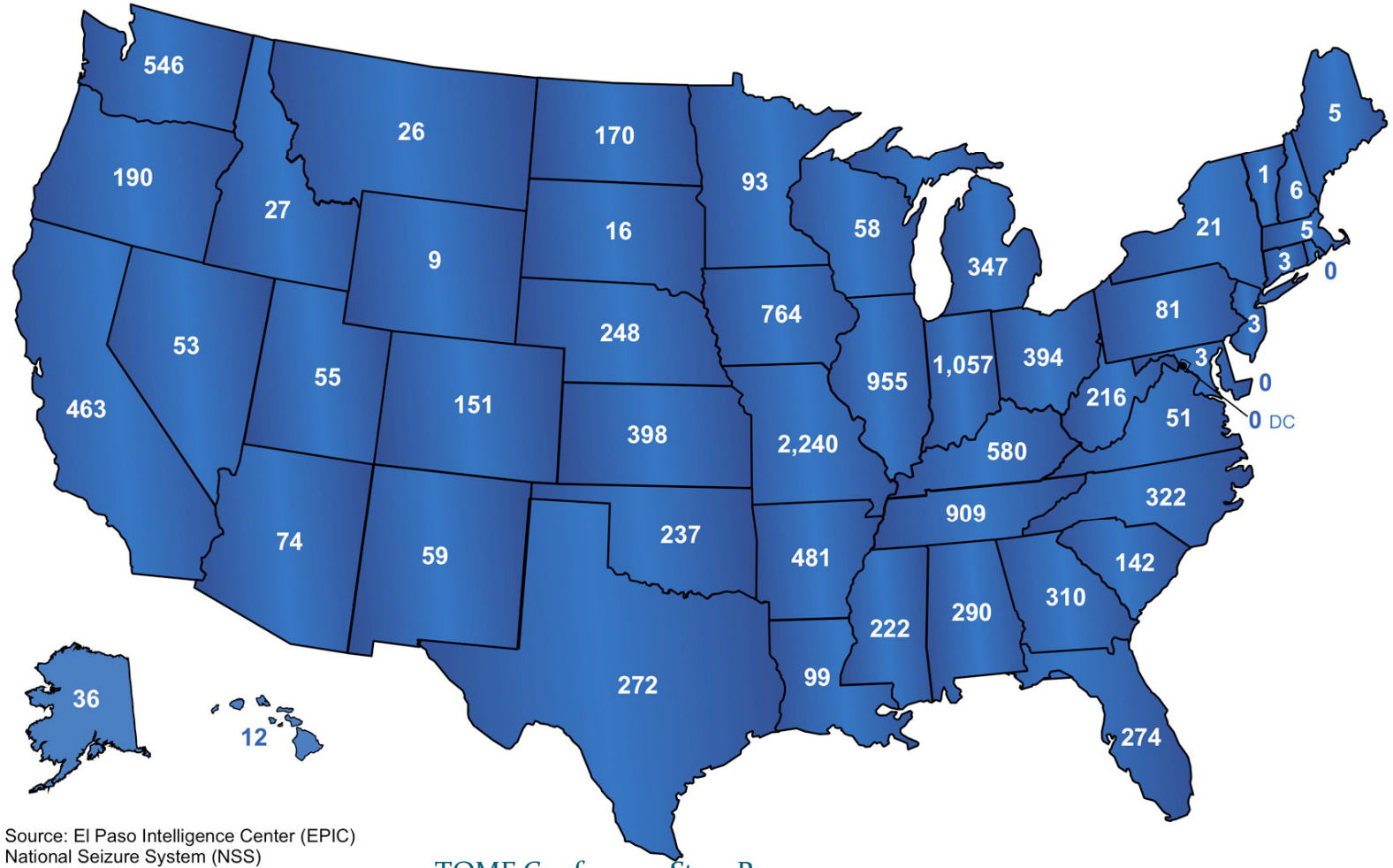
Source: National Clandestine Laboratory Database

Total: 17,033

Dates: 01/01/04 to 12/31/04

Calendar Year 2005
Total: 12,974

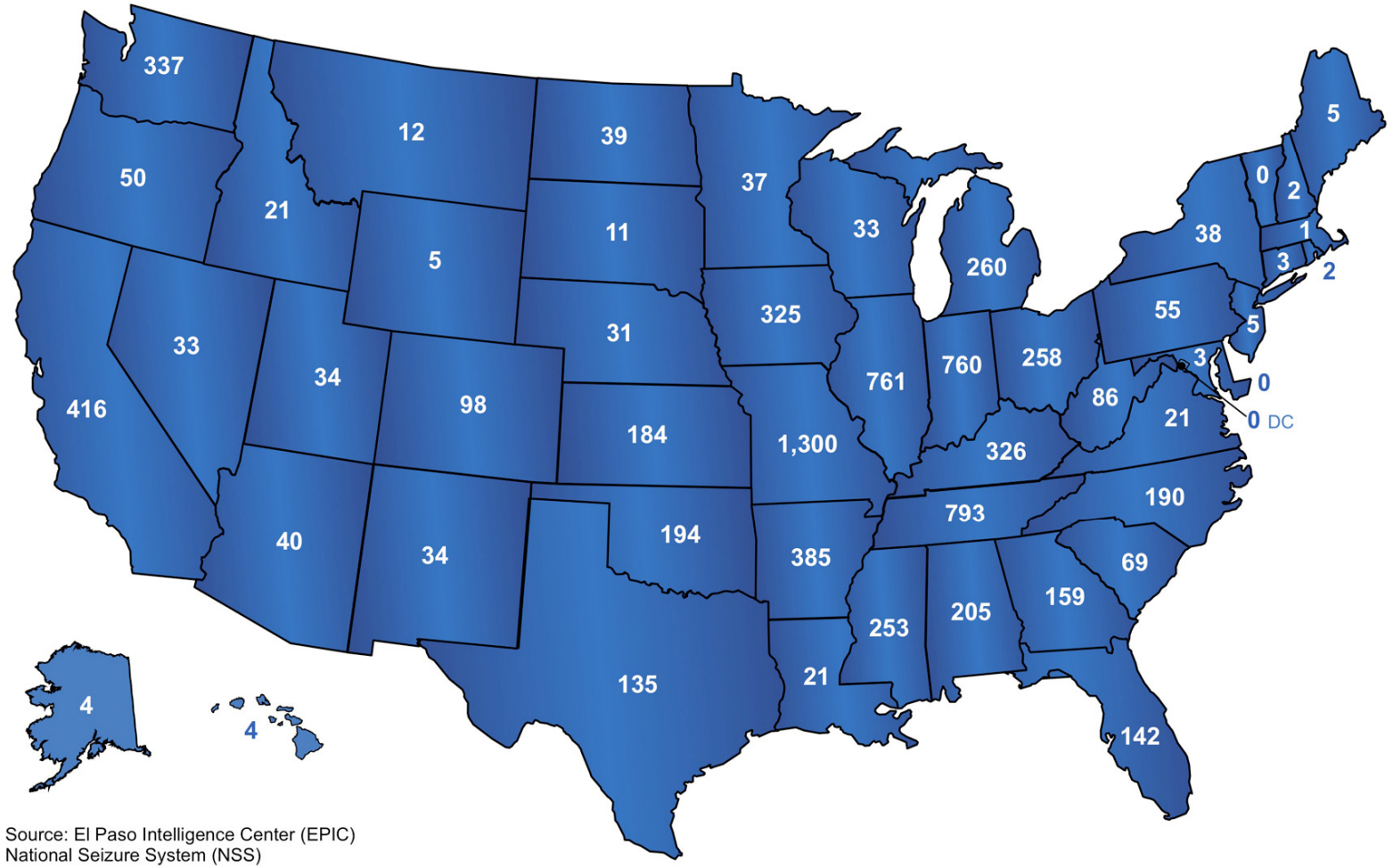
Total of All Meth Clandestine Laboratory Incidents Including Labs, Dumpsites, Chem/Glass/Equipment



Source: El Paso Intelligence Center (EPIC)
National Seizure System (NSS)

Calendar Year 2006
Total: 8,181

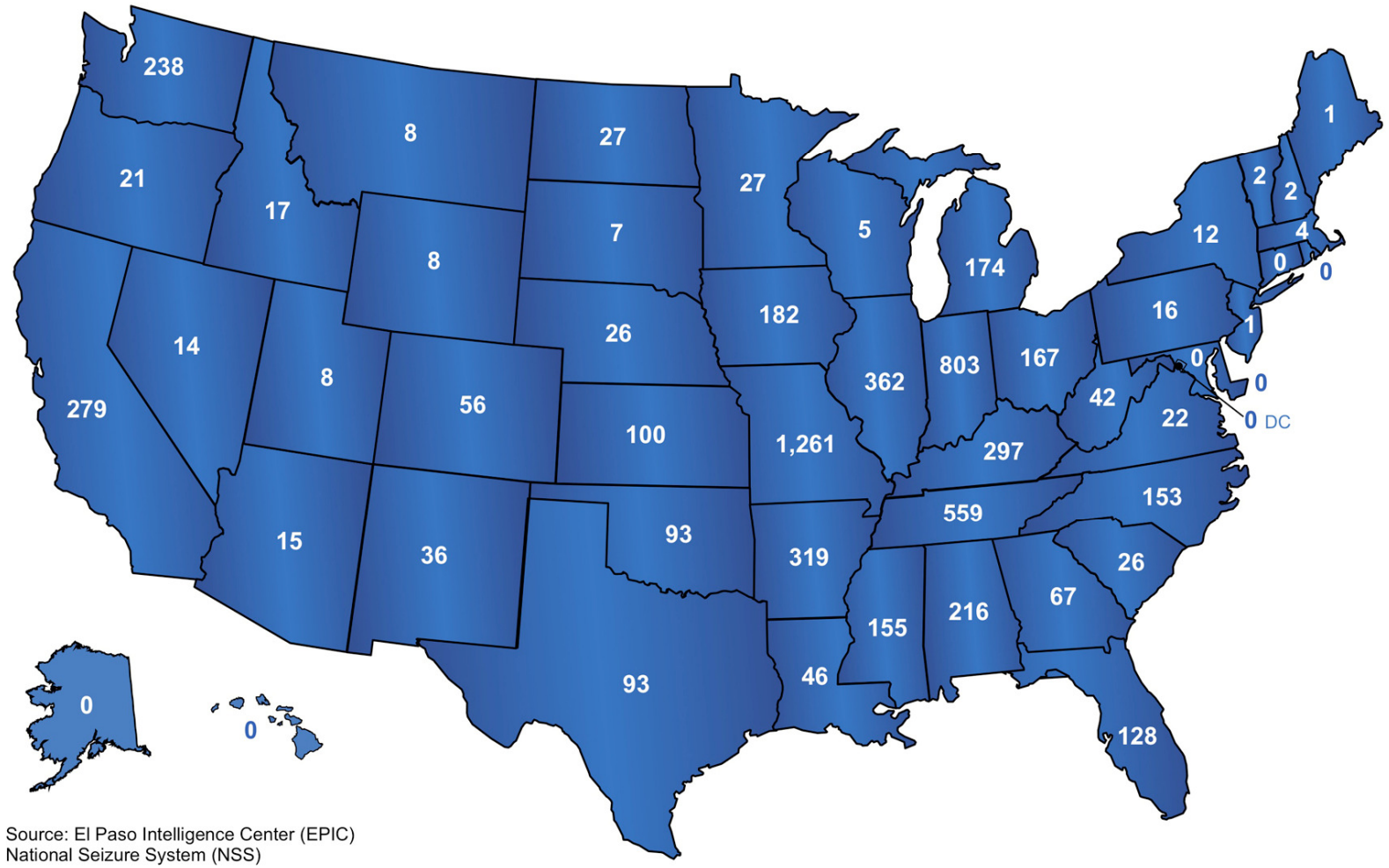
Total of All Meth Clandestine Laboratory Incidents Including Labs, Dumpsites, Chem/Glass/Equipment



Source: El Paso Intelligence Center (EPIC)
National Seizure System (NSS)

Calendar Year 2007
Total: 6,095

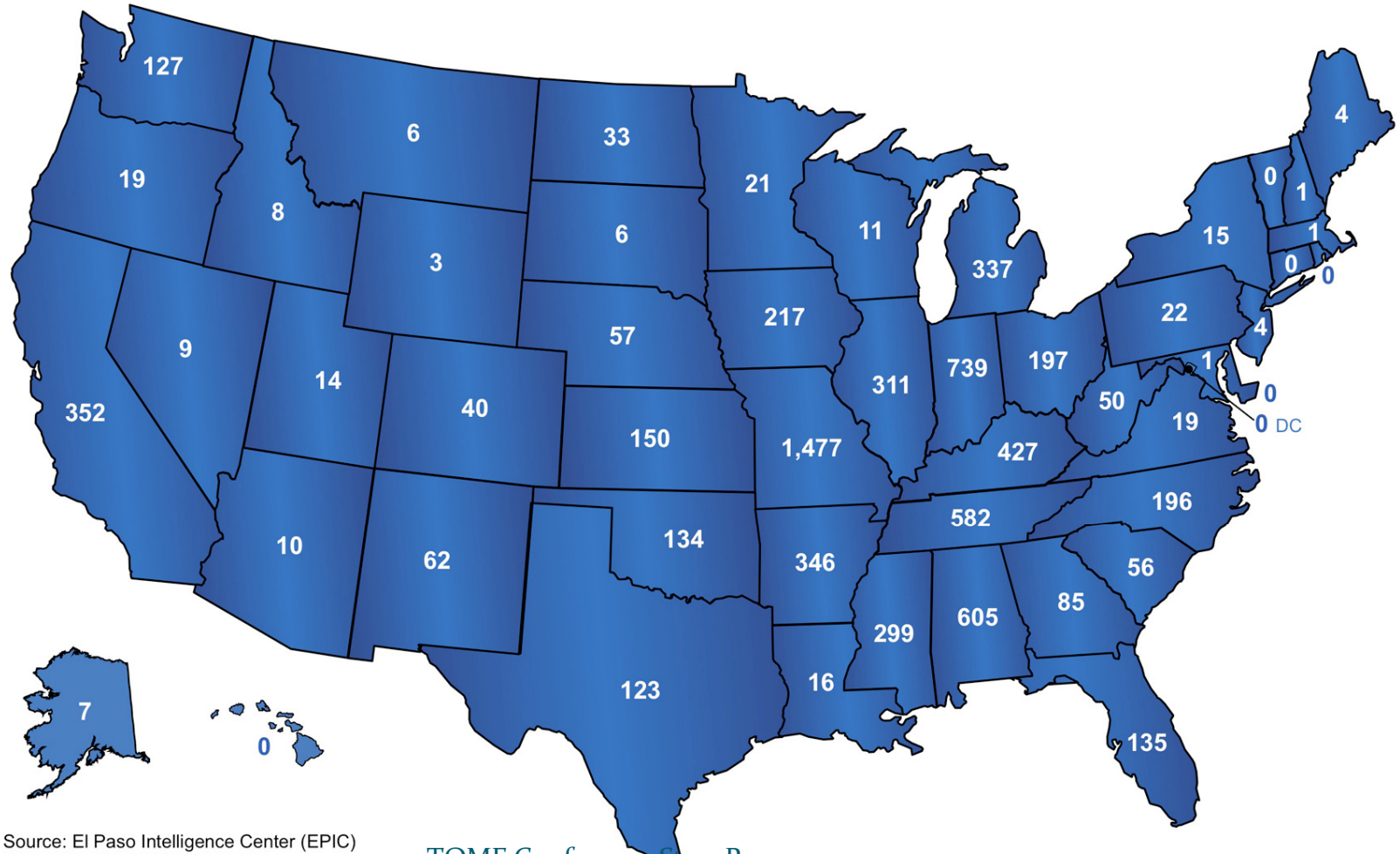
Total of All Meth Clandestine Laboratory Incidents Including Labs, Dumpsites, Chem/Glass/Equipment



Source: El Paso Intelligence Center (EPIC)
National Seizure System (NSS)

Calendar Year 2008
Total: 7,334

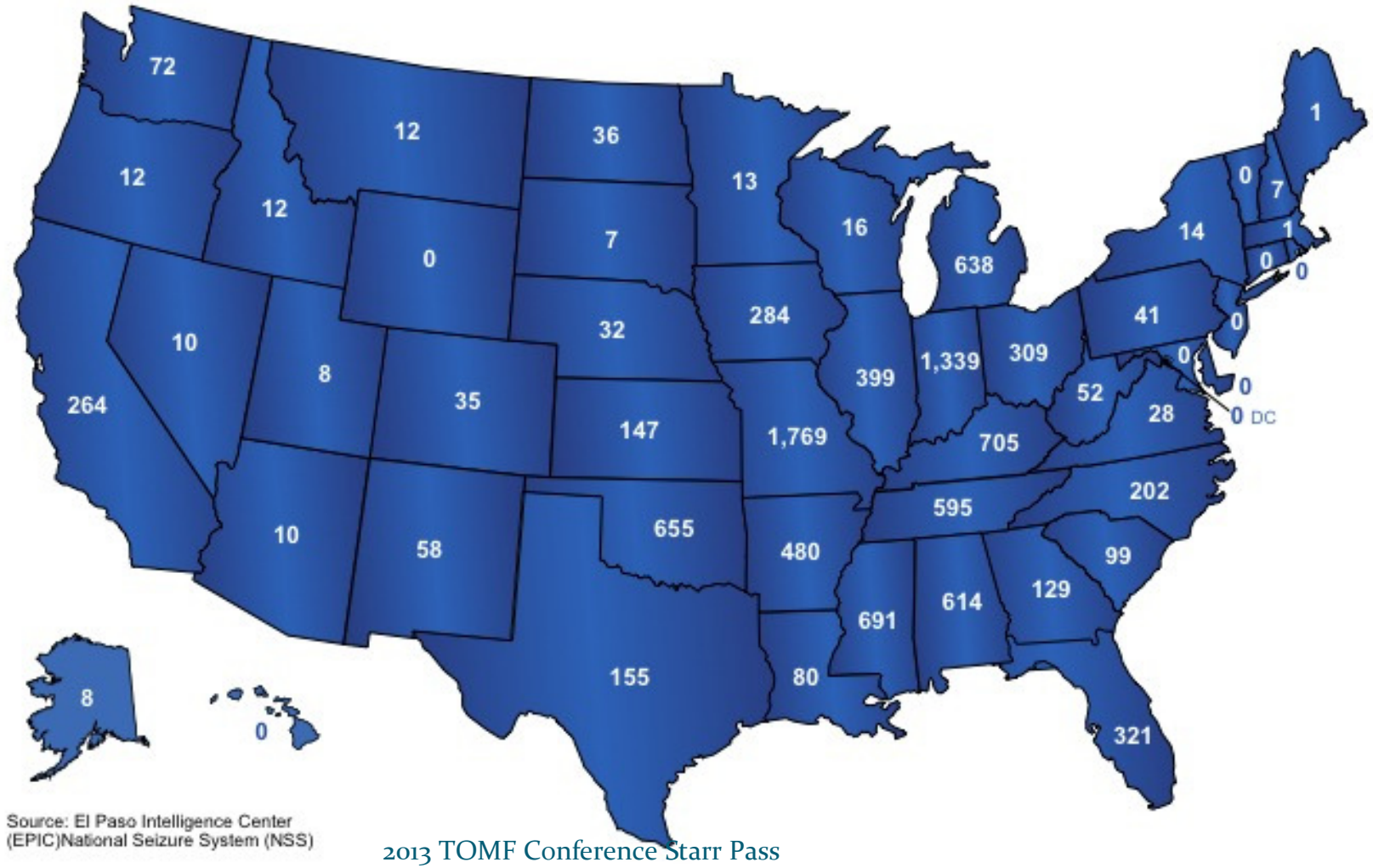
Total of All Meth Clandestine Laboratory Incidents Including Labs, Dumpsites, Chem/Glass/Equipment



Source: El Paso Intelligence Center (EPIC)
National Seizure System (NSS)

Calendar Year 2009
Total: 10,360

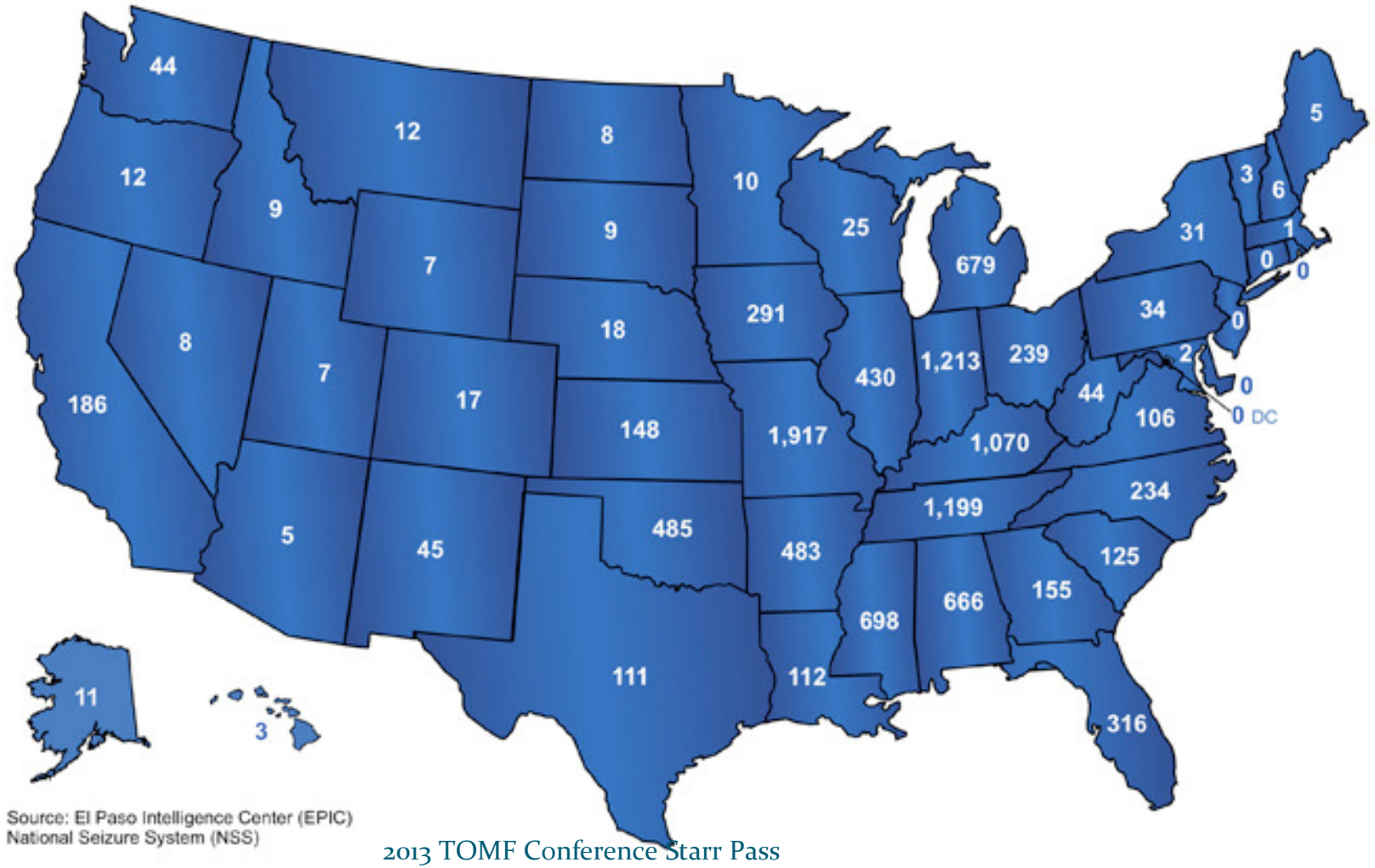
Total of All Meth Clandestine Laboratory Incidents Including Labs, Dumpsites, Chem/Glass/Equipment



Source: El Paso Intelligence Center (EPIC)National Seizure System (NSS)

Calendar Year 2010
Total: 11,239

Total of All Meth Clandestine Laboratory Incidents Including Labs, Dumpsites, Chem/Glass/Equipment



Source: El Paso Intelligence Center (EPIC)
National Seizure System (NSS)

Bath Salts

- **Numerous brands, Plant Food, Stain Remover**
- **Cloud 9**
- **Ivory Wave**
- **Super Coke**
- **Mtv**
- **Energy-1 (NRG1)**
- **TranQuility**
- **White Lightning**
- **Charge Plus**
- **“Not for human consumption”**


WHITE
DOVE

Synthetic Stimulants

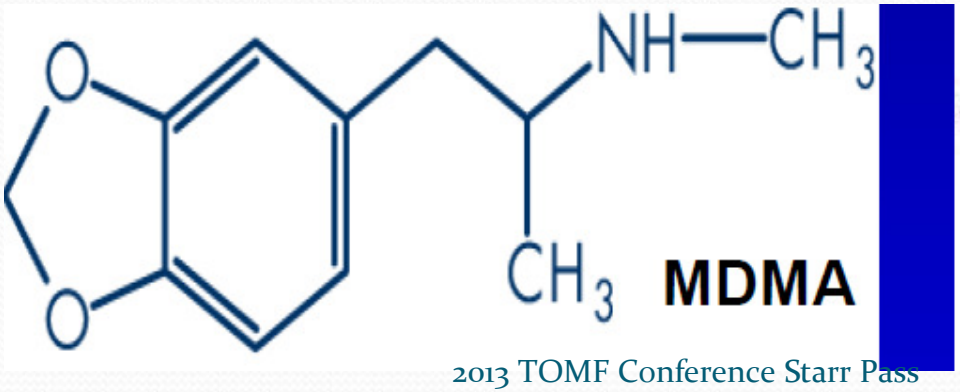
- **$20-30 per packet/jar**
- **Cathinone derivatives-Khat**
- **– Mephedrone**
- **– MDPV**
- **– Methylone**
- **- Intra-product variability**
- **– Other stimulants**
- **– Lidocaine/benzocaine**

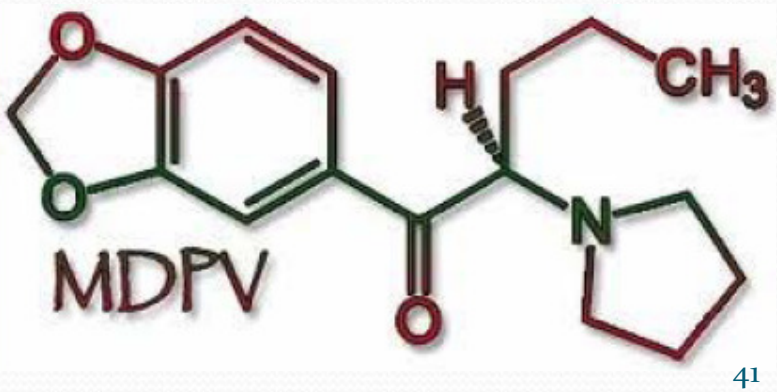
BS Pharmacology

- **NE-DA reuptake inhibitor**
- **Similar effect as MA/MDMA**
- **Reportedly shorter duration**
- **"High" 3-4 hrs**
- **Physical effects: 6 6-8 hrs**
- **Mean 20-250mg/dose**
- **Up to 5gm/binge**
- **UDS not readily detected**

MDPV

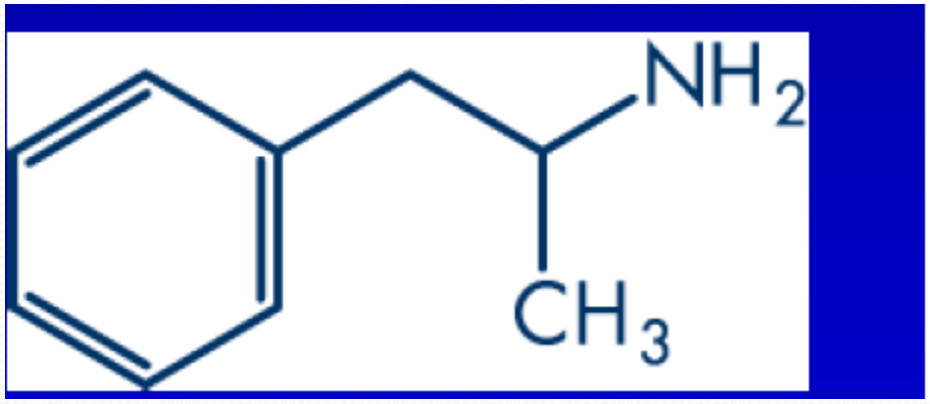
- **3,4-methylene-dioxypyrovalerone**
- **Found in 55% of seized forensic samples**
- **Pyrovalerone developed for chronic fatigue**

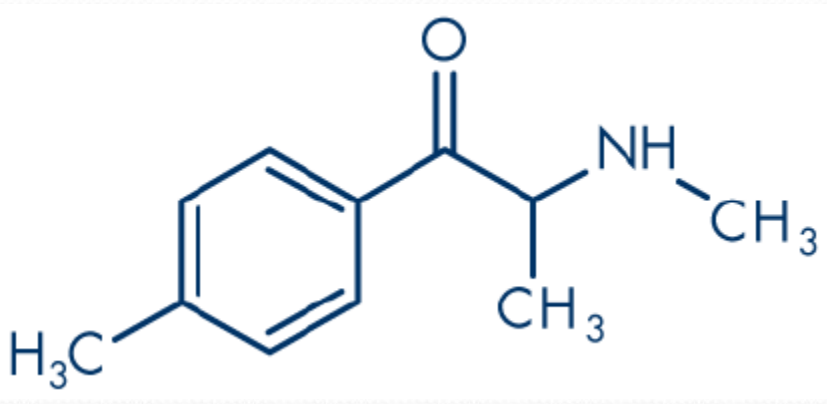




Mephedrone

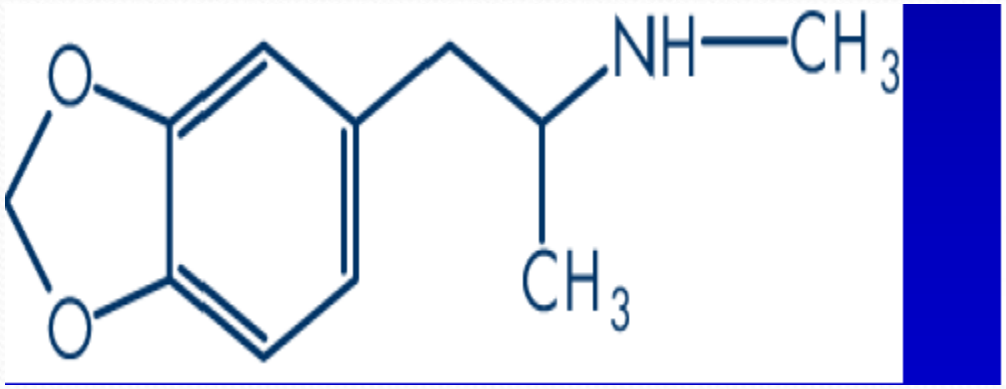
- **4-methylmethcathinone (4-MMC)**
- **Meow Meow, MCAT, Miaow**
- **23% of seized samples (NFLIS)**
- **Amphetamine vs Mephedrone**

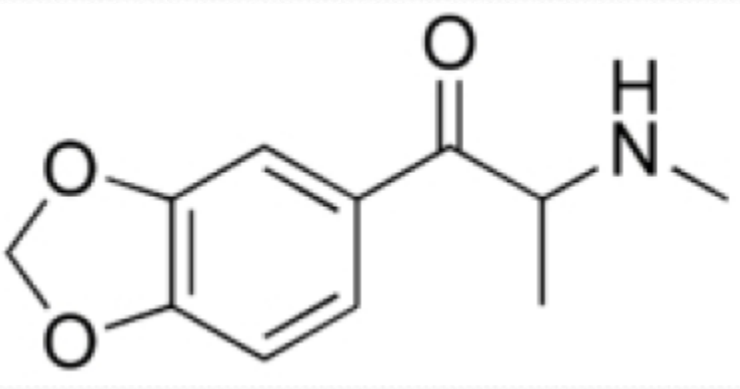




Methylone

- **3,4-methylenedeoxy-N-methylcathinone**
- **Developed for depression/parkinsons**
- **20% of seized samples**
- **MDMA vs Methylone**





Reasons to Use

- **Stimulant substitute**
- **Euphoria**
- **Sociability**
- **Sexual Arousal**
- **Music Appreciation**
- **Hallucinations**
- **Novelty**

US Trends for Bath Salts

- **No data on prevalence of use**
- **U.S. Poison Control Centers**
- **Bath Salts: Year # calls**
  - **2009 0**
  - **2010 292**
  - **2011 4137***
- *** Through July 2011**

Adverse Effects

- **Agitation**
- **Anxiety**
- **Paranoia**
- **Psychosis**
- **Panic**
- **Headache**
- **Suicidal**
- **Dry mouth**
- **Insomnia**
- **Dependence**
- **Palpitations**
- **BP/HR/temp increase**
- **Diaphoresis**
- **Dilated pupils**
- **Epistaxis**
- **Hyperreflexia**
- **Seizures**
- **Bruxism**
- **Mortality**

Legal Timeline

- **2008-2010 Banned in many European counties**
- **2011 Widespread U.S. State legislation**
- **Armed Services Ban**
- **DEA Notice of Intent to Temporarily Ban (Sept)However, many new synthetic cathinone derivatives**
- **Mephedrone, MDPV and Methylone all Schedule I effective July 10, 2012**

Kratom

- Illegal in Thailand
- Mu receptor agonist and a stimulant
- Currently legal in the US
- Over 50% of the toxicology of a major lab screening patients with addictions were positive. Only two labs testing as of January 2013.