

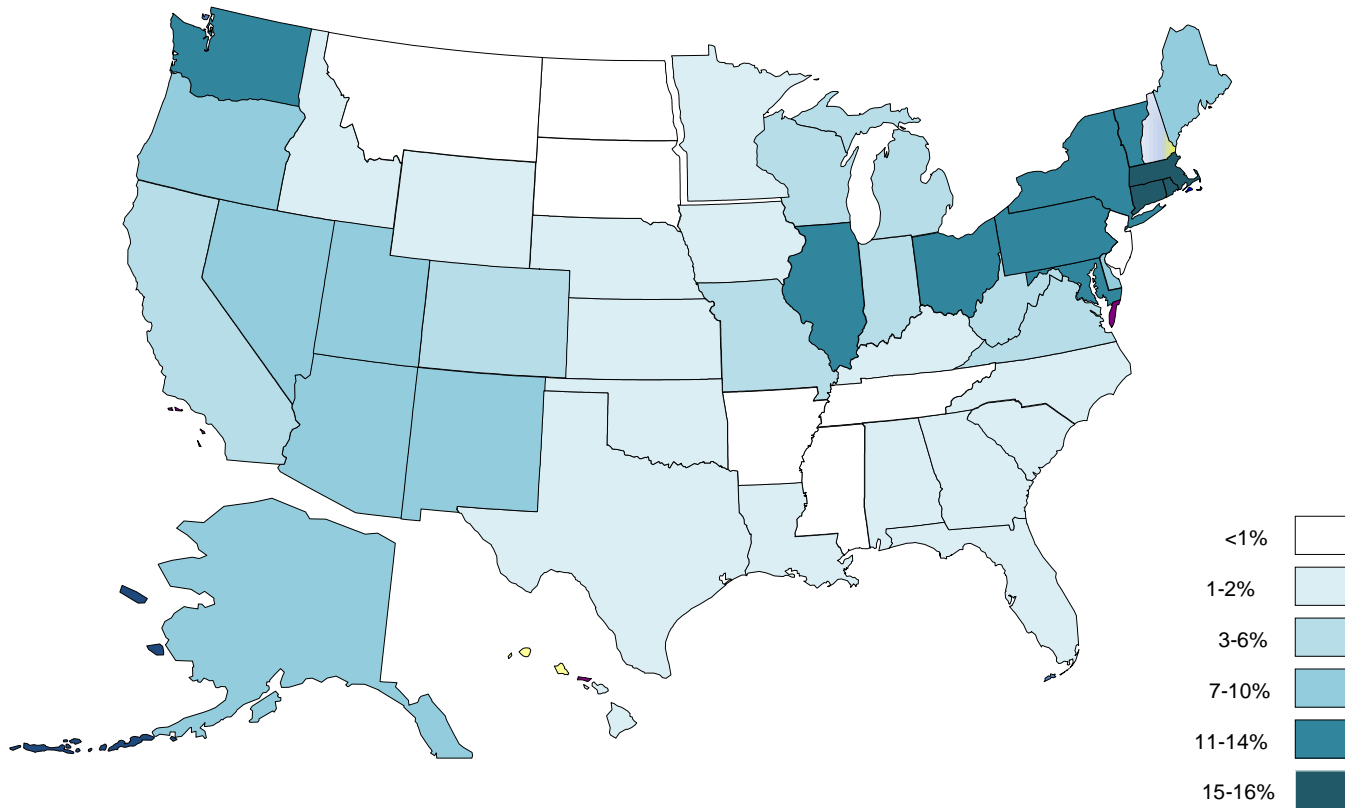


THE UNIVERSITY OF TEXAS AT AUSTIN
SCHOOL OF SOCIAL WORK

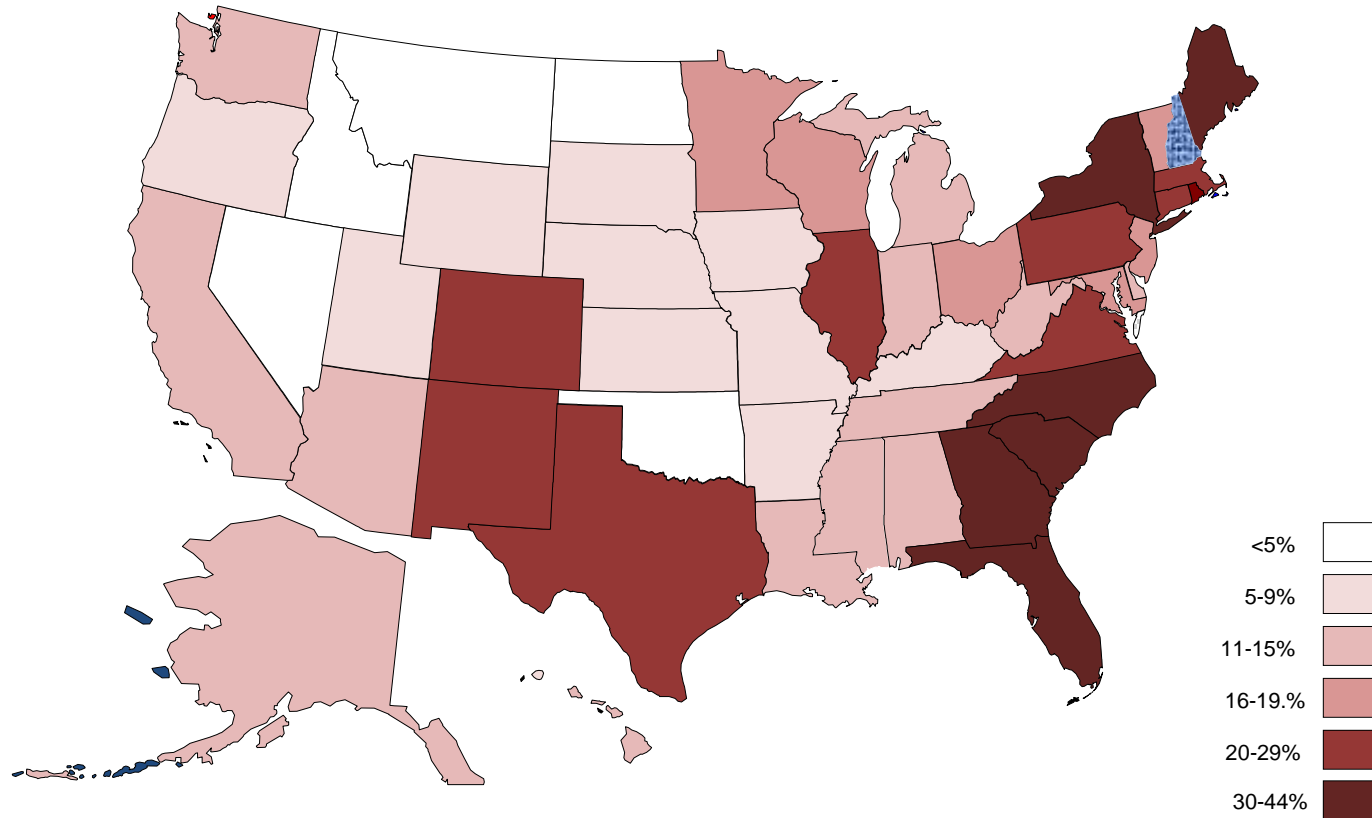
From Marijuana to Meth: Drug Use Trends in the US Today

Jane Maxwell, Ph.D.
Center for Social Work Research
The University of Texas at Austin

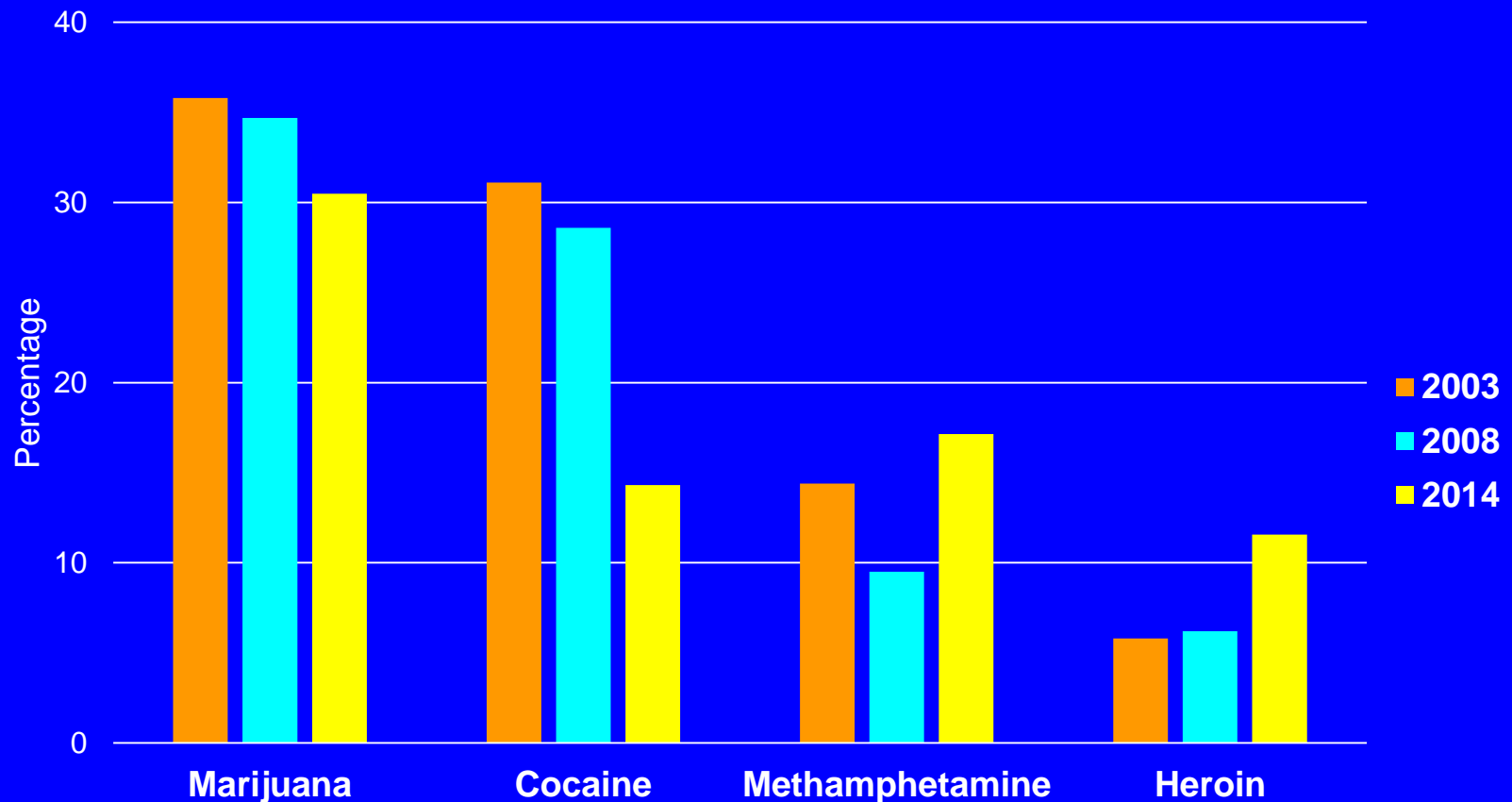
Percentage of Drug Items Identified as Heroin by Tox Labs: NFLIS 2010



Percentage of Drug Items Identified as Cocaine by Tox Labs: NFLIS 2010



Drugs Most Commonly Identified by U.S. Tox Labs Reporting to NFLIS: 2003 vs. 2008 vs. 2014





Mexican Black Tar Heroin

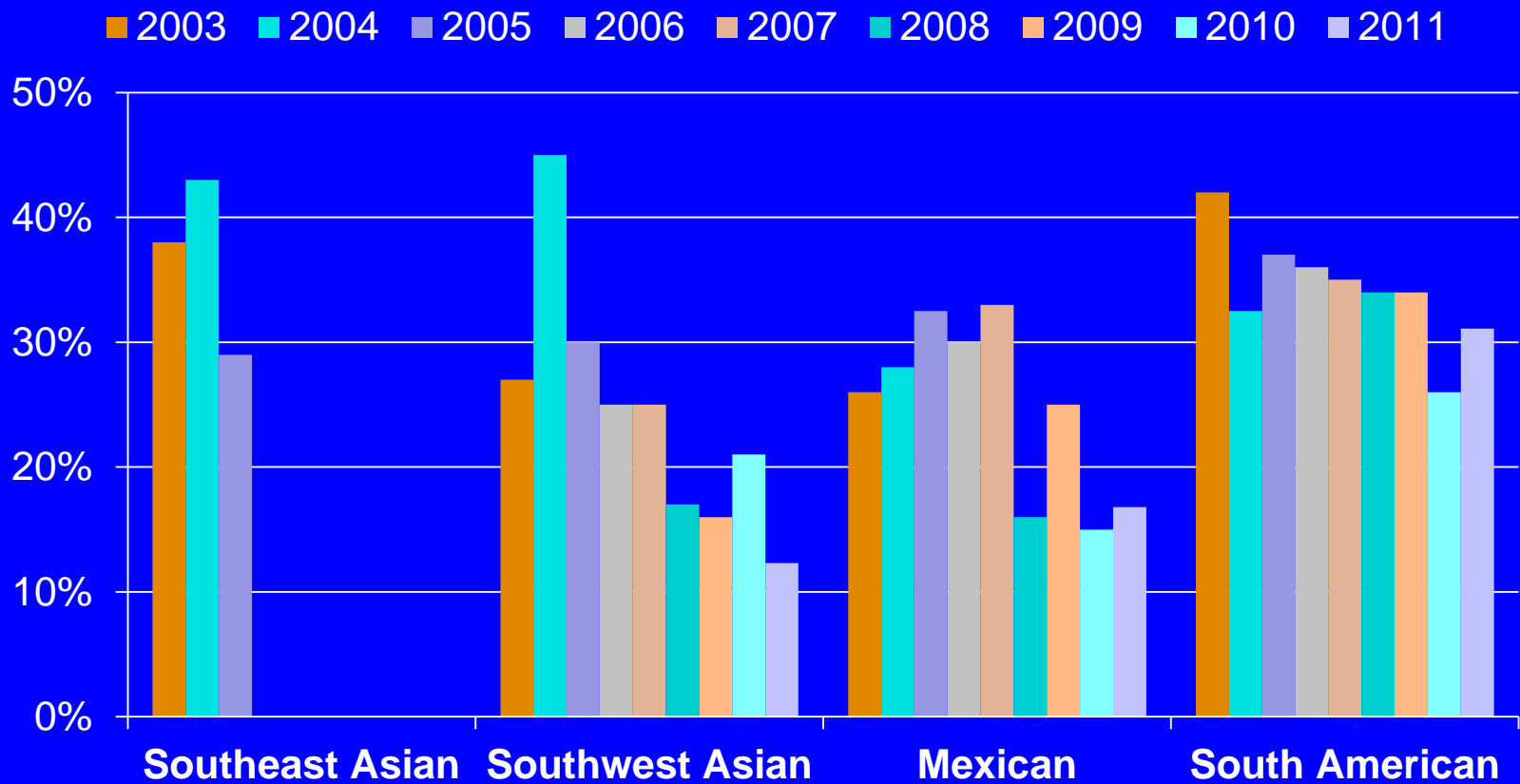


Mexican Brown Heroin

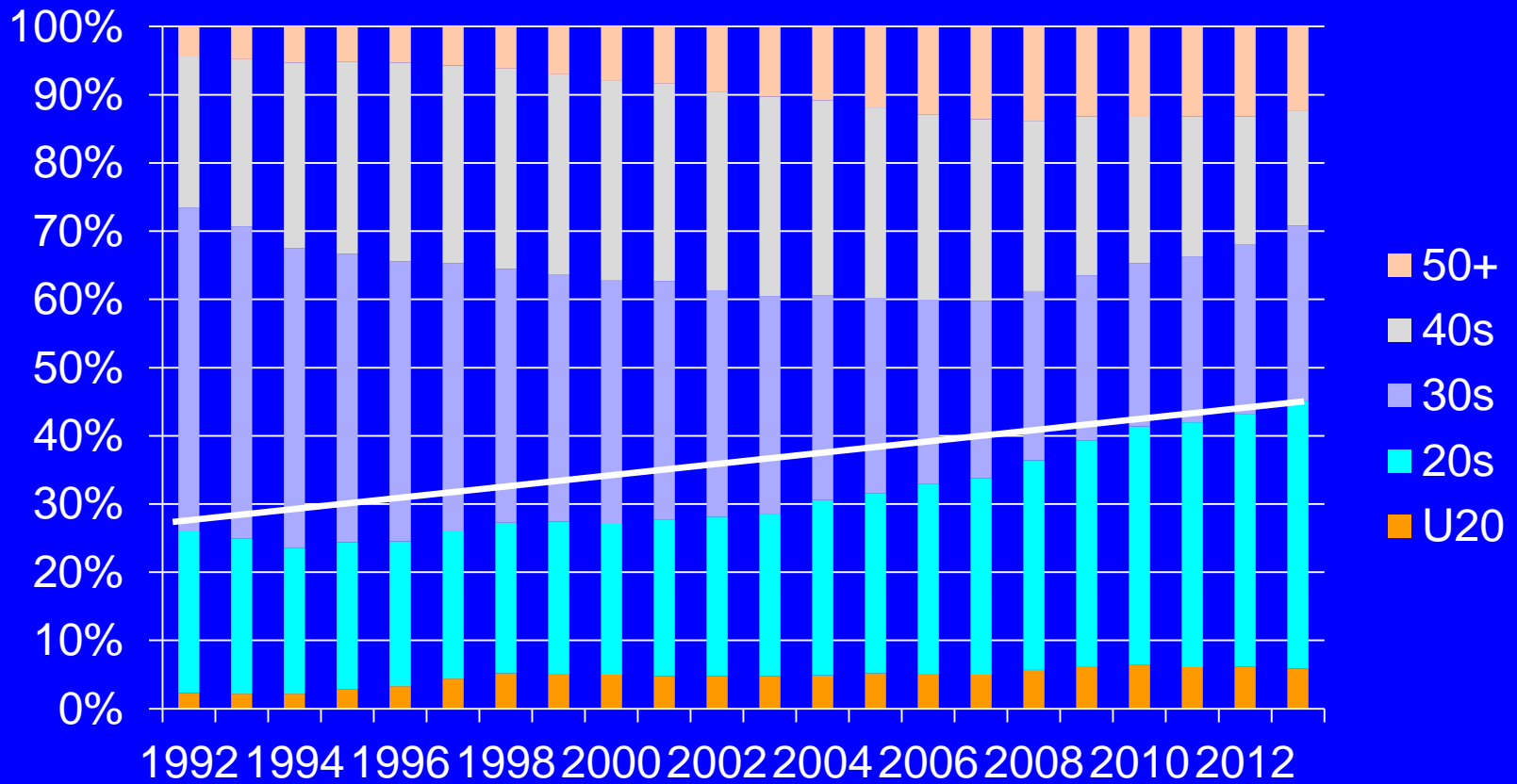


South American Heroin

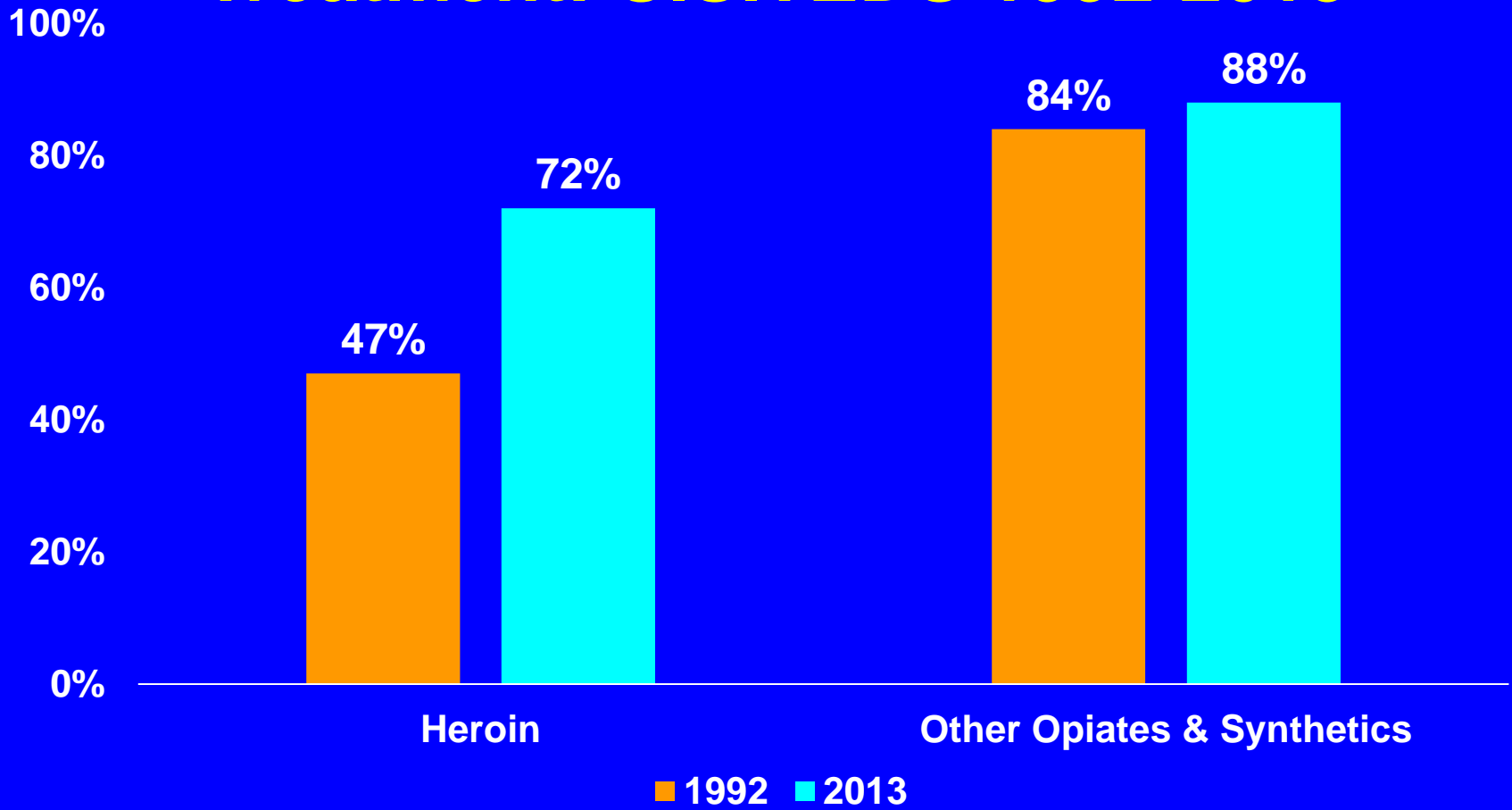
Average Purity of Heroin Samples in the US: 2003-2011



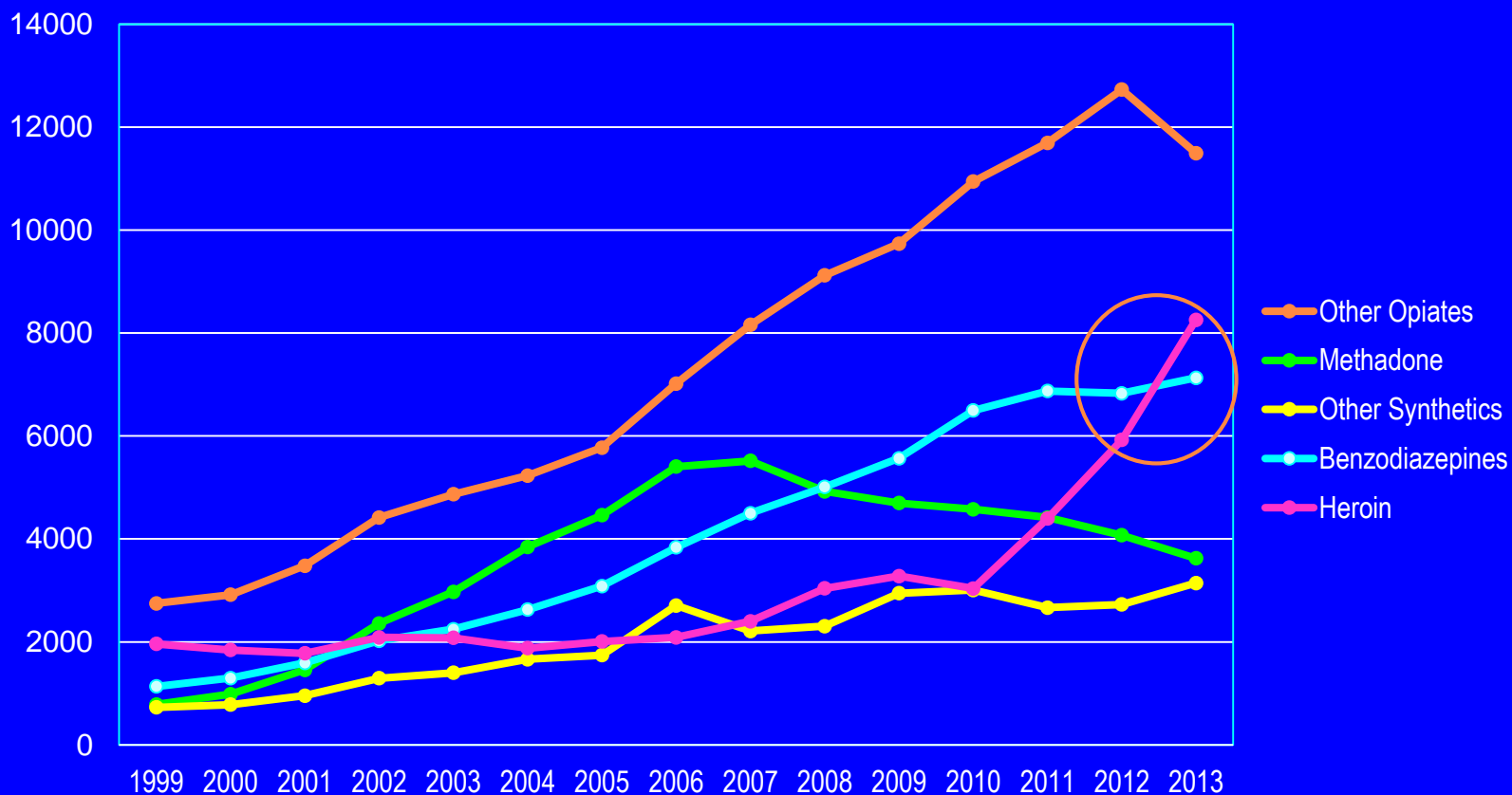
U.S. Heroin Treatment Admissions by Age Group: 1992-2013



Changes in the Proportion of White Clients Entering Treatment: U.S.TEDS 1992-2013



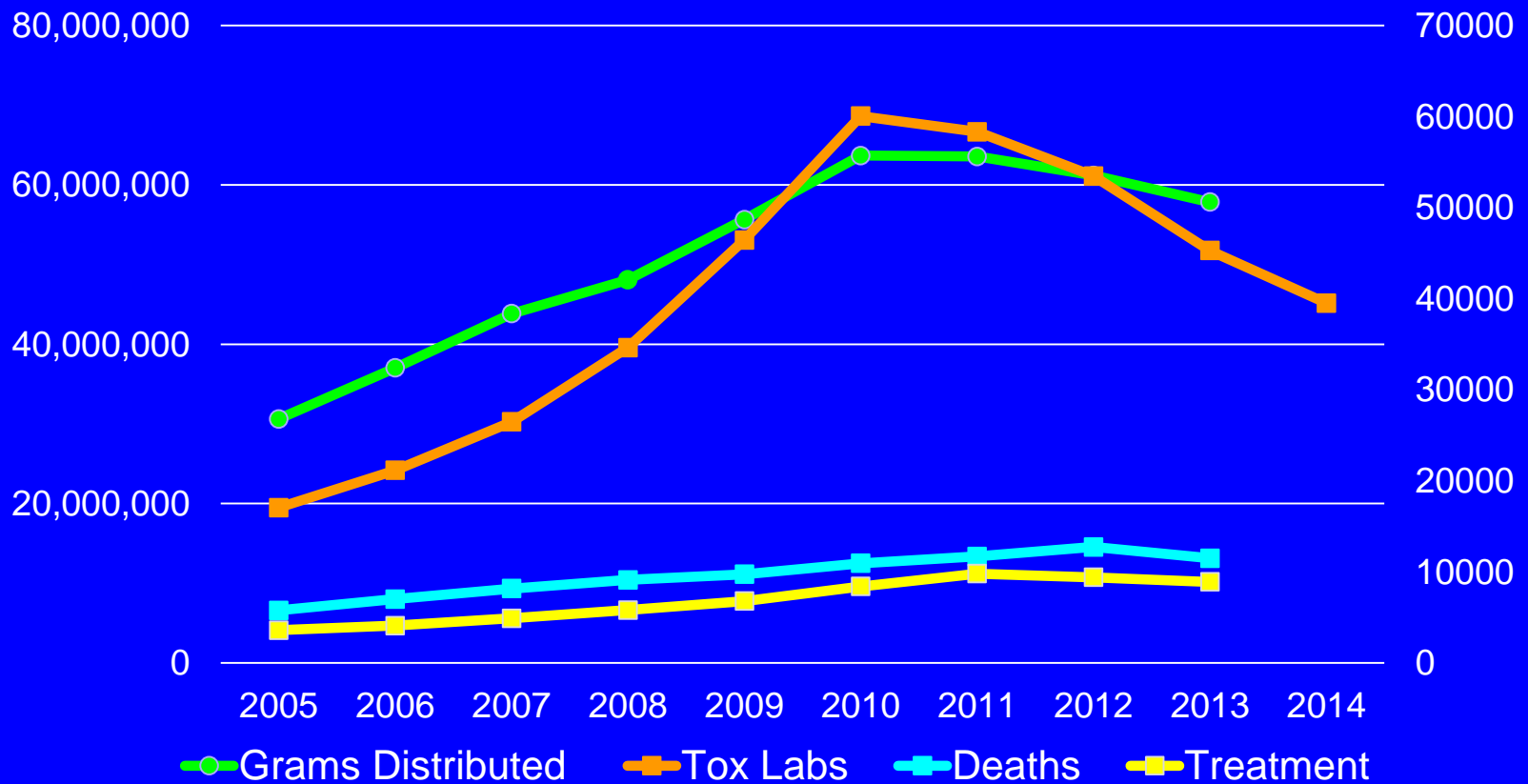
Number of Drug Poisoning Deaths: United States: CDC 1999—2013



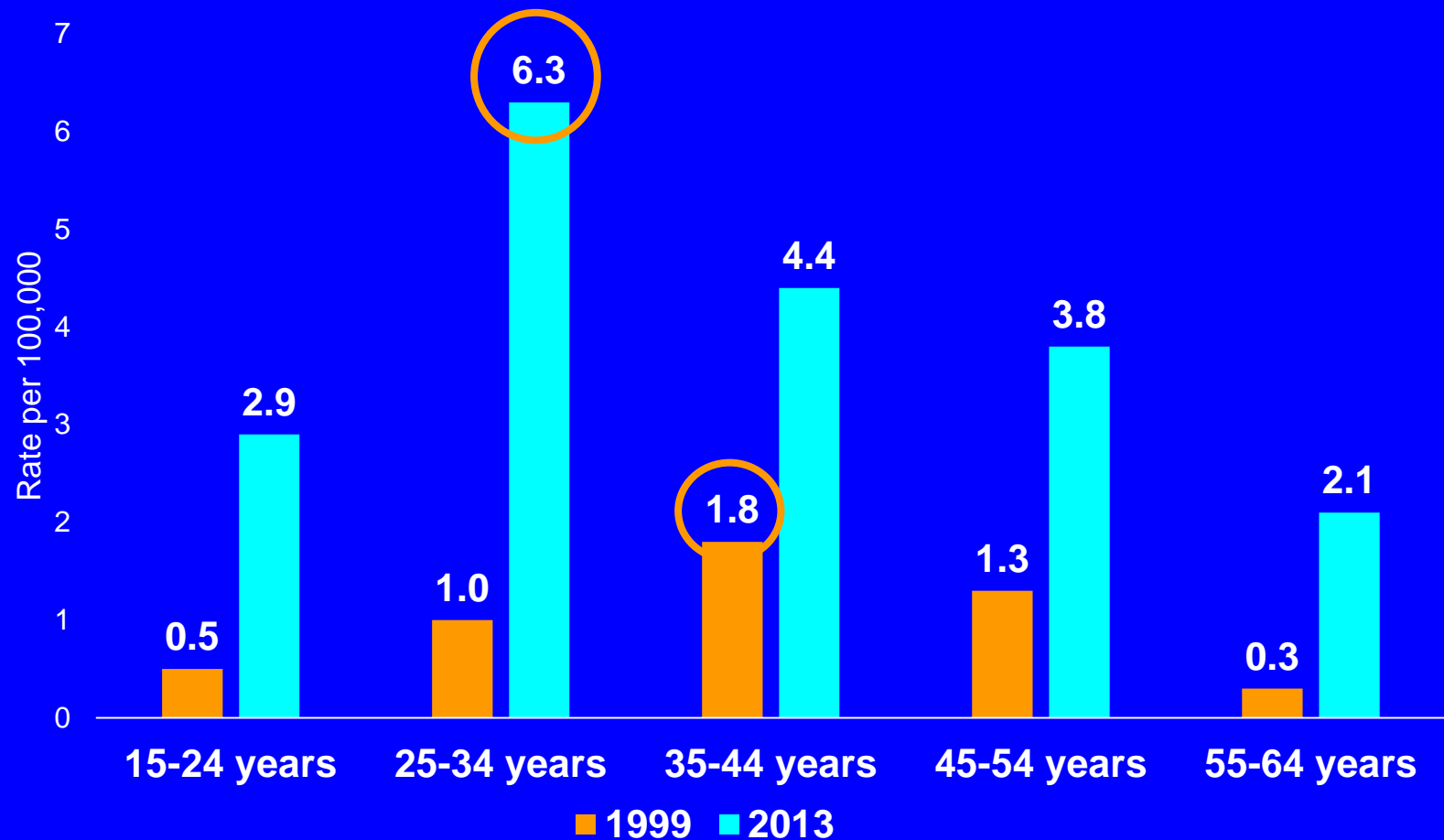
Source: CDC/NCHS WONDER-National Vital Statistics System, Mortality File.

Oxycodone

Indicators of oxycodone use based on items distributed by manufacturer, items identified in forensic laboratories, treatment admissions and deaths due to other opiates

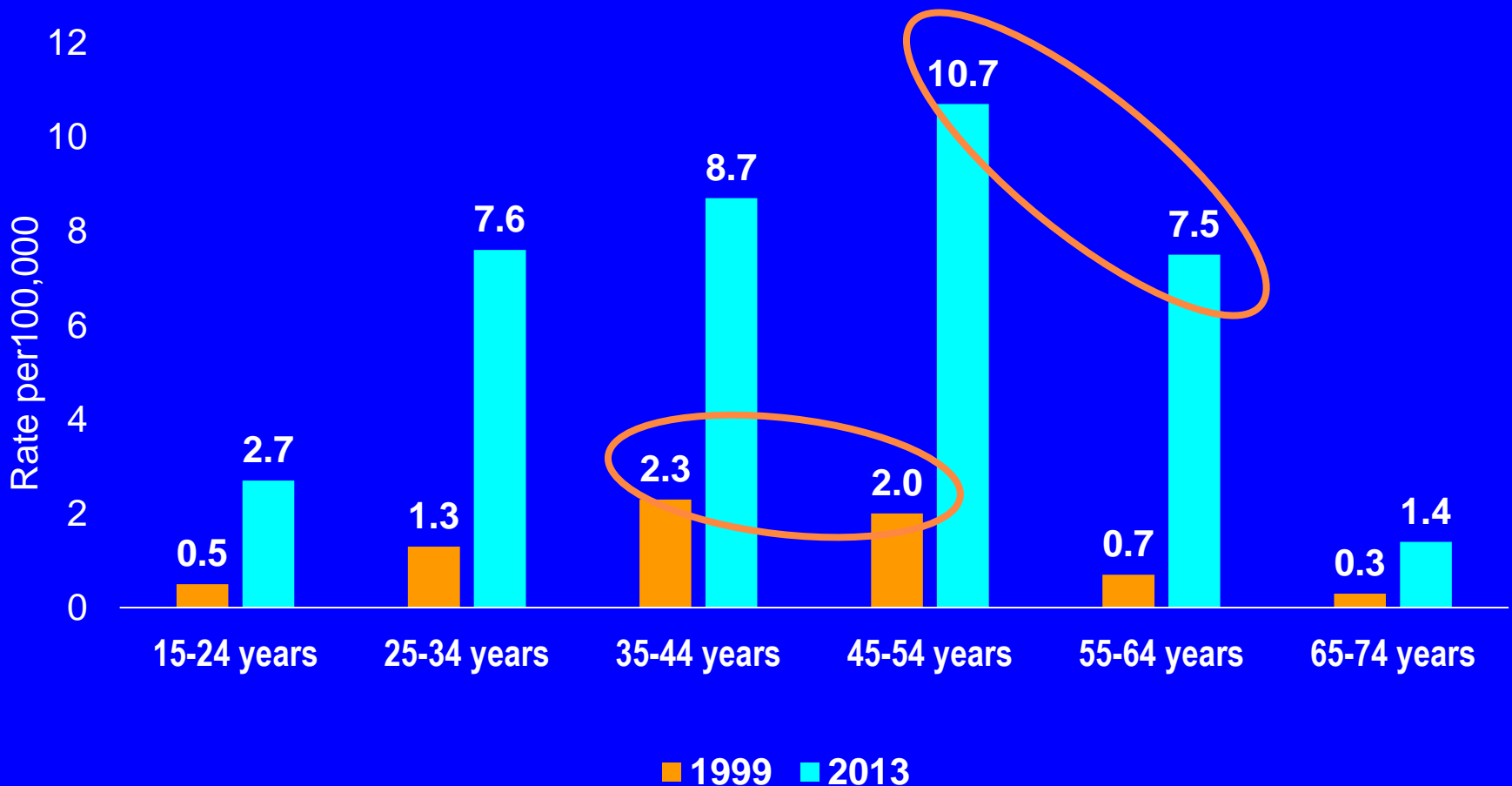


Rates per 100,000 of Drug Poisoning Deaths Involving Heroin in the US: 1999-2013



Source: CDC/NCHS WONDER-National Vital Statistics System, Mortality File

Rates per 100,000 of Drug Poisoning Deaths Involving Other Opiates in the US: 1999-2013



Other Opiates

- Shifting back and forth between Rx opiates and heroin. Which came first?
- Still problem with pain pill mills. Houston Cocktail “Holy Trinity”: oxycodone, soma, alprazolam (Xanax).
- Evidence in Florida of decreasing problems due to Prescription Monitoring Programs but heroin is up.
- Reports of difficulty in using “hardened” extended release pills.
- Cost difference? Heroin cap in Texas is \$10-\$20 vs. \$5-\$80 for old crushable OxyContin or about \$1-\$10 for newer hard to crush.

Pharmacologic Treatments

FDA approved for Opiates

- **Methadone**-daily oral dose
- **Buprenorphine**-daily pill or film
 - Duo (Suboxone© is buprenorphine & naloxone partial agonist-causes withdrawal if use opioids)
 - Mono (buprenorphine--Subutex©)
- **Naltrexone (Revia©)** 1 pill per day
- **Depo-Naltrexone (Vivitrol©)**-injected every 30 days.

FDA approved for Alcohol

- **Acamprosate, Disulfiram, Naltrexone**

Possible Limitations on Treatment Access

- Are today's methadone programs easily accessible and attractive to new young suburban patients?
- **Treatment philosophies to attract aging Baby Boomers using pain pills?**
- Cost of buprenorphine & naltrexone and reimbursement?
- **Limits on size of patient loads?**
- Lack of knowledge about new MATS and targets for use + stigma of and by users.

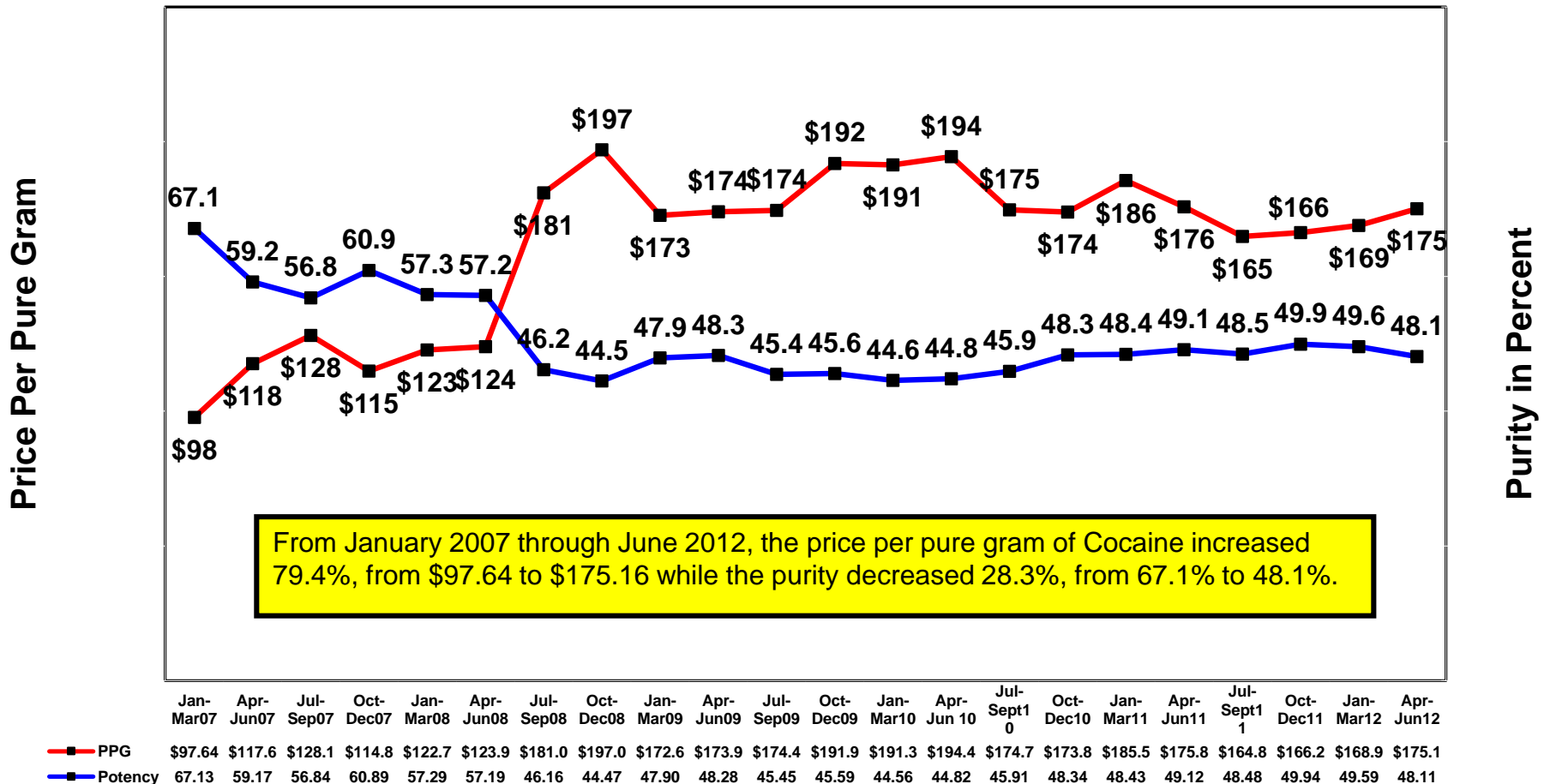
Risk Factors for Opioid Overdose

Another Use for Naltrexone

- Taking opioids at high doses (equal to 20 mg of morphine or more per day).
- **Change an opioid dosage level or switch patient to a different opioid.**
- Having problems with lungs, such as COPD, sleep apnea, and/or asthma.
- **Taking medications or substances that interact with an opioid, including alcohol, some sleeping aids, and anxiety medications (benzos).**
- Taking certain medications for depression.
- **MAKE SURE FAMILY KNOWS SIGNS OF OVERDOSE AND HAS NALTREXONE HANDY**



January 2007 – June 2012 All Cocaine Purchases STRIDE



*During 2nd Qtr. 2012, the number of cocaine samples analyzed for the STRIDE dataset decreased significantly as compared to 1st Qtr. 2012 due to resource limitations.

Cocaine: Is it going to increase?

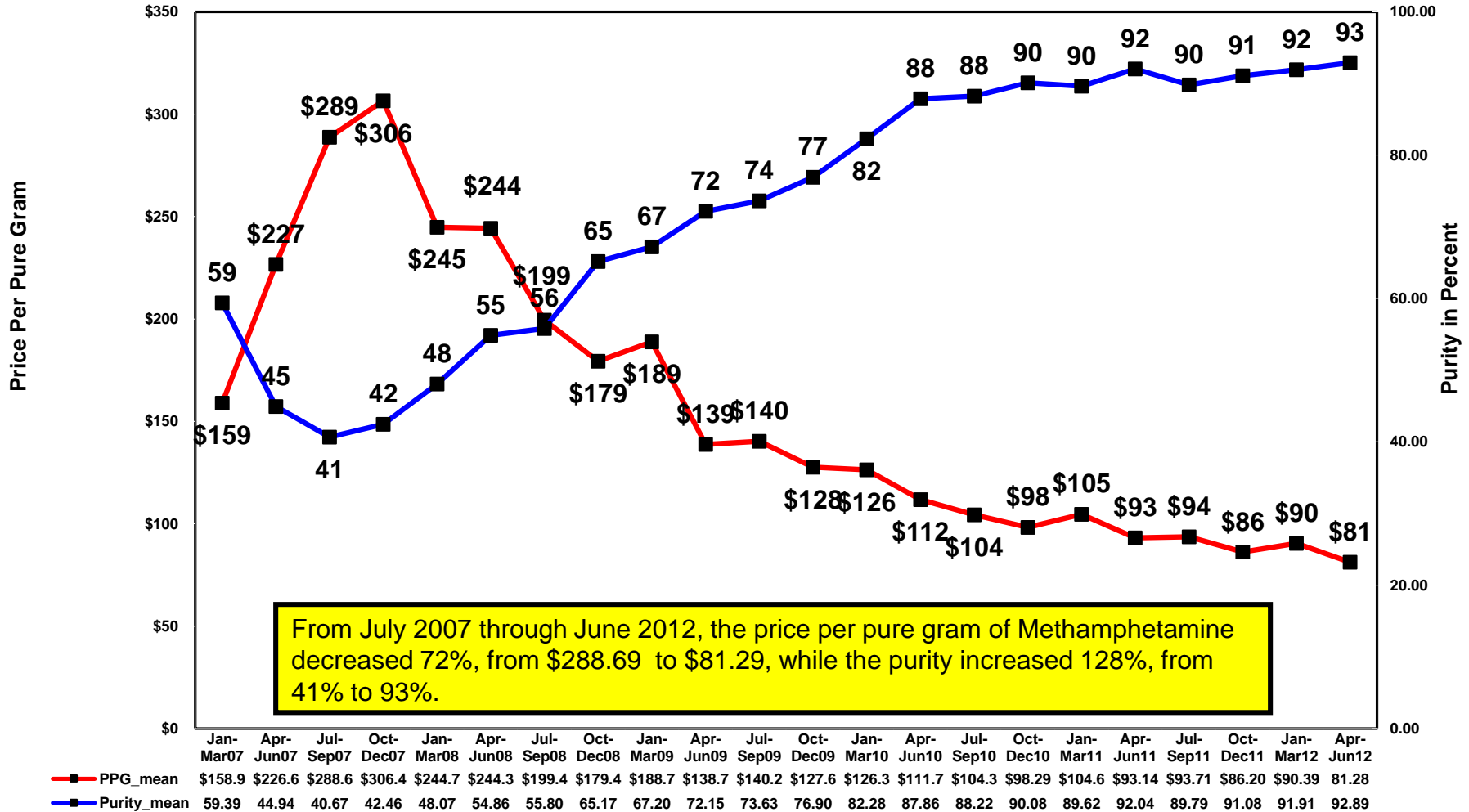
- Poison control, treatment, deaths, & tox lab indicators down; price up across the US.
- **Use of Levamisole as a filler with serious medical consequences.**
- Users in Austin report it is so weak “not worth paying for” and mixing coke with synthetic cathinones to increase effect.
- **In 2012, DEA reports price per pure gram increased from \$98 to \$255 while purity decreased from 67% to 44%.**
- Now seeing more cocaine than cannabis at tox labs on the Texas border in 2014. Kilograms seized at border down but number of items identified up. Indication of return of cocaine?
- **Amount of coca under cultivation in South America up 44% and production rose 52% between 2013 and 2014. Indicators of return of cocaine?**

Methamphetamine

- **Indicators are now equal to or at higher levels than before the limitation on pseudoephedrine.**
- Areas in Texas which had traditionally been dominated by heroin now reporting increasing problems with meth and new users becoming psychotic in short period of time due to potency.
- **More crystal meth use among young MSM and high-risk heterosexual populations.**
- Syphilis with MSM increasing and HIV rates due to MSM increasing.
- **Over 90% of meth now made in Mexico using phenyl-2-propanol, which is has been illegal in the US since the 1980s. It is legal in Mexico.**



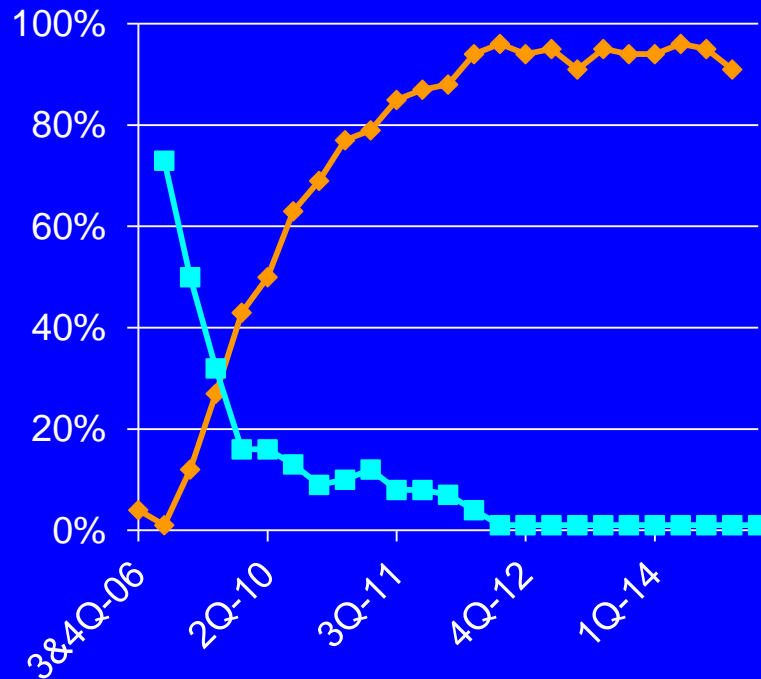
All Methamphetamine Purchases Domestic STRIDE Data January 2007 – June 2012



DEA Methamphetamine Profiling Program: National Data 2006-2014

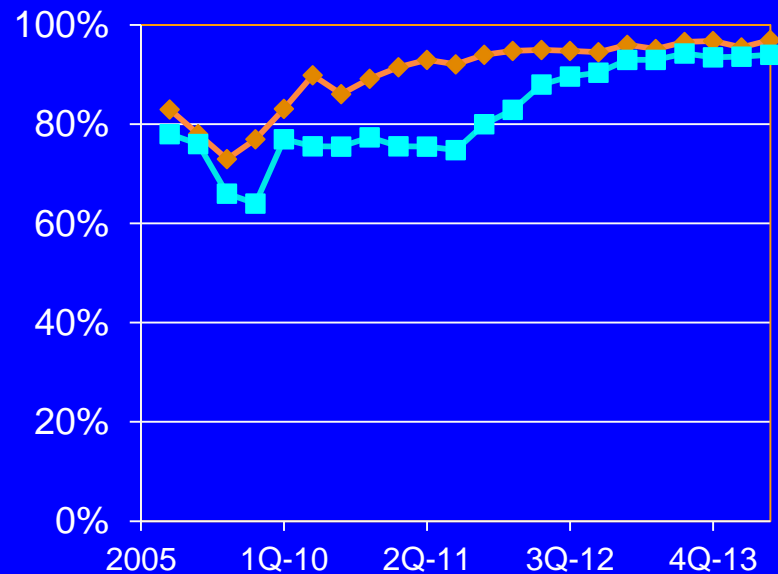
Production Routes

◆ P2P
 ■ Pseudoephedrine



Purity and Potency

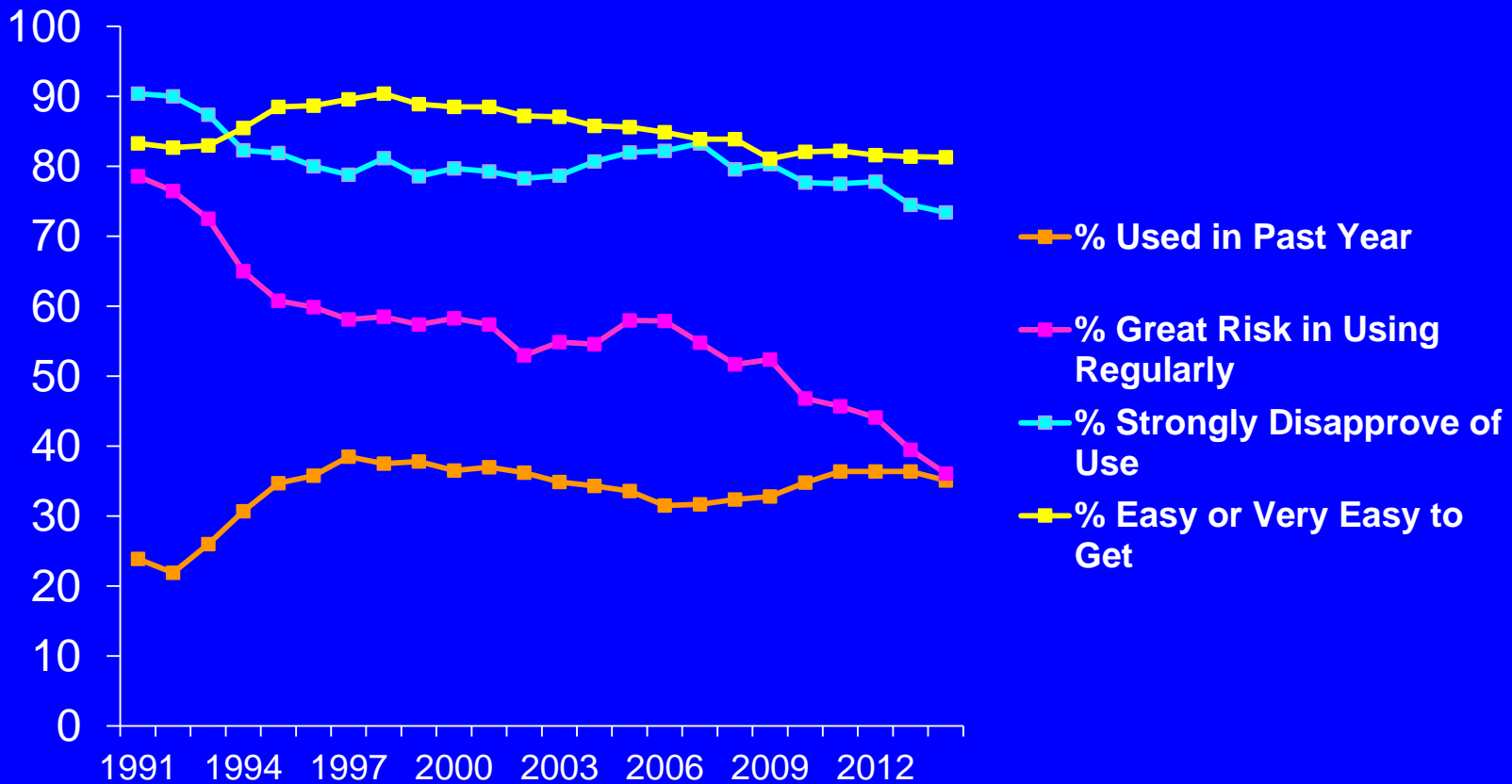
◆ Purity
 ■ Potency



Local Reports on Meth Use

- Meth increasing in Maine—one pot used to make meth and pills is back. Methamphetamine remains at very low levels in Boston, Chicago, Philadelphia, Boston, New York City and Baltimore.
- **Street outreach workers in Corpus Christi, which has always been a heroin town, report more meth than heroin, better highs, and some moving back to smoking Ice since it is available.**
- Other outreach workers reported closed groups of MSM using GRINDR or Craig's List to meet sexual partners to use meth, which will increase the cases of syphilis—as well as HIV.
- **Liquid meth is crystal meth dissolved in water to get it across the border. Conversion labs in Texas change the liquid meth back to powder or Ice.**

U.S. Monitoring the Future Survey: 1991-2014: Marijuana Use by 12th Graders



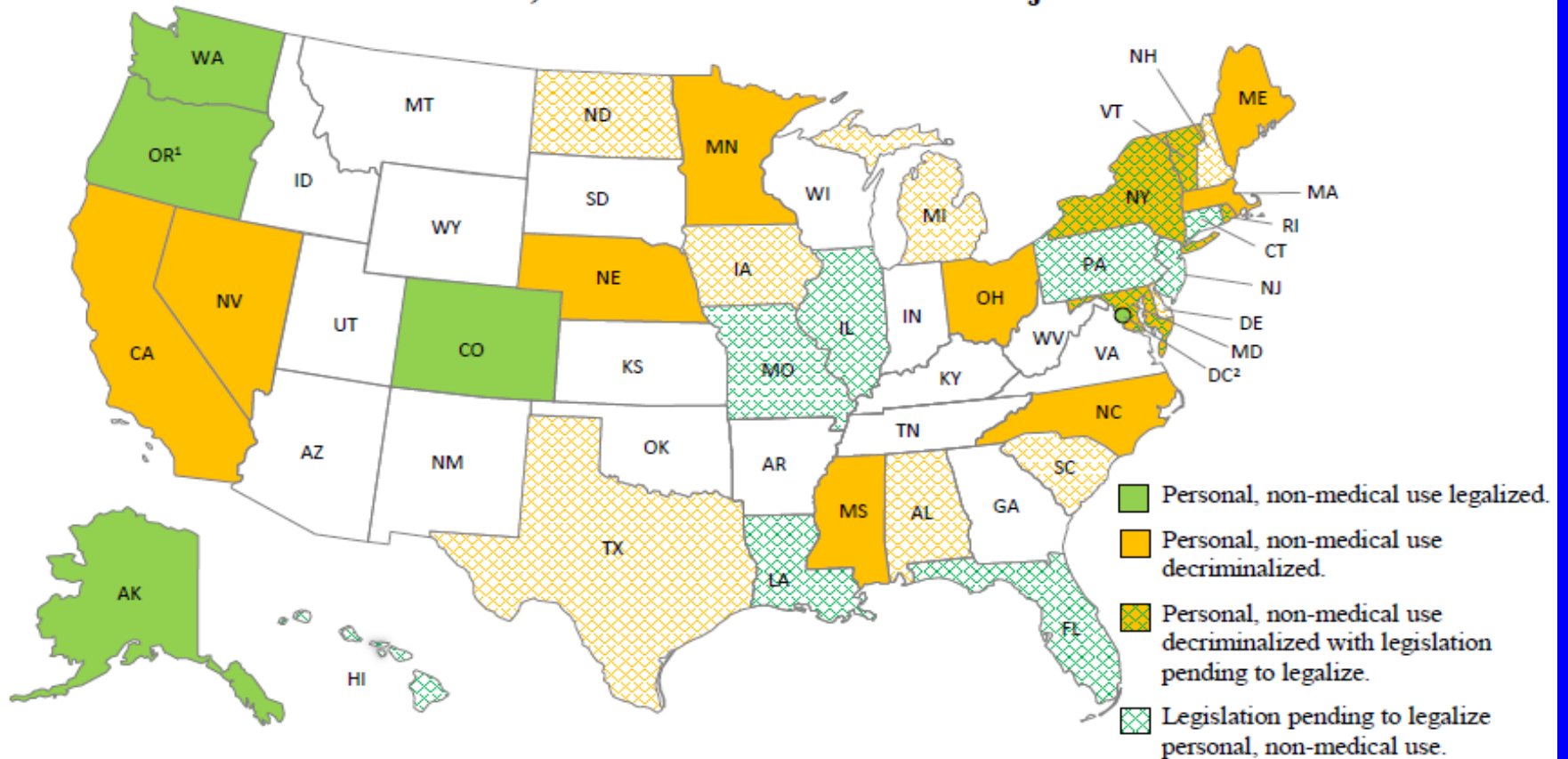


Blunts

Cone

Flavored Papers

Personal, Non-Medical Use of Marijuana



¹ OR Ballot Measure 91 takes effect July 1, 2015.

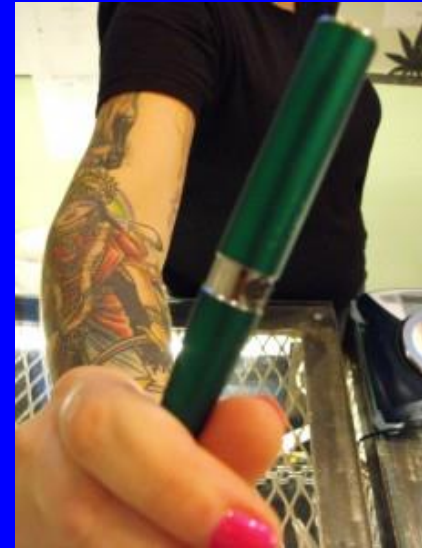
² D.C. Initiative 71 took effect on February 26, 2015. However, the U.S. House majority's position is that the Initiative cannot lawfully take effect due to a provision in the FY2015 spending bill passed in December 2014.

Marijuana in Colorado

- Medical use legal since 2000. 2,000 on registry 2001-2008.
- In 2014, 116,000 patients with valid registry ID and 274,000 patient applications.
- Since 2013, Colorado has earned \$90 million in taxes and fees.
- 495 medical marijuana centers and 233 retail stores for all buyers.
- Fewer treatment admissions (fewer cj referrals); fewer pot arrests, fewer marijuana positives in fatal crashes, but increases in hospital discharge rates & calls to poison center.
- Need to regulate/require potency and label candy & cookies that contain THC.

Vapor Pens

- Advertised for “patients”
- **Cost \$100-\$200**
- Potency varies
- **Higher percentage of THC**
- No odor. Similar to electric cigarettes
- **Pen-style vaporizers contain 100-150 hits**
- Some can be recharged & refilled
- **<http://potappetit.com/the-pen-is-mightier-than-the-bong-or-mini-vaporizers-got-the-right-stuff/>**



Dabs, BHO, Honey, Budder

- Dabs, shatter wax and vaporizer pens contain hash oil (“wax”). Supposedly 80%-90% THC. Different methods on the web.
- Butane Honey Oil or Butane Hash Oil is a golden resin created by placing dried and ground marijuana into a special pvc filter. Butane gas is shot through one end of the filter into a bowl full of water.**

Wax, Budder, Shatter



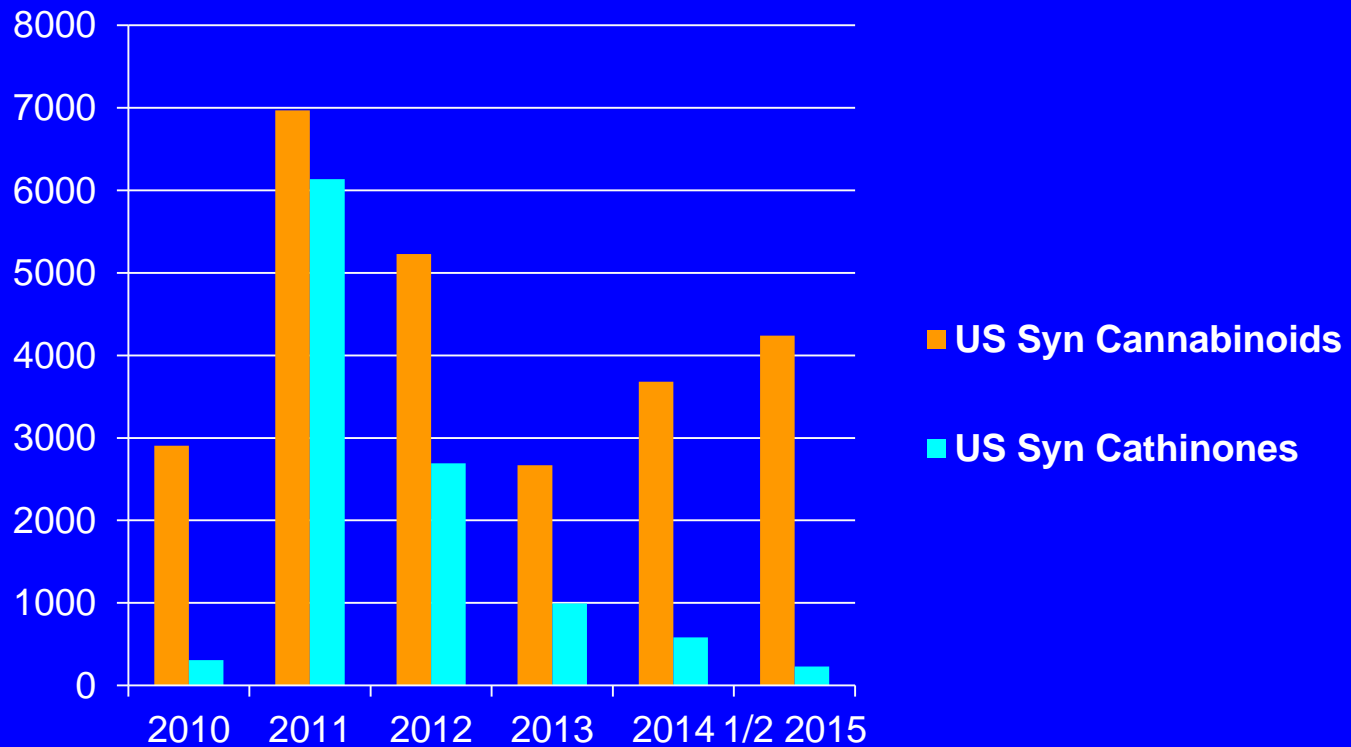


Synthetic Drugs



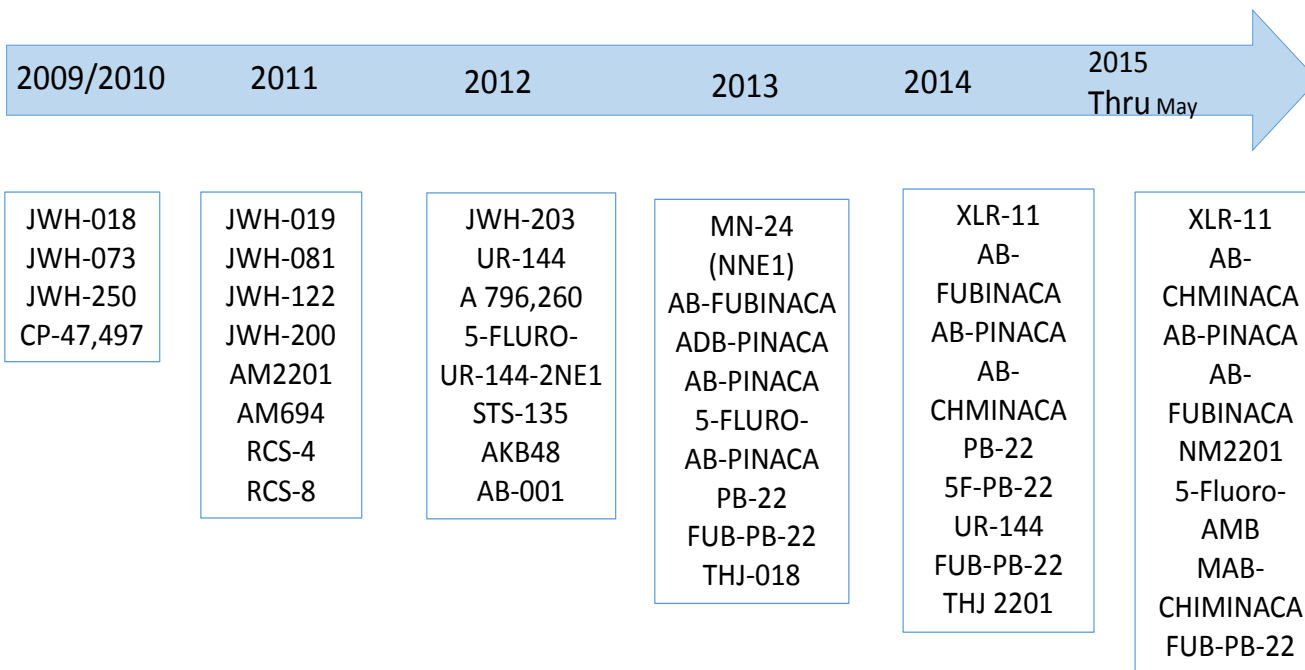
- Not really “Spice,” “Bath Salts,” “Incense,” or “Plant Food”
- **Chemically-based; not plant derived**
- Complex chemistry
- **Constantly changing to “stay legal”**
- Need to prove “intended to use” to convict in some areas

The Synthetics: Calls to US Poison Control Centers: 2010-1/2 2015



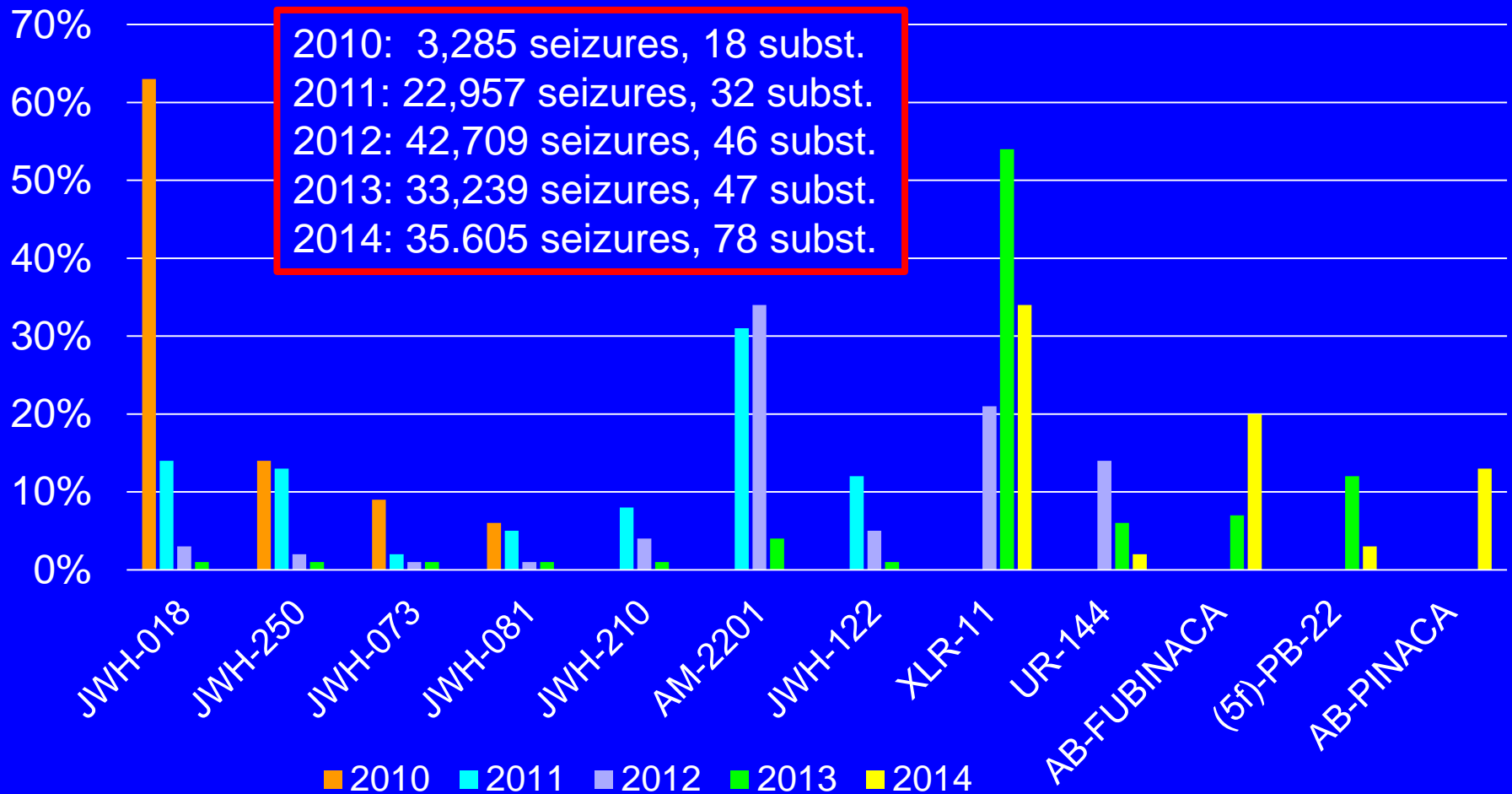
Question: What is causing this resurgence in synthetic cannabis cases with reactions serious enough to involve EMS?

Cannabinoids by Year



DEA's National Forensic Laboratory Information System and DEA's Special Testing and Research Laboratory

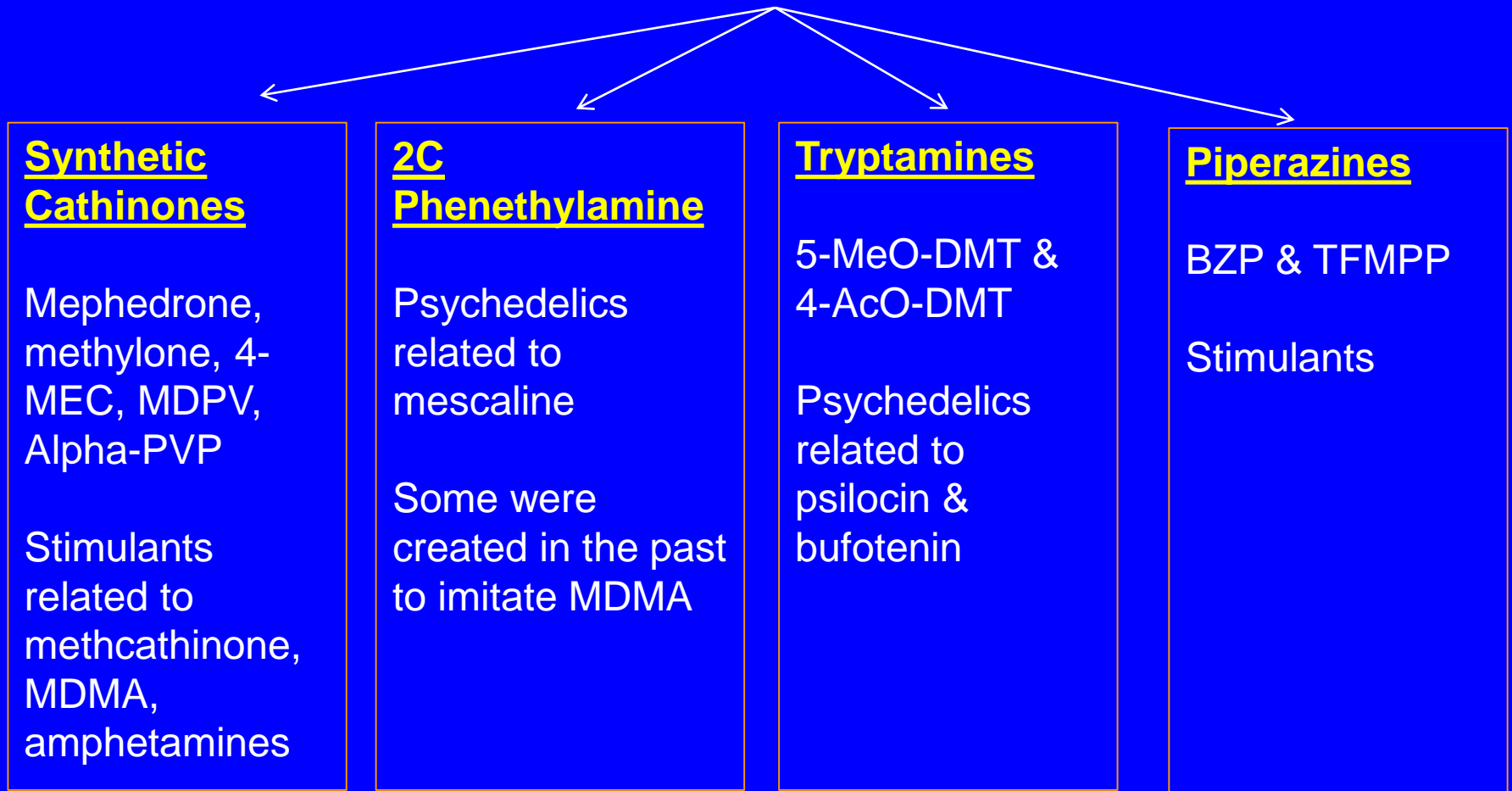
Synthetic Cannabis Items Identified and Reported to U.S. NFLIS: 2010-2014



Comparison of Texas Poison Control and Treatment Cases: 2010-2014

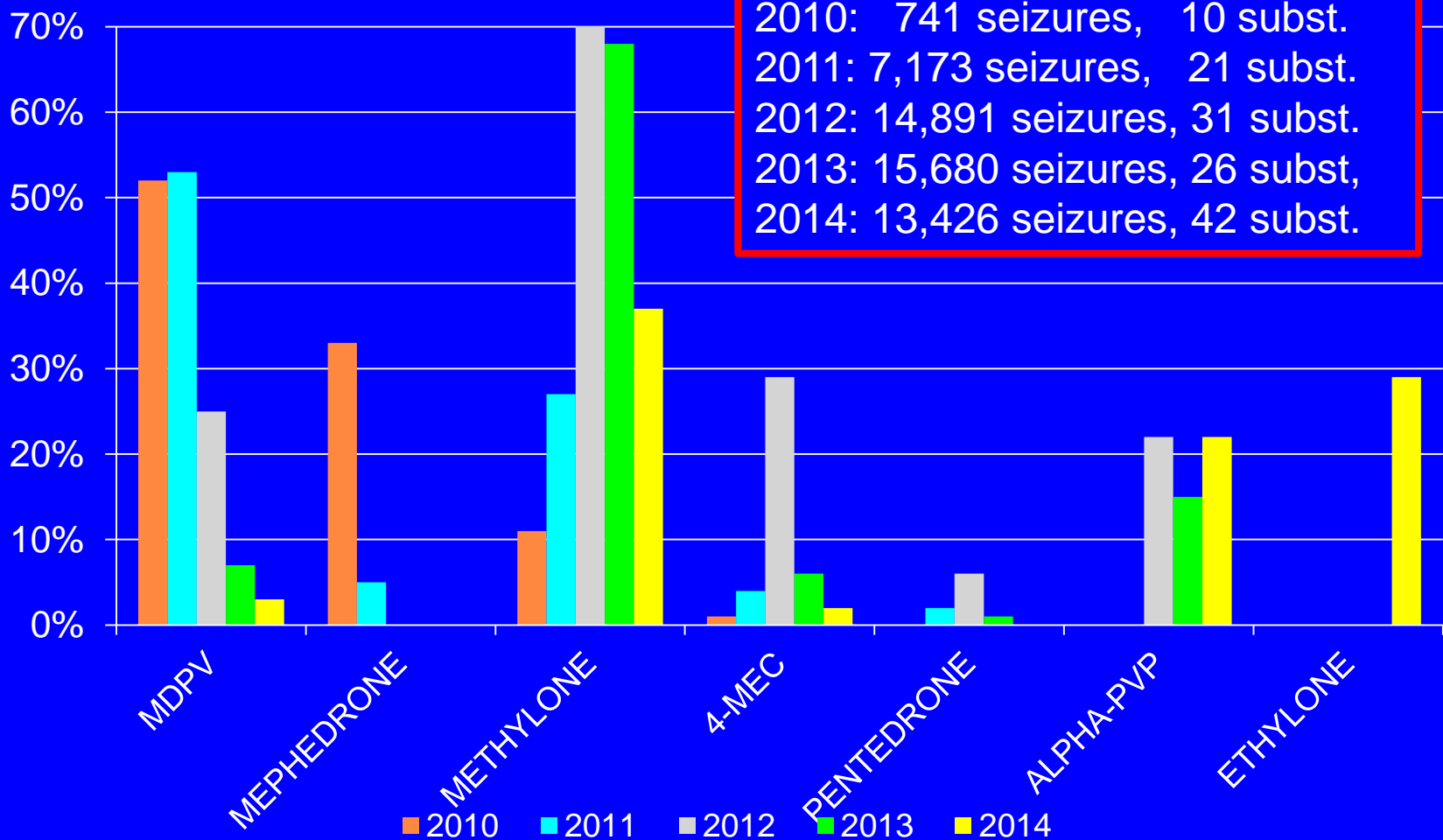
	PCC-Syn. Cannabis 2012-2014	Treatment- Synthetic Cannabis 2014	PCC-Syn. Cathinone 2012-2014
% Male	77%	70%	80%
Under Age 20	45%	Age 24	14%
Intended to Abuse	85%		88%
Moderate Effect (returns to pre- exposure state)	41%		47%
Major Effect (life threatening)	8%		12%
Deaths	4		4
# Exposures	2812	491	81

From the term “Bath Salts” to...



And Dissociatives related to ketamine and PCP and Opioids related to morphine, fentanyl, and heroin.

Synthetic Cathinone Items Identified and Reported to U.S. NFLIS: 2000-2014



U.S. Top Cathinone Categories Reported in NFLIS: 2010-First 5 Months of 2015

	#1	#2	#3
2010	MEPHEDRONE	MCPV	METHYLONE
2011	MDPV	METHYLONE	MEPHEDRONE
2012	METHYLONE	MDPV	ALPHA-PVP
2013	METHYLONE	ALPHA-PVP	MDPV
2014	ETHYLONE	METHYLONE	ALPHA-PVP
2015	ETHYLONE	ALPHA-PVP	METHYLONE

"Flakka"

- *Flaka - Beautiful, elegant woman who charms all*
- *Elsewhere called "Gravel"*

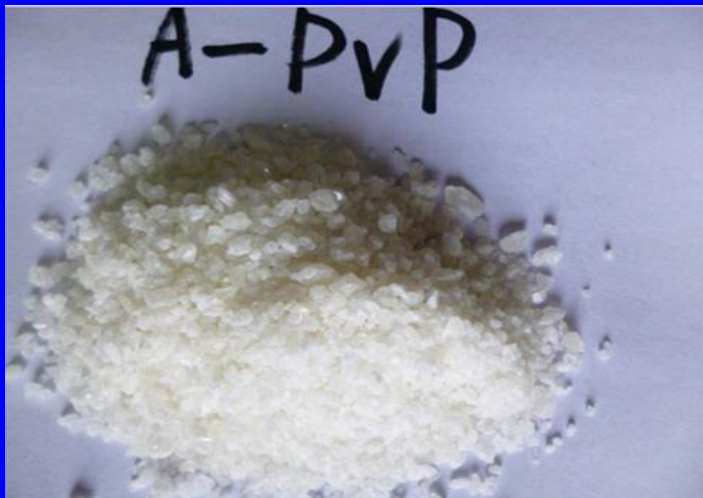


**α -pyrrolidinopentiophenone
Or α -pyrrolidinovalerophenone**

South Florida Crime a-PVP Lab

Cases:

- 2012 - 2
- 2013 - 6
- 2014 - 576



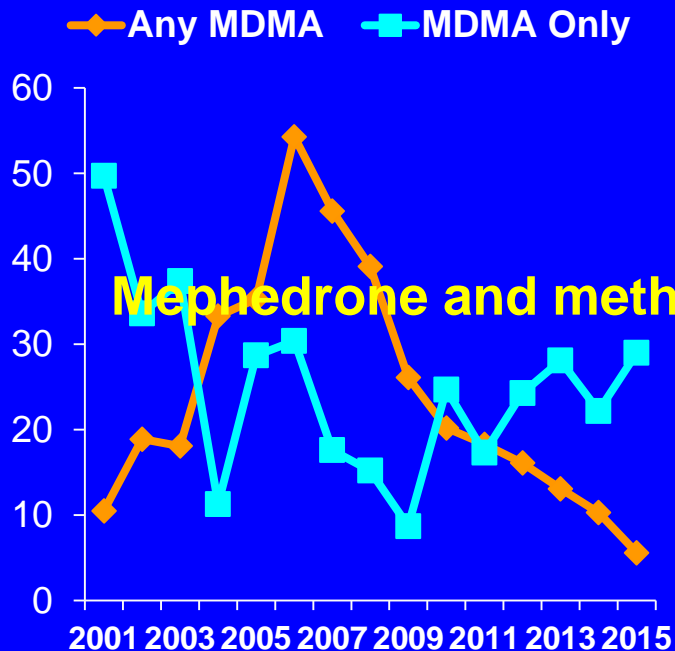
Toxic Effects:

- Agitation,
- Psychosis,
- Violent behavior,
- Excited Delirium
- Hyperthermia
- Kidney failure
- Death

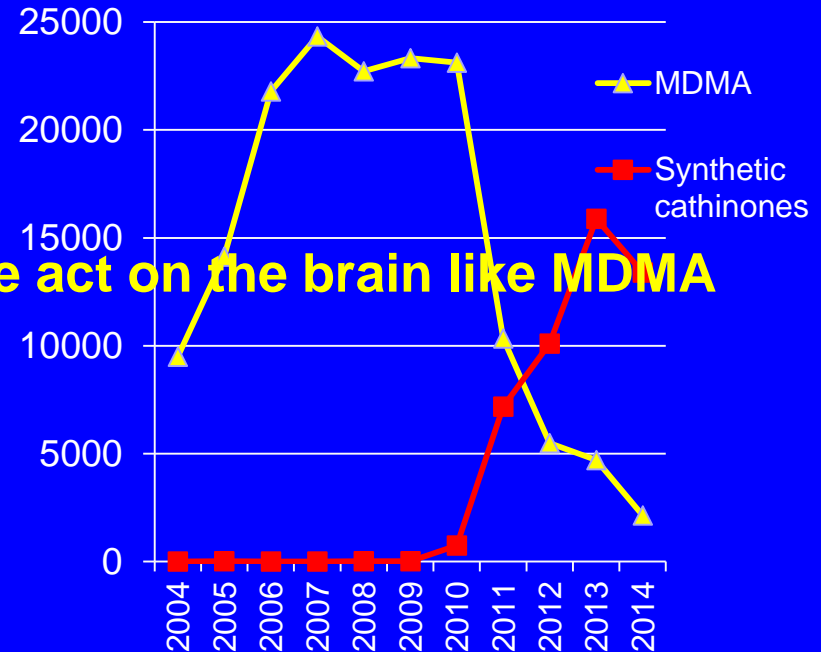
Courtesy of Jim Hall

Glimpses of MDMA Situation in U.S.: 1999-2015

Results of Pill Tests Containing MDMA*



MDMA Items Identified in DEA's NFLIS Tox Labs: 2004- 2014



Baumann, M.H., et al. The designer methcathinone analog monoamine transporters in brain tissue. *Neuron-psychoph*

*http://www.ecstasydata.org/stats_substance_by_year.php

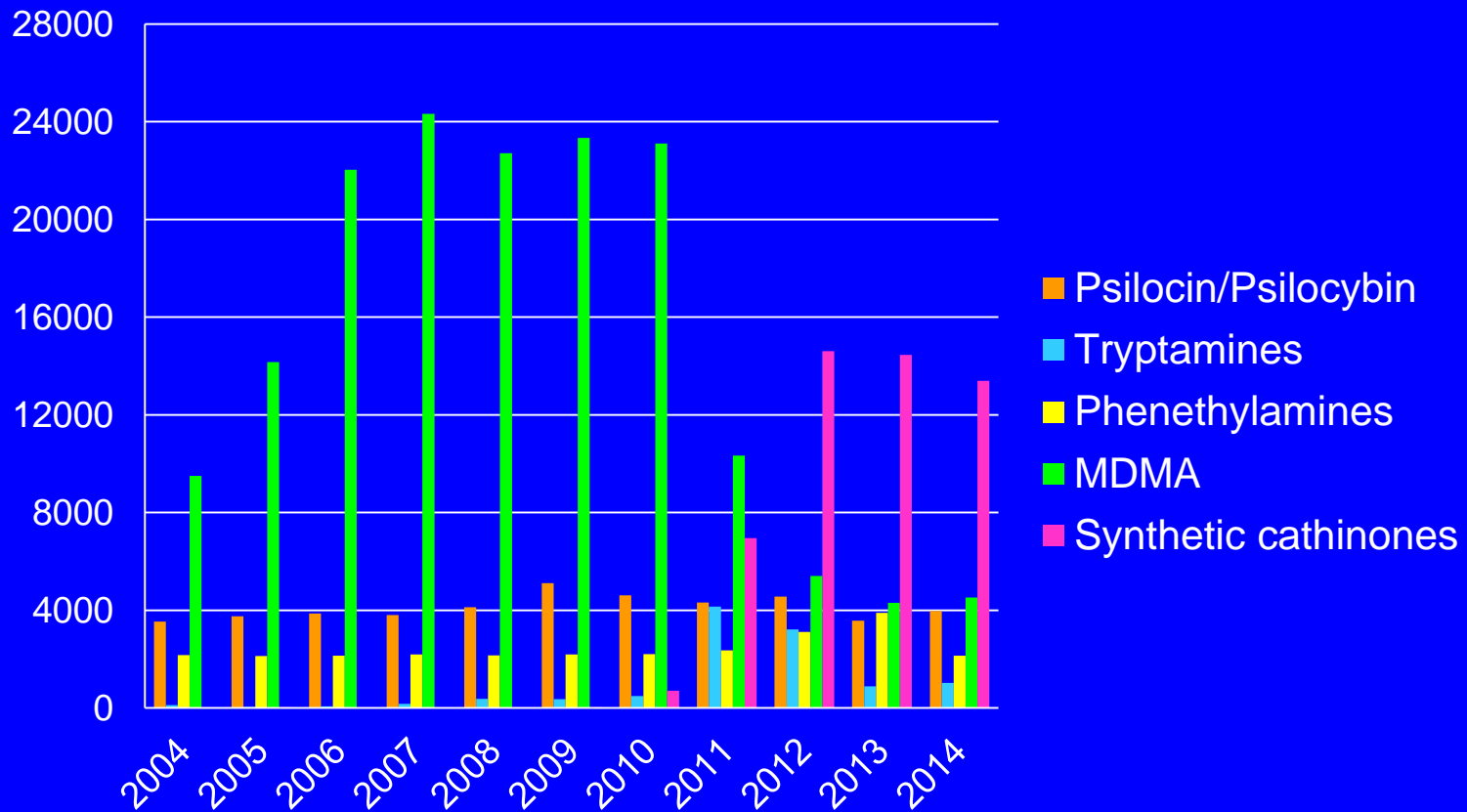
New MDMA Warning Watch out for Molly!

- “Molly” initially referred to ecstasy pills with high quality MDMA powder. With MDAM shortage, now have more caffeine, meth, & methylone with little MDMA in them.
- **European Monitoring Centre for Drugs and Drug Addiction issued warning in February 2014 that “dangerously high” levels of MDMA are appearing in Europe.**
- MDMA tablets in the EU in 2012 contained 60 – 100 mg of MDMA, but tablets containing 150 and 200 mg of MDMA are currently available and can contain even higher amounts, e.g. 240 mg.

2C-C-NBOMe, 2C-I-NBOMe, Mescaline-NBOMe

- **Analogs of the 2C-X family of phenethylamines**
- **Strongly active at the sub-milligram dose (a Super Potent drug)**
- **Most 25I and 25C is sold as pure powder, liquid, or blotter.**
- **Risk of confusing one white powder for another or simply misunderstanding the difference between one psychedelic or stimulant drug and another**
- **Obtained from China.**
- **NFLIS Labs nationwide identified 10 reports of 2-C-Nbome variations in 2011, 480 in 2012, 1563 in 2013, 1832 in 2014.**
- **Weighing and handling pure high-potency chemicals such as LSD or 25I-NBOMe should be performed wearing eye protection, gloves, and a filter mask**

Changes in Psychoactive Substances Identified in Forensic Laboratories in US: 2004-2014



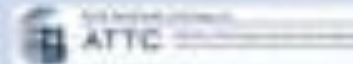
SOURCE: National Forensic Laboratory Information System, 2010, 2011, 2012, 2013

Phencyclidine

- PCP, Angel Dust, Killer Weed
- **Dissolved in embalming fluid (“Fry,” “Amp,” “Water, Water”).**
- Swallowed, sniffed, smoked on joints dipped in “Fry”.
- **Out-of-body strength.**
- Dissociative drug like DXM and ketamine; effects are similar to cathinones.



**Will They Turn You into a Zombie?
What Clinicians Need to Know about
Synthetic Drugs (2nd Edition)**



<http://www.uclaisap.org/slides/synthetic-drug-training-package.html>

A Few Other Substances to Throw in the Mix...

- **Ketamine**-dissociative anesthetic that distorts perceptions of sight and sound, and can produce feelings of detachment.
- **Kratom** – opioid-like effects
- **Krokodil** – cheap heroin replacement—skin wounds—dirty needles
- **Salvia divinorum** – hallucinogenic effects
- **Methoxetamine** – “legal ketamine”
- **Benzo Fury (5-APB)** – stimulant and hallucinogenic effects
- **GHB** - sexual assault with it.
- **Rohypnol** - along the Texas-Mexico border.

New Issues?

Need better way to disseminate information on harms of new drugs. Adults know very little about them.

How can parents talk to their kids when they have no idea what they are talking about?

How do we, the audience, stay up to date?

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<http://www.utexas.edu/research/cswr/gcattc/>