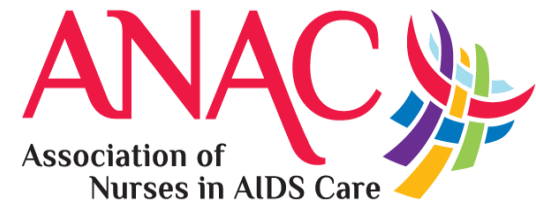


# Treating Stimulant Use Disorder in HIV Settings

**Faculty:** Steven Shoptaw, PhD

**Moderator:** Sheila Tumilty, BSN, RN, ACRN

May 16, 2023



# The Association of Nurses in AIDS Care (ANAC)

**Mission:** ANAC fosters the professional development of nurses and others involved in the delivery of health care for persons at risk for, living with and/or affected by the human immunodeficiency virus (HIV) and its comorbidities. ANAC promotes the health, welfare and rights of people living with HIV around the world.

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To receive a certificate of completion, attendees must:

- Be registered to attend
- View today's webinar presentation in its entirety
- Complete the online, post-activity evaluation. You will receive a link to the evaluation by email.

**The deadline to claim contact hours is December 31, 2023.**



ANAC is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation.

NCPD questions? Email [Sheila@anacnet.org](mailto:Sheila@anacnet.org)



# Learning Outcomes

At the conclusion of today's activity, participants will be able to:

- Discuss the epidemiology of stimulant use disorders globally and in endemic areas, especially in those living with or at risk for HIV, while recognizing factors of culture and comorbidities.
- Describe the neurobiology leading to development and maintenance of stimulant use disorders and how these relate to treatment choices.
- Review evidence for advancements in pharmacotherapies that be brought into practice in conjunction with integrative, evidence based behavioral therapies

# Disclosures

Dr. Shoptaw receives clinical supplies for his research from:

- Gilead Sciences, Inc
- Indivior, Inc
- Alkermes, Inc

Dr. Shoptaw provides consultation services to Aelis, Inc.

# Housekeeping

- This webinar is being recorded
- Your lines will be muted during the webinar
- Type questions in the “Question” or “Chat” pane of your dashboard
- There will be a Q & A session at the end of the webinar



## Faculty



Steven Shoptaw PhD

Director

UCLA Department of Family Medicine:

Center for Behavioral and Addiction Medicine

# Treating Stimulant Use Disorder in HIV Settings

**Steven Shoptaw PhD**

Director, UCLA Dept Fam Med: Center for  
Behavioral and Addiction Medicine

Director, UCLA CHIPTS P30MH058107

MPI, Big South/West Node, NIDA CCTN  
UG1DA020024

May 16, 2023



**CHIPTS**  
Center for HIV Identification, Prevention  
and Treatment Services

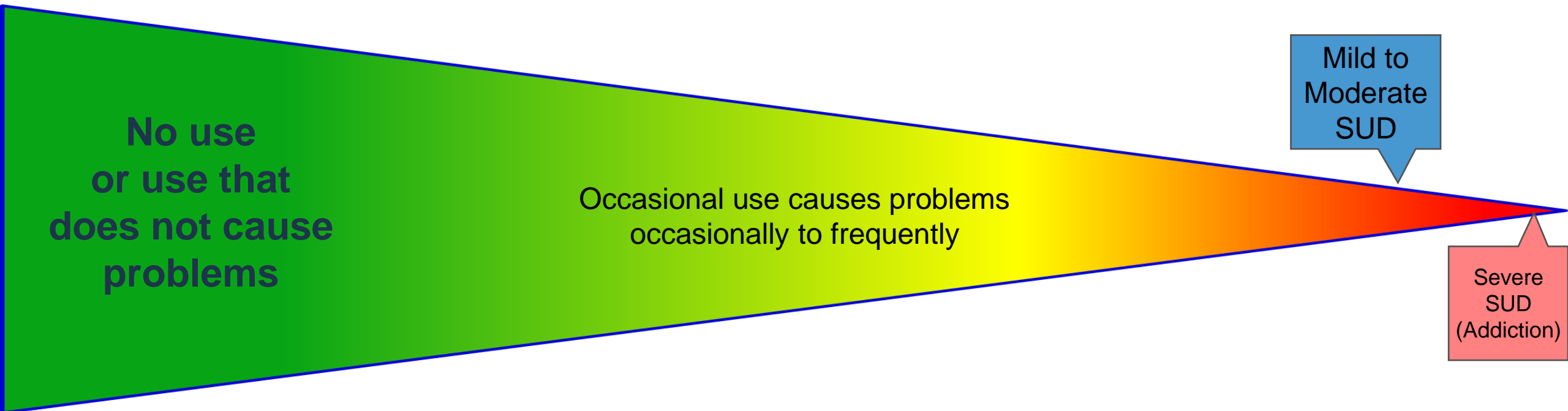


# Objectives



- Discuss the epidemiology of stimulant use disorders globally and in endemic areas, especially in those living with or at risk for HIV, while recognizing factors of culture and comorbidities.
- Describe the neurobiology leading to development and maintenance of stimulant use disorders and how these relate to treatment choices.
- Review evidence for advancements in pharmacotherapies that be brought into practice in conjunction with integrative, evidence based behavioral therapies

# Definitions of a Spectrum: Stimulant Use to Stimulant Use Disorder: Mild to Moderate to Severe



Fun



Fun with Problems



**Problems**

# DSM-5 Definition: Substance Use Disorder

Maladaptive pattern of use, *clinically significant impairment or distress* and 2+ of the following in the same 12-month period:

1. Tolerance
2. Withdrawal
3. Used for longer periods than intended
4. Can't cut down or quit
5. Time spent getting, using or recovering
6. Give up social, work or fun activities
7. Craving or a strong desire or urge to use a substance
8. Continued use despite knowledge of negative consequences
9. Failure to fulfill major role obligations
10. Use in physically hazardous situations
11. Continued use despite social and interpersonal problems

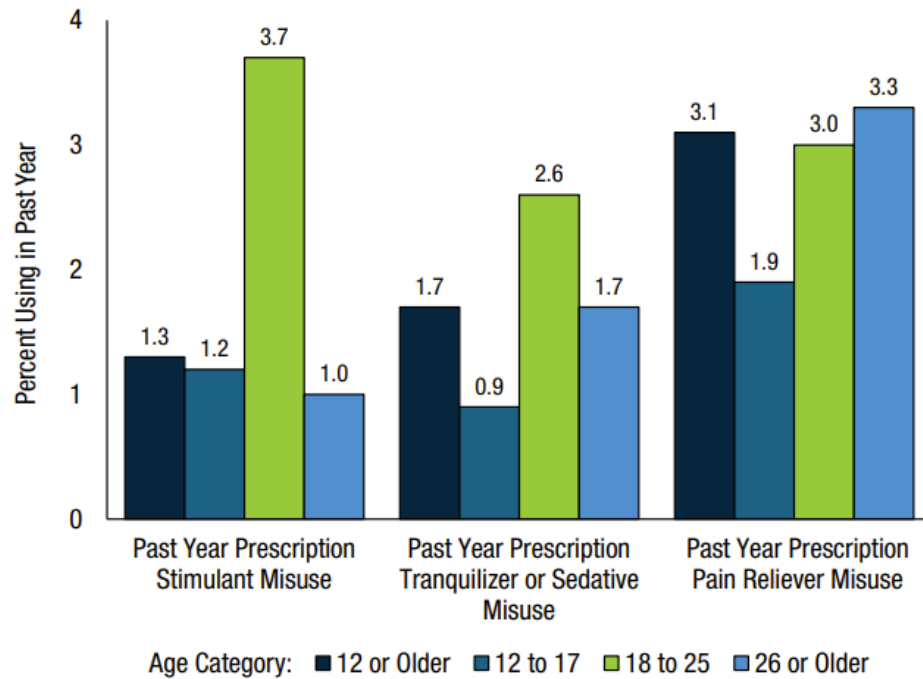
Mild = 2-3 criteria  
Moderate = 4-5 criteria  
Severe = 6+ criteria

Diagnostic and Statistical Manual of Mental Disorders, 5<sup>th</sup> Edition,  
American Psychiatric Association, 2013

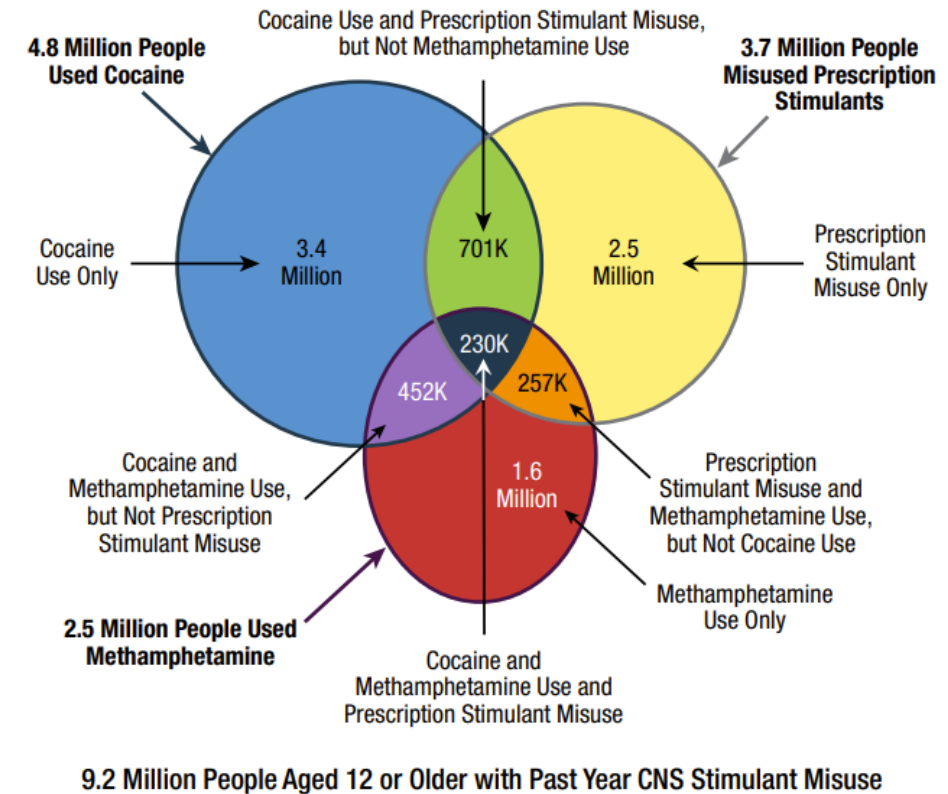
# **Epidemiology and Culture of Methamphetamine**

# CNS Stimulant Misuse in the Past Year, 2021

**Figure 20. Past Year Prescription Stimulant Misuse, Past Year Prescription Tranquilizer or Sedative Misuse, and Past Year Prescription Pain Reliever Misuse: Among People Aged 12 or Older; 2021**



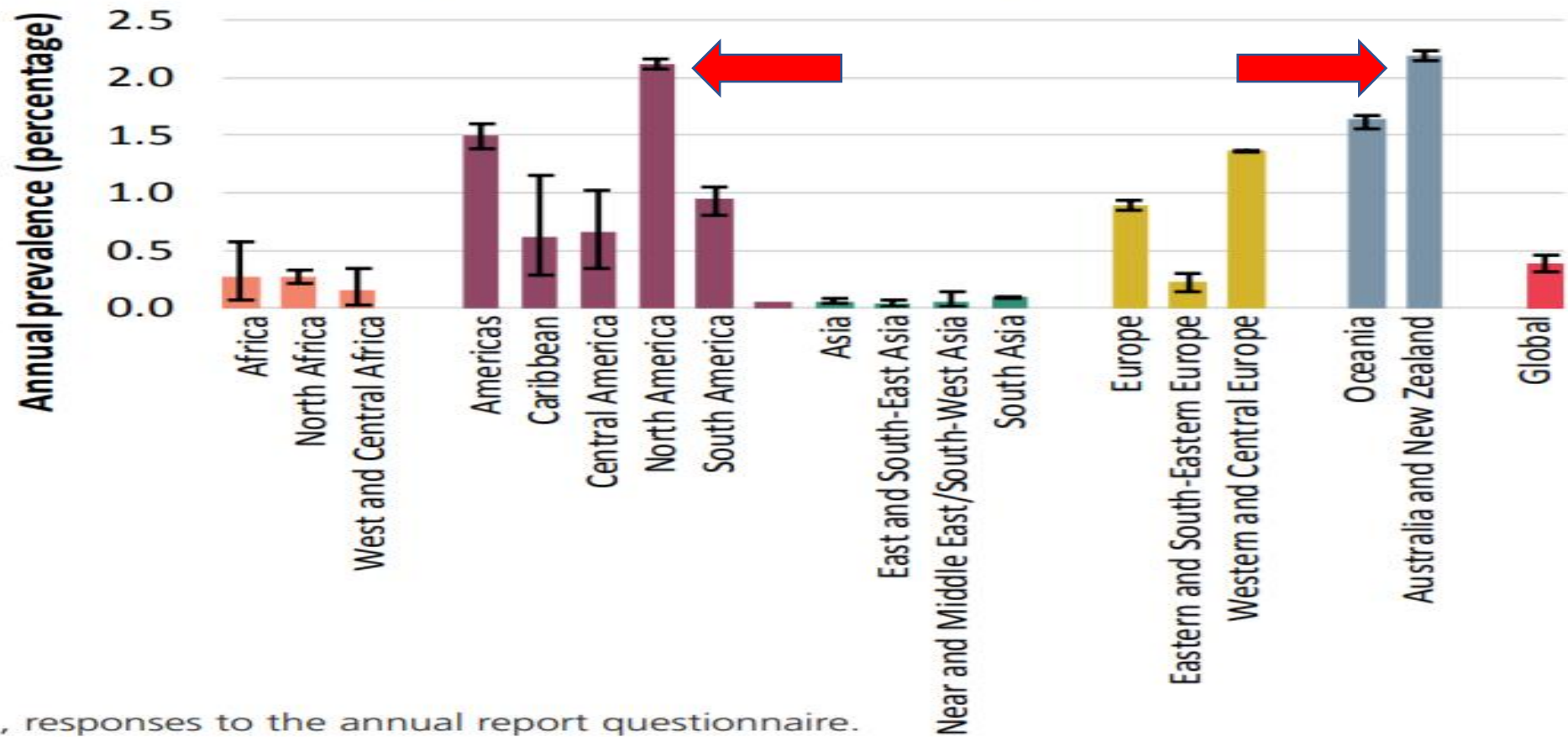
**Figure 25. Past Year Central Nervous System (CNS) Stimulant Misuse: Among People Aged 12 or Older; 2021**



Substance Abuse and Mental Health Services Administration. (2023) PEP22-07-01-005, NSDUH Series H-57

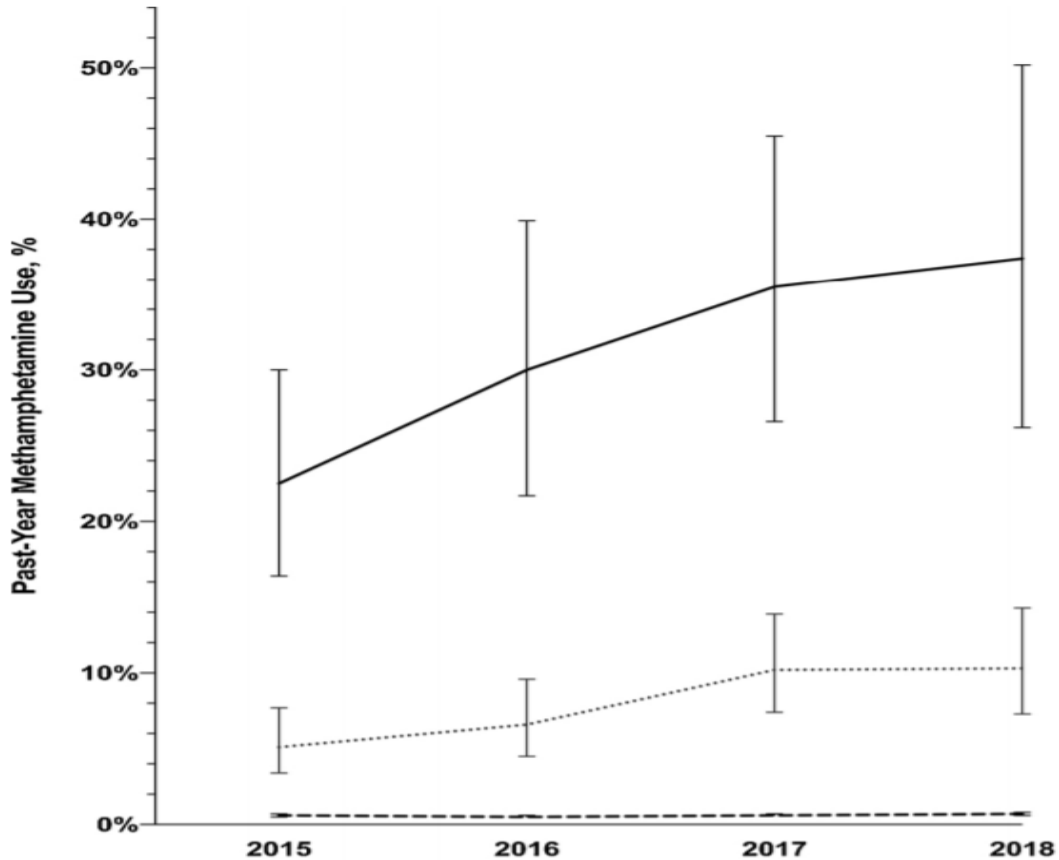
# World Drug Report, 2020, Booklet 2

FIG. 19 Use of cocaine, by region and selected subregions, 2018



Source: UNODC, responses to the annual report questionnaire.

# Size of the Problem: NSDUH, Methamphetamine U.S.



- General population estimates remain low (0.7%)
- Dramatic rises in meth use among people who report using heroin and LSD

Palamar JJ. *Drug Alc Dep.* 2020 Jun 3;213:108089

ADDICTION

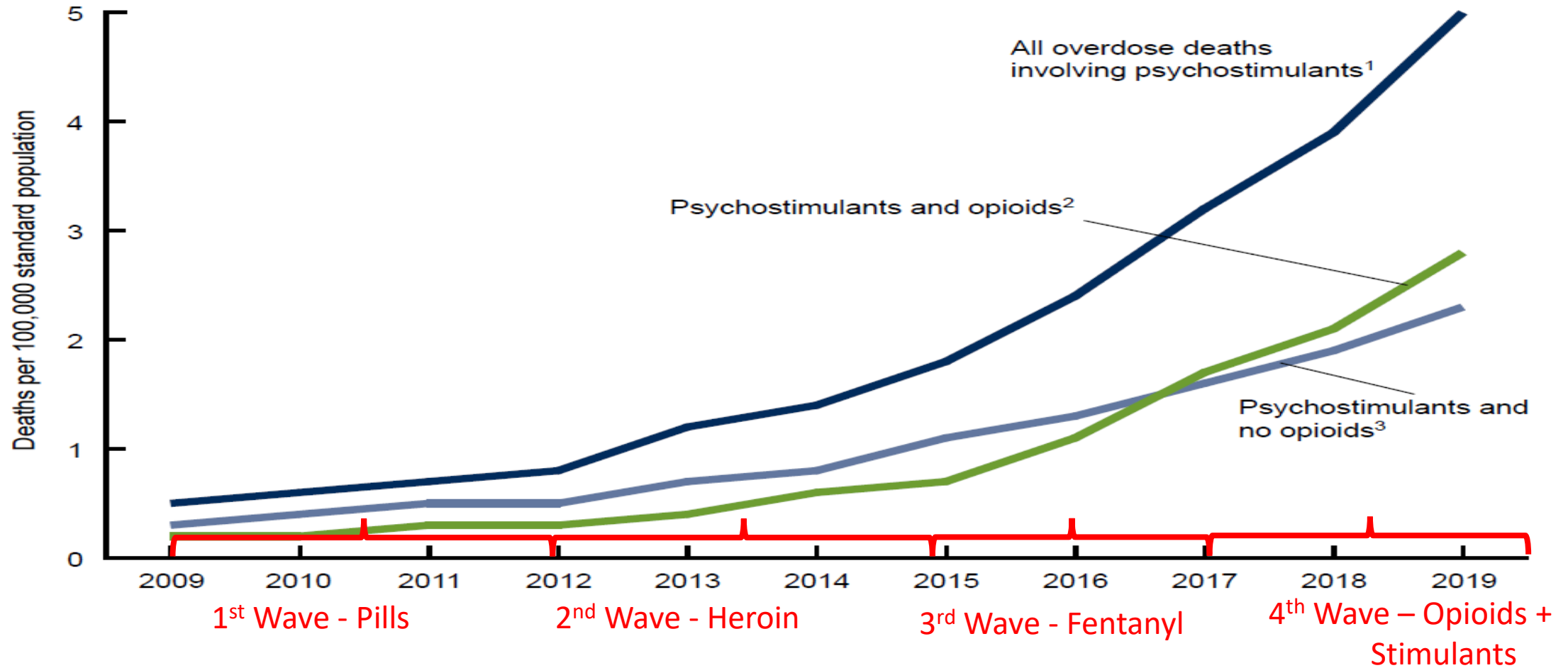
ADDICTION OPINION AND DEBATE

SSA SOCIETY FOR THE STUDY OF ADDICTION

doi:10.1111/add.15458

**Heroin use cannot be measured adequately with a general population survey**

# 4<sup>th</sup> Wave: Poly-Substance Use<sup>1</sup>

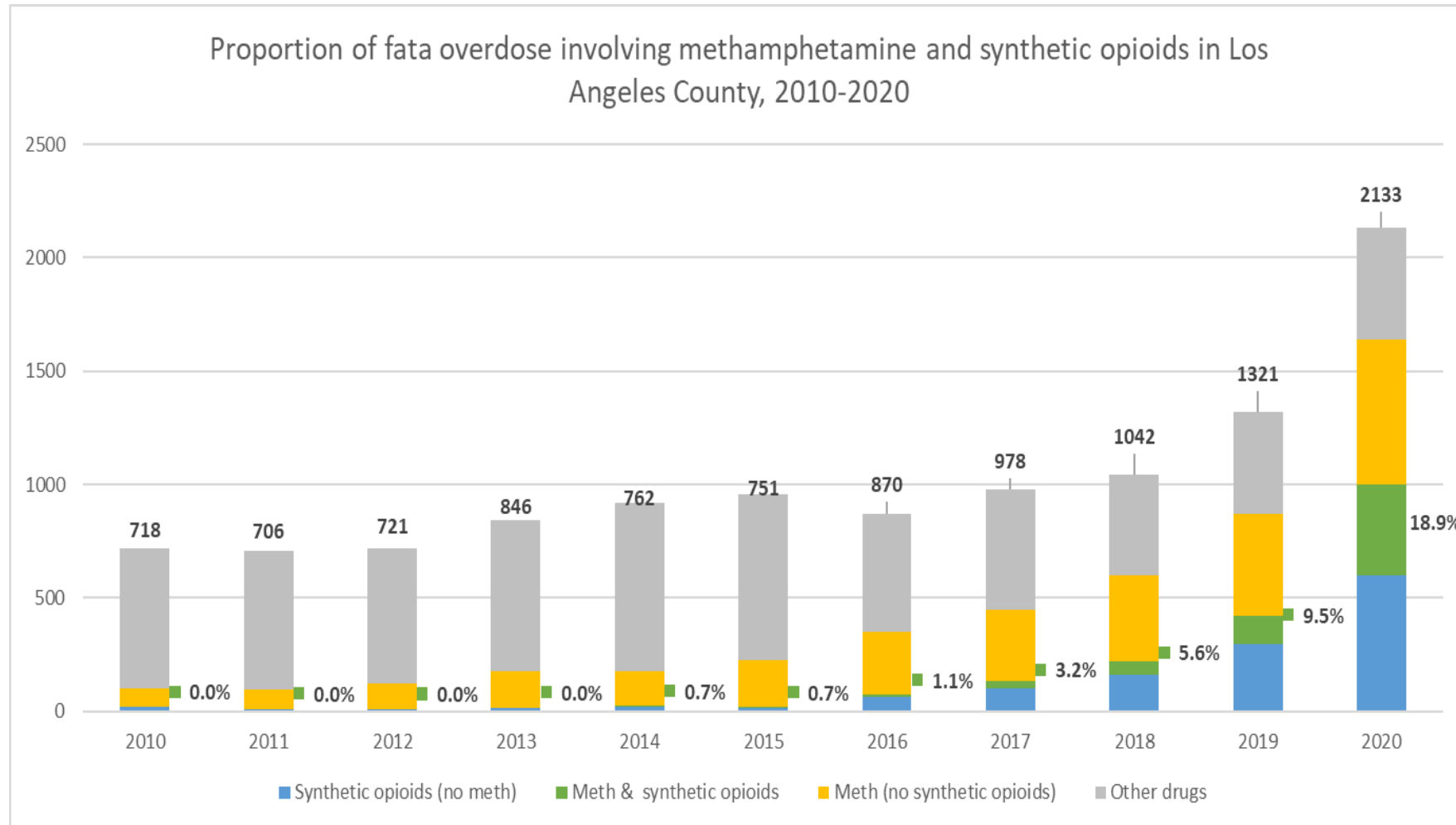


Hedegaard et al., *NCHS Data Brief, 406*, April 2021

<sup>1</sup> Concept Defined by Dan Ciccarone



# Methamphetamine and Fentanyl in LA County



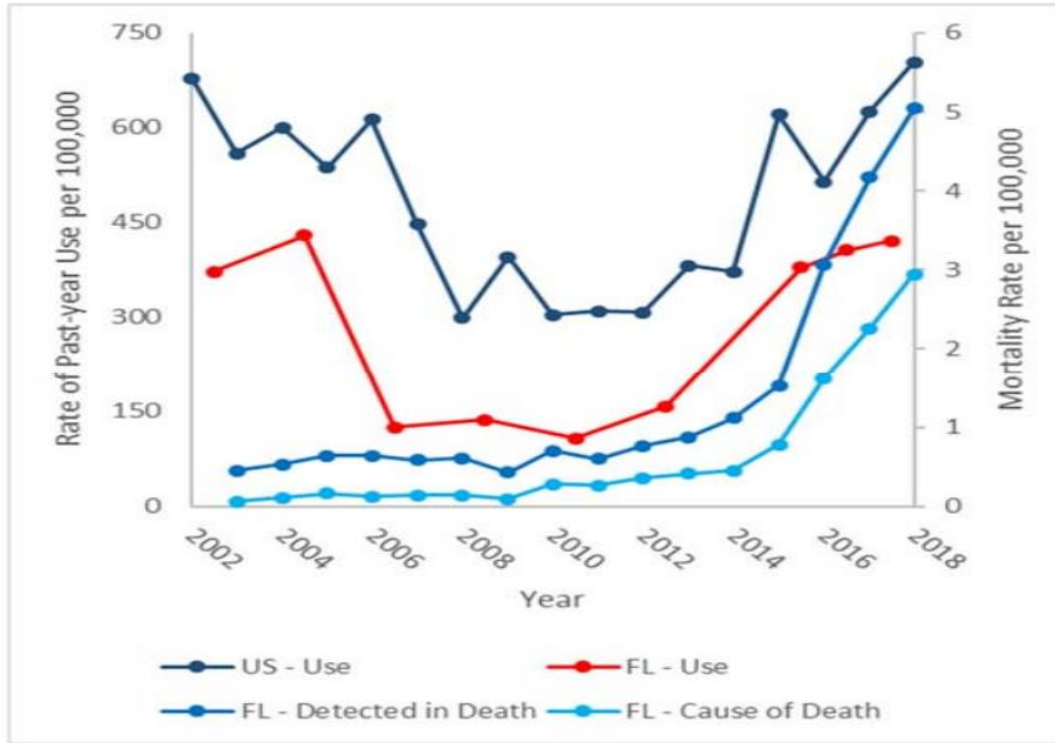
Chelsea Shover analysis of data from CDC Wonder March 10, 2022

# Florida Methamphetamine Prevalence; Fentanyl

## Substance Abuse Trends *Alert!*

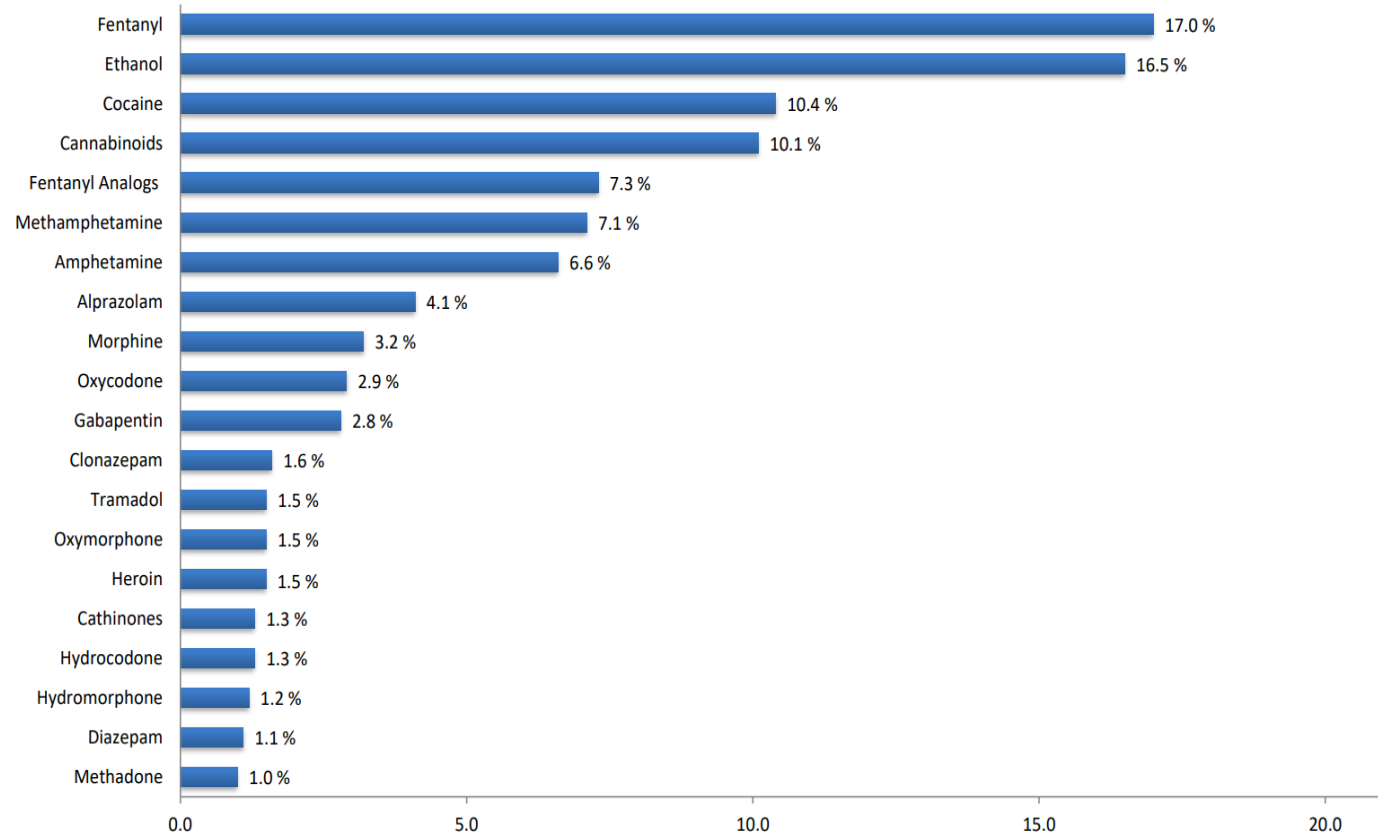
May 2020

### Use of Methamphetamine Increases in Florida and Across the Nation



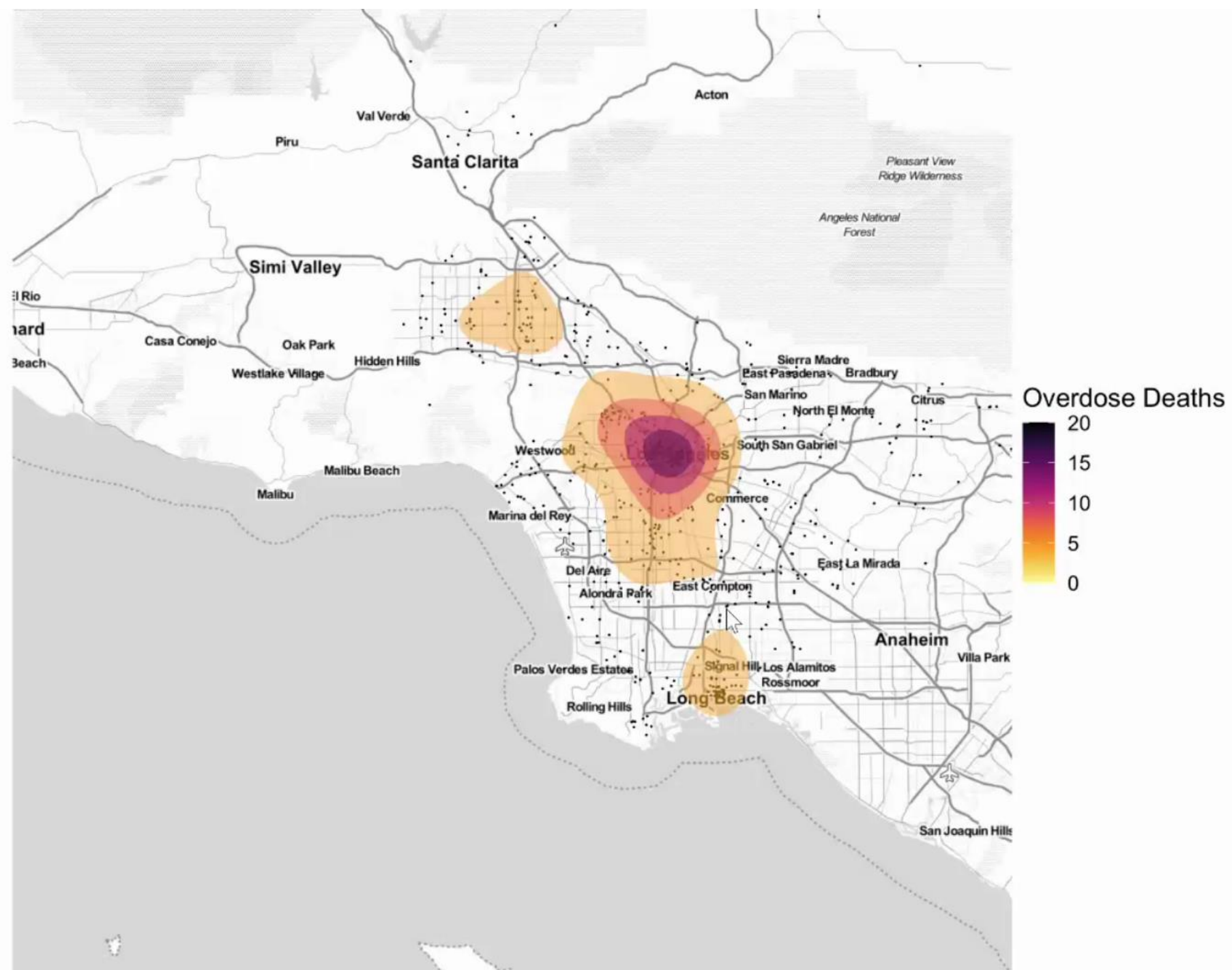
**Figure 1.** Self-reported, past-year methamphetamine (meth) use, US and FL, and fatal drug poisoning in which meth caused and/or detected at death, 2002 - 2018. Source: [NSDUH](#) and [FL ME Commission](#).

## Drugs Identified in Deceased Persons by Florida Medical Examiners



# Geographic hotspots: Methamphetamine- related deaths 2021

Map: David Goodman-Meza, MD,  
MAS. Data are provisional: cases  
closed as of Feb 2022.

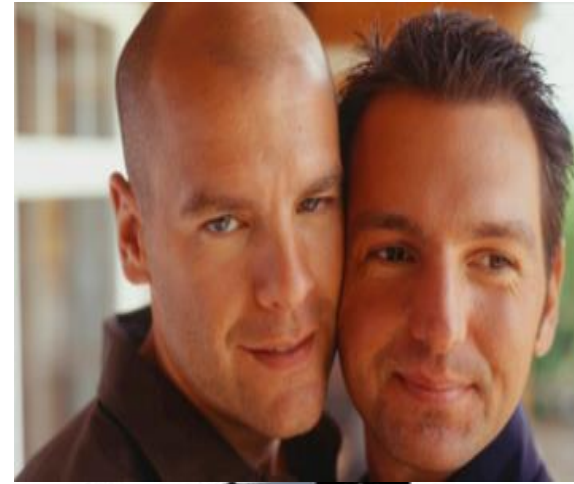


# The Importance of Phenotypes: Methamphetamine Use Patterns Matter

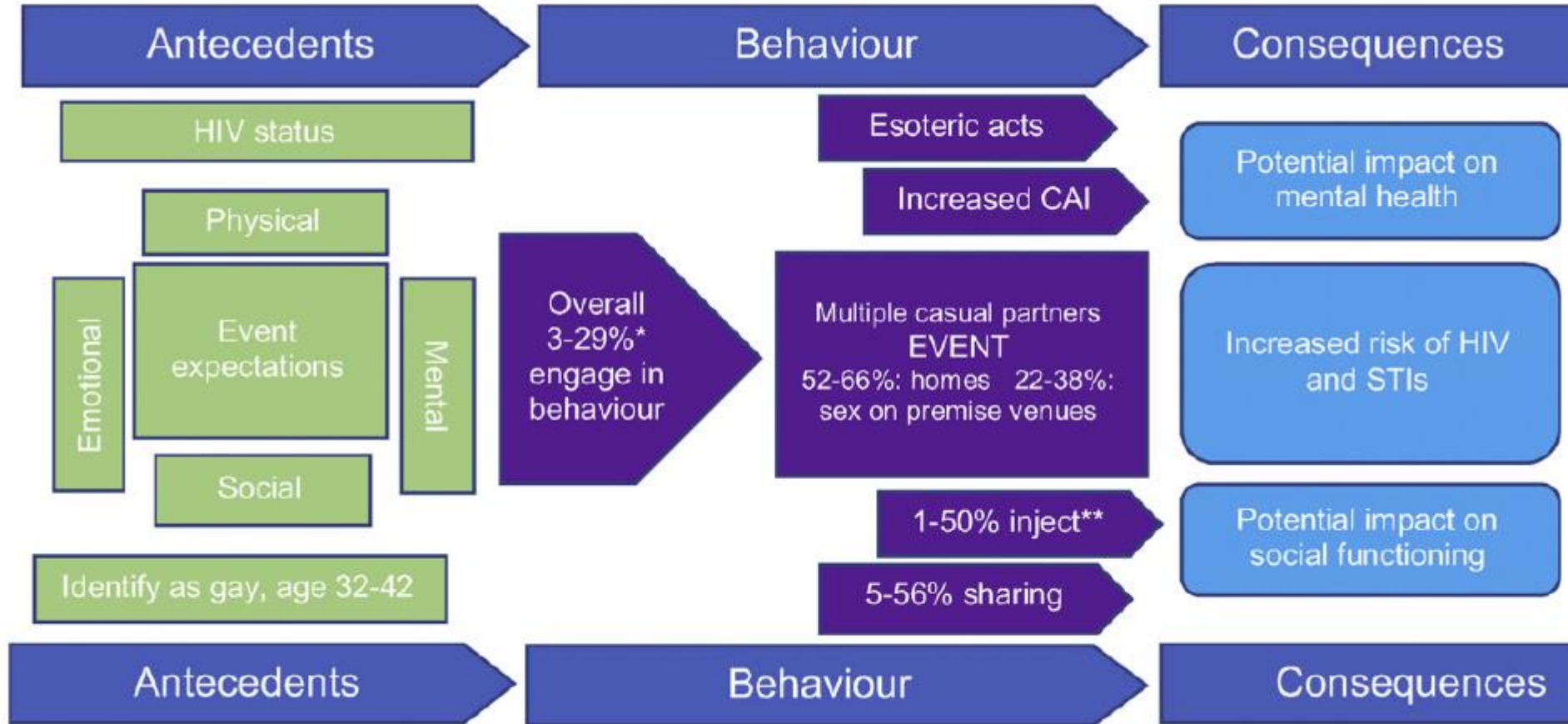
# Methamphetamine Effects and Function Shape Treatment Goals

Physical	Psychological
↑ Heart Rate	↑ Confidence
↑ Blood Pressure	↑ Alertness
↑ Pupil Size	↑ Mood
↑ Respiration	↑ Sex Drive
↑ Sensory Acuity	↑ Talkativeness
↑ Energy	↑ Energy
↓ Appetite	↓ Boredom
↓ Sleep	↓ Loneliness
↓ Reaction Time	↓ Timidity

- Gay Men
- Shift Workers
- Bikers – Gangs
- Women
- Rural
- Youth
- Homeless



# Chemsex: Review of MSM Papers




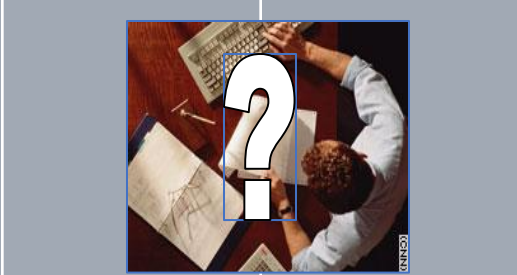
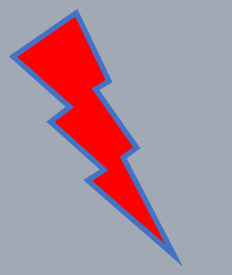



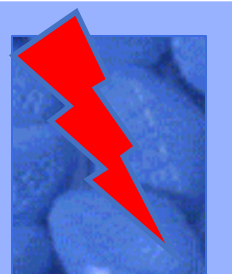

Maxwell et al., 2019. *Int J Drug Pol.* 63:74-89

# Chemsex and PWID

- MSM less likely than heterosexual men to use drugs associated with chemsex, whether injected or not
- WSW who inject also report chemsex, though not comparable to WSW or heterosexual women who do not inject
  - Heinsbroek et al., 2018, *Int J Drug Pol.* 55:215-222

# Weekend Warriors

Sun Mon Tues Weds Thur Fri Sat


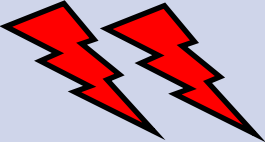
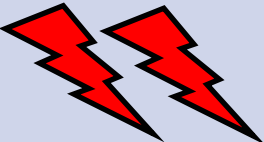
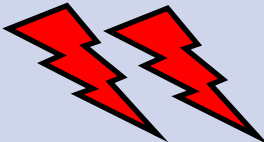
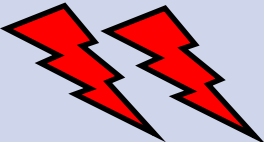

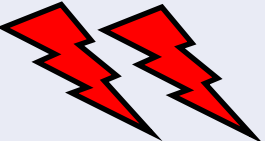
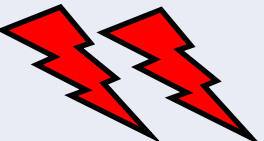
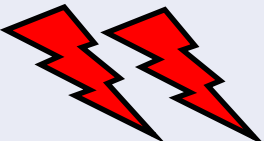
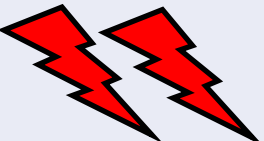
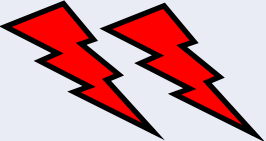

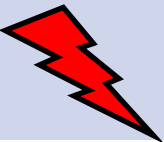
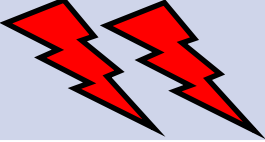
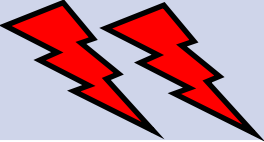
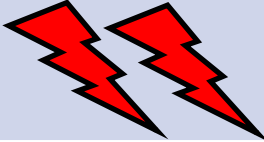
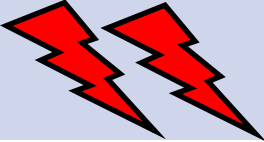
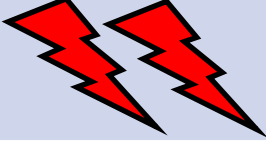


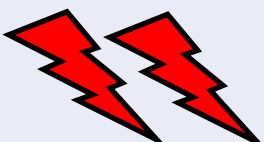

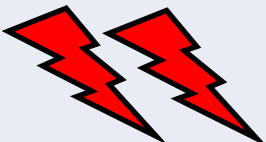
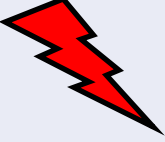

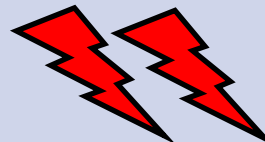
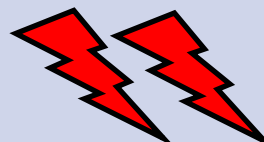
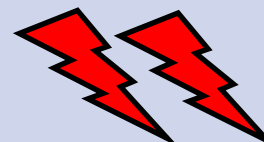
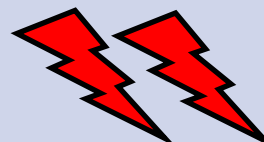
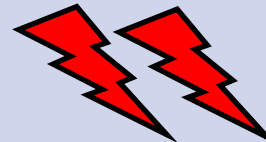
\$100 - \$250 for the weekend (excluding cover charges) –

Lowest costs in Los Angeles; highest in Miami

<https://www.drugtimes.org>



# Shift Workers

SUN	MON	TUES	WEDS	THUR	FRI	SAT
						
						
						
						
						

# Blue Moon

SUN	MON	TUES	WEDS	THUR	FRI	SAT
						
						

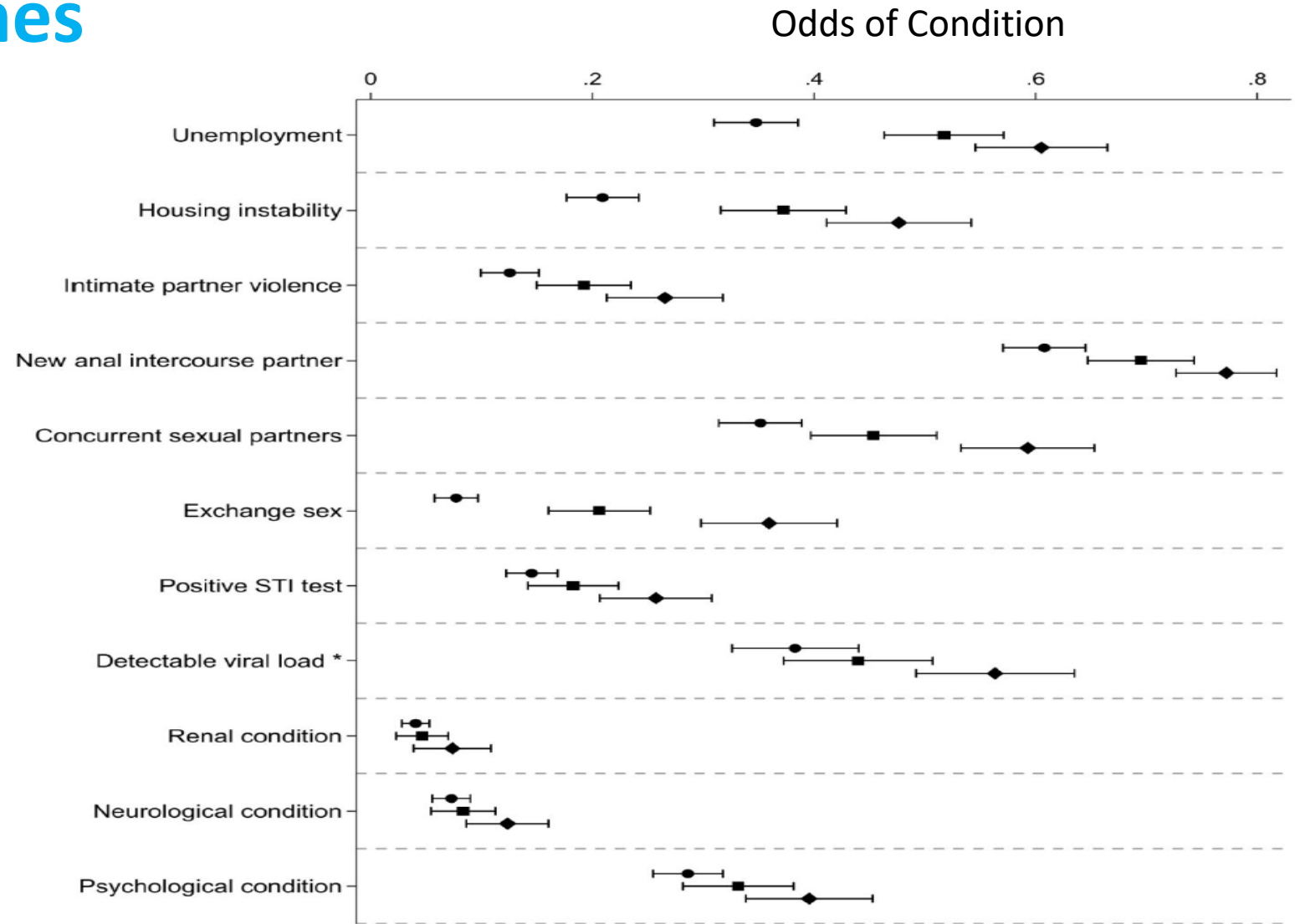
# Cumulative Exposure: Methamphetamine

	$\Sigma$ Meth exposure per month <sup>1</sup>	Naturally Occurring Abstinence
<b>Weekend Warriors</b>	~ 1-3 g	>14 days
<b>Shift Workers</b>	~ 10-11 g	4-8 days
<b>Blue Moon</b>	~ 1 g every 3-6 months	> 30 days

<sup>1</sup>Exposure totals estimated for .25g meth used each time (Drug Times 2021)

An “eight ball” of meth is 3.5 grams and costs ~\$60-70/g depending on purity

# Links Between Meth Use Phenotype and Social and Health Outcomes

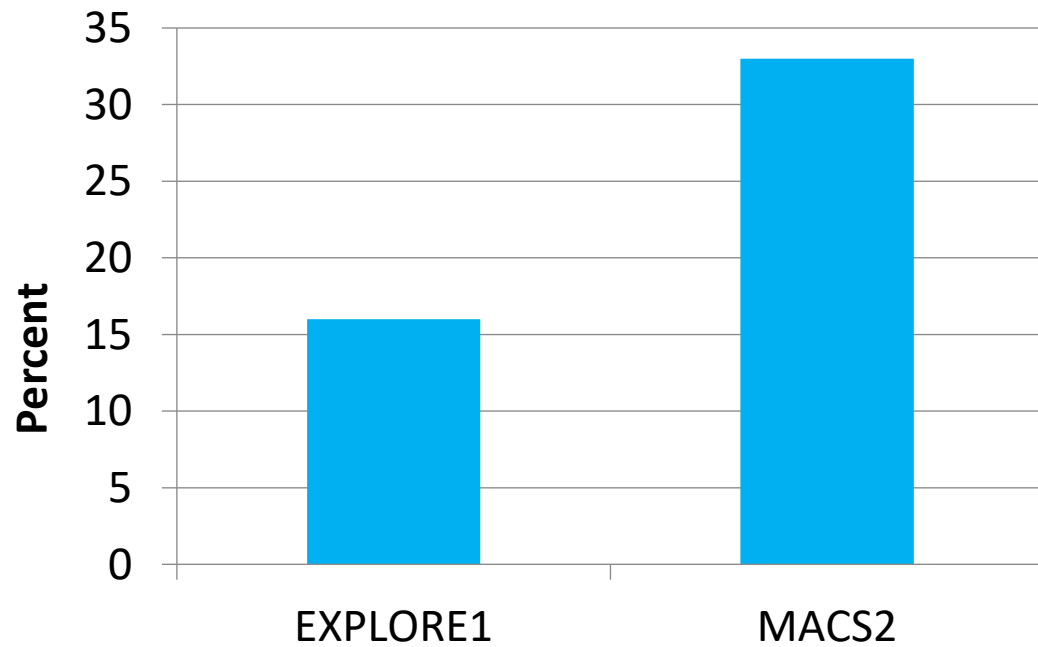


Methamphetamine use

- None
- Monthly or less
- ◆ Weekly or more

Shoptaw S, Li MJ, et al. Drug Alcohol Depend. 2022 Mar 1;232:109320.

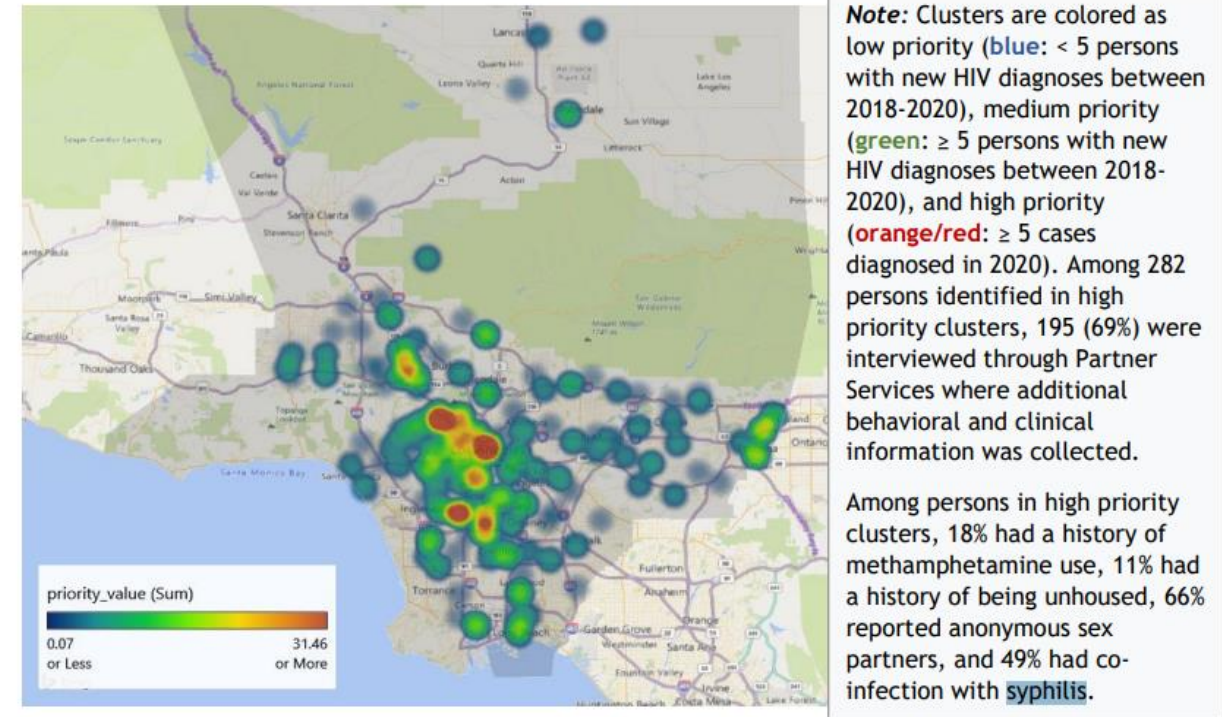
# Methamphetamine Use, HIV Incidence in MSM; Other STIs



<sup>1</sup> Project EXPLORE; Koblin et al., 2006, AIDS, 20: 731-739

<sup>2</sup> Multisite AIDS Cohort Study; Ostrow et al., 2009, JAIDS, 51: 349-355

Figure 26: Molecular HIV cluster cases by zip code and priority level, LAC, 2018-2020



The highest number of high priority clusters were in West Hollywood, Downtown, and South Los Angeles zip codes.

[http://publichealth.lacounty.gov/dhsp/Reports/HIV/2020AnnualHIVSurveillanceReportUpdated9-2021\\_fig1fig2update.pdf](http://publichealth.lacounty.gov/dhsp/Reports/HIV/2020AnnualHIVSurveillanceReportUpdated9-2021_fig1fig2update.pdf)

# Black MSM in Baltimore, 2018-2020

**TABLE 4.** The Unadjusted Odds Ratios (ORs) and Adjusted Odds Ratios (AORs) of HIV Positivity\* Associated With Methamphetamine (Meth) Use† and Syphilis Positivity‡ Adjusting for Age, Employment, and Sexual and Drug Risk Behaviors Among Black Gay, Bisexual, and Other Men Who Have Sex With Men (MSM) in the USHINE Study, Baltimore City, 2018 to 2020 (n = 268)

	<b>OR</b>	<b>95% CI</b>	<b>AOR</b>	<b>95% CI</b>	<b>AOR</b>	<b>95% CI</b>	<b>AOR</b>	<b>95% CI</b>	<b>AOR</b>	<b>95% CI</b>
Meth use <sup>†</sup> , past 3 mo	<b>6.05</b>	<b>2.68–13.70</b>	<b>6.06</b>	<b>2.66–13.78</b>	<b>4.41</b>	<b>1.88–10.33</b>	<b>5.96</b>	<b>2.33–15.21</b>	<b>6.41</b>	<b>2.26–18.19</b>
Syphilis positive <sup>‡</sup>	<b>2.19</b>	<b>1.12–4.28</b>	<b>2.19</b>	<b>1.09–4.40</b>	<b>2.64</b>	<b>1.27–5.50</b>	<b>2.56</b>	<b>1.22–5.37</b>	<b>2.57</b>	<b>1.23–5.37</b>
Age, continuous	<b>1.07</b>	<b>1.03–1.11</b>			<b>1.05</b>	<b>1.01–1.10</b>	<b>1.05</b>	<b>1.00–1.10</b>	<b>1.05</b>	<b>1.00–1.10</b>
Employment status, not working <sup>§</sup>	<b>2.36</b>	<b>1.43–3.88</b>			<b>1.96</b>	<b>1.15–3.35</b>	<b>1.97</b>	<b>1.15–3.39</b>	<b>1.96</b>	<b>1.14–3.37</b>
Unprotected anal intercourse, last sex	1.48	0.91–2.41					1.48	0.86–2.54	1.49	0.87–2.56
Sex partners, past 3 mo, >3 partners	0.98	0.58–1.65					0.51	0.25–1.01	0.51	0.25–1.02
Anonymous sex, past 3 mo	1.18	0.64–2.17					1.22	0.59–2.56	1.22	0.59–2.55
Injection drug use, past 3 mo	4.18	0.85–20.52							0.72	0.11–4.81

Bold font indicates significance at  $P < 0.05$ .

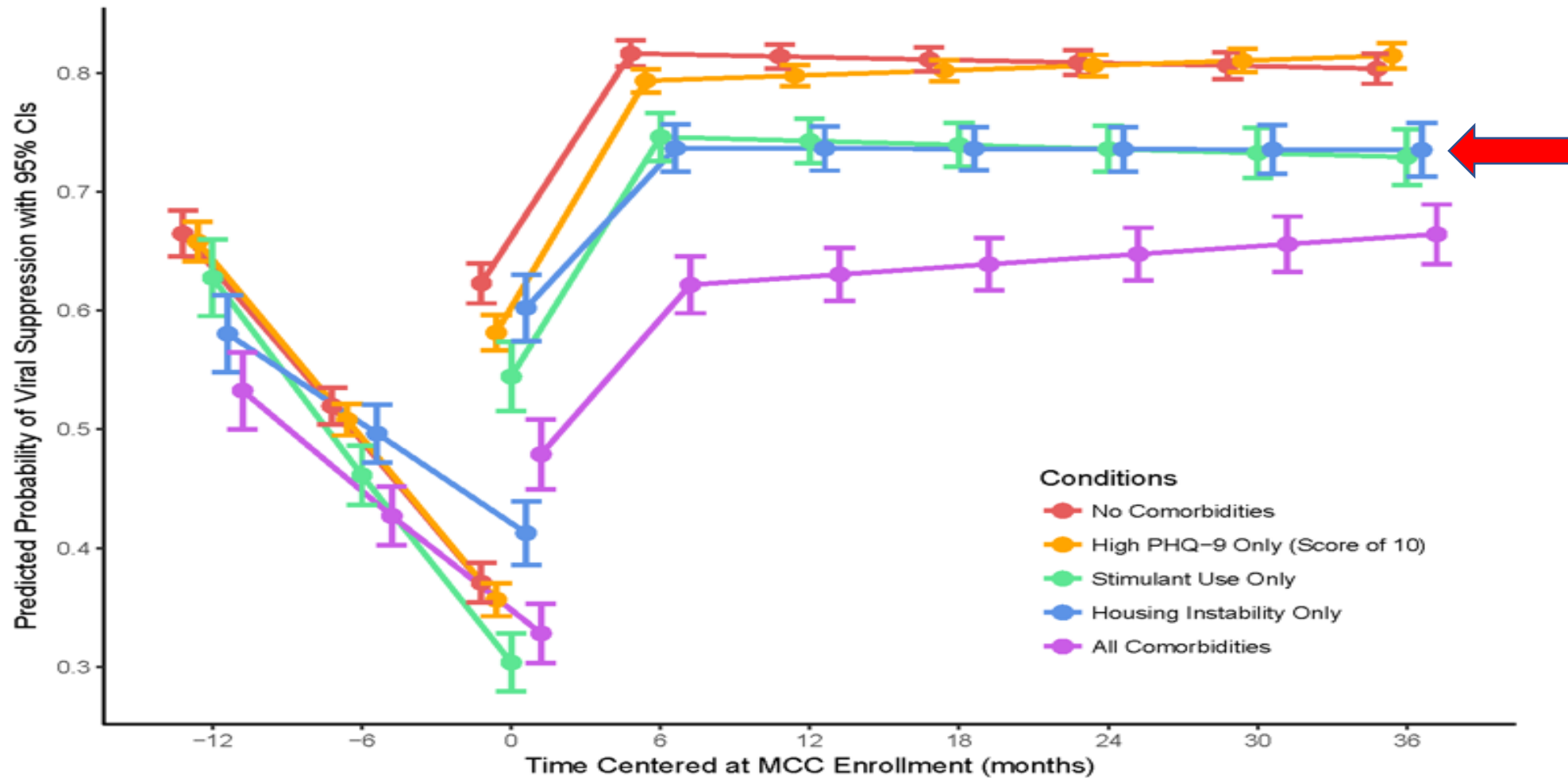
\*HIV positivity was defined as a positive HIV rapid test result with enzyme-linked immunosorbent assay confirmation at a study visit and/or medical record documentation of a prior positive HIV diagnosis, that is, person living with HIV.

†Meth use defined as any use of meth use (e.g., crystal, T, Tina, and meth speed) including use before or during sex in the past 3 months.

‡Syphilis positive defined as a reactive rapid plasma reagin titer followed by a reactive treponemal test and reflect active infection; a titer cutoff of greater than or equal to 1:8 was used.

§Employment defined as not working full-time, part-time, or as self-employed.

# Medical Care Coordination Outcomes, LA: 2013-2017



# Speed kills: Associations between methamphetamine use, HIV infection, tobacco use, and accelerated mortality among gay and bisexual men in Los Angeles, CA 20years after methamphetamine dependence treatment

R. Colby Passaro<sup>a,b,\*</sup>, Keenan Ramsey<sup>c,d</sup>, Eddy R. Segura<sup>b,e</sup>, Jordan E. Lake<sup>b,f</sup>, Cathy J. Reback<sup>g,h</sup>, Jesse L. Clark<sup>b,g</sup>, Steve Shoptaw<sup>b,c,g</sup>

Risk Group	Mortality Rate
<b>10-Year Standardized Mortality Ratio</b>	
GBM + Meth	3.95 (2.89-5.01)
<b>20-Year Standardized Mortality Ratio</b>	
GBM + Meth	3.39 (2.49-4.09)
<b>10-Year Crude Mortality Rate</b>	
GBM + Meth	2.3 per 1,000 PY
GBM + Meth + HIV	5.2 per 1,000 PY
<b>20-Year Crude Mortality Rate</b>	
GBM + Meth + HIV	3.4 per 1,000 PY
GBM + Meth + HIV + Tobacco use	16.9 per 1,000 PY

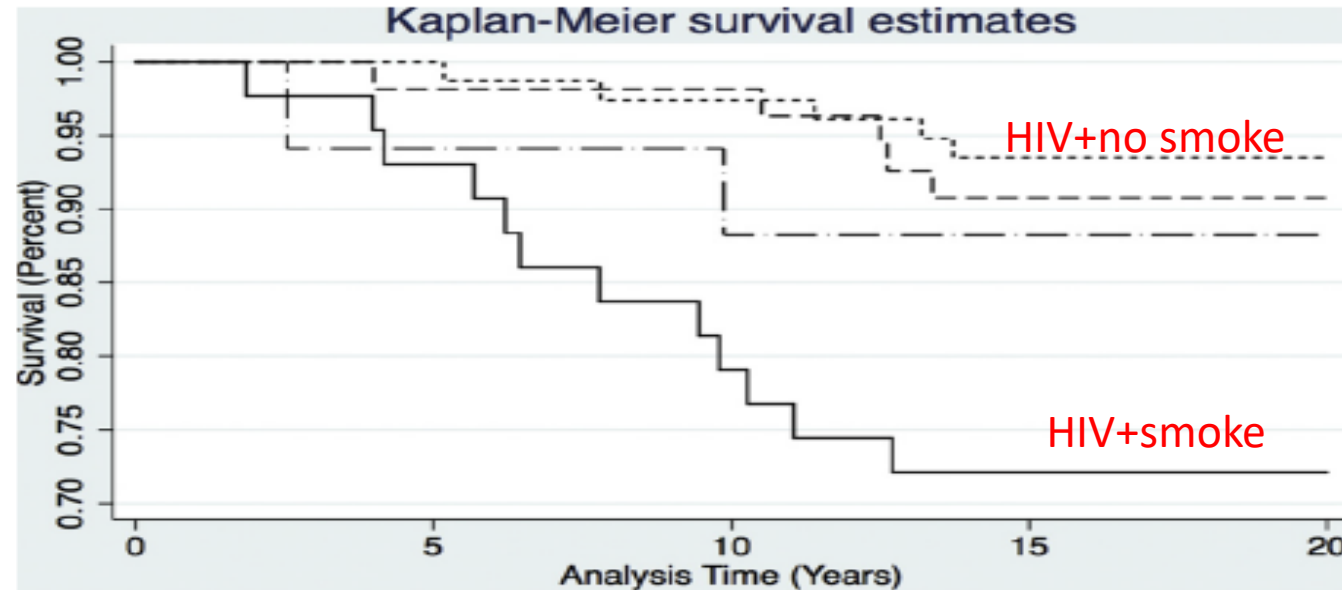
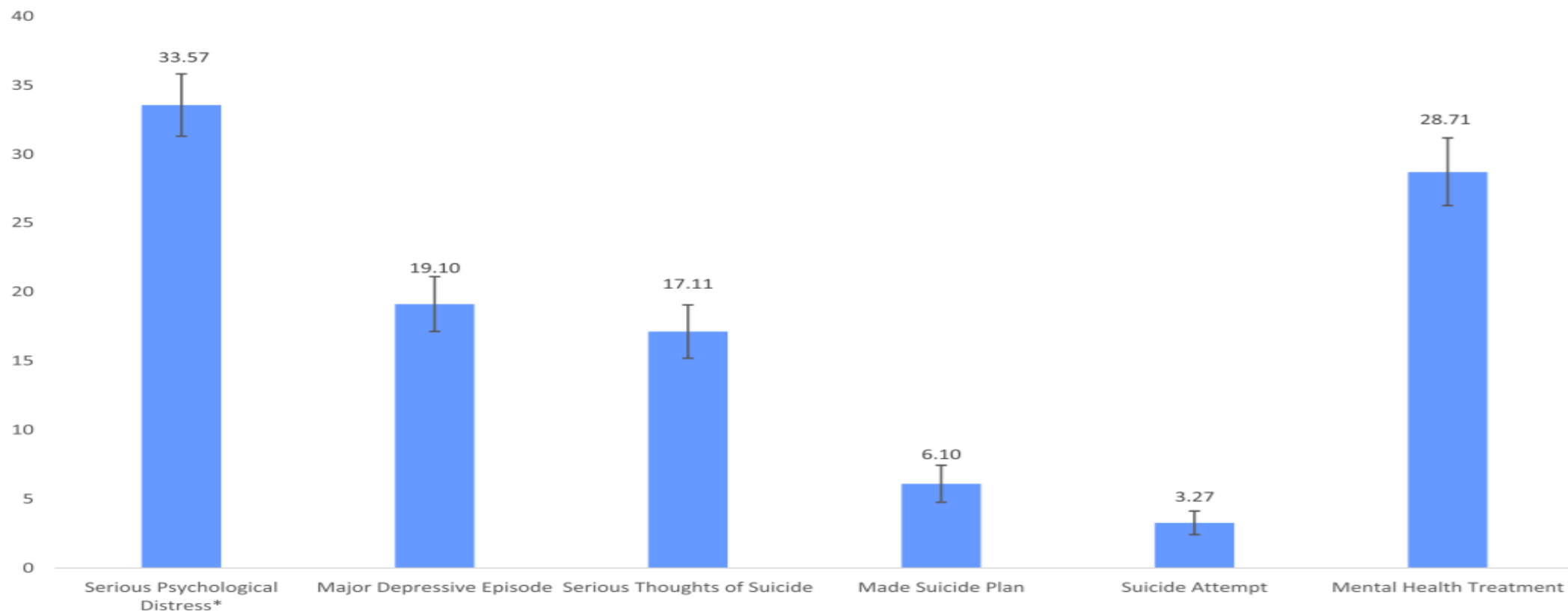


Fig. 2. Kaplan-Meier (K-M) Survival Curves for GBM Treated for Methamphetamine Dependence in Los Angeles, CA between 1998-2000, stratified by HIV status and Tobacco Use; N = 191. Short-dashed line = HIV infection, but no tobacco use; Dashed line = No HIV infection or tobacco use; Dash-dot line = Tobacco use, but no HIV infection; Solid line = Concomitant HIV infection and tobacco use.



# Cocaine Use and Concurrent Psychiatric Symptoms



**Fig. 2.** Prevalence of Past-Year Mental Health Characteristics Among Adults Reporting Past-Year Cocaine Use, United States, 2018–2019 \*Serious psychological distress is defined as a score of 13 or higher from the six items on the K6 Distress Scale, used by NSDUH for worst month in past year (CBHSQ, 2020; Kessler et al., 2005). Unweighted Sample Size = 85,765 Error bars represent 95% Confidence Interval. Source: National Surveys on Drug Use and Health, 2018–2019 (SAMHSA CBH, 2020).

Mustaquim D et al. Addict Behav. 2021 Sep;120:106950.

# Intake with James

James is a 42 year old Black/African American gay man who is seeing you because his partner, John, is saying he needs help. John is complaining that James' "weekend warrior" use of methamphetamine is interfering with their life together. He tells you this is impossible as he is in long-term recovery from addiction to crack cocaine in his early 20s and he knows how to control his meth use. James became HIV-positive a few months ago and has started HIV treatment and currently is virally suppressed (good response to HIV management). James smokes cigarettes 1-1.5 packs per day.

In developing the treatment plan for James, which of the following best captures your thoughts about James' primary behavioral goal?

- a. Stop/reduce methamphetamine use
- b. Stop/reduce cigarette smoking
- c. Consultation with James' infectious disease physician
- d. A and B
- e. All of the above

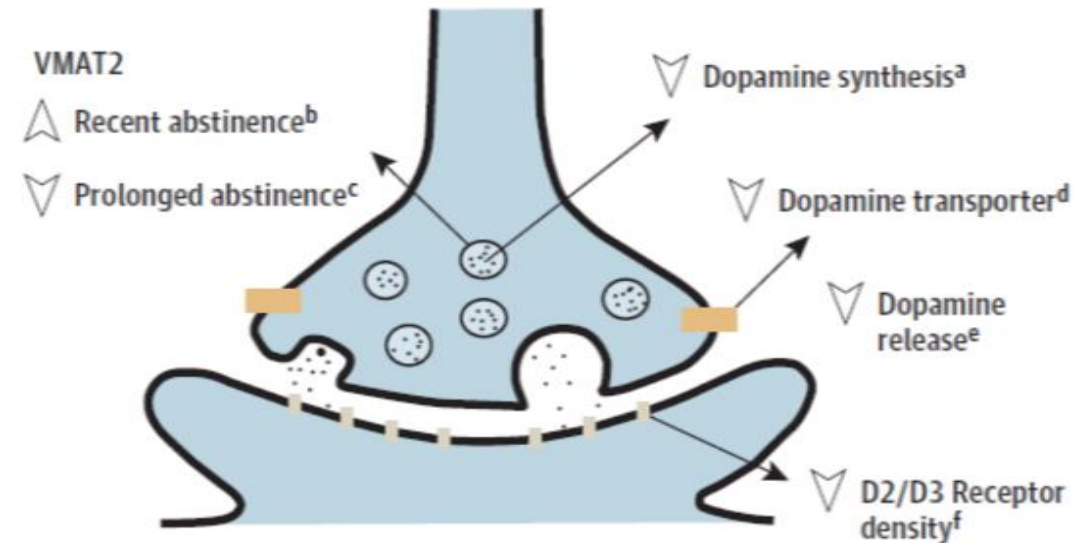
# Relevant Neurobiology



- All behavior is brain expressed – including “motivated/automatic” behaviors in stimulant use disorder
- Cocaine and methamphetamine have direct effects on neurons in stimulating and sustaining dopamine release
- Behavioral and potential medication therapies have mechanisms that affect neurotransmission, which in turn correspond with behavior change

# Dopamine Dysfunction in Stimulant Use Disorder

Figure 4. Summary of Dopaminergic Alterations in Stimulant Users



The synaptic location of the major dopaminergic findings is summarized from our meta-analysis and the results from studies of other aspects of the dopamine system. VMAT2 indicates vesicular monoamine transporter 2. The upward arrow indicates increased in stimulant users compared with controls; the downward arrow indicates decreased in stimulant users compared with controls.

## COCAINE:

Primarily blocks DA transporters

## AMPH/METH:

Inhibits DA reuptake AND increases reverse transport of DA into cleft

## AMPH/METH Effects Dose Dependent

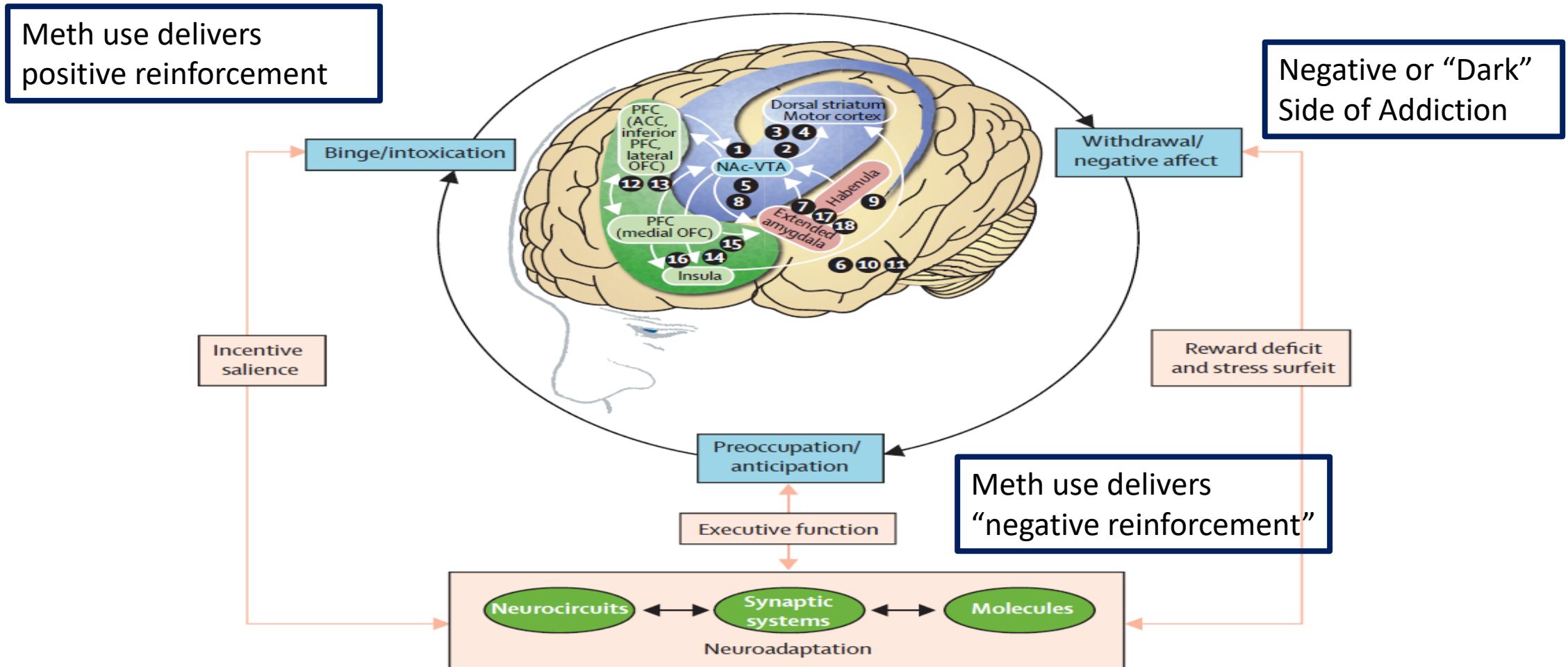
- Low doses block DA transport
- High doses also reverse DA transport

## Both effect 5-HT and NE transporters

Ashok A et al. 2017. *JAMA Psychiatry*, 74(5):511-519

Alburges ME et al. *Synapse*. 2015 69:396-404.

# Neurocircuitry of Addiction: Medication Targets



# Raul

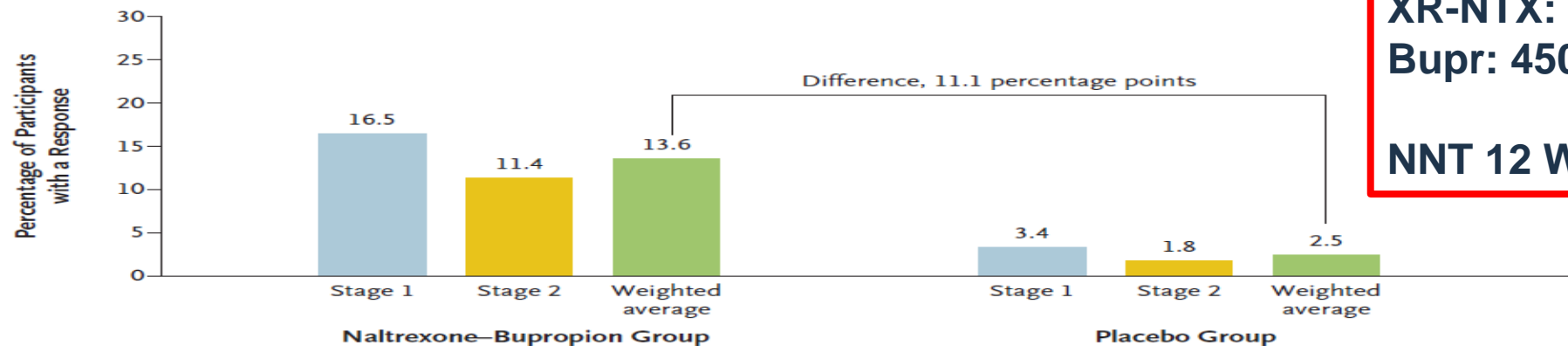
Raul is a 34-year-old Latino man living with HIV who you are treating for methamphetamine use disorder along with HIV. He brings his wife Anna, a 28-year-old Latina to an appointment with him. They tell you their child, Armando is a 7-year-old boy with a record of impulsive and hyperactive behaviors – mostly at school – behaviors that have been consistent since kindergarten. Last week, Armando wouldn't stop running around the classroom, causing distractions to the class and interrupting the teacher. The school nurse called to say that Armando start psychostimulants as a condition of his being able to continue at the school. Anna begins to cry and says, "I don't want Armando to have the same problem with stimulants that Raul does." You assure Anna and Raul this is not likely. For one reason, there is no evidence children treated with psychostimulants for attention deficit hyperactivity disorder progress to substance use disorder over those not treated with the medications. What is another reason why it is not likely that treatment using psychostimulants will lead to stimulant use disorder in Armando?

- A. Prescription psychostimulant abuse is not a problem in the United States
- B. High doses of psychostimulants are neurotoxic; therapeutic doses of stimulants are not
- C. You recommend that Raul and Anna change schools for Armando – the school is biased
- D. Raul is in treatment for stimulant use disorder; genetic transmission is likely

# Pharmacotherapies

# Broadly Effective Medication for Meth Use Disorder

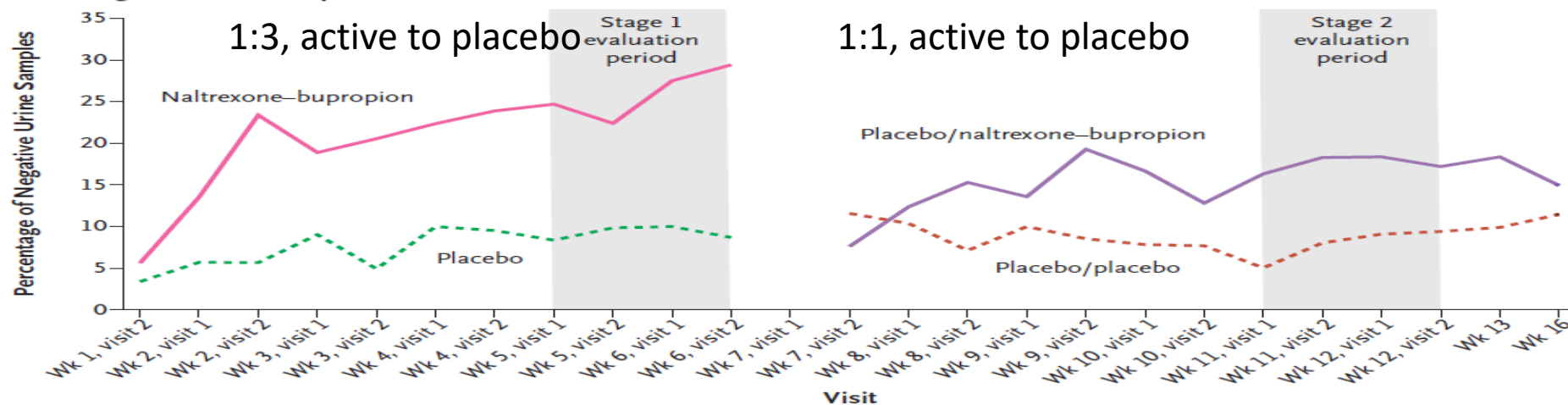
## A Responses



**XR-NTX: 380mg @ 3 wks**  
**Bupr: 450mg @ day**

**NNT 12 Wks=9**

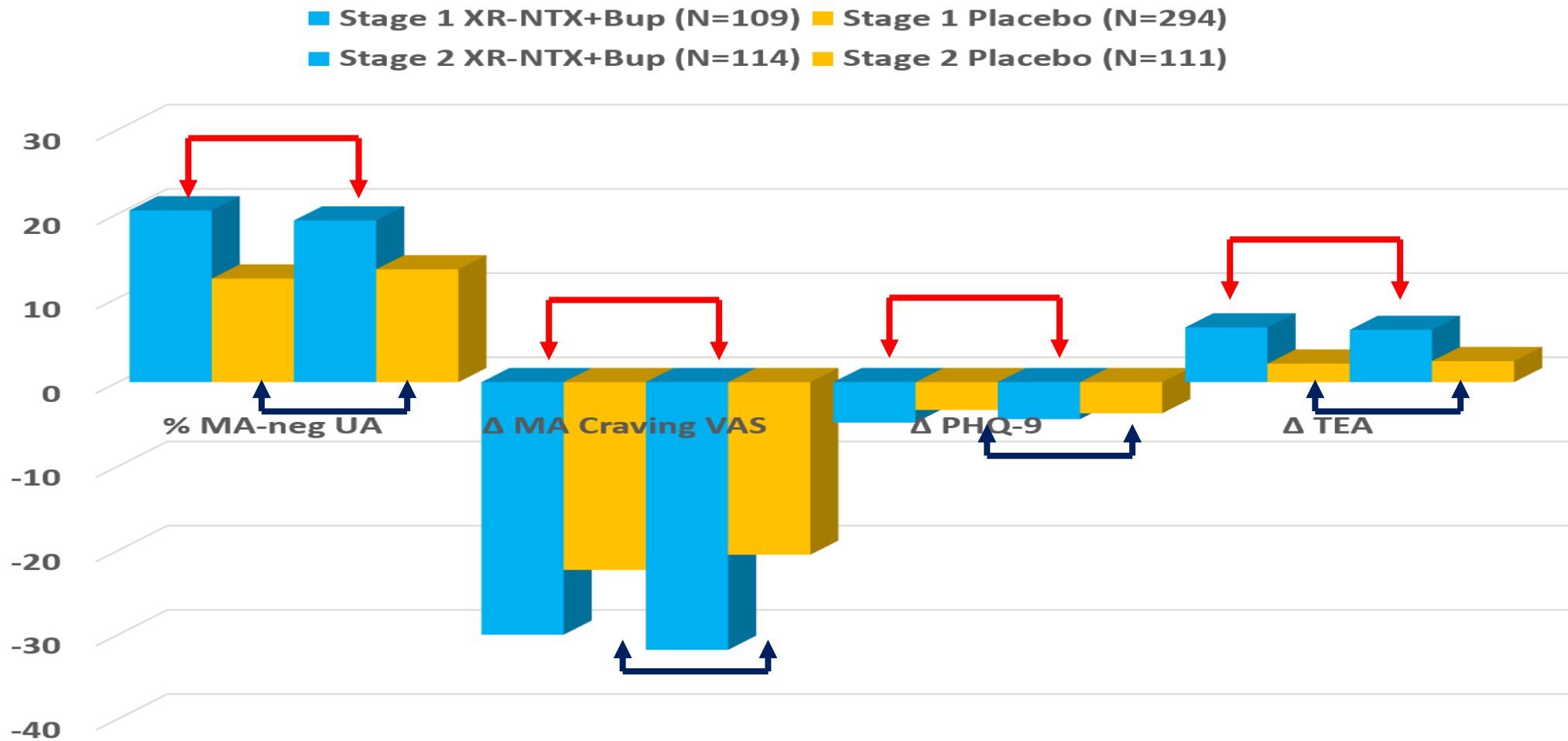
## B Methamphetamine-Negative Urine Samples



Trivedi MH et al., N Engl J Med. 2021 Jan 14;384(2):140-153.



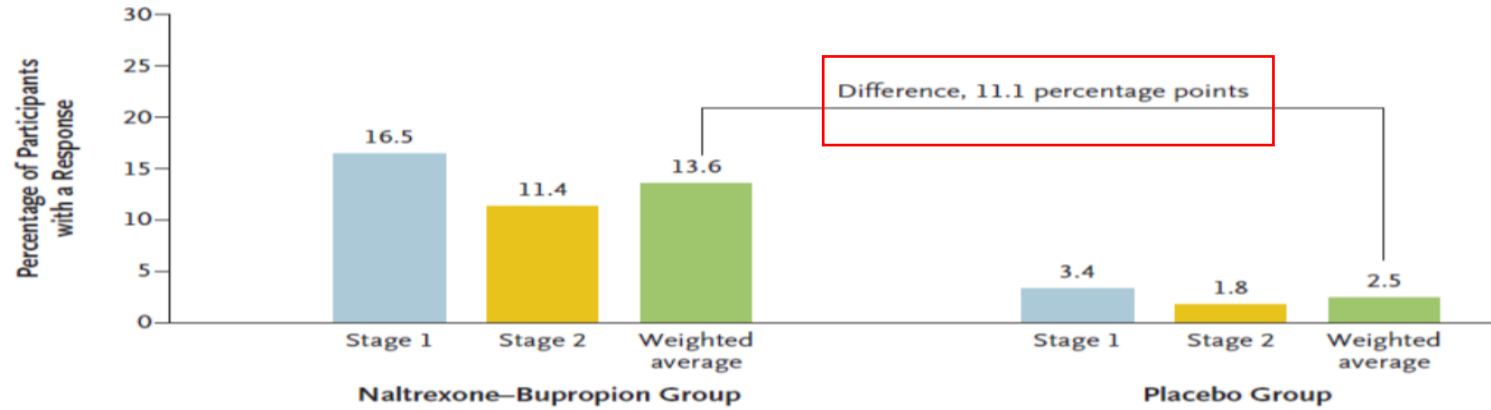
# Secondary Outcomes



Trivedi MH et al., N Engl J Med. 2021 Jan 14;384(2):140-153.

# Differential Response to Treatment: MSM/W?

A Responses

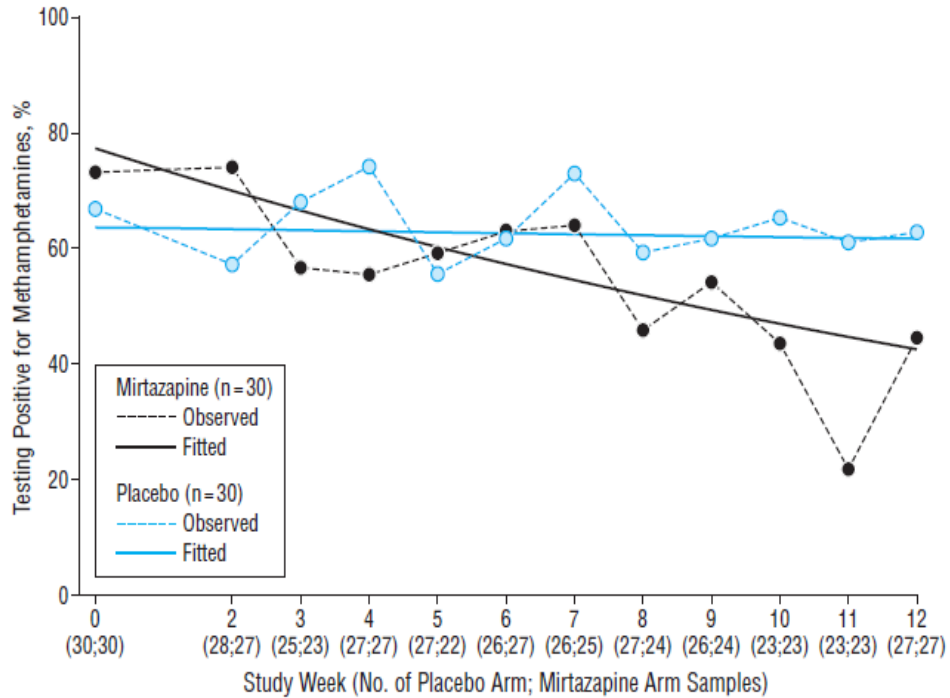


Trivedi MH et al., N Engl J Med. 2021  
384(2):140-153.

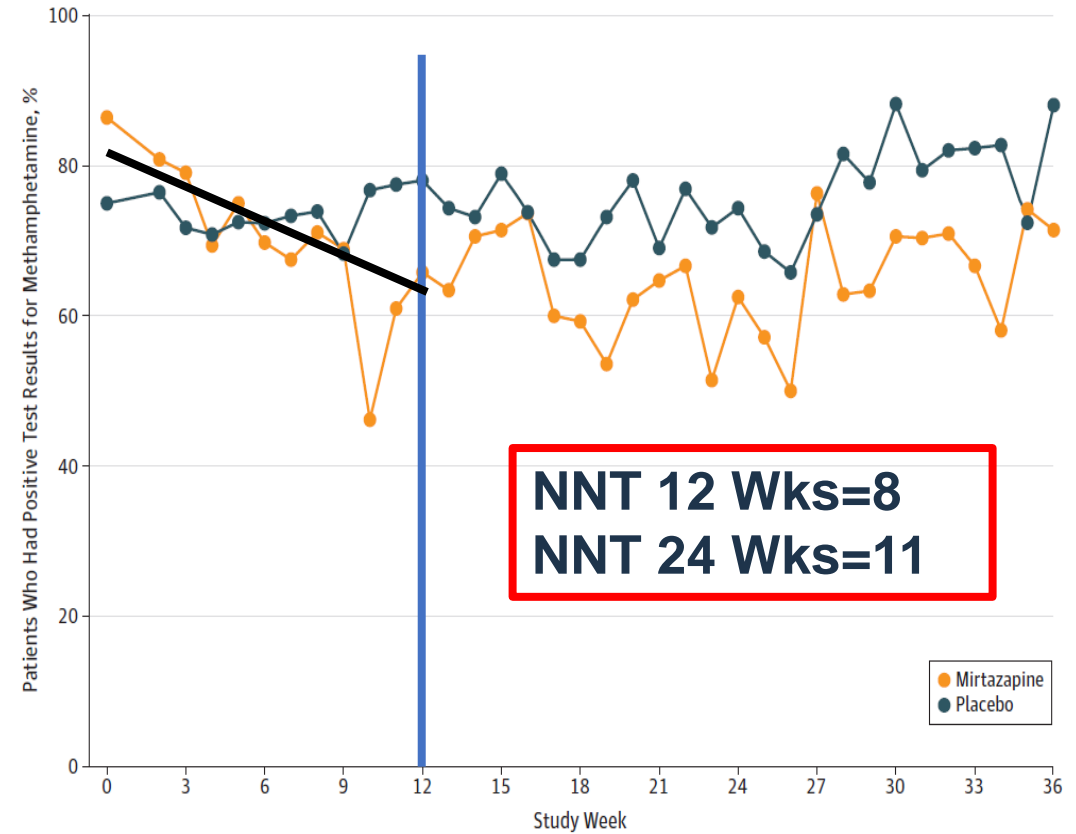
ect for extended-release  
NTX-BUP vs Placebo

Subgroup	# Randomized	Placebo Responder Rate	NTX-BUP Responder Rate	# Re-randomized	Placebo Responder Rate	NTX-BUP Responder Rate	Treatment Effect ( <i>h</i> )	Standard Error of <i>h</i>	p-value
MSM/W	151	(3/108) 0.0278	(6/43) 0.1395	90	(2/47) 0.0426	(10/43) 0.2326	0.1479	0.0357	0.04
MSW	95	(4/69) 0.0580	(2/26) 0.0769	50	(0/22) 0.0000	(1/28) 0.0357	0.0227	0.0484	

# Pharmacotherapy for Stimulant Use in MSM: Mirtazapine 30 mg/day



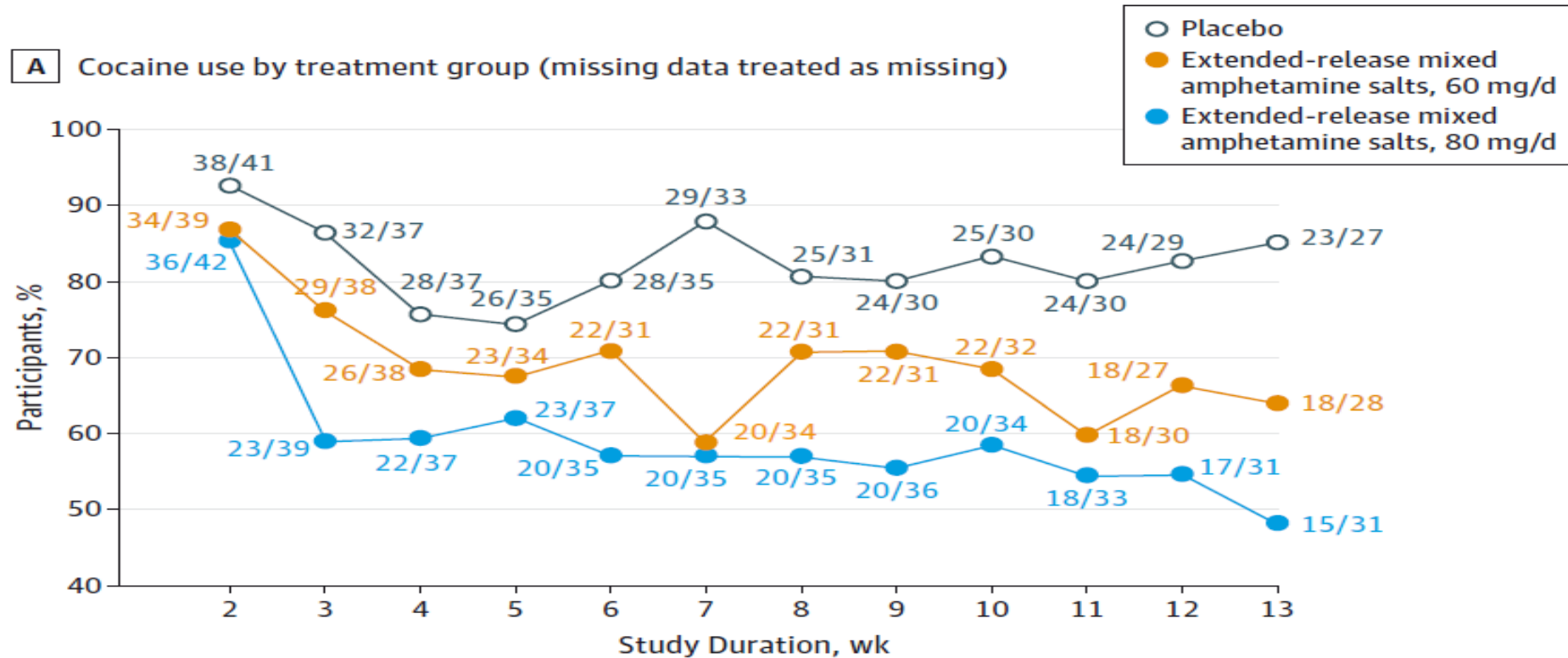
Colfax et al. *Archives Gen Psych*, 2011 68: 1168-1175



Coffin et al., doi:10.1001/jamapsychiatry.2019.3655

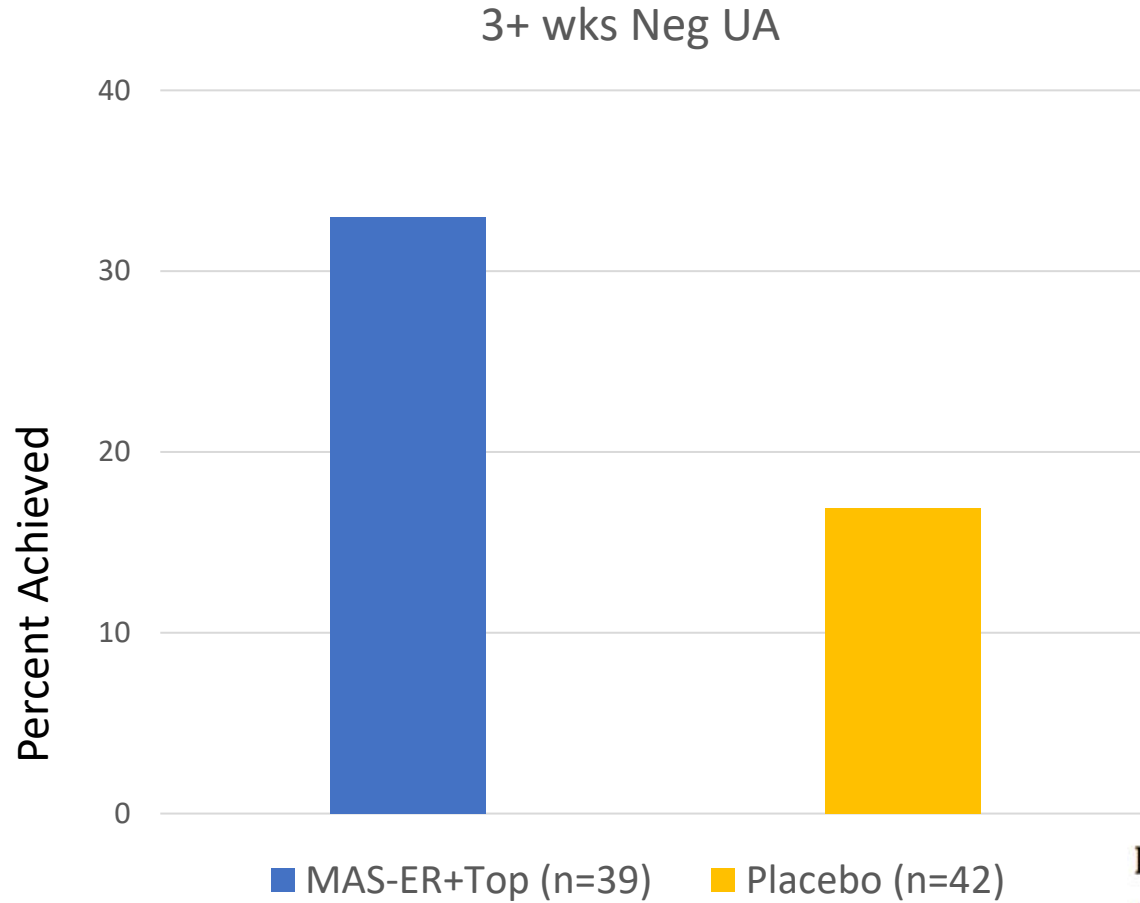
# Cocaine+ADHD: Mixed Amphetamine Salts - ER

Figure 2. Proportion of Participants With Cocaine Use by Randomized Treatment Group From Randomization (Week 2) Through End of Treatment Maintenance (Week 13)

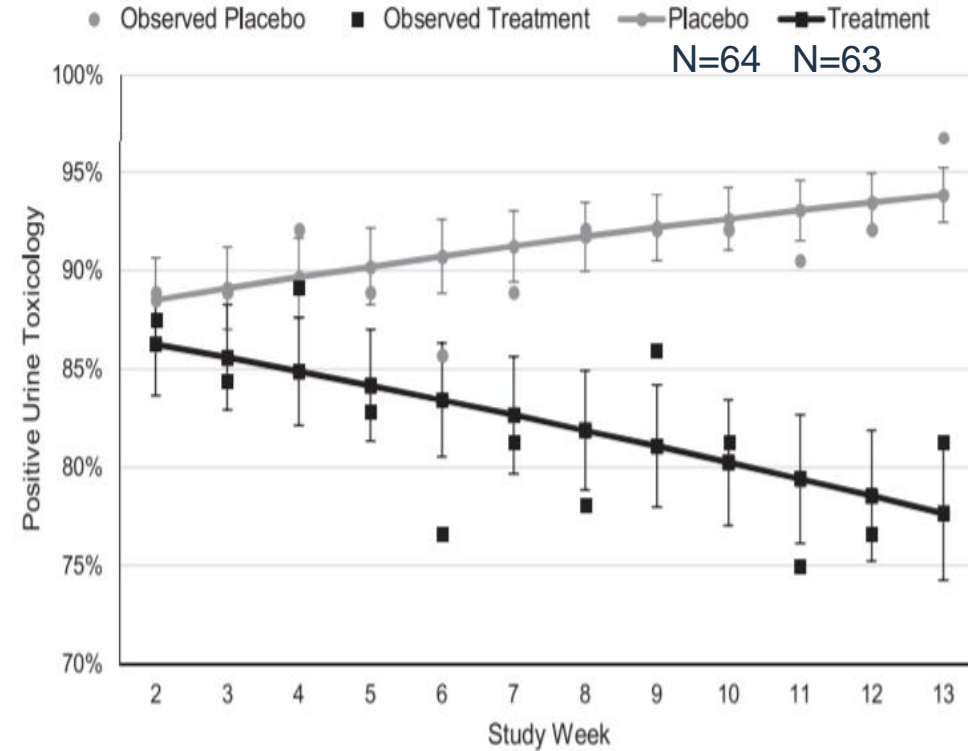


Levin F et al. 2015. *JAMA Psychiatry*, 72(6):593-602

# Mixed Amphetamine Salts-Extended Release + Topiramate



Mariani J et al. 2012. Biol Psychiatry 72:950–956



**Fig. 3.** Model-estimated (adjusted by sex, alcohol use disorder, and site) probabilities (in percentages) and 1 standard error of positive urine toxicology, weeks 2-13. Observed proportions are displayed as separate markers.

Levin FR et al. 2020 DAD 206:107700.

# Summary Current Pharmacotherapies

After 25 years, there are some signals for efficacy, though there still is no FDA approved treatment for cocaine or methamphetamine addiction:

- Large trial, strong signal for XR-NTX+Bupropion over placebo for reducing methamphetamine use
- Mirtazapine effects in MSM are impressive, particularly replication
  - Effect is reduction in use, not abstinence (like naltrexone for heavy alcohol drinking)
  - So far only tested in San Francisco and only in MSM

Mixed amphetamine salt-ER shows consistent signal for cocaine addiction

- Dose effects observed for people with ADHD
- Combination MAS-ER plus topiramate shows two replications

**Evidence to consider medication  
as a foundation of treatment for  
stimulant use disorder**



# Waiting for FDA Approved Meth Medications? Unlikely: Medications are Generic

## Phase I Safety

---

- Ia – First in humans. Few subjects. Biological measures
- Ib – First in pathology group. Biological measures, few efficacy
  - Communication with FDA and Industry for early efficacy testing

## Phase II Safety and Early Efficacy

---

- Iia – First efficacy studies with safety; RCTs with placebo; n=50-200
- Iib – Continued efficacy; RCTs with placebo; n=200-500
  - Communication with FDA and Industry for need for definitive/pivotal trial

## Phase III Efficacy

---

- RCTs with large samples (>1,000), relaxed controls on inclusion/exclusion; real world studies in clinics
  - Communication with FDA for Marketing

## Phase IV Post Marketing

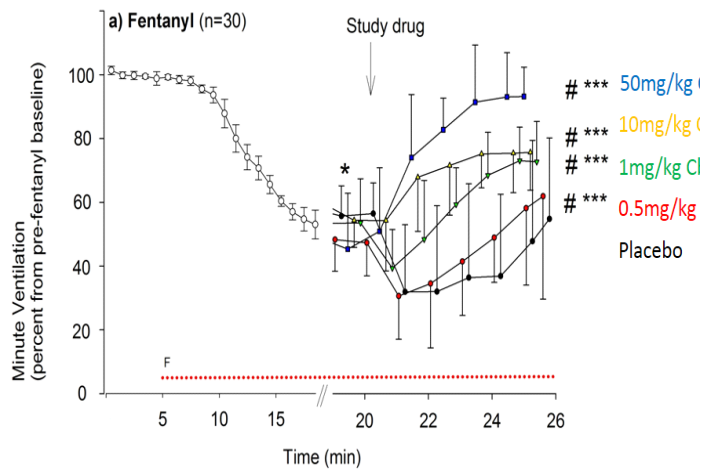
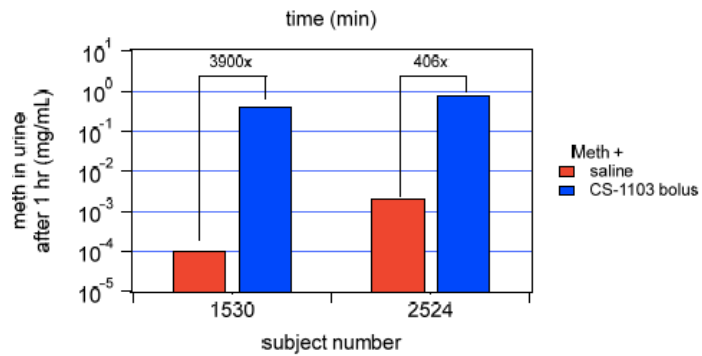
---

- RCTs with large samples (>1,000), relaxed controls on inclusion/exclusion; real world studies in clinics
  - Communication with FDA and Industry for ongoing monitoring of unusual side effects

# Next Steps in Meth Pharmacotherapy Trials

- Clear Scientific – CS1103

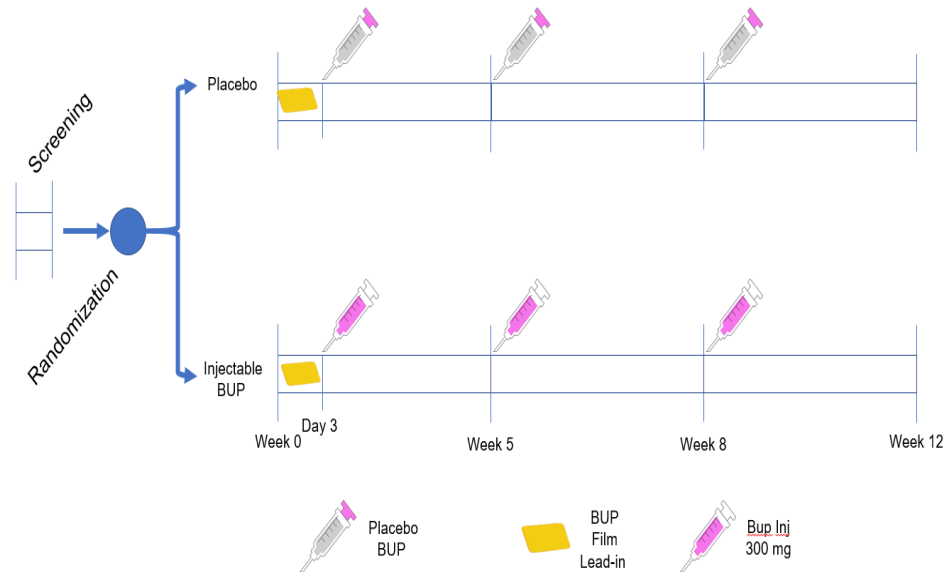
- Phase 1b trial



- CTN-0110

- Lead Investigator for MURB – Methamphetamine Use Reduction using Buprenorphine (monthly injection)

## MURB Study Design



### Completely Different Strategies:

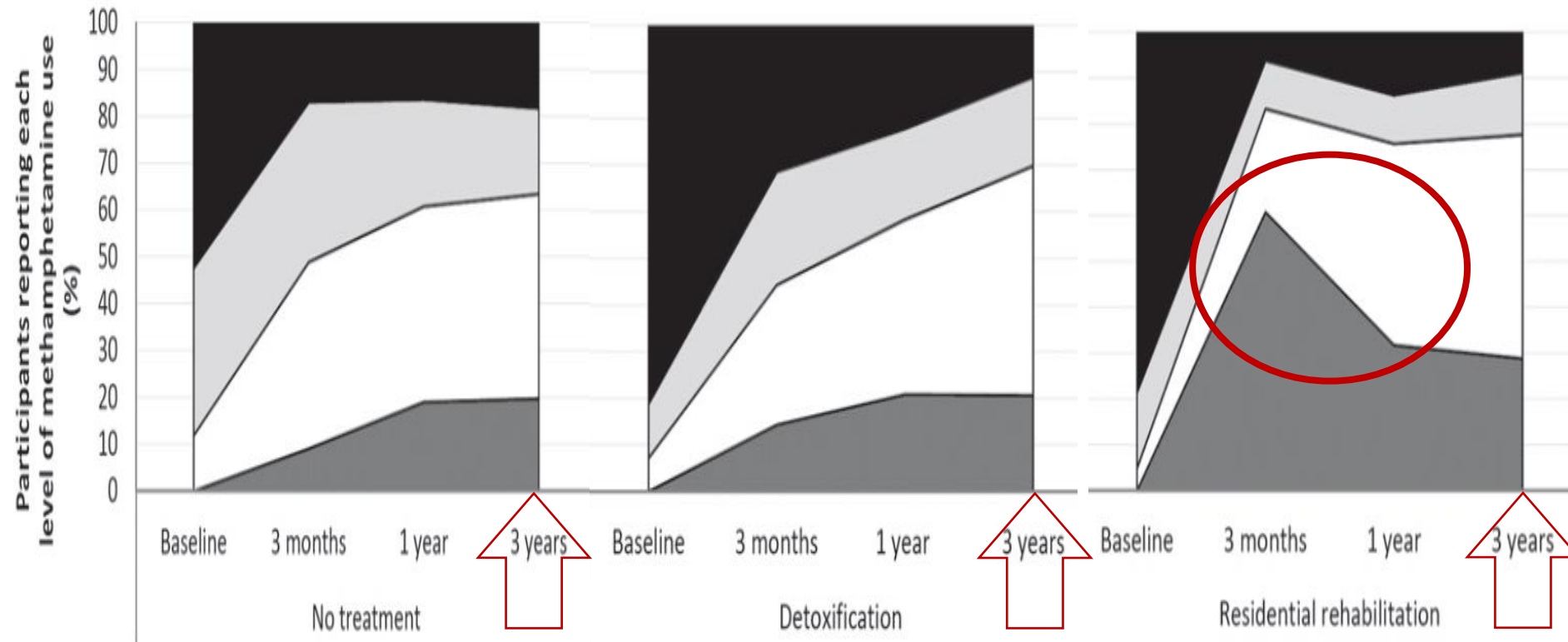
1. Antibodies (Brooks Gentry, University of Arkansas)
2. VMAT-2 inhibitor (Linda Dvoskin, U Kentucky)



# Behavioral Therapies

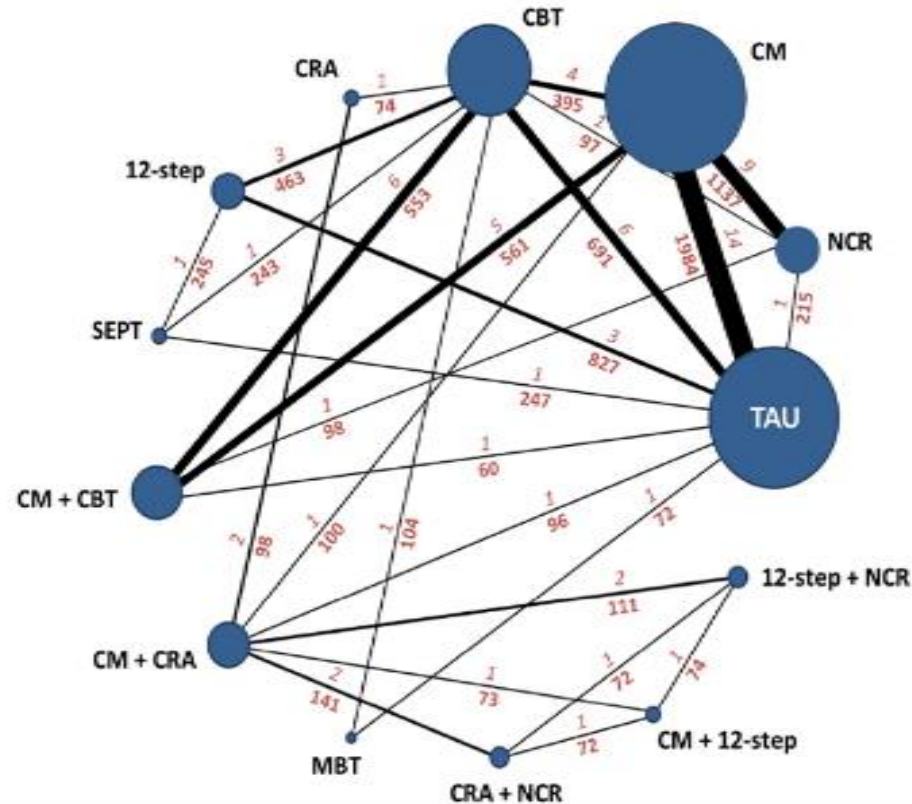
# Quasi-experimental Treatment Outcomes - MATES study: Don't Pay for Expensive Treatment

- 3+ days/week
- 1-2 days/week
- Less than weekly
- No use



# Meta-analysis of Behavioral Therapies for Stimulant Use Disorder

A Abstinence



- CM +/- either community reinforcement approach or CBT had superior efficacy and acceptability compared to TAU at 12 weeks and at end of treatment.

DeCrescenzo et al, 2018. *PLoS Med* 15(12): e1002715.

# Contingency Management and Substance Use Disorders

- Operant conditioning (Skinner, 1938)
- Initial concepts derived from work with delinquent boys (Yates, 1970)
- Early work in MMT clinics to encourage opioid abstinence (Stitzer et al, 1977)
- Application to cocaine dependence by Higgins' group (1993, 1994)
- Original voucher-based CM now has alternative “fishbowl method” (Petry 2000)

# Fishbowl

- Urine results determine number of draws
- First negative = 3 draws with increases by 1 for each consecutive negative sample to a cap
- Prizes are:
  - 50 “good job”
  - 30 “low prize” (\$1-2)
  - 17 “medium prize” (\$5-10)
  - 3 “big prize” (\$50)



# Vouchers/Cash

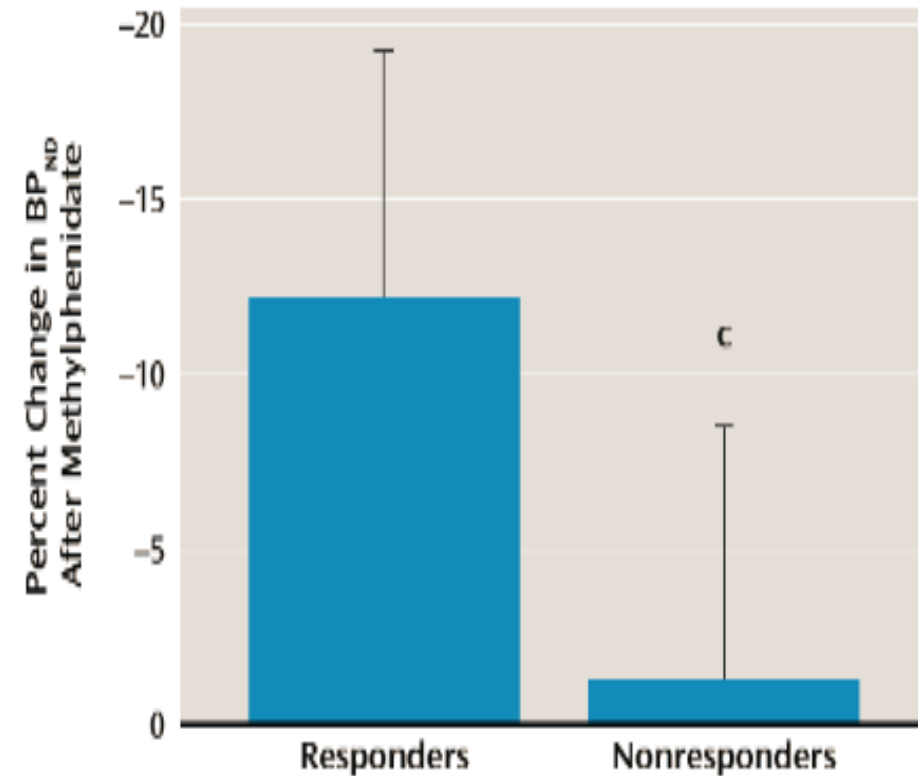
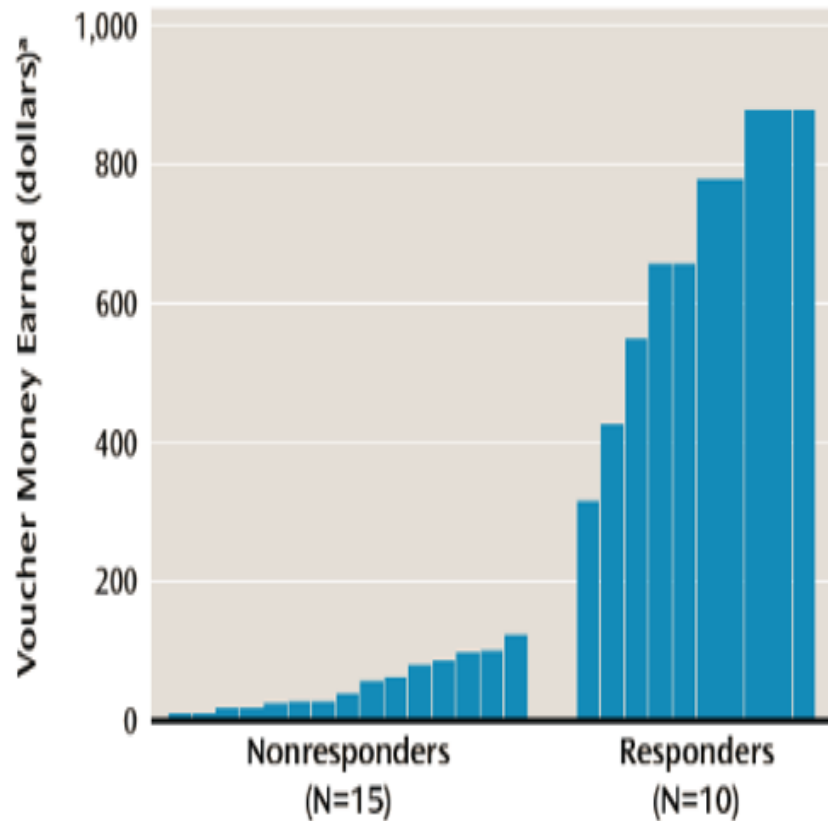
Week	M/Tu	Th/F	Bonus	Week Total
Week 1	\$5.00	\$7.50	\$10.00	\$22.50
Week 2	\$10.00	\$12.50	\$10.00	\$32.50
Week 3	\$15.00	\$17.50	\$10.00	\$42.50
Week 4	\$20.00	\$22.50	\$10.00	\$52.50
Week 5	\$25.00	\$27.50	\$10.00	\$62.50
Week 6	\$30.00	\$30.00	\$10.00	\$70.00
Week 7	\$30.00	\$30.00	\$10.00	\$70.00
Week 8	\$30.00	\$30.00	\$10.00	\$70.00
Week 9	\$30.00	\$30.00	\$10.00	\$70.00
Week 10	\$30.00	\$30.00	\$10.00	\$70.00
Week 11	\$30.00	\$30.00	\$10.00	\$70.00
Week 12	\$30.00	\$30.00	\$10.00	\$70.00
Totals				\$702.50

# Meta Analyses of Contingency Management

- $d=0.46$  (Benishek et al., **2014**, *109:1426-1436*) – Prize based only
- $d=0.58$  (Dutra et al., **2008**, *Am J Psychiatry 165:179-187*)
- $d=0.52$  (Griffith et al., **2000**, *Drug Alc Dep 58:55-66*)
- $d=0.40$  (Prendergast et al., **2006**, *Addiction 101:1546-1560*)

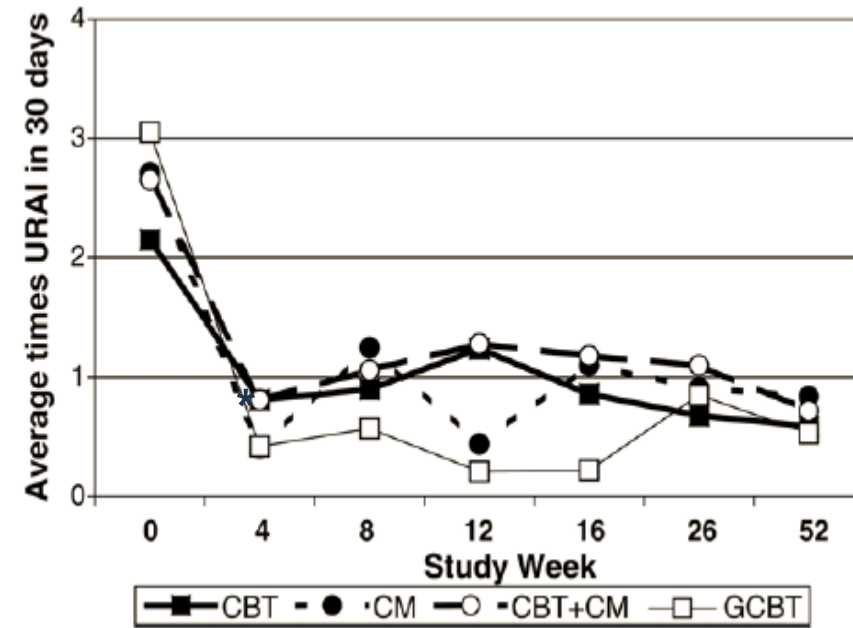
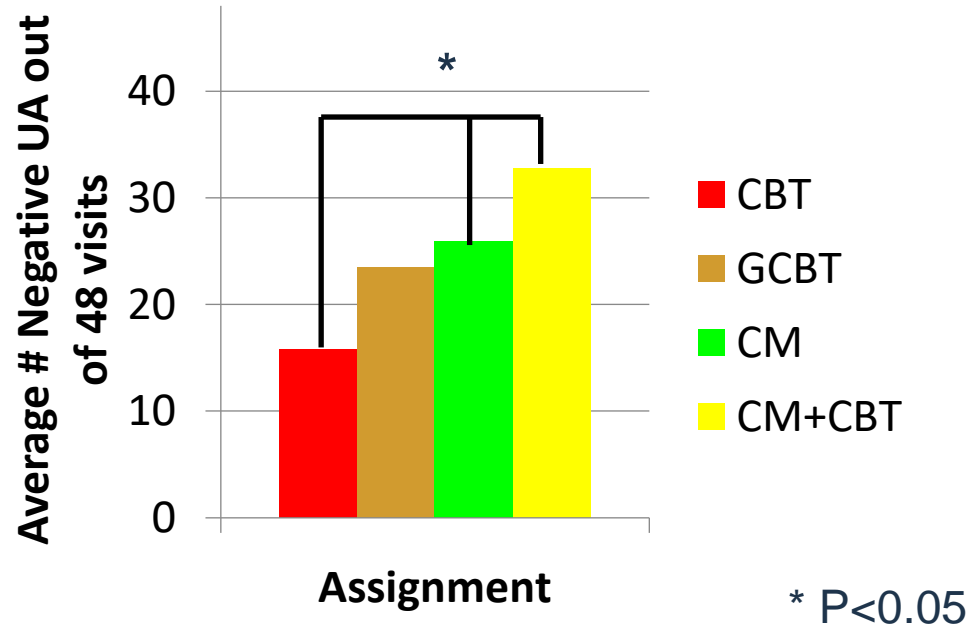
**If Contingency Management were a medication  
it would be standard of care**

# Dopamine D2-D3 Availability Predicts Outcomes for Contingency Management of Cocaine Use Disorder



## Behavioral treatment approaches for methamphetamine dependence and HIV-related sexual risk behaviors among urban gay and bisexual men

Steven Shoptaw<sup>a,b,d,\*</sup>, Cathy J. Reback<sup>a,b,c,d</sup>, James A. Peck<sup>b</sup>, Xiaowei Yang<sup>a,b</sup>,  
Erin Rotheram-Fuller<sup>a,b,d</sup>, Sherry Larkins<sup>a,b,d</sup>, Rosemary C. Veniegas<sup>b,d</sup>,  
Thomas E. Freese<sup>b</sup>, Christopher Hucks-Ortiz<sup>a,b,d</sup>





# Contingency Management Reduces Viral Load

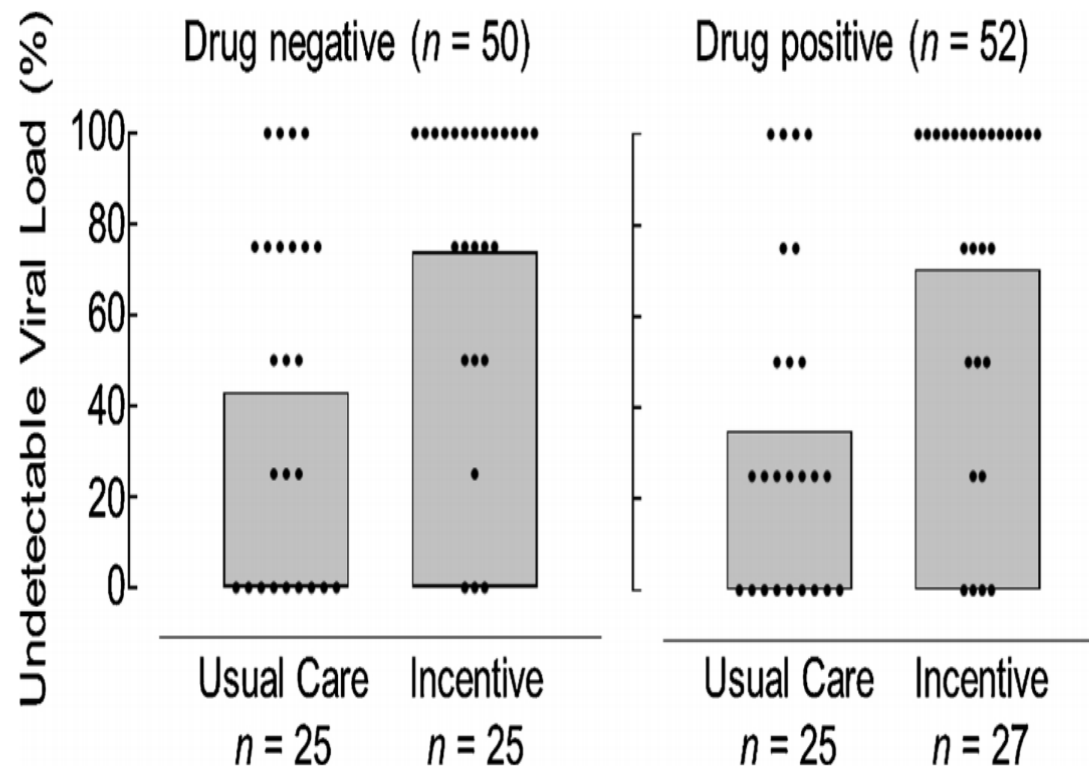
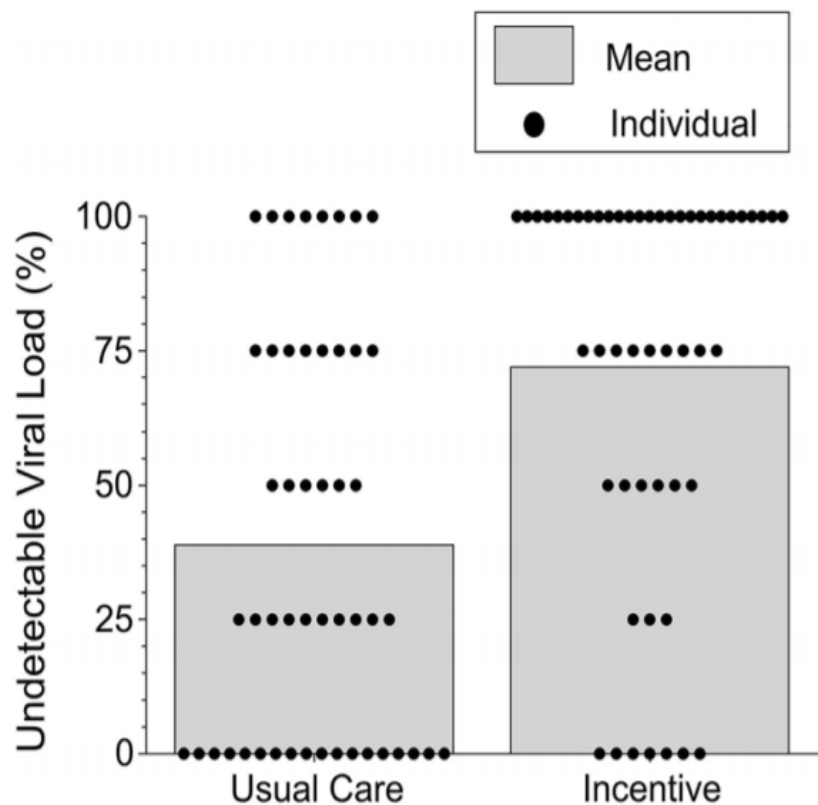


Fig. 1. Mean percentage of blood samples with undetectable HIV viral load (< 200 copies/mL) aggregated across assessments conducted in the year after randomization for participants in the Usual Care or Incentive group who were Drug negative (left) or Drug positive (right) for cocaine or opiates at study intake. Missing samples are imputed as detectable. Dots show means for individual participants; bars show means across participants.

# Contingency Management (CM) Boosts nPEP Outcomes in at-risk Stimulant Using MSM

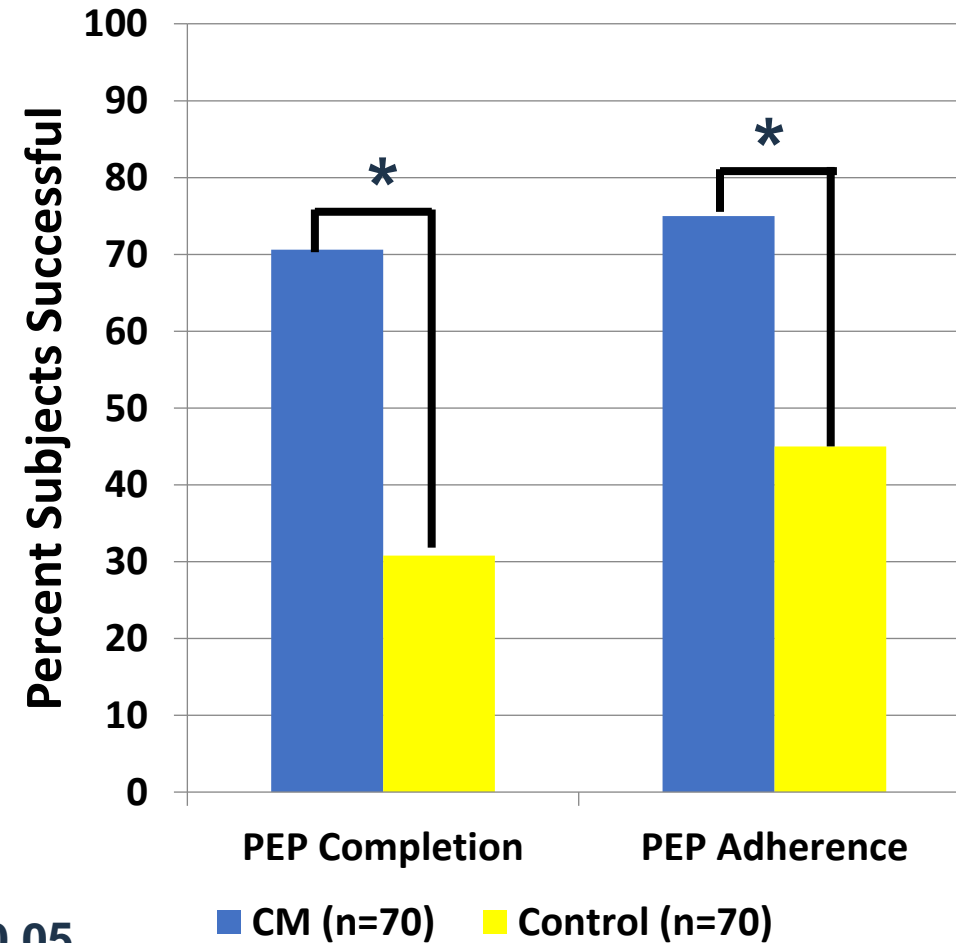
## Design:

- Escalating 8-week CM schedule with thrice-weekly visits based on drug-free urine samples
- \$430 maximum
- n=140

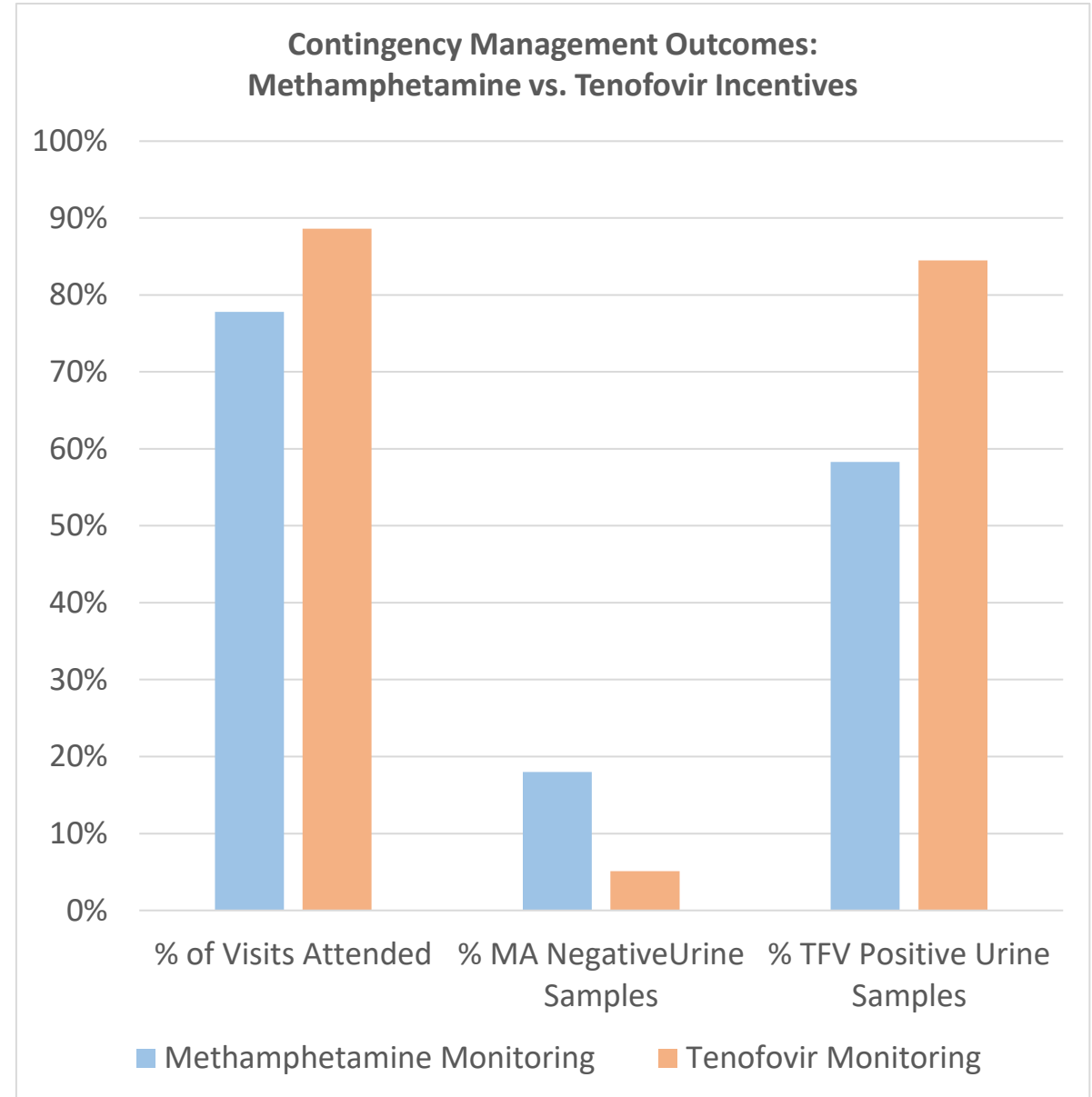
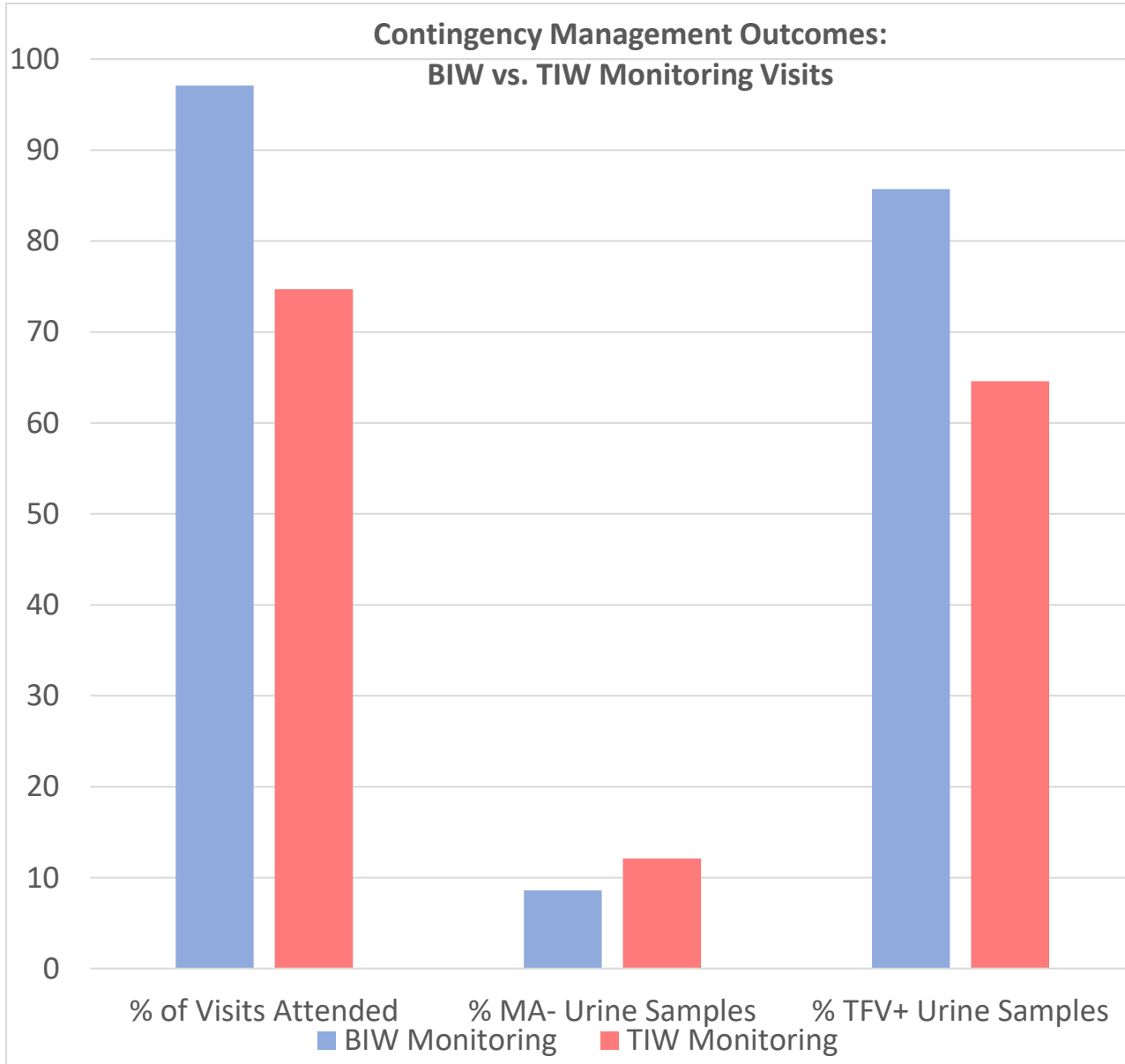
## Methamphetamine Outcomes:

- CM = 8.9 (SD=9)
- Control = 6.1 (SD=6) \*

\* P<0.05



# C-MAX: Aggregate Contingency Management Outcomes



Unpublished data from CHIPTS pilot study, Jesse Clark, 5/25/2022

# CM and Stimulants Program in U.S. VA Health System

- Evaluation of ongoing implementation of CM within 94 VA settings, 2060 patients
- >2/3 of clinics used twice weekly, 12-weeks and 8 draw limits of a fishbowl method, using VA Canteen coupons



Table 3  
Attendance & substance use outcomes.

	$\bar{X}$	SD
Patients treated <sup>a</sup>	21.9	20.7
Sessions attended per patient <sup>a</sup>	13.5	8.9
Proportion of sessions attended <sup>b</sup>	55.9%	19.1%
Samples provided <sup>a</sup>	296.3	294.0
Proportion of samples negative <sup>a</sup>	91.1%	11.2%

## THERAPY MANUALS FOR DRUG ADDICTION

Manual 1

A Cognitive-  
Behavioral Approach:  
Treating Cocaine Addiction

# Cognitive Behavioral Therapy

- Teaches skills to instill abstinence
- Early recovery skills, use of structure to schedule activities
- Teaches skills to interrupt craving (trigger, thought, craving, use) – thought stopping
- Teaches skills to return to abstinence following lapse or return to use

CBT4CBT, LLC  
Developers of Computer Based Training for Cognitive Behavioral Therapy

Home Providers Evidence Patients Program Access Resources Contact

Welcome to CBT4CBT™

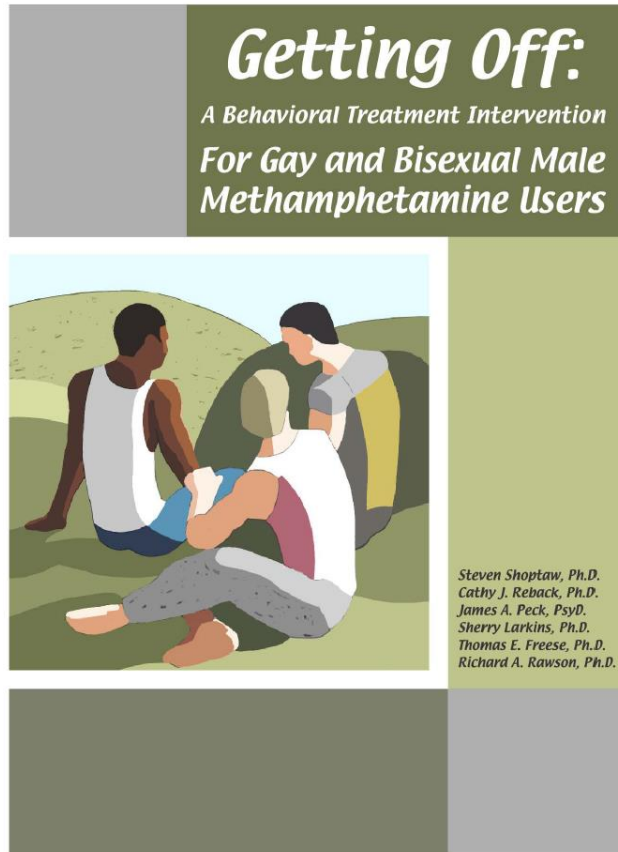
We provide Computer Based Training for Cognitive Behavioral Therapy (CBT4CBT). CBT4CBT™ can help people stop or reduce use of drugs or alcohol when used as part of a treatment plan supervised by a healthcare professional.

PROVIDERS CONTACT



<https://www.ojp.gov/ncjrs/virtual-library/abstracts/therapy-manuals-drug-addiction-manual-1-cognitive-behavioral>

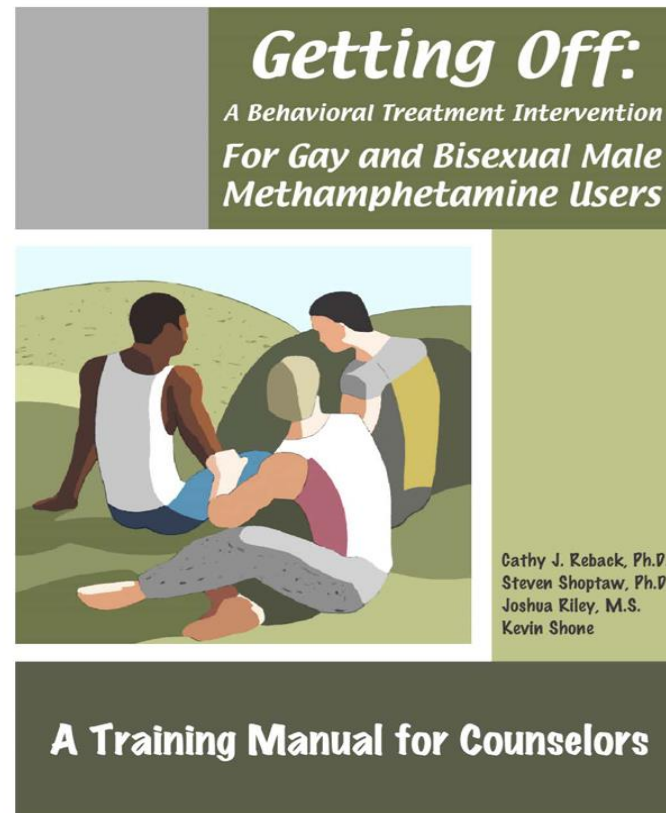
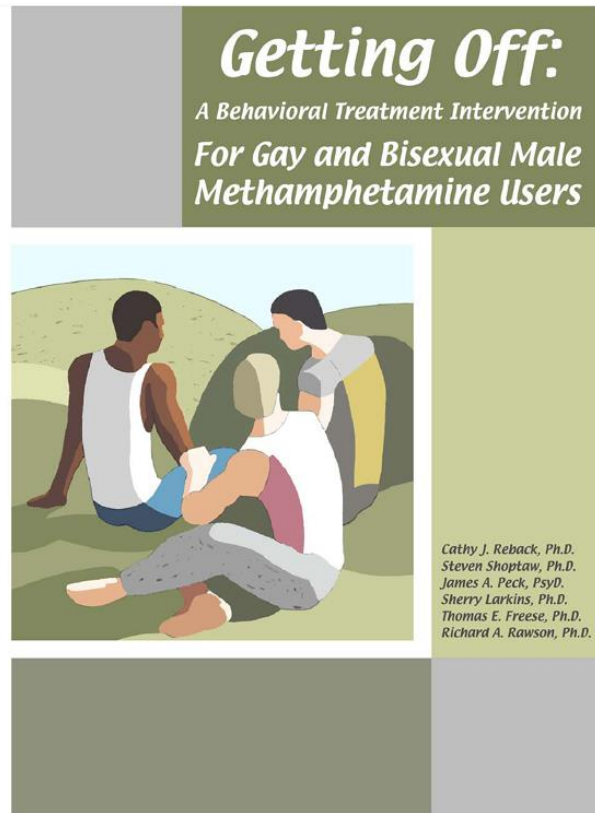
# Cognitive Behavioral Therapy



- Teaches skills to instill abstinence
- Early recovery skills, especially use of structure to schedule activities
- Teaches skills to interrupt craving (trigger, thought, craving, use) – thought stopping
- Teaches skills to return to abstinence following lapse or relapse

<https://www.friendscommunitycenter.org/resources>

# Culturally Tailored Gay Specific Treatment Materials



- Attention to sexual functioning in the setting of reducing/stopping stimulant use
- Specific distinctions in addressing sexual and drug-risks for groups not engaged in chemsex (e.g., heterosexual women; some heterosexual men)
- Monitoring of “triggers” when discussing chemsex during treatment, especially when ending session
- Issue of social-, sexual- and drug-related networks



# C4: Client-Centered Care Coordination

Wheeler DP et al. *Journal of the International AIDS Society* 2019, **22**:e25223  
<http://onlinelibrary.wiley.com/doi/10.1002/jia2.25223/full> | <https://doi.org/10.1002/jia2.25223>



## RESEARCH ARTICLE

### Pre-exposure prophylaxis initiation and adherence among Black men who have sex with men (MSM) in three US cities: results from the HPTN 073 study

Darrell P Wheeler<sup>1§</sup> , Sheldon D Fields<sup>2</sup>, Geetha Beauchamp<sup>3</sup>, Ying Q Chen<sup>4</sup>, Lynda M Emel<sup>3</sup>, Lisa Hightow-Weidman<sup>5</sup>, Christopher Hucks-Ortiz<sup>6</sup>, Irene Kuo<sup>7</sup>, Jonathan Lucas<sup>8</sup>, Manya Magnus<sup>7</sup>, Kenneth H Mayer<sup>9,10,11</sup> , LaRon E Nelson<sup>12,13</sup>, Craig W Hendrix<sup>14</sup>, Estelle Piwowar-Manning<sup>15,20</sup>, Steven Shoptaw<sup>16</sup>, Phaedrea Watkins<sup>8</sup>, C Chauncey Watson<sup>17</sup> and Leo Wilton<sup>18,19</sup>

> [J Racial Ethn Health Disparities](#). 2022 Jan 8;10.1007/s40615-021-01209-y.  
doi: 10.1007/s40615-021-01209-y. Online ahead of print.

### Implementation of Client-Centered Care Coordination for HIV Prevention with Black Men Who Have Sex with Men: Activities, Personnel Costs, and Outcomes—HPTN 073

Darren L Whitfield<sup>1</sup>, LaRon E Nelson<sup>2 3</sup>, Arnošt Komárek<sup>4</sup>, DeAnne Turner<sup>5</sup>, Zhao Ni<sup>6</sup>, Donte T Boyd<sup>7</sup>, Tamara Taggart<sup>8 9</sup>, S Raquel Ramos<sup>2</sup>, Leo Wilton<sup>10 11</sup>, Geetha G Beauchamp<sup>12</sup>, Lisa Hightow-Weidman<sup>13</sup>, Steven J Shoptaw<sup>14</sup>, Manya Magnus<sup>15</sup>, Kenneth H Mayer<sup>16</sup>, Sheldon D Fields<sup>17</sup>, Darrell P Wheeler<sup>18</sup>, H. I. V. Prevention Trials Network (HPTN) 073 Study Team





# Nurse Case Management



ELSEVIER

Public Health

Volume 154, January 2018, Pages 151-160



Original Research

Cost-effective way to reduce stimulant-abuse among gay/bisexual men and transgender women: a randomized clinical trial with a cost comparison ☆

S.X. Zhang <sup>a</sup>, S. Shoptaw <sup>b</sup>, C.J. Reback <sup>c</sup>, K. Yadav <sup>d</sup>, A.M. Nyamathi <sup>d</sup>

...

American Journal of Men's Health  
Volume 11, Issue 2, March 2017, Pages 208-220  
© The Author(s) 2015, Article Reuse Guidelines  
<https://doi.org/10.1177/1557988315590837>

*HIV/AIDS/STIs*

## Impact of Tailored Interventions to Reduce Drug Use and Sexual Risk Behaviors Among Homeless Gay and Bisexual Men

Adeline Nyamathi, ANP, PhD, FAAN<sup>1</sup>, Cathy J. Reback, PhD<sup>2</sup>, Steven Shoptaw, PhD<sup>1</sup>,  
Benissa E. Salem, RN, MSN, PhD<sup>1</sup>, Sheldon Zhang, PhD<sup>3</sup>, and Kartik Yadav, BSc(H), MSCR<sup>1</sup>

Nursing Research • January/February 2009 • Vol 58, No 1, 13-22

## Effects of a Nurse-Managed Program on Hepatitis A and B Vaccine Completion Among Homeless Adults

Adeline Nyamathi ▼ Yihang Liu ▼ Mary Marfisee ▼ Steven Shoptaw ▼ Paul Gregerson ▼ Sammy Saab  
Barbara Leake ▼ Darlene Tyler ▼ Lillian Gelberg

SAGE  
journals

# Motivational Interviewing: Basic Assumptions

- People change thinking and behavior along a series of stages
- Individuals may enter treatment at different “stages of change”
- The natural change process can be changed using MI techniques
- MI engages individuals in longer term treatment and promotes specific behavior changes
- Confrontation of “denial” is counterproductive and may be harmful



Drug and Alcohol Dependence

Volume 107, Issue 1, 1 February 2010, Pages 23-30



## Effect of motivational interviewing on reduction of alcohol use

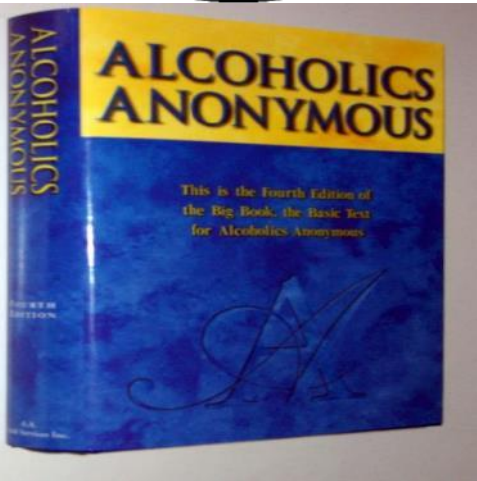
Adeline Nyamathi <sup>a</sup>, Steven Shoptaw <sup>b,1</sup>, Allan Cohen <sup>c,2</sup>, Barbara Greengold <sup>d,3</sup>, Kamala Nyamathi <sup>e</sup>, Mary Marfisee <sup>f,4</sup>, Viviane de Castro <sup>d,5</sup>, Farinaz Khalilifard <sup>d,5</sup>, Daniel George <sup>g</sup>, Barbara Leake <sup>h</sup>

W.R. Miller, S. Rollnick. (2013) Motivational Interviewing: Helping People Change, 3rd Edition (Applications of Motivational Interviewing) 3rd Edition. Guilford Press

# Summary on Behavioral Therapies



- Treatment works for who it works for – Costs and chronicity when recommending treatments
- Contingency Management – highly *efficacious* with consistent signal
- Motivational Interviewing – brief sessions
- Cognitive Behavioral Therapy – “teachy” with meetings with therapist over weeks/months
- 12-Steps is an ubiquitous social fellowship – not a therapy – but has *effectiveness*



# James, Session 2

James returns to see you the week after the intake. He tells you that he is not interested in working with you to do things he already knows how to do in establishing some kind of recovery from meth. In his early 20s, he was a member of cocaine anonymous (12-steps) for almost 10 years and has no interest in returning to that program. James' tells you his sex life with John (his partner) is between boring and non-existent, which is why he mostly uses methamphetamine. His medical insurance policy is comprehensive in coverage. He is not opposed to medications, but would really like to be part of a contingency management program (not currently available at your clinic). He doesn't want to be part of "teach-y" therapy groups, but he likes talking to you.

What is the best evidence based choice for meth treatment with James?

- a. Cognitive Behavioral Therapy
- b. Social work
- c. Extended release naltrexone (380mg @ 3 weeks) + bupropion (450 mg per day)
- d. Mirtazapine (30 mg per day)
- e. B and D
- f. A and C

# Closing Points

- Stimulant use, misuse and disorder are linked with neural adaptation that corresponds with development of addiction and targets for treatments
- There is no broadly effective, FDA approved medication for stimulant use disorder on the horizon
- There are medications that have efficacy that require consideration in HIV settings:
  - Methamphetamine (mirtazapine, XR-NTX+Bup)
  - Cocaine (MAS-ER, MAS-ER+Topiramate)
  - Novel medication strategies provide new models for drug development
  - Completely novel medications to be evaluated in next 3 years
- Contingency management is most efficacious behavioral therapy, though MI and CBT used more, especially with HIV contexts
- Raises question that foundation of stimulant addiction treatment starts with medication Whole person/integrated strategies may provide directions for increased efficacy for treatments that address biology, behavior and culture...**facilitated by nurse case management!**

# Questions



# Nursing Continuing Professional Development

To be awarded contact hours for this webinar, complete the evaluation found at:

<https://www.classmarker.com/online-test/start/?quiz=a6h6462ad1374a9c>

Additional Questions?

Email Sheila at [Sheila@anacnet.org](mailto:Sheila@anacnet.org)

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