

# Updates on New Methamphetamine and Cocaine Health Risks: Improved Screening and Action to Save Lives

January 12, 2022

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# Welcome and Introductions

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# Welcome

Kathleen West, DrPH

Senior Program Manager

Advocates for Human Potential, Inc.



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## Presenters

### Phillip Coffin, MD, MIA, FACP, FIDSA

- Director of Substance Use Research, San Francisco Department of Public Health, University of California San Francisco.
- Board-certified and practicing internist, infectious disease specialist, and addiction medicine specialist.
- National Institute on Drug Abuse/Centers for Disease Control and Prevention-funded investigator studying pharmacotherapies and behavioral interventions for substance use, overdose, and infectious diseases.



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## Presenters

### Connie Priddy, MA, RN, MCCN

- Worked as a registered nurse in the emergency department before transitioning to a hospital-based aeromedical helicopter.
- Nearly 25 years as a flight nurse in a high-stress environment, working autonomously to assess and provide medical care to critically ill and injured patients.
- Trained in screening and assessment for a full range of substance use disorder.
- Currently employed at Cabell County Emergency Medical Services (a local county-based 9-1-1 ambulance service).
  - Initially hired to develop a continuous quality improvement program for emergency medical services (EMS) personnel who serve the local community.



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# Learning Objectives

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## This webinar is designed to:

- Inform frontline emergency department personnel, first responders, corrections administrators, jail medical staff, and community supervision staff about acute toxicity and death from methamphetamine and cocaine.
- Discuss medical and community interventions for addressing acute and chronic stimulant toxicity.
- Identify challenges unique to practitioners' and discuss pathways to success.



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# Methamphetamine in the Era of Fentanyl: Toxicities and Therapies

Phillip Coffin, MD, MIA, FACP, FIDSA  
Director of Substance Use Research  
San Francisco Department of Public Health  
University of California San Francisco

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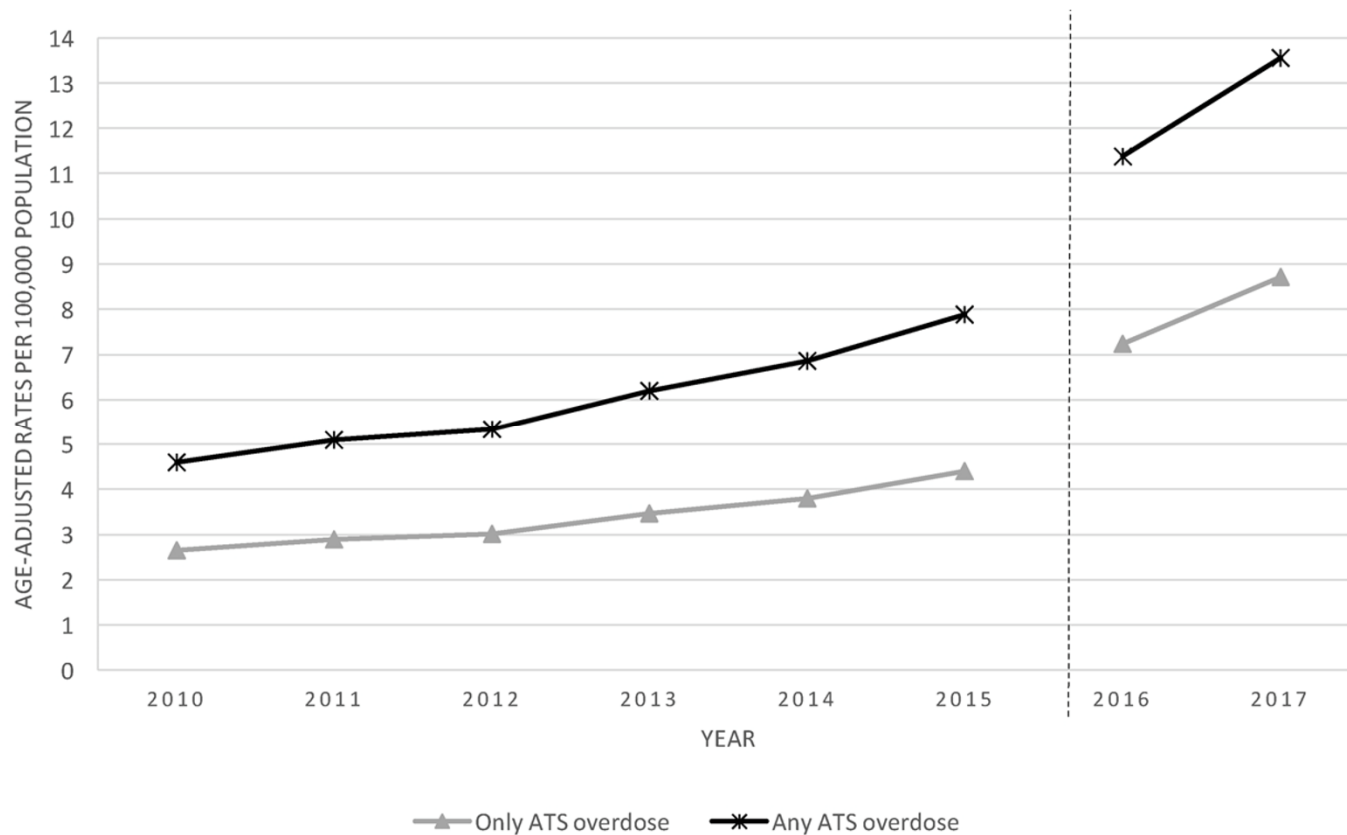
# Objectives

By the end of this presentation, attendees will be able to:

- Describe pathways to acute toxicity and death from methamphetamine (MA) and cocaine use.
- Identify potential medical and community interventions to address acute and chronic stimulant toxicity.

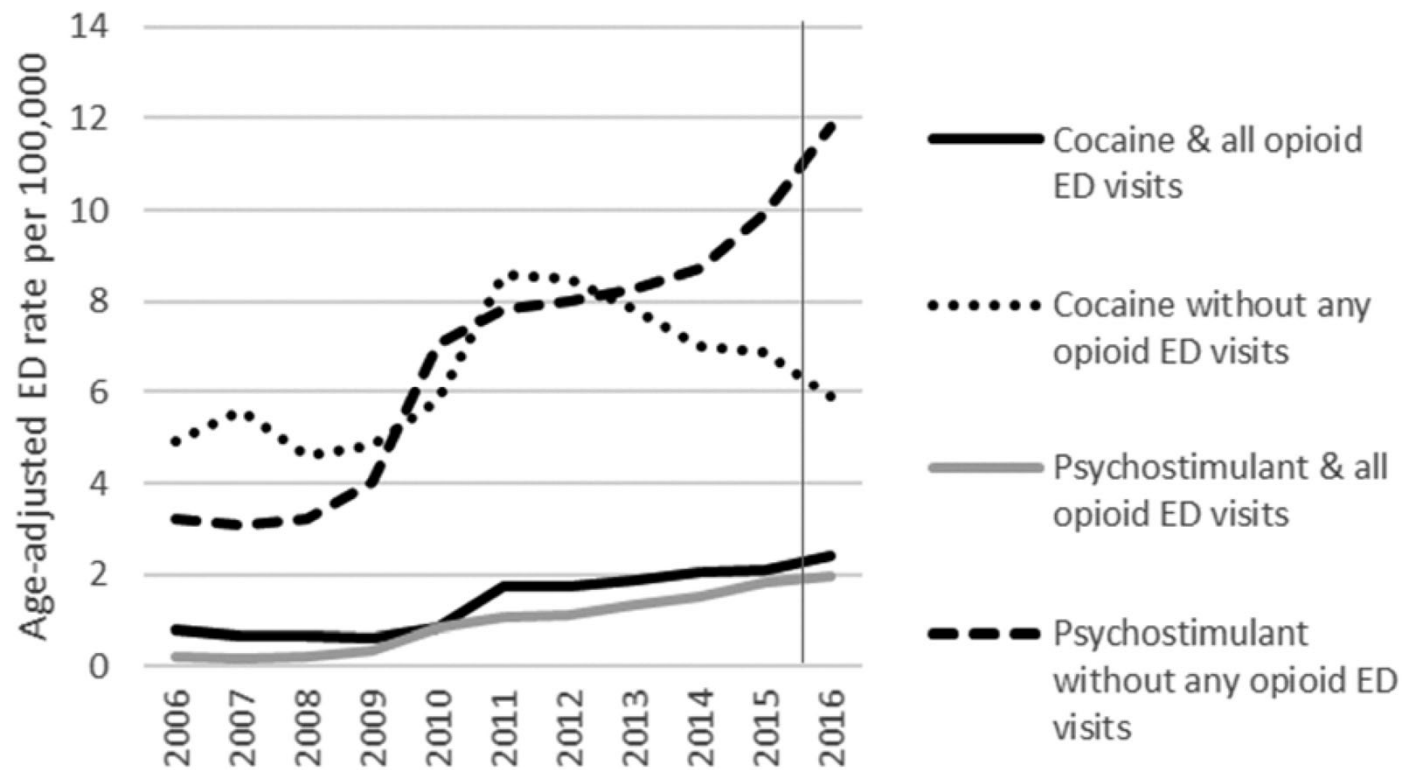


# Amphetamine Overdose Emergency Department (ED) Visits in the United States



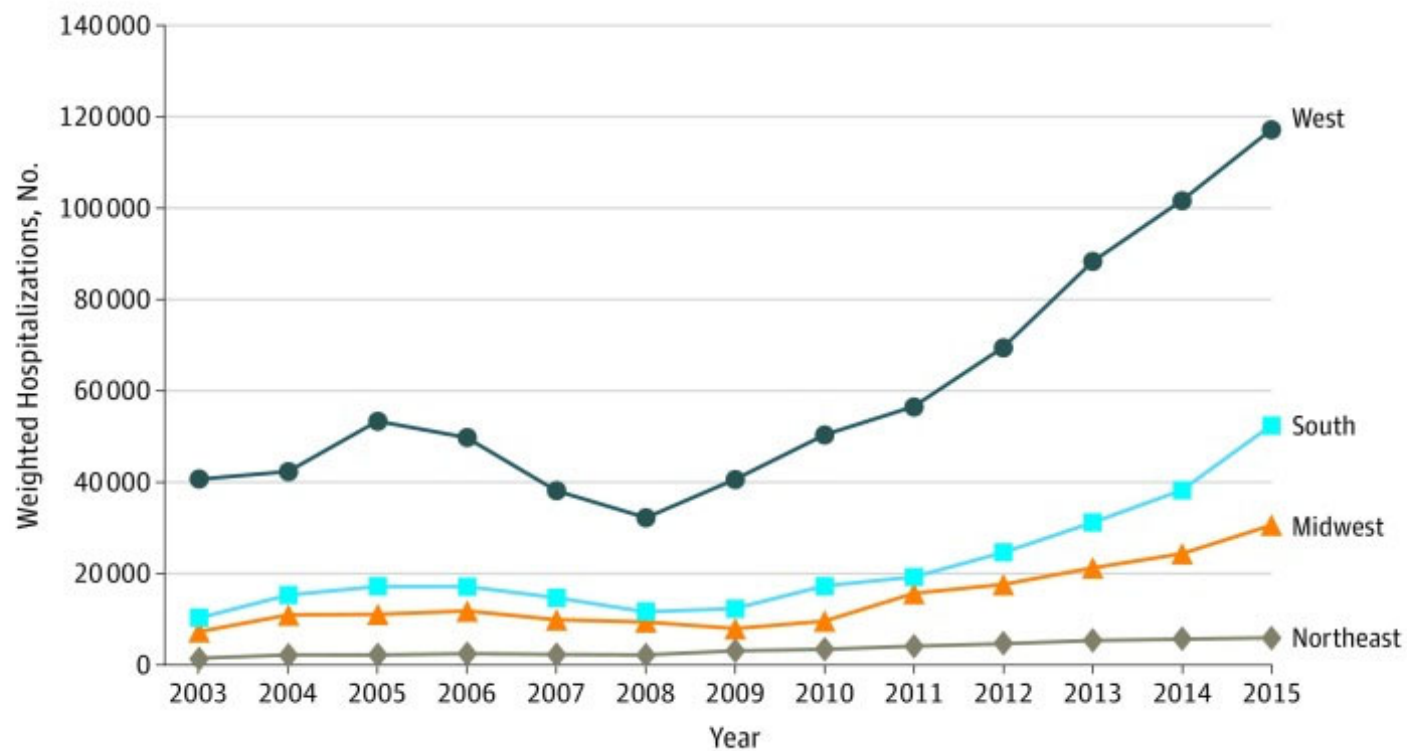
Vivolo-Kantor et al., 2020, *Drug and Alcohol Dependence*

# Stimulant ED Visits in the United States



Hoots et al., 2020, *Addiction*

# Amphetamine-Related Hospitalizations by U.S. Region



Winkelman et al., 2018, *JAMA Network Open*

# What Leads to Methamphetamine-Related ED Presentations?

- Trauma: 18-33%
- Psychosis: 8-80%
  - Psychiatric admission 14%
  - Psychiatric hold 11%

Jones, 2018, *Journal of Clinical Nursing*

- Neurologic harms of methamphetamine (MA)
  - Stroke: 2-5x risk for hemorrhagic (not ischemic) stroke
  - Cognitive impairment: learning, executive function, concentration, memory
  - Parkinson's: 1.5-3x
  - Seizures: seems more cocaine-related
  - Psychosis: ~27% in dependent persons

Lappin et al., 2019, *Addiction*; Kim, 2020, *Biomolecules and Therapeutics*

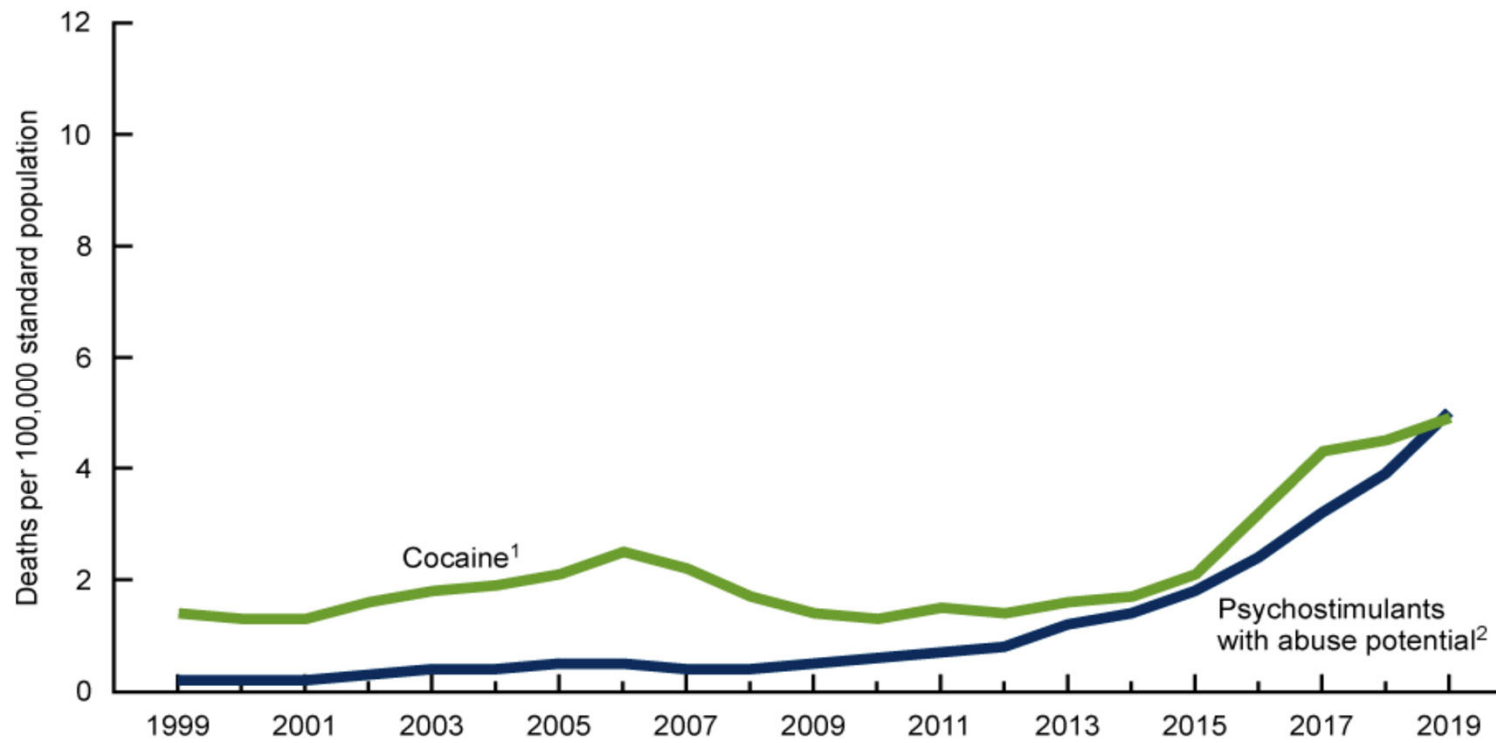
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# Emergency Presentations for MA: Summary

- ED visits and hospitalizations for MA-related causes are rising nationally.
- The reasons for MA-related presentations differ from those for opioids, and are led by:
  - Psychiatric disorders
  - Cardiac complaints
  - Trauma

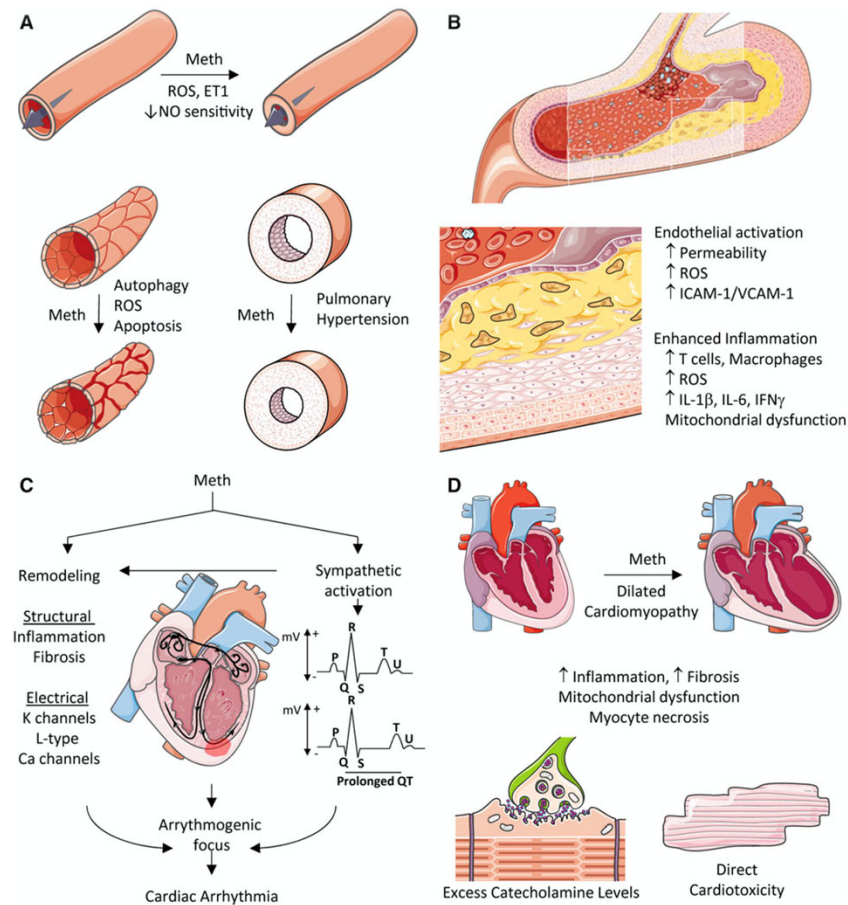


# Age-Adjusted Stimulant Overdose Death in the United States



Hedegaard et al., 2020, *NCHS Data Brief No. 394*

# Cardiovascular Effects of MA



Kevil et al., 2019, *Arteriosclerosis, Thrombosis, and Vascular Biology*

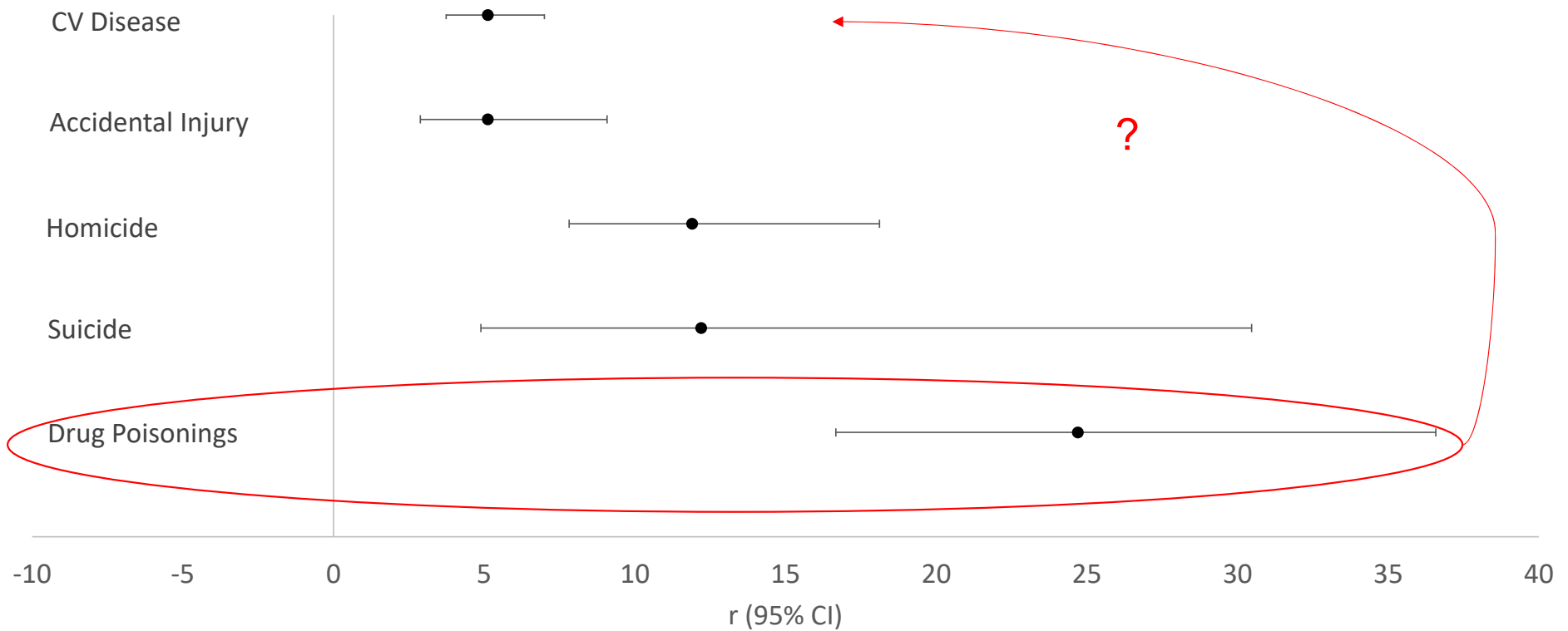
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# Cardiac and Cerebrovascular Disease Associated with MA

- Cerebral / coronary vasoconstriction & pulmonary hypertension
- Atherosclerotic disease
  - Likely mediated by inflammation rather than cholesterol
- Cardiomyopathy
  - Often dilated
- Arrhythmias
- National Inpatient Sample, 2014
  - 184,039 patients with MA “abuse or dependence” diagnosis
  - Adjusted OR for stroke 1.19 (1.10-1.28) and sudden cardiac death 1.27 (1.12-1.44)

Parekh et al., 2018, *Journal of the American College of Cardiology: Cardiovascular Interventions*

# Standardized Mortality Rates for People Who Use Amphetamines



Stockings et al., 2019, *Addiction*

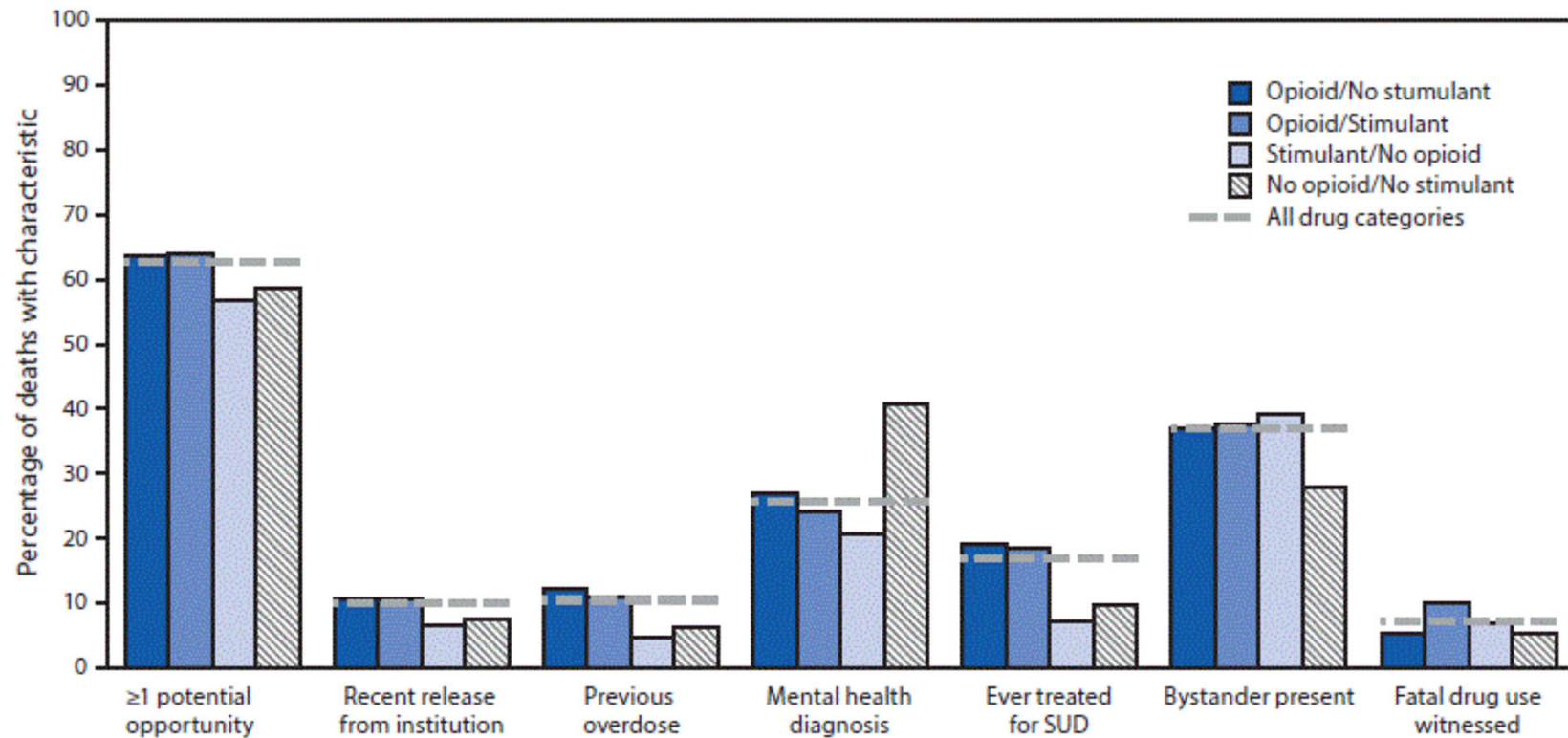
# Cause of Death (COD) Among Stimulant Overdose Deaths

2001 opioid and stimulant deaths in San Francisco

	Cardiac COD	Cerebrovascular COD
Stimulant versus opioid	7.88 stimulant; 1.92 opioid	13.1 stimulant; 0.3 opioid
MA versus cocaine	5.5 MA; 10.1 cocaine	15.1 MA; 11.8 cocaine

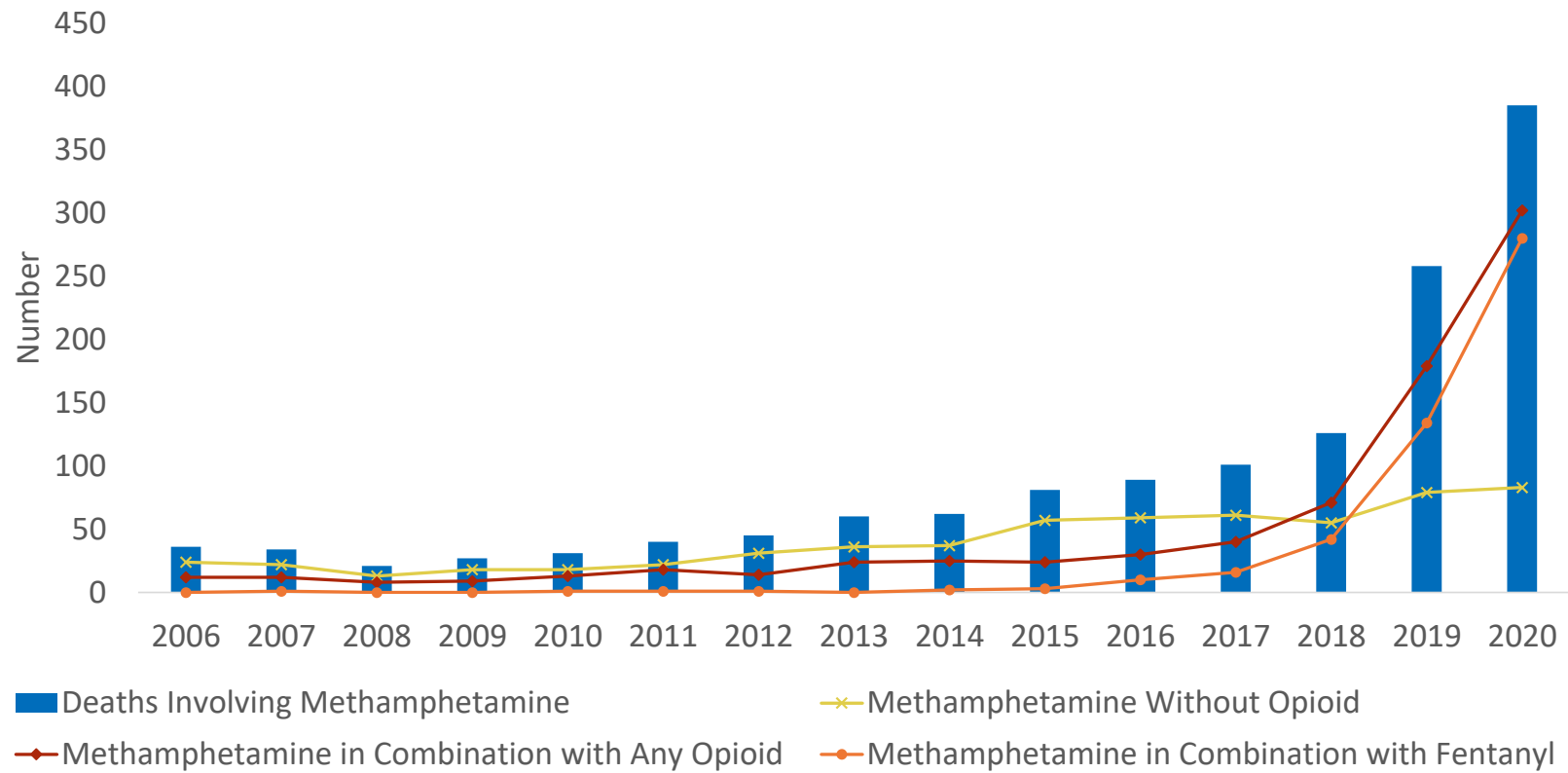
Opioid deaths included opioid/stimulant deaths; results were unchanged when excluding opioid/stimulant deaths.

# Potential Opportunities for Intervention in SUDORS Regions, Jan-Jun 2019



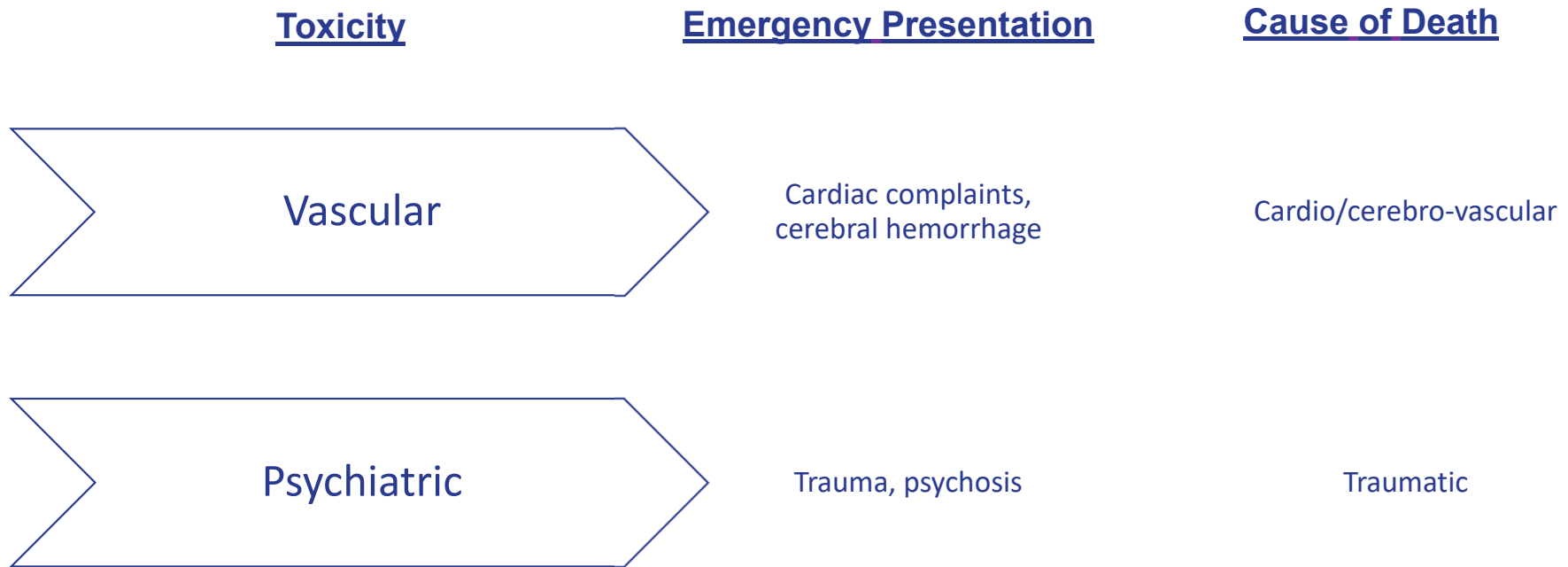
Hedegaard et al., 2020, *NCHS Data Brief No. 394*

# MA Overdose Deaths in San Francisco



Coffin et al. August 2020. *Substance Use Trends in San Francisco through 2019*.

# Proposed Construct for Stimulant Toxicity





# What About Deaths Attributed to Both MA and Fentanyl?

- Are these really “fentanyl” deaths?
- How often is the fentanyl exposure unintentional?

Arguments for Intentional Exposure	Arguments for Unintentional Exposure
Co-use of stimulants and opioids is longstanding and common.	There are multiple case reports of people intending to use stimulants who died from fentanyl overdose.
Stimulant-opioid decedents prior to fentanyl appeared demographically similar to opioid decedents.	Fentanyl is rarely mixed with heroin in western United States, so unintentional exposure may be more common among people who use non-opioid drugs.
People using fentanyl may use more stimulants due to potent sedating effects of fentanyl.	Fentanyl appears similar to various forms of methamphetamine and cocaine.

*Fentanyl was present in 5.9% of samples thought to be methamphetamine in Vancouver.*

# Medical Record Evidence of Pre-Mortem Opioid Use Among Overdose Decedents in San Francisco

	Stimulant only (n=140)	Stimulant- fentanyl (n=220)	Fentanyl only (n=34)	Non-fentanyl opioids (n=112)	p-value
	%	%	%	%	
<b>Clinical History of Opioid Use in 3 Years Preceding Death</b>	<b>48%</b>	<b>56%</b>	<b>65%</b>	<b>82%</b>	<b>&lt;0.001</b>

*Unpublished data*

# Stimulant Use Disorder: DSM-V



## USE PATTERNS:

- **More/longer** use than intended
- **Unable to stop** or cut down
- **Excessive time** dealing with opioids
- **Craving**



## CONTINUED USE EVEN WHEN:

- **Responsibilities** not fulfilled
- **Social** and interpersonal problems
- **Activities** reduced
- **Physical** hazards from use
- **Health** problems patient knows are caused by opioids



## DRUG EFFECTS (ONLY IF NOT PRESCRIBED):

- **Tolerance:** requiring more to achieve effect
- **Withdrawal** symptoms if opioids are stopped

## SCORING

**Give 1 point** for each domain endorsed by the patient or observed by the clinician.

**Mild SUD = 2-3**

**Moderate SUD = 4-5**

**Severe SUD = 6 or more**

Center for Innovation in Academic Detailing on Opioids at the San Francisco Department of Public Health. July 2021. *Opioids and Chronic Pain: A Guide for Primary Care Providers (National Edition)*.

# MA Use Disorder Medication Trials

- 23 pharmacotherapies have been tested in randomized controlled trials (RCTs), with some potential in the following products:
  - Dexamphetamine, methylphenidate
  - Naltrexone
  - Topiramate
  - Bupropion
  - Mirtazapine
  - Riluzole
- Potential future agents
  - NAC
  - Pomaglumetad
  - mAbs
  - vaccines

## Some Classes Without Signal

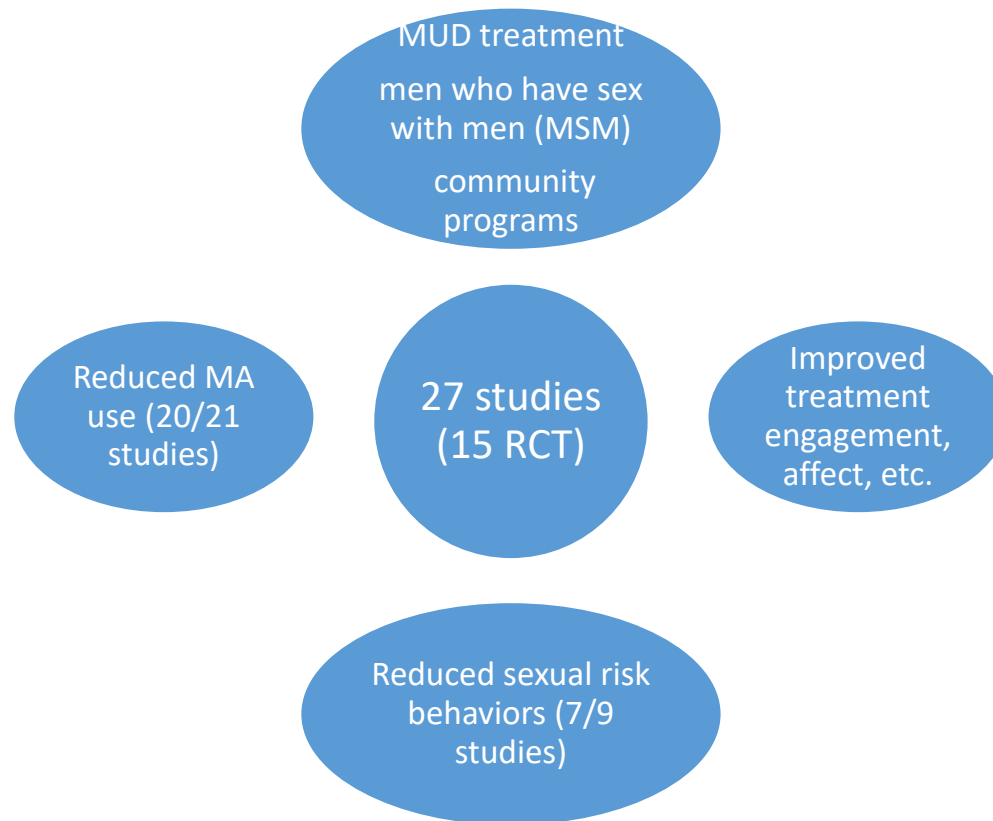
SSRIs	GABA agents
TCA's	BDZ antagonist
5HT3R antagonist	Nicotinic agonist

## Limitations

Measure of MA use & outcome of choice
Co-morbid mental illness
Co-morbid cardiac disease
Medication adherence

Siefried, 2020, *CNS Drugs*

# Contingency Management for MA Systematic Review



Brown & DeFulio, 2020, *Drug and Alcohol Dependence*

# Intervention Possibilities

Intervention Class	Sub-Class	Opioid Overdose	Stimulant Toxicity
Pharmacologic	Reversal agent	Naloxone	Benzodiazepines
	Disorder treatment	Buprenorphine, methadone, XR-ntx	Cumulative use reduction?
Behavioral	Behavioral intervention	Overdose prevention plan	Contingency management
Medical Care	Emergency response	Multiple interventions	-
	Medical co-morbidities	-	Cardiac disease prevention?
	Psychiatric	-	First-assist packs?
Community	Safe spaces	Drop-in, safe consumption	Sobering center
	Safe supply	Multiple opioids	Methylphenidate?
	Drug checking	Fentanyl Test Strips (FTS), Fourier-Transform Infrared Spectroscopy (FTIR), Mass Spectroscopy (MS)	FTS, MS, etc.
	Structural	Social determinants	Social determinants

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## Conclusions

- MA use is increasingly prevalent across the United States.
- Emergency medicine presentations related to MA are likely dominated by psychiatric and cardiac complaints.
- Acute toxicity deaths from MA, in the absence of fentanyl, are likely predominantly due to cardiac and cerebrovascular events.
- The relationship between MA and fentanyl is complex. Further research is needed to understand the rapidly rising mortality rate due to these drugs combined.
- Interventions are slowly emerging.
  - Contingency management has proven benefit.
  - Several medications show promise, warranting trials and novel combinations in appropriately-selected patients.
  - Innovative strategies to reduce morbidity include cardiac preventive care, first-assist packs, incorporating reduced cumulative exposure as a treatment goal, sobering centers and other safe spaces, and drug checking.

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# BEYOND THE OPIOID EPIDEMIC: A CONTINUING PUBLIC HEALTH CRISIS WITH STIMULANT USE

Connie Priddy, MA, RN, MCCN

Huntington Quick Response Team (QRT) Program Coordinator

Cabell County Emergency Medical Services





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# Objectives

- Describe how to use first responders as a “first point of contact” in the substance use disorder crisis.
- Recognize and provide appropriate medical intervention for all “overdose” events, including stimulant use.
- Identify first responder stress as related to substance use disorder.

# A Community in Crisis



**\*City population: 50,000**

**\*County population: 100,000**

**\*Cabell County EMS runs 35,000 calls annually**  
*(County-based EMS agency that serves all of Cabell County, West Virginia. This is all-inclusive of overdose calls in the City of Huntington.)*

# Cabell County EMS “Suspected Overdose” Calls

**2015**

“Suspected overdose” calls – **480**

Narcan usage – **298**

**2016**

“Suspected overdose” calls – **1,217**

Narcan usage – **768**

**2017**

“Suspected overdose” calls – **1,831**

Narcan usage – **1,153**



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# A Day that Changed Everything



Gordon Merry, Cabell County EMS Director  
August 15, 2016

Not *ONE* person received follow-up treatment that day.

# Innovative Approaches



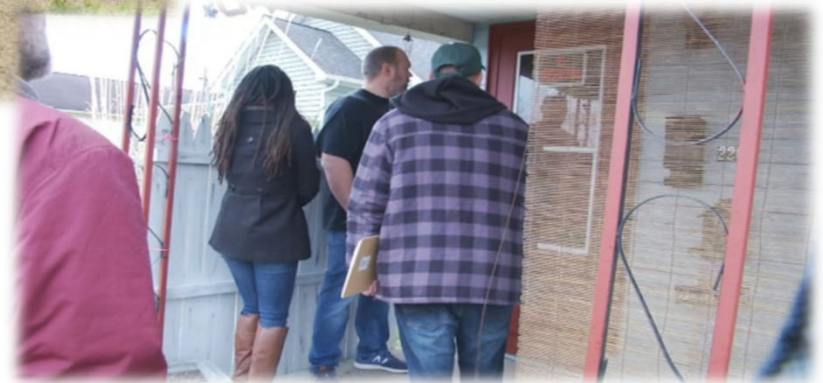
**Cabell County EMS**



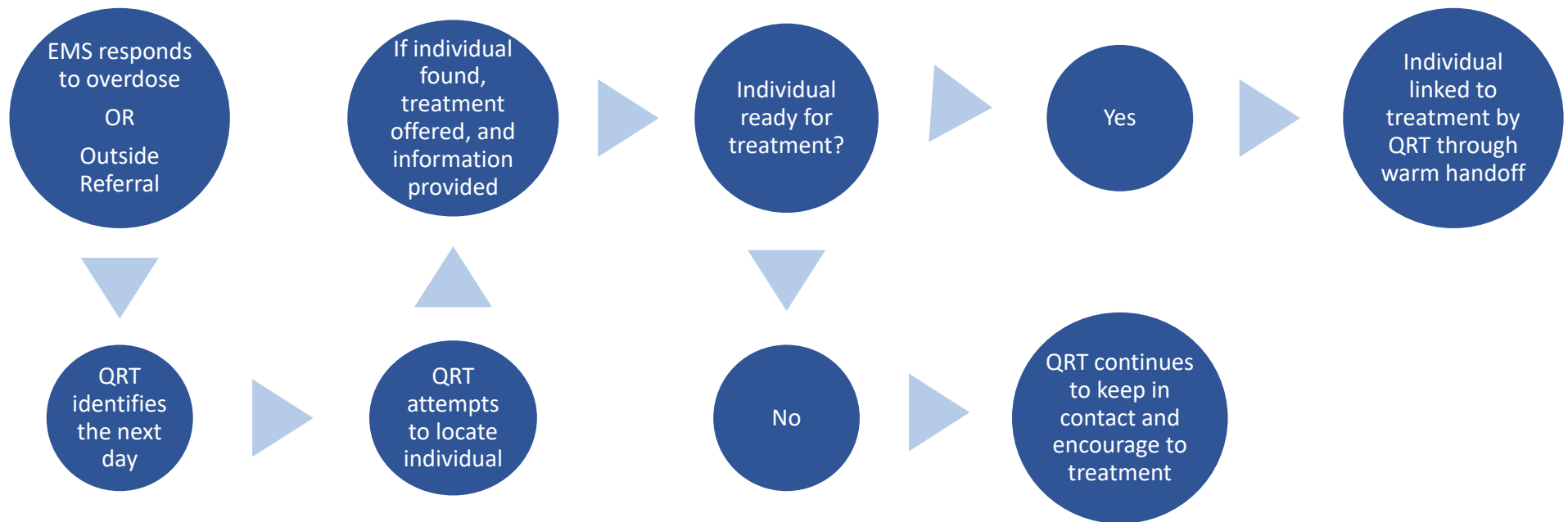
**Pretera Center  
Recovery Point**

**Huntington Police Department  
Faith-Based Leaders July 2018**

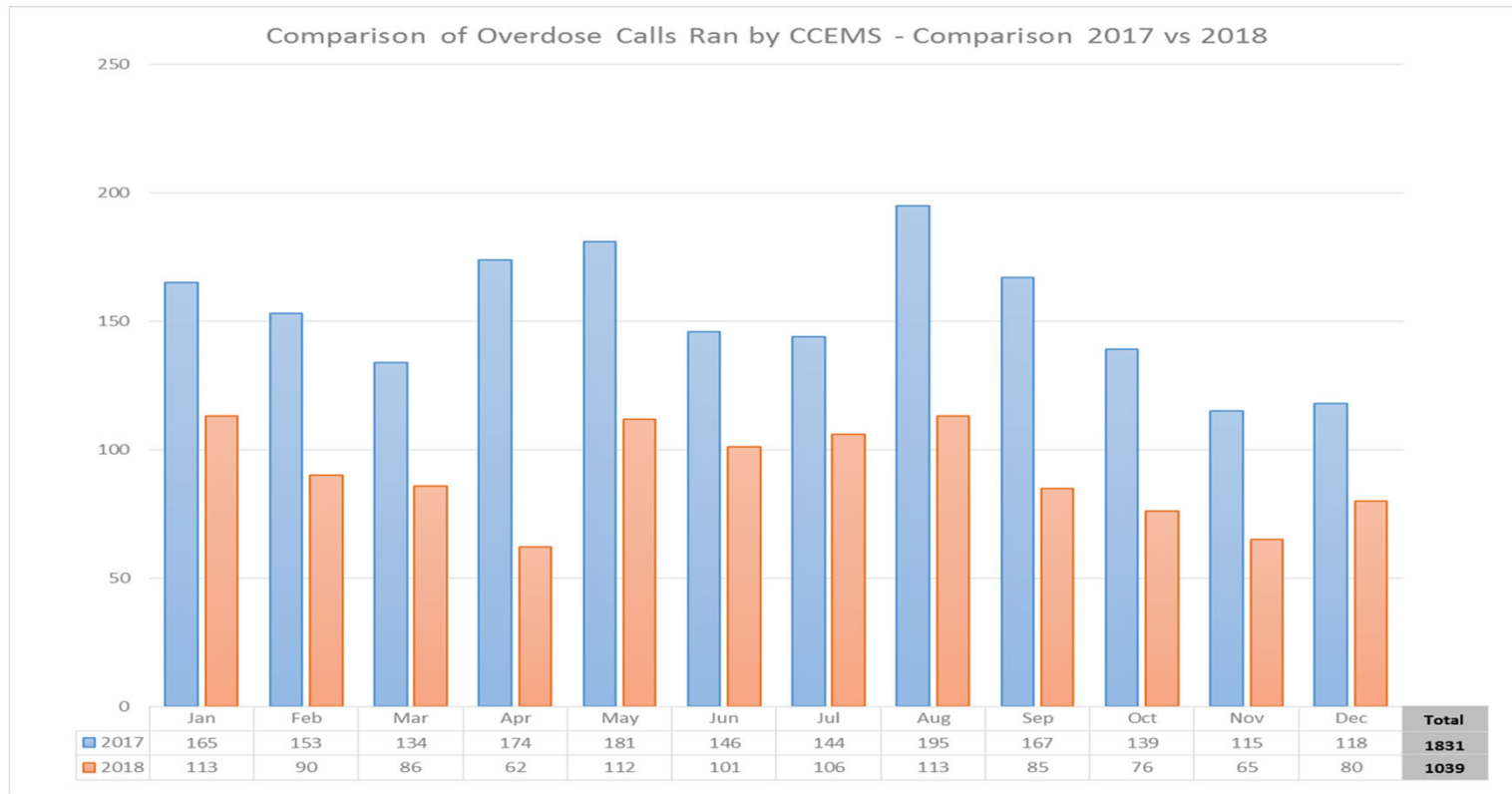
***QRT MODEL***  
*(First Responder  
Diversion Program)*



# Innovative Approaches



# Innovative Approaches



# Innovative Approaches





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# Innovative Approaches

## Cabell County EMS “suspected overdose” ambulance calls

- 2017: 1,831
- 2018: 1,089
- 2019: 878

## QRT Statistics 2017 (Dec) – 2019

- QRT eligible: 1,869
- Contacts made: 803
- Entered treatment: 239  
Approximately 30% enter formalized treatment.



**Total reduction in ambulance calls, 2017-2019: 52%**



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## New Challenges


- “Drug of choice” evolving.
- Stimulant use on the rise.
- Two federal grants focused on opioid use.
- Most individuals experiencing “polydrug use.”
- Use of stimulants with opioids (goof-ball), used at same time.
- Use of a stimulant to keep alert until next opioid use, or use of a stimulant to come “down” from opioid use.
- Limited facilities that treat *stimulant* use disorder.

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# First Responder Challenges

- Increasing stimulant use.
- Escalating confrontation at scene of overdoses.
- Individuals who are much more combative.
- More physical harm to first responders.
- No pharmaceutical treatment (such as naloxone).

# First Responder Challenges

 **Paramedic Treatment Protocol 4607**  
**BEHAVIORAL EMERGENCIES / PATIENT RESTRAINT**

A. Assure scene safety. Do not engage patient unless risk of harm is minimized by law enforcement.

B. Implement **SAFER** mnemonic:

- Stabilize the situation by containing and lowering the stimuli.
- Assess and acknowledge the crisis.
- Facilitate the identification and activation of resources.
- Encourage patient to use resources and take actions in his/her best interest.
- Recovery or referral – leave patient in care of responsible person or professional.

C. Perform **Initial Treatment / Universal Patient Care Protocol** and follow the proper protocol for medical management based on clinical presentation.


D. For altered mental status, perform rapid glucose determination.

E. Control environmental factors; attempt to move patient to a private area free of family and bystanders. **MAINTAIN ESCAPE ROUTE.**


F. Attempt de-escalation, utilize an empathetic approach. Ensure patient safety and comfort. **AVOID CONFRONTATION.**

G. **Physical Restraint:** (Commercially available soft restraints are acceptable.)

1. Consider restraining patient, as needed, to protect life or prevent injury **per MCP order** with the following considerations:
  - a. Restrain patient in the supine position or left lateral recumbent position only.
  - b. Ensure method of restraint does not affect breathing or circulation.
  - c. Use the least restrictive or invasive method of restraint which will protect the patient and others. In many instances, full restraints will be appropriate to ensure patient and provider safety during transport.
2. Continually monitor the restrained patient's airway, circulatory, respiratory, and mental status frequently.



2018 EDITION West Virginia Office of Emergency Medical Services – Statewide Protocols Page 1 of 2

 **Paramedic Treatment Protocol 4607**  
**BEHAVIORAL EMERGENCIES / PATIENT RESTRAINT**


H. **Chemical Restraint - Behavioral:**

1. If psychotic/behavioral agitation is suspected, administer **Midazolam (Versed®)** 5 mg IV, IM or IN.  
**NOTE: Midazolam may not be tolerated well in patients over 55 years of age. Doses should be initiated low and repeated as needed. Administration of these medications in patients > 55 years of age shall be as follows:**  
**Midazolam (Versed®) 2 mg IV/IM or 5 mg (IN) via atomizer.**
2. If patient remains agitated or aggressive in five (5) minutes, administer **Haloperidol (Haldol®)** 5 mg IM.
3. If dystonic reaction (dyskinesia) is noted secondary to **Haloperidol (Haldol®)** administer **Diphenhydramine (Benedryl®)** 25 mg IV or IM.

I. **Chemical Restraint – Excited Delirium:**

1. **(OPTIONAL):** If psychotic/behavioral extreme excited delirium is suspected, administer **Ketamine 5 mg/kg IM to a max single dose of 320 mg**  
**-OR- If IV/IO already in place, 2 mg/kg IV/IO to a max single dose of 200 mg.**  
**NOTE: If suspected or known presence of benzodiazepines in patient, consider half dose to minimize respiratory depression**

II. Transport as soon as possible.

K. If patient is medically stable, in **consultation with Medical Command**, consider transporting to a facility with advanced psychiatric care capability. 

2018 EDITION West Virginia Office of Emergency Medical Services – Statewide Protocols Page 2 of 2

# Actual “Special Reports”



*“Suffered injury due to carbon monoxide exposure and possible meth exposure.”*

*“Paramedic assaulted by patient, hit in ribs and shoulder. Restrained by HPD.”*

*“Patient became combative, thrashing legs and arms. Kicked in chest and scratched neck.”*

*“Became combative, unbuckled himself, and jumped out of back of ambulance.”*

Submitted through emsCHARTS


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# First Responder Role

- Ensure the scene is safe.
- Recognize when an “overdose” involves stimulants.
  - Many calls involve both stimulant and opioid use.
  - The potential for opioid overdose remains.
  - Decreased respiratory drive, with possibility of full cardiac arrest .
- Administer naloxone as needed.
- Support and utilize First Responder Diversion Program (QRT model).

# First Responder Resources

CABELL COUNTY CRITICAL INCIDENT  
STRESS MANAGEMENT TEAM  
(CISM TEAM)




PROVIDING SUPPORT DEBRIEFINGS TO FIRST  
RESPONDERS  
CONTACT PHONE NUMBER:  
1-304-526-8484

**QRT**  
Quick Response Team



**ATTENTION  
First Responders**



St. Mary's Medical Center has  
a resource to help you with  
job-related trauma and stress


**2017 First Responder Meetings**  
6-7:30 p.m. • St. Mary's Conference Center  
2849 Fifth Ave., Huntington

April 6	July 6	Oct. 5
May 4	Aug. 3	Nov. 1
June 7	Sept. 7	Dec. 7


For more information, call Melissa Long at (304) 526-1357



**CABELL COUNTY  
EMERGENCY MEDICAL SERVICES  
SECOND-RESPONDER PROGRAM**



**DID YOU KNOW?**  
EMS Providers are 10  
times more likely than  
the general public to  
attempt suicide.



**WARNING SIGNS**

- Nightmares • Flashbacks • Feeling hopeless
- Feeling like a burden • Unexplained anger

**RISK FACTORS**

- Overworking • Self-medicating • Sleep disturbances
- Overconsumption of alcohol • Impulsive behaviors
- Easy access to lethal means

**HOW TO GET HELP?**

Tammy Damron, SMMC – EAP: 304-526-6675  
Prestra Center 24/7 Crisis Line: 1-800-642-3434/1-877-399-7776  
National Suicide Prevention Hotline: 1-800-273-8255

# Lessons Learned

- Collaboration works to benefit the entire community.
- Addressing the opioid crisis prepares everyone for addressing the next crisis, whether involving stimulants or some unforeseen threat.
- Ignoring issues do not make them disappear. Work proactively based on data (even when data reveals unfavorable trends).
- Providing hope is the strongest tool we have in the toolbox.





# Questions?



THANK YOU

“Innovations Now” Award 2019, Addiction Policy Forum

<https://www.cossapresources.org/Learning/PeerToPeer/Diversion/Sites/Huntington>

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# Questions?

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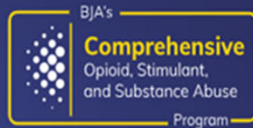
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## Contact Information

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<https://cossapresources.org/Program/TTA>



COSSAP GRANT PROGRAM

LEARNING OPPORTUNITIES

AREAS OF FOCUS

PUBLICATIONS & DIGITAL MEDIA

PDMP TTAC

SEARCH

## TRAINING AND TECHNICAL ASSISTANCE

The COSSAP training and technical assistance program offers a variety of learning opportunities and assistance to support BJA COSSAP grantees and other local, tribal, and state stakeholders to build and sustain multidisciplinary criminal justice responses to illicit substance use and misuse.

Training and technical assistance is provided in a variety of formats, including virtual and in-person training events, workshop and meeting presentations, and online resources.

REQUEST TTA

If you are interested in requesting training and technical assistance, please complete the form at <https://www.cossapresources.org/Program/TTA>.



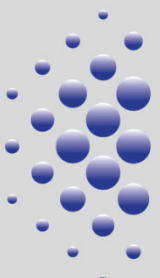
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# COSSAP Resources

**Tailored Assistance**—The COSSAP training and technical assistance (TTA) program offers a variety of learning opportunities and assistance to support local, tribal, and state organizations, stakeholders, and projects in building and sustaining multidisciplinary responses to the nation’s substance abuse crisis. ***You do not need to be a COSSAP grantee to request support.*** TTA is provided in a variety of formats, including virtual and in-person training events, workshop and meeting presentations, and online resources. Request TTA to support your activities at <https://cossapresources.org/Program/TTA/Request>.

**Funding Opportunities**—Current COSSAP and complementary funding opportunities are shared at <https://www.cossapresources.org/Program/Applying>.

**Join the COSSAP community!** Send a note to [COSSAP@iir.com](mailto:COSSAP@iir.com) with the subject line “Add Me” and include your contact information. You’ll receive the latest-and-greatest COSSAP opportunities, resources, and updates.



BJA's

**Comprehensive**  
Opioid, Stimulant,  
and Substance Abuse  
Program