#### HHP Care Model and Disease Management Webinar Series

#### **Meth and Your Patient**

Thursday, September 30, 2021 12:00pm – 1:00pm





## Moderator

#### Gerard Livaudais, MD, MPH

*Executive Vice President* Population Health and Provider Networks Hawai'i Pacific Health



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- Specific areas may not pertain directly to your clinical practice area and/or may not be applicable to your practice based on your existing workflows, infrastructure, software (e.g. EHR), and communications processes.

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  - Due to time constraints, any unanswered questions will be addressed this week and posted on the HHP website
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#### Meth and Your Patient September 30, 2021

#### Mark Baker, M.D., FACEP, FAMIA

Pali Momi Medical Center Hawaii Pacific Health

#### Dan Galanis, PhD

Epidemiologist, EMS & Injury Prevention System Branch, Hawai'i Department of Health

#### **Richard Witt**

Drug Intelligence Officer, Hawai'i High Intensity Drug Trafficking Areas (HIDTA)





#### **Disclosure: Visual Lecture**



https://titlestream.com/new-property-disclosure-form/



#### Introduction:



- ED Doc at Pali Momi Medical Center since 1989
- May have treated more patients in the ED than...



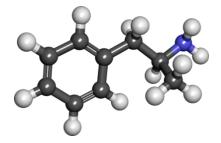
## Why does this matter?

A patient named Charles. He died at age 42 from methamphetamine related heart disease. Many more followed.



**KAPI'OI ANI** ΔωΔι PALI MOMI PACIFIC STRAUB WII COX

#### **Three goals for this lecture:**



Describe methamphetamine and who is using it.



Describe the morbidity from using meth. And mortality...



Share resources for clinicians and patients

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# Get help



#### **Quiz: multiple choice**

How is methamphetamine different than amphetamine?

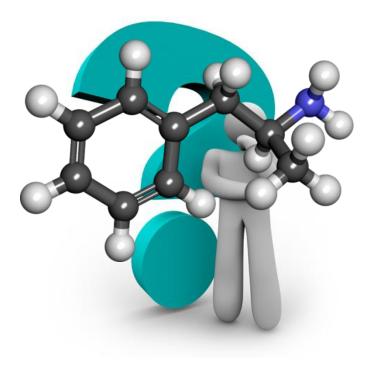
A: there is a 'meth'

B: similar effects, very different drug

C: meth is the L-isomer

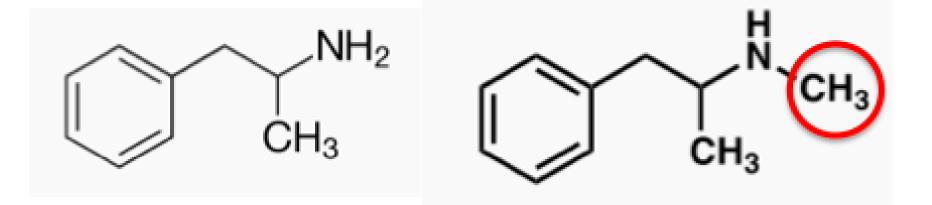
D: meth can not be prescribed

The answers are: A and D





#### Amphetamine = Adderall

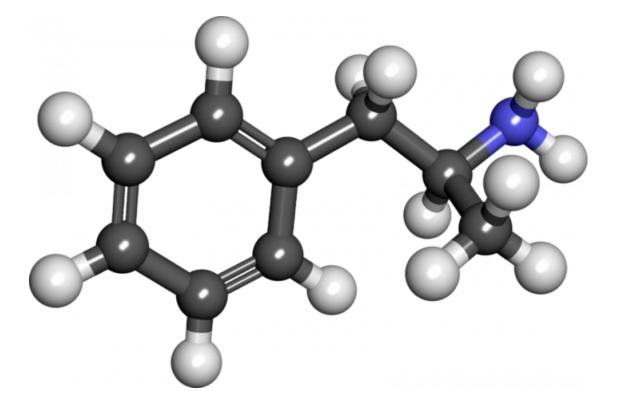


#### Adderall (Amphetamine)

#### Methamphetamine (Crystal meth)

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#### What do people call it?



https://www.google.com/url?sa=i&source=images&cd=&ved=2ahUKEwiM2Mmg4b\_IAhWFv54KHXB3CDoQjRx6BAgBEAQ&url=https%3A%2F% 2Fmethamphetaminepp.weebly.com%2F&psig=AOvVaw3T0SMfQgq6qfVsIQz5ZNBj&ust=1572379753008173

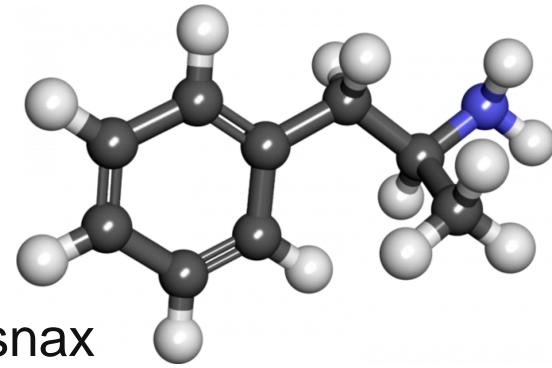


- Meth
- Ice
- Speed
- Crank
- Chalk
- Wash
- Dunk
- Scooby snax

Trash

Pookie

Rocket fuel Gak



https://www.google.com/url?sa=i&source=images&cd=&ved=2ahUKEwiM2Mmg4b\_IAhWFv54KHXB3CDoQjRx6BAgBEA Q&url=https%3A%2F%2Fmethamphetaminepp.weebly.com%2F&psig=AOvVaw3T0SMfQgq6qfVslQz5ZNBj&ust=157237 9753008173

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#### How addictive is it?

" Methamphetamine is one of the most addictive substance on this planet. That's because people get hooked after just one use."

https://www.simplepathrecovery.com/glossary/crystal-meth/





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#### How addictive is it?

				← Follov	v Sea	rch the website	Q
Australian Government Department of Health	The Departmer of Health	nt					
A Ministers For Consumers	For Health Professionals -	About us N	/ledia Centre	Programs & Campaigns 👻	Resourc	es 👻 Ageing & Aged Care	
Home / For Consumers / Education and Prevention / Illicit Drugs /						Isten ►	
PATTERNS OF USE AND HARMS ASSOCIATED WITH SPECIFIC POPULATIONS OF METHAMPHETAMINE USERS IN AUSTRALIA - EXPLORATORY RESEARCH					TABLE OF CONTENTS		
6. Specific types of methamphetamine users and behavioural contexts						Notes on the research	
Page last updated: February 2008						List of tables and figures	
						1. Executive summary	
6.1 Overview of behavioural contexts and target audiences						2. Background to the research	
6.2 Social use					3. Research objectives		
6.3 Functional users					4. Methodology		
6.4 Dependent users 6.1 Overview of behavioural contexts and target audiences						5. Understanding the broad context o methamphetamine use	f
When attempting to categorise users, the research found that discriminating factors relate more to behaviour and motivation for use rather than purely						6. Specific types of methamphetam	nine



## **Users**:

## Social Functional Dependent -Dead





## **Social Users:**



Ice Dabblers use ice opportunistically. That is, while ice is neither their drug of choice nor a drug they proactively seek, they will use it on occasions when it is offered by others.

https://www.abc.net.au/news/health/2017-02-20/ice-what-happens-to-your-body-when-you-use-the-drug/8275654

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## **Social Users:**



#### "I would use it if someone offered it to me but I would never buy it."

https://www.smh.com.au/national/inside-the-dark-web-drug-market-20191023-p533e2.html



## **Functional Users:**

## Drivers Shift workers



## Even newscasters No immunity from drug addiction

https://www.smh.com.au/national/inside-the-dark-web-drug-market-20191023-p533e2.html

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#### **Dependent Users:**





#### KTLA anchor Chris Burrous died of methamphetamine overdose, coroner says



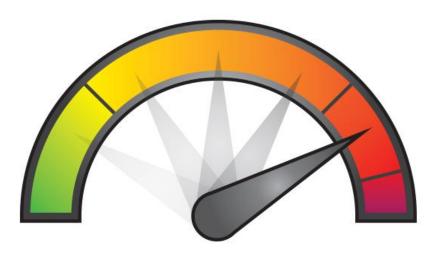


https://www.dailynews.com/2019/02/22/ktla-anchor-chris-burrous-died-of-methamphetamine-overdose-during-a-sexualencounter-coroner-says/

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## **My 'Personal Experience'**

## It used to be a few patients





## **My 'Personal Experience'**

## Now there are too many to count





#### What, Where, and How?



## Richard Witt Drug Intelligence Officer, Hawai'i High Intensity Drug Trafficking Areas (HIDTA)





#### Where is it coming from: MEXICO











## Meth comes in multiple forms





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#### Forms of Meth

Methamphetamine is a central nervous system stimulant with a high potential for abuse and dependence. A synthetic drug, methamphetamine is closely related chemically to amphetamine, but produces greater effects on the central nervous system. The drug's euphoric effects are similar to, but longer lasting than those of cocaine. It generally comes in three forms:



crystalline powder, readily soluble in water or alcohol.

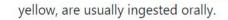


crystalline methamphetamine called "Ice".

Crystal: Users smoke chunks of a very pure form of



Rock: Big chunks of the drug, usually found in





## How much do users use?

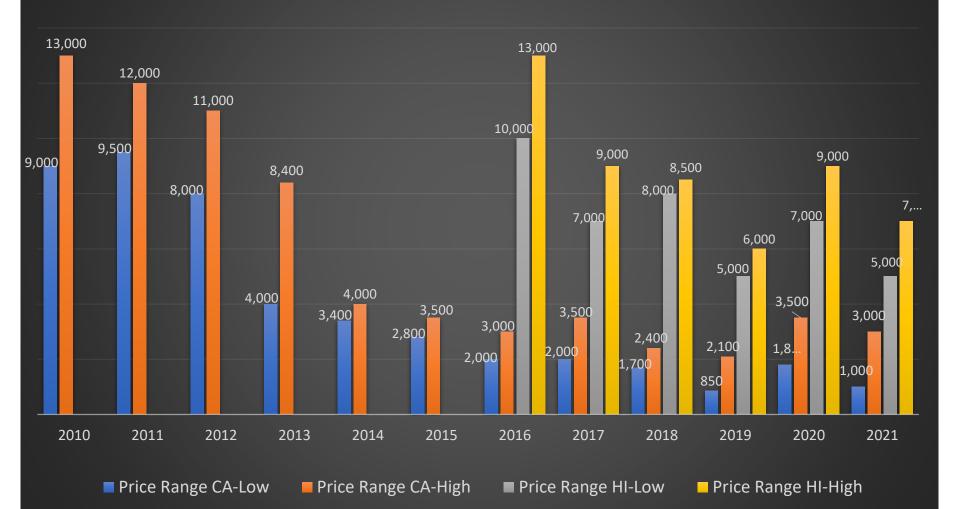


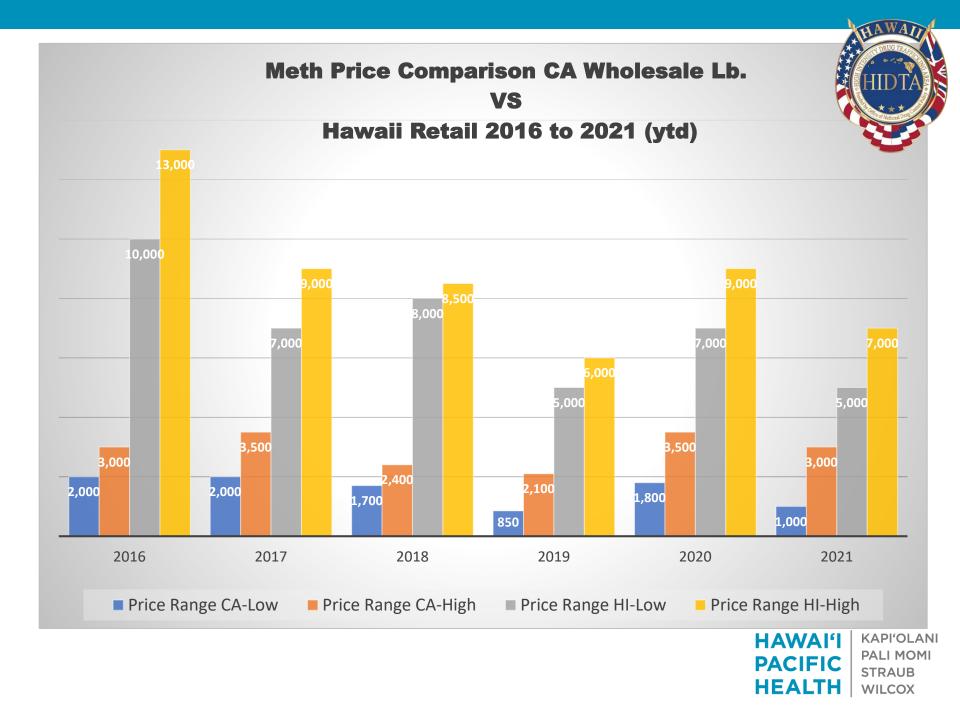
- The amount used by a normal chronic user is about .5 grams whether it is smoked or injected, maybe two times during a day or night. Users will "binge" for up to three days before needing to crash.
- Some users I have known inject at least 1.5 per day; some times in one dose or distributed throughout the day/night.
- The effects range from 8 to 10 hours, sometimes up to 14 hours.
- In the early years 80s to early 90s, before Crystal Meth, users would use higher doses of plain meth with lower 65 to maybe 78% purity levels. After the advent of crystal meth, the doses were reduced due to the purity of at least 98% and the effects last much longer now.



### How much does it cost?

LA Meth Prices 2010 - 2020 Compared to Hawaii Prices 2016 – 2021 (YTD) Per Lb.







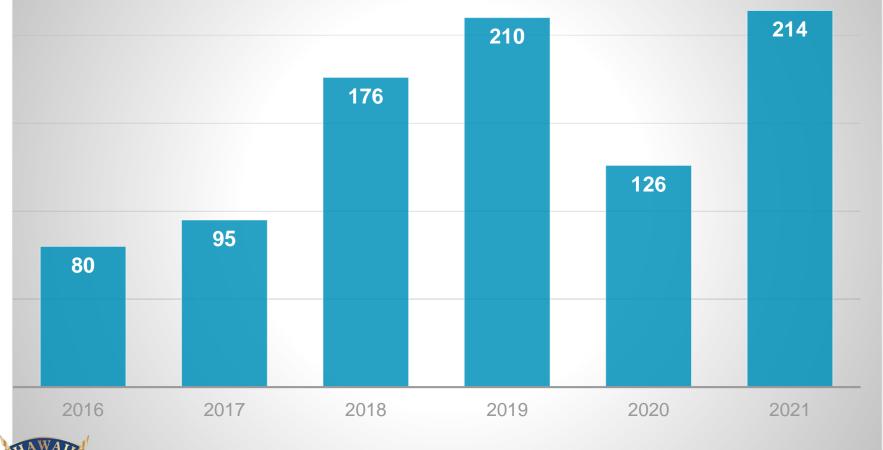
#### Current Street Prices Hawaii

- .5 to .70 gr = \$20.00
- 1 to 1.2 gr = \$40.00
- 1.5 to 2 gr = \$60.00
- 3.5 gr (eight ball) \$100 to \$160
- Most Recent Prices on Oahu





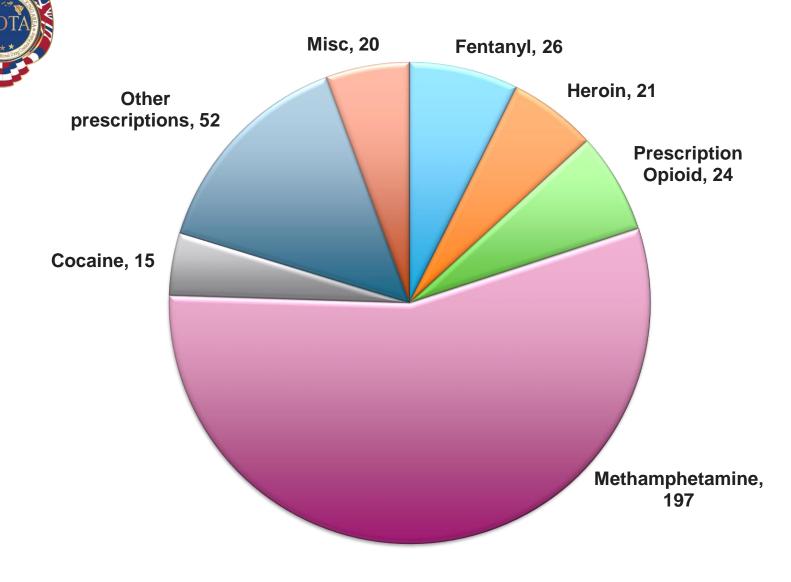
### Meth Seizures by Hawaii HIDTA (Kg)





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### 2020 Drug-related Deaths by Drug Category



# How big is the problem in Hawaii?

### Mark Baker



### How big is the problem in Hawaii?

Los Angeles Times

 Use of Highly Addictive 'Ice' Growing in Hawaii : Drugs: This smokable form of methamphetamine that ravages the minds and bodies of users has spread rapidy because it offers an intense, prolonged high without the use of needles.



# How big is the problem in Hawaii?

"People in Hawaii are the guinea pigs for the spread of smokable crystal methamphetamine into the U.S.," said U.S. Atty. Daniel Bent. "What's happening here is just a sample of what's to come. Los Angeles Times



# When was this LA Times article written?

- A: 1989
- B: 1999
- C: 2009

D: 2019

### Los Angeles Times



# When was this LA Times article written?

### intense, prolonged high without the use

By SUSAN ESSOYAN OCT. 16, 1989 | 12 AM

SPECIAL TO THE TIMES

HONOLULU — The drug first caught on about three years ago in Kalihi,

Los Angeles Times



# And now?

GALILUMINA

Los Angeles Times

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Column: Meth addiction is an epidemic, and it's complicating the homeless relief effort

By STEVE LOPEZ | COLUMNIST JUNE 29, 2019 | 5 AM

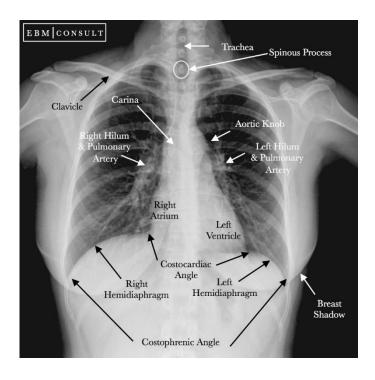


### Los Angeles, 2019: Steve Lopez

Addiction and all its consequences are on full display in Los Angeles County, where the latest sprawl is measured in tents rather than houses.



# **Medical Consequences:**



# Cardiac

https://www.ebmconsult.com/articles/radiology-chest-xray-normal



### **Medical Consequences:**



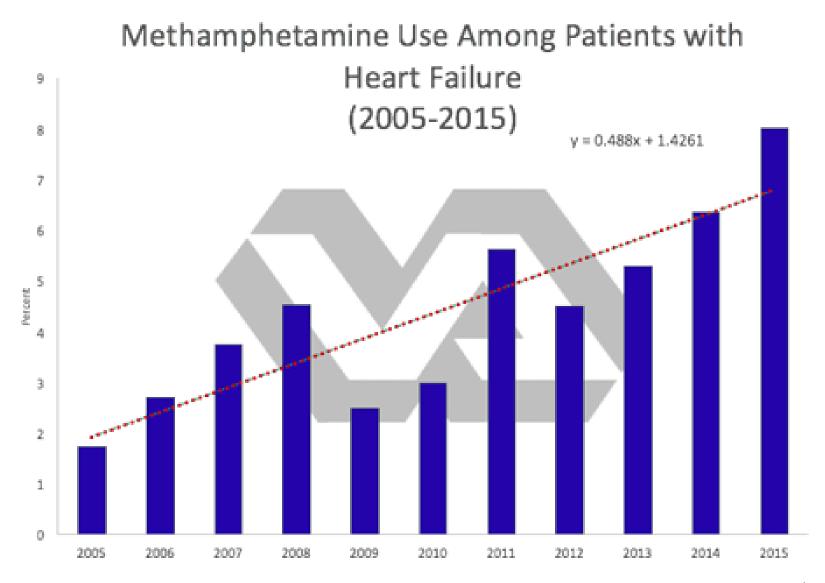
# Cardiac: Congestive heart failure







Circ	ulation	Hello Guest!          MY ALERTS       SIGN IN       JOIN         Submit your article       Image: Comparison of the second
	rmation Issues Subjects Features Educati By continuing to browse this site you are agreeing to our use of cookie	ion Reviewers
Home > Circulation > Vol ■ FREE ACCESS ARTICLE	A 136, No. suppl_1 > Abstract 14066: Methamphetamine Associated Heart HEART FAILURE AND CARDIOMYOPATHIES SESSION TITLE: HEART FAILURE TOPICS THAT GRAB YOUR ATTENTION! Abstract 14066: Methamphetamine Associated Heart Failure, a New Epidemic Marin Nishimura, Janet Ma, Isac C Thomas, Sutton Fox, Avinash Toomu, Sean Mojaver, Derek Juang, and Alan Maisel Originally published 8 Jun 2018   Circulation. 2017;136:A14066 Abstract Martoduction: Methamphetamine is one of the most commonly abused illegal substances in the United States. Heart failure due to Methamphetamine use (MethHF) is a poorly characterized disease entity that appears to be on the rise.	Image: Boot state   Details   Related   References   Figures   Figures Figures Figures References Figures F
		HAWAI'I KAPI'OLAN PACIFIC PALI MOMI STRAUB HEALTH WILCOX



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### BRILLIANT EARTH







.com...

### Deputies: Woman goes into cardiac arrest after consuming meth during traffic stop

By: Kelly Healey

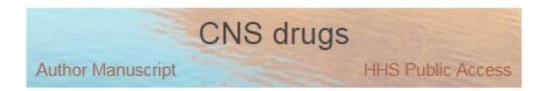
Updated: Jun 11, 2019 - 8:10 AM





### **Medical Consequences:**

# Psychiatric



### Methamphetamine Psychosis: Epidemiology and Management

Suzette Glasner-Edwards, Ph.D. and Larissa J.

Mooney, M.D.



# Medical Consequences: Psychiatric

- Confusion
- Delusions



- Intense paranoia
- •Feeling self-conscious in public
- Visual and auditory hallucinations



# Medical Consequences: Psychiatric

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#### NEWS

Skin Manifestations May Signal Crystal Meth Use : Think 'meth mites' when patients are picking at their skin and think they have insects crawling on them.

Publish date: January 15, 2006

By Joyce Frieden



# Medical Consequences: Skin







https://metro.co.uk/2016/01/27/before-and-after-pics-of-crystal-meth-users-are-enough-to-put-you-off-for-life-5648453/

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# Medical Consequences: Teeth



https://www.therecoveryvillage.com/meth-addiction/meth-mouth/#gref



# Medical Consequences: Teeth

ta	Treatment By S	Our Rehab Centers 🗸	Addiction Treatment -	Drug Addiction 🗸	Alcohol Abuse 🗸
et	Home > M				

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### Meth Mouth: Every Dentist's Worst Nightmare

After as little as one year using the notorious street drug methamphetamine, users can develop oral hygiene symptoms commonly known as "meth mouth" — a frightening case of extensive oral damage, tooth decay and gum disease. Meth mouth is incurable and in many cases can lead to tooth extraction. Meth, short for methamphetamine, is common on the streets, but is also sometimes prescribed to treat severe cases of attention deficit hyperactivity disorder, commonly known as ADHD, and narcolepsy. Meth is the most abused synthetic drug in America, with more than 25 million addicts worldwide from its euphoric highs. Used as a recreational stimulant, it can be ingested in a number of ways — swallowed, snorted, injected and smoked — but smoking this substance is the most dangerous, providing quicker access to the brain and bloodstream. Meth has double the potency of cocaine and is extremely addictive. **Although meth mouth is the most common side effect of methamphetamine abuse, the drug carries many other side effects. Other symptoms of meth abuse and addiction include:** 

<u>~</u> · · · ·

https://www.therecoveryvillage.com/meth-addiction/meth-mouth/#gref



### **Social Consequences:**





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### Is there Hawaii Data?

### Daniel Galanis, Epidemiologist, EMS & Injury Prevention System Branch, Hawai'i Department of Health



### Case definitions (less specific than you'd think)

### Data sources:

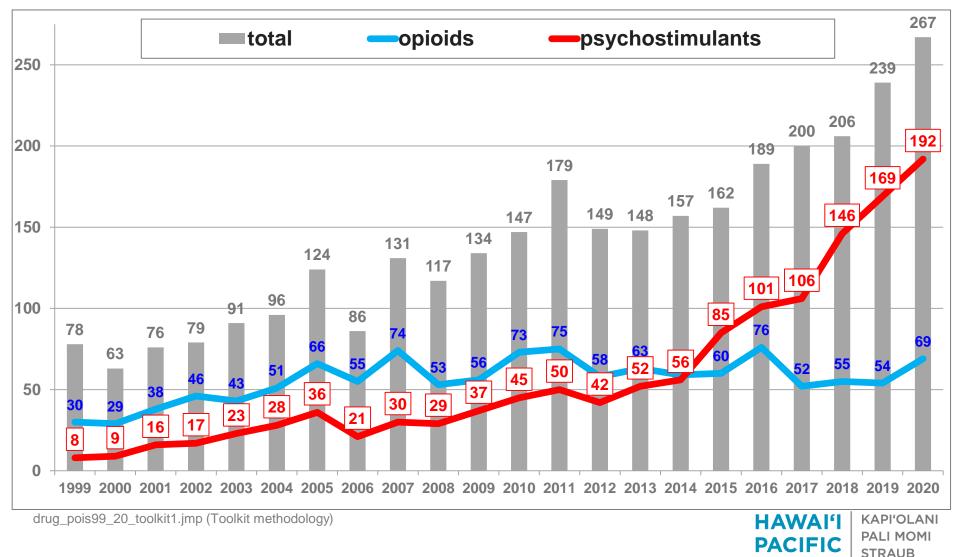
- Death certificate database, Hawaii Department of Health (through 2020)
- CDC WONDER Multiple Cause of Death (wonder.cdc.gov) (through 2019)

### ICD 10 codes:

- Underlying cause of death code for drug poisoning
  - Unintentional (X40-X44), Intentional (X85, X60-X64) and Undetermined Intent (Y10-Y14)
    - AND...
- Contributing Cause of death code of T436.0, "poisoning by...unspecified psychostimulant"
  - Excludes cocaine, caffeine, amphetamines, methylphenidate, ecstasy, and "other" psychostimulants

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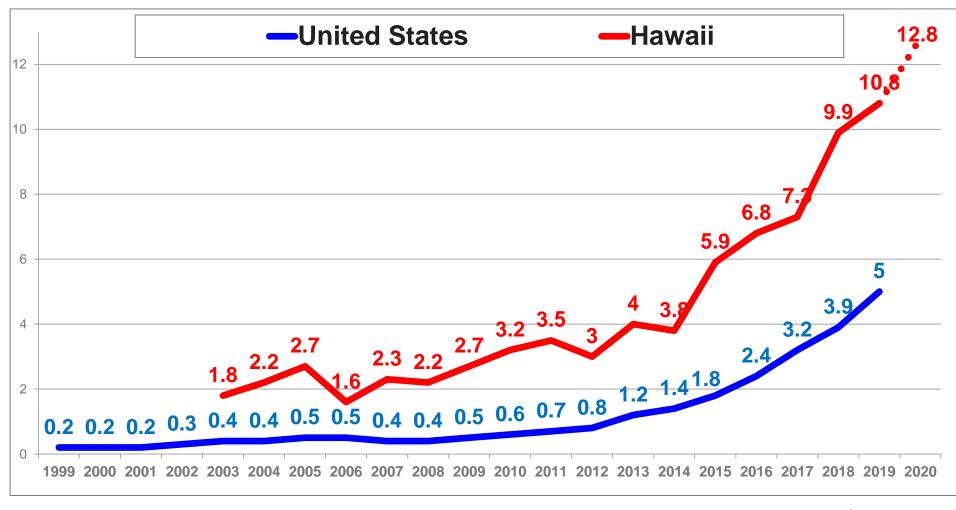
### Annual number of fatal drug overdoses among Hawaii residents, by type of substance, 1999-2020



HEALTH

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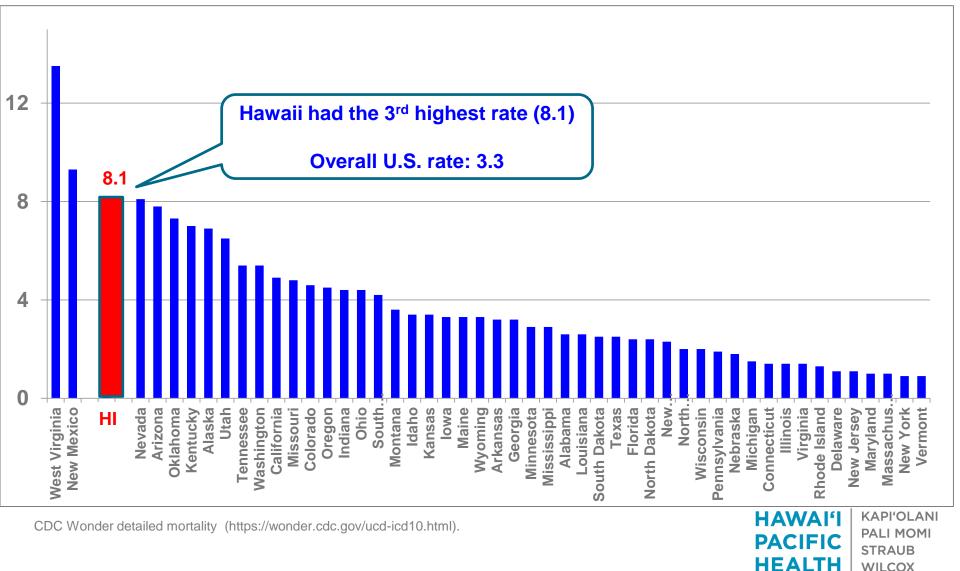
# Adjusted fatality rates for poisoning involving psychostimulants, Hawaii vs. U.S., 1999-2019 (2020)



CDC Wonder detailed mortality (https://wonder.cdc.gov/mcd.html). CC codes of T436



### Adjusted fatality rates for poisonings involving psychostimulants, by state, 2015-2019



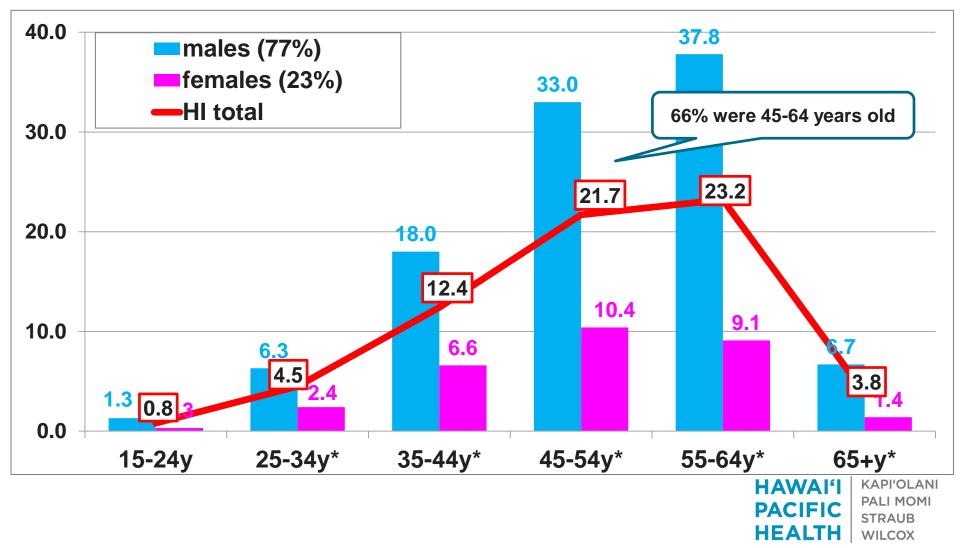
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### Distribution of increases in standardized mortality rates from overdoses related to psychostimulants, by state, 2010-2014 vs. 2015-2019

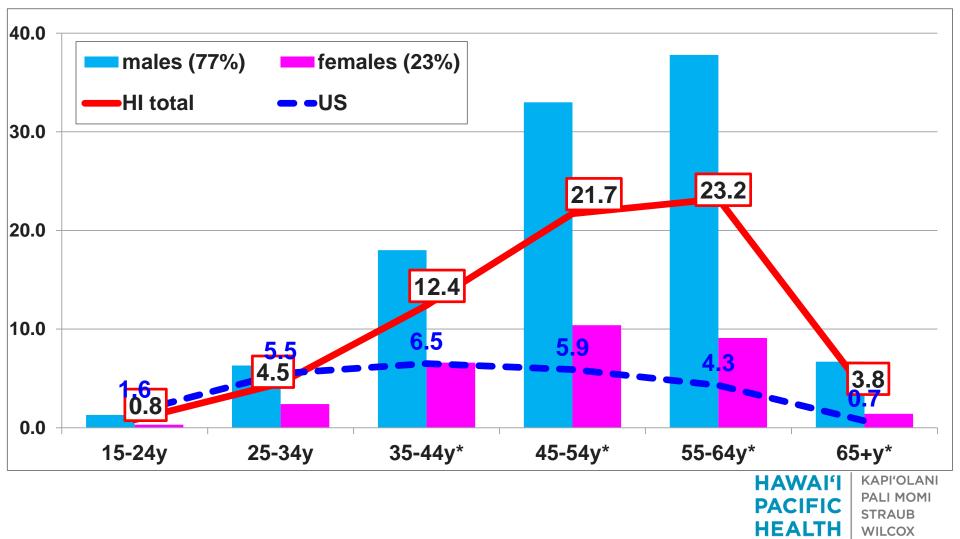
Lowest	Low	<b>Medium</b>	High	Highest
(100%-150%)	(154%-200%)	(212%-400%)	(450%-600%)	(625%-1367%)
Arkansas California Hawaii Massachusetts Nebraska Nevada Oklahoma Oregon Utah Vermont Washington	Alaska Idaho Iowa New Mexico New York Rhode Island South Dakota Texas Wyoming	Arizona Colorado Delaware Georgia Kansas Maine Maryland Michigan Minnesota Missouri Montana Wisconsin	Alabama Connecticut Florida Illinois Louisiana New Hampshire New Jersey North Carolina South Carolina Tennessee Virginia	Indiana Kentucky Mississippi Ohio Pennsylvania West Virginia



Five-year drug poisoning fatality rates (/100,000) involving psychostimulants, among Hawaii residents, by age and gender, 2015-2019



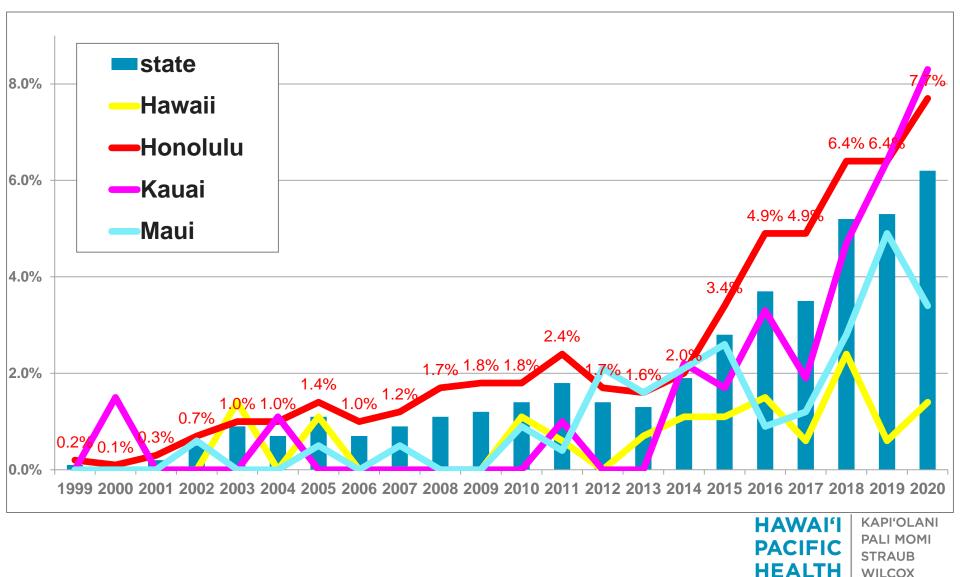
Five-year drug poisoning fatality rates (/100,000) involving psychostimulants, among Hawaii and US residents, by age and gender, 2015-2019



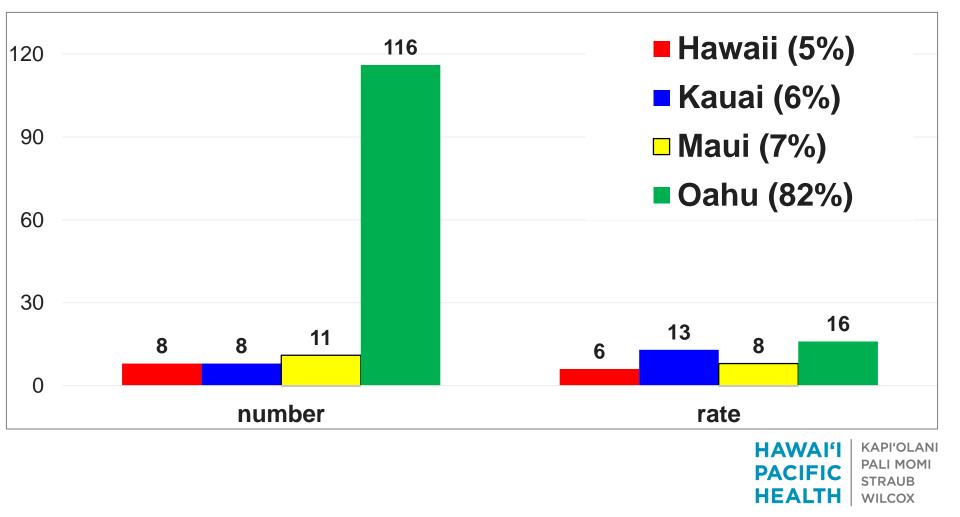
# Annual percent of Hawaii resident deaths (ages 45-64 years) from overdose related to psychostimulants, 1999-2020



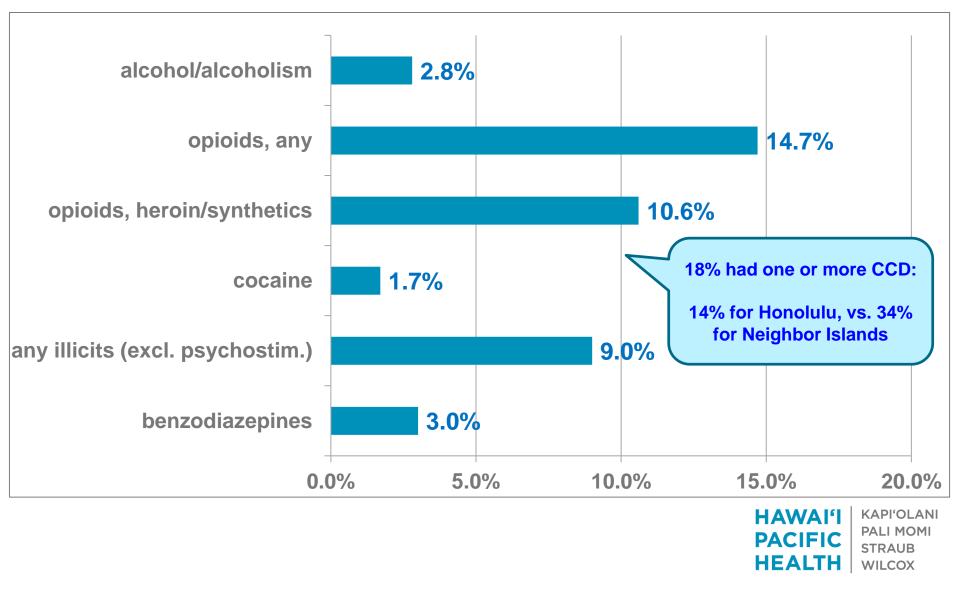
# Annual percent of Hawaii resident deaths (ages 45-64 years) from overdose related to psychostimulants, by county, 1999-2020



Average annual number and 5-year age-adjusted rate of fatal overdoses related to psychostimulants in Hawaii, by county of residence, 2016-2020 (For residents 20 years and older)



# Other substances coded as contributing causes for overdoses related to psychostimulants in Hawaii, 2016-2020



### October 2019 report

Cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm



### National Center for Health Statistics

CDC > NCHS > National Vital Statistics System > Vital Statistics Rapid Release > Surveillance Activities

Vital Statistics Rapid Release - Monthly Provisional Drug Overdose Death Counts

### Provisional Drug Overdose Death Counts

Recent improvements in timeliness and data quality over the last year have prompted a re-evaluation of the length of time that data quality requirements have had to be met for states to be included in "Figure 2. 12 Month-ending Provisional Number of Drug Overdose Deaths by Drug or Drug Class." As a result of this re-evaluation, trends for additional states are presented in Figure 2. Additional states will be added as they meet data quality and timeliness requirements. Please see the Technical Notes of the dashboard for more information.

This data visualization presents provisional counts for drug overdose deaths based on a current flow of mortality data in the National Vital Statistics System. Counts for the most recent final appual data are provided for comparison. National provisional counts include

On This Pag	e	
Dashboard		
Data Tables	for Current Dashb	oard
Technical no	otes	
Nature and	sources of data	
	ath classification a drug deaths	nd
Selection of jurisdictions	specific states and	other
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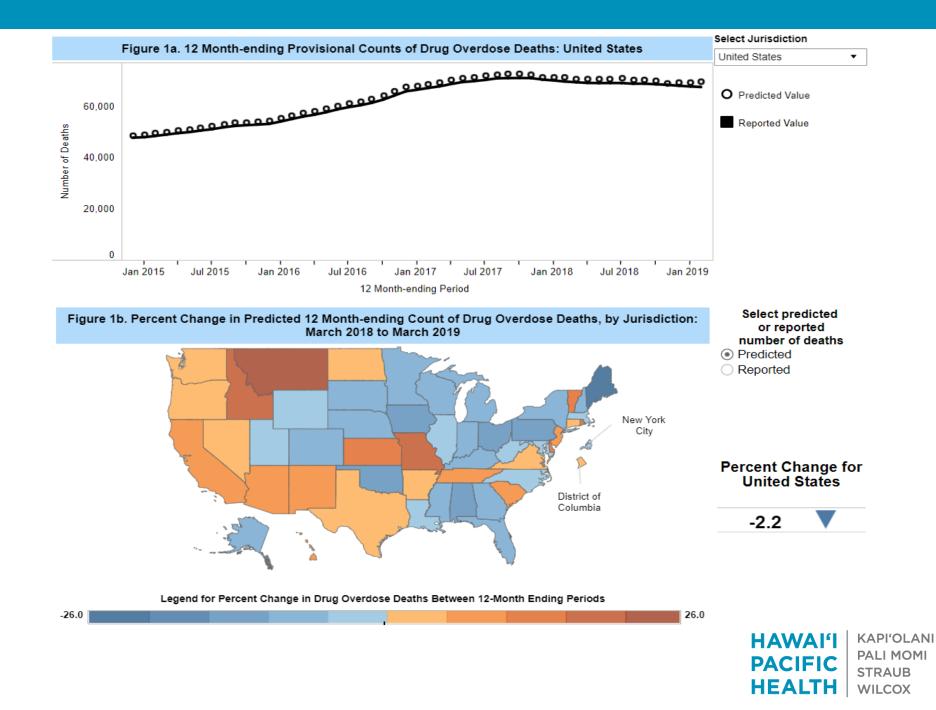
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#### **AP NEWS**

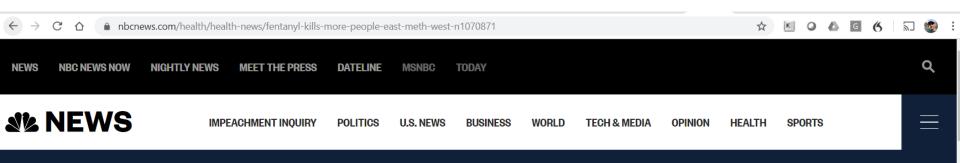
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## Meth is most common drug in overdose deaths in chunk of US

By MIKE STOBBE October 25, 2019

Click to copy	NEW YORK (AP) — Fentanyl is driving drug overdose deaths in the U.S. overall, but in nearly half of the country, it's a different story. Meth is the bigger killer, a new government report shows.
RELATED TOPICS AP Top News	Nationwide, most deaths still involve opioid drugs like fentanyl and heroin. But in 2017, the stimulant meth was the drug most frequently involved in deaths in four regions that include 19 states west of the Mississippi.
Opioids Health General News U.S. News	The report released Friday by the Centers for Disease Control and Prevention is the agency's first geographic breakdown of deaths by drug. It's based on 2017 figures when there were more than 70,000 overdose deaths in the U.S., two-thirds of them involving opioids.



HEALTH NEWS

# Fentanyl kills more people in the East, meth in the West

The drugs behind deadly overdoses vary across the United States.

Oct. 25, 2019, 8:30 AM UTC

By Erika Edwards

The drugs driving overdose deaths vary depending on where you live in the U.S., a government report published Friday found.





Meth Is Top Drug in the West for Overdose Deaths

Fentanyl remains the top drug in overdose deaths nationwide, but methamphetamine is becoming more prevalent

By Jennifer Calfas Oct. 25, 2019 1:29 pm ET

 $\Rightarrow$ 

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TEXT

Methamphetamine, or "meth," the powerful man-made alternative to plant-based stimulants like cocaine and crack, is playing a bigger role in fatal overdoses in the western half of the U.S. than the synthetic opioid fentanyl.

A new report from the Centers for Disease Control and Prevention marking the first time the agency has broken down regional differences in overdose deaths by specific drugs—shows that meth was the top drug involved in overdose deaths in 19 states west of the Mississippi River in 2017.

TO READ THE FULL STORY



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## CDC Report: Meth Is More Popular On The West Coast Than Heroin, Fentanyl

#### By Lauren Gilger

Published: Monday, October 28, 2019 - 1:45pm Updated: Monday, October 28, 2019 - 1:51pm

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# Mark Baker



The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

## Treatment:

#### Bupropion and Naltrexone in Methamphetamine Use Disorder

M.H. Trivedi, R. Walker, W. Ling, A. dela Cruz, G. Sharma, T. Carmody, U.E. Ghitza, A. Wahle, M. Kim, K. Shores-Wilson, S. Sparenborg, P. Coffin, J. Schmitz, K. Wiest, G. Bart, S.C. Sonne, S. Wakhlu, A.J. Rush, E.V. Nunes, and S. Shoptaw

#### ABSTRACT

#### BACKGROUND

The authors' full names, academic degrees, and affiliations are listed in the Appendix. Address reprint requests to Dr. Trivedi at the University of Texas Southwestern Medical Center, 5323 Harry Hines Blvd., Dallas, TX 75390-9119, or at madhukar.trivedi@utsouthwestern.edu.

N Engl J Med 2021;384:140-53. DOI: 10.1056/NEJMoa2020214 Copyright © 2021 Massachusetts Medical Society. The use of naltrexone plus bupropion to treat methamphetamine use disorder has not been well studied.

#### METHODS

We conducted this multisite, double-blind, two-stage, placebo-controlled trial with the use of a sequential parallel comparison design to evaluate the efficacy and safety of extended-release injectable naltrexone (380 mg every 3 weeks) plus oral extended-release bupropion (450 mg per day) in adults with moderate or severe methamphetamine use disorder. In the first stage of the trial, participants were



Adverse events with naltrexone–bupropion included gastrointestinal disorders, tremor, malaise, hyperhidrosis, and anorexia. Serious adverse events occurred in 8 of 223 participants (3.6%) who received naltrexone– bupropion during the trial.

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

#### Bupropion and Naltrexone in Methamphetamine Use Disorder

M.H. Trivedi, R. Walker, W. Ling, A. dela Cruz, G. Sharma, T. Carmody, U.E. Ghitza, A. Wahle, M. Kim, K. Shores-Wilson, S. Sparenborg, P. Coffin, J. Schmitz, K. Wiest, G. Bart, S.C. Sonne, S. Wakhlu, A.J. Rush, E.V. Nunes, and S. Shoptaw

ABSTRACT

#### The authors' full names, academic de- The use of n

The use of naltrexone plus bupropion to treat methamphetamine use disorder has not been well studied.

#### METHODS

grees, and affiliations are listed in the Appendix. Address reprint requests to Dr. Trivedi at the University of Texas Southwestern Medical Center, 5323 Harry Hines Blvd, Dallas, TX 75390-9119, or at madhuka.trivedi@utsouthwestern.edu M. Bengl Med 2021;384:140-53.

N Engl J Med 2021;384:140-53. DOI: 10.1056/NEJMoa2020214 Copyright © 2021 Massachusetts Medical Society. We conducted this multisite, double-blind, two-stage, placebo-controlled trial with the use of a sequential parallel comparison design to evaluate the efficacy and safety of extended-release injectable naltrexone (S80 mg every 3 weeks) plus oral extended-release bupropion (450 mg per day) in adults with moderate or severe methamphetamine use disorder. In the first stage of the trial, participants were

The weighted average response across the two stages was 13.6% with naltrexone–bupropion and 2.5% with placebo

... response over a period of <u>12 weeks</u> ...

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ORIGINAL ARTICLE
Bupropion and Naltrexone in Methamphetamine Use Disorder
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BACKGROUND The use of naltrexone plus bupropion to treat methamphetamine use disorder has not been well studied. METHODS We conducted this multisite, double-blind, two-stage, placebo-controlled trial with the use of a sequential parallel comparison design to evaluate the efficacy and safety of extended-release injectable naltrexone (380 me every 3 weeks) plus oral

extended-release bupropion (450 mg per day) in adults with moderate or severe

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# Here is the problem: "nine months to get over the craving and depression"

61% of the sample relapsed to MA use within 1 year after treatment discharge and 25% during years 2-5.

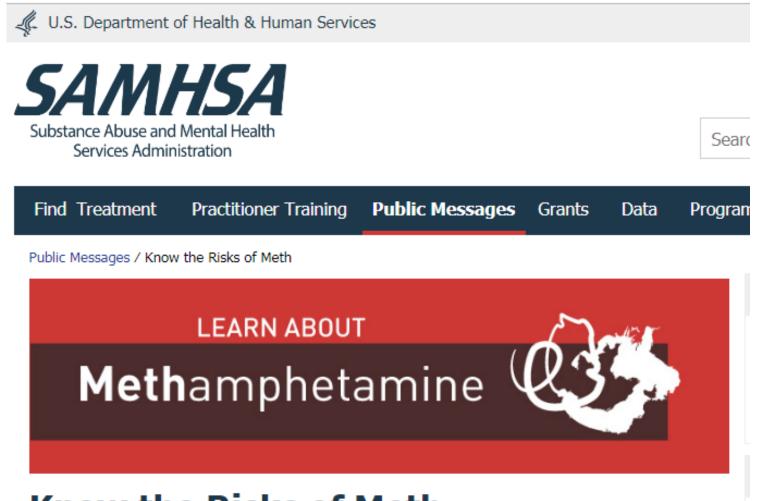
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4550209/



# Prevention: ask and warn your patients



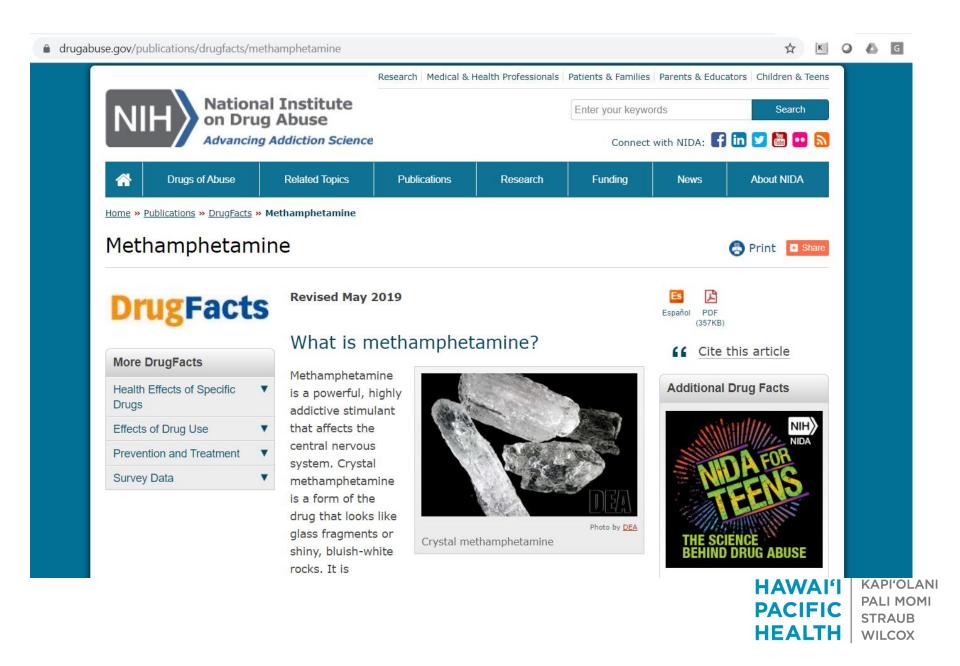




## **Know the Risks of Meth**

Methamphetamine (meth) is a powerful, highly addictive drug that causes devastating health effects, and sometimes death, even on the first try.





## ENDMETH

JUST VISIT ME WHEN I'M DEAD DONT

HOME WHO WE ARE LEARN DATA GET HELP STORIES PLEDGE CONTACT

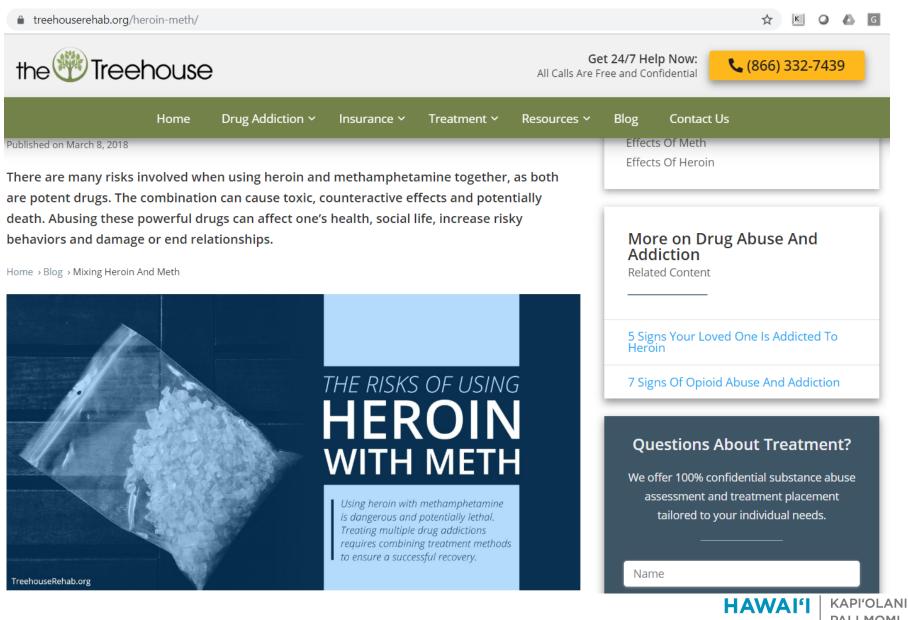
The Mission of ENDMETH is to reduce meth use with:

Community Awareness, Education and Prevention

It will take <u>all of us</u> to do this.







PACIFIC HEALTH WILCOX Home Is CMA for Me? The Public The Fellowship CMA Meetings Contributions Contact

## Crystal Meth Anonymous.



#### What Is Crystal Meth Anonymous?

Crystal Meth Anonymous is a fellowship of people who share their experience, strength and hope with each other, so they may solve their common problem and help others to recover from addiction to crystal meth. The only requirement for membership is a desire to stop using. There are no dues or fees for CMA membership; we are self-supporting through our own contributions. CMA is not allied with any sect, denomination, politics, organization or institution; does not wish to engage in any controversy; and neither endorses nor opposes any causes. Our primary purpose is to lead a sober life and to carry the message of recovery to the crystal meth addict who still suffers.\*

\*Adapted with permission of the Grapevine of Alcoholics Anonymous.

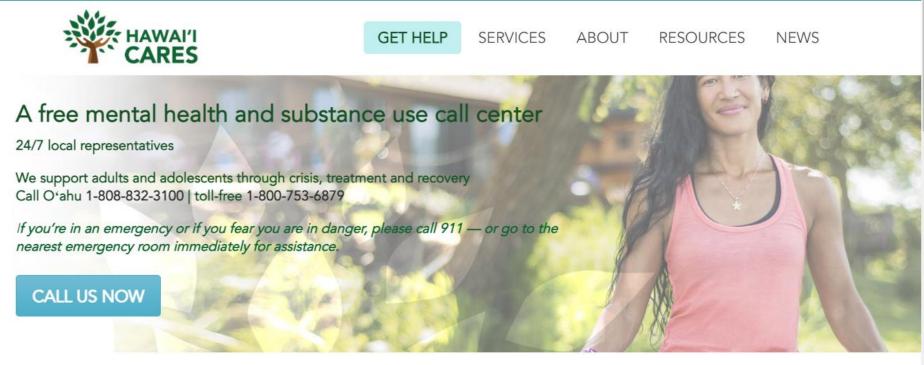
Read more: What Is Crystal Meth Anonymous?

#### Voices of the Fellowship





#### 24/7 crisis helpline O'ahu 1-808-832-3100 | toll-free 1-800-753-6879



## HOW WE HELP





## Mark Baker endmeth@gmail.com

# Questions



# Thank you!

- A recording of the meeting will be available afterwards.
- Unanswered question?
  - Contact us at info@hawaiihealthpartners.org

## HAWAI'I PACIFIC HEALTH

HAWAI'I HEALTH PARTNERS