



# Arkansas Statewide Epidemiology Outcomes Workgroup

**Quarterly Meeting  
September 20, 2023**

Supported by SAMHSA PFS Grant  
#6H79SP080990-01M001



# SEOW Mission

SEOW's mission is to guide successful prevention efforts in the state of Arkansas by:

- Analyzing, monitoring and sharing data trends in substance use and other environmental, behavioral, and health-related factors
- Informing data-driven policy and practice decision-making regarding prevention priorities at local and state levels
- Disseminating evidence-based education and prevention materials to the larger public

# Today's Agenda

- Welcome/Introductions/SEOW Mission (A. Oliveto)
- Adverse Childhood Experiences (M. Bollinger)
- APNA – Trends in Antisocial Behaviors (J. Thostenson)
- Project A.W.A.R.E. (B. Mathys)
- Fentanyl and Novel Potent Opioids (A. Oliveto)
- NSDUH 2021 Findings – AR vs US (A. Oliveto)
- Recap of SEOW Accomplishments (A. Oliveto)
- Future Directions (A. Oliveto)
- General Discussion/Action Plan/Wrap-Up/Next Meeting

# Adverse Childhood Experiences

Mary Bollinger, PhD  
UAMS/CAVHS

# APNA: Trends in Antisocial Behaviors

Jeff Thostenson, M.S.  
UAMS

# Project A.W.A.R.E.

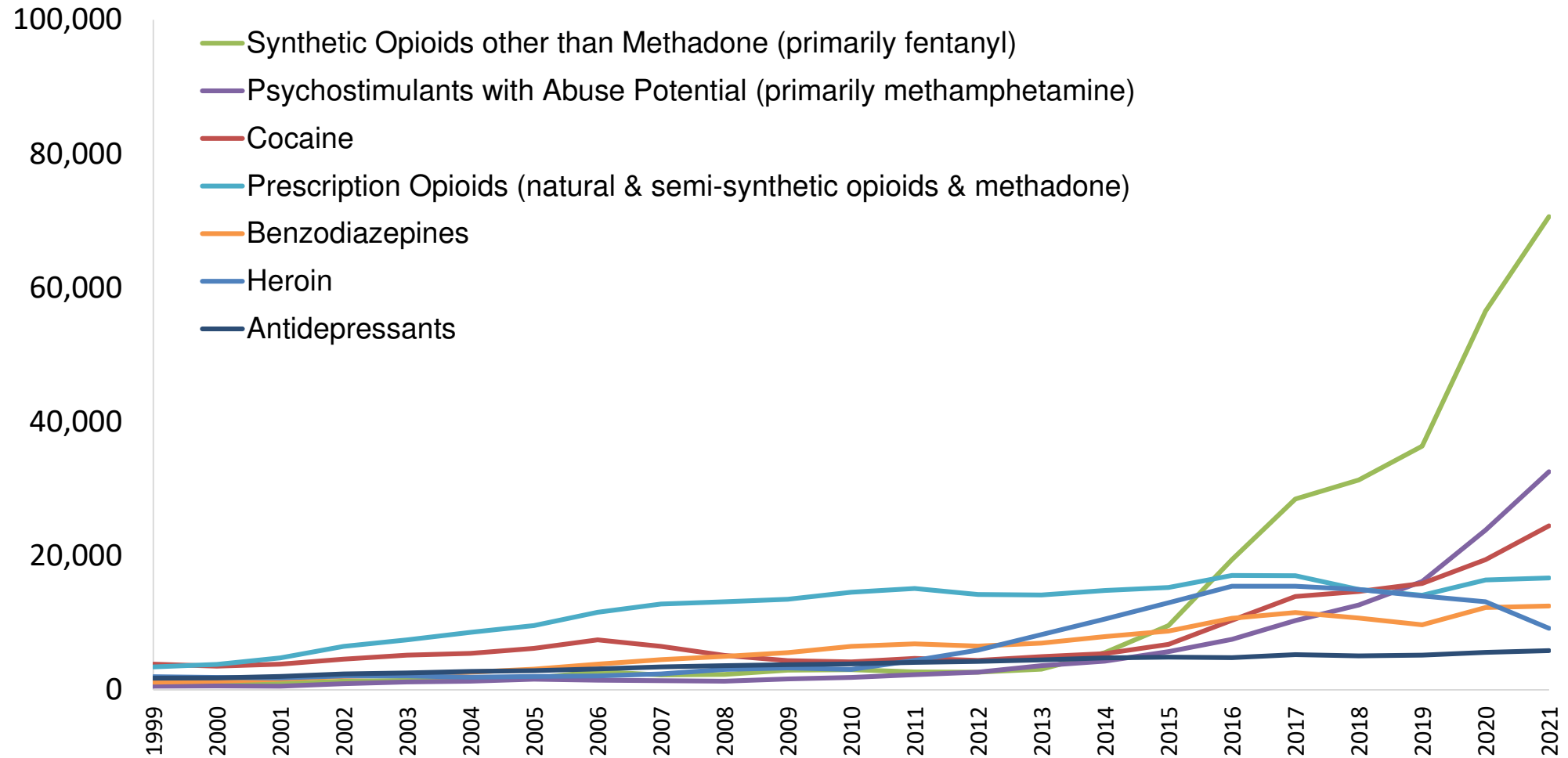
Beth Mathis  
Project A.W.A.R.E. Regional Trainer



# Fentanyl and Novel Potent Opioids

Alison Oliveto, PhD  
UAMS

# National Drug-Involved Overdose Deaths\*, Number Among All Ages, 1999-2021



\*Includes deaths with underlying causes of unintentional drug poisoning (X40–X44), suicide drug poisoning (X60–X64), homicide drug poisoning (X85), or drug poisoning of undetermined intent (Y10–Y14), as coded in the International Classification of Diseases, 10th Revision.

Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2021 on CDC WONDER Online Database, released 1/2023.



# Why is Fentanyl So Special Among Opioids?

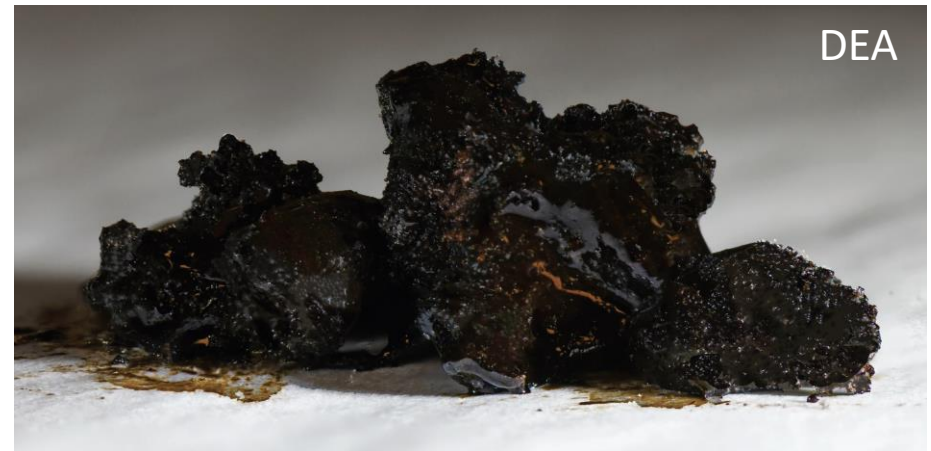
Opium poppy (*Papaver somniferum*) is one of the world's oldest medicinal plants

- Used to relieve pain, as a surgical anesthetic, for diarrhea and eye problems
- Contains **morphine**, codeine and paparevine
- **Heroin** is made from morphine
  - Can be a white or brown powder, or a black sticky substance known as black tar heroin
  - Can be injected, sniffed, snorted, or smoked
  - Can be mixed with crack cocaine (known as *speedballing*)



# Heroin

- Binds to opioid receptors on cells located in many areas, particularly receptors involved in feelings of pain and pleasure and in controlling heart rate, sleeping, and breathing
- About 80% of people who use heroin first misused prescription opioids
- People report feeling a "rush" (a surge of pleasure, or euphoria) after heroin use.
- Other common heroin effects, include:
  - dry mouth
  - warm flushing of the skin
  - heavy feeling in the arms and legs
  - nausea and vomiting
  - severe itching
  - clouded mental functioning
  - going "on the nod," a back-and-forth state of being conscious and semiconscious



**Black  
Tar  
Heroin**

# Heroin

## Regular users often:

- Develop a tolerance - need higher and/or more frequent doses of the drug to get the desired effects
- Develop a *substance use disorder* (SUD) - when continued drug use causes issues, such as health problems and failure to meet responsibilities at work, school, or home (can range from mild to severe)

## Heroin overdose symptoms include:

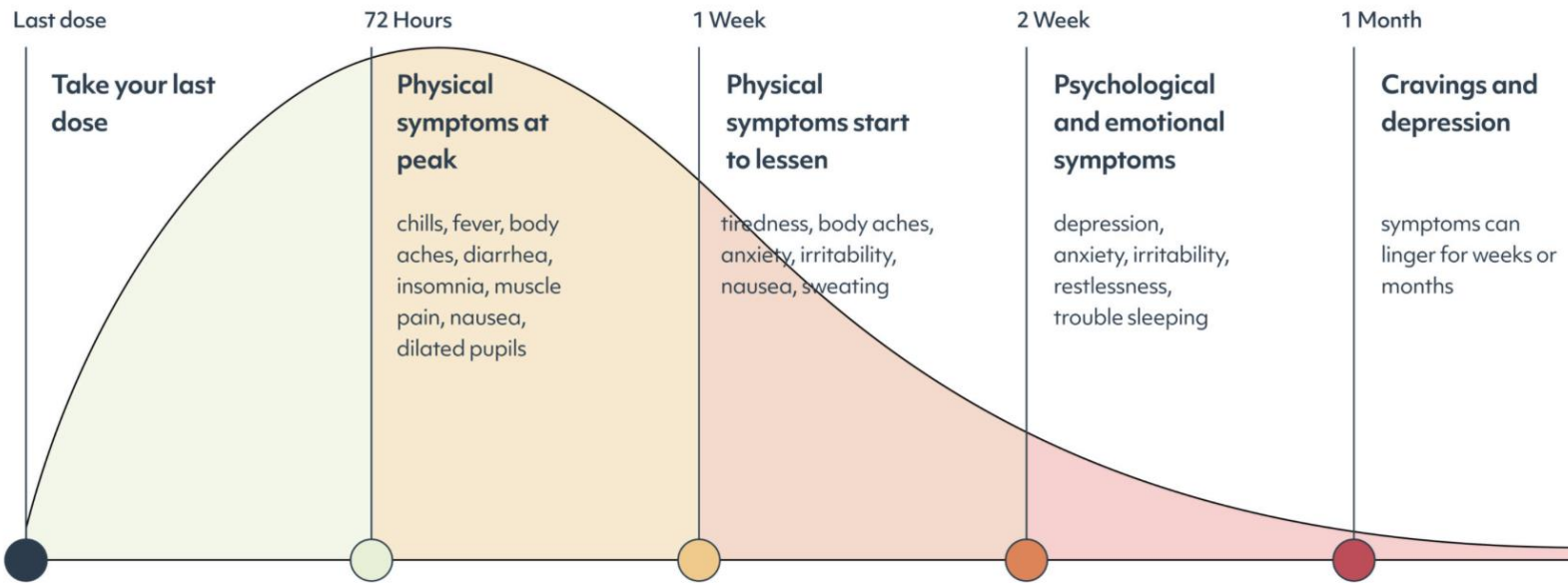
- Slow and shallow breathing
- Blue lips and fingernails
- Clammy skin
- Convulsions
- Coma
- Possible death



# Opioid Withdrawal

- Regular heroin users who stop using the drug abruptly may have severe withdrawal. Withdrawal symptoms—which can begin as early as a few hours after the drug was last taken—include:

## Opiate Withdrawal Timeline



Workit Health

From: <https://www.workithealth.com/blog/opiate-withdrawal-timeline/>

- restlessness
- severe muscle and bone pain
- sleep problems
- diarrhea and vomiting
- cold flashes with goose bumps ("cold turkey")
- uncontrollable leg movements ("kicking the habit")
- severe heroin cravings

<https://nida.nih.gov/publications/drugfacts/heroin>

# Long-Term Effects of Heroin (Opioid) Use

*People who use heroin over the long term may develop:*

- insomnia
- collapsed veins among people who inject the drug
- damaged tissue inside the nose for people who sniff or snort it
- infection of the heart lining and valves
- abscesses (swollen tissue filled with pus)
- constipation and stomach cramping
- liver and kidney disease
- lung complications, including pneumonia
- mental disorders such as depression and antisocial personality disorder
- sexual dysfunction for men
- irregular menstrual cycles for women
- Heroin use associated with some loss of the brain's white matter, which may affect decision-making, behavior control, and responses to stressful situations

<https://nida.nih.gov/publications/drugfacts/heroin>

# Fentanyl

- Developed to alleviate the suffering of people with severe pain due to serious chronic illness, injury or end-of-life cancers
- Used clinically for severe pain management among cancer patients and among those recovering from painful surgical operations
- Also used as a sedative

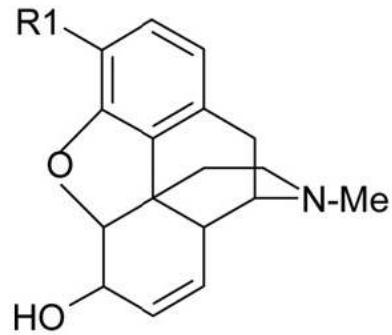


- Can be administered by injection, transdermal patch, sublingual film, lozenge
- While much more potent than morphine, has a shorter duration of action
- Relatively narrow therapeutic window

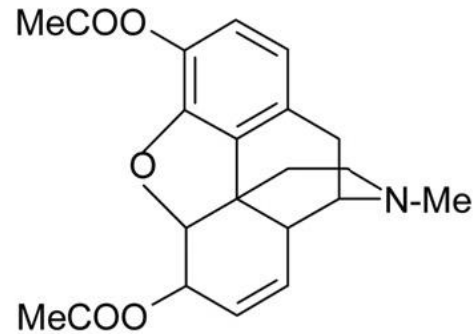
# Fentanyl

- U.S. National Forensic Laboratory estimates that fentanyl reports by federal, state, and local forensic laboratories increased from 4,697 reports in 2014 to 117,045 reports in 2020. (DEA.gov)
  - Often mixed, cut, or ingested alongside other drugs, including cocaine, methamphetamine and heroin (DEA.gov)
  - Has been reported in pill form, including pills mimicking pharmaceutical drugs such as oxycodone (DEA.gov)
  - Complicates determining the correct treatment in the case of an overdose, resulting in more deaths (Ramos-Matos, Bistas, Lopez-Ojeda, 2022)
- Fentanyl's ease of manufacture and high potency makes it easier to produce and smuggle, resulting in fentanyl replacing other abused opioids such as heroin and becoming more widely used (Falco G, 8 January 2023)

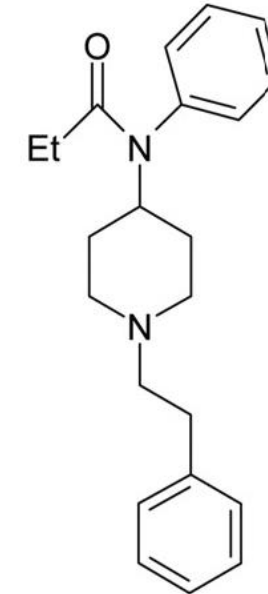
# Fentanyl



morphine: R1 = OH  
codeine: R1 = MeO



heroin



fentanyl

- 2 times more potent than morphine

- 100 times more potent than morphine
- 50 times more potent than heroin





DRUG ENFORCEMENT ADMINISTRATION

# FENTANYL

Fentanyl—Even this small amount can lead to significant health complications or DEATH.



For more information and resources, visit [www.dea.gov](http://www.dea.gov)

# Fentanyl



A 2-mg dose of fentanyl  
is  
**LETHAL**  
for most people



# Fentanyl Analogs

- Alfentanyl is 5-10 times **less potent** than fentanyl but has a very fast onset of effect
- Sufentanyl is 5-10 times **more potent** than fentanyl
- Carfentanyl is:
  - 10,000 times **more potent** than morphine
  - 5,000 times **more potent** than heroin
  - 100 times **more potent** than fentanyl

Opioid Crisis  
**Lethal Opioid Doses**

Opioid	FDA	Relative Potency	Lethal Dose
Morphine	✓	1x	1 Pea 
Heroin	✓	2x	1 Sunflower Seed 
Fentanyl	✓	100x	1 Sesame Seed 
Sufentanil	✓	500x	1 Grain of Sand 
Carfentanil	✗	10,000x	0.5 Grains of Salt 

Clearvue Health

Caption: Estimated lethal doses for the most common opioids based on relative potency. These doses correspond to the weight of drug that can be lethal for a patient who has not taken opioids in the past. The lethal doses can be much higher for patients who are currently taking opioids. The comparisons with the objects on the right are made based on weight.

<https://www.clearvuehealth.com/im/opioidlethaldoses/>

# Novel Potent Opioids (NPOs)

- Novel non-fentanyl opioids in the illicit drug supply
  - Subclass of synthetic opioids referred to as nitazenes:  
Isotonitazene      Metonitazene      Etonitazene
  - Brororphine is a non-nitazene
  - NPOs are structurally unrelated to fentanyl, but have been found to be up to:
    - 1000-fold more potent than morphine
    - 10 times more potent than fentanyl

So, 1/10 of a sesame seed can be fatal to someone not tolerant to opioids!



JAMA Netw Open. 2023 Aug; 6(8): e2331264.

PMCID: PMC10466160

Published online 2023 Aug 29. doi: 10.1001/jamanetworkopen.2023.31264:

PMID: [37642962](#)

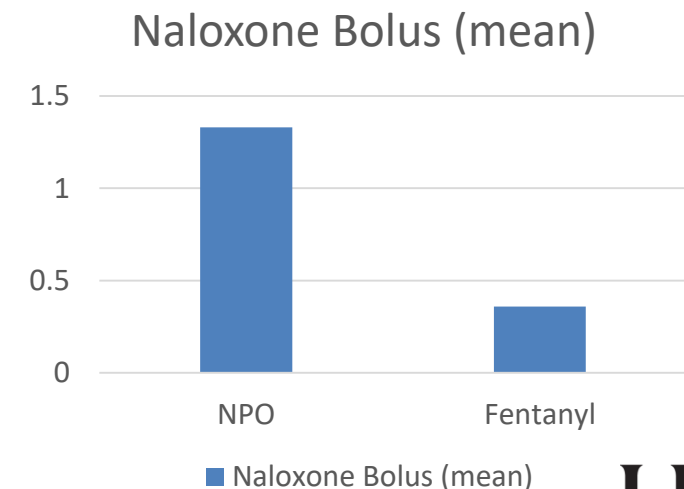
10.1001/jamanetworkopen.2023.31264

### Naloxone Use in Novel Potent Opioid and Fentanyl Overdoses in Emergency Department Patients

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- NPO overdoses required a significantly higher number of naloxone boluses in-hospital than fentanyl overdoses
- 66.6% of the NPO group versus 36.4% of the FEN group received 2+ doses of naloxone

- Reviewed NPO and fentanyl overdose cases among ED patients
- Identified 11 patients with only fentanyl and 9 patients with only an NPO (buprenorphine, isotonitazene, metonitazene, or N-piperidinyl etonitazene)



January 24/31, 2023

# **Fentanyl Drives Startling Increases in Adolescent Overdose Deaths**

- No statistically significant difference in ODs among those aged 15-24 years between 2020 and 2021
- CDC's Unintentional Drug Overdose Reporting System (SUDORS) found among those aged 10 to 19 years the following from the last half of 2019 and the last half of 2021:
  - 109% increase in average monthly overdose deaths among adolescents
  - 182% increase in illicit fentanyl deaths
    - 90% of the overdose deaths involved opioids
    - 84% of overdose deaths involved illicit fentanyl
    - Almost 25% of deaths involved counterfeit pills

Bridget M. Kuehn, MSJ

*JAMA.* 2023;329(4):280-281.  
doi:10.1001/jama.2022.23563

January 24/31, 2023

# **Fentanyl Drives Startling Increases in Adolescent Overdose Deaths**

- 2/3's of overdoses had bystanders present, but no lifesaving care attempted in most cases.

*More education for youth about the risks of illicit fentanyl and counterfeit pills, as well as training about and access to the Narcan Rescue are needed.*

Bridget M. Kuehn, MSJ

*JAMA.* 2023;329(4):280-281.

doi:10.1001/jama.2022.23563

# COUNTERFEIT DRUGS

OXYCODONE



**REAL**

**FAKE**

ADDERALL



**REAL**

**FAKE**

**SOURCE: DEA**

# Sharp Increase in Fake Prescription Pills Containing Fentanyl and Meth

DEA Warns that International and Domestic Criminal Drug Networks are Flooding the United States with Lethal Counterfeit Pills



**PUBLIC SAFETY ALERT**

**DEA Laboratory Testing Reveals that 6 out of 10 Fentanyl-Laced Fake Prescription Pills Now Contain a Potentially Lethal Dose of Fentanyl**





# DEA Fentanyl Seizures in 2023

In 2022, DEA seized more than 58.4 million fentanyl-lace fake pills and more than 13,000 pounds of fentanyl powder. The 2022 seizures are equivalent to more than 387.6 million lethal doses of fentanyl.

The 2023 fentanyl seizures represent over 190 million deadly doses. \*

39,200,000+

**Millions of Fentanyl Pills Seized**

6,500+ lbs.

**Pounds of Fentanyl Powder Seized**

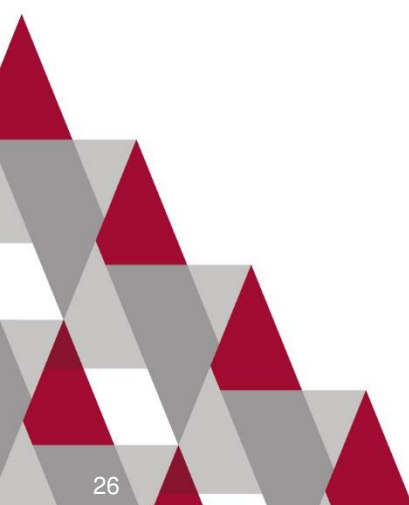


\* 2 mg of fentanyl equates to a potentially deadly dose

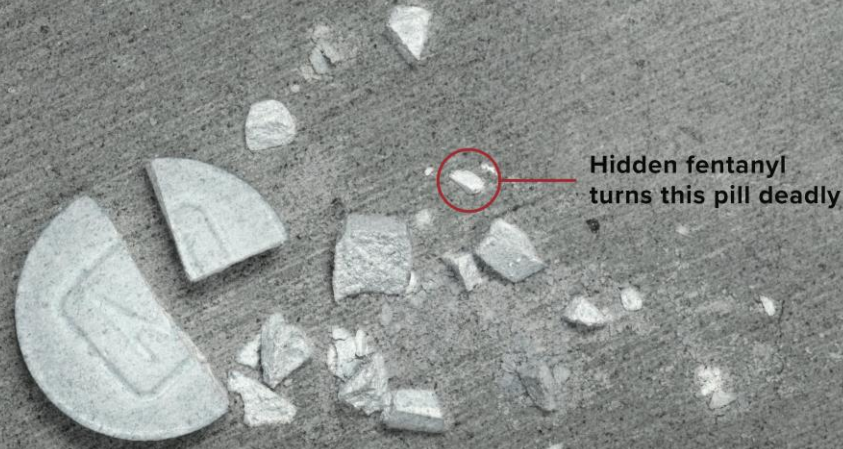
<https://www.dea.gov/onepill>



# Harm Reduction Approaches and Resources



NOT ALL PILLS ARE REAL



Hidden fentanyl  
turns this pill deadly

**ONE  
PILL CAN  
KILL**

Taking a pill **NOT** purchased from a  
licensed pharmacy can be a deadly decision.



Get a closer look at the dangers of  
counterfeit pills at [DEA.gov/OnePill](https://www.dea.gov/OnePill).

# One Pill Can Kill Social Media Campaign

- Help increase public awareness
- Resources:
  - Info for Teens
  - Info for Parents & Caregivers
  - Info for Teachers
  - Saving Lives with Narcan
- Stories
- Share Materials
  - Social Media Resources
  - Partner Toolbox

<https://www.dea.gov/onepill>



# Fentanyl Strips

- Used to detect fentanyl in drugs
- Arkansas Act 584: Removed fentanyl strips as illegal “drug paraphernalia” in 2023
- How to use: <https://www.cdc.gov/stopoverdose/fentanyl/fentanyl-test-strips.html>

## FENTANYL TEST STRIPS



# Narcan Rescue

- Naloxone blocks opioid receptors, decreasing the effects of opioids like fentanyl, heroin and morphine
- Can be given by intranasally, intramuscularly (into the muscle), subcutaneously (under the skin), or intravenously:
  - **Narcan® Nasal Spray** (naloxone HCl) 4 mg/0.1 mL Nasal Spray  
Directions for use: Administer one (1) spray of Narcan® in one nostril. Repeat after three (3) minutes if no response
  - **Naloxone HCl Solution** 1 mg/mL in a 2 mL pre-filled Luer-Lock Syringe  
Directions for use: Spray 1 mL (1/2 of syringe) into each nostril. Repeat after three (3) minutes if no response – (for use with mucosal atomization device)
  - **Evzio® (naloxone HCl injection) autoinjector**  
Directions for use: Follow audio instruction from device. Place on thigh and inject. Repeat after three (3) minutes if no response.

# Narcan Rescue Precautions

- Abrupt reversal of opioid effects in a person with a physical dependence on opioids can cause acute, severe withdrawal symptoms!
- Abruptly reversing the effects of opioids could result in a pain crisis due to neutralization of the analgesic effects of the opioid.
- Should be used with caution in patients with a history of seizures and/or cardiovascular disease.
- Will have no effect on respiratory depression caused from non-opioid substances.
- **Medical follow-up is needed** as naloxone's effects wear off quickly resulting in the need for further medical care. Naloxone should be considered a *temporary* overdose reversal agent with the potential need for multiple doses under acute medical care. Call 911 immediately after administering

# Other Harm Reduction Strategies

- **Keep naloxone readily available on you and at home.** Talk with your healthcare provider or pharmacist about being prescribed naloxone (e.g., Narcan) if you or someone you know is at risk for an overdose.
  - Check with your local health department or community-based organization to see if they distribute naloxone at no cost.
- **Avoid mixing drugs.** Mixing multiple stimulants like methamphetamine and cocaine, depressants like opioids and alcohol, or a combination of both can cause harm and potentially death
- **Don't rely on a previous source or experience.** Knowing where your drugs come from doesn't mean they're safe. And even if you have used drugs before, your body could react differently every time.
- **Never use drugs alone.** Make sure the people around you are aware when you have taken drugs, in case they need to give you naloxone or call for emergency assistance.
- **Ask for help if you're ready to get treatment for your addiction.** Recovery from substance use disorders is possible—it's okay to ask for help. You can find evidence-based treatment and service options near you by visiting [findtreatment.gov](https://www.findtreatment.gov) or by calling the 24/7, National Helpline at 800-662-HELP (4357).

# Resources

- Facts about Fentanyl. <https://www.dea.gov/resources/facts-about-fentanyl>
- Fentanyl Drug Facts. <https://nida.nih.gov/publications/drugfacts/fentanyl>
- Fentanyl. <https://nida.nih.gov/research-topics/fentanyl>
- Fentanyl Awareness. <https://www.dea.gov/fentanylawareness>
- One Pill Can Kill. <https://www.dea.gov/onepill>
- Naloxone. [https://www.healthy.arkansas.gov/images/uploads/pdf/What\\_is\\_Naloxone.pdf](https://www.healthy.arkansas.gov/images/uploads/pdf/What_is_Naloxone.pdf)
- NARCANSAS. <https://artakeback.org/narcansas/>
- Fentanyl Strips: A Harm Reduction Strategy. <https://www.cdc.gov/stopoverdose/fentanyl/fentanyl-test-strips.html>



# DISCUSSION

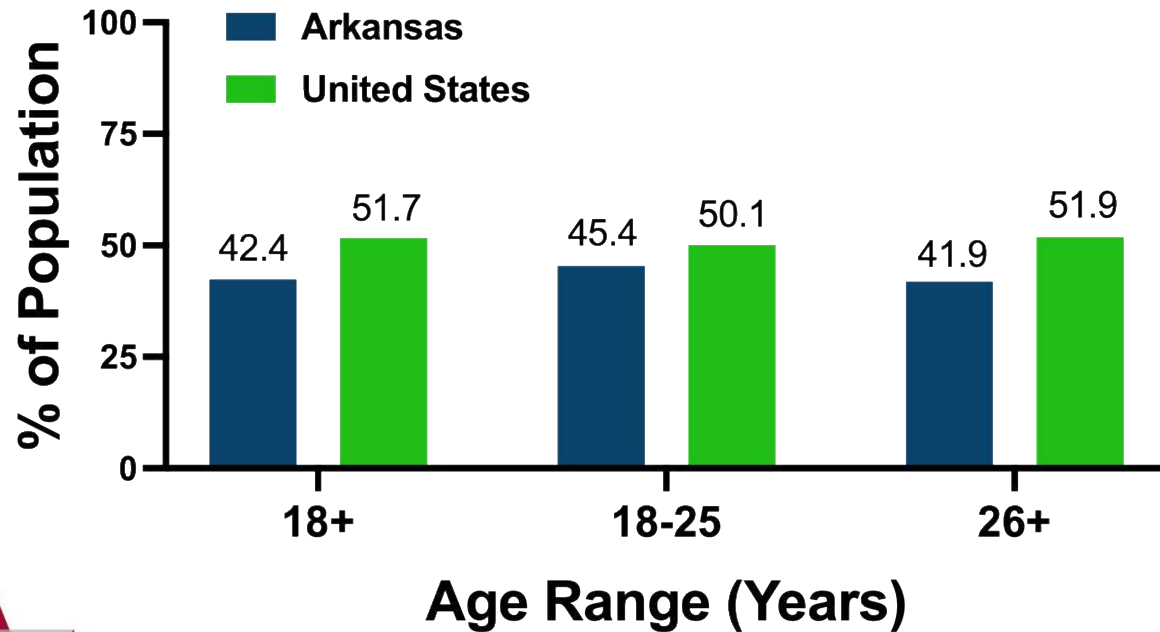


# **National Survey on Drug Use and Health (NSDUH) 2021 Results**

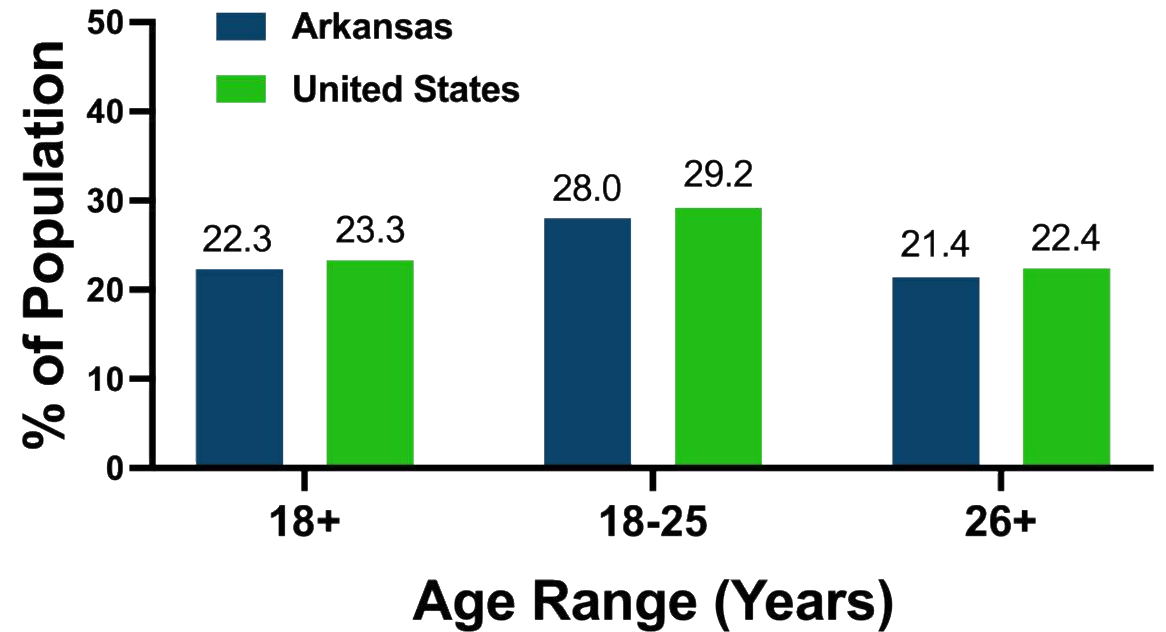
Alison Oliveto, PhD  
UAMS

# NSDUH, 2021

## Past-Month Alcohol Use, 2021

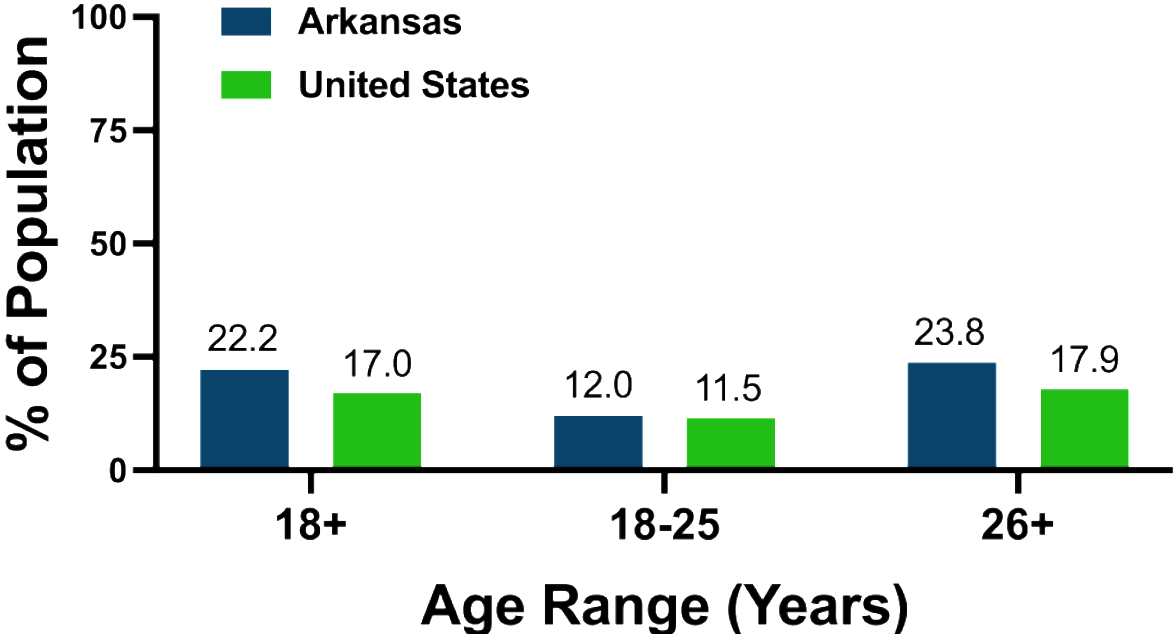


## Past-Month Binge Alcohol Use, 2021



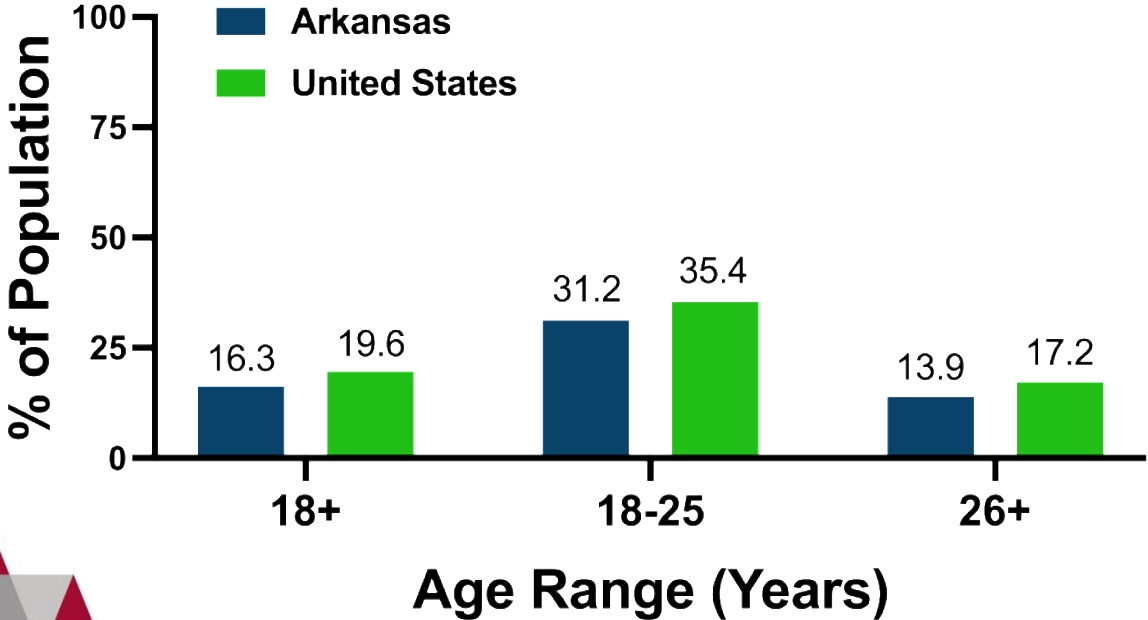
# NSDUH, 2021

## Past-Month Cigarette Use, 2021

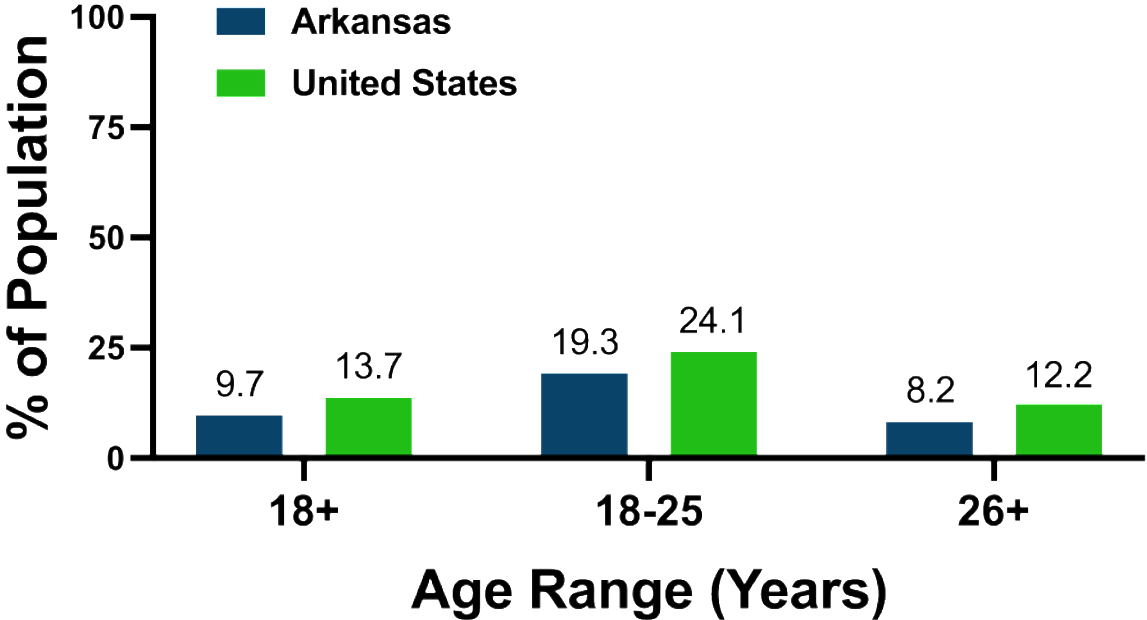


# NSDUH, 2021

### Past-Year Marijuana Use, 2021

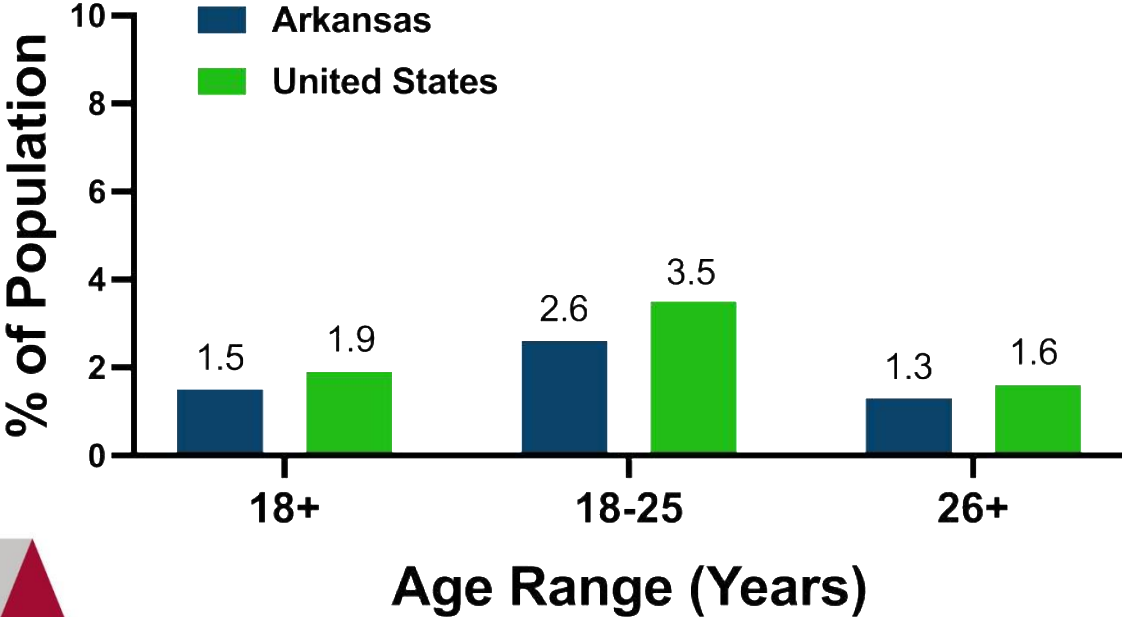


### Past-Month Marijuana Use, 2021

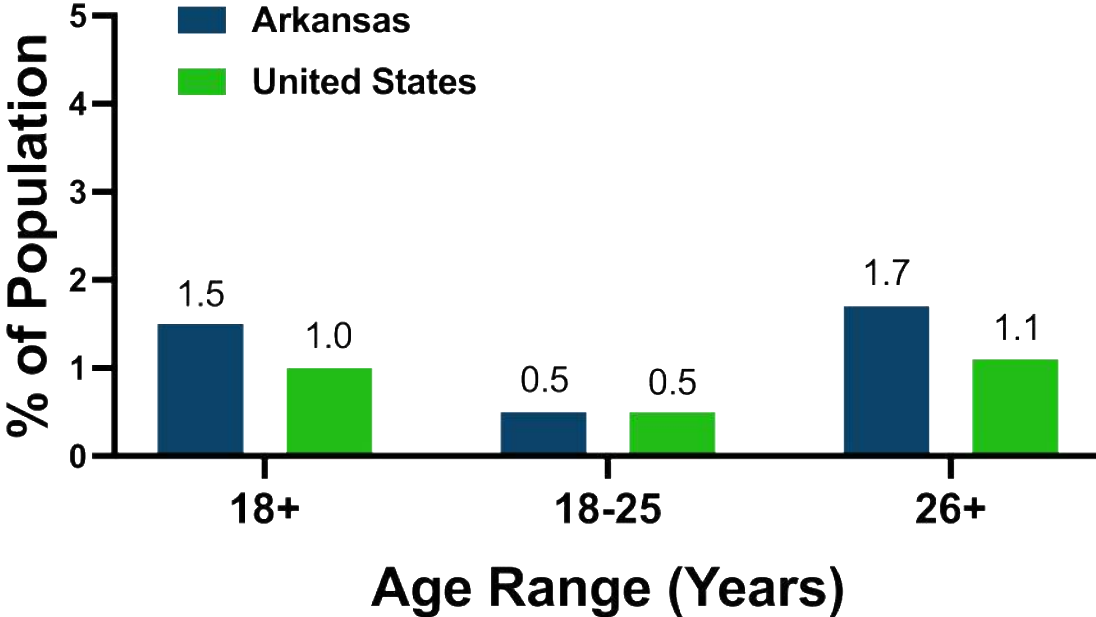


# NSDUH, 2021

### Past-Year Cocaine Use, 2021

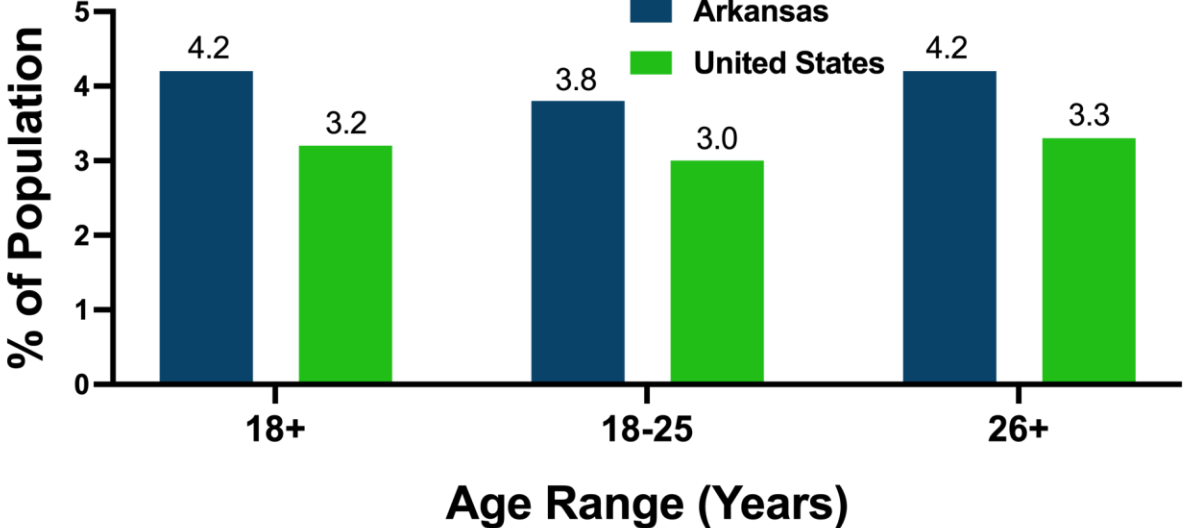


### Past-Year Methamphetamine Use, 2021

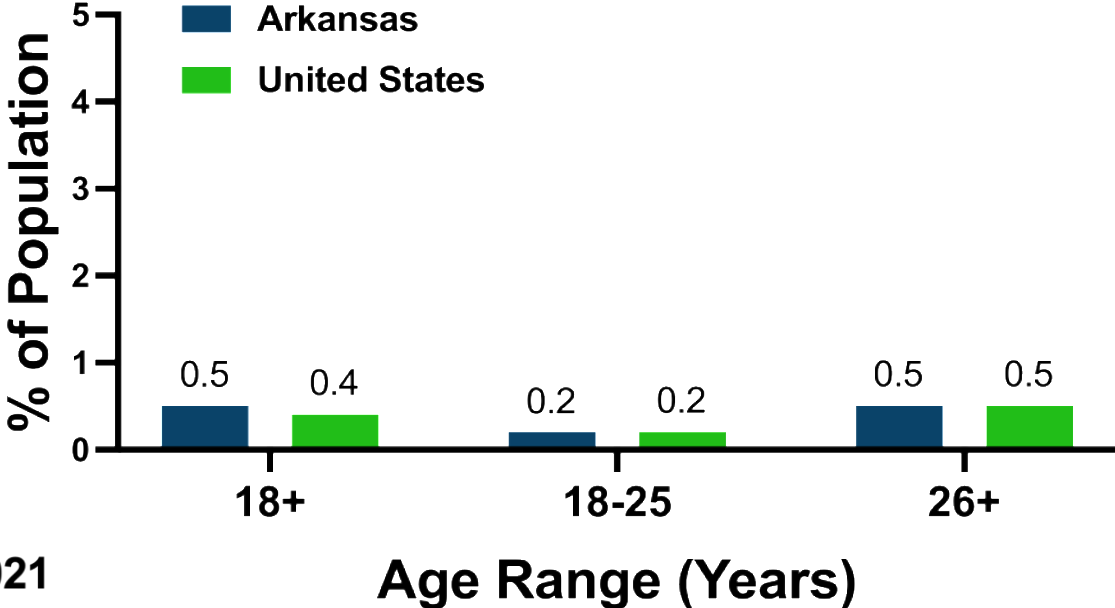


# NSDUH, 2021

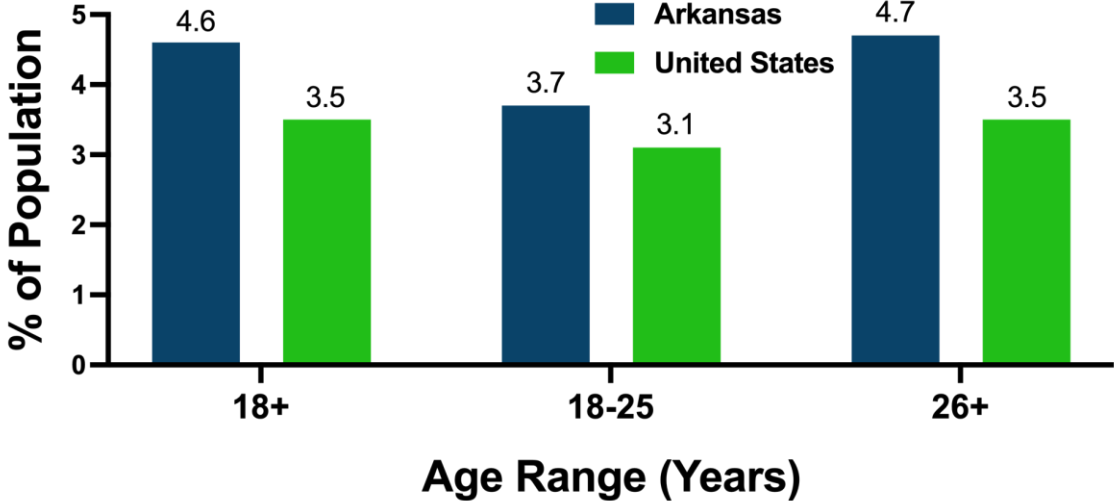
Past-Year Prescription Opioid Misuse, 2021



Past-Year Heroin Use, 2021

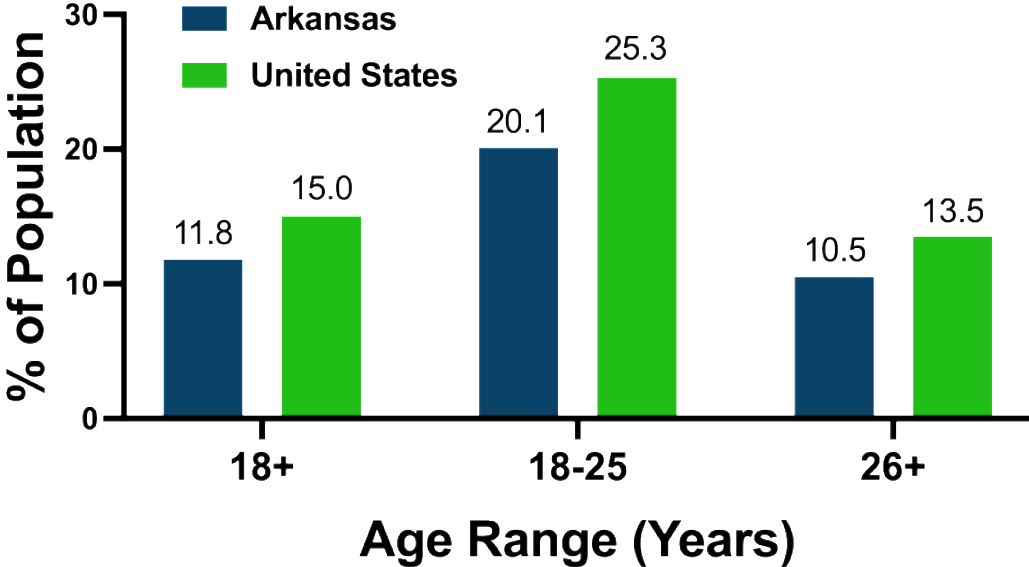


Past-Year Opioid Misuse, 2021

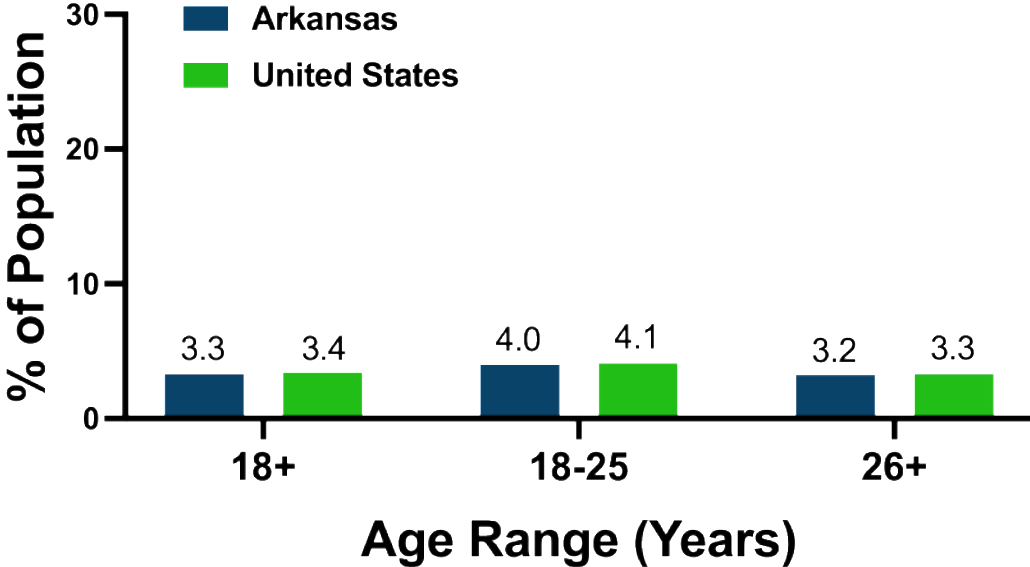


# NSDUH, 2021

### Past-Month Illicit Drug Use (Inc. MJ), 2021



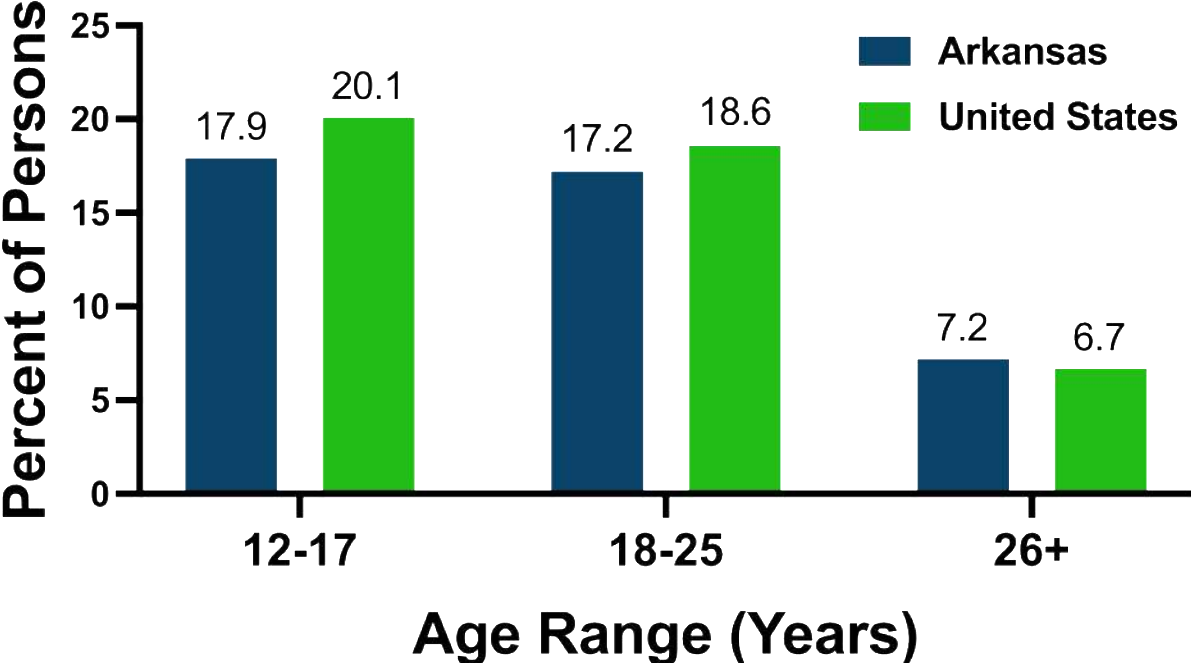
### Past-Month Illicit Drug Use (Exc. MJ), 2021





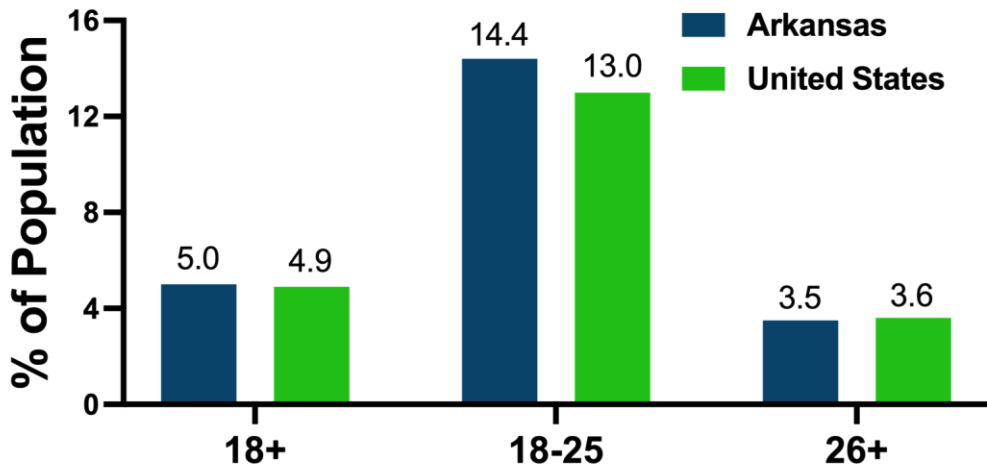
# NSDUH, 2021

## Past-Year Major Depressive Episode, 2021



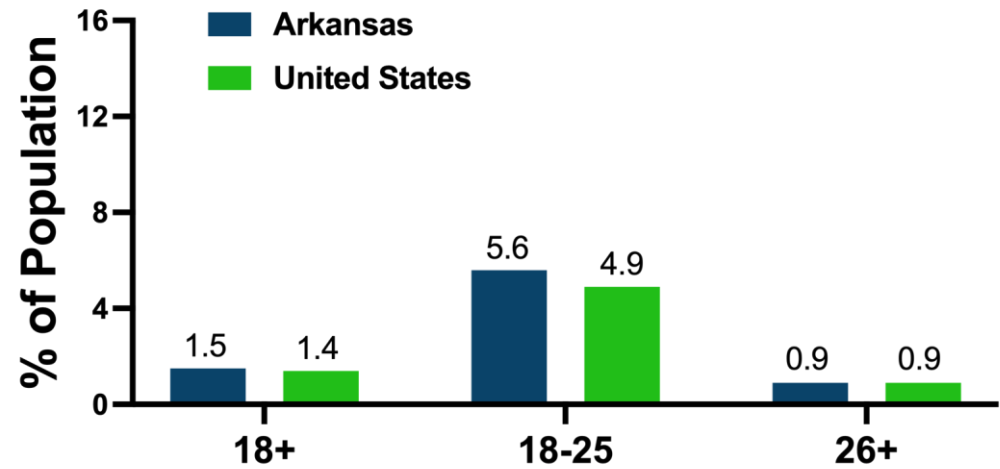
# NSDUH, 2021

## Serious Thoughts of Suicide, 2021



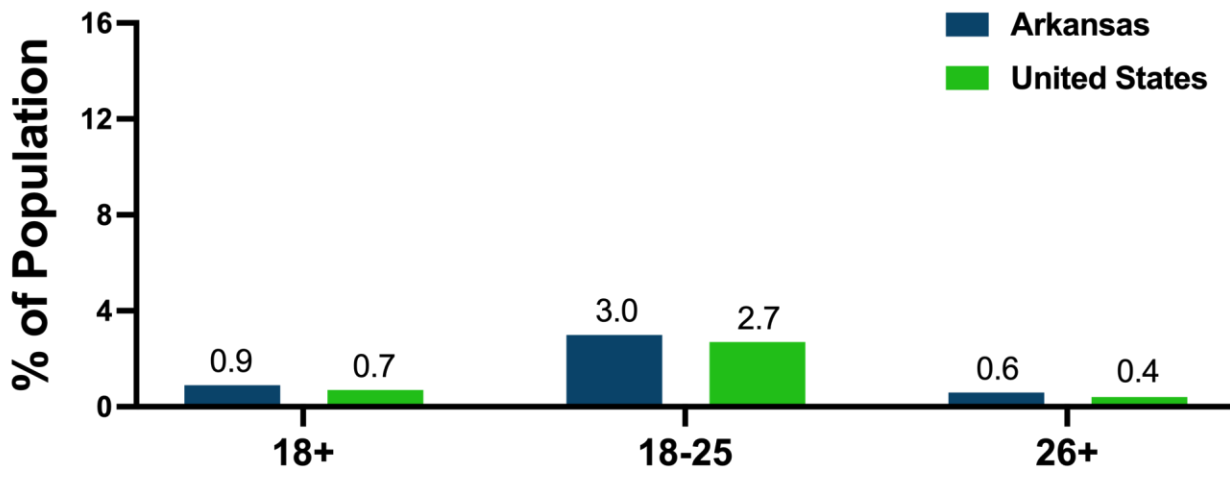
Age Range (Years)

## Made Any Suicide Plans, 2021



Age Range (Years)

## Attempted Suicide, 2021



Age Range (Years)

# Summary of Findings

## *In 2021:*

- Alcohol use and alcohol bingeing prevalence among Arkansans was lower than and similar to U.S. figures, respectively.
- Current cigarette use was higher among Arkansans, particular those aged 26+ years, relative to U.S. persons.
- Past-year and current marijuana use was lower among Arkansans relative to U.S. persons.
- Among Arkansans, past-year cocaine use was lower and methamphetamine use was higher than U.S. rates, with age-related differences for each substance.
- Past-year prescription opioid and any opioid use were higher among Arkansans across all age categories relative to U.S. persons, while heroin use was similar to U.S. rates.
- Arkansas and the U.S. had similar prevalence of illicit drug use (exc MJ) and major depressive disorder.
- While no overall differences between Arkansas and the U.S. were observed on suicidality measures, Arkansas young adults appeared to have higher prevalence on these measures relative to their U.S. counterparts.

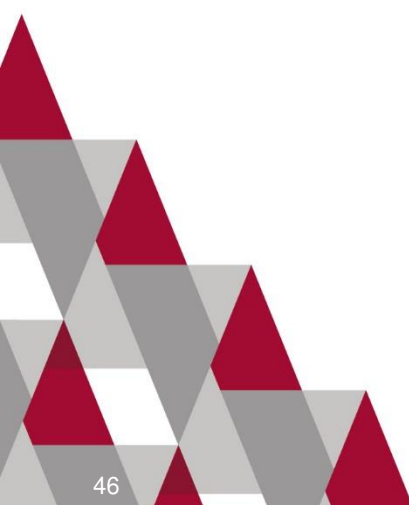
# Discussion



# Recap of SEOW Accomplishments Since 2019

- Co-developed SEOW mission, vision, logic model
- Established and maintained ARPrevention.org website
- Revamped SEOW membership
- Coordinated, hosted, and presented at Quarterly meetings with 30+ attendees per meeting
- Developed interactive prescription drug misuse and related factors webpage
- Created informational materials and prevention tools across the lifespan in English and Spanish:
  - A guide to prescription pain medicine use (physicians, caregivers, teens)
  - Medical marijuana (physicians, adults/caregivers, teens, children)
  - Marijuana poster (teens and young adults)
  - Methamphetamine poster
- Published/in process of publishing consolidated reports to aid prevention planning and policy:
  - 4 Annual Epidemiological Profiles Reports
  - 3 Annual Young Adult State of Wellbeing
- Monitoring trends in substance use and related outcomes, responded to data requests
- Became part of a Research2Policy Collaboration Grant

# Future Directions . . . . .





**We CAN make a difference!**

**Thank you!**

