

Adolescent & Young Adult Substance Use

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Learning Objectives

1. Describe the current trends in adolescent and young adult substance use, overdose, and treatment.
2. Identify opportunities to minimize the harms of alcohol and substance use on youth.
3. Identify strategies to engage youth and their families, including the use of trauma-informed, non-stigmatizing language.

Describe recent trends in opioid use, opioid use disorder and overdose among youth

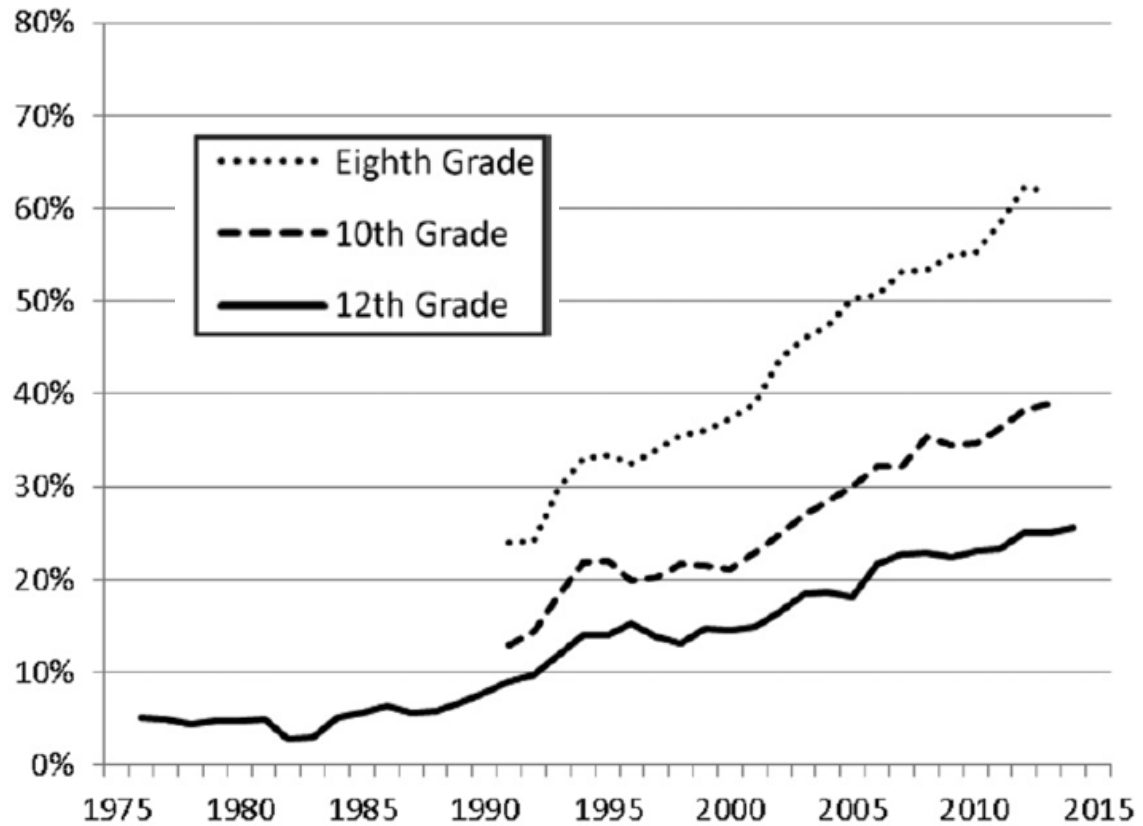
Use ≠ Substance Use Disorder

More teens
report using
substances than
have a SUD

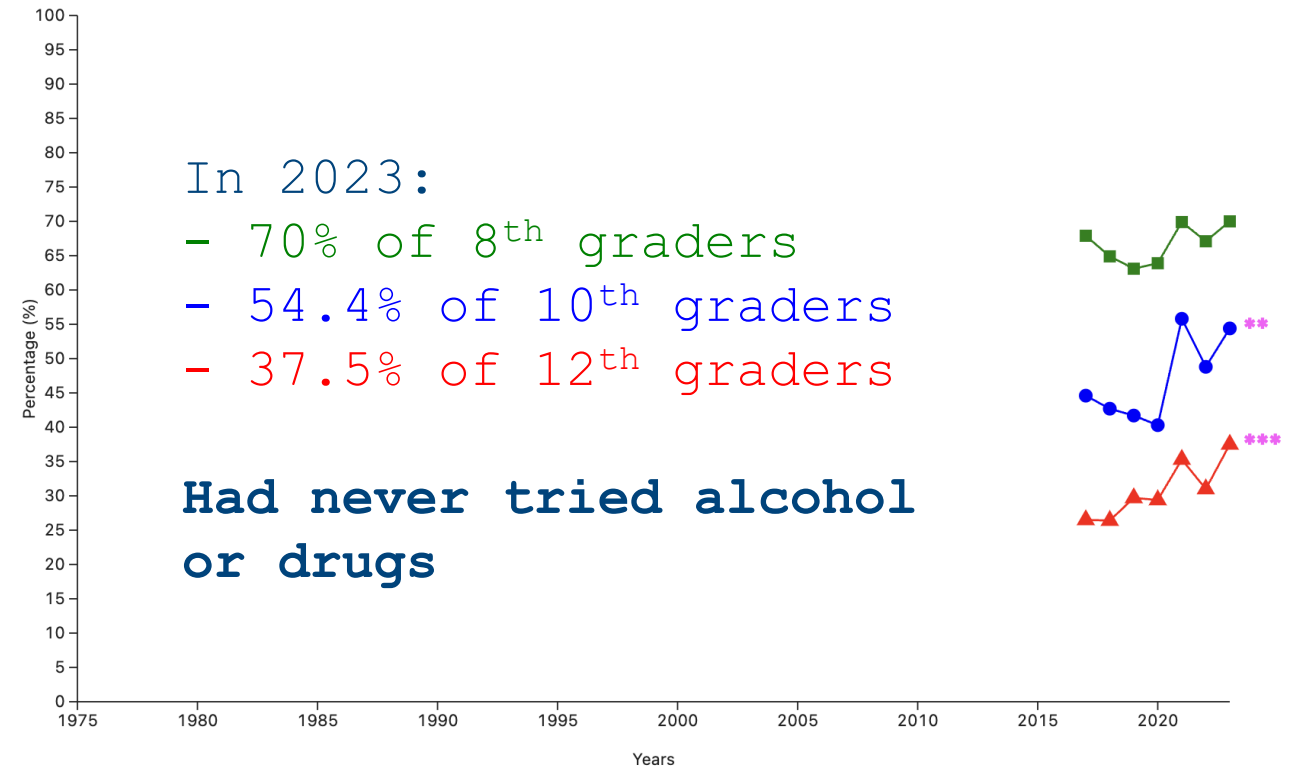


Any exposure to
alcohol or drugs
carries potential
for harm,
but there is also
an opportunity to
minimize harm

Lifetime Abstinence Reported by US Students



Levy et al., *Pediatrics* 2018



In 2023:

- 70% of 8th graders
- 54.4% of 10th graders
- 37.5% of 12th graders

**Had never tried alcohol
or drugs**

Miech, R. A., Johnston, L. D., Patrick, M. E., & O'Malley, P. M. (2024). Monitoring the Future national survey results on drug use, 1975–2023: Overview and detailed results for secondary school students. Monitoring the Future Monograph Series. Ann Arbor, MI: Institute for Social Research, University of Michigan. Available at <https://monitoringthefuture.org/results/annual-reports/>

New products are subtle & appeal to youth



MacCoun & Mello., NEJM 2015



Crave Max Apple Blueberry
Crave Max



Crave Max Blue Razz Lemonade
Cravedisposable.com



Npr.org



<https://www.latimes.com/california/story/2024-07-23/smart-vapes-with-games-could-lure-youth-uc-riverside-experts-say>

How have new products translated to how youth use

- Among youths who do vape, daily use increased from 15% to 28%
- Among youth who reported vaping daily, unsuccessful quit attempts increased from 28% to 53%

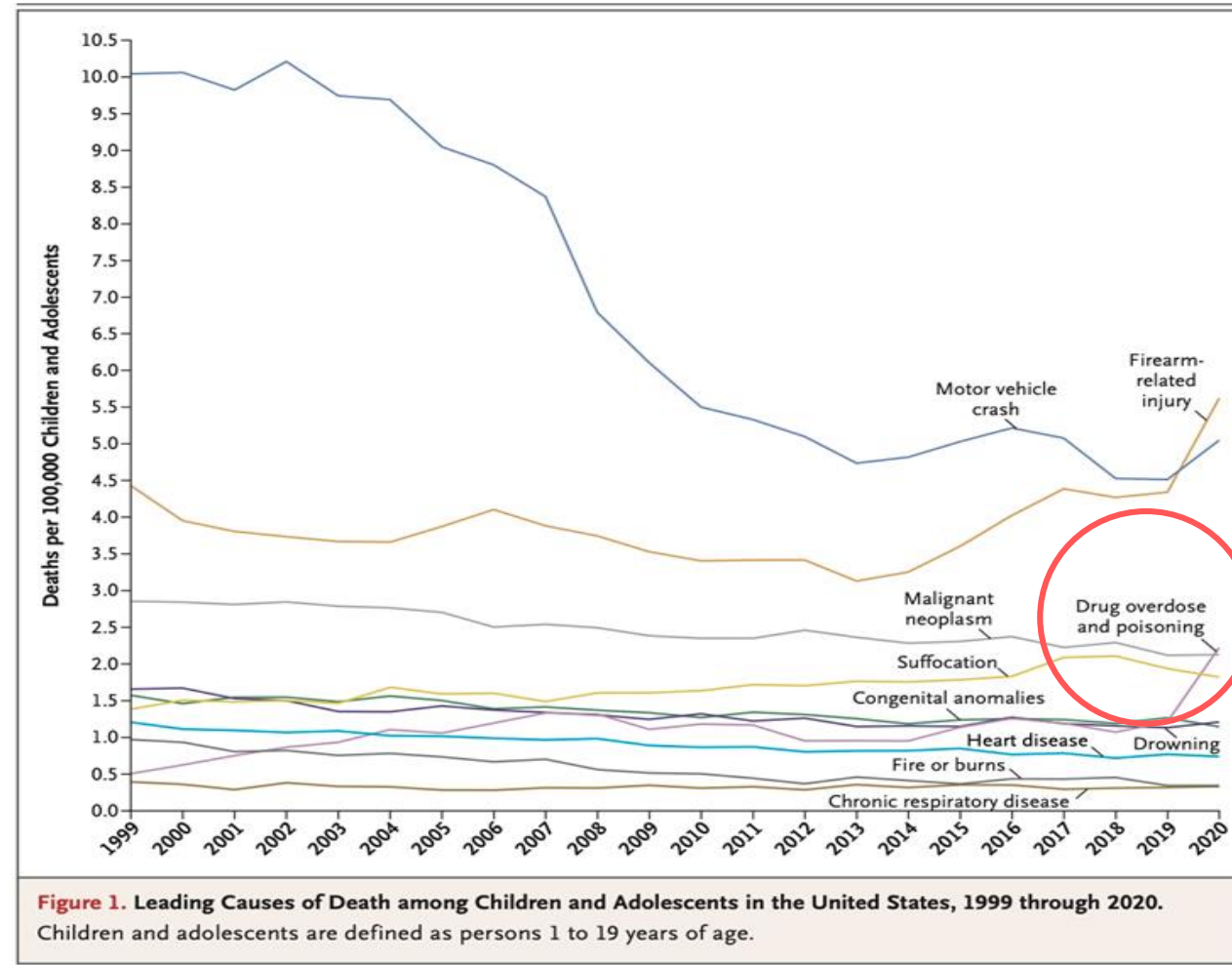
Masonbrink et al., 2025

How youth interact with substances has significantly changed



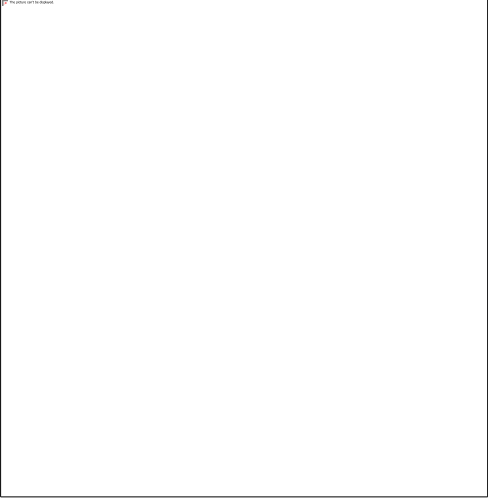
How have we kept up?

How has a changing drug supply impacted youth?

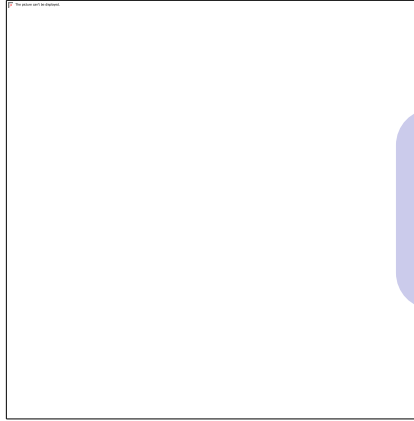


Goldstick et al. N Eng J Med May 19, 2022 386;20

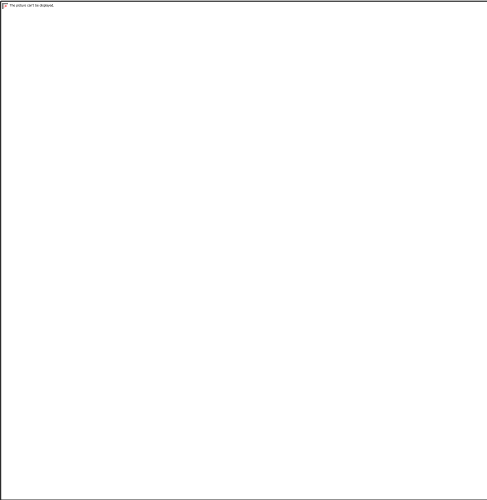
Characteristics of adolescent drug overdose deaths between July 2019 and December 2021 (N=2,231)



Adolescents
did NOT have a
history of opioid use



Died at home



Had a potential
bystander present



Naloxone was
administered

Tanz LJ et al.,. MMWR Morb Mortal Wkly Rep 2022;71:1576–1582.

Identify opportunities to minimize the harms of alcohol and substance use on youth.

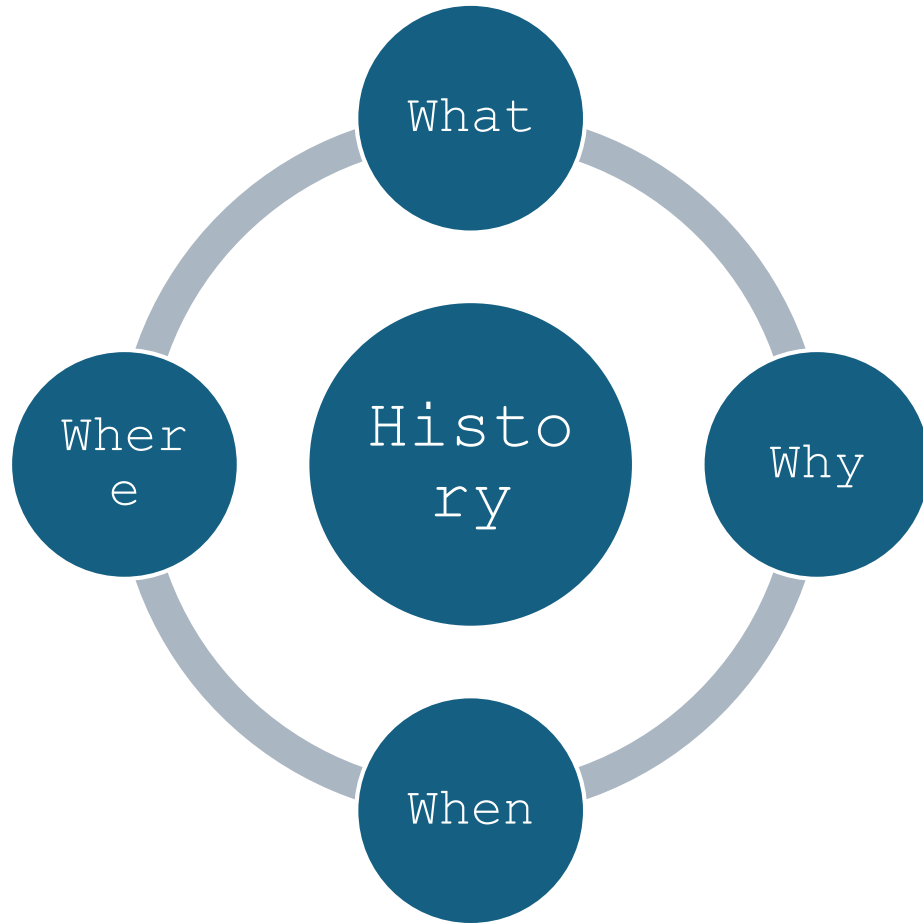
S2BI algorithm

In the past year, how many times have you used:
Tobacco? Alcohol? Marijuana?



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Respond with curiosity



- **What** products are they using & what are the potential risks?
- **Why** did they start & could we address symptoms using alternatives?
- **When** do they use & could they avoid before/during school, driving, sports?
- **Where** do they use & how are those places risky?

Pharmacotherapy Summary

Indication	Medication	Adolescent-Specific Considerations
Opioid Use	Buprenorphine	• FDA approved for AYA $\geq 16y$ • IM formulations insufficiently studied in youth
	Methadone	• Many states require parental consent for <18yo. • Very limited access for youth
	Naltrexone	• FDA-approved for AYA $\geq 18y$

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Alcohol Use	Naltrexone	• More effective than disulfiram in youth.

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Cannabis Use	N-acetylcysteine	Available OTC; not FDA-approved.
	Topiramate	Use limited by adverse side effects.

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Alcohol Use	Naltrexone	More effective than disulfiram in youth.
Cannabis Use	N-acetylcysteine	Available OTC; not FDA-approved.
	Topiramate	Use limited by adverse side effects.
Nicotine Use	NRT	- Few trials with adolescents who vape. - Minimal evaluation of NRT + oral medication - NRT not approved for adolescents (and requires rx) - Varenicline FDA-approved $\geq 16y$
	Varenicline	
	Bupropion	

Family-Based Interventions

<u>Name</u>	<u>Approach</u>	<u>Evidence</u>
Community Reinforcement Approach (CRAFT + A-CRA)¹	Skills-based program to teach family non-confrontational strategies to engage individuals in care.	↑ treatment entry, engagement, & completion; family mental health ↓ drug use, family depression scores
Multidimensional Family Therapy²	Combines individual therapy + multiple-system approaches to target intrapersonal & interpersonal factors contributing to use	↑ treatment retention, abstinence ↓ SU, adolescent risk-taking behaviors
Functional Family Therapy³	Behaviorally based & systems-oriented approach to improve communication, problem-solving, parenting, conflict resolution	↑ treatment engagement ↓ SU
Brief Strategic Family Therapy⁴	Address maladaptive family interactions to help families develop behavioral management, communication, conflict resolution skills	↑ treatment engagement ↓ SU, arrests, externalizing behaviors
Multisystemic Therapy⁵	Comprehensive family & community-based social ecological approach addressing substance use risk factors	↓ SU, aggressive criminal activity

Educate about Harm Reduction

- Understand motivations
- Leverage family & social connections
- Reduce risk of driving-related injury
- Decrease risk of overuse/intoxication
- Reduce overdose risk
- Reduce disease transmission

ANNALS OF MEDICINE
2022, VOL. 54, NO. 1, 2123–2136
<https://doi.org/10.1080/07853890.2022.2104922>



ORIGINAL ARTICLE

OPEN ACCESS

Addressing adolescent substance use with a public health prevention framework: the case for harm reduction

James Michael Winer^{a,b}, Amy M. Yule^{b,c}, Scott E. Hadland^{d,e} and Sarah M. Bagley^{a,b,f}

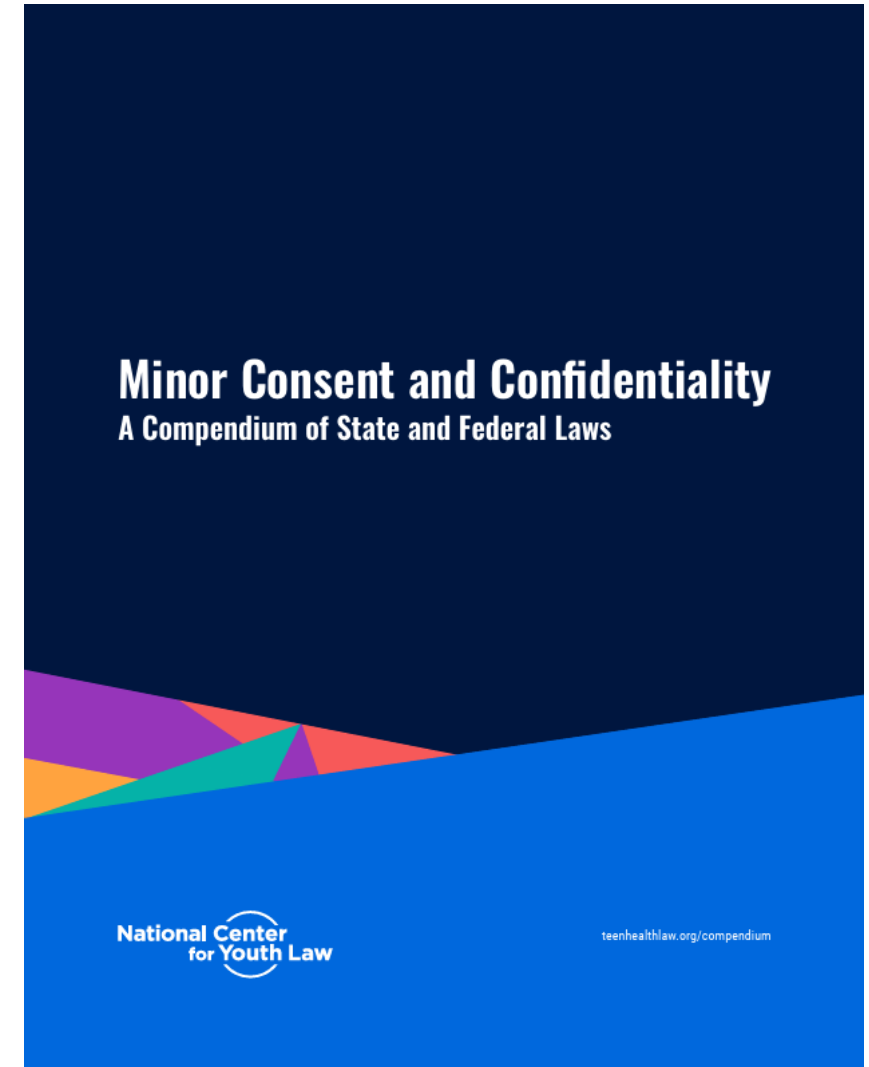
Leverage Family & Social Connections

Youth are part of social networks whose members have important effects on their decision-making

Families can be an important source of support and information

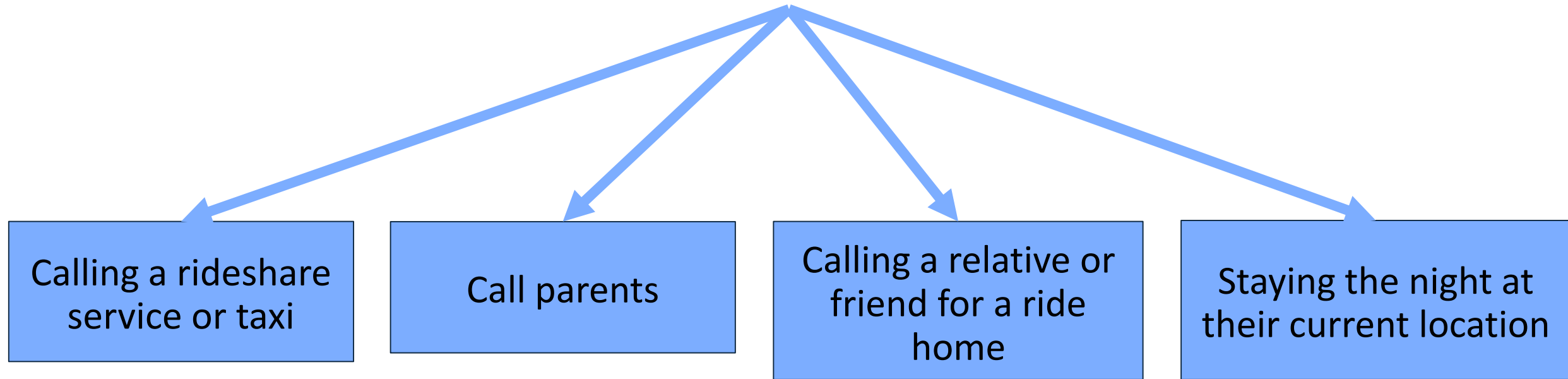
Assuring adolescent confidentiality is key

Confidentiality *can be* maintained while enlisting the support of family members



Reducing Risk of Driving Related Injury

Help Teens and Parents Develop an Exit Plan



How to talk to teens and families about overdose risk

PEDIATRICS' PERSPECTIVES

Anticipatory Guidance to Prevent Adolescent Overdoses

Scott E. Hadland, MD, MPH, MS,^{a,b} Deb M. Schmill, BS,^c Sarah M. Bagley, MD, MS^{d,e,f}

TABLE 1 Anticipatory Guidance for Overdose Prevention for Adolescents and Their Family Members	
Concept	Sample Statements to an Adolescent and/or Family Member
Initiate conversation	"It's important that we talk about safety. As you might know, the number of teen drug overdoses has been increasing. I now talk all my teen patients and their families about how to prevent and respond to an overdose."
Provide education about fentanyl	"What do you know about fentanyl?" "Fentanyl is a potent opioid that is causing a record number of teen overdoses. Most of the prescription pills that people sell—including on social media—are fake and contain fentanyl, and can cause someone to overdose. If a medication isn't prescribed by a doctor and provided by a pharmacy, it's likely to be fake"
Review signs of overdose	"Do you know what an overdose looks like? Have you seen one?" "Someone who is having an overdose looks sleepy, or might even be unconscious. Their breathing is slow, or they might have stopped breathing altogether. They often look pale, and might be blue around their lips or fingertips."
Review how to respond to an overdose	"How would you respond if you thought someone was having an overdose?" "If you suspect someone has overdosed, immediately call 911. Then, if you have naloxone nasal spray, use it. If the person is not breathing and you know how to give rescue breaths, do so."
Discuss naloxone and how to find it	"What do you know about naloxone? Do you have any?" "I recommend everyone carry naloxone with them and have it in their home. Naloxone can save someone's life. And it's safe to use even if someone isn't having an overdose. I can prescribe it to you today. You can also buy it over-the-counter—though it's more expensive this way—and it's often available at school or in the community."
Confidentially assess previous fentanyl use/exposure	<u>Discussed confidentially with adolescent only:</u> "In our practice, we ask every teen about their use of drugs and alcohol. Thanks for completing the screening questionnaire. To your knowledge, have you ever used fentanyl?" "Do you have any friends who use pills that might not have been prescribed by a doctor or filled by a real pharmacy? Have you ever used a pill that someone gave or sold you? Have you ever been approached in real life or on social media to buy one?"

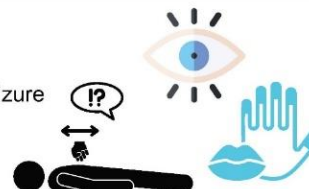


Anticipatory Guidance for Youth Overdose Prevention

- **Substances:** Alcohol, drugs including cannabis and nicotine, and/or prescription medication not taken as prescribed or that was not prescribed to you
- **Overdose:** An overdose can happen when someone takes too much of a substance, causing harmful effects to their body

☐ Recognize an opioid overdose

- Slow or shallow breathing
- Lips, fingertips or feet turning blue or gray (darker skin tones)
- Loss of consciousness
- Unresponsive
- Convulsions or a seizure
- Very small pupils



☐ Respond to an opioid overdose

DOs:

1. Check for breathing
2. Call 911 (You and/or the person who overdosed won't get into legal trouble for substance use — Massachusetts Good Samaritan law)
3. Give naloxone/ Narcan
4. Stay with the person until an ambulance arrives
5. Place the person on their side in the recovery position to prevent blocked airways

DO NOT: Leave the person alone; Assume the person will "wake up" on their own; Try to wake them up by shaking, hurting them, putting them in cold water, or give something to try to wake them up (e.g. coffee or energy drink); Try to induce vomiting

☐ How to administer naloxone



1. Lay



2. Spray



3. Stay

- Naloxone is used to restore breathing
- Safe to use and will not harm someone who has not taken opioids
- Can take up to 3 mins to start working and lasts up to 120 mins
- A 2nd dose can be given if breathing doesn't resume after 3 mins

☐ Overdose risks for youth



Risk can be increased by:

- Mixing substances or using more than one at a time
- Using substances while you are alone
- Using substances not prescribed to you (e.g. counterfeit pills)
- Not using prescriptions as directed by your doctor or pharmacist
- Using powdered substances (e.g. cocaine) that could have dangerous things like fentanyl mixed in

Identify strategies to engage youth and their families, including the use of trauma-informed, non-stigmatizing language.

Principles of Trauma-Informed Care

- Safety
- Trustworthiness and transparency
- Peer Support
- Collaboration and mutuality
- Empowerment, voice, and choice
- Cultural, historical context, and gender

Language & Approach Matter: “Hard to reach”

I am not hard to reach, people just generally
don't know how to reach me

Confidentiality

“If I am concerned about your safety, I will talk with you about involving other people, like your caregiver, who can help provide you with support. We would decide together how to do this.”

Taking the history

- Sharing parts of the SU history can be traumatic, particularly if family scheduled treatment/visit
- Acknowledge and give thanks to youth for showing up
- Focus on the key parts of the history that are related to safety
- Always give youth time alone
- Consider talking alone with parent *if youth consents*

Align goals for treatment

“...it’s really cool that we have medications that cannot just stop people from using and stop people from dying but like genuinely give people a more present life and I think that’s, for me, more than not using.” (23y M)

Offer a menu of options

- Developmentally, youth are seeking opportunities to be autonomous
- Identify ways that they can be involved in decision-making (i.e. in-person or telehealth visits, frequency of visits)
- Offer mini-experiments to see what it's like to cut back on use or make decisions about timing (i.e. not going to vape prior to school or will use NRT during school)

Recognize stigma related to treatment

> [J Adolesc Health](#). 2023 Jan;72(1):105-110. doi: 10.1016/j.jadohealth.2022.08.026.
Epub 2022 Oct 8.

Ambivalence and Stigma Beliefs About Medication Treatment Among Young Adults With Opioid Use Disorder: A Qualitative Exploration of Young Adults' Perspectives

[Sarah M Bagley](#)¹, [Samantha F Schoenberger](#)², [Vanessa dellaBitta](#)³, [Karsten Lunze](#)³,
[Kendyl Barron](#)⁴, [Scott E Hadland](#)⁵, [Tae Woo Park](#)⁶

Affiliations + expand

PMID: 36216678 DOI: [10.1016/j.jadohealth.2022.08.026](#)

Case Report | [Open Access](#) | [Published: 07 May 2018](#)

Stigma associated with medication treatment for young adults with opioid use disorder: a case series

[Scott E. Hadland](#), [Tae Woo Park](#) & [Sarah M. Bagley](#) ✉

[Addiction Science & Clinical Practice](#) **13**, Article number: 15 (2018) | [Cite this article](#)

6269 Accesses | **52** Citations | **293** Altmetric | [Metrics](#)

Editorial > [J Addict Med](#). 2017 Nov/Dec;11(6):415-416.

doi: [10.1097/ADM.0000000000000348](#).

Addressing Stigma in Medication Treatment of Adolescents With Opioid Use Disorder

[Sarah M Bagley](#)¹, [Scott E Hadland](#), [Brittany L Carney](#), [Richard Saitz](#)

Affiliations + expand

PMID: 28767537 DOI: [10.1097/ADM.0000000000000348](#)

Avoid fear-based language

What is Fear-Based Language?

**Definition of
Fear-Based
Language**

**Where does it
come from?**

Examples of fear-based language

- "You only have to take drugs one time to become addicted"
- "Drugs will ruin your life"
- "You are going to end up in jail or homeless if you use drugs"

Eliminating Fear-Based language

- Focus on facts and reliable information
- Highlight positive outcomes
- Avoid emotionally charged or dramatic words/imagery
- Offer choices



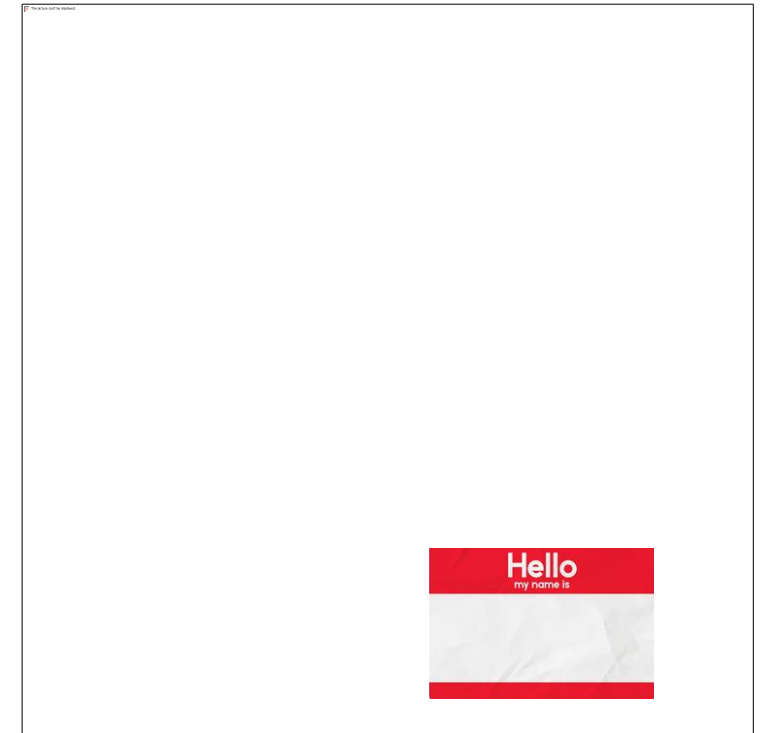
Chronic disease model may be limited

“None of this stuff is supposed to be utilized for the rest of people’s lives. It’s supposed to be a step up to help you out and then you can take it in your own direction after that” (28y F)

Bagley SM et al., *JAH*

“Recovery” model may not resonate

“They don't want their life to continue to be defined by their substance use, including if that means being defined by not using substances... I think the conversation isn't just about ...people won't die ... It's like people will be present for their lives again.”



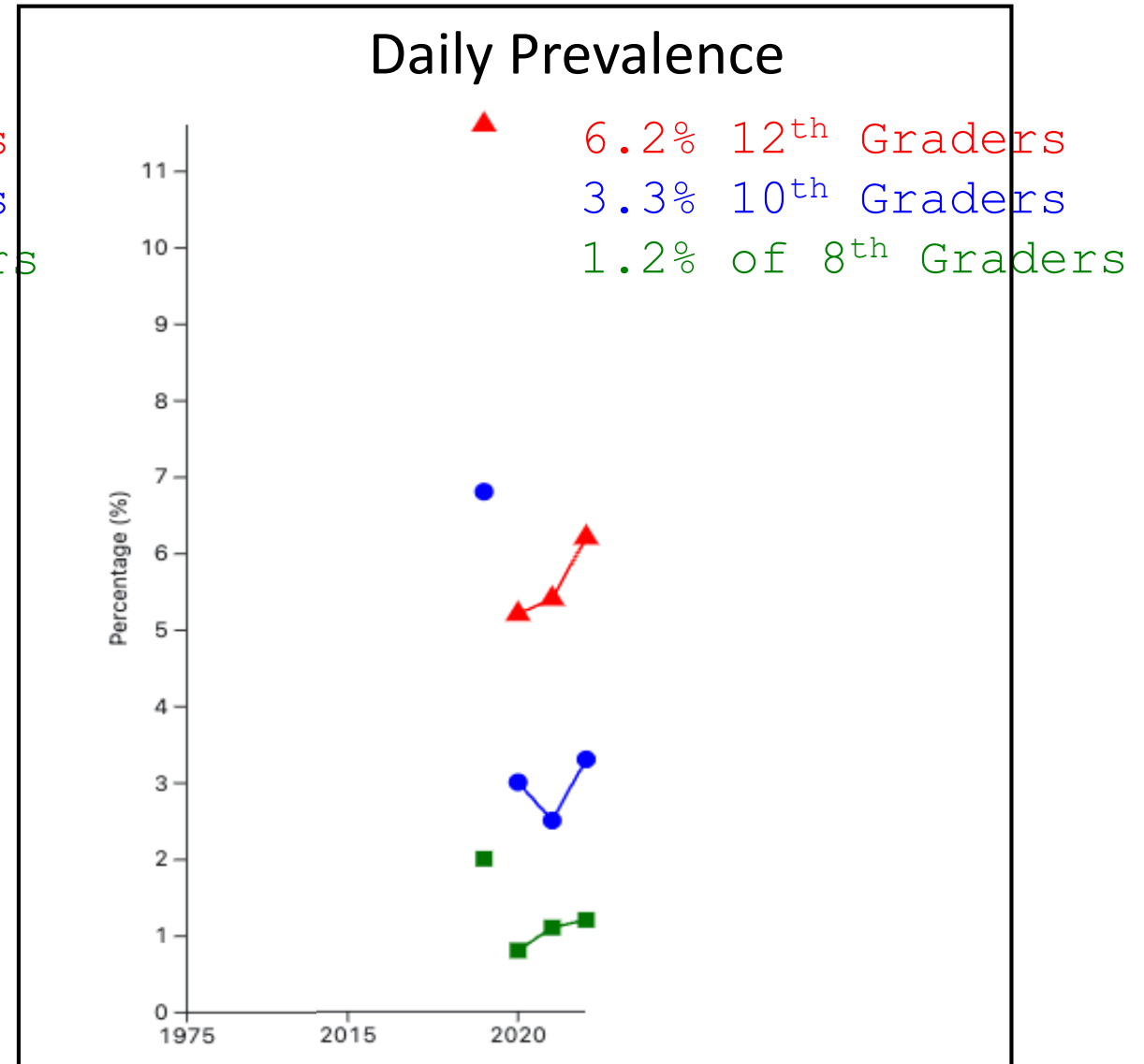
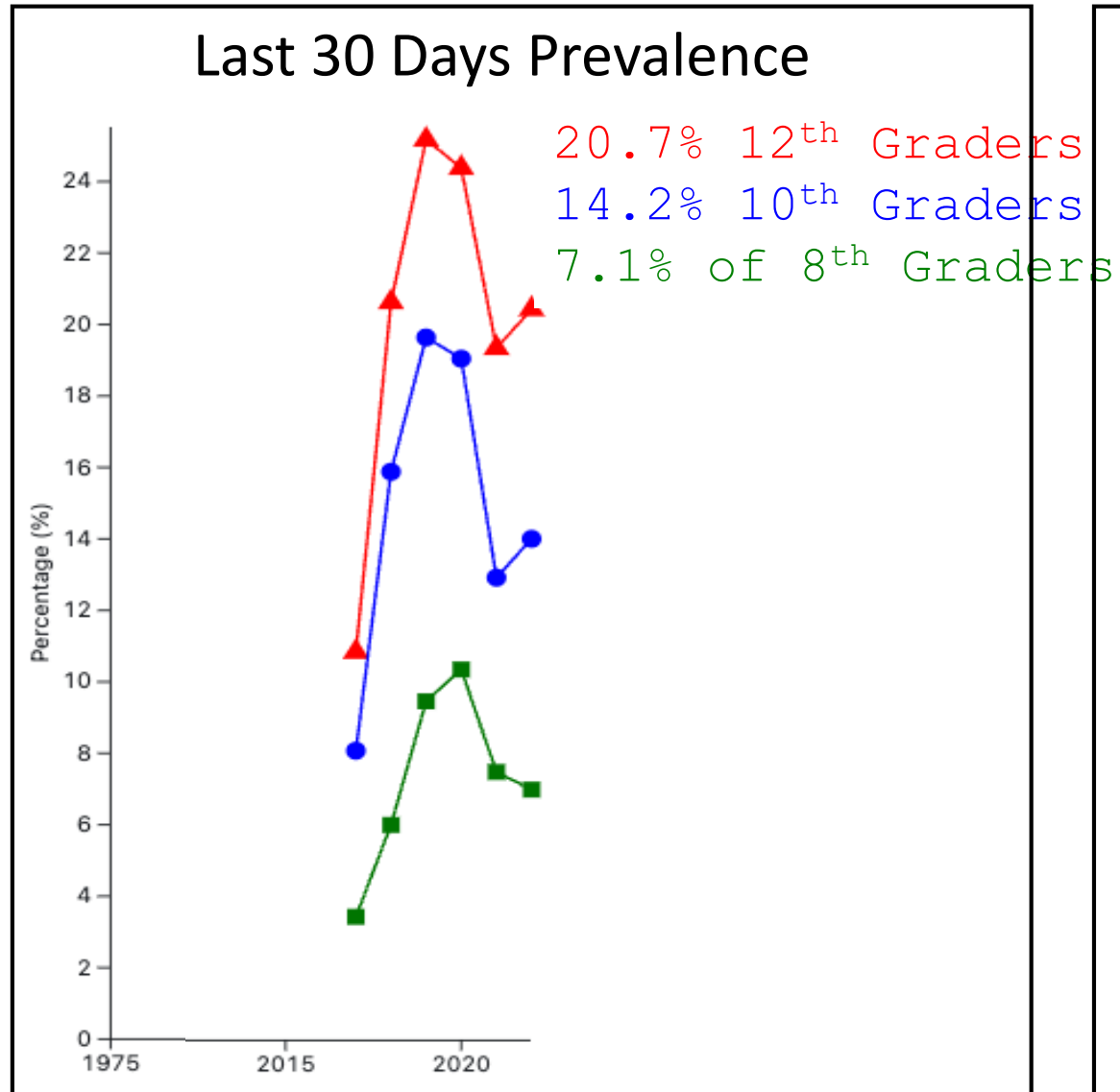
Schoenberger SF et al. J Gen Intern Med. 2022;
Mar;37(4):816-822

Thank you!

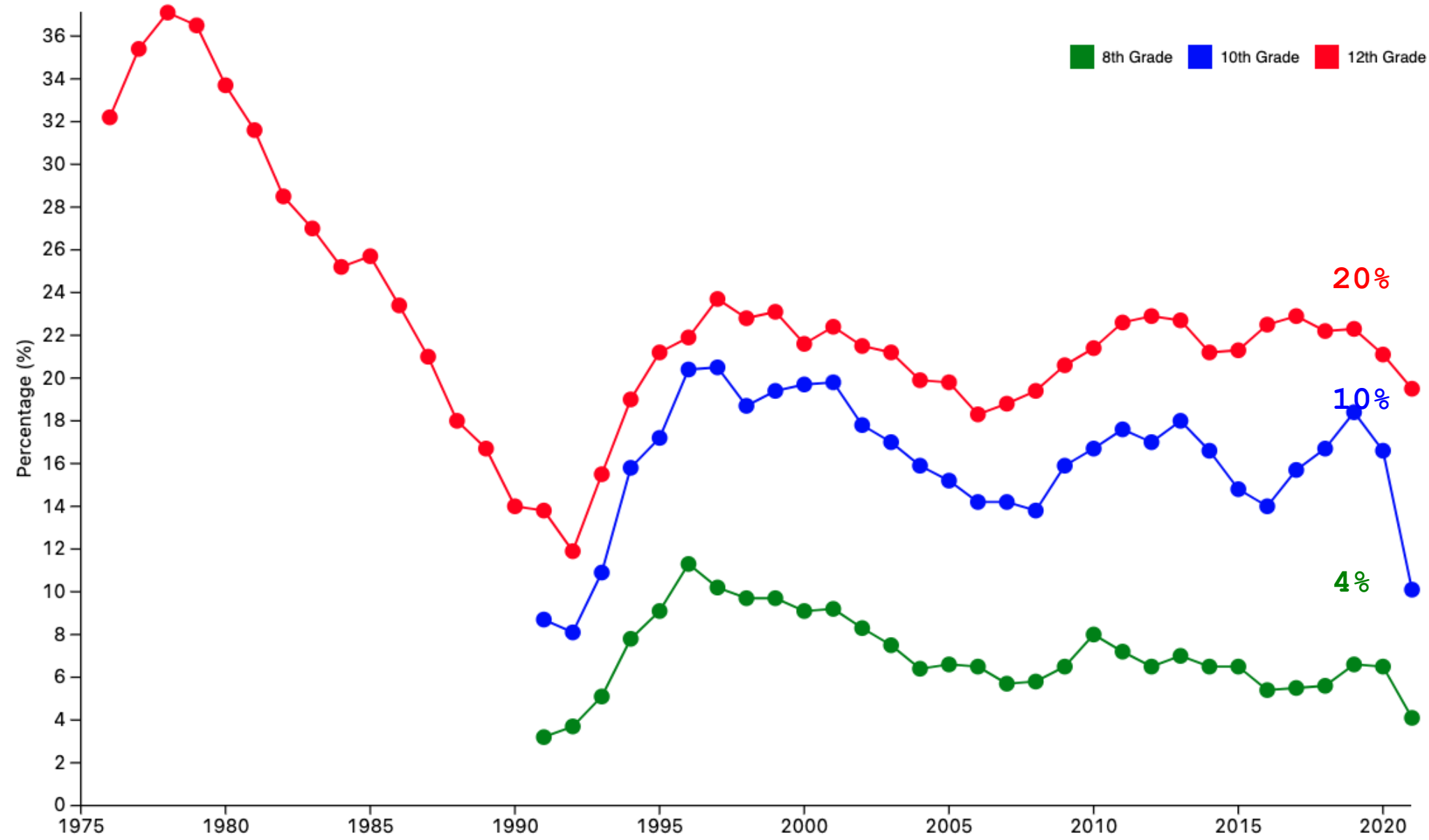
Sarah Bagley, MD MSc
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Supplemental Slides

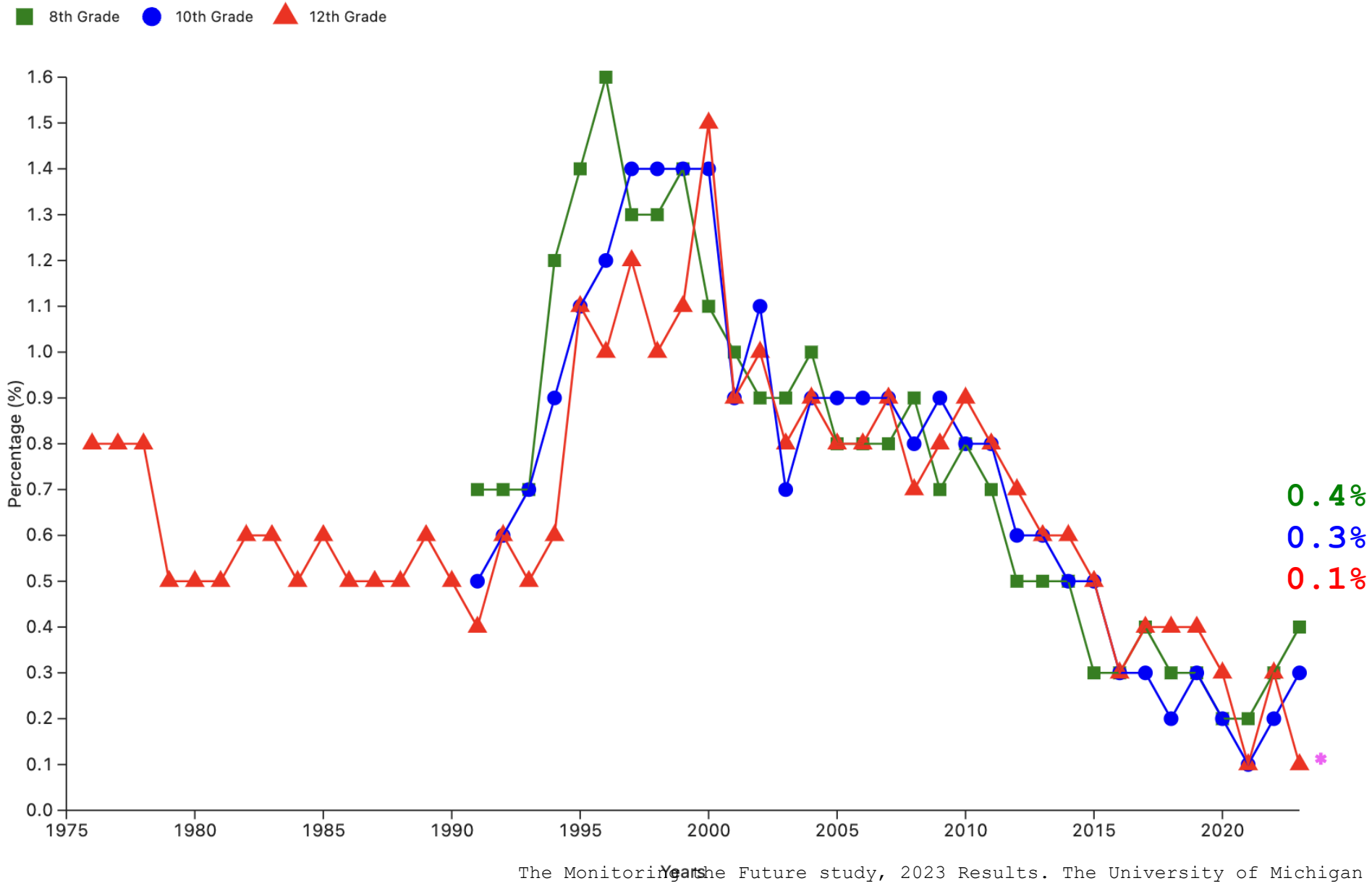
Vaped Nicotine (E-cigarettes): Prevalence of Use in 8th, 10th, and 12th Grade



Marijuana: Trends in Prevalence of 30 Day Use in 8th, 10th, and 12th Grade

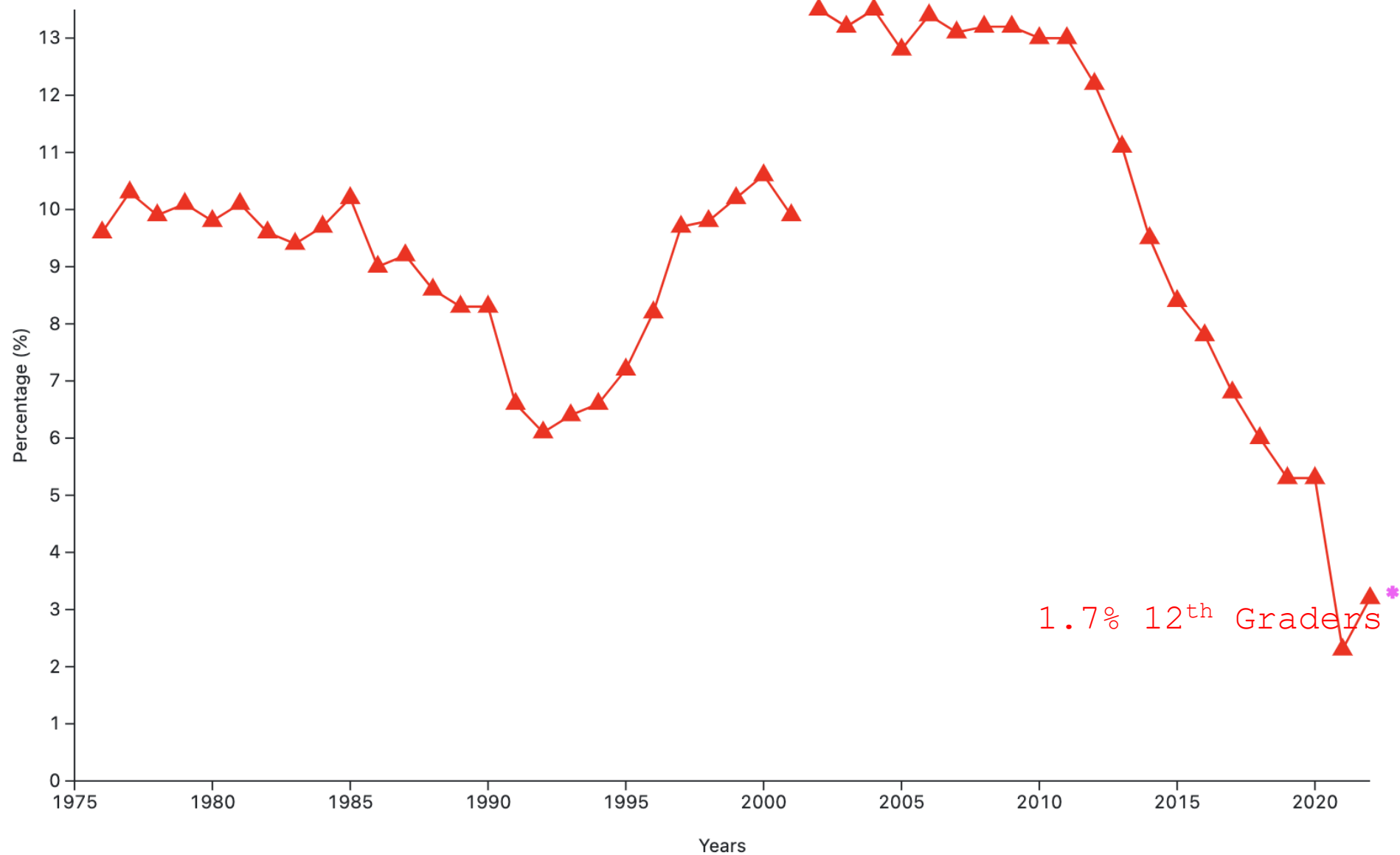


Heroin: Trends in Last 12 Months Prevalence of Use in 8th, 10th, and 12th Grade



Narcotics other than Heroin: Trends in Lifetime Prevalence of Use in 12th Grade

▲ 12th Grade



Pediatricians' perceived scope of responsibility

- **1 in 5** pediatricians thought it was their responsibility to manage substance use disorders
- **12%** thought it was their responsibility to prescribe medications for substance use disorders
- Nearly **25%** had diagnosed an adolescent with opioid use disorder
- Fewer than half felt prepared to counsel on opioid use

Hadland SE et al. JAMA Pediatr.2024;178(4):414-416

Systematic Screening for Substance Use is Necessary

Using their *clinical impression* primary care providers only identified:

- 20% of adolescents with a SUD mild
- 0% of the adolescents with a SUD moderate to severe

Wilson 2004

Validated tools for screening adolescents for substance use

Screening Tools for Adolescent Substance Use

NIDA Launches Two Brief Online Validated Adolescent Substance Use Screening Tools

NIDA has launched [two brief online screening tools](#) that providers can use to assess for substance use disorder (SUD) risk among adolescents 12-17 years old. With the American Academy of Pediatrics recommending universal screening in pediatric primary care settings, these tools help providers quickly and easily introduce brief, evidence-based screenings into their clinical practices.

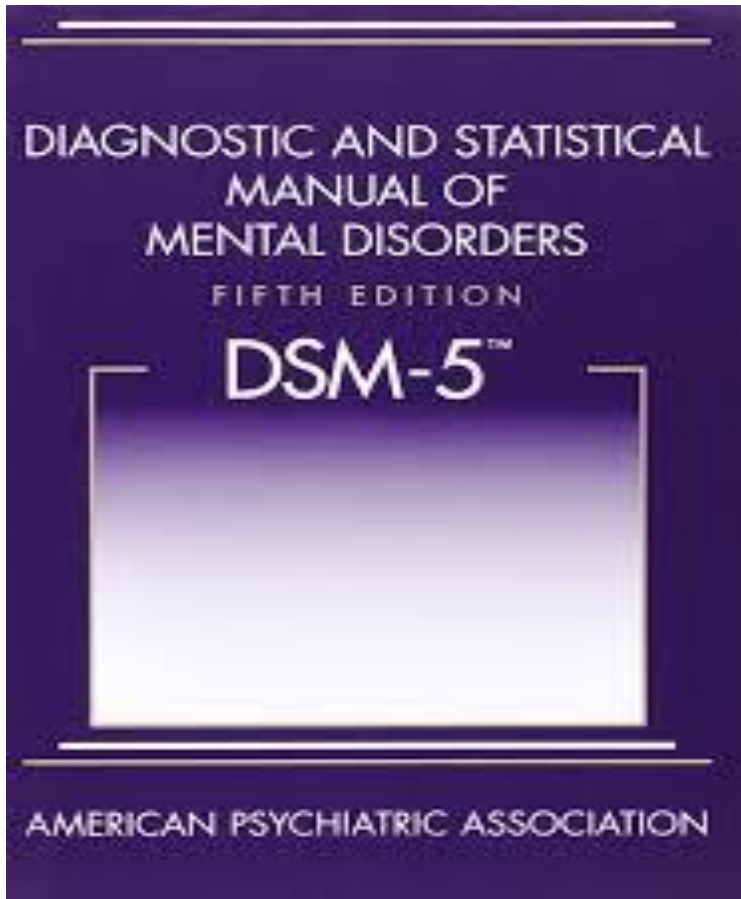
Two Screening Options: Providers can select the tool that makes sense for their clinical practice.



**Screening
to Brief
Intervention
(S2BI)**

**Brief
Screener
for Tobacco,
Alcohol, and
other Drugs
(BSTAD)**

Diagnostic Challenges in Adolescents



- Withdrawal symptoms are rare
- Hazardous use is less common in youth who have less access to automobiles
- Youth are often less aware and/or less willing to acknowledge substance use is causing problems for them
- Sometimes youth struggle to be open and honest about their substance use (particularly in the evaluation phase)

Winters 2011

Medications for Opioid Use Disorder

Medication	Medication & Dose	Access/Use Notes
Buprenorphine (+/- naloxone)	• Daily pill or film • Monthly injectable	• FDA approved for AYA ≥ 16 years old (sublocade efficacy not proven for <17 years old) • Safe in pregnancy with or without naloxone
Methadone	• Daily pill, liquid, wafer form	• <18 years old must have 2 prior failed treatment attempts • Very limited access for youth • Requires DAILY visits to clinic • Safe in pregnancy; may increase or split dose
Naltrexone	• Daily pill • Monthly injectable	• FDA-approved for AYA ≥ 18 years old

Medications for Cannabis Use Disorder

Medication	Dose	Use / Notes
N-acetylcysteine "NAC" ¹	600mg QD x3d > 600mg BID x3d > 1200mg BID	- Available as over-the-counter supplement - Decreased use in adolescents,¹ although no evidence of efficacy in adults² - Not FDA approved for CUD
Gabapentin ³	1200mg/day	- Decreased use, cravings, withdrawal symptoms in adults - No evidence in adolescents
Topiramate ⁴	25mg/day increased by 25mg weekly to 200mg/day	- Reduced use in adolescents - High rate of adverse effects (neurocognitive slowing, memory difficulties, weight loss, poor appetite) > treatment discontinuation

1. Gray et al. *American Journal of Psychiatry*, 2012. 2. Gray et al., *Drug Alcohol Depend* 2017. 3. Mason et al., *Neuropsychopharmacology*. 2012. 4. Miranda R et al., *Addiction Biology* 2017. 5. Bahji A et al., *Intern J of Drug Policy* 2021.

Medications for Nicotine Use Disorder

Medication	Dose	Use / Notes
Nicotine Replacement (NRT)	Patch: 7mg, 14mg, 21mg daily Lozenge/Gum: 2-4mg as needed	- No evidence for use with patients that vape - Limited evidence in adolescents - Side effects: nightmares, insomnia
Varenicline	0.5mg daily x3d > 0.5mg 2x/day x3d > 1mg 2x/day	- Mixed evidence in youth - Contraindicated: patients <17y (relative), seizures - Side effects: nausea, insomnia, odd dreams, headaches
Bupropion	150mg daily x3d > 150mg 2x/day	- Improved abstinence in youth - Good option for patients with depression - Contraindicated: seizures, eating disorder

Dawson et al., *J Am Acad Child Adolesc Psychiatry*, 2016

Medications for Alcohol Use Disorder

Medication	Dose	Use / Notes
Naltrexone	Pill: 50mg daily Injection: 380mg IM monthly	• Associated with decrease in drinks/day, cravings, heavy drinking, response to alcohol in youth • Contraindications: on opioid therapy, liver dysfunction • Safe in pregnancy
Acamprosate	Pill: 666mg three times daily	• Not studied in youth • Contraindications: renal dysfunction • Category C – possibly teratogenic
Disulfiram	Pill: 250mg daily	• Showed lower return to use in youth enrolled in RCT • Category C – reaction potentially risky for woman & fetus

Kranzler HR & Soyka M. JAMA 2018.

What's the evidence for medication treatment?

- Improved retention in care (clinical trials and observational data)
- Decreased opioid positive urine drug tests (clinical trials)
- Improved mortality (observational data)
- Youth have lower retention in care!

Woody et al. JAMA. 2008

Hadland SE. JAMA Pediatr 2018

Santo T Jr et al. JAMA Psychiatry. 2021 Sep 1;78(9):979-993

Matson et al. J Addict Med. 2014 May-Jun;8(3):176-82

Buprenorphine for Youth

- Continuation preferable to detox
- Trials in adolescents have ≤ 1 y follow up
 - 6m retention: 25-40%
 - 1y retention: 9-17%
- Insufficient evidence about ideal treatment duration & developmental considerations

Published in final edited form as:

Pediatrics. 2020 May ; 145(Suppl 2): S153–S164. doi:10.1542/peds.2019-2056C.

Management of Opioid Misuse and Opioid Use Disorders Among Youth

Camille A. Robinson, MD, MPH^a, J. Deanna Wilson, MD, MPH^b

Published in final edited form as:

J Addict Med. 2018 ; 12(3): 170–183. doi:10.1097/ADM.0000000000000388.

Buprenorphine treatment for adolescents and young adults with opioid use disorders: a narrative review

Jacob T. Borodovsky, BA^{1,2}, Sharon Levy, M.D., MPH^{3,4}, Marc Fishman, M.D^{5,6}, and Lisa A. Marsch, PhD¹

Journal of Adolescent Health 71 (2022) 143–144



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ADOLESCENT
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www.jahonline.org

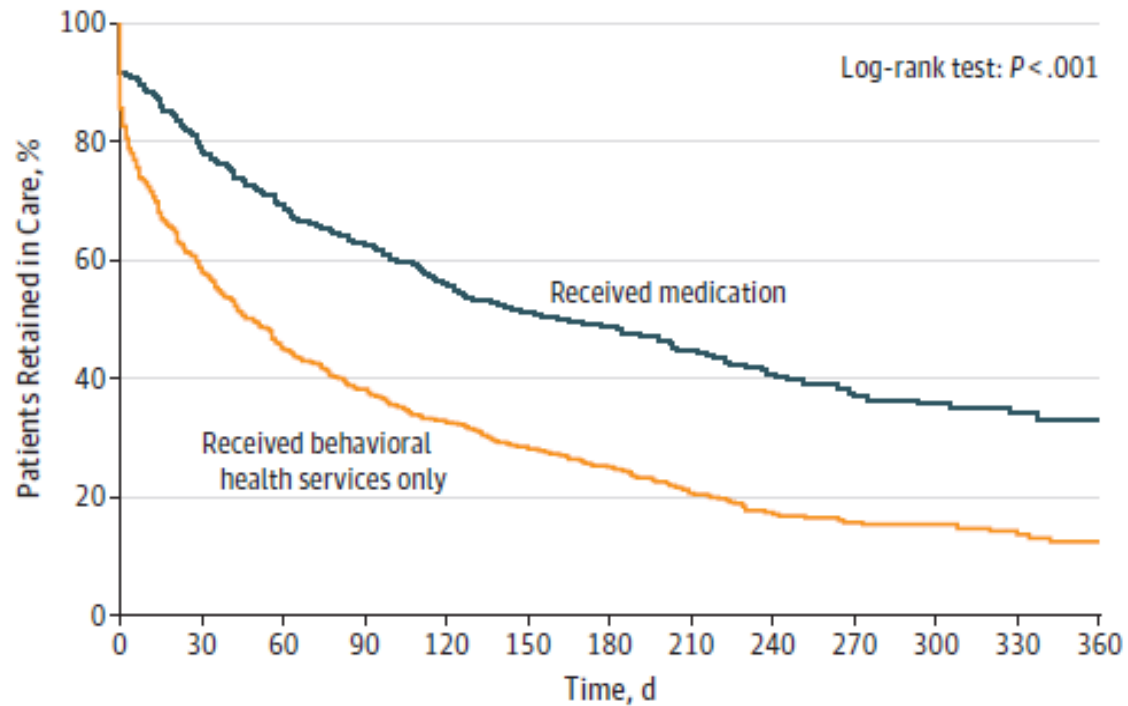
Editorial

An Urgent Need to Focus on Youth With Opioid Use Disorder



Medication helps adolescents stay engaged in treatment

Retention in Care for
13- to 22-year-old patients



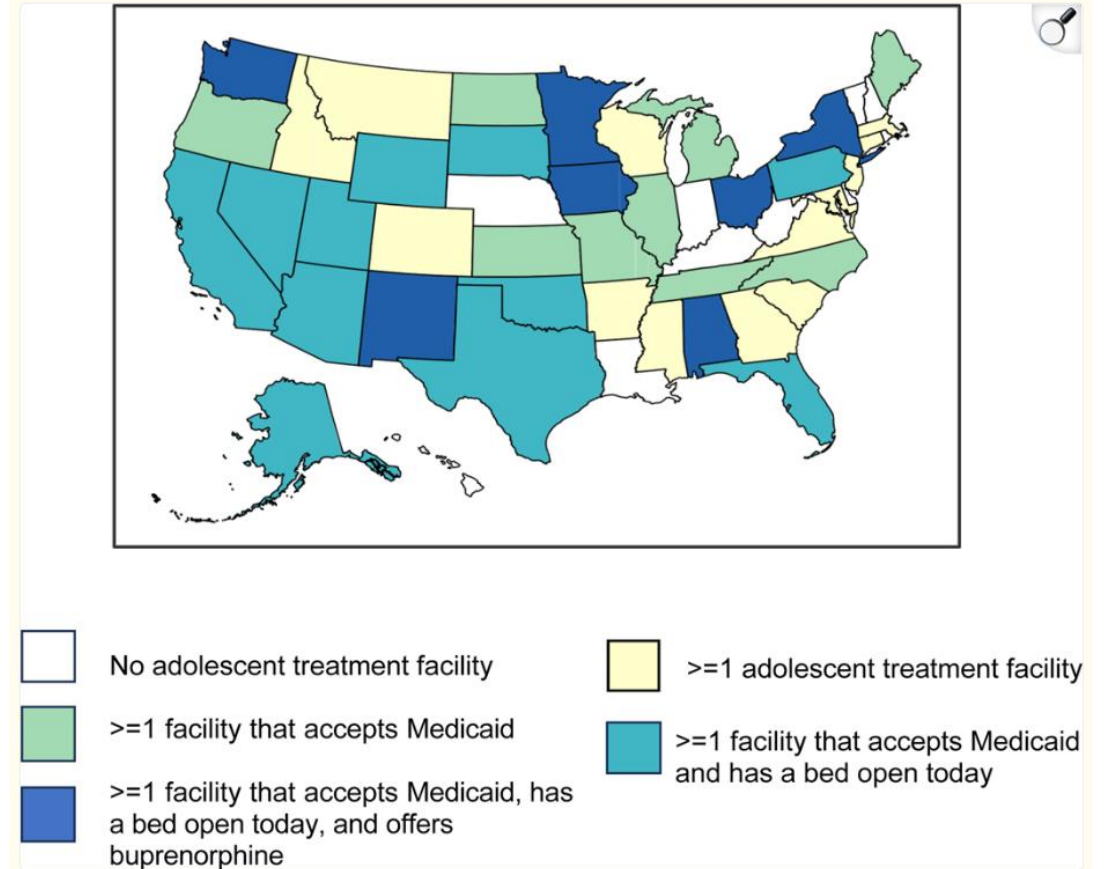
Hadland 2018

- 75% received any treatment within 3 months of an OUD diagnosis
- Type of treatment:
 - 52% behavioral health
 - 24% behavioral health and medication for OUD

Access to MOUD for adolescents

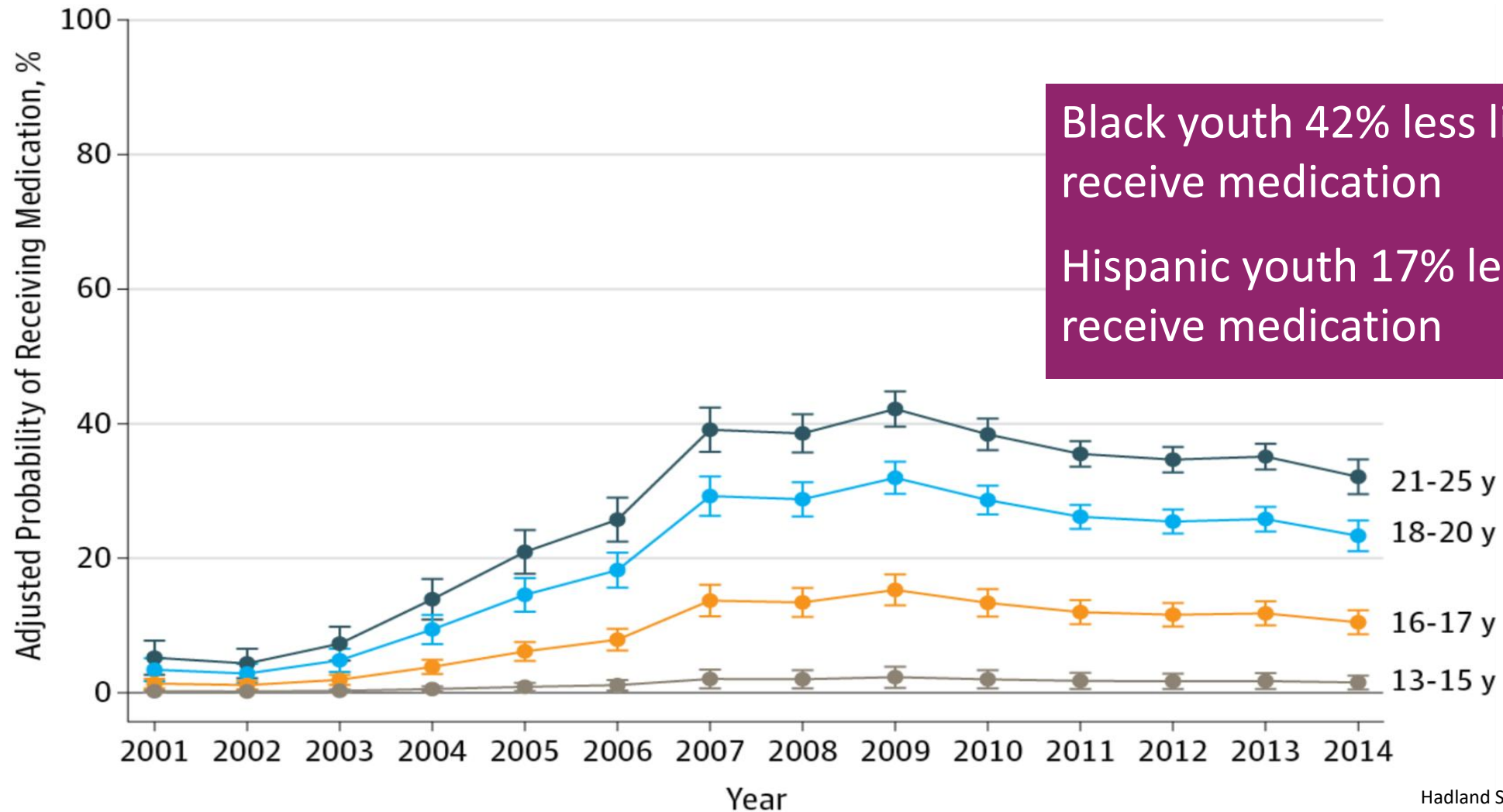
- Only 1 in 4 US facilities offered buprenorphine
- 1 in 8 offered buprenorphine for ongoing treatment
- Average parent would need to call 9 facilities on the SAMHSA Treatment Locator list to find one that offered buprenorphine

Exhibit 1. States that we identified have an adolescent residential treatment facility for OUD, and accept Medicaid, and have a bed open today, and offer buprenorphine.



King C et al, JAMA, 2023. King C et al., Health Aff, 2025.

Racial Disparities in Treatment



Hadland SE, et al. (2017) *JAMA Pediatr*

Behavioral Interventions

Technique	Approach	Comments
Motivational Interviewing	Recognize ambivalence towards behavior change, assess motivation, and address barriers to change.	Foundation of brief interventions Often implemented in primary care settings as part of SBIRT
Cognitive Behavioral Therapy	Use learning-based approaches to target maladaptive behavior patterns, barriers to change, & skills deficits.	Extensive evidence demonstrates efficacy as monotherapy & in combo with pharmacotherapy
Dialectical Behavior Therapy	Uses individual therapy, skills training, and coaching to reduce reliance on harmful strategies & improve capacity to tolerate difficult emotions	Useful for patients with co-occurring mental health or personality disorders
Contingency Management	Administer non-drug rewards (i.e. vouchers or cash) to counter robust reinforcing effects of drug	Challenging to implement