WashU Medicine

Beyond "Just Stop Drinking"

Treating Alcohol Use Disorder In Pregnancy

Presented by Kevin Xu MD MPH & Caroline Cary BA

April 7, 2026

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Disclosures

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Agenda

Part 1 - Practical challenges in treating AUD in reproductive-age people *(Xu)*

- Why screening and diagnosis isn't straightforward: the continuum of use
- Barriers to harm reduction: navigating risk thresholds
- Alcohol doesn't exist in a silo: comorbidity and the polysubstance landscape

Part 2 - Review of international OBGYN clinical practice guidelines *(Cary)*

- Alcohol use and AUD in pregnancy
- Study objective and methodology
- Findings in CPGs: What recommendations exist?
- Implications for practice

Objectives

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

- Describe the scope of international clinical practice guidelines addressing alcohol use and AUD during pregnancy
- Identify key gaps in current guidelines across the AUD cascade of care, from screening and diagnosis through treatment engagement, initiation, and retention
- Explain why existing guidelines consistently emphasize screening and brief intervention but fall short of providing actionable guidance on AUD treatments
- Recognize the limitations of current evidence on MAUD safety and effectiveness in pregnancy, and how this uncertainty shapes real-world clinical decision-making
- Articulate the implications of guideline gaps for clinicians caring for pregnant people with AUD, and identify priorities for future research and guideline development

Why screening and diagnosis aren't straightforward: The continuum of use

FIGURE 1. DSM-IV and DSM-5 Criteria for Substance Use Disorders.

	DSM-IV Abuse[a]		DSM-IV Dependence[b]		DSM-5 Substance Use Disorders[c]	
Hazardous use	X	≥1 criterion	–		X	≥2 criteria
Social/interpersonal problems related to use	X		–		X	
Neglected major roles to use	X		–		X	
Legal problems	X		–		–	
Withdrawal[d]	–		X	≥3 criteria	X	
Tolerance	–		X		X	
Used larger amounts/longer	–		X		X	
Repeated attempts to quit/control use	–		X		X	
Much time spent using	–		X		X	
Physical/psychological problems related to use	–		X		X	
Activities given up to use	–		X		X	
Craving	–		–		X	

Hasin DS et al. DSM-5 criteria for substance use disorders: recommendations and rationale. Am J Psychiatry. 2013 Aug;170(8):834-51. doi: 10.1176/appi.ajp.2013.12060782. PMID: 23903334; PMCID: PMC3767415.

Screening is easier said than done

- DSM-5 criteria for SUD seem straightforward, and we have validated screeners to help. But in practice, diagnosis requires evidence of functional impairment, which gets complicated!
- "Functional impairment" is not always easy to define, and patients and clinicians may see it differently.
- A patient's own assessment of their functioning may not match clinical criteria.
- The threshold for what counts as "clinically significant impairment" is also not fixed, and it may reasonably shift depending on context.
- **Reproductive age is one such context.** For a patient who is pregnant or actively trying to conceive, the relevant question is both impairment to the patient's current functioning and potential harm to a developing pregnancy. A level of use that might not cross the threshold for intervention in another clinical context may warrant a different conversation here.

You are an OB/GYN seeing a 31-year-old woman for a routine well-woman visit. She presents requesting IUD removal. She and her partner are actively trying to conceive. She is otherwise healthy, works as an accountant, and reports no significant medical history. She completed a routine substance use screener at check-in, which prompted the following discussion.

- Screener flags daily caffeine use. She reports drinking 4–5 cups of coffee per day plus a 5-hour energy drink most afternoons. Has been drinking coffee since college; consumption has increased since starting at her current firm.
- Reports that if she skips her morning coffee, she gets headaches and feels irritable and foggy.
- *"It's not a problem at all. I'm fine."* → Reports no functional impairment; she's performing well at work, her relationship is good, and she feels she is managing her life well.

Which of the following diagnoses are likely appropriate to document in EPIC?

- Caffeine use
- Caffeine dependence
- Caffeine use disorder
- No diagnosis

You are an OB/GYN seeing a 31-year-old woman for a routine well-woman visit. She presents requesting IUD removal. She and her partner are actively trying to conceive. She is otherwise healthy, works as an accountant, and reports no significant medical history. She completed a routine substance use screener at check-in, which prompted the following discussion.

- Screener flags tobacco use. She reports smoking 1 pack of cigarettes per day since age 17; use has increased over the past two years.
- Reports that if she doesn't smoke, she gets headaches and feels irritable and restless. She's planning to cut back once she is pregnant.
- *"It's not a problem at all. I'm fine."* → Reports no functional impairment: she's keeping up at work, her relationship is solid, and she feels she is managing her life well.

Which of the following diagnoses are likely appropriate to document in EPIC?

- Nicotine use
- Nicotine dependence
- Nicotine use disorder
- No diagnosis

You are an OB/GYN seeing a 31-year-old woman for a routine well-woman visit. She presents requesting IUD removal. She and her partner are actively trying to conceive. She is otherwise healthy, works as an accountant, and reports no significant medical history. She completed a routine substance use screener at check-in, which prompted the following discussion.

- Screener flags alcohol use. She reports drinking more than half a bottle of wine every night to unwind. Use has increased over the past two years. Reports no shakes, DTs, or seizures, but does notice headaches and irritability on mornings after she doesn't drink.
- Plans to stop once she is pregnant. Has never missed work; relationship is going well.
- *"It's not a problem at all. I'm fine."* → Reports no functional impairment; she's keeping up at work, her relationship is solid, and she feels she is managing her life well.

Which of the following diagnoses are likely appropriate to document in EPIC?

- Alcohol use
- Alcohol dependence
- Alcohol use disorder
- No diagnosis

You are an OB/GYN seeing a 31-year-old woman for a routine well-woman visit. She presents requesting IUD removal. She and her partner are actively trying to conceive. She is otherwise healthy, works as an accountant, and reports no significant medical history. She completed a routine substance use screener at check-in, which prompted the following discussion.

- Screener flags cannabis use. She reports smoking 1g of marijuana most evenings and using edibles on weekends to help with sleep and anxiety. Use has increased over the past year.
- Reports that when she skips cannabis at night, she has trouble sleeping and feels irritable. Notes it's "natural and way safer than alcohol."
- *"It's not a problem at all. I'm fine."* → Reports no functional impairment: she's keeping up at work, her relationship is solid, and she feels she is managing her life well.

Which of the following diagnoses are likely appropriate to document in EPIC?

- Cannabis use
- Cannabis dependence
- Cannabis use disorder
- No diagnosis

How do these vignettes differ?

- Does actively trying to conceive change your threshold for diagnosis or intervention for any of these substances?

- Who gets to define "functional impairment," and what happens when you and your patient see it differently?

Disagreements about whether substance use is causing functional impairment are common, complex, and not unique to alcohol.

Two familiar examples from outside the alcohol world:

- A patient has taken clonazepam for many years, has developed tolerance and dependence, and has used more than prescribed. A well-intentioned clinician proposes a taper. The patient strongly disagrees: *"I would be worse off without it. It's the only thing that helps my anxiety."*
- A patient has taken oxycodone for many years, has developed tolerance and dependence, and has used more than prescribed. A well-intentioned clinician proposes a taper. The patient strongly disagrees: *"I would be worse off without it. It's the only thing that helps my pain."*

Barriers to harm reduction: Navigating risk thresholds

The clinical message on alcohol in pregnancy is unambiguous: **no amount is safe.**

But not every patient will stop drinking. For those who continue to use, harm reduction offers a framework for reducing risk short of abstinence. The core premise of harm reduction is *meeting patients where they are;* this means minimizing harms associated with continued use, rather than defaulting to abstinence-only approaches.

However, harm reduction requires risk thresholds. To counsel a patient on "safer" use, we need to know what "less harmful" actually looks like.

In non-pregnant populations, there has been recent progress. We now have some understanding that certain drinking and cannabis consumption patterns carry lower risk than others, even if no amount is entirely safe

ADDICTION SSA SOCIETY FOR THE STUDY OF ADDICTION

Research Report | Full Access

World Health Organization risk drinking level reductions are associated with improved functioning and are sustained among patients with mild, moderate and severe alcohol dependence in clinical trials in the United States and United Kingdom

Katie Witkiewitz, Nick Heather, Daniel E. Falk, Raye Z. Litten, Deborah S. Hasin, Henry R. Kranzler, Karl F. Mann, Stephanie S. O'Malley, Raymond F. Anton

First published: 13 February 2020 | https://doi.org/10.1111/add.15011 | VIEW METRICS

ADDICTION SSA SOCIETY FOR THE STUDY OF ADDICTION

RESEARCH REPORT | Open Access

Estimating thresholds for risk of cannabis use disorder using standard delta-9-tetrahydrocannabinol (THC) units

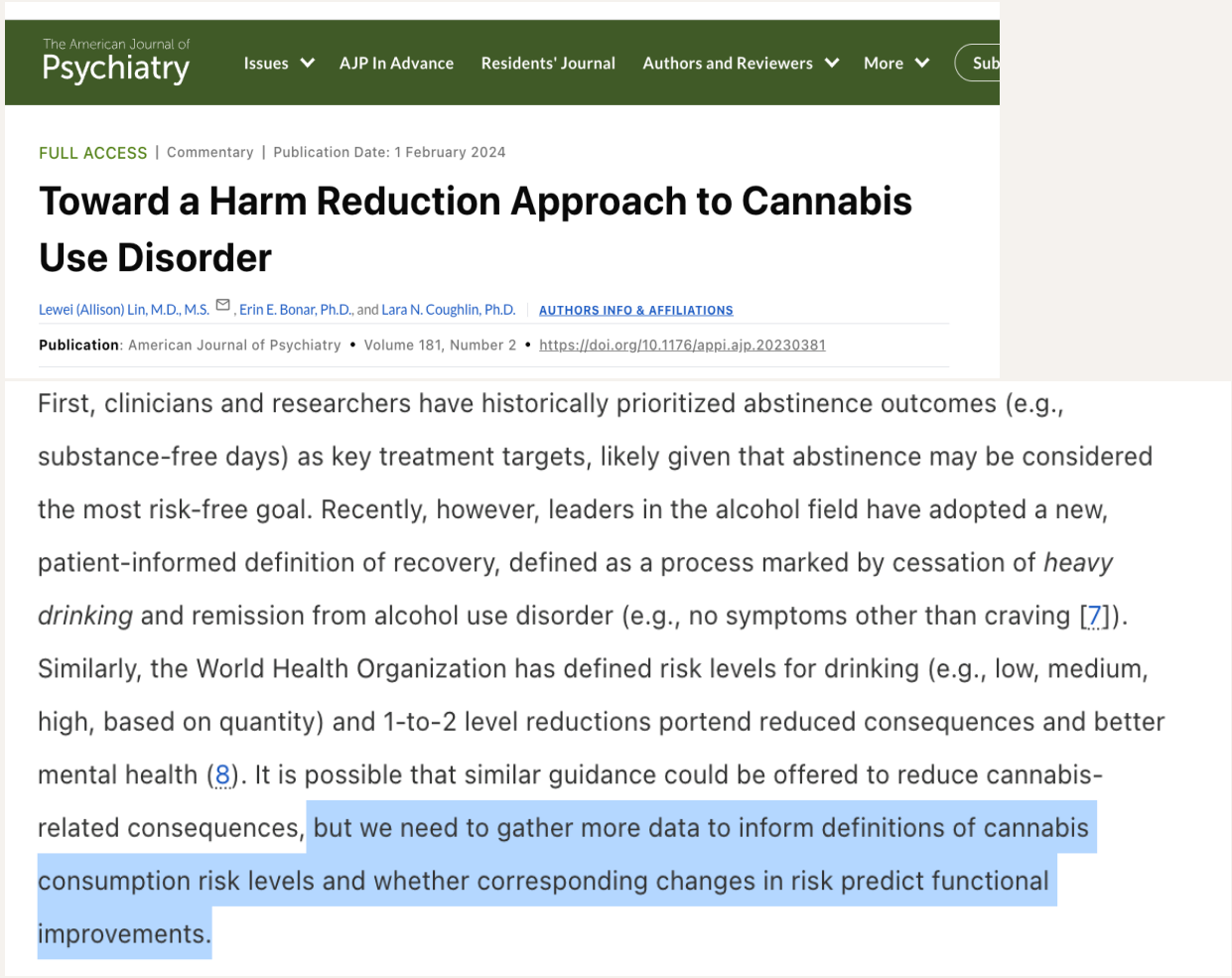
Rachel Lees Thorne, Will Lawn, Kat Petrilli, Katie Trinci, Anya Borissova, Shelan Ofori, Claire Mokrysz, H. Valerie Curran, Lindsey A. Hines, Tom P. Freeman

First published: 12 January 2026 | https://doi.org/10.1111/add.70263 | VIEW METRICS

Get it @ WUSTL

For pregnant and reproductive-age people, this data is much more limited. Translating risk thresholds from the general population to this context remains an open and active area of research

From the cannabis literature →



The American Journal of Psychiatry

Issues | AJP In Advance | Residents' Journal | Authors and Reviewers | More | Sub

FULL ACCESS | Commentary | Publication Date: 1 February 2024

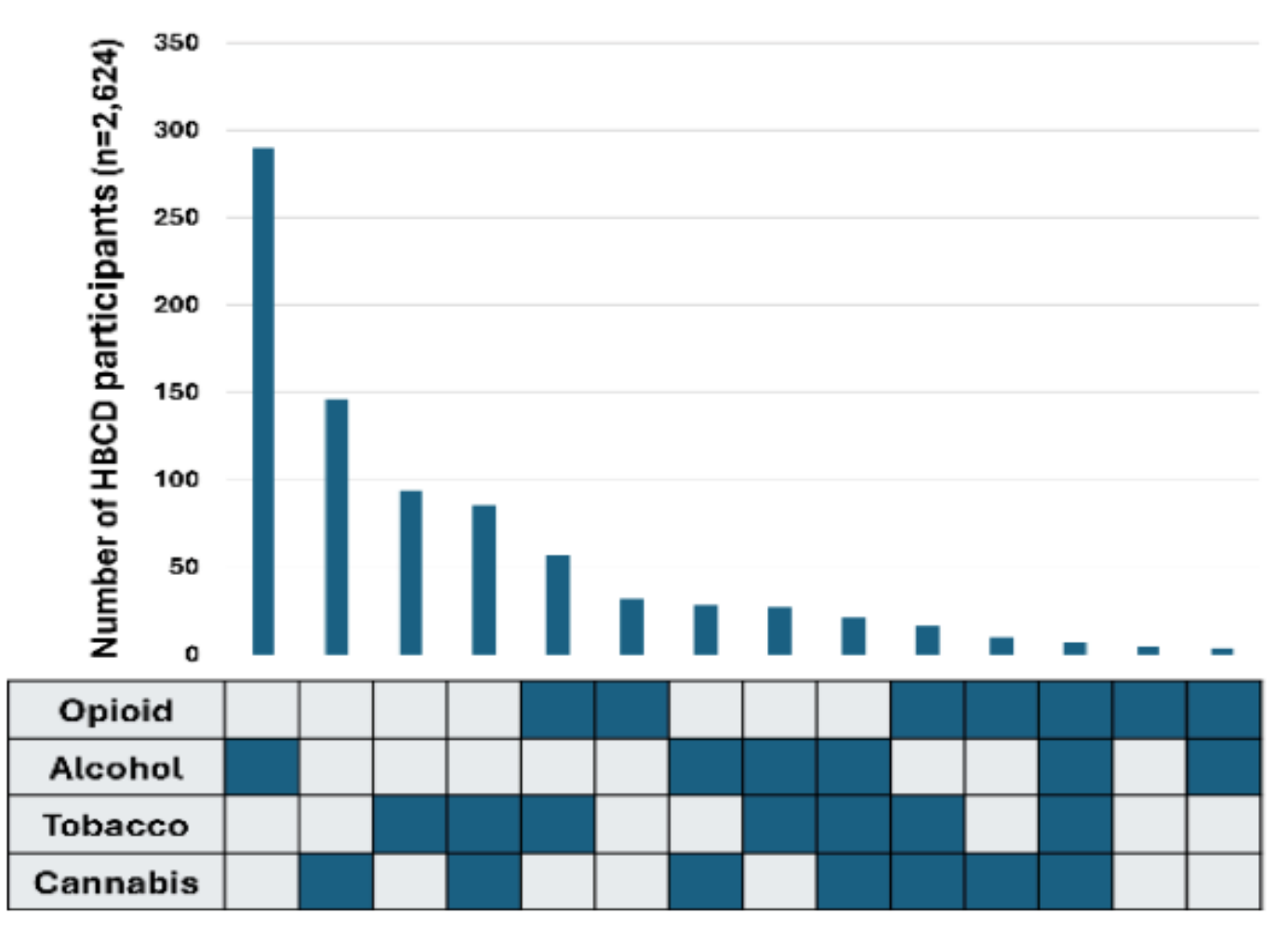
Toward a Harm Reduction Approach to Cannabis Use Disorder

Lewei (Allison) Lin, M.D., M.S., Erin E. Bonar, Ph.D., and Lara N. Coughlin, Ph.D. | AUTHORS INFO & AFFILIATIONS

Publication: American Journal of Psychiatry • Volume 181, Number 2 • https://doi.org/10.1176/appi.ajp.20230381

First, clinicians and researchers have historically prioritized abstinence outcomes (e.g., substance-free days) as key treatment targets, likely given that abstinence may be considered the most risk-free goal. Recently, however, leaders in the alcohol field have adopted a new, patient-informed definition of recovery, defined as a process marked by cessation of *heavy drinking* and remission from alcohol use disorder (e.g., no symptoms other than craving [7]). Similarly, the World Health Organization has defined risk levels for drinking (e.g., low, medium, high, based on quantity) and 1-to-2 level reductions portend reduced consequences and better mental health (8). It is possible that similar guidance could be offered to reduce cannabis-related consequences, but we need to gather more data to inform definitions of cannabis consumption risk levels and whether corresponding changes in risk predict functional improvements.

Alcohol doesn't exist in a silo: Comorbidity and the polysubstance landscape



← Among pregnant people with SUD, comorbidity is the **norm, not exception**

"Besides alcohol use disorder, is there **something else** going on that's highly treatable?"

Source: 2022 NIH HEALthy Brain and Child Development (HBCD) Study data

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Wednesday, November 22, 2023

Overdose deaths increased in pregnant and postpartum women from early 2018 to late 2021

The NEW ENGLAND JOURNAL of MEDICINE

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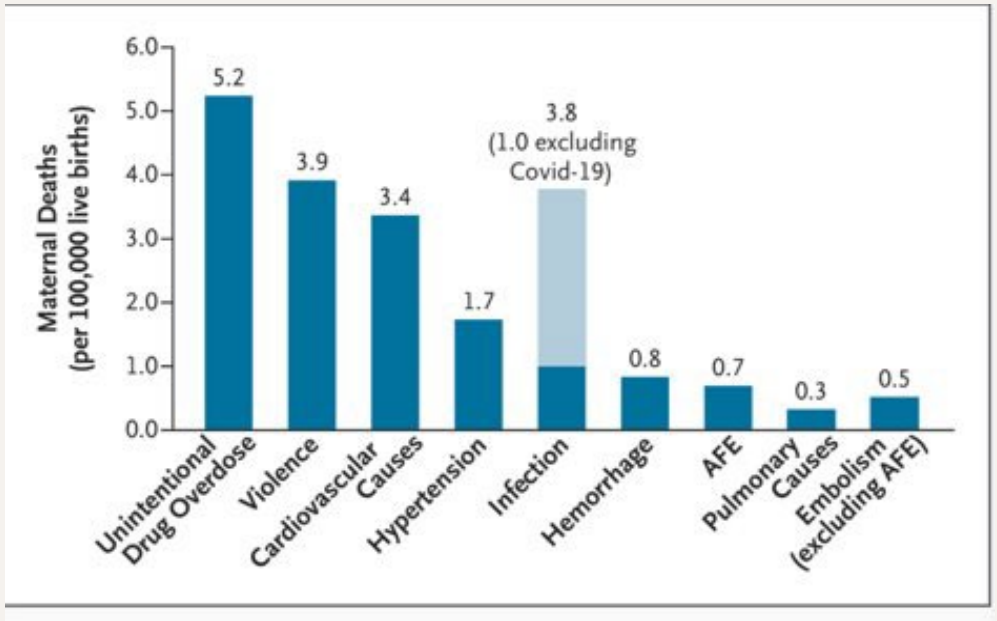
CORRESPONDENCE

Overdose, Homicide, and Suicide as Causes of Maternal Death in the United States

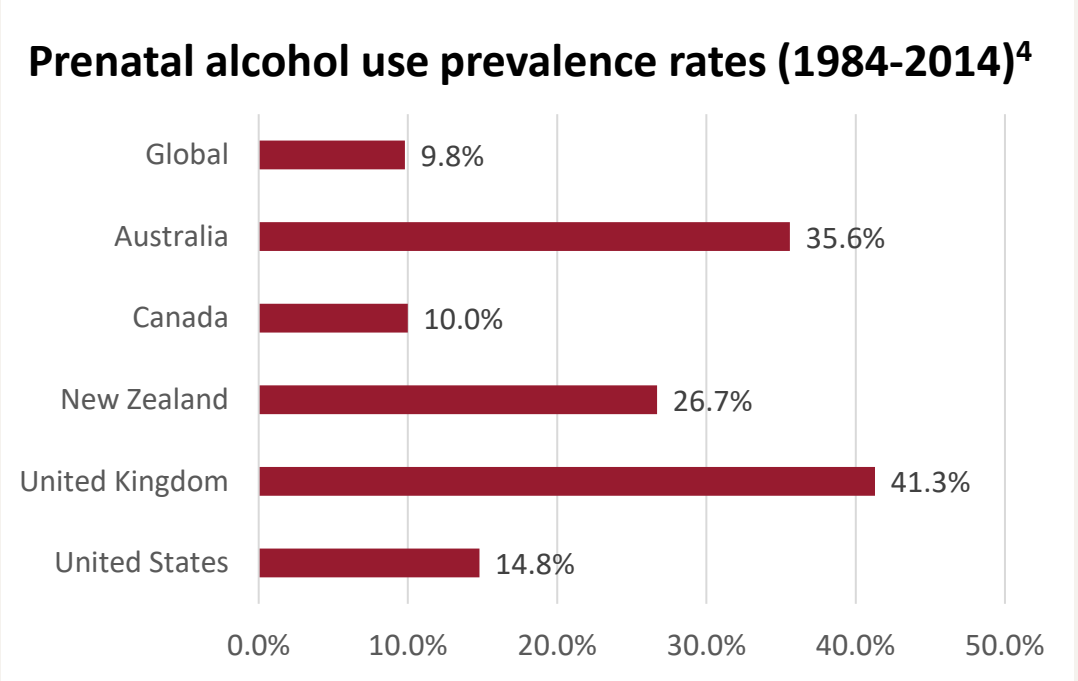
Published February 11, 2026 | N Engl J Med 2026;394:722-723 | DOI: 10.1056/NEJMc2512078 | VOL. 394 NO. 7



Alcohol use and AUD in pregnancy

Prevalence of Alcohol Use & AUD in Pregnancy

- Alcohol use disorder (AUD) is the most common substance use disorder worldwide[1]
- Alcohol use in pregnancy is prevalent in many countries[4]
- Rates of alcohol use and binge drinking in pregnancy have been rising in the US.[5]
- Alcohol has overtaken opioids as the most common substance exposure in the US



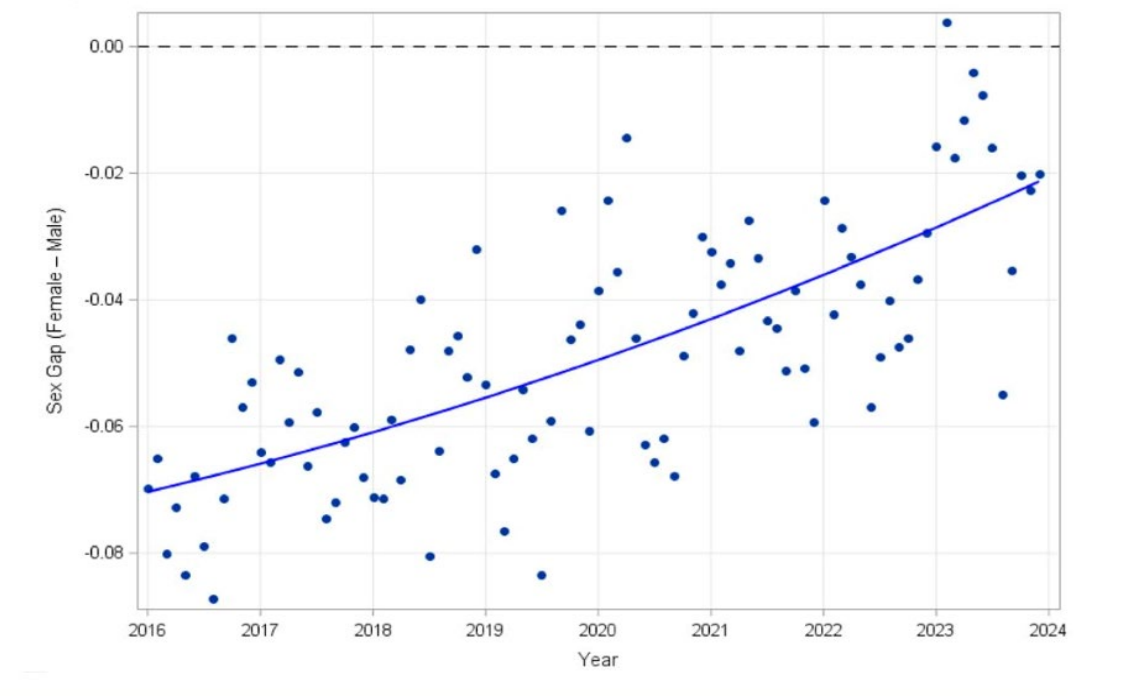
The sex gap for alcohol-related emergency and inpatient admissions is **narrowing** in the US.

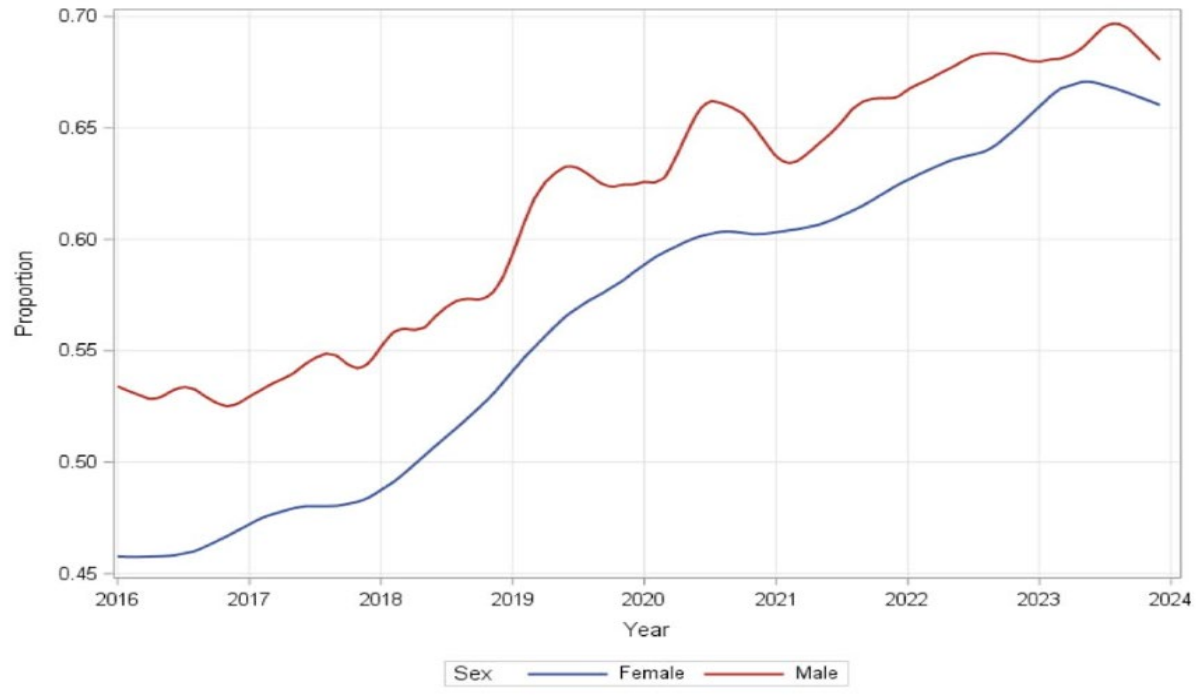
Received: 6 January 2026 | Accepted: 26 February 2026
DOI: 10.1111/acer.70279

RESEARCH ARTICLE

Narrowing differences in the rate of alcohol-related acute care admissions in the United States between women versus men, 2016–2023

Kevin Y. Xu[1,2,3] | Jennifer K. Bello[4] | Joanna L. Buss[2] | Jacob T. Steinle[1,2] | Suraj Shankar[1,2] | Shelly F. Greenfield[5,6,7] | Richard A. Grucza[4] | Davida M. Schiff[8] | Caitlin E. Martin[9,10]





Health Impacts of Alcohol Use & AUD in Pregnancy

- Alcohol use disorder has strong associations to premature mortality[2] and chronic health conditions.[3]
- Prenatal alcohol exposure has well-documented associated harms:
  - Spontaneous abortion
  - Stillbirth
  - Fetal alcohol spectrum disorder (FASD)[6-8]

Alcohol and Pregnancy

If you drink alcohol during pregnancy, your baby may be at risk of lifelong birth defects.

Did You Know?

- No drinks are safe. One beer, one shot of liquor, one mixed drink, and one glass of wine all contain about the same amount of alcohol.
- If you are trying to get pregnant, you should not drink alcohol.
- Didn't know you were pregnant? While no amount or type of alcohol is safe during pregnancy, serious harm is unlikely if you drank before you knew you were pregnant. The most important thing is to stop drinking alcohol when you find out you are pregnant.

Moderate Drinking: What's the Risk?

There is no safe amount or type of alcohol use during pregnancy. Even moderate drinking (one drink a day) can cause lifelong problems for your baby. These problems may be less obvious than those caused by heavy drinking. They may include problems with

- coordination
- behavior
- attention
- learning
- understanding consequences

Heavy Drinking: What's the Risk?

Heavy drinking is having more than three drinks per occasion or more than seven drinks per week. The most severe result of heavy drinking during pregnancy is called fetal alcohol syndrome (FAS). FAS can cause serious birth defects for your baby, including

- problems with brain development
- lower-than-average height and weight
- smaller-than-normal head size
- abnormal facial features

ACOG
The American College of Obstetricians and Gynecologists

Alcohol-related birth defects are completely preventable. Do not drink alcohol during pregnancy.

If it is hard for you to stop drinking, talk with your obstetrician–gynecologist (ob-gyn) about getting help. You can also visit the Alcoholics Anonymous website at www.aa.org or call the Substance Abuse and Mental Health Services Administration's treatment referral line at 800-662-HELP (4357).

During your first prenatal visit, or at any time throughout your pregnancy, your ob-gyn can offer advice about avoiding alcohol while pregnant. The American College of Obstetricians and Gynecologists believes that pregnant people who are dependent on alcohol should receive counseling and medical support to help them stop drinking.

ACOG
The American College of Obstetricians and Gynecologists

Addressing Alcohol Use & AUD in Pregnancy

- Evidence-based treatment guidelines for AUD during pregnancy remain limited.[9]
- Most birthing patients with AUD do not receive medication for AUD (MAUD) in US- and Australia-based samples. [10-12]
- Treating AUD during pregnancy presents unique clinical considerations.
  - Human clinical studies on the safety and effectiveness of MAUD during pregnancy are lacking.
- For those who do receive MAUD during pregnancy, first trimester MAUD discontinuation is widespread.[12]
  - The consequences of MAUD discontinuation to the dyad are poorly understood.

After a Pregnant Person Stops Drinking: What Comes Next?

- There are several mental health issues to navigate when patients are in early recovery.
  - Difficulty regulating emotions[37]
  - Anxiety[38,39]
  - Depressive symptoms[38,39]
- This usually falls on OBGYNs, as access to mental health specialists is sparse.[40,41]

Study objective and methodology

Study Objective

- Systematically review major clinical practice guidelines (CPGs) worldwide
- Examine how perinatal alcohol use and AUD treatment, particularly MAUD, are addressed by CPGs
- Guided by the AUD Cascade of Care framework,[13,14] we assessed the extent to which current guidelines provide recommendations across key stages of treatment:
  - Diagnosis
  - Engagement
  - Initiation
  - Retention

PICAR Framework and CPG Eligibility Criteria

- **Population:** pregnant people who use alcohol or have AUD
- **Interventions:** interventions for AUD (i.e., medication, psychosocial intervention, screening, and brief intervention) with any/no comparator
- **Content:** guidelines on AUD treatment in pregnancy from professional medical organizations in English-speaking countries (2014-present)
- **Attributes and Recommendations of eligible CPGs:** recommendations for AUD treatment, screening, or management during pregnancy

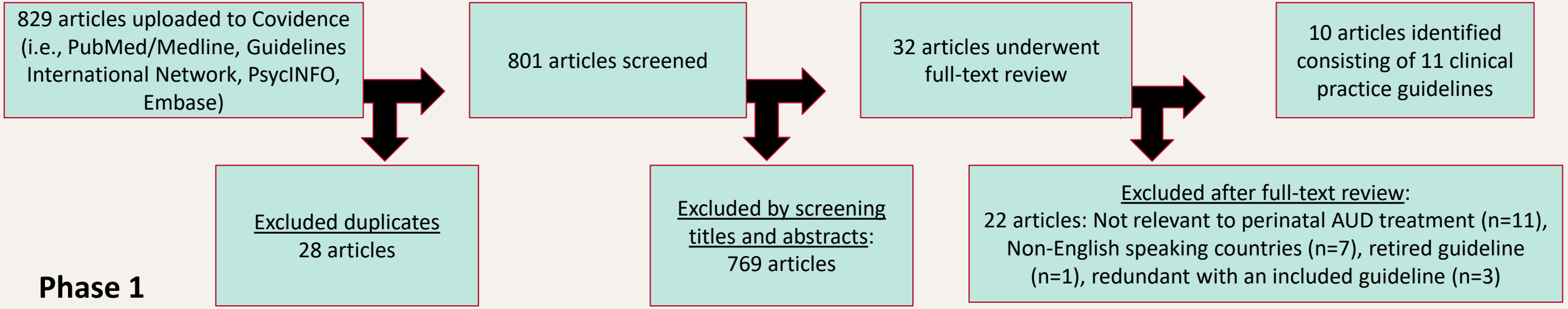
Search Strategy and Study Selection

- **Phase 1:** PubMed and major guidelines database search
  - Search terms related to substance use, AUD, pregnancy, and CPGs
  - Two reviewers independently reviewed abstracts using Covidence
  - Full-text articles obtained if they:
    - Focused on substance use or mental health during pregnancy
    - Served an audience of pregnant patient-facing clinicians.
- **Phase 2:** Evaluation of gray literature (i.e., professional society, government health department, and regulatory agency websites)

Data Extraction & Quality Assessment

- Extracted guideline characteristics
- Classified guidelines on their primary focus and scopes
- Extracted recommendations on AUD treatment during pregnancy
- Quality assessment performed via AGREE-REX (Appraisal of Guidelines Research and Evaluation-Recommendations Excellence) framework[15]

PRISMA Diagram



Phase 2

216 additional clinical practice guidelines **beyond** those identified in Phase 1 (i.e., government agencies, professional society websites, additional databases that were incompatible with Covidence)

7 additional clinical practice guidelines identified: Trip database (n=1), NDARC (n=2), RANZCP (n=2), APA (n=1), AAFP (n=1)

Excluded after full-text review: Trip (n=7), NHMRC (n=2), NICE (n=1), SIGN (n=1), RNAO (n=1), Guideline Central (n=6), Perinatal Series BC (n=3), NZMOH (n=4), Epistemonikos (n=2), BCCSU (n=1), CRISM (n=2), AAFP (n=32), APA (n=25), RANZCP (n=30), CCSA (n=46), NDARC (n=17)

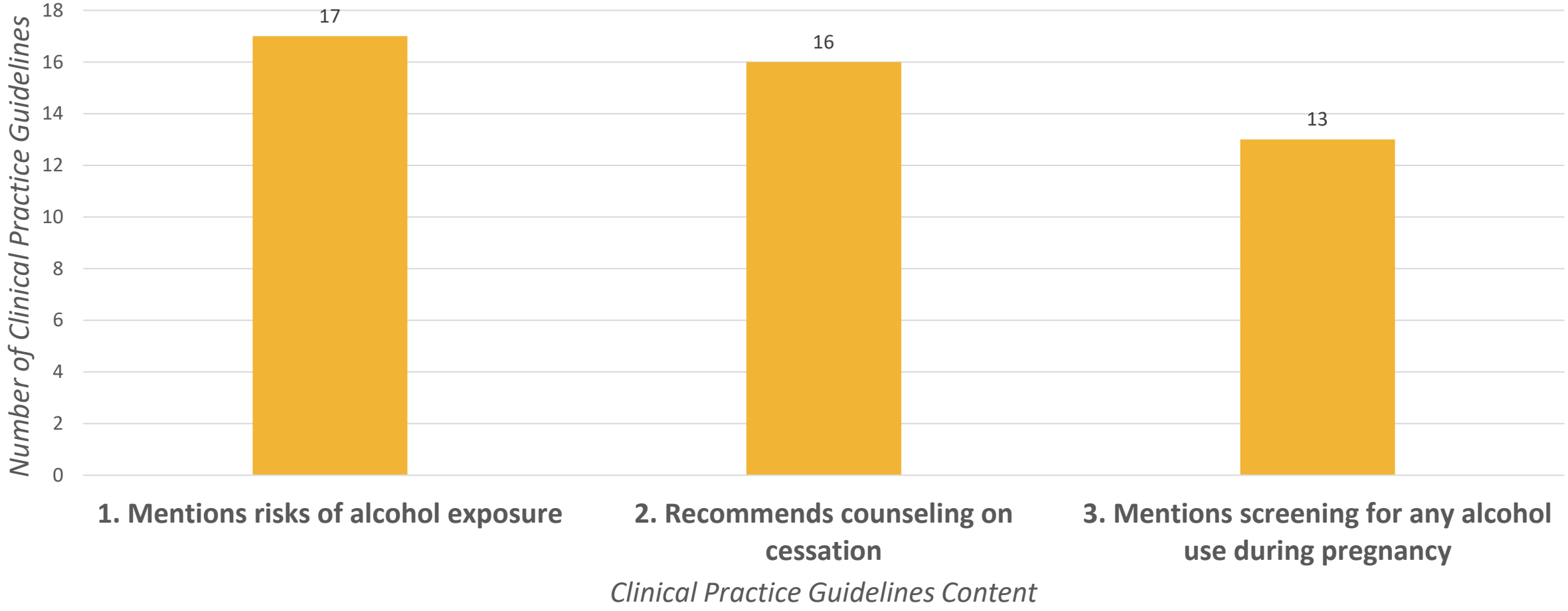
Abbreviations of Excluded CPGs: BCCSU = British Columbia Centre on Substance Use; NHMRC = National Health and Medical Research Council; NZMOH = New Zealand Ministry of Health; Perinatal Series BC = Perinatal Series British Columbia; RNAO = Registered Nurses' Association of Ontario; SIGN = Scottish Intercollegiate Guidelines Network

CPGs Included in Analysis

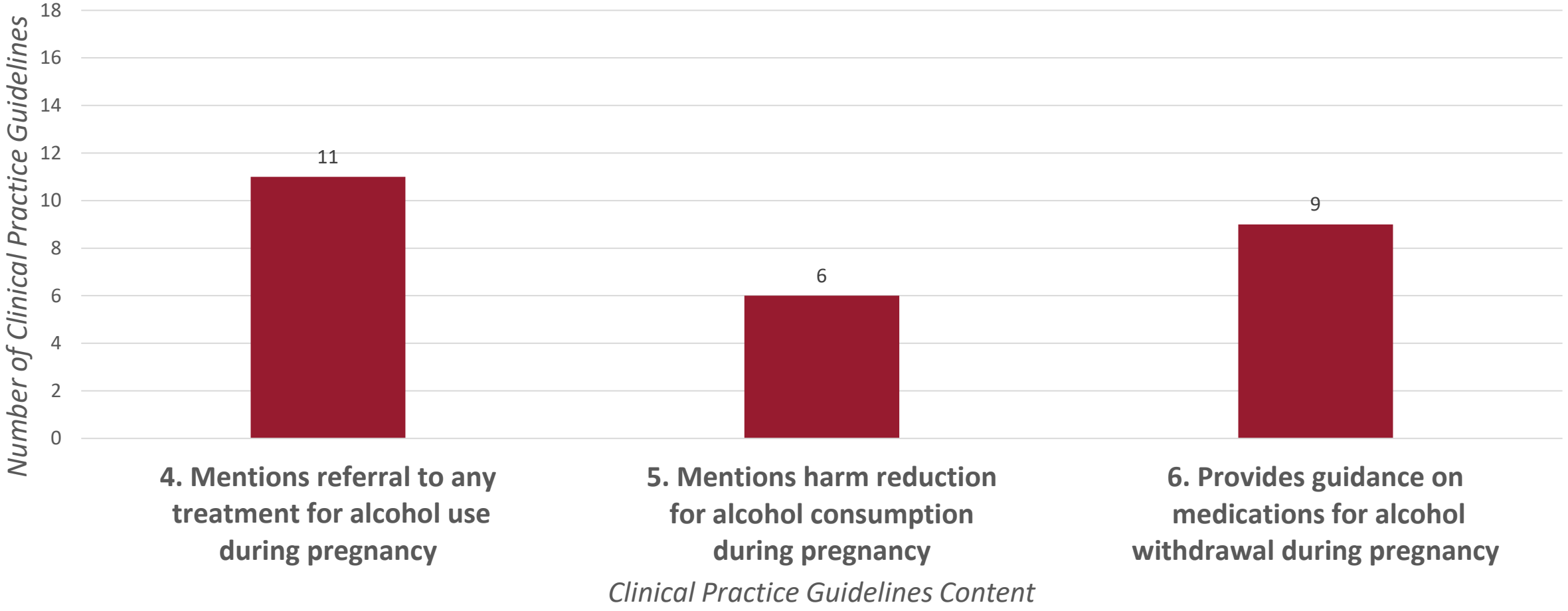
Country	Abbreviation	Organization Name	# of CPGs
Australia & New Zealand (4)	NDARC	National Drug & Alcohol Research Centre	1
	RANZCP	Royal Australian and New Zealand College of Psychiatrists	2
	RANZCOG	Royal Australian and New Zealand College of Obstetricians and Gynaecologists	1
Canada (3)	CCSA	Canadian Centre on Substance Use and Addiction	1
	CRISM	Canadian Research Initiative in Substance Misuse	1
	SOGC	Society of Obstetricians and Gynaecologists of Canada	1
International (2)	WFSBP & IAWMH	World Federation of Societies of Biological Psychiatry & International Association for Women's Mental Health	1
	WHO	World Health Organization	1
United Kingdom (1)	NICE	National Institute for Health and Care Excellence	1
United States (8)	AAFP	American Academy of Family Physicians	1
	ACOG	American College of Obstetricians and Gynecologists	1
	APA	American Psychiatric Association	3
	ASAM	American Society of Addiction Medicine	1
	USPSTF	U.S. Preventive Services Task Force	1
	VA	Veterans Affairs/Department of Defense	1

Findings in CPGs: What recommendations exist?

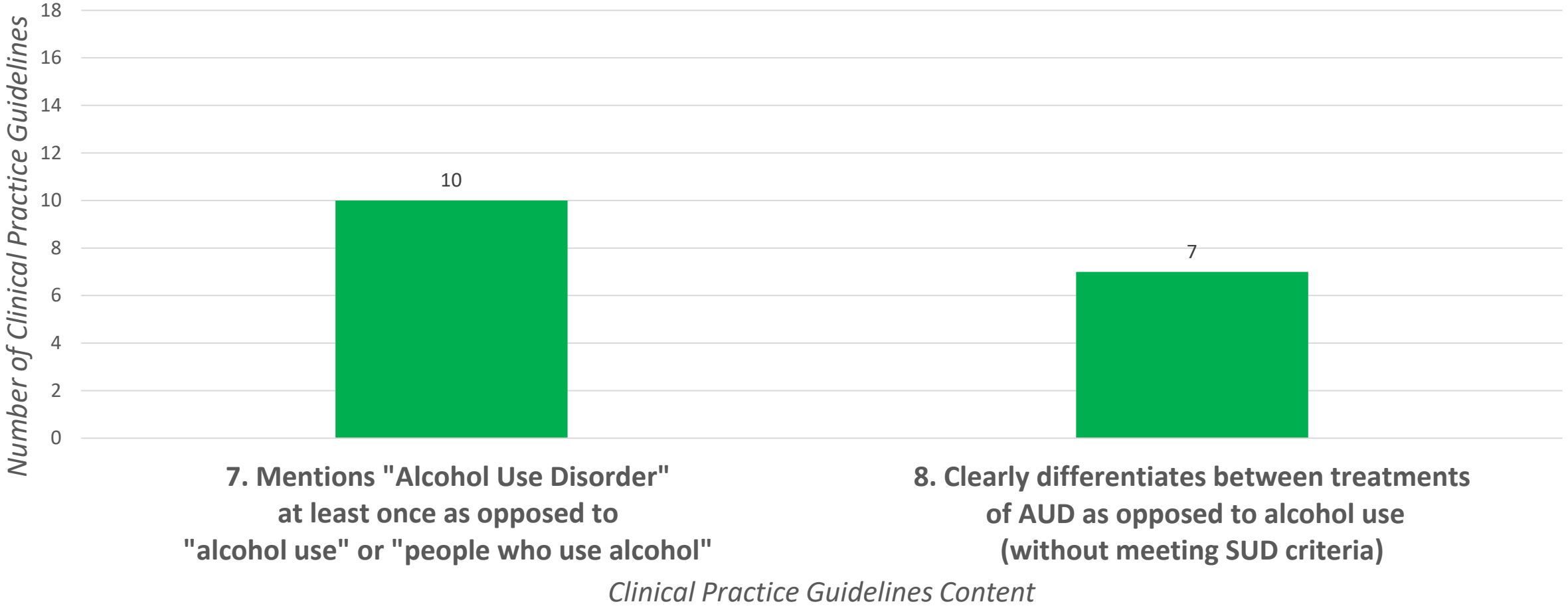
CPGs' General Approach to Alcohol Use in Pregnancy (n=18)



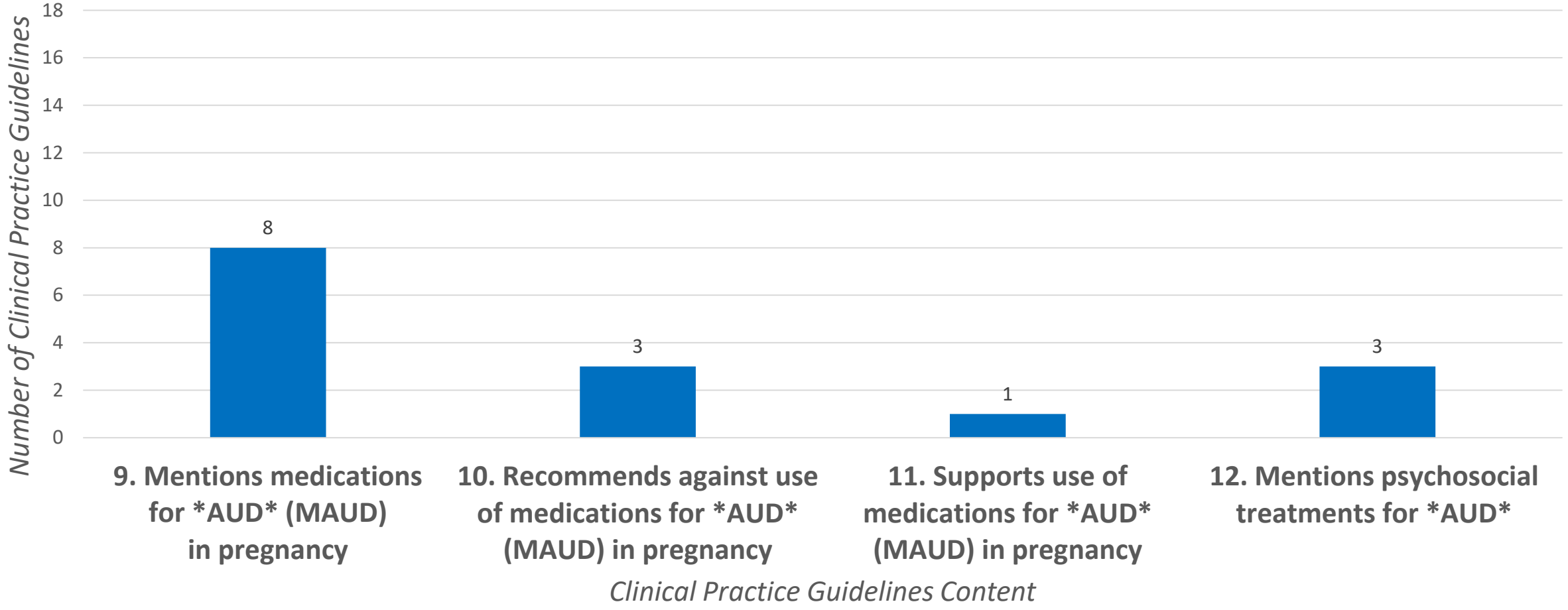
CPGs' Clinical Management of Alcohol Use in Pregnancy (n=18)



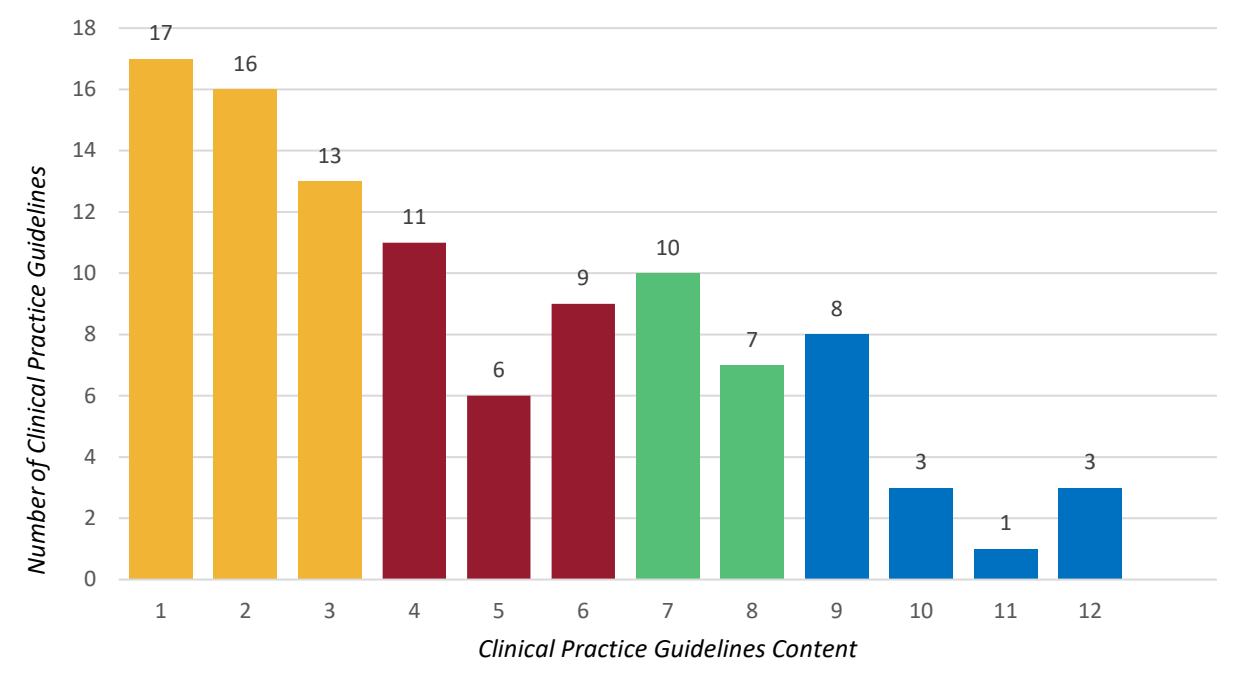
CPGs' AUD Terminology and Conceptualization (n=18)



CPGs' Specific Guidance for AUD Treatment (n=18)



CPGs' Overall Approach to Perinatal Alcohol Use/AUD



General Approach to Alcohol Use in Pregnancy (orange):
1. Mentions risks of alcohol exposure
2. Recommends counseling on cessation
3. Mentions screening for any alcohol use during pregnancy

Clinical Management of Alcohol Use in Pregnancy (red):
4. Mentions referral to any treatment for alcohol use during pregnancy
5. Mentions harm reduction for alcohol consumption during pregnancy
6. Provides guidance on medications for alcohol withdrawal during pregnancy

AUD Terminology and Conceptualization (green):
7. Mentions "Alcohol Use Disorder" at least once as opposed to "alcohol use" or "people who use alcohol"
8. Clearly differentiates between treatments of AUD as opposed to alcohol use (without meeting SUD criteria)

Specific Guidance for AUD Treatment (blue)
9. Mentions medications for *AUD* (MAUD) in pregnancy
10. Recommends against use of medications for *AUD* (MAUD) in pregnancy
11. Supports use of medications for *AUD* (MAUD) in pregnancy
12. Mentions psychosocial treatments for *AUD*

Four CPGs were equivocal about MAUD in pregnancy

“Given that the safety and efficacy of medications for the treatment of alcohol dependence has not been established in pregnancy, an individual risk benefit analysis should be conducted for each woman.” – WHO (International)

"Effective pharmacological treatments . . . to maintain abstinence from alcohol (such as disulfiram, naltrexone and acamprosate) have not been adequately assessed for safety and efficacy in pregnant women." – NDARC (Australia/New Zealand)

Three CPGs recommended against MAUD in pregnancy

“Due to the low level of evidence and/or to low benefit/risk ratio, pharmacological treatment for maintenance of abstinence should not be used during pregnancy.” – WFSB & IAWMH (International)

"With pharmacotherapies for AUD, there is limited evidence regarding the potential risks to an exposed fetus or infant…For these reasons, it is recommended that nonpharmacological interventions be used preferentially for treating AUD in pregnancy.” – APA (United States)

One CPG supported naltrexone and acamprosate use in pregnancy

Naltrexone: "Emerging literature from opioid use disorder suggests [naltrexone is] safe in pregnancy. Prescribe only if benefit of use outweighs risk" – SOGC (Canada)

Acamprosate: "Preliminary evidence suggests acamprosate safe in pregnancy. Prescribe only if benefit of use outweighs risk" – SOGC (Canada)

Implications for practice

Screen and Say ‘Just Don’t Drink’

- There was **abundant guidance about alcohol *use* in pregnancy.**
  - Most advised universal screening and counseling to not drink in pregnancy.

- **Actionable guidance on managing AUD in pregnancy was limited.**
  - Guidance stopped at referral to specialty care or withdrawal management.
  - Minimal information on MAUD or psychosocial treatment

Strengths & Limitations

- The lack of treatment recommendations does not signify poor-quality guidelines.
  - Most scored well in applicability, values and preferences, and feasibility.
  - The lack of guidance appears to stem from **gaps in the evidence base**.

- We only examined English-language documents from predominantly English-speaking nations.
  - WHO guidelines are designed to be globally applicable and are widely translated and adopted internationally.

- Another limitation is our exclusive focus on pregnancy and not postpartum management of AUD.

Guidelines Reflect Uncertainties Faced by Clinicians

- Most acknowledged that **the risks of MAUD in pregnancy are not well characterized** and advised individualized decision-making.
- **Most guidelines adopted a cautious, equivocal stance on MAUD.**
- This uncertainty leaves patients and clinicians with difficult choices.
  - People with AUD who are planning pregnancy must weigh the risks of continuing vs. discontinuing MAUD.
  - Many discontinue medications during pregnancy to avoid fetal exposure.[16]
  - **While the use of acamprosate and naltrexone are under-researched, the available data does not show harm.[17,18]**
  - Conversely, the harm of untreated AUD for mother and infant are well-known.

A Misalignment Persists

- There is a misalignment:
  - **Strong consensus on alcohol use screening and abstinence counseling;** and organizations demonstrating rigorous guideline development processes

  - Yet **limited guidance for the management of AUD** during pregnancy

The discontinuation of medication to treat alcohol use disorder is essentially **universal** in pregnancy.

RESEARCH ARTICLE

ALCOHOL CLINICAL & EXPERIMENTAL RESEARCH

Discontinuation of treatment for alcohol use disorder during pregnancy and postpartum in the United States

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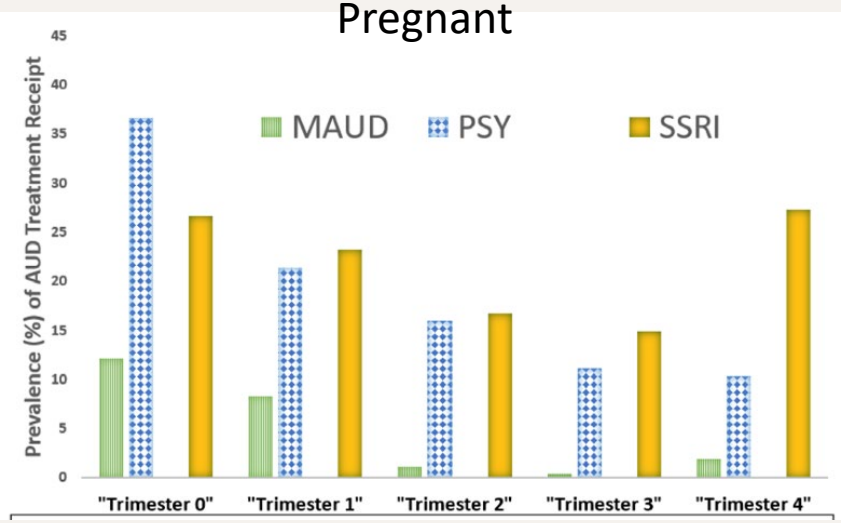
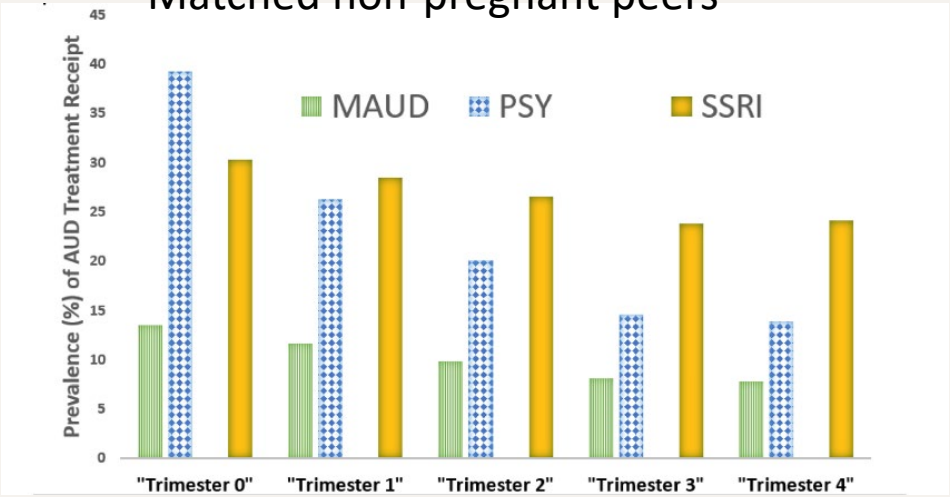
Pregnant



Matched non-pregnant peers



Next Steps

- Emphasize shared decision-making in CPGs
- Include guidance on psychosocial interventions
- Prioritize strengthening evidence on MAUD in pregnancy

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- The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH.

References

1. Volkow ND, Blanco C. Substance use disorders: a comprehensive update of classification, epidemiology, neurobiology, clinical aspects, treatment and prevention. World Psychiatry. 2023 Jun;22(2):203-29.
2. Kendler KS, Ohlsson H, Sundquist J, Sundquist K. Alcohol Use Disorder and Mortality Across the Lifespan: A Longitudinal Cohort and Co-relative Analysis. *Jama Psychiat.* 2016;73(6):575-581.
3. Udo T, Vasquez E, Shaw BA. A lifetime history of alcohol use disorder increases risk for chronic medical conditions after stable remission. *Drug Alcohol Depend.* 2015;157:68-74.
4. Popova S, Lange S, Probst C, Gmel G, Rehm J. Estimation of national, regional, and global prevalence of alcohol use during pregnancy and fetal alcohol syndrome: a systematic review and meta-analysis. *Lancet Glob Health.* 2017;5(3):e290-e299.
5. World Health Organization. Guidelines for Identification and Management of Substance Use and Substance Use Disorders in Pregnancy. Geneva, Switzerland: World Health Organization; 2014. Published November 19, 2014.
6. Curry SJ, Krist AH, Owens DK, et al. Screening and Behavioral Counseling Interventions to Reduce Unhealthy Alcohol Use in Adolescents and Adults US Preventive Services Task Force Recommendation Statement. *Jama-J Am Med Assoc.* 2018;320(18):1899-1909.
7. Shchetinina A, Slopen N. Unmet need for alcohol use disorder treatment in reproductive-age females, with emphasis on pregnant and parenting populations in the United States: Findings from NSDUH 2015-2021. PLoS One. 2024;19(4):e0301810.
8. Tsakiridis I, Oikonomidou AC, Bakaloudi DR, Dagklis T, Papazisis G, Chourdakis M. Substance Use During Pregnancy: A Comparative Review of Major Guidelines. Obstet Gynecol Surv. 2021 Oct;76(10):634-643. doi: 10.1097/OGX.0000000000000943. PMID: 34724075.
9. Lessard C, Li Y, Lin BY, et al. Alcohol Use Disorder During Pregnancy: Harmonizing Multiple Datasets. *J Addict Med.* 2025.
10. Roberts SC, Liu G, Terplan M. Medications for Alcohol Use Disorder among Birthing People with an Alcohol-related Diagnosis. *J Addict Med.* 2024.
11. Mintz CM, Hartz SM, Fisher SL, et al. A cascade of care for alcohol use disorder during pregnancy and postpartum in the United States. 2025. In Press. Alcohol: Clinical and Experimental Research. .
12. Mintz CM, Hartz SM, Fisher SL, et al. A cascade of care for alcohol use disorder: Using 2015-2019 National Survey on Drug Use and Health data to identify gaps in past 12-month care. *Alcohol Clin Exp Res.* 2021;45(6):1276-1286.
13. Mintz CM, Knox J, Hartz SM, et al. Demographic differences in the cascade of care for unhealthy alcohol use: A cross-sectional analysis of data from the 2015-2019 National Survey on Drug Use and Health. *Alcohol Clin Exp Res (Hoboken).* 2023;47(10):1890-1903.
14. Brouwers MC, Spithoff K, Kerkvliet K, Alonso-Coello P, Burgers J, Cluzeau F, Férvers B, Graham I, Grimshaw J, Hanna S, Kastner M, Kho M, Qaseem A, Straus S, Florez ID. Development and Validation of a Tool to Assess the Quality of Clinical Practice Guideline Recommendations. JAMA Netw Open. 2020 May 1;3(5):e205535.
15. AGREE-REX Research Team. The Appraisal of Guidelines Research & Evaluation—Recommendation EXcellence (AGREEREX) [electronic version]. 2019. Accessed [Month Day, Year]. https://www.agreetrust.org/wp-content/uploads/2021/07/AGREE-REX-Tool-PDF-version.pdf.
16. Chisolm MS, Payne JL. Management of psychotropic drugs during pregnancy. *BMJ*. 2016;532:h5918. doi:10.1136/bmj.h5918
17. Kelty E, Tran D, Lavin T, Preen DB, Hulse G, Havard A. Prevalence and safety of acamprosate use in pregnant alcohol-dependent women in New South Wales, Australia. *Addiction.* 2019;114(2):206-215.
18. Towers CV, Katz E, Weitz B, Visconti K. Use of naltrexone in treating opioid use disorder in pregnancy. *Am J Obstet Gynecol.* 2020;222(1).
19. World Health Organization. Guidelines for the identification and management of substance use and substance use disorders in pregnancy. Geneva, Switzerland: World Health Organization; 2014. Accessed May 2, 2025. https://www.who.int/publications/i/item/9789241548731.
20. Royal Australian and New Zealand College of Obstetricians and Gynaecologists. Substance Use in Pregnancy. Accessed May 2, 2025. https://ranzcog.edu.au/wp-content/uploads/Substance-Use-Pregnancy.pdf.

21. National Drug and Alcohol Research Centre. Supporting Pregnant Women Who Use Alcohol or Other Drugs: A Review of the Evidence. Sydney, Australia: University of New South Wales; 2014. Accessed May 2, 2025. https://ndarc.med.unsw.edu.au/sites/default/files/ndarc/resources/Supporting%20Pregnant%20Women%20who%20use%20Alcohol%20or%20Other%20Drugs%20-%20A%20review%20of%20the%20evidence.pdf.
22. Royal Australian and New Zealand College of Psychiatrists. Recognising and Reducing Alcohol-Related Harm. Accessed May 2, 2025. https://www.ranzcp.org/clinical-guidelines-publications/clinical-guidelines-publications-library/recognising-and-reducing-alcohol-related-harm.
23. Royal Australian and New Zealand College of Psychiatrists. Alcohol Policy. Accessed May 2, 2025. https://www.ranzcp.org/clinical-guidelines-publications/clinical-guidelines-publications-library/alcohol-policy.
24. Graves L, Carson G, Poole N, et al. Guideline No. 405: Screening and Counselling for Alcohol Consumption During Pregnancy. J Obstet Gynaecol Can. 2020;42(9):1158-1173.e1. doi:10.1016/j.jogc.2020.03.002. PMID: 32900457.
25. Canadian Centre on Substance Use and Addiction. Summary of Evidence and Guidelines for Low-Risk Drinking. 2011. Accessed May 2, 2025. https://www.ccsa.ca/sites/default/files/2019-04/2011-Summary-of-Evidence-and-Guidelines-for-Low-Risk%20Drinking-en.pdf.
26. British Columbia Centre on Substance Use. Canadian AUD Guidelines. 2023. Accessed May 2, 2025. https://www.bccsu.ca/wp-content/uploads/2023/10/Canadian-AUD-guidelines_ENG.pdf.
27. National Institute for Health and Care Excellence. Alcohol-Use Disorders: Diagnosis, Assessment and Management of Harmful Drinking and Alcohol Dependence (CG192). London, UK: NICE; 2011. Accessed May 2, 2025. https://www.nice.org.uk/guidance/cg192.
28. American College of Obstetricians and Gynecologists. Committee Opinion No. 633: Alcohol abuse and other substance use disorders: ethical issues in obstetric and gynecologic practice. Obstet Gynecol. 2015;125(6):1529-1537. doi:10.1097/01.AOG.0000466371.86393.9b. PMID: 26000541.
29. American Society of Addiction Medicine. The ASAM Clinical Practice Guideline on Alcohol. 2020. Accessed May 2, 2025. https://www.asam.org/docs/default-source/quality-science/the_asam_clinical_practice_guideline_on_alcohol-1.pdf.
30. American Psychiatric Association. Position Statement on Assuring the Appropriate Care for Persons with Substance Use Disorders. 2019. Accessed May 2, 2025. https://www.psychiatry.org/about-apa/policy-finder/position-statement-on-assuring-the-appropriate-car.
31. American Psychiatric Association. The American Psychiatric Association Practice Guideline for the Pharmacological Treatment of Patients With Alcohol Use Disorder. 2018. Accessed May 2, 2025. https://psychiatryonline.org/doi/book/10.1176/appi.books.9781615371969.
32. American Psychiatric Association. Maternal Mental Health Toolkit. 2023. Accessed May 2, 2025. https://www.psychiatry.org/psychiatrists/practice/professional-interests/women-s-mental-health/maternal-mental-health-toolkit.
33. American Academy of Family Physicians. Substance Use Disorders Policy. 2019. Accessed May 2, 2025. https://www.aafp.org/about/policies/all/substance-use-disorders.html#pregnant.
34. O'Connor EA, Perdue LA, Senger CA, et al. Screening and Behavioral Counseling Interventions to Reduce Unhealthy Alcohol Use in Adolescents and Adults: Updated Evidence Report and Systematic Review for the US Preventive Services Task Force. JAMA. 2018;320(18):1910-1928. doi:10.1001/jama.2018.12086. PMID: 30422198.
35. U.S. Department of Veterans Affairs. VA/DoD Clinical Practice Guideline for the Management of Substance Use Disorders. 2021. Accessed May 2, 2025. https://www.healthquality.va.gov/guidelines/mh/sud/.
36. Thibaut F, Chagraoui A, Buckley L, Gressier F, Labad J, Lamy S, Potenza MN, Rondon M, Riecher-Rössler A, Soyka M, Yonkers K. WFSBP * and IAWMH ** Guidelines for the treatment of alcohol use disorders in pregnant women. World J Biol Psychiatry. 2019 Jan;20(1):17-50. doi: 10.1080/15622975.2018.1510185. PMID: 30632868.
37. Alcohol and Pregnancy. Accessed October 24, 2025. https://www.acog.org/womens-health/infographics/alcohol-and-pregnancy
38. Emery NN, Walters KJ, Njeim L, Barr M, Gelman D, Eddie D. Emotion differentiation in early recovery from alcohol use disorder: Associations with in-the-moment affect and 3-month drinking outcomes. *Alcohol Clin Exp Res*. 2022;46(7):1294-1305. doi:10.1111/acer.14854
39. Rabinowitz JA, Ellis JD, Wells J, et al. Correlates and consequences of anxiety and depressive symptom trajectories during early treatment for alcohol use. *Alcohol Fayettev N*. 2023;108:44-54. doi:10.1016/j.alcohol.2022.11.005
40. Gopaldas M, Flook EA, Hayes N, Benningfield MM, Blackford JU. Subgroups of anxiety and depression trajectories during early abstinence in alcohol use disorder. *Alcohol Clin Exp Res*. 2025;49(5):1086-1096. doi:10.1111/acer.70032
41. Wilson CA, Bublitz M, Chandra P, et al. A global perspective: Access to mental health care for perinatal populations. *Semin Perinatol*. 2024;48(6):151942. doi:10.1016/j.semperi.2024.151942
42. Koire A, Suleiman M, Teslyar P, Liu CH. Prevalence of Community Perinatal Psychiatrists in the US. *JAMA Netw Open*. 2024;7(8):e2426465. doi:10.1001/jamanetworkopen.2024.26465

Thank you so much!

Questions?

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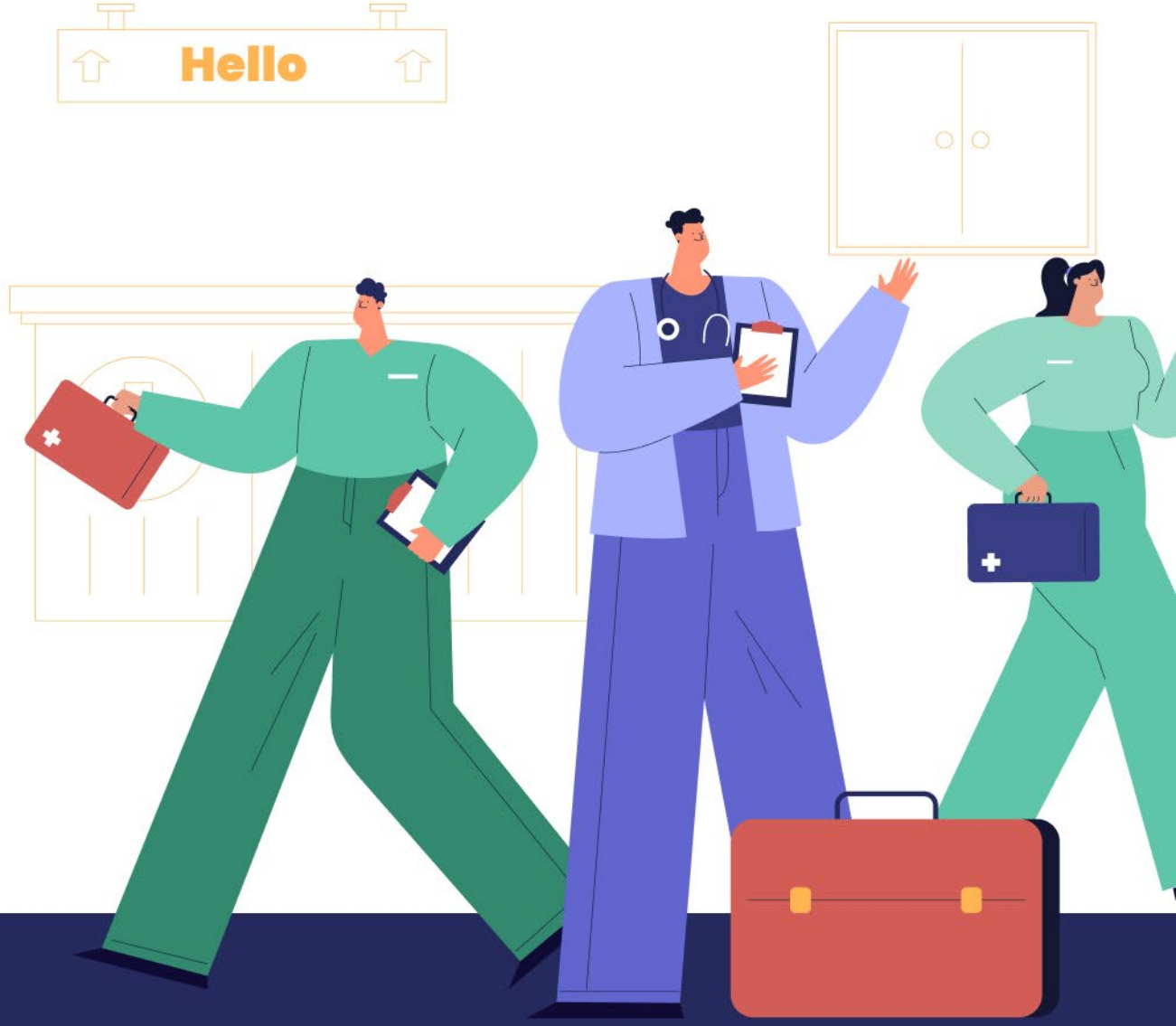
WashU Medicine

Understanding FASD: From Stigma to Support

Reframing brain-based differences to transform outcomes for individuals and systems



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Understanding the spectrum of prenatal alcohol exposure and its impact on neurodevelopment.

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Exploring why most individuals with FASD remain unidentified and misdiagnosed throughout life.

03. Maternal Support Matters

Addressing stigma and creating compassionate systems that enable early identification and intervention.

04. Neurobehavioral Framework & Recommendations

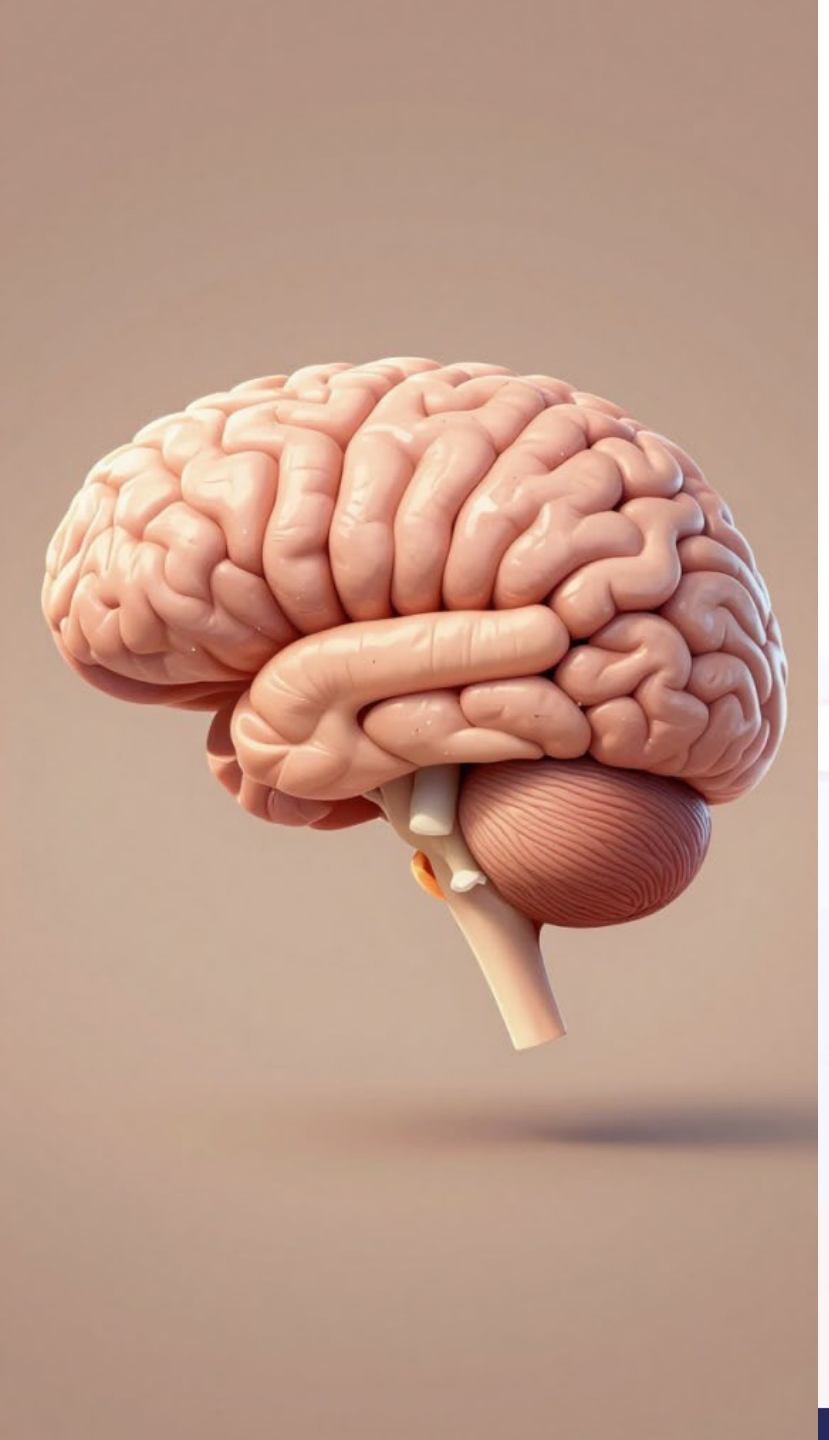
Practical approaches to case management and system-level changes for Vermont.

The Opening Scenario: When Bright Children Are Misunderstood

> **"Imagine a child who is bright, funny, and curious. Yet every day they are told they are lazy, defiant, or not trying hard enough."**

Many of these individuals may have Fetal Alcohol Spectrum Disorder (FASD) one of the most common developmental disabilities, yet one of the least recognized.

1. **Estimated 1–5% prevalence in the US**
2. **Most individuals remain undiagnosed throughout their lives**
3. **Present in child welfare, education, and justice systems, but rarely identified**



What is FASD? Prenatal Alcohol Exposure Creates Permanent Brain-Based Differences

Spectrum of Disorders

FASD includes Fetal Alcohol Syndrome (FAS), Partial FAS, and Alcohol-Related Neurodevelopmental Disorder (ARND).

Root Cause

Prenatal alcohol exposure affects brain development, creating permanent structural differences.

Brain-Based, Not Behavioral

These are brain differences, not willful behavior or character flaws. Critical reframe needed.

Brain Domains Impacted by FASD

Brain-Based Differences: 'Can't' Not 'Won't'

Executive Functioning

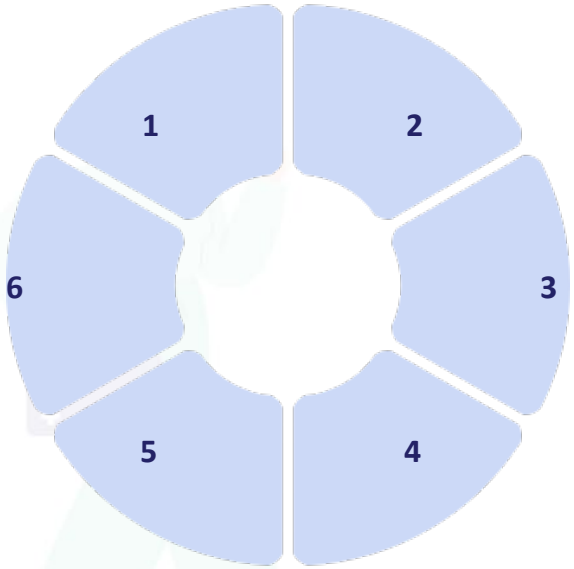
Challenges with planning, organizing tasks, and controlling impulses that affect daily decision making and goal-directed behavior.

Adaptive Functioning

Challenges with daily living skills and social navigation that affect independence, routines, and successful community participation.

Sensory Regulation

Difficulty managing sensory input and emotional responses, often resulting in overwhelm, avoidance, or atypical reactivity to stimuli.



Memory & Learning

Difficulty retaining new information and recalling learned material, impacting academic performance and skill acquisition over time.

Processing Speed

Slower understanding and response to information which can lead to delayed reactions and increased time needed to complete tasks.

Cause-Effect Reasoning

Impaired ability to connect actions with consequences, making it harder to learn from experiences and adjust future behavior accordingly.

The Diagnostic Gap: Why 95% of FASD Cases Go Unidentified

Despite affecting 1–5% of the population, most individuals with FASD never receive a diagnosis. This diagnostic gap creates decades of misunderstanding and inappropriate interventions.

Barriers to Diagnosis

- Maternal shame and stigma
- Lack of universal screening
- Limited trained diagnostic clinics
- Provider unfamiliarity with FASD
- Symptom overlap with other conditions

Consequences

- Labeled with ADHD, ODD, anxiety, learning disabilities, or attachment disorders
- Root cause remains unaddressed
- Secondary symptoms multiply
- Escalating behavioral crises

System Failure: FASD Is Not a Billable Mental Health Diagnosis

1

FASD Not Billable

FASD itself cannot be billed by most mental health agencies, leaving affected individuals without access to diagnosis-driven services.

2

Treat Secondary Symptoms

Systems focus on anxiety, ADHD, and depression rather than the underlying neurodevelopmental condition, resulting in symptom-targeted care.

3

Interventions Fail

Without addressing the neurodevelopmental disability, interventions are mismatched to needs and often fail to produce sustained improvement.

4

Crisis Escalation

Individuals cycle through services as behaviors worsen, leading to repeated crises and exhaustion of both clients and systems.

Financial and clinical misalignment perpetuates the diagnostic gap and treatment failures.

Maternal Stigma: The Primary Barrier to Early Identification

Alcohol use during pregnancy is complex and requires compassionate understanding

Addiction

Substance use disorder is a medical condition that requires evidence-based treatment and support rather than punitive responses, especially during pregnancy.

Untreated Trauma

Unresolved past trauma frequently contributes to substance use during pregnancy; trauma-informed care is essential to address root causes and promote healing.

Poverty & Barriers

Lack of resources, unstable housing, and limited access to healthcare create substantial barriers that prevent pregnant people from obtaining timely support and services.

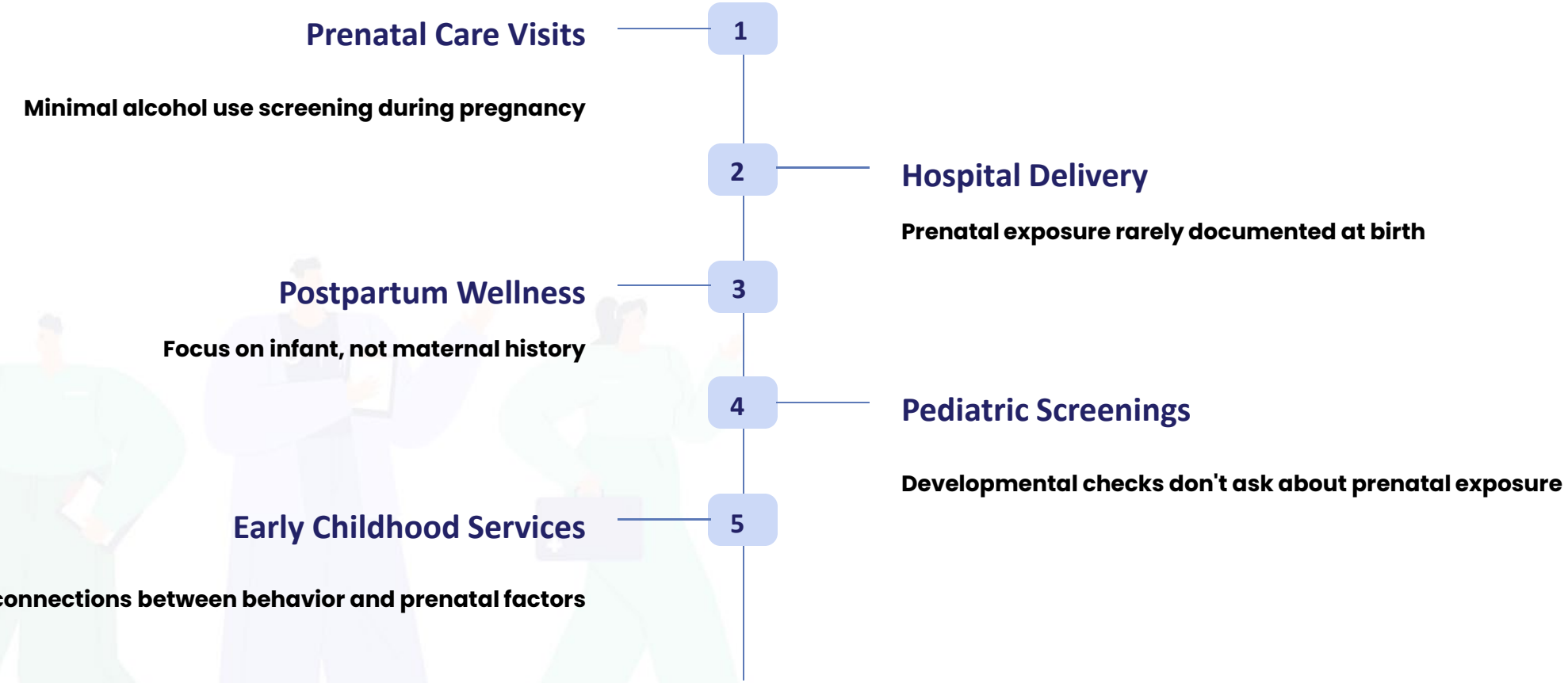
Insufficient Education

Many people have limited awareness of how alcohol affects fetal development; clear, nonjudgmental education is needed to inform safer choices and care.

Stigma Drives Concealment

Fear of judgment, legal consequences, or loss of custody leads many to conceal substance use, preventing early identification and access to supportive interventions.

Missed Screening Opportunities: Critical Windows We're Failing to Use



Early identification could prevent decades of misunderstanding. Every missed screening is a potential life trajectory altered.

Visual emphasis: highlight these missed opportunities with prevention-focused messaging and prioritize screening integration across these critical windows.

Maternal Support Must Replace Shame: Compassionate Systems Enable Disclosure

When mothers feel safe to disclose, children can be identified early. Support for mothers is support for children's futures.

Non-Judgmental Screening

Routine, compassionate prenatal alcohol screening

Accessible Treatment

Substance use treatment during and after pregnancy

Trauma-Informed Care

Addressing root causes with empathy

Mental Health Support

Integrated behavioral health services

Postpartum Follow-Up

Continued support for at-risk mothers

Part 2: The Neurobehavioral Model

Reframing behavior as brain-based communication, not willful defiance

The Neurobehavioral Model: Behavior as Communication of Brain Differences

Traditional Model ✗

Child Seen As...

- Oppositional and defiant
- Manipulative
- Deliberately non-compliant
- Lazy or unmotivated

Result: Punitive responses escalate problems

Neurobehavioral Model ✓

Paradigm Shift...

- Behavior = expression of brain differences
- Not character flaws
- Memory and processing challenges misread as defiance
- FASCETS framework: understand the brain to understand behavior

Result: Supportive responses improve outcomes

From 'What's wrong with this child?' to 'What happened to the brain?'

Case Example: When 'Defiance' Is Actually Executive Function Impairment

Traditional Interpretation

The Problem

A child repeatedly breaks the same classroom rule despite multiple reminders and consequences.

Interpretation

Child knows the rule but chooses to break it — oppositional behavior

Response

Escalating consequences (loss of recess, detention, suspension)

Outcome

Behavior persists or worsens; relationship damaged

Neurobehavioral Interpretation

The Reality

A child repeatedly breaks the same classroom rule despite multiple reminders and consequences.

Interpretation

Child may not retain rule, cannot generalize across settings, struggles with impulse control due to executive function deficits

Response

Visual cues, reduced verbal load, consistent repetition, environmental supports

Outcome

Behavior improves when approach matches brain needs

> ***Key Insight: Changing our response changes their trajectory***

Support Through a Neurobehavioral Lens

Reducing crisis cycles by addressing root neurodevelopmental needs

Reframe Behavior

Helping families understand behavior as brain-based, not willful

Coordinate Services

Bridging medical, educational, and mental health systems

School Advocacy

Securing appropriate accommodations and IEP support

Caregiver Education

Teaching why traditional consequences fail and what works

Environmental Supports

Building structures that prevent dysregulation and crisis

Practical Strategies: Making the Neurobehavioral Model Work

Visual Supports

Why repetition and visual cues help when verbal instruction doesn't stick

Adjust Expectations

Helping families match expectations to actual brain capacity, not chronological age

Reduce Overwhelm

Decreasing sensory and cognitive load in environment prevents dysregulation

Prevent Escalation

Without FASD understanding, families and providers escalate consequences — increasing failure

Case management bridges the gap between diagnosis and daily life. Families shift from frustration to empowerment.

Early Identification Prevents Secondary Complications Across Lifespan

Without Early Diagnosis: Risk Factors

- Increased likelihood of school failure and eventual dropout due to unmet learning and behavioral needs.
- Higher rates of mental health disorders such as depression, anxiety, and post-traumatic stress symptoms without timely support.
- Elevated risk for developing substance use disorders as individuals attempt to self-medicate or cope with challenges.
- Greater chance of involvement with the justice system stemming from untreated behavioral and social difficulties.
- Increased probability of unemployment and homelessness when early identification and supports are lacking.

With Early Support: Protective Factors

- Early diagnosis enables tailored interventions that significantly improve developmental and functional outcomes.
- Stable and understanding caregiving provides predictable environments that promote emotional regulation and resilience.
- Appropriate educational supports reduce learning gaps and increase engagement, decreasing long-term academic failure.
- Neurobehavioral-informed interventions address underlying brain-based difficulties and improve daily functioning across settings.
- Effective system coordination ensures families access services early, reducing risk trajectories and supporting positive outcomes.

Understanding the brain early changes life trajectory

Recommendations for Vermont Systems: Four Pillars of Improved FASD Response

Improve Screening

Universal prenatal alcohol exposure screening in all healthcare settings

Provider Education

Train pediatricians, educators, mental health clinicians, and child welfare workers on FASD identification

Maternal Support

Non-punitive screening, accessible substance use treatment, comprehensive postpartum support

System Recognition

Expand diagnostic capacity, increase FASCETS training, create billing pathways for FASD-informed care

Shifting the Paradigm: From 'What's Wrong?' to 'What Happened to the Brain?'

When we shift from asking 'What's wrong with this child?' to 'What happened to the brain?' we begin to create systems that support rather than punish.

Key transformation points

1. **From blame**
   to understanding
2. **From punishment**
   to support
3. **From symptom management**
   to addressing root neurodevelopmental cause

Impact

When systems understand FASD, interventions become effective rather than escalating. Investment in early identification and maternal support yields lifelong prevention of secondary issues.

Vermont has the opportunity to lead in FASD-informed care.

Compassionate understanding of brain differences transforms lives.

Let us move forward with an inspirational, forward-looking commitment to systems that heal, support, and prevent.

Questions & Discussion

Thank you for your commitment to understanding FASD and supporting individuals and families