Screening, assessing and managing perinatal substance use disorders

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The impact of substance use disorder (SUD) in perinatal individuals

Perinatal impact of alcohol, cannabis, opioids and sympathomimetics

Newer substances of use and their perinatal impact

“I just can’t get it together”

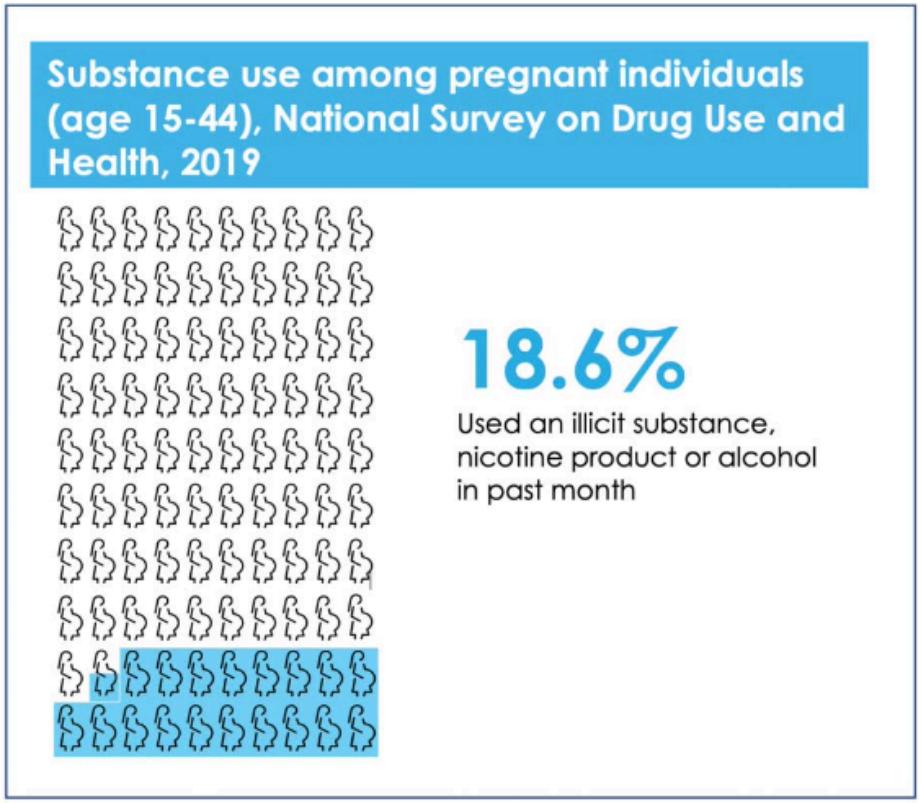


Fig. 1. Proportion of pregnant individuals with past-month substance use, National Survey on Drug Use and Health, 2019.

Smid. Substance Use Disorders Management in Perinatal Period. Obstet Gynecol 2022.

From Smid and Terplan JACOG 2022

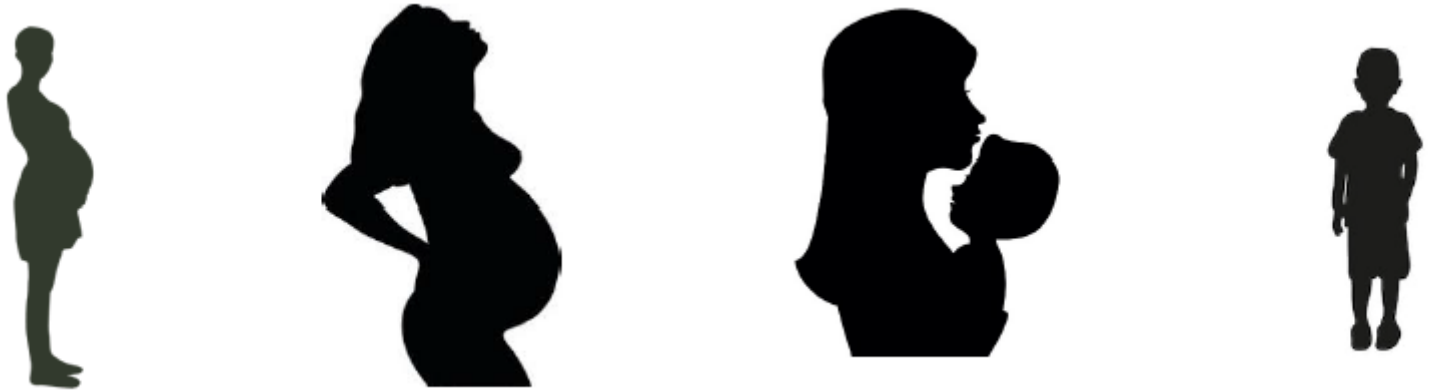
Substance use during pregnancy poses risk to the woman, fetus, and family

Exposure to Teratogens

Poor nutrition

Difficulties with labor management

Overdose



Limited access to prenatal care

Placental insufficiency

Withdrawal

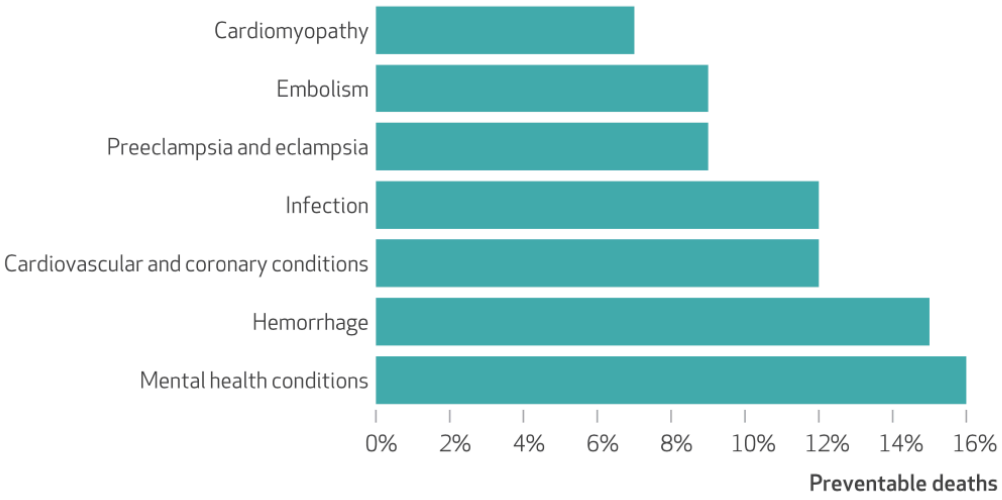
Infectious risk (eg HIV, HCV)

Preventable cause of maternal & infant mortality

Keegan J et al. J Addictive Diseases. 2010. 29 (2) 175-91

EXHIBIT 2

Leading causes of pregnancy-related death among deaths determined to be preventable in 14 US states, 2008–17



SOURCE Authors' analysis of pregnancy-related deaths occurring during the period 2008–17 and determined by fourteen state Maternal Mortality Review Committees (as listed in the text) to be preventable. **NOTES** $N = 226$. Leading causes were defined as causes with at least ten deaths. Percentages do not sum to 100 percent.

Among 421 MMRC determined pregnancy related deaths:

11% were due to mental health conditions

100% preventable

72% MH conditions

67% SUD conditions

Trost SL,, et al. Preventing Pregnancy-Related Mental Health Deaths: Insights From 14 US Maternal Mortality Review Committees, 2008-17. Health Affairs (Project Hope). 2021 Oct;40(10):1551-1559.

MMRIA MATERNAL MORTALITY REVIEW INFORMATION APP
ERASE MM
REVIEW to ACTION

Mental health conditions are now the leading cause of pregnancy-related deaths

Table 4. Underlying causes of pregnancy-related deaths*, overall and by race or ethnicity[1], data from Maternal Mortality Review Committees in 36 US states, 2017–2019[1]

	Total		Hispanic		Non Hispanic									
					AIAN		Asian		Black		NHOPI		White	
	N	%	n	%	n	%	n	%	n	%	n	%	n	%
Mental health conditions[2]	224	22.7	34	24.1	2	-	1	3.1	21	7.0	0	-	159	34.8
Hemorrhage[3]	135	13.7	30	21.3	2	-	10	31.3	33	10.9	1	-	53	11.6
Cardiac and coronary conditions[4]	126	12.8	15	10.6	1	-	7	21.9	48	15.9	0	-	49	10.7
Infection	91	9.2	15	10.6	1	-	0	0.0	23	7.6	0	-	49	10.7
Embolism-thrombotic	86	8.7	9	6.4	0	-	2	6.3	36	11.9	0	-	34	7.4
Cardiomyopathy	84	8.5	5	3.6	0	-	2	6.3	42	13.9	0	-	33	7.2
Hypertensive disorders of pregnancy	64	6.5	7	5.0	0	-	1	3.1	30	9.9	1	-	22	4.8
Amniotic fluid embolism	37	3.8	6	4.3	1	-	7	21.9	10	3.3	2	-	9	2.0
Injury[5]	35	3.6	5	3.6	1	-	1	3.1	15	5.0	0	-	10	2.2
Cerebrovascular accident	25	2.5	2	1.4	0	-	0	0.0	10	3.3	0	-	13	2.8
Cancer	19	1.9	3	2.1	0	-	1	3.1	7	2.3	0	-	7	1.5
Metabolic/ endocrine conditions	12	1.2	2	1.4	0	-	0	0.0	6	2.0	0	-	3	0.7
Pulmonary conditions	12	1.2	1	0.7	0	-	0	0.0	4	1.3	1	-	5	1.1

Mental Health Conditions:

Mental health conditions include deaths of suicide, overdose/poisoning related to substance use disorder, and other deaths determined by the MMRC to be related to a mental health condition, including substance use disorder.

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Trost SL, Beauregard J, Njie F, et al. Pregnancy-Related Deaths: Data from Maternal Mortality Review Committees in 36 US States, 2017–2019. Atlanta, GA: Centers for Disease Control and Prevention, US Department of Health and Human Services; 2022.

Substance use during pregnancy opportunities and challenges

- Refractory Illness
- Stigma and Shame
- Legal issues
- Providers' own emotional reactions
- Time elapsed before recognition of pregnancy
- Access

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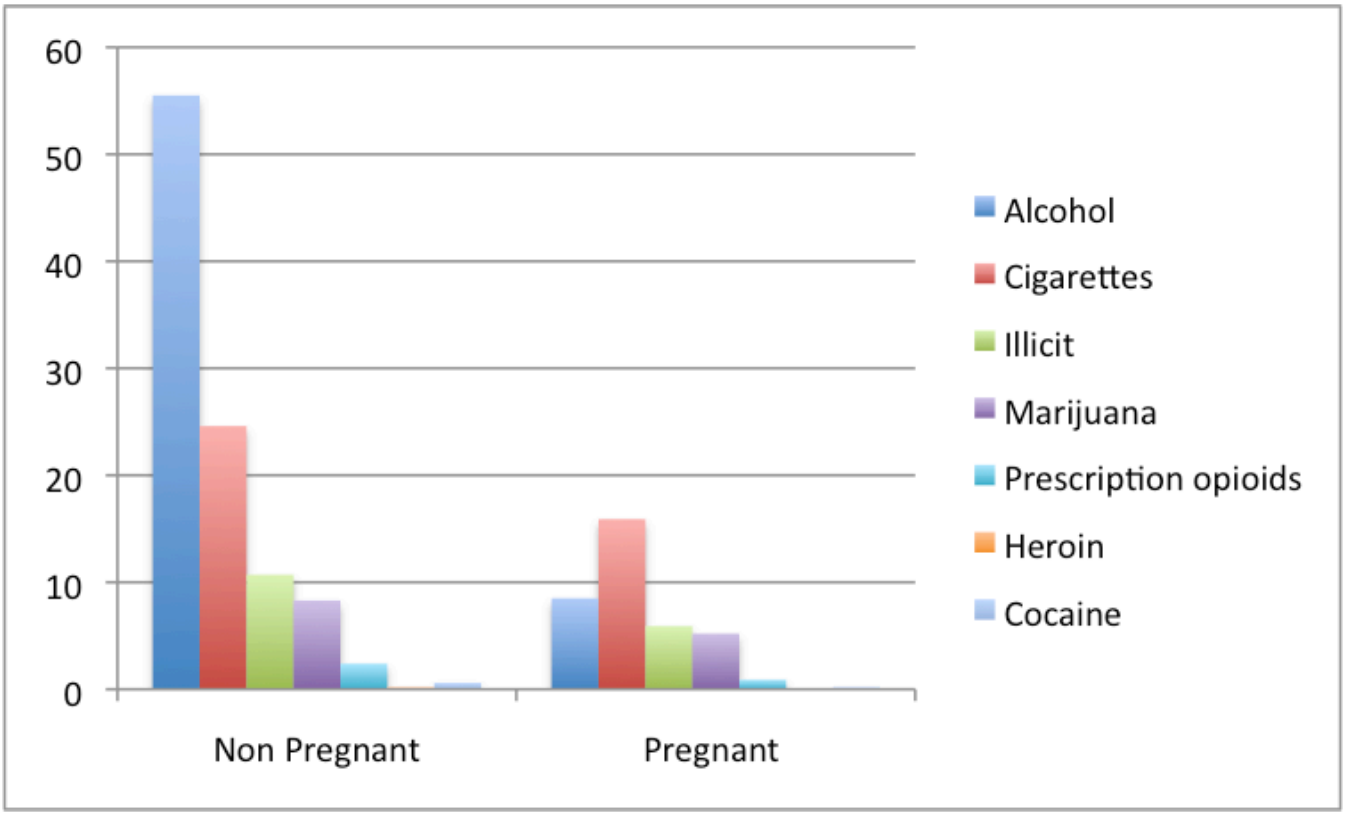
Pregnancy is a window of opportunity during which women stop using substances



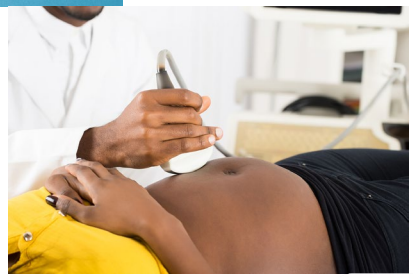
Drug use in the past month, females 15-44

Havens JR et al. Drug and Alcohol Dependence 99 (2009) 89–95; NSDUH 2012 National Survey on Drug Use and Health (2012); Harrison et al Maternal Child Health J (2009) 13:386–394

Women with substance use disorders can present throughout pregnancy and the postpartum period

Screening and assessment for substance use should be part of pregnancy and postpartum care

History

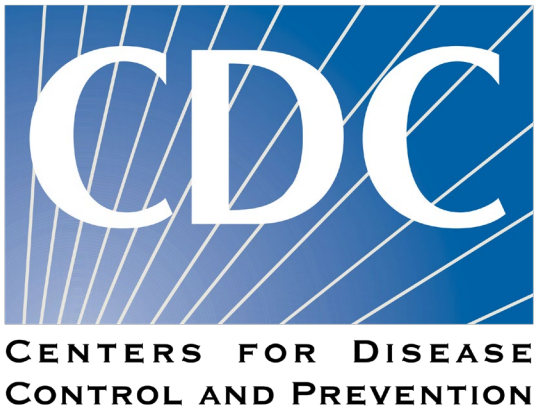


Physical Examination

Prescription Monitoring Program

Toxicology testing (with consent)

Universal screening for substance use in pregnancy is recommended by many organizations



https://www.mcpapformoms.org/Toolkits/SubstanceUseProgramToolkit.aspx

Non-Stigmatizing Language

Reducing Stigma by Using Strength-Based Language

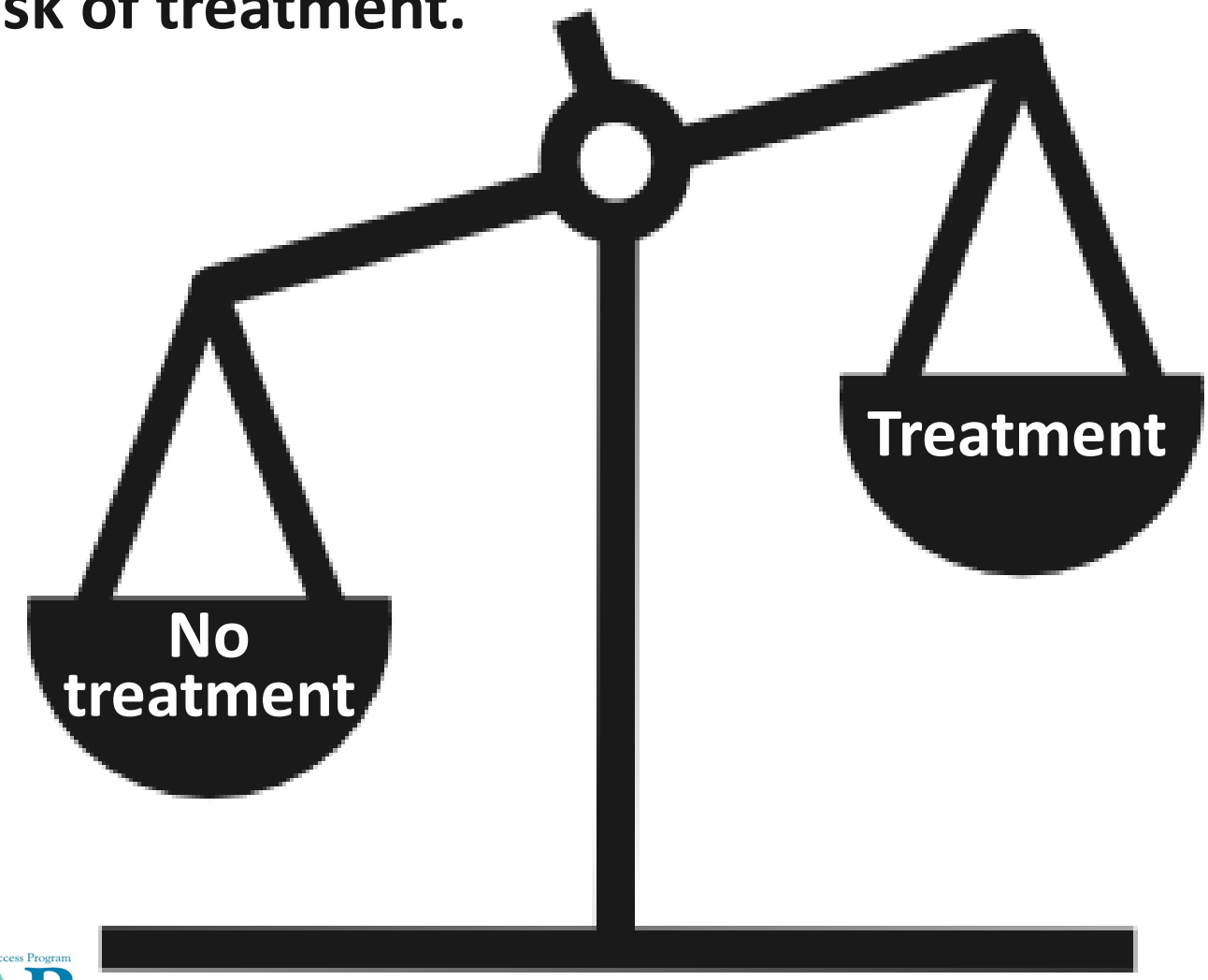
Substance use disorders are chronic illnesses, and recovery can be achieved with treatment and ongoing support. The language that we use can help create an inclusive environment that promotes treatment. Using strength-based and person-first language can help clients feel respected, valued, and help build trust.

Non-Stigmatizing Language	Stigmatizing Language
Person who uses substances	Substance abuser or drug abuser Alcoholic Addict User Abuser Drunk Junkie
Babies affected by maternal opioid use	Addicted babies/born addicted
Substance use disorder or addiction use, misuse Risky, unhealthy, or heavy use Non-medical use	Drug habit Abuse Drug problem
Substance of use	Drug of choice
Person in recovery Abstinent Not drinking or taking drugs	Clean
Medication for addiction treatment (MAT) Medication for Opioid Use Disorder (MOUD)	Substitution or replacement therapy Medication-Assisted Treatment (MAT)
Positive/aberrant, negative (toxicology screen results)	Clean or dirty urine
Opioid Treatment Program (OTP) Dispensing	Methadone clinic Dosing
Impaired Intoxicated	Nodding Stoned High
Non-adherent	Failed/failure Non-compliant
Discharge Transferred	Termination Shipped out
Former client Seeing multiple providers	Frequent flyer Doctor shopping

Call MCPAP for Moms at 855-MOM-MCPAP (855-666-6272).

Adapted from The Grayken Center for Addiction at Boston Medical Center "Words Matter Pledge."

The risk of untreated symptoms must be balanced against the risk of treatment.



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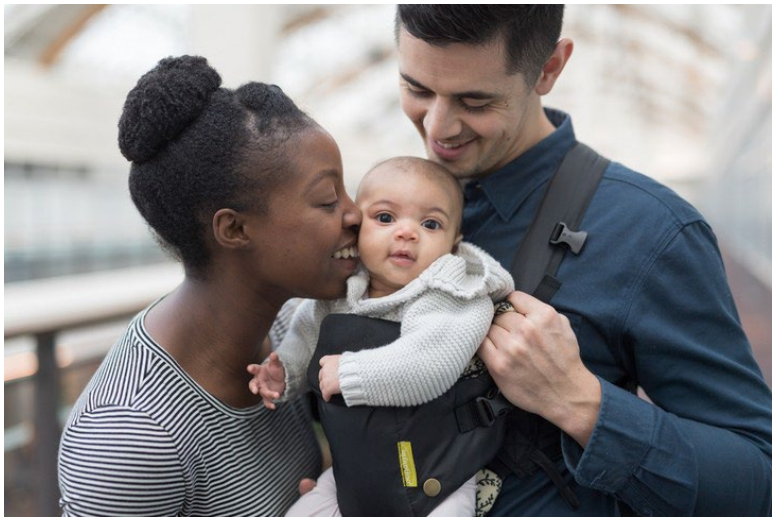
Fear of loss of custody greatly impacts women with substance use disorders in pregnancy

Substance use and treatment leads to many reports to social services

There is increased scrutiny in this process for families affected by poverty and families of color

Losing custody increases the risk of substance lapse/relapse

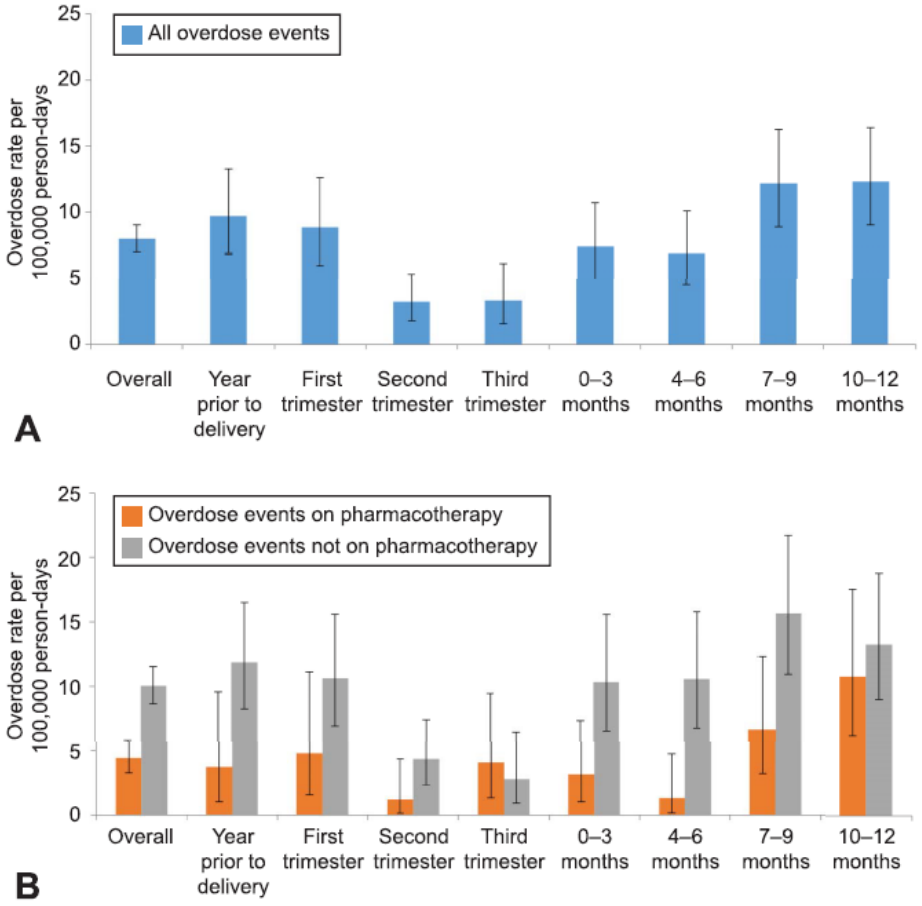


Pregnant and Parenting women with SUD benefit from the development of a team of providers

Please work with patients to develop a Plan of Safe Care

http://www.healthrecovery.org/safecare

Opioid overdose is a leading cause of maternal mortality



Methadone and Buprenorphine save lives

Mortality is greatest after delivery

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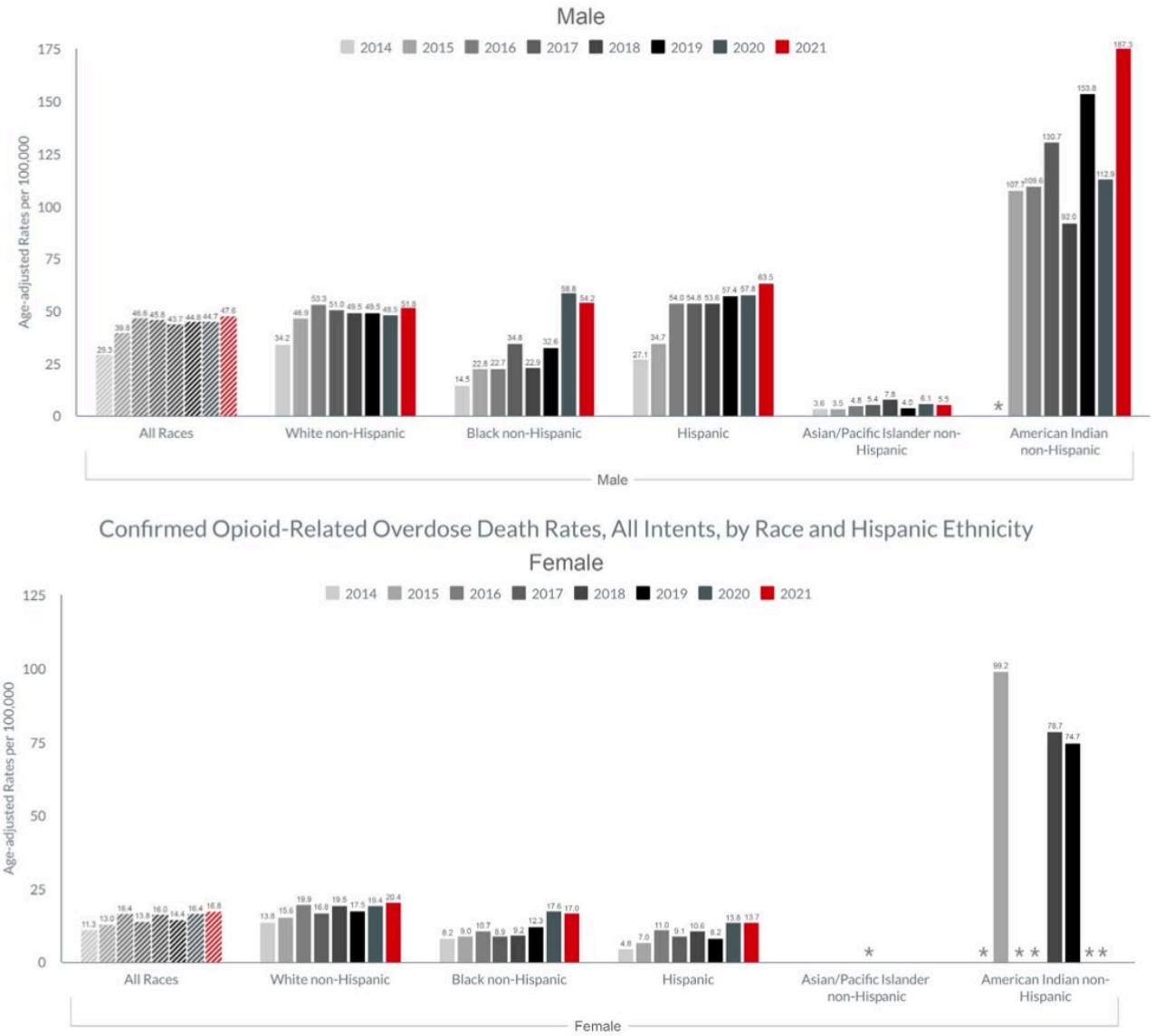
Metz 2016, Schiff et al 2018

There are racial and ethnic inequities in annual mortality related to opioid overdose



*Rate calculations based on death counts less than 5 are excluded due to rate instability.

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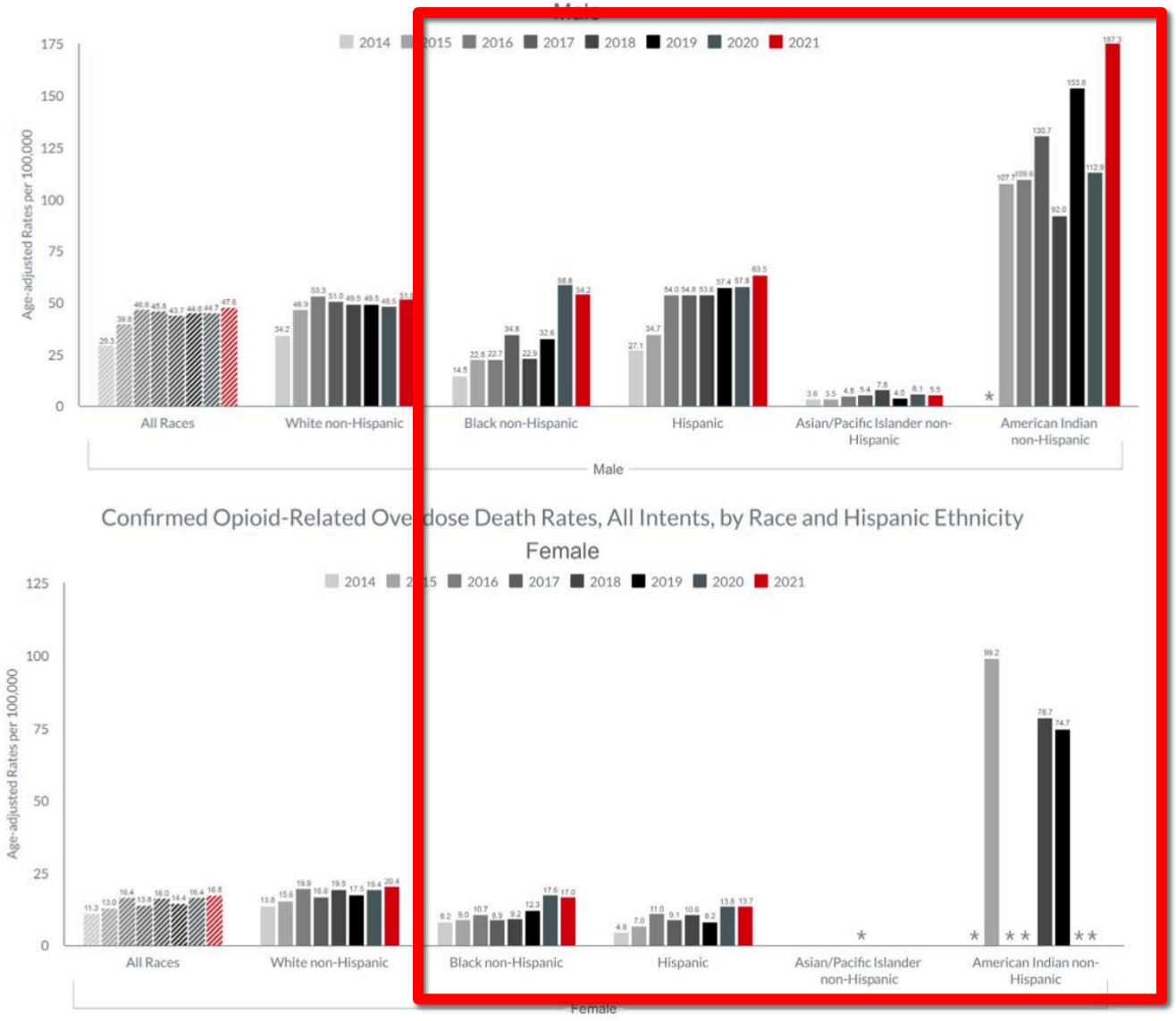

*Rate calculations based on death counts less than 5 are excluded due to rate instability.

Opioid use disorders in pregnancy are treated pharmacologically with methadone and buprenorphine

No FDA approved treatment

Mainstays of treatment:

- **Methadone**
- **Buprenorphine (single or combination)**
- **Naltrexone (emerging)**

High risk of relapse after discontinuation of opioids

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Rementeria et al. *AJOG.* 1973; 2. Zuspan *AJOG*.. 3. Fricker *Arch of Pedi & Adol Med.* 1978 4 Luty *J of Sub Abuse Treat.* 2003 5.Towers et al AJOG 2015 6 Jones et al. *The American Journal on Addictions.* 2008

Opioids are not teratogenic, though opioid use disorder carries risk

- Intrauterine fetal demise and stillbirth
- Intrauterine growth restriction
- Placental abruption
- Preterm labor
- Postpartum hemorrhage
- Reduced cognitive function in exposed children

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Kaltenbach Obstetrics and Gynecology Clinics. 1998 Jick et al JAMA. 1981

Long term agonist treatment is preferred, but medication assisted withdrawal can be considered

Some increasing literature supporting medication assisted withdrawal (aka Detox)

No available MOUD provider
Pt preference
***Risk for relapse remains high**

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Freeman et al. *Annals of Clinical Psychiatry* 2013

Inequitable treatment for women of color with medication for opioid use disorder (MOUD) may contribute to risk of death

Black Non Hispanic and Hispanic women were less likely to receive MOUD compared to white women

Women of color were more likely to receive methadone than buprenorphine

Peeler et all and Schiff et al

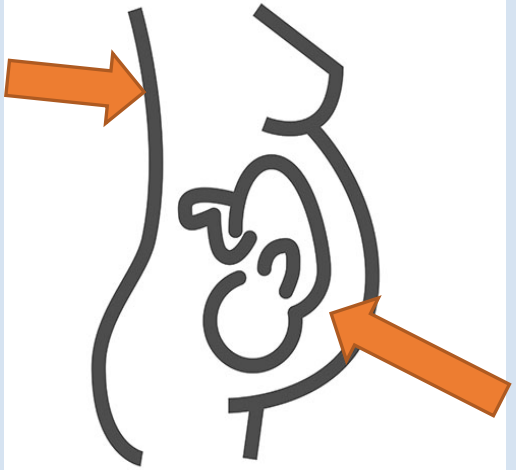
For women with opioid use disorders, there are maternal and fetal benefits to medication during pregnancy

Maternal Benefits:

70% reduction in overdose related deaths

Decrease in risk of HIV, HBV, HCV

Increased engagement in prenatal care and recovery treatment



Fetal Benefits:

Reduces fluctuations in maternal opioid levels; reducing fetal stress

Decrease in intrauterine fetal demise

Decrease in intrauterine growth restriction

Decrease in preterm delivery

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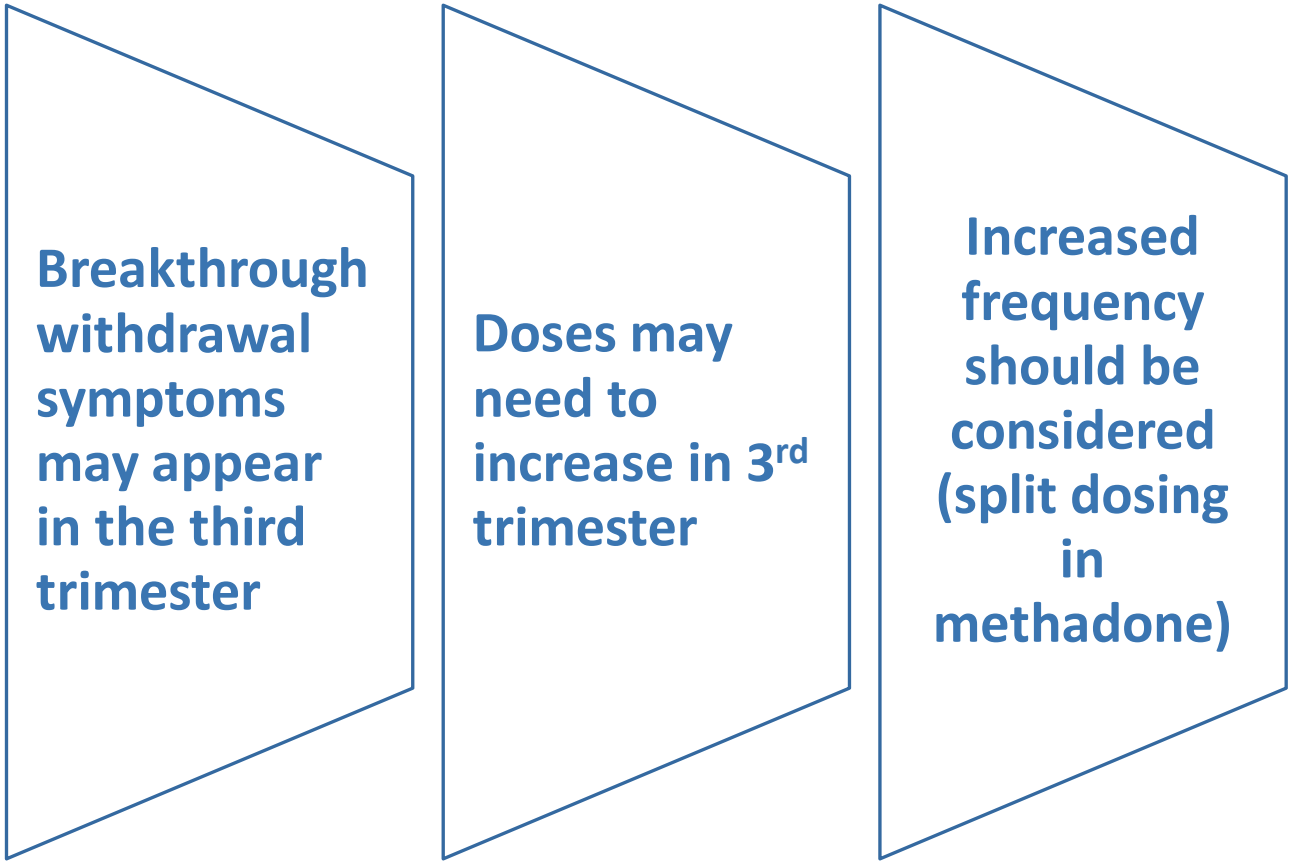
Dose adjustments for MOUD are often needed in the third trimester due to the physiology of pregnancy



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Park 2012

Pregnant women are entitled to priority access to methadone treatment, especially with recent expansion of access by SAMHSA February 2024

Must be administered in a federally licensed facility

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Buprenorphine is as effective as methadone for the treatment of opioid use disorder in pregnancy

No apparent difference between buprenorphine and methadone for:

- Medical complications at delivery
- Illicit drug use/relapse risk
- Abnormal presentation
- Use of analgesia
- Maternal weight gain
- Cesarean section
- Positive drug screen

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Jones 2012

Buprenorphine is now a first line treatment for opioid use disorder during pregnancy with distinct features

Fewer drug interactions

Office based treatment

Babies exposed have less severe withdrawal

Lower of overdose and sedation

Single formulation (Subutex) is preferred
*NOT Sublocade

Combination formulation (Suboxone) may be more accessible

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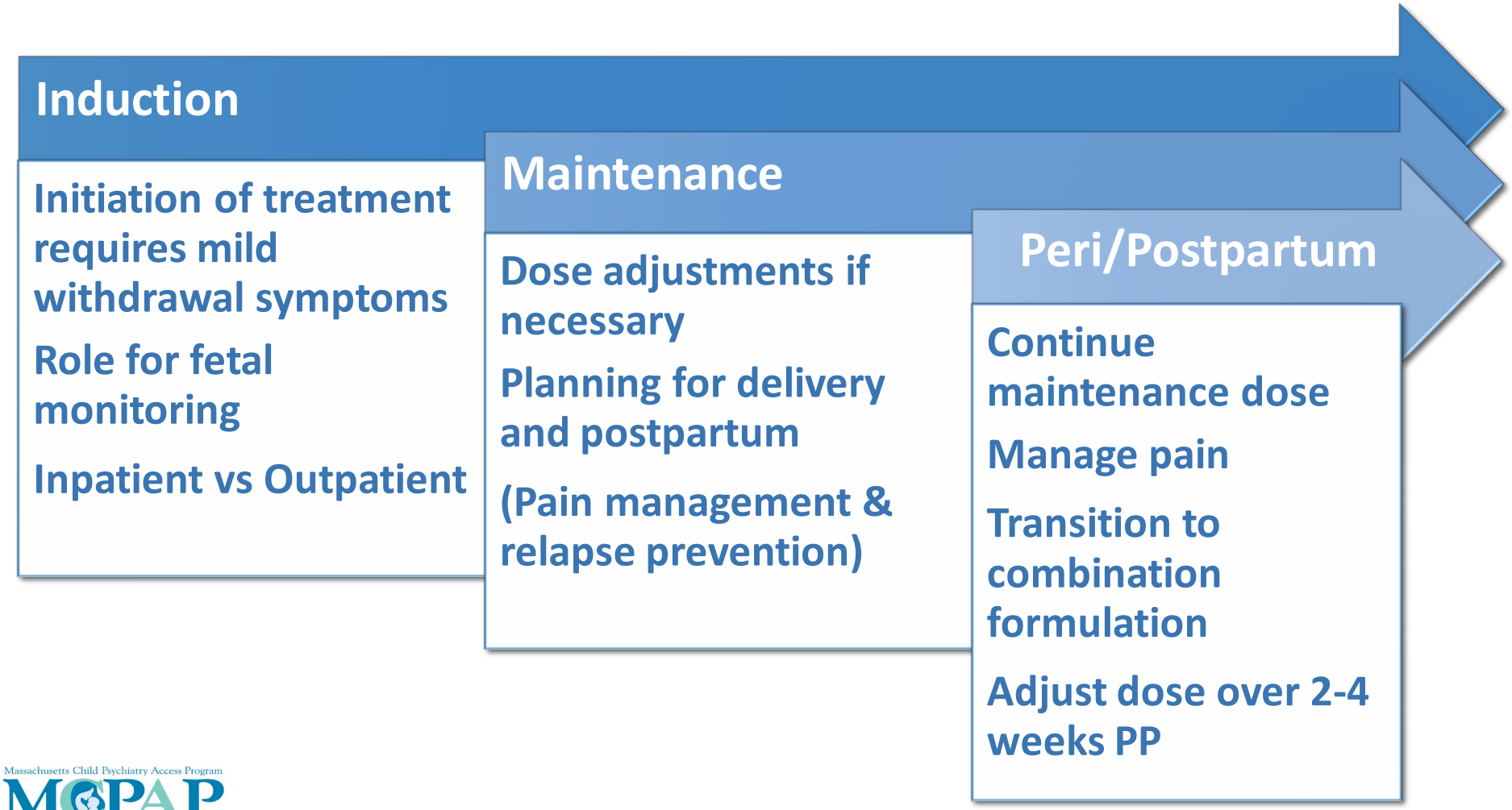
Jones NEJM 2010, Blandthorn 2011, Park *Psychsomatics* 2012

Treatment with MOUD during pregnancy consists of three distinct phases of management and monitoring



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Data regarding the use of naltrexone during is emerging

Limited human data

If the patient is stable on naltrexone may be reasonable to continue

Available as daily oral treatment or monthly injectable

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Saia 2016

How do I choose?

Methadone and Buprenorphine are first line options

If a patient stable is stable on a medication no need to switch

In a patient new to treatment or who wishes to switch, consider:

- **Patient preference**
- **Access**
- **Need for structured treatment**
- **Would not recommend a switch from Methadone to buprenorphine**

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Women with any history of substance use should be counseled as early as possible about possible social service reporting after delivery and neonatal opioid withdrawal

Shifting from NAS to Neonatal Opioid Withdrawal Syndrome (NOWS)

More descriptive and specific

NAS and the other NAS

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Non pharmacologic treatment for NOWS is first line – Eat Sleep Console (ESC) decreases time in the hospital and empowers mother-infant relationships

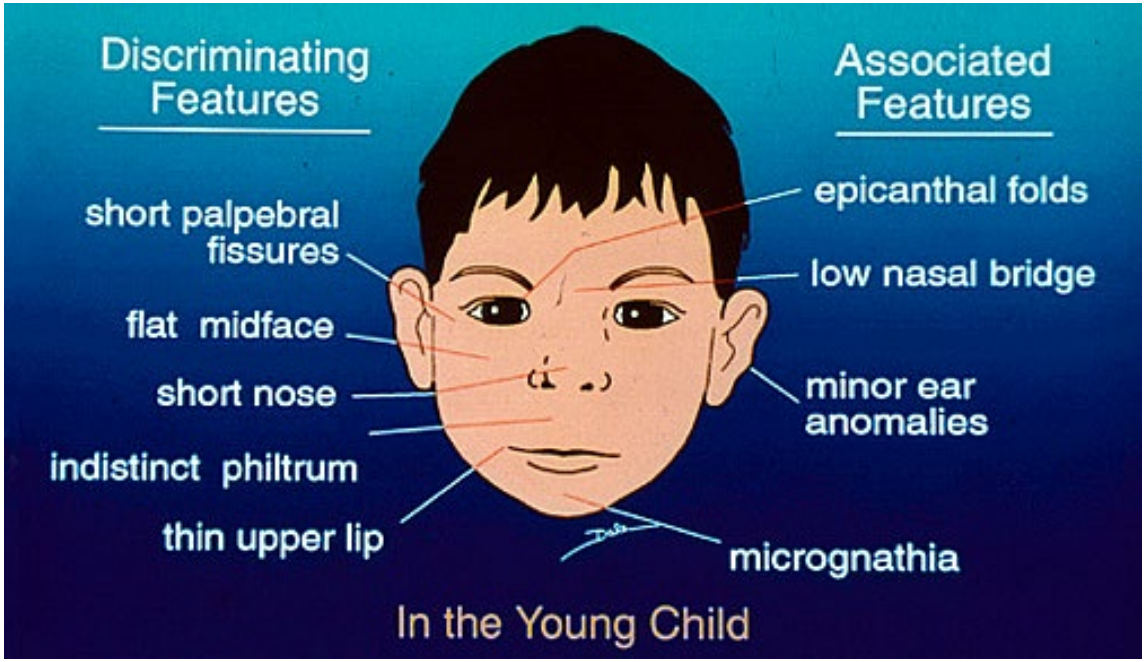
30% decrease in the development of NAS

50% decrease in neonatal hospital stay

Breastfeeding should be encouraged for women on medication for addiction treatment (MAT) if SUD stable though criteria vary

Pritham UA et al. *J Obstet Gynecol Neonatal Nurs.* 2012., Welle-Strand GK et al. *Acta Paediatr*. 2013.,Wachman EM et al. *JAMA*. 2013., Abdel-Latif ME et al. *Pediatrics;* Grossman *Pediatrics* 2017

Impact of Alcohol Use in pregnancy goes beyond Fetal Alcohol Spectrum Diagnoses



Effect on perinatal person

Effect on fetus/neonate

Effect on child/family

Impact of Alcohol Use in pregnancy goes beyond Fetal Alcohol Spectrum Diagnoses

Effect on perinatal person

- Acute Intoxication
- Risks of chronic use
- Withdrawal syndromes

Effect on fetus/neonate

- Alcohol Related Birth defects
- Acute neonatal intoxication, hypotonia
- Neonatal withdrawal

Effect on child/family

- Neurobehavioral Disorder associated with prenatal alcohol exposure (DSM-5)
- Impact on parenting/custody

Brief Interventions can impact alcohol use in pregnancy

Providers can:

1. Screen, assess and provide clear recommendations to abstain

2. Relay education regarding potential harms

3. Set goals and evaluate strategies to avoid triggers

Floyd 2007; Bhat 2015

Medication treatment for alcohol use disorder is dependent on the presenting symptom

Treatment for cravings

- Naltrexone has emerging data
- Less Data
  - Disulfiram
  - Acamprosate
  - Topiramate

Treatment for withdrawal

- Benzodiazepine taper
- Lorazepam is preferred
- Monitor vital signs

Alcohol can negatively impact lactation

Alcohol can *decrease* breastmilk volume and milk ejection reflex

HIGH EXPOSURE RISK

Alcohol equilibrates across membranes within 30-60 minutes

Giglia 2006

Cannabis is the most commonly used substance in pregnancy in the U.S. and recreational use is legal in many states

48-60% of users continue during pregnancy

There are **limited human data** available for THC/CBD use in pregnancy

Marijuana and synthetic cannabinoids are highly potent

NSDUH 2018; Ryan et al Pediatrics 2018

Women should be advised to abstain from cannabis use in pregnancy and lactation

Developmental Risks

Visual processing/cognition
Neural Development

Intrauterine Growth Restriction

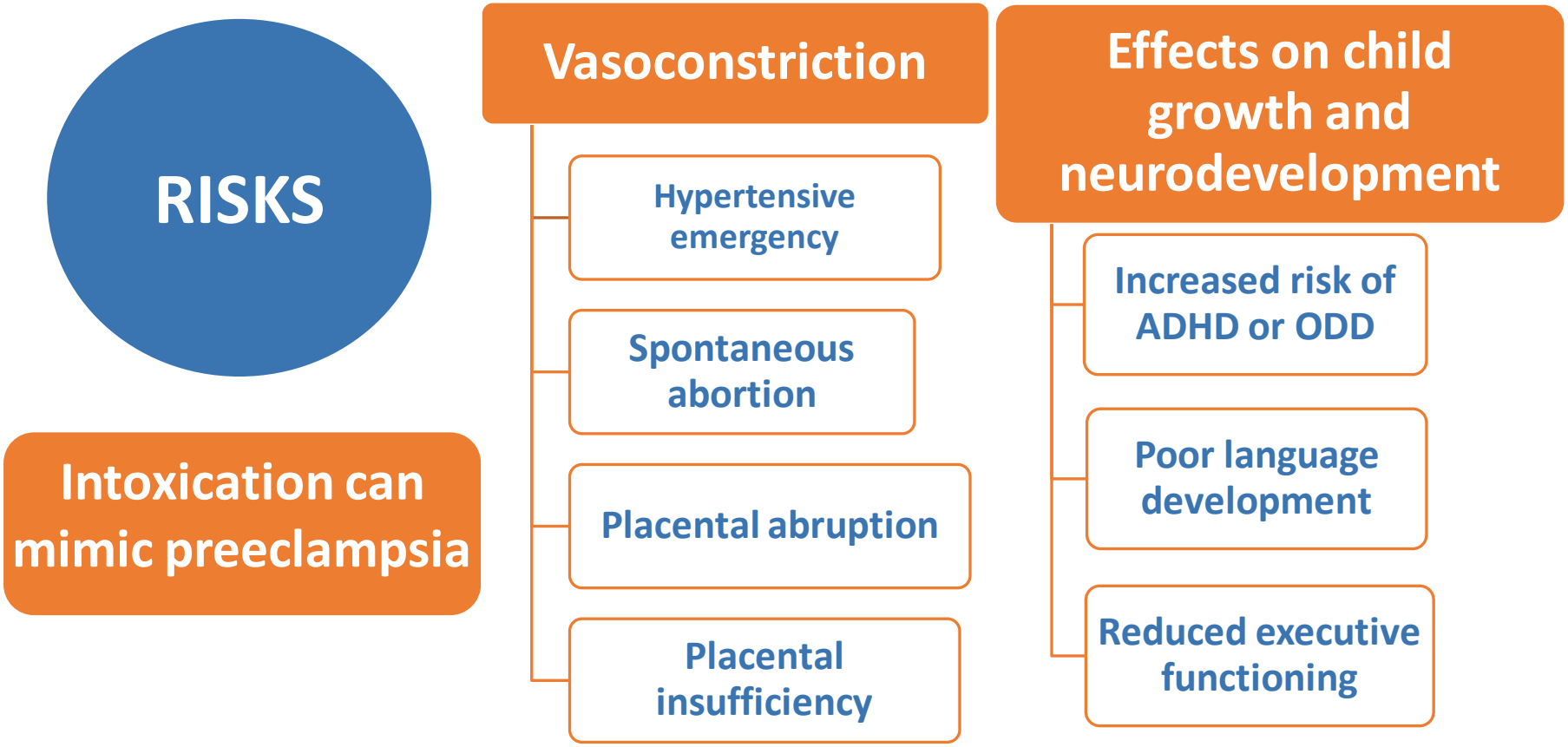
Low birth weight
Head circumference

Lactation

Concentrates in breastmilk
May inhibit milk supply

Marijuana use during pregnancy and lactation. Committee Opinion No. 637. American College of Obstetricians and Gynecologists. Obstet Gynecol 2015;126:234–8; Marroun et al (2009) JAACAP; Jacques Journal of Perinatology (2014)

The primary risks associated with cocaine use in pregnancy are due to vasoconstriction, not structural teratogenicity or withdrawal



Cressman et al JOGC 2014; Cain et al Clin OG 2013

Stimulants carry some risk so therapeutic use should be assessed based on risks of untreated symptoms

VS

Therapeutic use

Abuse

Bolea- Alamanac et al Br Journ Pharmac 2013; Freeman AJP 2014

Stimulants carry some risk so therapeutic use should be assessed based on risks of untreated symptoms

VS

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Emerging psychoactive substances

Substance	Examples	Effects in Human Pregnancy
Adulterants	Xylazine	Withdrawal, SEDATION wounds, decreased uterine flow, lower mat/fet HR, growth restriction, decr bl sugar
Stimulants	P2P methamphetamine	More cardiac effects, higher risk of OD/death
Synthetic cannibinoids	Spice, K2, herbal incense and Bonsai	Eclampsia in a case report Fetal effects – CF abn, ocular defects, decreased survival NAS
Cathinones	Kath, Bath salts	CR: confusion agitation stillbirth mHTN, PTL Neonatal withdrawal Craniofacial abn, cortical dysplasia, placental issues (animal)
Plant-based	Kratom	Kratom – animal studies: NTD Neonatal withdrawal tx'd with bzd and morphine
Non medical use of prescribed medications	promethazine, DM, Quetiapine Ketamine	Ketamine – impaired fetal neuronal development/death; neonatl hypotonia

Selected Resources

- Smid, Marcela and Terplan, Mishka. “What Obstetrician-gynecologists should know about Substance use Disorders in the perinatal period” *Obstetrics and Gynecology (2022)*
- Jones, Hendrée E., et al. "Neonatal abstinence syndrome after methadone or buprenorphine exposure." *New England Journal of Medicine* 363.24 (2010): 2320-2331.
- Mittal, Leena. "Buprenorphine for the treatment of opioid dependence in pregnancy." *The Journal of perinatal & neonatal nursing* 28.3 (2014): 178-184.
- McLafferty, Laura P., et al. "Guidelines for the management of pregnant women with substance use disorders." *Psychosomatics* 57.2 (2016): 115-130.
- http://pcssmat.org/category/module/medicalspecial-populations/
- SAMHSA Behavioral Health Treatment Services Locator: http://findtreatment.samhsa.gov/
- MCPAP for Moms: https://www.mcpapformoms.org/Toolkits/SubstanceUseProgramToolkit.aspx