

Perinatal Opioid Use Disorder

Connie Guille, MD

Professor, Depts of Psychiatry and OB/GYN

Director, Women's Reproductive Behavioral Health Division



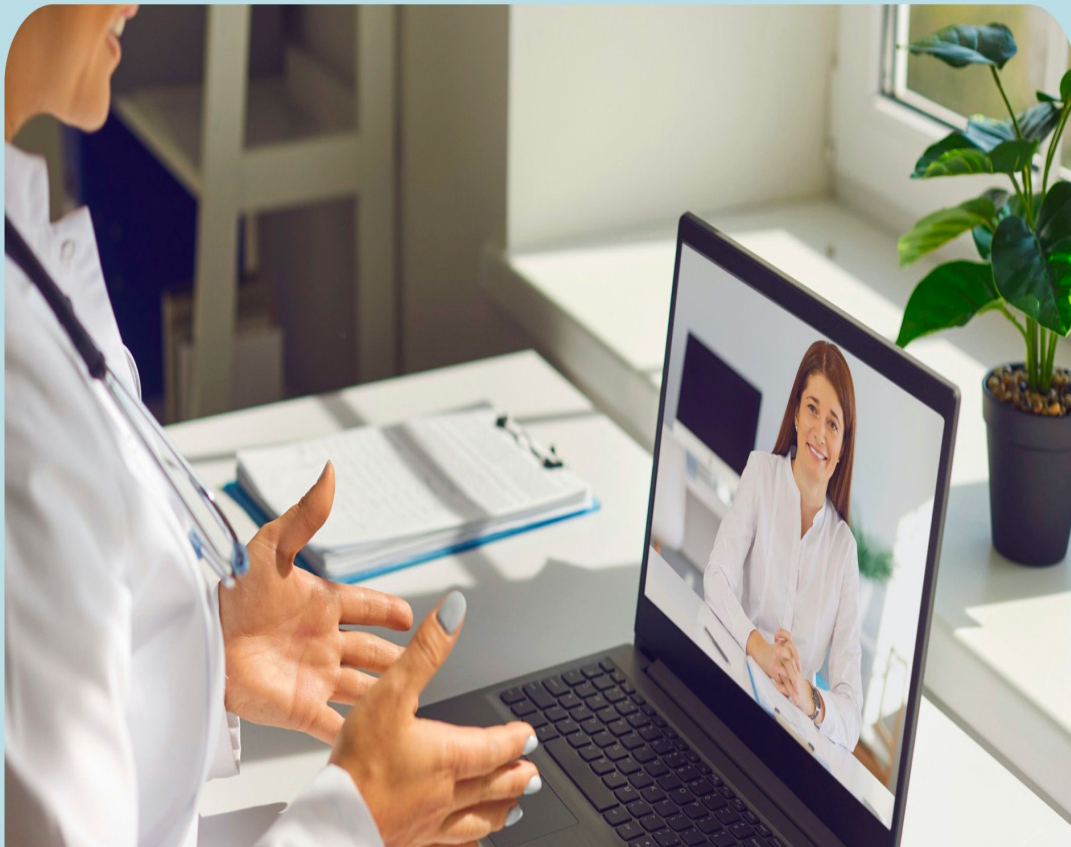
Overview

- What should I do if this patient comes into my OB practice?
- Diagnosis and Treatment
 - Medication for OUD (MOUD)



Mom's IMPACTT

IMProving Access to Maternal Mental Health and Substance Use Disorder Care Through Telemedicine and Tele-Mentoring



Mom's IMPACTT provides real-time perinatal psychiatric consultation to obstetric, pediatric, primary care, psychiatric and community health providers to effectively identify and manage maternal mental health and substance use concerns among pregnant and postpartum people living in South Carolina.

Mom's IMPACTT has 4 components:

- Real-time psychiatric consultation for providers serving pregnant and postpartum people.
- Linkage to community-based resources, treatment, and support groups.
- Trainings for providers and staff on mental health and substance use screening, discussion of screening results, treatment options and referral, risks and benefits of medications.
- Psychiatric consultation for pregnant and postpartum people with mental health and substance use concerns.

For more information visit our website:

muschealth.org/momsimpactt

For a confidential consultation:

Scan this QR code or call

843-792-MOMS (843-792-6667)



How Mom's **IMPACTT** Works [Building Provider Capacity: Consultation]

843-792-MOMS
(843)-792-6667



Doulas
Midwives
Obstetricians
Pediatricians
Psychiatrists

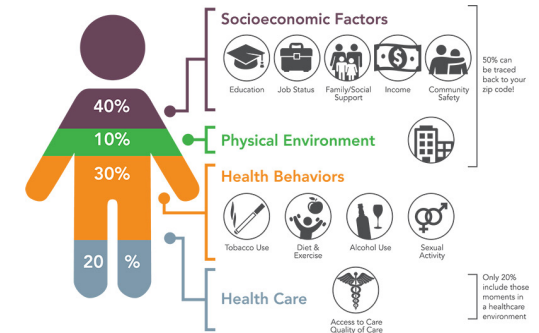
Community Health Workers
Advance Practice Providers
Primary Care/Family Practice



- Assessment
- Referrals & Resources
- Care Coordination



Provider-Provider Consultation



- Referrals to Resources

Source: Institute for Clinical Systems Improvement, Going Beyond Clinical Walls: Solving Complex Problems (October 2016)

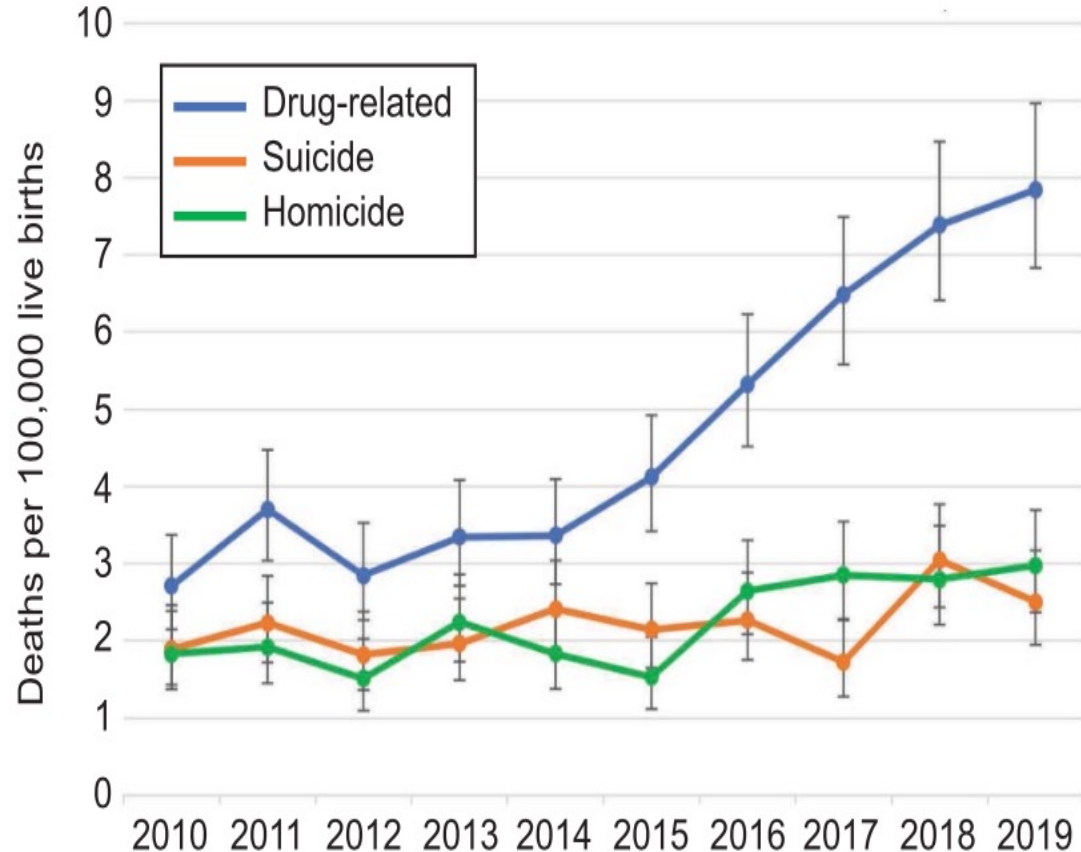
Pregnancy-Related Deaths: Data from Maternal Mortality Review Committees in 36 US States, 2017–2019 (N=1,018)

Most frequent underlying causes of pregnancy-related death:

- Mental health conditions (22.7%)
- Hemorrhage (13.7%)
- Cardiac and coronary conditions (12.8%)
- Infection (9.2%)
- Thrombotic embolism (8.7%)
- Cardiomyopathy (8.5%)

**84.2% deaths
determined
to be preventable**

Pregnancy-Associated Deaths Due to Drugs, Suicide, and Homicide in the United States, 2010–2019 (n=11,792)



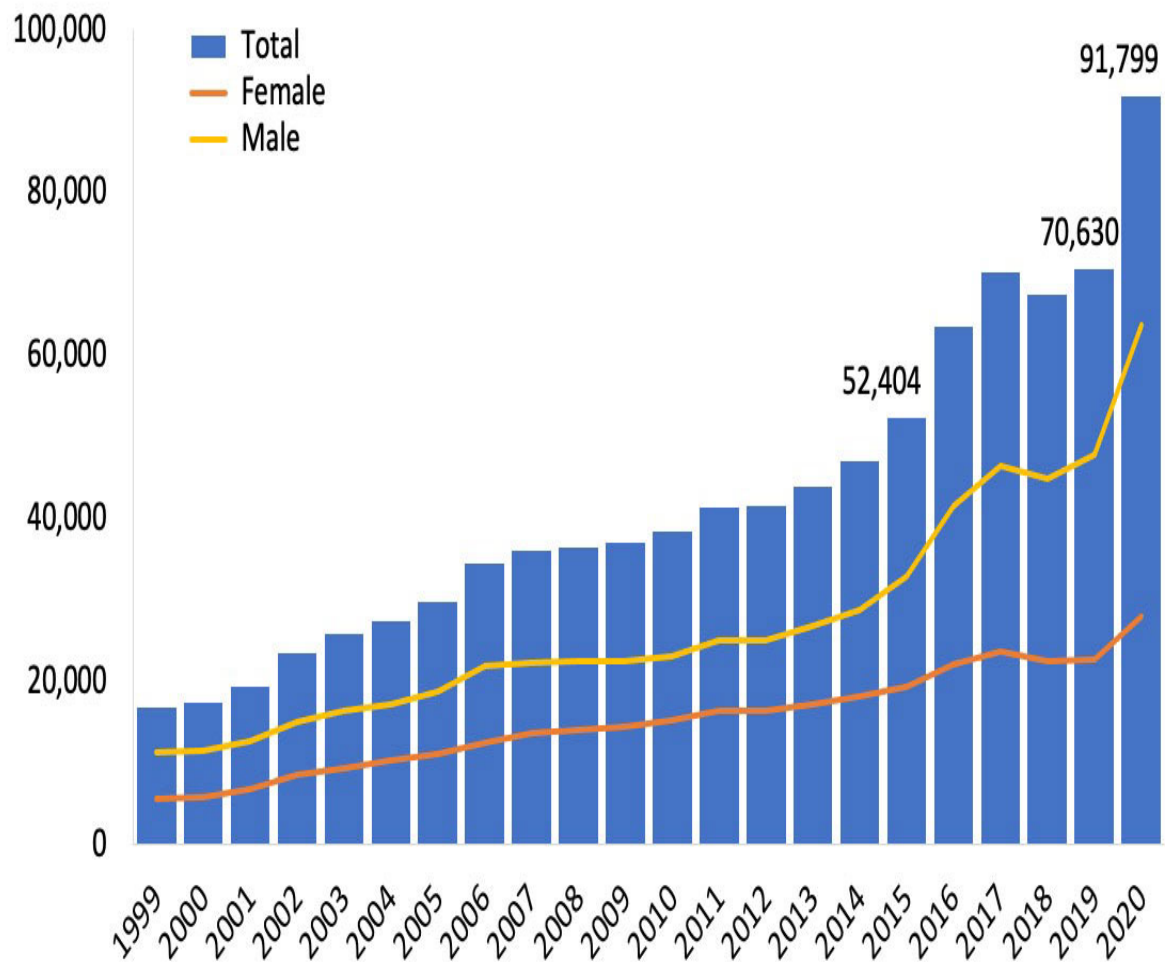
22.2% of all Maternal Deaths are due to:

- Drugs (11.4%)
- Suicide (5.4%)
- Homicide (5.4%)

2010-2019

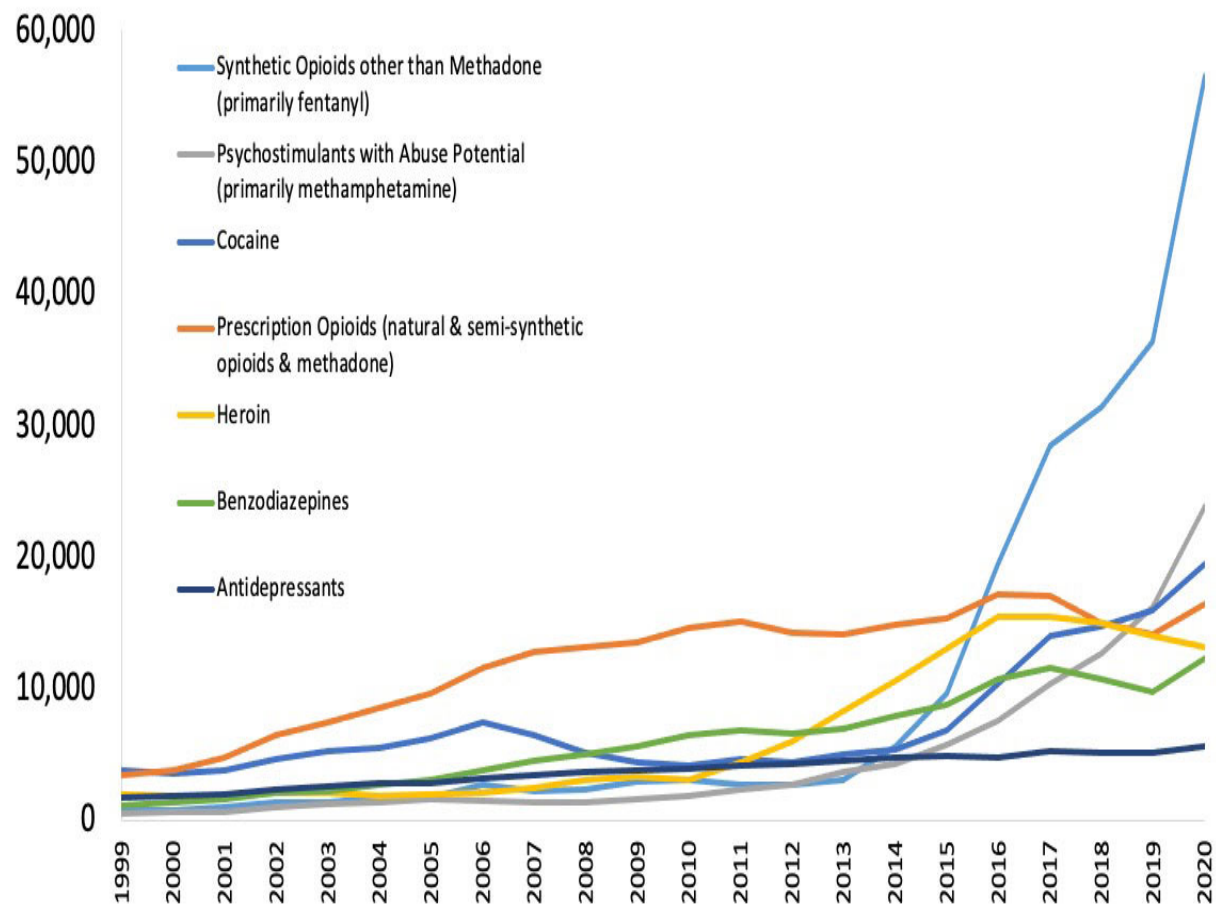
- Drug-related deaths increased 190%
- Suicide increased 30%
- Homicide increased 63%

Figure 1. National Drug-Involved Overdose Deaths* Number Among All Ages, by Gender, 1999-2020



*Includes deaths with underlying causes of unintentional drug poisoning (X40–X44), suicide drug poisoning (X60–X64), homicide drug poisoning (X85), or drug poisoning of undetermined intent (Y10–Y14), as coded in the International Classification of Diseases, 10th Revision. Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2020 on CDC WONDER Online Database, released 12/2021.

Figure 2. National Drug-Involved Overdose Deaths*, Number Among All Ages, 1999-2020



*Includes deaths with underlying causes of unintentional drug poisoning (X40–X44), suicide drug poisoning (X60–X64), homicide drug poisoning (X85), or drug poisoning of undetermined intent (Y10–Y14), as coded in the International Classification of Diseases, 10th Revision. Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2020 on CDC WONDER Online Database, released 12/2021.

US Trends in Drug Overdose Mortality Among Pregnant and Postpartum Persons, 2017-2020

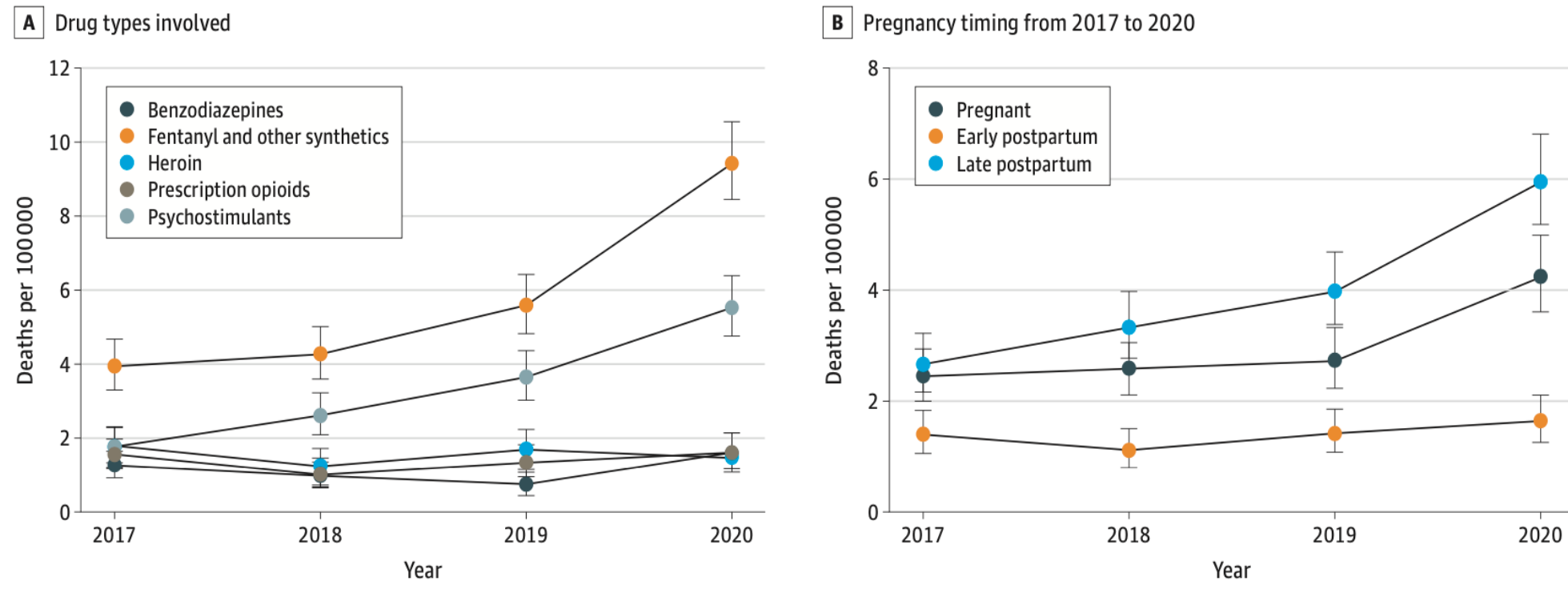
Table. Drug Overdose Mortality Rates Among Pregnant or Postpartum Persons and Those of Reproductive Age From 2017 to 2020^a

Year	Pregnant or postpartum			Reproductive age (aged 15-44 y) ^b		
	No. of persons	No. of live births ^c	Drug overdose mortality rate per 100 000 (95% CI) ^d	No. of persons	Population	Drug overdose mortality rate per 100 000 (95% CI) ^d
2017	252	3 844 260	6.56 (5.78-7.43)	9191	63 958 243	14.37 (14.08-14.67)
2018	266	3 780 401	7.04 (6.23-7.95)	9198	64 171 698	14.33 (14.04-14.63)
2019	304	3 736 144	8.14 (7.26-9.12)	9433	64 325 356	14.66 (14.37-14.96)
2020	427	3 602 653	11.85 (10.77-13.05)	12 756	64 543 832	19.76 (19.42-20.11)
Total	1249	14 963 458	8.35 (7.89-8.83)	40 578	256 999 129	15.79 (15.64-15.94)
Absolute change rate (95% CI) [relative change %] ^e						
2017-2020			5.30 (3.90-6.72) [80.81]	5.39 (4.94-5.85) [37.53]		
2019-2020			3.72 (2.25-5.20) [45.67]	5.10 (4.65-5.55) [34.77]		

Bruzelius E, Martins SS. US Trends in Drug Overdose Mortality Among Pregnant and Postpartum Persons, 2017-2020. *JAMA*. 2022;328(21):2159–2161. doi:10.1001/jama.2022.17045

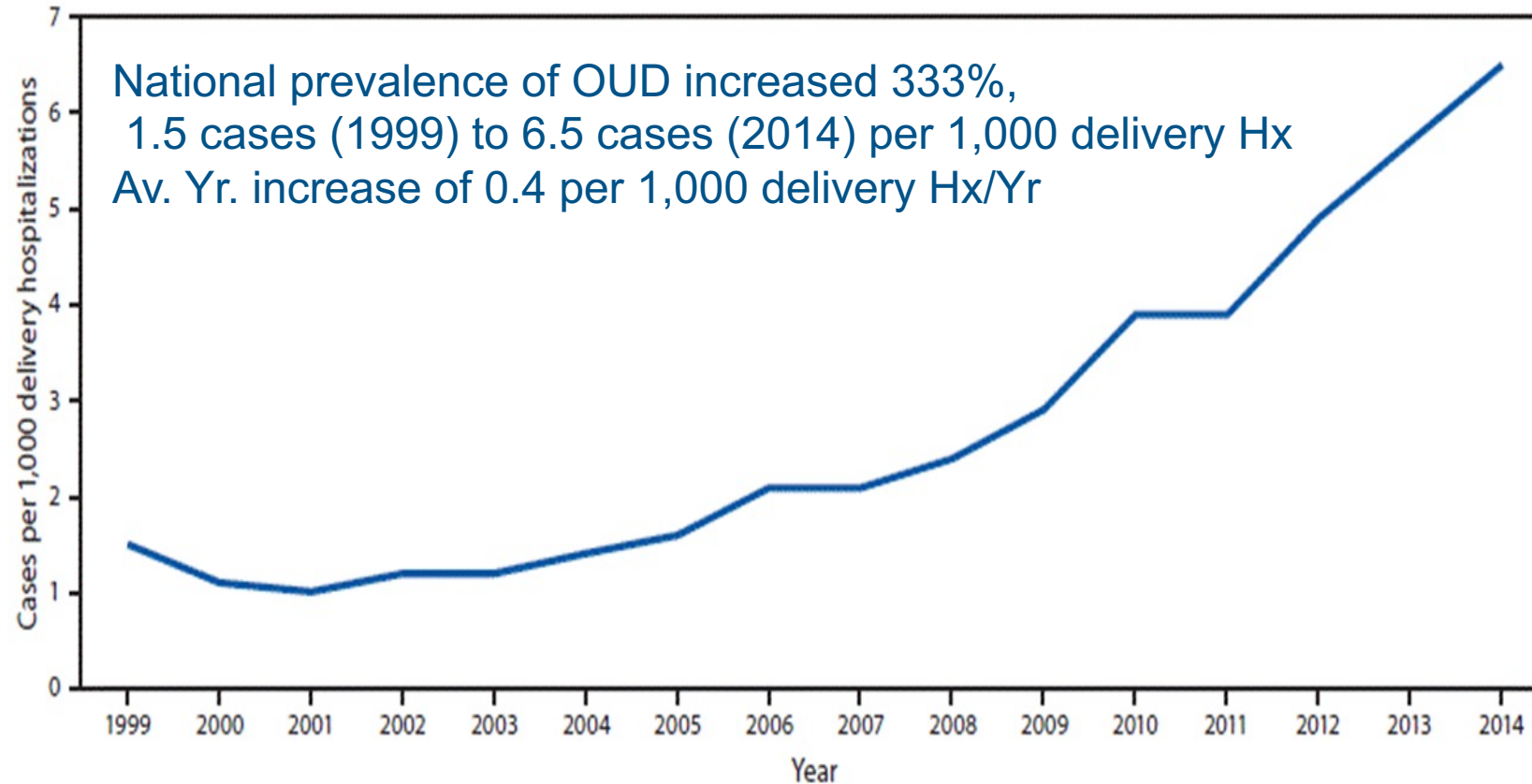
US Trends in Drug Overdose Mortality Among Pregnant and Postpartum Persons, 2017-2020

Figure. Pregnancy-Associated Drug Overdose Mortality



Bruzelius E, Martins SS. US Trends in Drug Overdose Mortality Among Pregnant and Postpartum Persons, 2017-2020. *JAMA*. 2022;328(21):2159–2161. doi:10.1001/jama.2022.17045

Prevalence of Opioid Use Disorder in Pregnancy



Per 1,000 Delivery Hospitalizations in US 1999-2014

Haight SC, Ko JY, Tong VT, Bohm MK, Callaghan WM. Opioid Use Disorder Documented at Delivery Hospitalization — United States, 1999–2014. MMWR Morb Mortal Wkly Rep 2018;67:845–849.

Treatment of Perinatal Opioid Use Disorder (OUD)



- OUD Treatment Mother-Infant Dyad
 - Therapy & medications
 - Mental health & trauma
 - Social determinants of health
- Integrated Prenatal and OUD Treatment
 - Retention in treatment
 - Maternal and newborn outcomes
 - Cost-effective
- Dearth of perinatal SUD treatment programs





Methadone and Buprenorphine

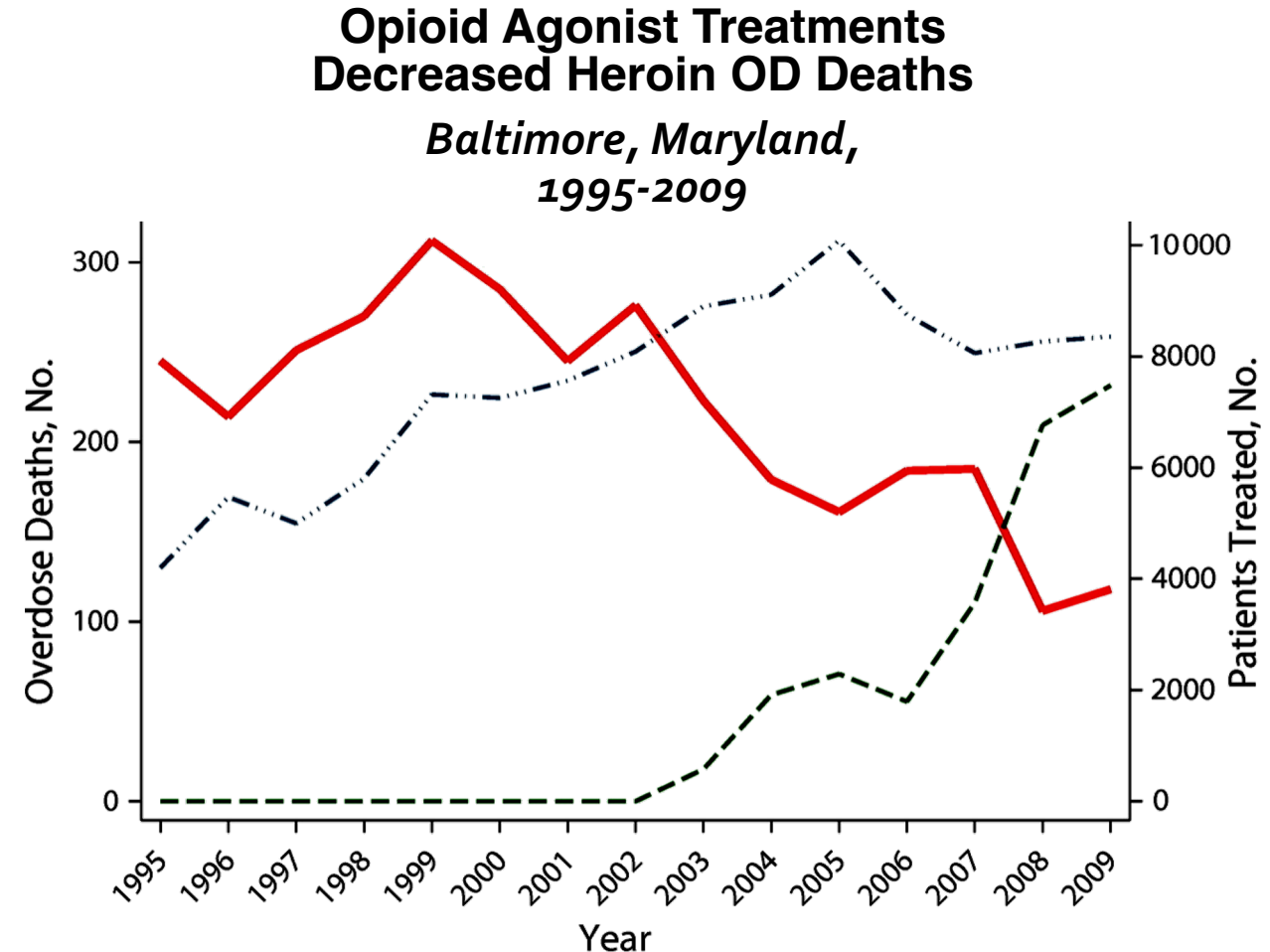


DECREASE:

- Opioid use
- Opioid-related overdose
- Opioid mortality
- Criminal activity
- Infectious disease transmission

And INCREASE

- Social functioning
- Employment
- Retention in treatment



Schwartz RP et al., Am J Public Health 2013.



Medications for Opioid Use Disorder (MOUD)

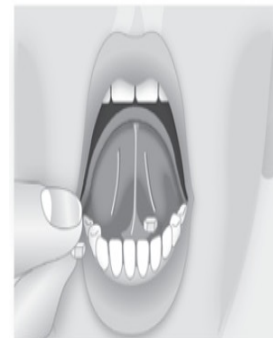


ACOG Committee Opinion No. 524 and 711:
Opioid Abuse, Dependence, and Addiction in Pregnancy (2012)
Opioid Use and Opioid use Disorder in Pregnancy (2017)

Gold Standard of Treatment:

Methadone

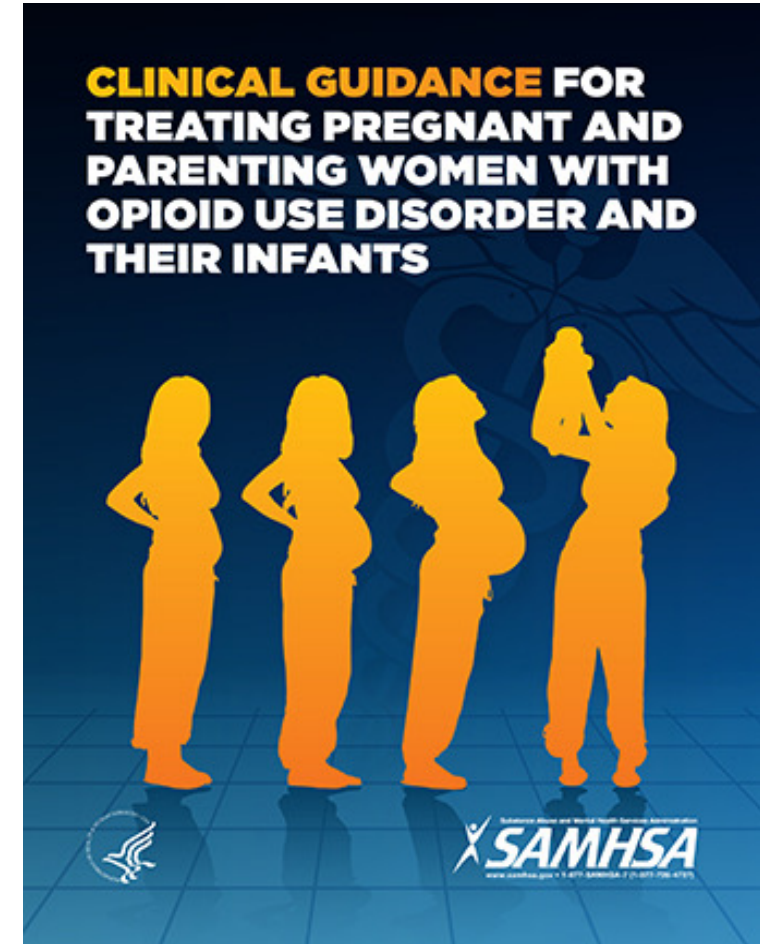
Buprenorphine





**GREAT
RESOURCE**

<https://store.samhsa.gov/>

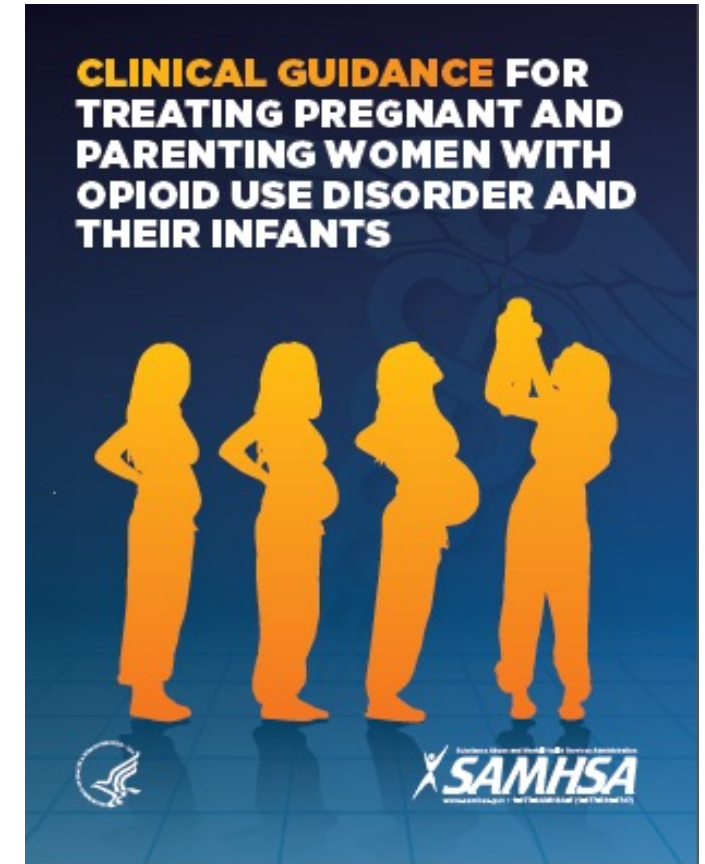


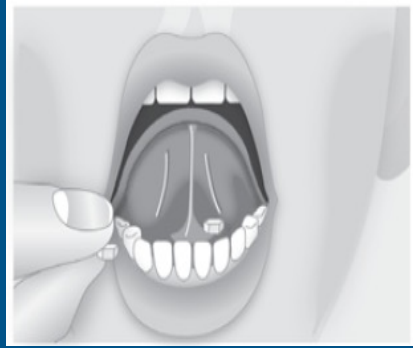
The *Clinical Guide* consists of 16 factsheets that are organized into 3 sections: Prenatal Care (Factsheets #1–8); Infant Care (Factsheets #9–13); and Maternal Postnatal Care (Factsheets #14–16).

SAMHSA Clinical Guide

Recommendations

- Buprenorphine and methadone are the safest medications for managing OUD during pregnancy.
- Medication assisted withdrawal is **not** recommended during pregnancy.
- Transitioning from methadone to buprenorphine or from buprenorphine to methadone during pregnancy is not recommended.
- Dose of Buprenorphine and Methadone will need to be increased over course of pregnancy.
- Breastfeeding is recommended for women on buprenorphine and methadone.





Risks of Medications for OUD



Risks & Benefits of Medication Vs. Risk of Untreated Illness

Women

- Access (travel and cost)
- Preference to not take medications

Obstetric/Newborn

- Prematurity
- Low birth weight
- NAS/NOWs
 - Extended hospital stay
 - Cost



Risks of Relapse and Drug Use



Risks & Benefits of Medication Vs. Risk of Untreated Illness

Women

- Cycles Intoxication/Withdrawal
- Risk of Infections
- High risk behaviors
 - Risk of STI
 - Victim of violence
 - Legal ramifications
- Overdose and death

Obstetric/Newborn

- Prematurity
- Low birth weight
- Severe maternal complications
- NAS/NOWs

Child Development

- Maternal-newborn separation

ORIGINAL ARTICLE

Buprenorphine versus Methadone for Opioid Use Disorder in Pregnancy

E.A. Suarez, K.F. Huybrechts, L. Straub, S. Hernández-Díaz, H.E. Jones, H.S. Connery, J.M. Davis, K.J. Gray, B. Lester, M. Terplan, H. Mogun, and B.T. Bateman

- ### Public Insurance Programs in US 2000-2018
- 2,548,372 pregnancies
 - 11,272 exposed to Buprenorphine
 - 5,056 exposed to Methadone

- **Neonatal Abstinence Syndrome (NAS)**

- Buprenorphine (52%) vs. Methadone (69.2%) [Adjusted RR, 0.73; 95% CI, 0.71 to 0.75]

- **Preterm Birth**

- Buprenorphine (14.4%) vs. Methadone (24.9%) [Adjusted RR, 0.58; 95% CI, 0.35 to 0.62]

- **Small for Gestational Age**

- Buprenorphine (12.1%) vs. Methadone (15.3%) [Adjusted RR, 0.72; 95% CI, 0.66 to 0.80]

- **Low Birth Weight**

- Buprenorphine (8.3%) vs. Methadone (14.9%) [Adjusted RR, 0.56; 95% CI, 0.5 to 0.63]

- **No differences in rates of Cesarean Section or Severe Maternal Complications**

ORIGINAL ARTICLE

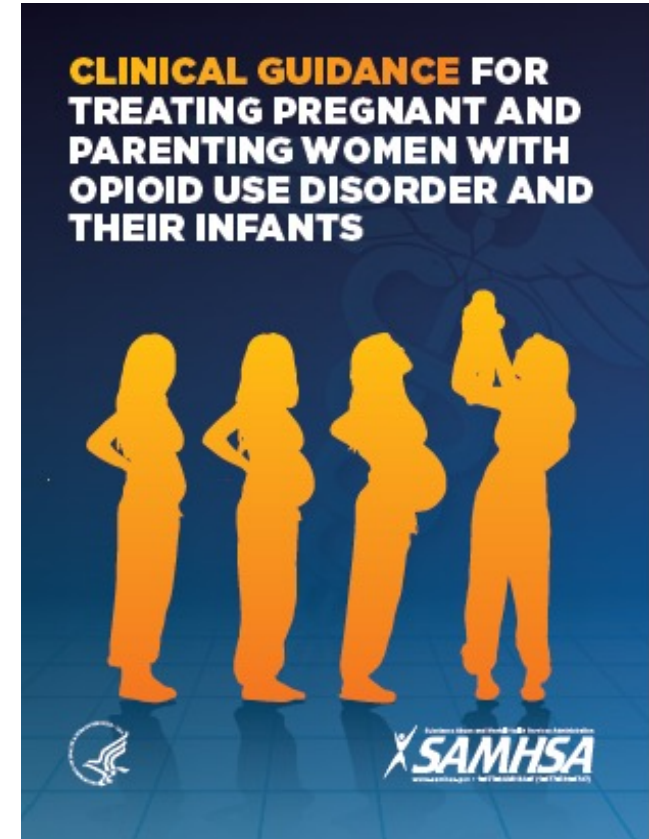
Buprenorphine versus Methadone for Opioid Use Disorder in Pregnancy

E.A. Suarez, K.F. Huybrechts, L. Straub, S. Hernández-Díaz, H.E. Jones, H.S. Connery, J.M. Davis, K.J. Gray, B. Lester, M. Terplan, H. Mogun, and B.T. Bateman

- **Clinical Decision: Buprenorphine Vs. Methadone**
 - **Starting Treatment**
 - **Choose medication that is best for the mother!**
 - Accessible, available and reduces risk of relapse.
 - **Continuing Effective Treatment**
 - **Do not switch effective treatment!**
 - **Methadone to Buprenorphine Risks**
 - Destabilization of illness
 - Precipitated withdrawal
 - Increase exposures to 2 medications
 - If not effective, exposure to illness
 - Unknown if switch lowers risk of NAS

SAMHSA Clinical Guide Recommendations

- Buprenorphine induction, stabilization and maintenance in Pregnancy is the same as non-pregnant populations
 - Induction: Day 1
 - COWS score 8-12; give 2-4mg buprenorphine and wait 30 minutes; if tolerated give 2-4mg again.
 - Stabilization: Day 2
 - Target Dose 16mg Daily [8mg BID]
 - Maintenance: Day 3 and ongoing
 - Adjust dose based on response, craving and withdrawal symptoms



Clinical Guide Recommendations

- Maintenance Pregnancy:
 - Will need to increase dose due to physiological changes in pregnancy resulting in lower levels of buprenorphine
- Adjust dose based on response, craving and withdrawal
 - Dose does not increase the risk for NOWS/NAS
 - Can try to split the total dose to BID, TID, QID
 - Increase by 4-8mg as needed
 - Maintain dose for delivery
 - Reduce dose postpartum

Original Research

ajog.org

OBSTETRICS

An evidence-based recommendation to increase the dosing frequency of buprenorphine during pregnancy



Steve N. Caritis, MD; Jaime R. Bastian, PharmD; Hongfei Zhang, MSc; Hari Kalluri, PharmD; Dennis English, MD; Michael England, MD; Stephanie Bobby, RN; Raman Venkataramanan, PhD

ORIGINAL RESEARCH

CME/MOC

Does Maternal Buprenorphine Dose Affect Severity or Incidence of Neonatal Abstinence Syndrome?

Jacqueline Wong, MD, Barry Saver, MD, MPH, James M. Scanlan, PhD, Louis Paul Gianutsos, MD, MPH, Yachana Bhakta, BS, James Walsh, MD, Abigail Plawman, MD, David Sapienza, MD, and Vania Rudolf, MD, MPH

Mom's IMPACTT

IMProving Access to Maternal Mental Health and Substance Use Disorder Care Through Telemedicine and Tele-Mentoring



Mom's IMPACTT provides real-time perinatal psychiatric consultation to obstetric, pediatric, primary care, psychiatric and community health providers to effectively identify and manage maternal mental health and substance use concerns among pregnant and postpartum people living in South Carolina.

Mom's IMPACTT has 4 components:

- Real-time psychiatric consultation for providers serving pregnant and postpartum people.
- Linkage to community-based resources, treatment, and support groups.
- Trainings for providers and staff on mental health and substance use screening, discussion of screening results, treatment options and referral, risks and benefits of medications.
- Psychiatric consultation for pregnant and postpartum people with mental health and substance use concerns.

For more information visit our website:

muschealth.org/momsimpactt

For a confidential consultation:

Scan this QR code or call

843-792-MOMS (843-792-6667)



Acknowledgements



- **Mentors and Collaborators**
 - Rubin Aujla, MD
 - Kelly Barth, DO
 - Lisa Boyars, MD
 - Kathleen Brady, MD, PhD
 - Katie Cristaldi, MD
 - Edie Douglas, MPH
 - Dee Ford, MD
 - Karen Hartwell, MD
 - Donna Johnson, MD
 - Hendree Jones, PhD
 - Courtney King, PhD
 - Savanna Lee, BA
 - Roger Newman, MD
 - Thomas Uhde, MD



Shared Decision-Making Tool for Treatment of Perinatal Opioid Use Disorder

Constance Guille, M.D., M.S.C.R., Hendree E. Jones, Ph.D., Alfred Abuhamad, M.D., Kathleen T. Brady, M.D., Ph.D.

To assist pregnant women with OUD in the decision to
continue or discontinue MOUD

- What are the current treatment recommendations
- Risks of Methadone or Buprenorphine
- Risk of Relapse
- Risk of Drug Use in Pregnancy

Summary: Treatment of Perinatal OUD

- **Comprehensive Integrated Treatment Including MOUD**
- **MOUD**

Risk & Benefits of Medication Vs. Risk of Untreated Illness

Shared Decision Making: Informed Treatment Choices

Treatment Choices Prioritize Women's Health

Continue Effective Treatments to Reduce Risks of

Destabilization, Withdrawal, Unnecessary Exposures

Adjust dose during pregnancy and postpartum

Pregnant Woman with Opioid Use Disorder



National Institute on Drug Abuse
Clinical Trials Network

Lead Node: University of Cincinnati
10 sites across the country

RCT Bup XL vs. Bup SL

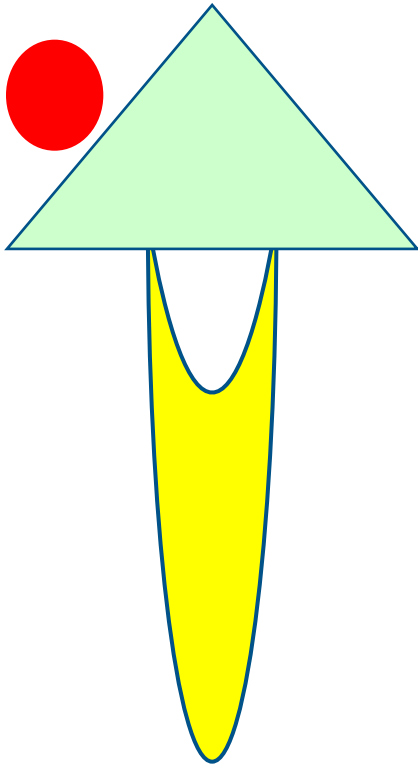
Illicit opioid use

less severe NOWS (NAS).

Medications for Opioid Use Disorder

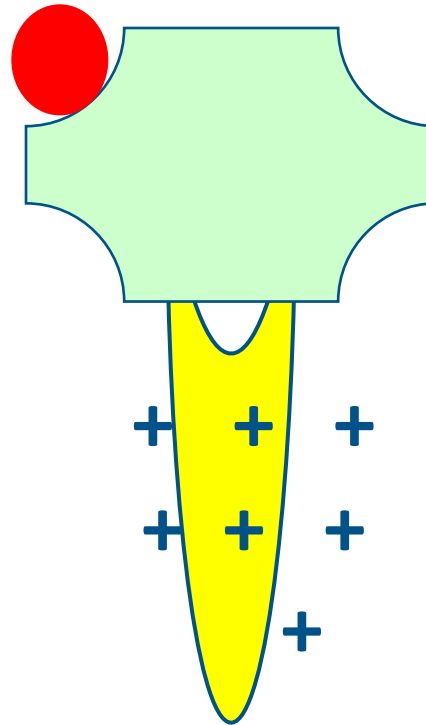
Naltrexone

Antagonist



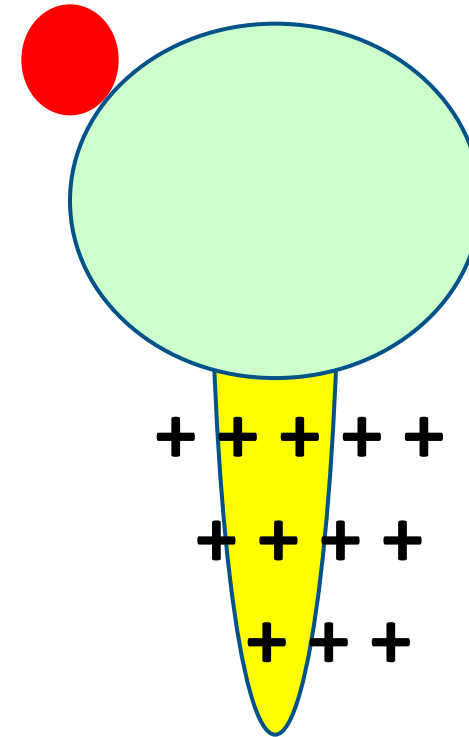
Buprenorphine

Partial Agonist



Methadone

Agonist

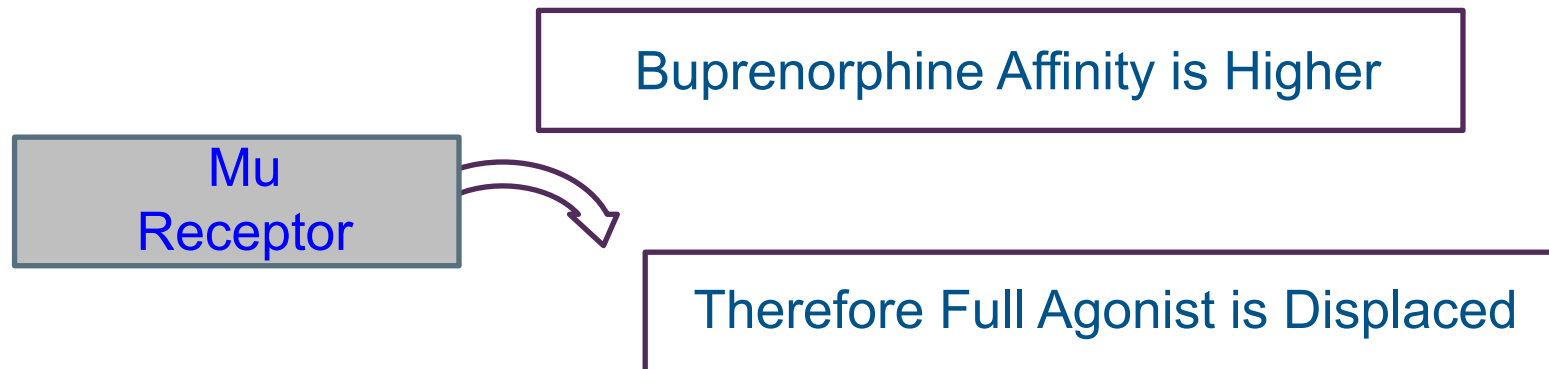


Rarely Used in Pregnancy

How Does Buprenorphine Work?

AFFINITY is the strength with which a drug physically binds to a receptor

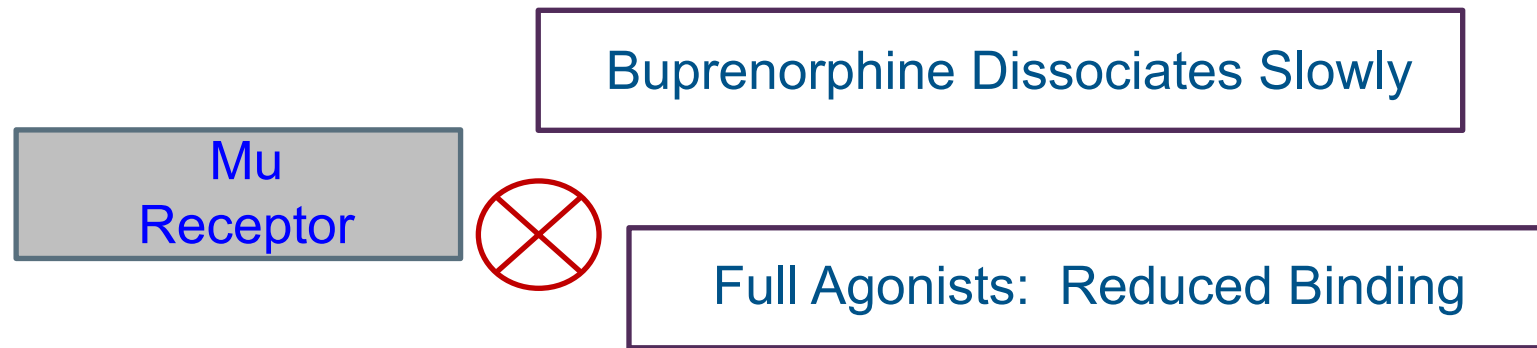
- Buprenorphine has strong affinity; will displace full mu receptor agonists like heroin and methadone
- Receptor binding strength (strong or weak), is NOT the same as receptor activation



How Does Buprenorphine Work?

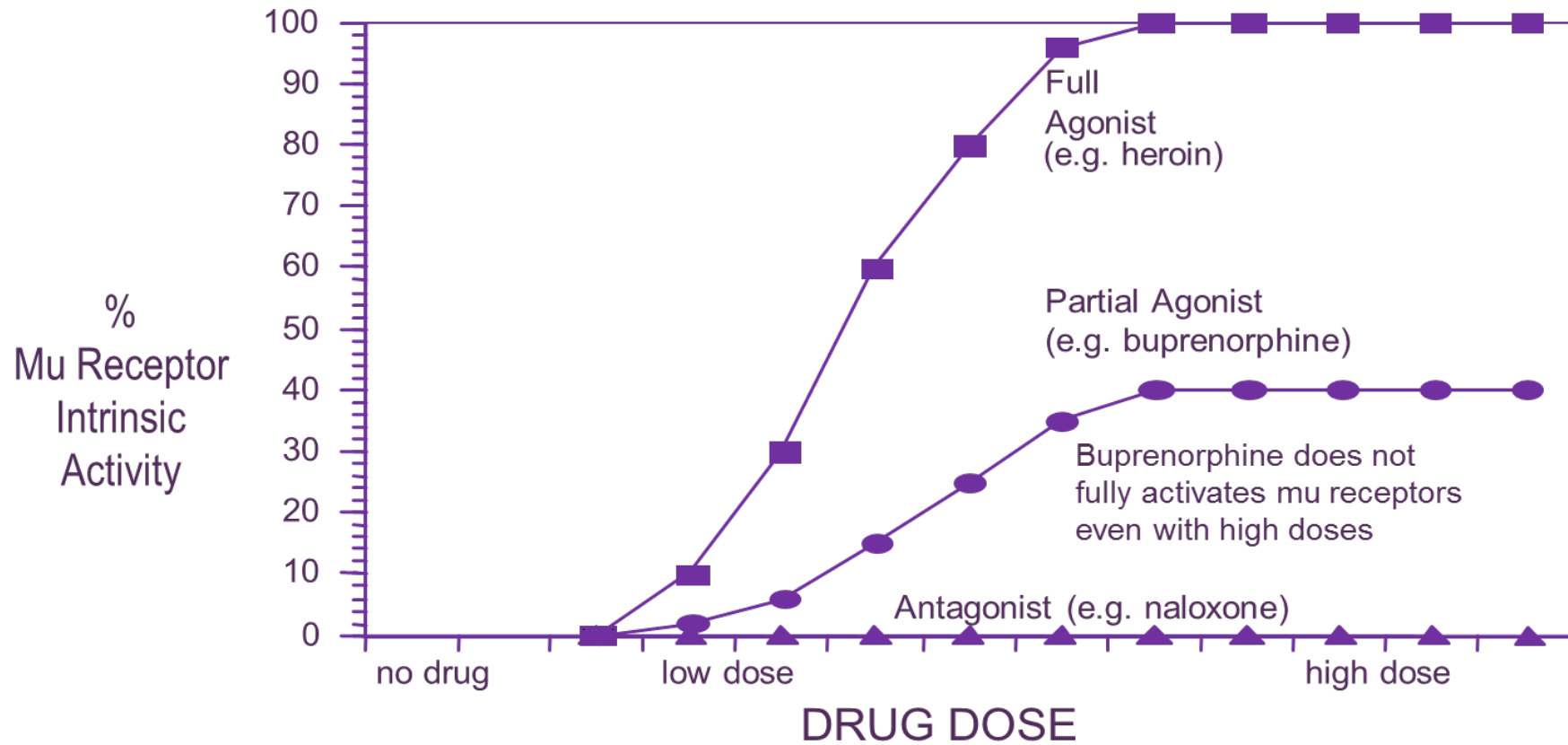
DISSOCIATION is the speed (slow or fast) of disengagement or uncoupling of a drug from the receptor

- Buprenorphine dissociates slowly



- Therefore buprenorphine stays on the receptor a long time and blocks heroin, methadone and other opioids from binding to those receptors

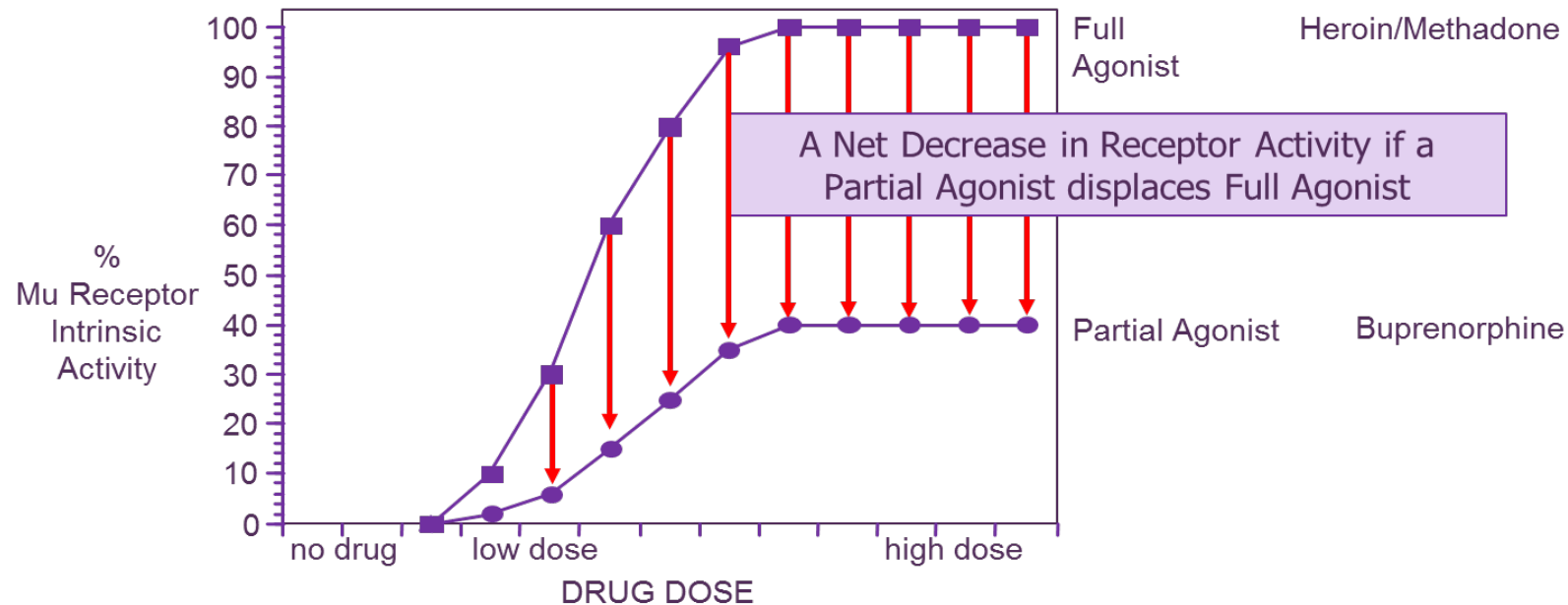
Buprenorphine is a Partial Agonist



Pharmacology of Full vs. Partial Agonists

Buprenorphine can precipitate withdrawal if it displaces a full agonist from the mu receptors

Buprenorphine only partially activates the receptors; therefore, a net decrease in activation occurs and withdrawal develops



How Does Buprenorphine Work?

Buprenorphine may reduce the effects of other opioids taken due to its high affinity for, and slow dissociation from, the mu receptor.

However, buprenorphine is unlikely to block *all* effects from an opioid taken after initiation of buprenorphine treatment.

This is because the availability of mu receptors is a dynamic process; while effects may be less, they are not likely to be completely eliminated.