



UW PACC

Psychiatry and Addictions Case Conference

UW Medicine | Psychiatry and Behavioral Sciences

SUBSTANCE USE DISORDERS IN PREGNANCY

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GENERAL DISCLOSURES

The University of Washington School of Medicine also gratefully acknowledges receipt of educational grant support for this activity from the Washington State Legislature through the Safety-Net Hospital Assessment, working to expand access to psychiatric services throughout Washington State.

SPEAKER DISCLOSURES

- ✓ No conflicts of interest

OBJECTIVES

- Understand scope and impact of substance use in pregnancy
- Gain a basic understanding of maternal and fetal effects for most common substances
- Review recommendations for screening, intervening and referring

Mother Convicted as Drug Deliverer After Cocaine Is Found in Newborns

July 14, 1989 | From Associated Press

SANFORD, Fla. — An addict who gave birth to two children with traces of cocaine in their systems was convicted of drug delivery Thursday under a law routinely used against drug dealers.

"A derivative of cocaine which the defendant had introduced into her body passed into theirs" through the umbilical cord, Circuit Judge O. H. Eaton Jr. ruled in the non-jury trial.

Jennifer Clarise Johnson, 23, faces up to 30 years in prison, but prosecutor Jeff Deen said he would recommend that she continue in a drug-treatment program and receive a long period of probation.

Deen said the verdict is "a new tool for prosecutors to put a stop to this great problem in this state and in the nation."

Born into suffering: More babies arrive dependent on drugs

Laura Ungar, USA TODAY

Published 10:27 a.m. ET July 8, 2015 | Updated 7:10 p.m. ET July 8, 2015



(Photo: Alton Strupp, *The Courier-Journal*)

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LOUISVILLE, Ky. — Shortly after he was born, tremors wracked Leopoldo Bautista's tiny body as he suffered through the pain of drug withdrawal — pain his mother understands.

Samantha Adams is being treated with methadone for a heroin addiction, and she passed the methadone into Leopoldo's system. Sitting vigil with him at Norton Hospital, she tears up as she describes the 10-day-old "going through what I'd been through."

Being born into suffering is becoming ever more common as research shows a continuing surge in drug-dependent infants amid a national epidemic of pain pill and now heroin abuse, with no end in sight.

ACCESS TO CARE

- Research demonstrates that punitive policies applied to substance use do not improve outcomes
- Improved outcomes are associated with public health models that emphasize harm reduction and access to treatment

ACCESS TO CARE

Early prenatal care is recommended for the best possible maternal and infant outcomes (CDC, 2011).

ACCESS TO CARE

- National Survey: Abstinence rate of 57%
- Prospective Study: Abstinence rate of 96% of heavy drinkers, 78% of cannabis users, 73% of cocaine users and 32% of cigarette smokers
- Precipitous rates of relapse following delivery

EPIDEMIOLOGY

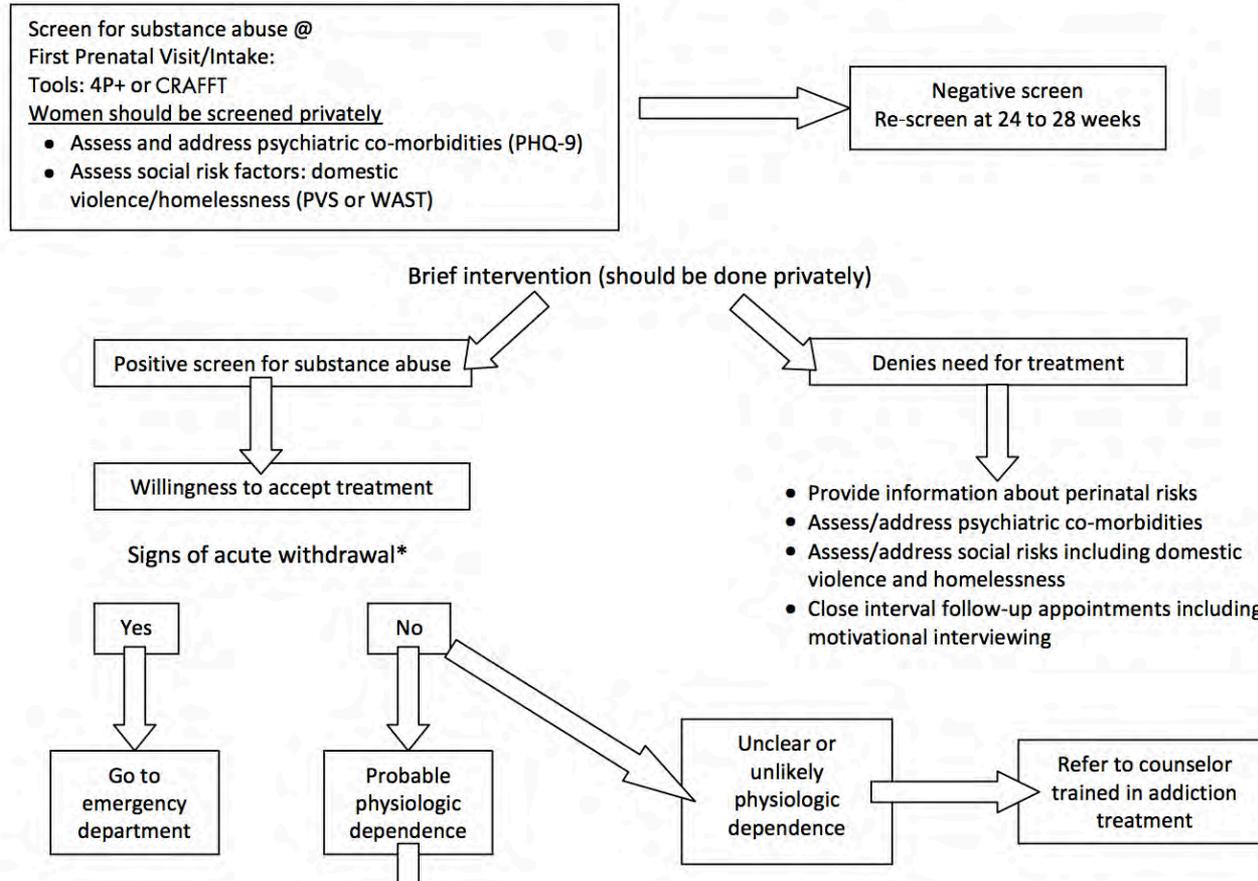
5.9% of pregnant women use **illicit drugs**, **8.5%** drink **alcohol** and **15.9%** smoke **cigarettes**, resulting in over **380,000** offspring exposed to illicit substances, over **550,000** exposed to alcohol and over **one million** exposed to tobacco in utero.

UNIQUE CONSIDERATIONS

- Impact varies and is complicated by:
 - drug, point of exposure and extent of use
 - polysubstance use
 - comorbid and undertreated psychiatric and medical conditions
 - lack of prenatal care
 - Poverty
 - Interpersonal violence
 - Impaired maternal-infant and bonding
- Limited research

APPROACH

Screening and Brief Intervention Algorithm**



APPROACH

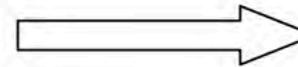
Screen for substance abuse @

First Prenatal Visit/Intake:

Tools: 4P+ or CRAFFT

Women should be screened privately

- Assess and address psychiatric co-morbidities (PHQ-9)
- Assess social risk factors: domestic violence/homelessness (PVS or WAST)



Negative screen

Re-screen at 24 to 28 weeks

SCREENING

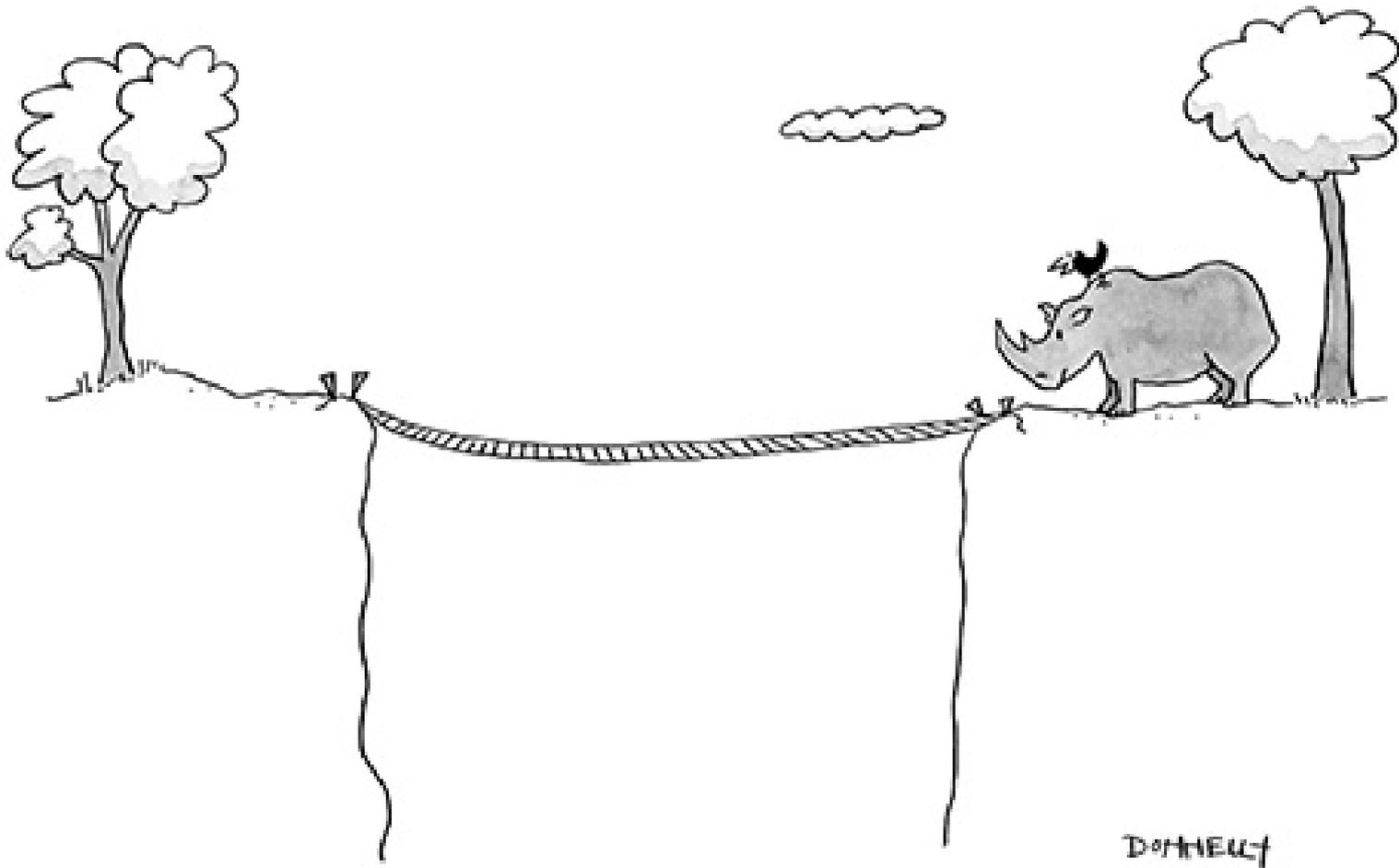
Screen	Sens (%)/Spec(%)	Substance	Cost
AUDIT-C	67-95/85	Alcohol	Free
CRAFFT (15-24 yo)	76/94	Alcohol and drug	Free
4P's Plus	87/76	All	Permission
T-ACE	69-88/1-89	Heavy alcohol	Free
TICS	80/80	Alcohol and drug	Free
TWEAK	71-91/73-83	Heavy alcohol	Free

SCREENING

- **Assess:** Readiness to change
- **Advise:** fill in knowledge gaps for all pts
- **Assist and Arrange:** if ready, refer

SCREENING

Drug toxicology is NOT recommended for universal screening because it has limitations and should only be considered if there is a clinical indication and with consent.



“Go ahead. Nothing to worry about.”

TOBACCO: INTRODUCTION

- Remains one the most prevalent and preventable causes of infant morbidity and mortality in the US
- Almost ½ quit during pregnancy and close to 80% relapse following delivery
- Smokers have the lowest abstinence rates when compared with other substances

TOBACCO: PATHOPHYSIOLOGY

- Nicotine easily crosses the placenta
- Amniotic fluid nicotine levels are severely elevated
- Increases placental resistance and toxin exposure → impaired fetal oxygenation

TOBACCO: ADVERSE EFFECTS

PREGNANCY

- **Early Pregnancy Loss/IUFD**
- Ectopic Pregnancy
- **Preterm Delivery**
- **Low Birth Weight/SGA**
- PROM
- Placental abruption/Previa
- Antenatal depressive symptomatology in the mother

POSTNATAL

- **SIDS**
- NEC
- Childhood Asthmas/Obesity/Increased risk for **Respiratory Infections** and Otitis Media
- Associations with poor academic outcomes/ADHD/substance use/antisocial behaviors (studies have mixed results; many confounders)
- Altered maternal/fetal attachment (confounders)

TOBACCO: INTERVENTIONS

- Early identification and counseling
- Contingency management
 - Cochrane review: CM superior to other interventions
- NRT +/- Bupropion
 - NRT increases abstinence rates in late pregnancy by 40%

CONTINGENCY MANAGEMENT



Center for **Technology**
and **Behavioral Health**

Innovate · Evaluate · Disseminate

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Program Reviews

Eye on Innovation

Resources

PROGRAM REVIEWS

Motive8: Online contingency management for smoking cessation

TOBACCO: INTERVENTIONS

Smoking Cessation For Pregnancy And Beyond: A Virtual Clinic



You have signed up successfully. If enabled, a confirmation was sent to your e-mail.



<https://www.smokingcessationandpregnancy.org/course>

ALCOHOL: EPIDEMIOLOGY

“[CDC to Women: Protect Your Womb From the Devil Drink](#),” sneered The Atlantic. Slate wondered: “[CDC Says Women Shouldn’t Drink Unless They’re On Birth Control. Is It Drunk?!?](#)”

[Jezebel](#), [Elle](#) and [USA Today](#) all expressed (righteous) outrage at the idea that a government agency should suggest an entire population of adult women stop drinking because of theoretical fetuses.

ALCOHOL: EPIDEMIOLOGY

- Approximately 3.3 million U.S. women aged 15-44 years who were not pregnant and not sterile were at risk for an alcohol-exposed pregnancy during 2011–2013.
- A developing baby can be exposed to alcohol before a woman knows she is pregnant.

ALCOHOL: EPIDEMIOLOGY

- Prenatal alcohol exposure is the leading preventable cause of birth defects and neurodevelopmental in the US.
- Binge drinking is clearly associated with harmful effects in pregnancy.
- Studies on light and moderate drinking have inconsistent findings.

<https://www.cdc.gov/mmwr/volumes/65/wr/mm6504a6.htm>, Andersen AM, Andersen PK, Olsen J, Grønbaek M, Strandberg-Larsen K. Moderate alcohol intake during pregnancy and risk of fetal death. *Int J Epidemiol.* 2012;41(2):405–413.

May PA, Blankenship J, Marais AS, et al. Maternal alcohol consumption producing fetal alcohol spectrum disorder (FASD): quantity, frequency, and timing of drinking. *Drug Alcohol Depend.* 2013;133(2):502–512.

ALCOHOL: PATHOPHYSIOLOGY

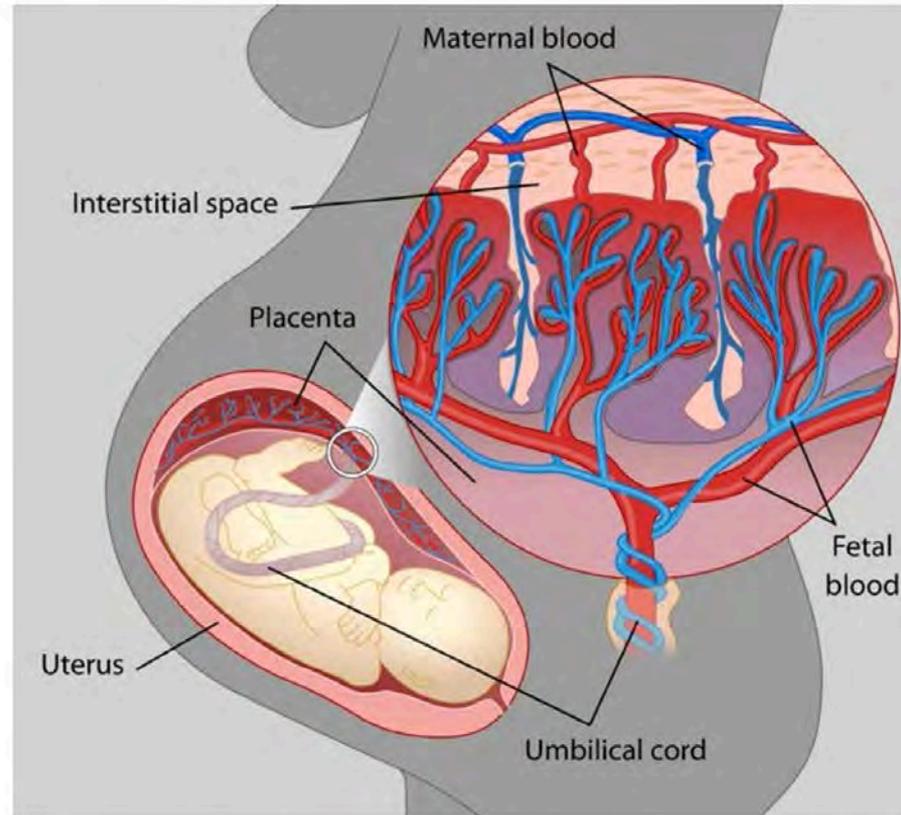


Figure 5.5 *In the placenta alcohol follows nutrients across the interstitial space from the maternal to the fetal blood supply. The baby gets as much alcohol as the mother gets.*

Alcohol use during pregnancy can lead to lifelong effects.

Up to **1 in 20** US school children may have FASDs.



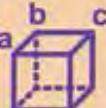
People with FASDs can experience a mix of the following problems:

Physical issues

- low birth weight and growth 
- problems with heart, kidneys, and other organs 
- damage to parts of the brain 

Which leads to...

Behavioral and intellectual disabilities

- learning disabilities and low IQ 
- hyperactivity 
- difficulty with attention
- poor ability to communicate in social situations
- poor reasoning and judgment skills 

These can lead to...

Lifelong issues with

- school and social skills 
- living independently
- mental health
- substance use
- keeping a job 
- trouble with the law

Drinking while pregnant costs the US **\$5.5 billion** (2010).



SOURCES: CDC Vital Signs, February 2016. American Journal of Preventive Medicine, November 2015.

ALCOHOL: FASD

Four Diagnoses under the Umbrella of FASD					
Diagnosis		Growth	FAS Face	Brain	Alcohol
1. FAS	Fetal Alcohol Syndrome	growth	face	severe	alc
2. PFAS	Partial FAS		face	severe	alc
3. SE/AE*	Static Encephalopathy / Alc Exposed			severe	alc
4. ND/AE	Neurobehavioral Disorder / Alc Exposed			moderate	alc

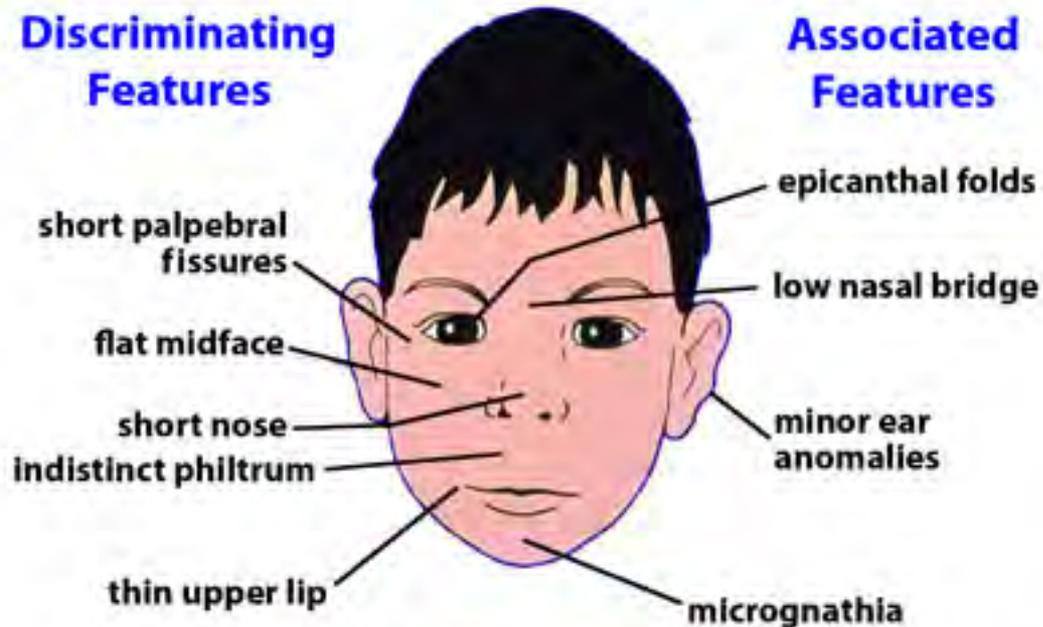
* Also referred to as:

- Alcohol Related Neurodevelopmental Disorder (ARND) or
- Neurodevelopmental Disorder Prenatal Alcohol Exposed (ND-PAE)

<https://depts.washington.edu/fasdpn/htmls/fasd-fas.htm>

ALCOHOL: FAS

Faces in Fetal Alcohol Syndrome



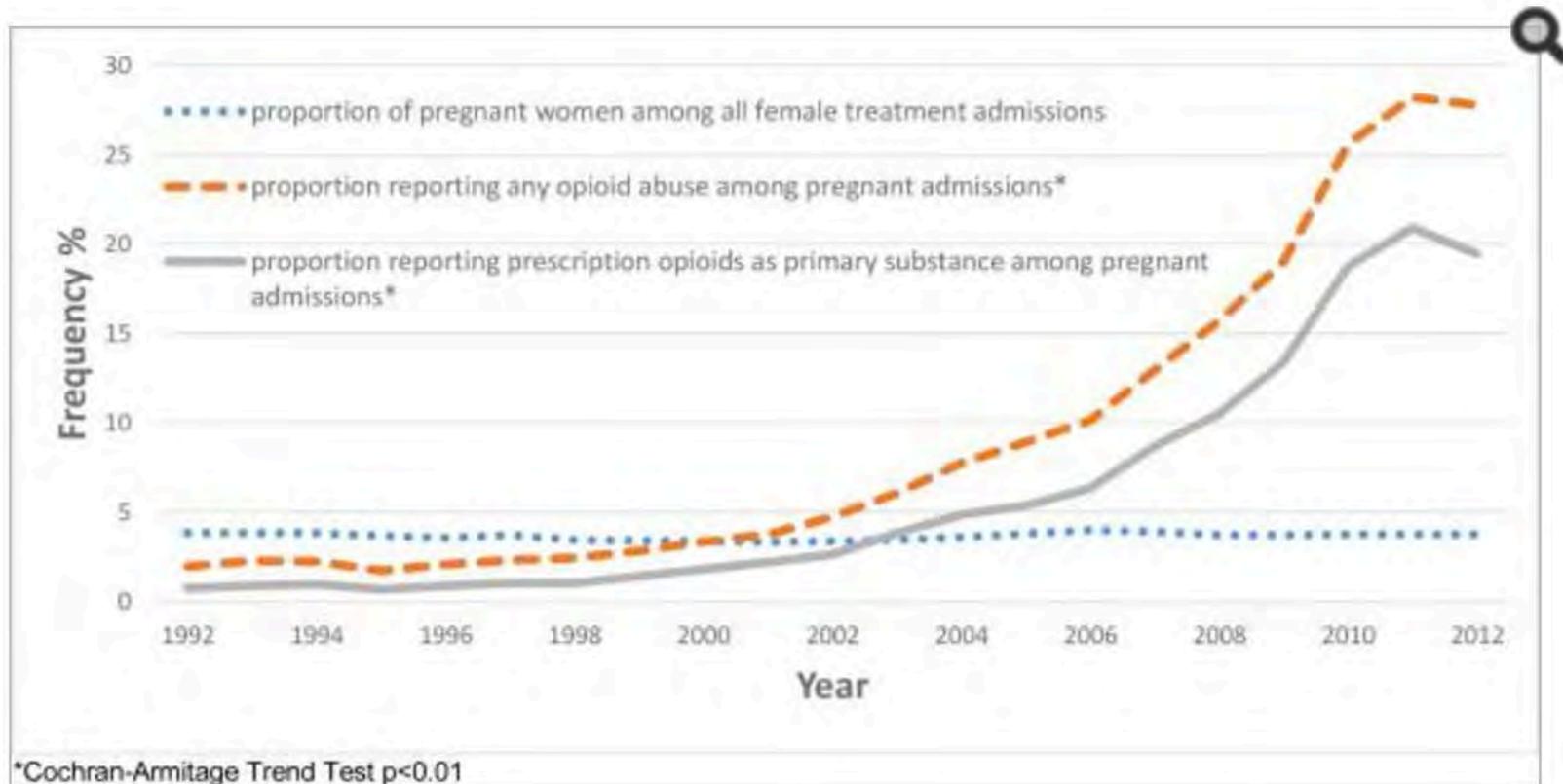
In The Young Child

Streissguth, 1994

ALCOHOL: INTERVENTIONS

- Behavioral Intervention
 - No evidence supporting one intervention over another
- Medication Assisted Treatment
 - Naltrexone (?), disulfiram (no?), acamprosate (no?)
- Referral to a higher level of care as indicated
 - Medically supervised withdrawal
 - Residential treatment

OPIOIDS: EPIDEMIOLOGY



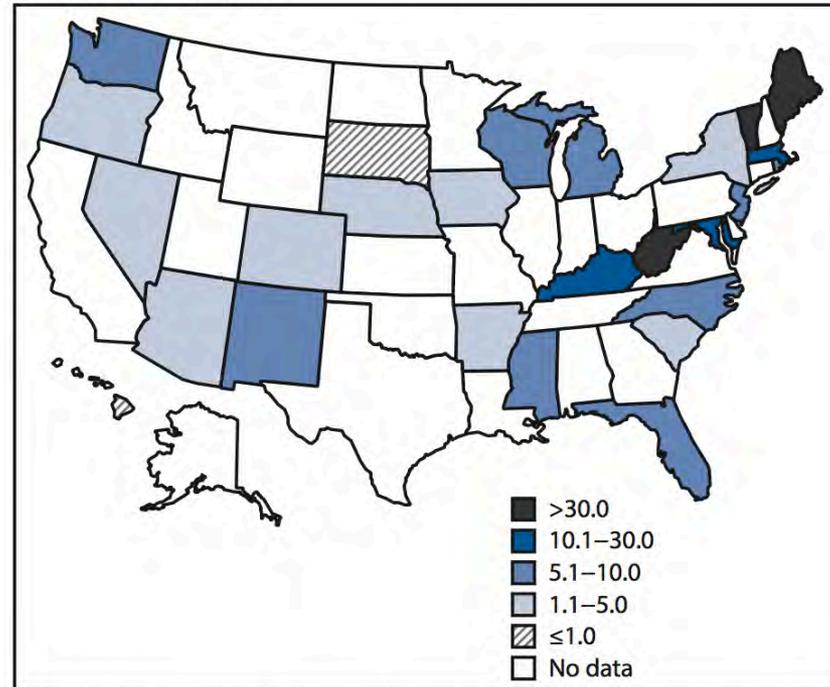
Pregnancy and prescription opioid abuse among substance abuse treatment admissions, TEDS-A 1992-2012

OPIOIDS: ADVERSE EFFECTS

- Placental Abruption
- IUFD
- Intraamniotic infection
- IUGR
- Fetal passage of meconium
- Preeclampsia
- Premature labor and delivery
- Premature rupture of membranes
- Placental insufficiency
- Miscarriage
- Postpartum hemorrhage
- Septic thrombophlebitis
- Mixed data on teratogenicity

OPIOIDS: NAS

FIGURE. Neonatal abstinence syndrome (NAS) incidence rate* — 25 states, 2012–2013[†]



Source: State Inpatient Databases, Healthcare Cost and Utilization Project.

* NAS cases per 1,000 hospital births.

[†] Incidence rates reported are for 2013, except for four states (Maine, Maryland, Massachusetts, and Rhode Island) for which 2013 data were not available; 2012 data are reported for these states.

OPIOIDS: NAS

- Clinical diagnosis:
 - hx of maternal opioid use
 - positive tox screen
 - neonatal findings c/w NAS
- Varies widely in presentation
- Potentiated by other substances
- No known long-term adverse effects

OPIOIDS: INTERVENTIONS



The American College of
Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

COMMITTEE OPINION

Number 524 • May 2012



Committee on Health Care for Underserved Women
and the American Society of Addiction Medicine

This information should not be construed as dictating an exclusive course of treatment or procedure to be followed.

ABSTRACT: Opioid use in pregnancy is not uncommon, and the use of illicit opioids during pregnancy is associated with an increased risk of adverse outcomes. The current standard of care for pregnant women with opioid dependence is referral for opioid-assisted therapy with methadone, but emerging evidence suggests that buprenorphine also should be considered. Medically supervised tapered doses of opioids during pregnancy often result in relapse to former use. Abrupt discontinuation of opioids in an opioid-dependent pregnant woman can result in preterm labor, fetal distress, or fetal demise. During the intrapartum and postpartum period, special considerations are needed for women who are opioid dependent to ensure appropriate pain management, to prevent postpartum relapse and a risk of overdose, and to ensure adequate contraception to prevent unintended pregnancies. Patient stabilization with opioid-assisted therapy is compatible with breastfeeding. Neonatal abstinence syndrome is an expected and treatable condition that follows prenatal exposure to opioid agonists.

OPIOIDS: INTERVENTIONS

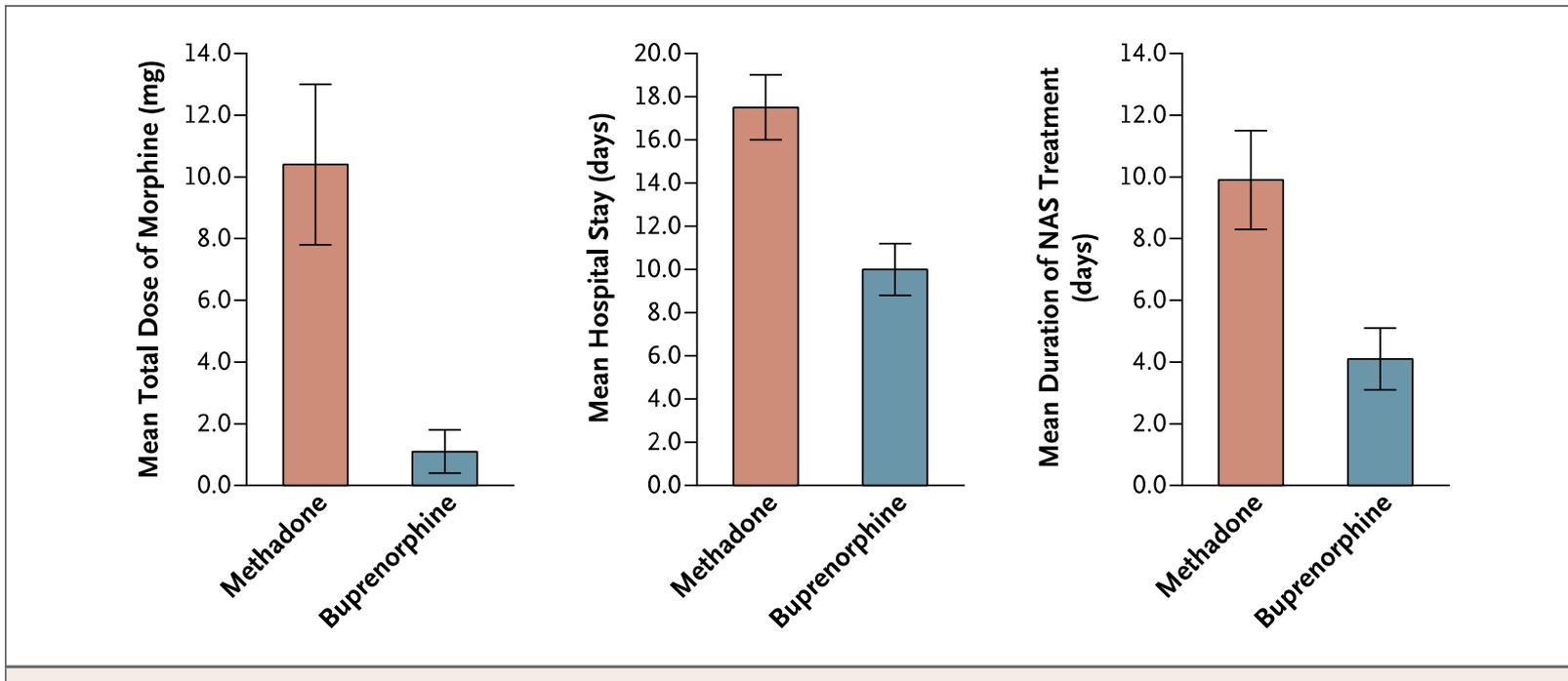
- Medically supervised withdrawal can be safely performed, but it presents a high risk for relapse (41 to 96%)
 - Placental abruption, PTL, meconium, growth delay, fetal death
 - Poor prenatal care

OPIOIDS: INTERVENTIONS

- Reduces risk of illicit opiate use and other drugs diminishing risk of transmission of infectious diseases
- Prevents fluctuation in maternal drug level over the course of the day thus avoiding fetal distress
- Improves participation in prenatal care
- Improves maternal nutrition and infant birth weight
- Reduces obstetric complications (IUFD, PTL etc)
- Removes opiate-dependent woman from high-risk environment

OPIOIDS: INTERVENTIONS

Outcomes comparing methadone to buprenorphine



OPIOIDS: INTERVENTIONS

Methadone



Most evidence in pregnancy

Daily observed dosing

No diversion potential

No ceiling effect

Longer NAS hospital stay

Buprenorphine



Office based therapy

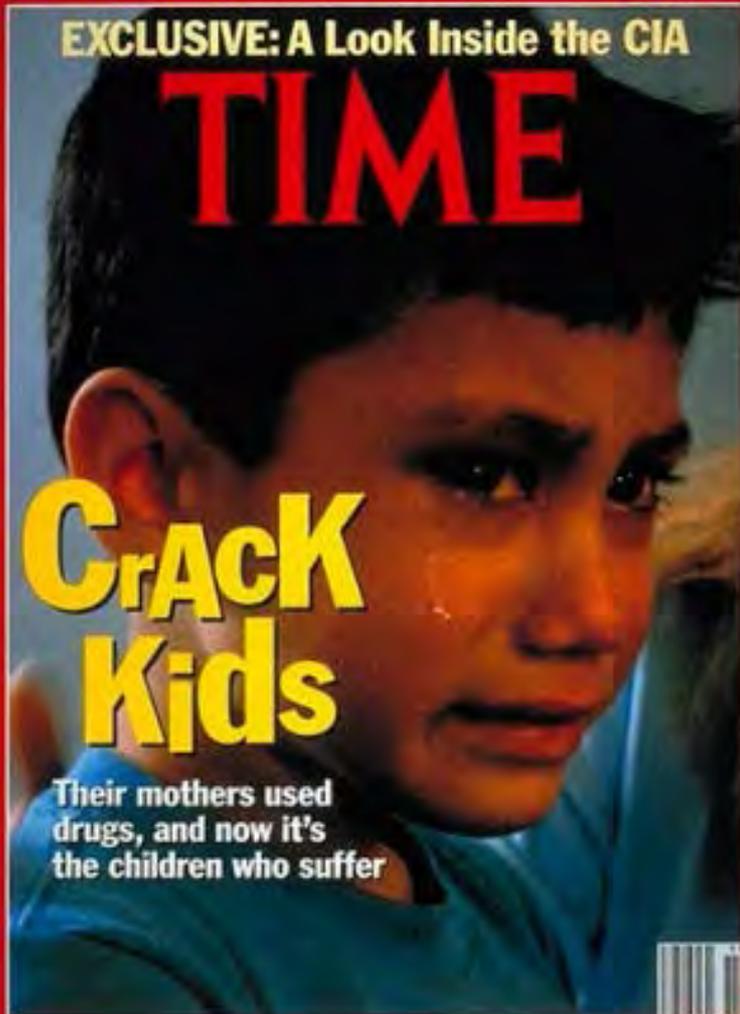
Diversion potential

Need to be in withdrawal to start

Ceiling effect

Shorter NAS hospital stay

COCAINE



The New York Times Revisiting the 'Crack Babies' Epidemic That Was Not



Michael Winerip

RETRO REPORT MAY 20, 2013



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<http://www.nytimes.com/2013/05/20/booming/revisiting-the-crack-babies-epidemic-that-was-not.html>

COCAINE: ADVERSE EFFECTS

- PROM
- Placental abruption
- Preterm birth (OR = 3.38; 95% CI: 2.72–4.21)
- Low birth weight (OR = 3.66; 95% CI: 2.90– 4.63)
- SGA (OR = 3.23; 95% CI: 2.43–4.30)

COCAINE: INTERVENTIONS

- CBT, MI and **CM**
- No evidence-based pharmacologic treatments

CANNABIS: EPIDEMIOLOGY

- Most commonly used illicit substance in pregnancy and lactation
- Prevalence ranges from 10% to 43%

CANNABIS: PATHOPHYSIOLOGY

- δ -9-tetrahydrocannabinol (THC) crosses the placenta, but its major metabolite does not
- Fetal THC concentrations are lower than maternal
- Produces 5x the amount of CO as cigarette smoke

CANNABIS: ADVERSE EFFECTS



Pregnant Women Turn to Marijuana, Perhaps Harming Infants

More expectant mothers are using marijuana, believing it safe. But research suggests it may hurt brain development and reduce birth weight.

NYTIMES.COM

CANNABIS: ADVERSE EFFECTS

- LBW*
- PTL*
- SGA*
- Fetal brain growth
- Poor attention and executive functioning
- Lower academic achievement
- Increased behavioral problems

CANNABIS: INTERVENTIONS

- CBT, MI, CM?
 - Brief Marijuana Dependence Counseling by SAMSHA
- No evidence-based pharmacologic treatments

BREASTFEEDING

- Illicit substances including marijuana, heroin, cocaine and methamphetamine: contraindicated in breastfeeding according to the AAP.
- Nicotine and alcohol: benefits outweigh risks with limited use
- Methadone: encouraged

SUMMARY

- Screen all pts for substance use in pregnancy and screen more than once
- Fill in gaps in knowledge around substance use in pregnancy
- Weigh the r/b of various treatments with the risks of continued substance use in pregnancy
- Refer to a higher level of care as indicated

July 24, 1992

Mother Cleared of Passing Drug to Babies

By TAMAR LEWIN

Correction Appended

The Supreme Court of Florida yesterday overturned the conviction of Jennifer Clarice Johnson, the first woman in the nation convicted of delivering drugs to her newborn infants through the umbilical cord in the seconds after their births.

Ms. Johnson, 26 years old, of Altamonte Springs, was charged and found guilty under laws intended to apply to drug traffickers. About 160 such criminal cases have been brought nationwide.

"It's a great victory for public health, for women and newborns and common sense," said Lynn Paltrow, litigation director of the Center for Reproductive Law and Policy, which provided legal representation for Ms. Johnson. "It's the first Supreme Court in any state to address a conviction of a pregnant woman for giving birth to a substance-exposed newborn. It's significant both because it's a unanimous decision and because now all the courts that have ruled on these cases say they're illegal, unconstitutional or both."

RESOURCES

- See email attachment for more information:
 - Swedish OB Outreach Clinic
 - 26 day inpatient "Chemically Using Pregnant Women" programs
 - Outpatient Treatment Programs
 - 6 month residential treatment programs for pregnant and parenting women
 - Parent-Child Assistance Program (PCAP)
 - MOMs Plus Case Management
 - Nurse-Family Partnership
 - Maternity Support Services and Infant Case Management

SPECIAL THANKS TO

Drs. Duncan, Sapienza and Peterson

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