

Opiates in Pregnancy

Amy Levi, PhD, CNM, WHNP-BC
Albers Professor of Midwifery

**I have nothing to disclose
relevant to this presentation**

Objectives

- Review the incidence and prevalence of opiate use in pregnancy in the United States
- Describe the health effects of opiate use in pregnancy
- Discuss the management of opioid-using pregnant women
- Discuss resources for practitioners managing pregnant women with substance abuse disorders

First Woman Charged based on Controversial Law that Criminalizes Drug Use During Pregnancy

Jul 13, 2014, 2:33 PM ET

<http://abcnews.go.com/GMA/video/mom-charged-drug-assault-fetus-24555743>

Overall Prevalence of Drug Dependence in Women

- More than 5 times as many women died from prescription painkiller overdoses in 2010 as in 1999.
- Women between the ages of 25 and 54 are more likely than other age groups to go to the emergency department from prescription painkiller misuse or abuse. Women ages 45 to 54 have the highest risk of dying from a prescription painkiller overdose.*

Overall Prevalence of Drug Dependence in Women

- Non-Hispanic white and American Indian or Alaska Native women have the highest risk of dying from a prescription painkiller overdose.
- Prescription painkillers are involved in 1 in 10 suicides among women.
- ***Death data include unintentional, suicide, and other deaths. Emergency department visits only include suicide attempts if an illicit drug was involved in the attempt.**

Overall Prevalence of Drug Dependence in Women

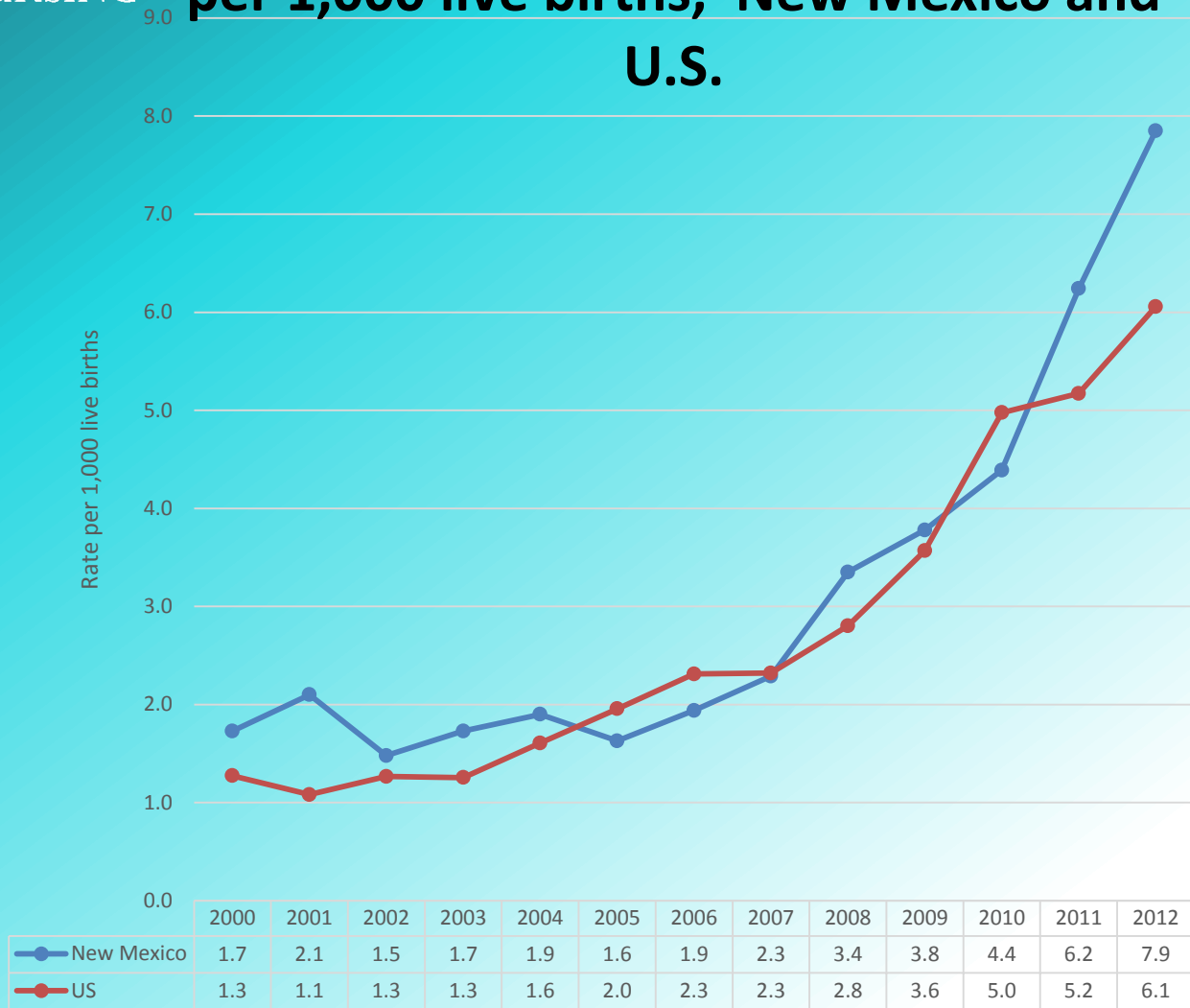
- **The prescription painkiller problem affects women in different ways than men:**
 - Women are more likely to have chronic pain, be prescribed prescription painkillers, be given higher doses, and use them for longer time periods than men.
 - Women may become dependent on prescription painkillers more quickly than men.
 - Women may be more likely than men to engage in “doctor shopping” (obtaining prescriptions from multiple prescribers).

Overall Prevalence of Drug Dependence in Pregnant Women

- 16.2% of pregnant teens and 7.4% of pregnant women 18 to 25 years old used illicit drugs, including opiates such as heroin and illegally obtained prescription painkillers.
- The number of U.S. babies born dependent on drugs nearly tripled between 2000 and 2009
- An estimated 13,539 babies -- an average of one every hour -- were diagnosed with a drug withdrawal syndrome



Rate of Neonatal Abstinence Syndrome per 1,000 live births, New Mexico and U.S.



Sources:

US: Weighted national estimates from HCUP Nationwide Inpatient Sample (NIS), 2000, Agency for Healthcare Research and Quality (AHRQ), based on data collected by individual States and provided to AHRQ by the States. Total number of weighted discharges in the U.S. based on HCUP NIS = 36,417,565.

New Mexico: 2012 Hospital Inpatient Discharge Data (HIDD).

Health Effects of Opiate Addiction in Pregnancy

- Obstetric complications increase up to six fold, with no clear etiology identified:
 - Spontaneous Abortion
 - Low Birthweight
 - Intrauterine Growth Retardation
 - Preeclampsia
 - Placental abruption
 - Premature Rupture of Membranes

Health Effects of Opiate Addiction in Pregnancy

- Preterm Birth
- Fetal distress
- Fetal demise
- Malpresentation
- Low APGAR scores
- Postpartum Hemorrhage
- Septic thrombophlebitis
- Meconium aspiration
- Chorioamnionitis



Health Effects of Opiate Addiction in Pregnancy

- No consistent pattern of congenital anomalies has been found with illicit substances (excluding EtOH, barbiturates, and maybe tobacco) in large-scale epidemiologic studies.
- Few studies have controlled for concomitant drug use, social, or psychosocial factors.
- Opiates are not teratogens in humans

Neonatal Effects of Opiate Addiction in Pregnancy

- Postnatal growth deficiency
- Microcephaly
- Neurobehavioral problems*
- Increased neonatal mortality
- **74-fold** increase in sudden infant death syndrome (SIDS)
- Neonatal abstinence syndrome (NAS)

Heroin in Pregnancy

- Passage through placenta to fetus within 1 hour of administration
- Accumulates in amniotic fluid
- Limited fetal detoxification due to immature tissues
- **Fluctuation in drug levels** causes placental changes → **placental insufficiency** and **IUGR**
- More significant placental change and LBW than methadone or buprenorphine.

Management of Opiate Addiction in Pregnancy

- Recognize that women may be at risk:
 - Screen for chronic pain
 - Screen for substance abuse disorders
 - Inquire about all prescription medications as well as non-prescription medications
 - Identify opportunities for substance abuse treatment, or alternative pain management

Management of Opioid-Dependent Pregnant Women



- Urine Drug Screening
 - Routine
 - With consent
 - With elaboration of the consequences
 - With a management plan available, including referrals as necessary



"You're fired, Jack. The lab results just came back, and you tested positive for Coke."

Management of Opioid-Dependent Pregnant Women

- At increased risk for: anemia, malnutrition, hypertension, hyperglycemia, STIs, TB, hepatitis, and preeclampsia
- Regular Prenatal panel, including
 - LFTs, Renal function, PPD, glucose intolerance, anti-HCV antibody
 - Consider repeat CBC, serology at 24-28 wks

Opioid Maintenance

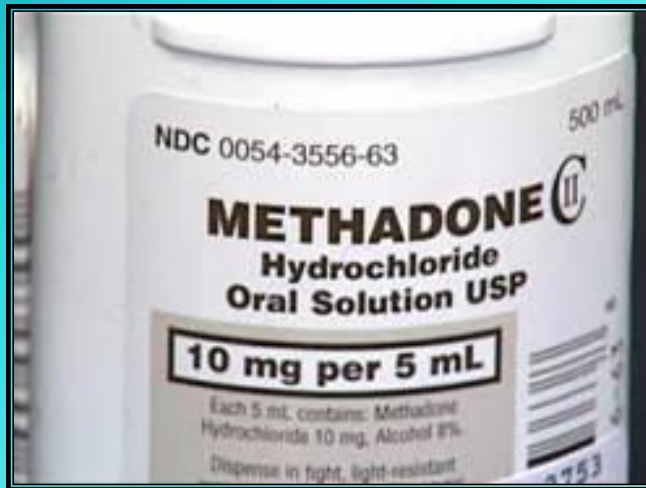
- Methadone
- Subutex (Buprenorphine)
- Suboxone (Buprenorphine/Naloxone)
- Oral slow release morphine

1 g heroin ~ 8 mg buprenorphine ~ 80 mg methadone

Management of Opiate Addiction in Pregnancy: Methadone

- Why methadone is preferred over illicit substance abuse:
 - Less drug-seeking and criminal behavior, fewer relapses, decreased STIs, improved prenatal care and compliance, improved nutrition
 - Consistent maintenance opioid treatment prevents repeated fetal withdrawals

Methadone



- Pregnancy Category C
- Full mu opioid agonist
- First-line treatment of opioid addiction in pregnancy in the US, UK, and Australia
- Requires daily visits to methadone clinic

Methadone

- Higher infant birthweight and less IUGR than seen in heroin-addicted moms.
- NAS in 60-100% of neonates
- Longer duration of NAS treatment vs. buprenorphine & heroin
 - 30 days vs. 11-12 days tx
 - Likely due to longer half-life

Methadone

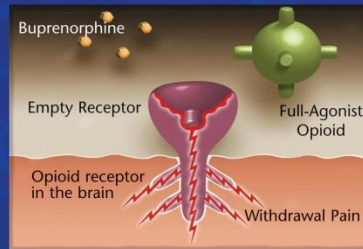
- Some experts believe that, when compared to buprenorphine, methadone is the preferred medication:
 - They report buprenorphine has a “ceiling” dose, which is surpassed by some woman...thus they require higher levels of opioid maintenance that can only be reached with methadone
 - Less structured regimen of buprenorphine treatment vs. daily methadone dosing may lead to gaps in prenatal care, in addition to diversion or IV abuse of buprenorphine

Management of Opiate Addiction in Pregnancy: Buprenorphine

- Buprenorphine (Category C)
- Long-acting partial mu opioid agonist & kappa antagonist
- While approved in the US for opioid detox & maintenance, it is not FDA-approved for use during pregnancy
- However, is considered safe in pregnancy
- First choice for opioid maintenance programs & in pregnant women in Finland since 1996

Buprenorphine

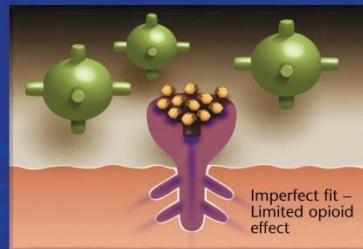
How Buprenorphine Works



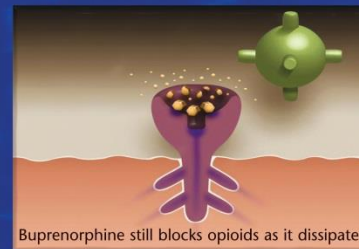
Opioid receptor is empty. As someone becomes *tolerant* to opioids, they become less sensitive and require more opioids to produce the same effect. Whenever there is an insufficient amount of opioid receptors activated, the patient feels discomfort. This happens in withdrawal.



Opioid receptor filled with a full-agonist. The strong opioid effect of heroin and painkillers can cause euphoria and stop the withdrawal for a period of time (4-24 hours). The brain begins to crave opioids, sometimes to the point of an uncontrollable compulsion (addiction), and the cycle repeats and escalates.



Opioids replaced and blocked by buprenorphine. Buprenorphine competes with the full agonist opioids for the receptor. Since buprenorphine has a higher affinity (stronger binding ability) it expels existing opioids and blocks others from attaching. As a partial agonist, the buprenorphine has a limited opioid effect, enough to stop withdrawal but not enough to cause intense euphoria.



Over time (24-72 hours) buprenorphine dissipates, but still creates a limited opioid effect (enough to prevent withdrawal) and continues to block other opioids from attaching to the opioid receptors.

The above illustrations are for educational purposes and do not accurately represent the true appearance.



The National Alliance of Advocates
for Buprenorphine Treatment
naabt.org

10M 6/07
Copyright © 2007, NAABT, Inc.

naabt.org • naabt.org • naabt.org • naabt.org • naabt.org • naabt.org • naabt.org • naabt.org •

Buprenorphine

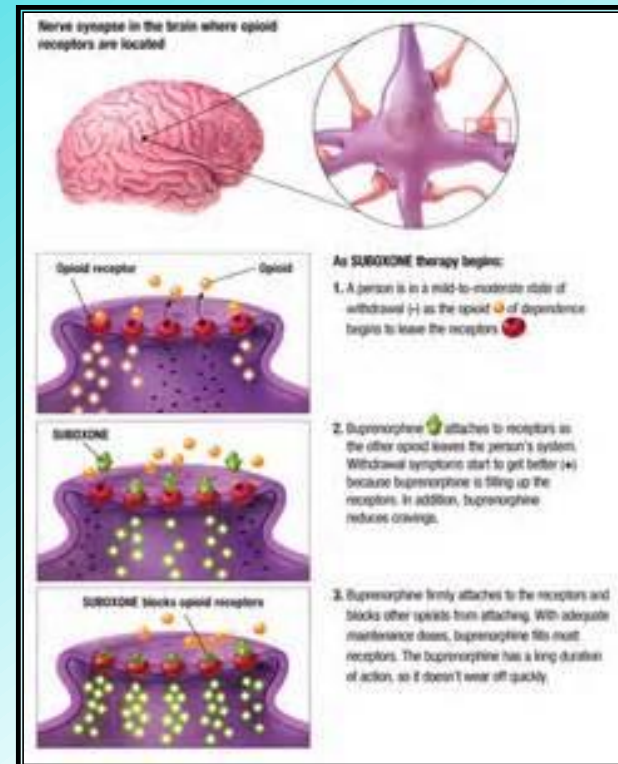
- May have less placenta exposure than methadone
- Partial agonist profile may lower liability for NAS
- Cochrane Review favored buprenorphine over methadone in regards to:
 - Higher infant birthweight
 - Shorter neonatal hospital stay

Buprenorphine

- Low rates of prematurity (avg. 39.2 wks)
- NAS occurs in 62%, but only half require treatment
- Less severe NAS than methadone (though no RCTs yet*) with ↓ incidence and ↓ need for pharmacologic treatment vs. methadone
- Shorter duration of NAS treatment vs. methadone

Management of Opiate Addiction in Pregnancy: Suboxone

- Buprenorphine (Category C) + Naloxone (Category B)
- Limited studies in pregnant women.



Management of Opiate Addiction in Pregnancy: Suboxone

US DHHS Center for Substance Abuse Treatment
recommendations:

- Cautious use of naloxone in opioid-addicted pregnant women → may precipitate withdrawal in both mother & fetus
- Recommends buprenorphine monotherapy, though admit it has great potential for abuse & diversion which is not a risk with combined therapy

Management of Opioid- Dependent Pregnant Women: Detox

- Varied opinion on monitored detoxification & abstinence during pregnancy
- If attempt to wean, suggested in 1st vs. 2nd or 3rd Trimester
 - 1st – theoretical risk of miscarriage
 - 3rd – risk of premature labor or fetal death

Management of Opioid- Dependent Pregnant Women: Detox

- Third trimester detox is generally not recommended
 - Higher methadone doses related to increased BW, prolonged gestation
 - Attempt to decrease incidence of NAS by weaning may cause continued substance abuse

Management of Opioid- Dependent Pregnant Women

- In fact, increased dosage of maintenance therapy may be required in 2nd-3rd trimester:
 - Increased maternal fluid volume + altered opioid metabolism in placenta & fetus → same dose produces lower blood level of particular drug

Breastfeeding during Treatment

- Breastfeeding during Suboxone or methadone treatment is encouraged
- Contraindications:
 - illicit substance abuse
 - HIV
- Buprenorphine:
 - breastfeeding infant will receive only 1/5 to 1/10 of the total available buprenorphine

Breastfeeding during Treatment



- No evidence to support theory that breastfeeding will help suppress NAS
- Likewise, NAS does not occur after breastfeeding is discontinued

Postpartum Care

- Plan ahead: how will treatment be continued?
- What kinds of support needs will be met, especially for meeting newborn needs and transition to parenting?

How to ensure the best possible outcome:

- Prenatal care
- Addiction treatment
- Other social services, including individual/group/family therapy and access to supportive resources



Resources for Managing Opiate Addiction in Pregnancy

- <https://npwh.globalclassroom.us/portal/auth/xmlrpc/jump.php?wr=https://npwhcourses.globalclassroom.us/stratus&ins=10&wantsurl=/custom/frontend.php%3Furl=501534>
- www.cdc.gov

Resources for Managing Opiate Addiction in Pregnancy

- Clinician’s Screening Tool for Drug Use in General Medical Settings
 - From the National Institute on Drug Abuse- National Institutes of Health
 - <http://www.drugabuse.gov/nmassist/>
- Resource Guide: Screening for Drug Use in General Medical Settings
 - From NIDA- NIH- a more detailed guide to screening for drug use
 - <http://www.drugabuse.gov/publications/resource-guide/preface>

Resources for Managing Opiate Addiction in Pregnancy

- Narcotics Anonymous: www.na.org
- Opioid treatment centers by state:
<http://dpt2.samhsa.gov/treatment/directory.aspx>
[X](#)
- For private treatment facilities: www.recovery.org

Bibliography

- Arunogiri S et al. Managing opioid dependence in pregnancy: a general practice perspective. *Aust Fam Physician*. 2013 Oct; 42(10):713-6.
- Baldacchino A. Neurobehavioral consequences of chronic intrauterine opioid exposure in infants and preschool children: a systematic review and meta-analysis. *BMC Psychiatry*. 2014 Apr 8; 14:104.
- Desai RJ. Increase in prescription opioid use during pregnancy among Medicaid-enrolled women. *Obstet Gynecol*. 2014 May; 123(5):997-1002.
- Foder A et al. Behavioral effects of perinatal opioid exposure. *Life Sci*. 2014 May 28; 104(1-2):1-8.
- Fullerton CA et al. Medication-assisted treatment with methadone: assessing the evidence. *Psychiatr Serv*. 2014 Feb 1; 65(2):146-57.

Bibliography

- Gopman S. Prenatal and postpartum care of women with substance use disorders. *Obstet Gynecol Clin North Am.* 2014 Jun; 41(2):213-28.
- Jones HE et al. Clinical care for opioid-using pregnant and postpartum women: the role of the obstetric providers. *Am J Obstet Gynecol.* 2014 Apr; 210(4):302-10.
- Krans EE. Health care use patterns of opioid-dependent pregnant women. *Obstet Gynecol.* 2014 May; 123 Suppl 1:61S.
- Medication Assisted Treatment for Opioid Addiction During Pregnancy. Treatment Improvement Protocol Series, No. 43. Center for Substance Abuse Treatment. Substance Abuse and Mental Health Services Administration (US); 2005.
- Metz V et al. Impact of treatment approach on maternal and neonatal outcome in pregnant opioid-maintained women. *Hum Psychopharmacol.* 2011 Aug; 26(6):412-21.