SUBSTANCE USE DISORDERS IN PREGNANCY
Lorie M. Harper, MD, MSCI

FINANCIAL DISCLOSURES
• I have no financial disclosures.
• I am the medical director of the UAB’s Comprehensive Addiction in Pregnancy Program
• CAPP is funded by UAB and a SAMSHA Regional Partnership Grant

OBJECTIVES
• Identify substance use disorders
  • Definition of a substance use disorders
  • Screening and diagnosis of substance use disorders
• Treatment of Substance Use Disorders
  • Behavioral therapy
  • Pharmacotherapy
  • Prenatal Care
IDENTIFICATION

WHAT IS A SUBSTANCE USE DISORDER?

- **DSM-5:**
  - Recurrent use of alcohol and/or drugs causes clinically and functionally significant impairment
  - Based on evidence of impaired control, social impairment, risky use and pharmacologic criteria
  - May be classified as mild, moderate, or severe depending on number of diagnostic criteria

WHAT IS A SUBSTANCE USE DISORDER?

Substance use disorder is a disease, not a choice!
THE MYTH

• https://www.youtube.com/watch?v=H37TmZzy-Ag

CRITERIA

• Impaired Control
  • Takes substance in larger amounts over longer period than originally intended
  • Persistent desire to cut down / unsuccessful attempts to decrease use
  • Great deal of time obtaining, using, or recovering from effects of substance
  • Craving (intense desire or urge for substance)

CRITERIA

• Social impairment
  • Recurrent substance use may result in failure to fulfill major obligations at work, school or home
  • Continued substance use despite social or interpersonal problems caused or exacerbated by effects of substance
  • Social, occupational, or recreational activities may be given up or reduced because of substance use
CRITERIA

• Risky Use
  • Recurrent substance use in situations in which it is physically hazardous
  • Continued use despite knowledge of having a persistent or recurrent physical or psychological problem

CRITERIA

• Tolerance & Withdrawal
  • Requiring a markedly increased dose of the substance to achieve the desired effect or a markedly reduced effect when the usual dose is consumed
  • Withdrawal is a syndrome that occurs when blood or tissue concentrations of a substance decline in an individual who had maintained prolonged heavy use

SEVERITY

• Mild: 2-3 symptoms
• Moderate: 4-5 symptoms
• Severe: ≥6 symptoms
PHYSIOLOGY OF ADDICTION

The involvement of mesolimbic neurons in morphine addiction
Johnston Nih et al.

Fig. 5. Schematic diagram of brain reward circuit involved in morphine addiction: (a) mesolimbic (nucleus accumbens), (b) ventral tegmental area, (c) septo-hippocampal, and (d) amygdala (from Johnston et al. 2010). Credit: NIH.

projections from the nppc and amy internally are reduced. this is mediated via decreased glial cell adhesion and fibroblast growth factor (ggf).

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PHYSIOLOGY OF OPIOID USE DISORDER

• The cartoon version:
  • https://www.youtube.com/watch?v=NDVV_M_CSI

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EXAMPLES

Holly is a 25-year old AAF presents for her first prenatal visit. She reports an MVC 2 years ago with subsequent chronic pain. She was initially given Percocet 5/325 mg which she has continued to take twice per day. She has a prescription for her Percocet that she refills every 30 days. She does not take more than prescribed, but if she skips a few doses she feels cold, nauseated, and gets diarrhea.

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM
Colleen is a 32-yr WF presenting for a first prenatal visit with you at 29 weeks. She reports she just changed physicians because her prior obstetrician just didn’t have a good bedside manner. She reports she has fibromyalgia and she has been on Vicodin every 6 hours during pregnancy because she cannot take NSAIDs. Her prior OB was filling the prescription but she is almost out and requests that you refill it.

**EXAMPLES**

- How can you figure out if Colleen has an OUD?
  - Prescription Drug Monitoring Program
  - Ask about how often she runs out early
  - Ask if she uses Vicodin more frequently that she is supposed to
  - What does she do if she runs out of Vicodin between visits?

**EXAMPLES**

- You review Colleen’s PDMP. In the last 6 months she has received 20 prescriptions for opioids from 5 different providers.
- After you inquire further, she reports that she has been going to different physicians because nobody will prescribe enough to control her pain – she used to only need 1-2 pills/day but now is using 10-12. She has tried to cut down because her husband complains that she never does anything but feels terrible when she tries to cut back and it’s the only thing that makes her feel normal.
REMISSION & RECOVERY

• Remission: 0/11 criteria have been met for 3 months (exception is craving)

• Early Remission: 3-12 months
• Sustained Remission: >12 months

• Recovery begins after leaving a controlled environment

WHO NEEDS TO BE SCREENED?

• WHO (2014)
  • Strong recommendation for universal screening of all pregnant women
  • Low quality evidence but benefits outweigh risks

• ACOG (2015, 2017)
  • Screening is part of comprehensive obstetric care
  • Should be done at first prenatal visit
  • Be performed universally
  • Rely on validated screening tools
SCREENING QUESTIONNAIRES

- 5Ps Plus
- NIDA Quick Screen
- CRAFFT

5Ps Plus

- Parents
- Partner
- Peers
- Past
- Pregnancy
- Smoking

NIDA Quick Screen

https://www.drugabuse.gov/nmassist/step/0
CRAFFT

Begin: “I’m going to ask you a few questions that I ask all my patients. Please be honest. I will keep your answers confidential.”

**Part A**
During the PAST 12 MONTHS, did you:

<table>
<thead>
<tr>
<th>Measure</th>
<th>5Ps</th>
<th>NIDA (Past Month)</th>
<th>NIDA (Pre-Preg)</th>
<th>CRAFFT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>36.5</td>
<td>84.1</td>
<td>66.2</td>
<td>74.3</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>81.4</td>
<td>55.8</td>
<td>63.4</td>
<td>37.2</td>
</tr>
<tr>
<td>Specificity</td>
<td>34.9</td>
<td>85.2</td>
<td>66.3</td>
<td>75.7</td>
</tr>
<tr>
<td>PPV</td>
<td>4.4</td>
<td>12.4</td>
<td>6.4</td>
<td>5.3</td>
</tr>
<tr>
<td>NPV</td>
<td>98.1</td>
<td>98.1</td>
<td>98.0</td>
<td>97.0</td>
</tr>
</tbody>
</table>

For clinic use only: Did the patient answer “yes” to any questions in Part A?

No ☐ Yes ☐

Ask CAR question only, then stop ☐ Ask all 6 CRAFFT questions ☐

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**Part B**

<table>
<thead>
<tr>
<th>Measure</th>
<th>5Ps</th>
<th>NIDA (Past Month)</th>
<th>NIDA (Pre-Preg)</th>
<th>CRAFFT</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
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<td>98.1</td>
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<td>98.0</td>
<td>97.0</td>
</tr>
</tbody>
</table>

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CRAFFT

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SCREENING QUESTIONNAIRES

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## AFTER SCREENING

- Diagnosis

### NIDA Drug Screening Tool

NIDA-Modified ASSIST (NM ASSIST)

https://www.drugabuse.gov/nmassist/step/1

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## NIDA

### Question 1 of 8, NIDA-Modified ASSIST

In your lifetime, which of the following substances have you ever used?

*Note for Prescriptions: For prescription medications, please report prescribed use only.*

<table>
<thead>
<tr>
<th>Substance</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Cannabis (marijuana, pot, grass, herb, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Cocaine (nose, snort, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Prescription stimulants (Ritalin, Concerta, Provigil, Adderall, etc. pills, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Methamphetamine (speed, crystal meth, ice, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Inhalants (butane/air or glue, gas, paint fumes, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Hallucinogens (LSD, acid, mushrooms, PCP, Special K, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. Street benzodiazepines (diazepam, valium, temazepam, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. Prescription opioids (heroin, codeine [OxyContin, Percocet, Percodan, Vicodin, etc.], methadone, buprenorphine, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Other – specify</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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## NIDA

1. In the past 3 months, how often have you used the substances you mentioned (first drug, second drug, etc.)?

   - Never
   - Once or Twice
   - Monthly
   - Weekly
   - Daily or Almost Daily

2. In the past 3 months, how often have you had a strong desire or urge to use (first drug, second drug, etc.)?

   - Never
   - Once or Twice
   - Monthly
   - Weekly
   - Daily or Almost Daily

3. In the past 3 months, how often has your use of (first drug, second drug, etc.) led to health, social, legal or financial problems?

   - Never
   - Once or Twice
   - Monthly
   - Weekly
   - Daily or Almost Daily

4. During the past 3 months, how often have you failed to do what was normally expected of you because of your use of (first drug, second drug, etc.)?

   - Never
   - Once or Twice
   - Monthly
   - Weekly
   - Daily or Almost Daily

5. Has a friend or relative or anyone else ever expressed concern about your use of (first drug, second drug, etc.)?

   - Never
   - Once or Twice
   - Monthly
   - Weekly
   - Daily or Almost Daily

6. Have you ever tried and failed to control, cut down or stop using (first drug, second drug, etc.)?

   - Never
   - Once or Twice
   - Monthly
   - Weekly
   - Daily or Almost Daily
## NIDA

### Substance Use and Misuse

<table>
<thead>
<tr>
<th>Substance Use</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>X</td>
</tr>
<tr>
<td>Marijuana</td>
<td>X</td>
</tr>
<tr>
<td>Opioids</td>
<td>X</td>
</tr>
<tr>
<td>Stimulants</td>
<td>X</td>
</tr>
<tr>
<td>Sedatives</td>
<td>X</td>
</tr>
<tr>
<td>Prescription</td>
<td>X</td>
</tr>
<tr>
<td>Other</td>
<td>X</td>
</tr>
</tbody>
</table>

### SBIRT

- Screening
- Brief Intervention
- Referral to Treatment

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**Box 1: SBIRT: Screening, Brief Intervention, and Referral to Treatment**

- **Screening**
- **Brief Intervention**
- **Referral to Treatment**

ACOG Committee Opinion, #711
SBIRT

- Even a 10 minute conversation can decrease substance use during pregnancy
- Referral to treatment:
  - Can include a resource list
  - Referral to social worker for references
  - Referral to inpatient or outpatient rehab
- https://www.youtube.com/watch?v=WFJFltUY8o4

MOTIVATIONAL INTERVIEWING

- Have patients make suggestions on how they can improve/change behavior
- Ask what is important to the patient
- How motivated are you to change on a scale of 1-10? Why is that number not lower?

WHY BOTHER?

WHY BOTHER?

- Stillbirth (AOR ~16)
- Placental abruption (AOR 6.8)
- Preterm delivery (AOR 2.1)
- Low birth weight (AOR 1.8)
- Neonatal withdrawal
  - 58% moderate to severe
  - 95% require treatment

WHY BOTHER?

At 23, Brittany Harlow was a stay-at-home single mom with a 6-year-old daughter and a 3-year-old son. She'd struggled with depression and drugs over the years, chronicling her ups and downs in her diaries, according to her mother, Denise Harlow.

JoeyLee Light was many things — a punk rocker, a college student, a jewelry crafter, a budding businesswoman. She was also a 25-year-old heroin addict with a history of bipolar disorder and depression who was trying hard to change her life.

WHY BOTHER?

- OUD:
  - 25% of pregnancy associated deaths
  - Increase in hospital mortality 3-4 fold
  - Increase in cardiac arrest, renal failure, blood transfusion
TREATMENT

BEHAVIORAL THERAPY

- Mainstay of SUD treatment
- No trials that demonstrate efficacy during pregnancy

REHAB

"There are no federal standards for counseling practices or rehab programs."
MEDICALLY SUPERVISED WITHDRAWAL

• Non-Pregnant
  • Typically not sufficient to produce long-term recovery
  • High risk of relapse
  • High risk of overdose with relapse

• Pregnant
  • Case reports of stillbirth
  • Case reports of miscarriage
  • Case report of low catecholamine levels

MEDICALLY SUPERVISED WITHDRAWAL


MEDICALLY SUPERVISED WITHDRAWAL

• NOT standard of care
• May be considered in special circumstances (eg no access to pharmacotherapy)
• More research needed
  • Intent to treat
  • Appropriate comparison groups
MEDICALLY SUPERVISED WITHDRAWAL

Table 1. Opioid-free Treatment of Opioid Withdrawal.

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Study Design</th>
<th>n</th>
<th>Method(s) of Detoxification</th>
<th>Method(s) of Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haabreke, 2014</td>
<td>Retrospective</td>
<td>100</td>
<td>Inpatient methadone taper</td>
<td>Outpatient methadone</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(n=22)</td>
<td>(n=78) Sweden</td>
</tr>
<tr>
<td>Lund, 2012</td>
<td>Retrospective</td>
<td>25</td>
<td>Outpatient methadone taper</td>
<td>Outpatient methadone or</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(n=6)</td>
<td>buprenorphine (n=17)</td>
</tr>
<tr>
<td>Jones, 2008</td>
<td>Retrospective</td>
<td>175</td>
<td>Outpatient methadone taper</td>
<td>Outpatient methadone</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(n=95)</td>
<td>maintenance (n=80)</td>
</tr>
</tbody>
</table>


OPIOID TAPER

- Prevent opioid withdrawal symptoms by using long-acting opioids to diminish symptoms.
- Then wean off of long-acting opioid over 2-4 weeks.
- 4-week reduction protocol more successful than 2-week reduction protocol.
- Typically use either methadone or buprenorphine.
### Risks of Relapse

#### Standardized Mortality Rate (95% CI)

<table>
<thead>
<tr>
<th>In Treatment</th>
<th>1.8 (1.6-2.1)</th>
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</thead>
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<tr>
<td>1-14 days</td>
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<td>2.1 (0.9-4.1)</td>
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<tr>
<td>&gt;28 days</td>
<td>1.7 (1.5-2.0)</td>
</tr>
<tr>
<td>Died in Detox</td>
<td></td>
</tr>
<tr>
<td>1-14 days</td>
<td>5.5 (2.7-9.8)</td>
</tr>
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<td>1.1 (0.6-2.0)</td>
</tr>
<tr>
<td>&gt;28 days</td>
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**Note:**
- Mortality rates are based on standardized mortality rates, which correct for differences in age, sex, and race among the populations being compared.
- The mortality rates are expressed as the number of deaths per 10,000 person-years.
- CI = Confidence Interval

#### Risk of Relapse

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**The University of Alabama at Birmingham**

## RISK OF RELAPSE

<table>
<thead>
<tr>
<th></th>
<th>Standardized Mortality Rate (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>In Maintenance</strong></td>
<td></td>
</tr>
<tr>
<td>1-14 days</td>
<td>2.5 (1.1-4.9)</td>
</tr>
<tr>
<td>15-28 days</td>
<td>2.4 (1.0-4.9)</td>
</tr>
<tr>
<td>&gt;28 days</td>
<td>1.7 (1.5-2.0)</td>
</tr>
<tr>
<td><strong>Out of Treatment</strong></td>
<td></td>
</tr>
<tr>
<td>1-14 days after exit</td>
<td>31.5 (26.2-37.5)</td>
</tr>
<tr>
<td>15-28 days after exit</td>
<td>8.0 (5.4-11.5)</td>
</tr>
<tr>
<td>&gt;28 days after exit</td>
<td>5.3 (4.9-5.7)</td>
</tr>
</tbody>
</table>

Maternal Death

PHARMACOTHERAPY

- Also known as:
  - Opioid replacement therapy (ORT)
  - Opioid agonist therapy (OAT)
  - Maintenance therapy
  - Medication assisted therapy (MAT)
PHARMACOTHERAPY: GOALS

- Improve health
- Improve daily functioning
- Avoid withdrawal symptoms
- Decrease craving
- Risk reducing – decreased exposure to HIV, hepatitis C, and overdose

PHARMACOTHERAPY OPTIONS

- Methadone
- Buprenorphine
  - ± Naloxone (Subutex versus Suboxone)

METHADONE

- Synthetic opioid
- Pure agonist
- Renal and hepatic clearance
- Metabolism increased during pregnancy (hepatic enzymes)
- Half-life 8-20 hours
METHADONE

- Initiation (Day #1)
  - 20 mg PO (15-30 mg)
  - 5-10 mg every 3-6 hours for withdrawal
- Day #2
  - Combine total of doses given in first 24 hours
  - Can increase every 3 days
  - Average starting dose: 70 mg
  - Average Delivery dose: 93 mg

METHADONE SIDE EFFECTS

- Constipation
- Drowsiness
- QT prolongation
- Respiratory depression

BUPRENORPHINE

- Synthetic opioid
- Mixed agonist-antagonist activity
- High affinity (will displace other opiates)
- Low activity
- Hepatic clearance
AGONIST VERSUS PARTIAL AGONIST


BUPRENORPHINE

• Initiation
  • Cannot start until experiencing mild withdrawal
  • If start before withdrawal symptoms occur can precipitate withdrawal

CLINICAL OPIATE WITHDRAWAL SCALE
BUPRENORPHINE

- **Initiation**
  - Cannot start until experiencing mild withdrawal
  - If start before withdrawal symptoms occur can precipitate withdrawal
  - First dose 2-4 mg
  - Increase by 2 mg every 1-2 hours
  - Maximum effective dose is 32 mg/day
  - Average is 16-24 mg/day

BUPRENORPHINE

- **Buccal administration**
  - Moisten inside of cheek with water
  - Apply film to cheek immediately after removing from packaging & hold in place for 5 second
  - Keep film in place until it dissolves (<30 minutes)
  - Avoid eating or drinking until film dissolves

- **Sublingual administration**
  - Hold tab under tongue until dissolved
  - Two tablets may be held under tongue at once

BUPRENORPHINE+NALOXONE

- Naloxone is opioid antagonist
- Not orally absorbed
- Added to buprenorphine to prevent diversion & misuse
- Naloxone only absorbed if snorted/injected
BUPRENORPHINE SIDE EFFECTS

- Constipation
- Nausea/vomiting
- Drowsiness/dizziness
- Insomnia (SL)
- QT prolongation

METHADONE VS BUPRENORPHINE

- Methadone
  - Preferred for long-standing abuse
  - Requires daily visits
  - Higher retention rates (78%)
  - Higher overdose mortality (4.18/1000 person years)

- Buprenorphine
  - May be better for prescription opioid users or new heroin users
  - Office based therapy
  - Lower retention (57%)
  - Lower overdose mortality (0.98/1000 person years)

Neonatal Abstinence Syndrome after Methadone or Buprenorphine Exposure

Hendrie H. Jones, Ph.D., Karol Kaltenbach, Ph.D., Sarah H. Heil, Ph.D., Susan M. Stine, M.D., Ph.D., Marie G. Copie, M.D., Amelia M. Arne, Ph.D., Kevin E. O’Grady, Ph.D., Peter Selby, M.B., B.S., Peter R. Martin, M.D., and Gabrielle Fischer, M.D.
## METHADONE VS BUPRENORPHINE

<table>
<thead>
<tr>
<th>Primary outcomes</th>
<th>Methadone (N=70)</th>
<th>Buprenorphine (N=15)</th>
<th>Odds Ratio (95% CI)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treated for NAS — no. (%)</td>
<td>61 (87)</td>
<td>27 (17)</td>
<td>2.7 (1.0-7.2)</td>
<td>0.06</td>
</tr>
<tr>
<td>NAS peak score</td>
<td>12.8±6.6</td>
<td>11.0±8.6</td>
<td>1.0 (0.8-1.3)</td>
<td>0.04</td>
</tr>
<tr>
<td>Total amount of morphine for NAS — mg</td>
<td>16±6.2</td>
<td>11±6.7</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Duration of infant’s hospital stay — days</td>
<td>11±3.5</td>
<td>10±3.2</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Infant’s head circumference — cm</td>
<td>33.0±0.3</td>
<td>33.8±0.3</td>
<td>0.03</td>
<td></td>
</tr>
</tbody>
</table>

### Secondary maternal outcomes

<table>
<thead>
<tr>
<th>Secondary maternal outcomes</th>
<th>Methadone (N=70)</th>
<th>Buprenorphine (N=15)</th>
<th>Odds Ratio (95% CI)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cesarean section — no. (%)</td>
<td>27 (39)</td>
<td>17 (29)</td>
<td>1.4 (0.8-2.5)</td>
<td>0.23</td>
</tr>
<tr>
<td>Maternal weight gain — kg</td>
<td>8.6±2.0</td>
<td>8.3±4.9</td>
<td>0.89</td>
<td></td>
</tr>
<tr>
<td>Abnormal fetal presentation during delivery — no. (%)</td>
<td>33 (48)</td>
<td>3 (2)</td>
<td>3.3 (1.5-7.2)</td>
<td>0.04</td>
</tr>
<tr>
<td>Anesthesia during delivery — no. (%)</td>
<td>60 (86)</td>
<td>49 (85)</td>
<td>1.2 (1.0-1.4)</td>
<td>0.01</td>
</tr>
<tr>
<td>Positive drug screen at delivery — no. (%)</td>
<td>31 (44)</td>
<td>3 (2)</td>
<td>3.5 (1.6-7.9)</td>
<td>0.02</td>
</tr>
<tr>
<td>Medical complications at delivery — no. (%)</td>
<td>37 (53)</td>
<td>18 (31)</td>
<td>1.9 (1.0-3.6)</td>
<td>0.03</td>
</tr>
<tr>
<td>Did not complete study — no. (%)</td>
<td>36 (52)</td>
<td>28 (46)</td>
<td>1.5 (0.8-3.2)</td>
<td>0.21</td>
</tr>
</tbody>
</table>
METHADONE VERSUS BUPRENORPHINE

- Methadone: Appears to be no adverse long-term impact on infant neurodevelopment
- Buprenorphine: Limited information available

METHADONE VS BUPRENORPHINE

- How do you choose?
  - What is available?
  - Patient preference

OUD: PATIENT COUNSELING

- Increased risk of birth defects with opiates/opioids
- Increased preterm birth, growth restriction, stillbirth, SIDS
  - Still present with pharmacotherapy but less than with continued use
  - Risk of relapse without treatment
OPIOID ANTAGONISTS

- Naltrexone
  - Oral (daily)
  - Injectable (Qmonth)
- Should not have any withdrawal symptoms prior to administration
  - Naloxone challenge test: Parenterally administer naloxone (subQ, IM, IV) – observe for 1 hour for withdrawal symptoms
  - No withdrawal: Administer naltrexone
  - Withdrawal Delay >24 hours

OPIOID ANTAGONISTS

- Can be used in highly motivated patients
- Agonist therapy is preferred – more effective
- Unique issue of pregnancy: All patients will eventually need pain control – must stop antagonist >1 month before delivery

BACK TO BUPRENORPHINE

- Office-based therapy
  - Can do buprenorphine inductions and maintenance in office
- X-waiver
  - Can take a course with ASAM to obtain (online or in-person)
  - 30 patients for 1 year, apply to increase after 1 year
BUPRENORPHINE - OBT

- Some things to consider:
  - Where to do inductions?
  - You must be able to refer for psychosocial therapy if providing buprenorphine
  - How many patients will you have?
  - UDS?
  - Who will provide buprenorphine after delivery?
  - Will patients be able to obtain buprenorphine after delivery?

SAFETY

Every patient with OUD needs a naloxone kit (or two or three)

SAFETY

- Monitor EKG at higher doses of methadone (>80 mg) and buprenorphine (>16 mg)
- Obtain liver function tests at baseline
- Avoid other sedatives/hypnotics, particularly benzodiazepines
### Prenatal Care for SUD

- **SAMHSA:**
  - Integrated care
  - Prenatal care
  - Substance abuse treatment
  - Pediatric care
  - Family planning
  - Social work/Case Coordinator

- **Actual:**
  - Prenatal care from obstetrician
  - Substance abuse treatment from
    - Psychiatry
    - Rehab
    - Methadone clinic
    - Opiate prescriber

Sounds great, but isn’t that expensive?

### Integrated Care

<table>
<thead>
<tr>
<th></th>
<th>Integrated Care (n=100)</th>
<th>Standard Care (n=46)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pos. Drug Screen</td>
<td>36.8%</td>
<td>63.2%</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>GA at Delivery</td>
<td>38.6</td>
<td>35.4</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Birth Weight</td>
<td>2934</td>
<td>2539</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Low Birth Weight (&lt;2500g)</td>
<td>15%</td>
<td>39%</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>NICU</td>
<td>10%</td>
<td>26%</td>
<td>0.01</td>
</tr>
<tr>
<td>NICU LOS</td>
<td>6.6</td>
<td>38.9</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Svikis, Drug and Alcohol Dependence 1997; 45:105-113.

$4644 SAVED per mother/infant pair

### Service Co-Location

- Provision of:
  - Obstetric care
  - Psychotherapy
  - Pharmacotherapy
  - Social services
  - Case Coordination
  - Coordination of care with inpatient teams (rehab)
  - Pediatric follow up

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM
**PREGNANCY MANAGEMENT**

- Hepatitis C screening
- Level 2 ultrasound?
- Fetal growth monitoring?
- Antenatal testing?

**THANK YOU & QUESTIONS**