Guideline for Substance Abuse in Pregnancy

Substance abuse is becoming more common in the pregnant woman and the opioid crisis spreads across the nation in epidemic levels, including the State of Maine.

All pregnant women should be asked about drug use, both prescription and illicit, alcohol use, and tobacco use.

Illicit drug use or substance abuse that may impact both maternal/fetal outcomes is use of opioids, including misuse of prescription opioid analgesia medications and use of heroin. Other drugs of misuse that may cause adverse outcomes are marijuana, cocaine, inhalants, methamphetamines, hallucinogens, and prescription psychotherapeutics.

Patients may have random urine toxicology screens sent if they have the following diagnoses:

- Preterm labor
- Placental abruption
- History of substance abuse
- Participation in a methadone maintenance program
- Preeclampsia/eclampsia
- Fetal demise in utero
- IUGR
- Multiple requests for pain medications (particularly at more than one institution)

**Substance Abuse Interventions for Pregnant Patients:**

- Physicians will assist with safe prescribing practices
  - referral to addiction specialist
  - Social Work consult early on in care to identify resources needed and development of a trusting relationship to assist in particular at peripartum
- Anesthesia consult at viability to prepare for proper pain management to improve maternal-fetal outcomes
- Psychiatry-addition specialist to adjust medication doses through antepartum/peripartum
- Referral to neonatal team for pre-delivery consult

**Urine Toxicology:**

Obtained at first prenatal visit for all substance abuse pregnant patients to look for other possible illicit drugs.
• Required informed consent to be signed by the patient at initial encounter and may be done randomly if clinically warranted, i.e.:
  - preterm labor
  - placental abruption
  - history of substance abuse beyond prescribed medications
  - preeclampsia/eclampsia
  - IUGR
  - multiple requests for pain medications (particularly at other institutions and other providers
    • important to check State Prescription Monitoring Program at each office visit
• Screening test with the 4Ps, if positive:
  - urine toxicology should be obtained

4P Screen:
1. Parents: Do they have problems with drugs/alcohol?
2. Partner: Does partner have problems with drugs/alcohol?
3. Past: Has the patient had past history of use of drugs and/or alcohol?
4. Present: Does the patient use drugs/alcohol?
  • what?
  • how much?
  • how long?

Screening Test More Relevant to Younger Patients:

CRAFT Screen:
C: Has the patient ridden in a car with others who are using drugs or drinking?
R: Does the patient use drugs/alcohol to relax?
A: Does the patient use drugs/alcohol when alone?
F: Does the patient’s family/friends ask them to stop drinking and using drugs?
T: Has the patient gotten in trouble related to drug/alcohol use?

If the answer is “yes” to two or more of these questions, then further evaluation is warranted and possible urine toxicology.

First Prenatal Visit:
• Prenatal labs including HIV, Hepatitis B, Hepatitis C, and TB test. Repeat if clinically warranted.
• Comprehensive history and physical with Pap smear.
• Chlamydia, GC cultures, and syphilis
• Dating ultrasound
• Informed consent
• Urine toxicology screen (ordered per physician preference)
  1. Initial test – ELISA, thin layer
  2. Confirmatory – gas chromatography, mass spectrometry
Timing of Drug Use and Positive Test:
- Acute marijuana use: 3 days
- Chronic marijuana use: 30 days
- Cocaine use: 1-3 days
- Heroin: 1 day
- Methadone: 3 days

Ultrasounds:
1. First visit for dating
2. All patients should have a targeted fetal survey at 18-20 weeks
   - To reassure the patient about probable normal fetal anatomy (depending on type and amount of drug used)
   - Birth defects rarely a result of drug use
3. Sequential ultrasound growth assessments every four weeks starting at 24 weeks
4. Clinically indicated for maternal/fetal well being

Red Flags for Unknown Substance Abuse or Excessive Use:
- Late or no prenatal care
- Multiple missed appointments
- Prescription Monitoring Program
  - multiple different prescriptions by different physicians
- Comorbid psychiatric/mental health diagnosis
- Multiple admissions, ER visits, doctor calls
- Chaotic/erratic behavior, excessive conversation
- Sedation
- Appearance of confusion, intoxication
- Signs of withdrawal
- Multiple pain complaints
- Poor historian
- Poor judgment/decisions
- Helpless
- Agitation, aggressive behavior
- Unstable home environment
- Problems with family/partner, relationships
- Poor performance in school
- Trouble with the law
- Fluctuations in mood
- Look for signs, i.e., papillary pinpoint or dilation, flushing, track marks on arms, piloerection, sweating, disheveled, slurred speech
- Positive for STDs
- Positive HIV, Hepatitis B, Hepatitis C
- Cellulites, abscesses on extremities
- Skin popping (intradermal needling with infections)
- Poor weight gain
Important: Do not use Naloxone to diagnose opioid dependence in a pregnant woman. Contraindicated as it can induce withdrawal which may cause preterm labor, fetal distress, fetal demise.

Naloxone in pregnancy should only be used in cases to save a mother’s life in cases of drug overdose.

When using buprenorphine, use without Naloxone due to risk to the fetus. Subutex in pregnancy.

Suboxone has Naloxone with partial opiate agonist buprenorphine and used non-pregnant.

“Withdrawal from opioid use during pregnancy is associated with poor neonatal outcomes, including early preterm birth or fetal demise and with higher relapse rates among women. Robust evidence has demonstrated that maintenance therapy during pregnancy can improve outcomes.” ACOG

Peripartum Management:

“Opioid use during pregnancy including medical assisted therapy, prescription opioid use for pain, or non-medical opioid use can put infants at risk for NAS – or neonatal abstinence syndrome. NAS is both expected and treatable and evidence shows that it does not lead to long term complications. ACOG continues to recommend use of medical assisted therapy as the standard of care during pregnancy for women with opioid use disorders.” ACOG

Opioids may be needed to treat chronic or acute pain, i.e. pain from:
- cesarean delivery
- kidney stones
- sickle cell crisis
- trauma in pregnancy
- problems associated with substance use disorders
- appropriate pain management peripartum at delivery as appropriate, when alternatives are ineffective

Patients may be given opioid while breastfeeding

Long-acting reversible contraception should be provided prior to leaving the hospital.

Both breastfeeding benefits and long-acting reversible contraception should be encouraged and discussed prenatally.

Women on opioids will need higher doses of pain relief despite being on opioids in an effort to provide adequate analgesia for labor; may require split dosing every 6-8 hours of their standard daily dose divided plus additional analgesia as needed.
Buprenorphine should **not** be given to patients already on methadone.

**Important:** Narcotic agonist – antagonist drugs, i.e. butorphanol, nabuphine, pentazocine, should be **avoided in labor** as it may precipitate acute withdrawal.

Pediatric/neonatology staff should be involved in the delivery and care management of all narcotic substance abuse exposed infants.

**Dose Adjustment Management:**
When a patient is admitted to labor and delivery with substance abuse disorder and/or on medication assisted therapy with subutex or methadone, consult psychiatry addiction for dose adjustment.

**Breastfeeding:**
Minimal levels of methadone or buprenorphine are found in breastmilk regardless of maternal dose.

All patients without positive HIV should be encouraged to breastfeed.

Buprenorphine insert states that breast feeding is contraindicated, however, export consensus panel feels that breastfeeding is not contraindicated and should be carried out with maternal bonding and swaddling in combination to decrease side effects of neonatal abstinence syndrome.

Breastfeeding contributes to bonding between mother and infant and passive antibody immunity.

**Postpartum:**
Patient should remain on same opiate dose as antepartum and under continued physician care with treatment and addiction support.

**Neonatal Abstinence Syndrome:**
Patient should be counseled prenatally that neonate may be observed/detoxed 1-2 weeks as inpatient post delivery.

When methadone is used antepartum, symptoms tend to occur within 72 hours and can last on average two weeks or more depending on amount and longevity of methadone used.

Bupronorphine (subutex) has been shown to have less severe withdrawal and length of stay decreased in half, usually 1-2 weeks.

**Opioid Addiction:**
Includes dependence on opioid prescriptions and heroin.
Heroin:
- Most rapid onset, short half life, multiple daily doses to maintain euphoria
- Highly addictive
- Inexpensive
- Easy access on the street
- May be injected, smoked, nasally inhaled
- High OD rate especially if laced with fentanyl

Prescribed Opioids
- Codeine, found in many cough syrups
- Fentanyl
- Morphine
- Opium
- Hydrocodone
- Methadone
- Oxycodone
- Oxycotin
- Mependine (Demerol)
- Hydromorphone (Delaudid)
- Hydrocodone
- Propoxyphene
- Buprenorphine (suboxone, subutex)

All drugs are increased risk of physical dependence, overdose, addiction, and abuse. Injection of opioid carries increased risk of cellulitis and abscess, sepsis, Hepatitis B, Hepatitis C, HIV, osteomyelitis, and endocarditis.

All of the above may products may be swallowed, injected, nasally inhaled, smoked, chewed, suppositories.

Onset/intensity of euphoria based on formulation and how much is taken.

Opioid Effects:
- Bind to opioid receptors in brain (nucleus accumbens)
- Pleasurable sensation
- Depress respirations
- Increased risk of respiratory arrest
- Increased risk of death

Opioid Addiction:
- Compulsive drug-seeking behavior
- Physical dependence/tolerance which lead to the need for higher doses
- With physical dependence, if cessation occurs withdrawal ensues

Withdrawal Syndrome:
Symptoms:
• Pupils pinpoint (opioids)
• Dilated stimulants
• Tachycardia
• Conjunctional injection
• Sweating
• Watery eyes
• Runny nose
• Yawning
• Unsteady gait
• Slurred speech

Short-acting opioids, i.e., heroin – symptoms within 4-6 hours, up to 72 hours. Side effects resolve within one week.

Long-acting opioids, i.e., methadone – withdrawal begins 24-36 hours after use. Last for several weeks.

High incidence of relapse due to obsessive thinking and cravings that last for years.

Acute heroin withdrawal is not fatal to adults and is increased risk to the fetus.

**Pregnant Heroin Addicts:**
Chronic untreated heroin use associated with increased risk of:
• IUGR
• Abruptio placenta
• Fetal death
• Preterm labor, preterm delivery
• Intraterine meconium (related to withdrawal repeatedly and withdrawal on placental function)

To support addiction, lifestyle issues of illicit drug use put pregnant women at risk for engaging in high risk behaviors.

Risky behavior exposes patients to:
• Sexually transmitted diseases
• Victims of violence
• Prostitution
• Incarceration, legal consequences
• Abandonment of children
• Removal of children from home

**Treatment:**

“Maternal detoxification is not recommended in pregnancy due to increased risk of preterm delivery, fetal distress, and IUFD.”
Methadone:
   Traditional treatment for heroin dependence since the 70s and now for opioid dependence

Drawbacks:
   • Constipation
   • Fatigue
   • Significant pharmokinetic drug interactions with many other drugs including antiretroviral agents

Perinatal methadone dosage should be managed by addiction treatment specialist with a registered methadone program.

Withdrawal symptoms:
   • Drug craving
   • Abdominal cramping
   • Nausea
   • Insomnia
   • Irritability
   • Anxiety

Recommended maternal dosing:
   (in hospital only if patient already in treatment)

Initially always to be done by methadone or buprenorphine substance abuse specialist or clinic (unless patient is withdrawing, then only use methadone).

   • Methadone Initiation 10-20 mg over next 24 hours, advancing 5-10 mg every 6 hours for signs of withdrawal
   • Maintenance 10-300 daily or twice daily

Most physicians do not have the proper type of DEA license to provide these medications for any indication except pain control.

Buprenorphine Benefits of Use:
   The only opioid approved for treatment of opioid dependence in an office-based setting.

   Dose individualized based on no symptoms of withdrawal.

   Burprenorphine works on same receptors as morphine and heroin.

Advantages of buprenorphine over methadone (Important):
   • Lower risk of overdose
   • Less severe neonatal abstinence
   • Improved fetal growth
• Office-based management vs. daily treatment by treatment center
• Decreases preterm delivery

**Complications:**

**Cocaine/Crack:**
- Crosses fetal blood brain barrier/placenta
- Vasoconstriction causing fetal/placental damage
- Intrauterine fetal demise
- Increased preterm delivery
- Low birth weight (increased intrauterine growth restriction)
- Placenta abruptio
- Increased risk of miscarriage
- Maternal hypertension/maternal CV toxicity (mimics preeclampsia)
  - Avoid β-blockers, i.e., Labetalol as causes end organ ischemia
  - Use hydralazine as preferred drug to lower blood pressure due to unopposed α adrenergic stimulation

**Maternal effects:**
1. Increased heart rate
2. Increased blood pressure
3. Cardiac arrhythmias
4. Hypertension
5. Hyperthermia
6. CVA
7. Seizures
8. Subarachnoid hemorrhage
9. Rupture aneurysm
10. Nasal epistaxis
11. Weight loss

**Methamphetamines** (similar to crack cocaine):
Powerful stimulants, AKA, speed, chalk, meth, ice, crystal, glass.

- Known neurotoxic agent → brain cells with dopamine
- Amphetamines cross placenta
- Increased intrauterine growth restriction
- Placental abruptio
- Preterm labor
- Intrauterine fetal demise
- Infant/neonatal death
- Preeclampsia

**Fetal effects:**
1. Vascular disruptions
   • Cardiac (tachycardia, bradycardia)
• Limbs
• Genitourinary systems
• CNS (mild to moderate neuro developmental abnormalities)

2. IUGR
3. Preterm labor
4. Preterm PROM
5. Placental abruption
6. Pregnancy-induced hypertension
7. Meconium staining
8. Cerebrovascular accidents
9. Stillbirths

Opiates/Opioids
Patients may use any form available on street including:
• Vicodin
• Percocet
• Fentanyl patches
• Oxycodone
• Oxycontin
• Suboxone

Heroin
• IM
• IV
• SQ
• Intranasal

Maternal effects:
• Rush followed by tranquility
• Somnolence, altered mentation, respiratory arrest

Withdrawal symptoms
• Nausea vomiting, abdominal cramping, pain sensitivity
• Hypertension, tachycardia, hyperventilation
• Lacrimation, mydriasis, rhinorrhea
• Yawning, sweating
• Vomiting diarrhea
• Chills, flushing, muscle spasms
• Restless, irritable, tremors
• Piloerection

Marijuana:
Important: Discontinuation of marijuana and antianxiety meds are safe during pregnancy.
Prevalence of marijuana use during pregnancy varies with age, race, ethnic background and socioeconomic status. Most common illicit use of marijuana is found in teens to mid 20s, especially medical marijuana, legalization of marijuana and more acceptance as a social norm, however, it is not considered to be safe in pregnancy.

ACOG recommends NO use of marijuana during pregnancy, postpartum, and while breastfeeding.

Marijuana is the most common illicit drug used in pregnancy.

Marijuana is believed to have neurodevelopment impact on the developing fetus/child.

Fifty percent of women using marijuana prior to pregnancy continue to use in pregnancy.

As marijuana becomes more prevalent and engineered to increase levels of THC toxicity which makes neuropysch impact higher and passes on to fetus.

References:
1. ACOG Committee Opinion No. 524. Apioid abuse, dependence, and addiction in pregnancy. May 2012 (reaffirmed 2016)
