New York State (NYS) Opioid Use Disorder (OUD) in Pregnancy & Neonatal Abstinence Syndrome (NAS) Project

Coaching Call Webinar
September 17, 2019
Welcome & Introductions

Marilyn Kacica, MD, MPH
Medical Director
Division of Family Health
New York State Department of Health
# Agenda

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<tr>
<th>Time</th>
<th>Session</th>
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<td>12:00 PM –</td>
<td><strong>Welcome &amp; Introductions</strong></td>
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<td>12:10 PM</td>
<td>• Marilyn Kacica, MD, MPH</td>
<td><em>Medical Director, Division of Family Health</em></td>
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<td><strong>Opioid Use Disorder in Pregnancy</strong></td>
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<td>• Paul Updike, MD</td>
<td><em>Medical Director for Substance Use Services</em></td>
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<td><strong>Next Steps</strong></td>
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<td>1:00 PM</td>
<td>• Kristen Lawless, MS</td>
<td><em>Program Director, Division of Family Health</em></td>
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Opioid Use Disorder in Pregnancy

Paul Updike, MD
Medical Director for Substance Use Services
Catholic Health Services Buffalo
Opioid Use Disorder in Pregnancy

Paul Updike, MD
Medical Director for Substance Use Services,
CHS Buffalo
pupdike@chsbuffalo.org
Objectives

• Review the opioid epidemic
• Review the pathophysiology and consequences of OUD
• Review effective treatment options for OUD with particular attention to the chronic disease concept
• Review special concerns regarding OUD in pregnancy
• Review our experience caring for women with OUD
What are opioids?

“Natural”, referred to as “opiates”
- Derived from opium poppy
- Morphine, codeine, opium

Synthetic (partly or completely):
- Semisynthetic: heroin, hydrocodone, oxycodone
- Fully Synthetic: fentanyl, tramadol, methadone

“Opioid” refers to both “natural” and synthetic members of this drug class

Effects
All of these drugs have significant potential for causing “addiction”, or Opioid Use Disorder

They also share common effects, depending on dose:
- Pain relief (analgesia)
- Cough suppression
- Constipation
- Sedation (sleepiness)
- Respiratory suppression (slowed breathing)
- Respiratory arrest (stopping breathing)
- Death
Historical Perspective on How the Problem Started

- Opium poppy cultivated in Mesopotamia in 3400 BC. Referred to as the “joy plant”
- 1803: Active ingredient of opium identified - morphine
- 1895: Heroin, diacetylmorphine is synthesized and marketed by Bayer as a medication with less side effects than morphine
- Early 20th century: increases in morbidity associated with opioids leads to many countries passing laws restricting their use
- Harrison Narcotics Tax Act 1914
Historical Perspective Continued

- Second half of the 20th century physicians became more comfortable prescribing for acute and cancer pain
- 1980’s saw call for broader use for non-malignant chronic pain. Literature report of 38 chronic pain patients concluding opiate use is safe
- 1995- OxyContin introduced
- 1990’s – “The Decade of Pain” – Dramatic increase in the use of opiates coincident with the approval of new opioid formulations. Joint commission adapted, federally mandated patient satisfaction surveys based on how pain was addressed
  - *BMJ* 2011;343:d5142
- From 1997-2007 the milligram per person use of prescription opiates increased 400 percent
  - *Pain Physician*. 13;401-435. 2010
New York Consumption of Oxycodone 1980 - 2006

Sources: U.S. Dept of Justice, Drug Enforcement Administration, Office of Diversion Control
Around 64,000 people died from drug overdoses in the U.S. in 2016.

- Peak car crash deaths (1972)
- Peak H.I.V. deaths (1995)
- Peak gun deaths (1993)

60,000 deaths per year

20,000

40,000

Total U.S. Drug Deaths

Drugs involved in US overdose death, 2000-2016
RELATIVE STRENGTH
2012 – 2017 OPIOID RELATED DEATHS
ERIE COUNTY

SOURCE: ERIE COUNTY MEDICAL EXAMINERS OFFICE, *CLOSED CASES REPORTED THRU 5/23/2018
**2016 and 2017* Erie County Opioid Related Deaths**

**By Type of Opioid**

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<th>2016 N=301</th>
<th>2017 N=233 (35 pending)</th>
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<tr>
<td>Fentanyl Related²</td>
<td>59%</td>
<td>55%</td>
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<tr>
<td>Heroin Related¹</td>
<td>8%</td>
<td>5%</td>
</tr>
<tr>
<td>Fentanyl &amp; Heroin Related⁴</td>
<td>17%</td>
<td>23%</td>
</tr>
<tr>
<td>Other Opioids³</td>
<td>16%</td>
<td>17%</td>
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1. **No Fentanyl; Possible Other Drugs Involved**
2. **No Heroin; Possible Other Drugs Involved**
3. **No Fentanyl or Heroin; Possible Other Drugs Involved**
4. Possible Other Drugs Involved

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**Source:** Erie County Medical Examiners Office, *Closed Cases Reported Thru 2/27/2018*
ASAM Definition of Addiction

• **Short Definition of Addiction:**
  Addiction is a primary, chronic disease of brain reward, motivation, memory and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social and spiritual manifestations. This is reflected in an individual pathologically pursuing reward and/or relief by substance use and other behaviors.

• Addiction is characterized by inability to consistently abstain, impairment in behavioral control, craving, diminished recognition of significant problems with one’s behaviors and interpersonal relationships, and a dysfunctional emotional response. Like other chronic diseases, addiction often involves cycles of relapse and remission. Without treatment or engagement in recovery activities, addiction is progressive and can result in disability or premature death.
Biologic and Social Factors Involved in Addiction

• Minority (~10%) who use drugs become addicted
• Risk factors that $\uparrow$ vulnerability
  o early exposure to drug use
    • adolescence
    • legitimate prescriptions
  o Other risks factors
    • family history
    • exposure to high-risk environments
      o socially stressful environments with poor familial and social supports
      o easy access to drugs and permissive normative drug taking attitudes mental illnesses
    • mood disorders, ADHD, psychoses, anxiety disorders
How do You diagnosis OUD Mild/Moderate/Severe

- Using larger amounts/longer than intended
- Much time spent using
- Activities given up in order to use
- Physical/psychological problems associated with use
- Social/interpersonal problems related to use
- Neglected major role in order to use
- Hazardous use
- Repeated attempts to quit/control use
- Withdrawal *
- Tolerance *
- Craving

*Does not count if taken only as prescribed and constitutes the sole criteria

DSM 5, American Psychiatric Association
Opioid Neurobiology

PREFRONTAL CORTEX: Executive Functions

LIMBIC SYSTEM: Pleasure, reward. This area is responsible for development of addiction.

BRAIN STEM: Respiration; Cough Suppression

SPINAL CORD: Analgesia
What is Addiction?

Addiction is A Brain Disease

Characterized by:

- Compulsive Behavior
- Continued abuse of drugs despite negative consequences
- Persistent changes in the brain’s structure and function
Addiction is Like Other Diseases…

➢ It is preventable
➢ It is treatable
➢ It changes biology
➢ If untreated, it can last a lifetime

Research supported by NIDA addresses all of these components of addiction.
Addiction Involves Multiple Factors

Diagram showing the relationship between Biology/Genes, Environment, Brain Mechanisms, and Addiction with DRUG as the core concept.
Stages of the Addiction Cycle

- 1st stage (binge/intoxication) involves opiate-induced reward sensations in the brain.
- 2nd stage (withdrawal/negative affect) is elevation in threshold for experiencing reward sensation after drug use (i.e., exposure to drug required) and withdrawal state develops when drug cannot be obtained.
- 3rd stage (preoccupation-relapse) is chronic relapse in drug use, often triggered by environmental and emotional cues.

Chronic opioid use induces neurochemical changes that alter brain circuits, which reduces the reward sensation experienced during the initial stage and increases the stress and compulsivity associated with chronic drug addiction.

Why Do People Take Drugs in The First Place?

To Feel Good
To have novel:
- feelings
- sensations
- experiences
AND
to share them

To Feel Better
To lessen:
- anxiety
- worries
- fears
- depression
- hopelessness
Drugs of Abuse Engage Motivation and Pleasure Pathways of the Brain

Why Do People Abuse Drugs?
Natural Rewards Elevate Dopamine Levels

Effects of Drugs on Dopamine Release

**Amphetamine**
- DA
- DOPAC
- HVA

**Cocaine**
- DA
- DOPAC
- HVA

**Nicotine**
- Accumbens
- Caudate

**Morphine**
- Dose
  - 0.5 mg/kg
  - 1.0 mg/kg
  - 2.5 mg/kg
  - 10 mg/kg

Di Chiara and Imperato, PNAS, 1988
Addiction is a disease of the youth
MRI Scans of Healthy Children and Teens Over Time
Consequences of OUD are Wide Ranging

- Physical (Withdrawal, intoxication, overdose)
- Medical
- Psychological
- Spiritual
- Social
- Legal
- It’s not fun
Behavioral manifestations and complications of addiction, primarily due to impaired control

These can include:

- Excessive use and/or engagement in addictive behaviors, at higher frequencies and/or quantities than the person intended, often associated with a persistent desire for and unsuccessful attempts at behavioral control;
- Excessive time lost in substance use or recovering from the effects of substance use and/or engagement in addictive behaviors, with significant adverse impact on social and occupational functioning (e.g. the development of interpersonal relationship problems or the neglect of responsibilities at home, school or work);
- Continued use and/or engagement in addictive behaviors, despite the presence of persistent or recurrent physical or psychological problems which may have been caused or exacerbated by substance use and/or related addictive behaviors;
- A narrowing of the behavioral repertoire focusing on rewards that are part of addiction; and
- An apparent lack of ability and/or readiness to take consistent, ameliorative action despite recognition of problems.

http://www.asam.org/for-the-public/definition-of-addiction
Principles of Management

• Recovery from addiction is best achieved through a combination of self-management, mutual support, and professional care provided by trained and certified professionals.

• As in other health conditions, self-management, with mutual support, is very important in recovery from addiction.

• Chronic disease management is important for minimization of episodes of relapse and their impact.

http://www.asam.org/for-the-public/definition-of-addiction
Treatment

- Is Biopsychosocial-spiritual
- Addresses the whole person
- Addresses cross addiction
- Isn’t necessary to know the total cause
- Effective treatment acknowledges the brain disease and individualizes care
Accessing Treatment

• The decision to get help is a big deal!
• Treatment should be supported
• Some amount of ambivalence is common
• Motivation for treatment is not always that important. Usually self directed but can also be through a referral or mandate.
• Several attempts are often necessary
• Access can be limited
• People can and do get better.
Medication Assisted Treatment

• Recognizing that addiction is a chronic brain disease
• Dramatically increases the abstinence rates and outcomes for patients vs psychosocial treatments alone
• Important tool to aide a patients recovery
• Not replacing one addiction for another
• Effective for all opiates (prescription and heroin)
Euphoria

Normal

Withdrawal

Tolerance & Physical Dependence

Medication Assisted Therapy

Acute Use

Chronic Use

Alford, Boston University, 2012
Gender and Opioid Use Disorder

Opioid Use among Women
- Between 2004 and 2010: opioid-related overdose deaths increased more rapidly among Women (400%), then Men (276%)(1)
- In 2015 there were more past-year initiates of prescription opioid misuse among Women (1.2 million – 0.9%) than Men (0.9 million – 0.7%)(2)
- There are still more male than female adults who use heroin, heroin use is increasing twice as fast among women than men(2)
- Today 50% of new heroin initiates are Women (3)
- NAS cases 1.5/1000 in 1999 to 6/1000 in 2013 (MMWR 2016)
Pregnancy and Opioid Use Disorder (OUD)

- Nearly 50% of Pregnant substance use disorder treatment admissions are for Opioids (1)

- Overdose mortality has surpassed hemorrhage, pre-eclampsia and sepsis as a cause of pregnancy-associated death (2)
Gender, Pregnancy and OUD

• **86%** of pregnant opioid-abusing women report pregnancy was unintended (1)
  – In general population: 31%–47% are unintended
• Pregnancy can be a powerful catalyst for women to engage in treatment
• During Pregnancy
  – Adolescents report the highest illicit substance use in the prior month
    • Reported **substance use decreases with increasing maternal age** (NSDUH 2012-2013)
  – Trend toward reduction of use over gestation
    • Reported **substance use decreases with increasing gestational age** (SAMHSA TEDS 2014)
Medically Assisted Withdrawal in Pregnancy (Detoxification)

- Not recommended in pregnancy (1)(2)(3)
- Withdrawal management has been found to be inferior in effectiveness over pharmacotherapy with opioid agonists and increases the risk of relapse without fetal or maternal benefit (ASAM)
- Increased rate of relapse with associated overdose mortality following detoxification
- Increased access to opioid agonist treatment was associated with a reduction in heroin overdose deaths(4)
- Offering pharmacotherapy for OUD in pregnancy increases*
  - Treatment retention
  - Number of obstetrical visits attended
  - In-hospital deliveries
TREATMENT OPTIONS FOR OUD IN PREGNANCY

METHADONE

- Has been the *Gold Standard* for opioid use disorder in pregnancy
- Pregnancy category C
- Limited dosing flexibility
  - Split dosing in pregnancy is preferred due to increased clearance in later gestation
- May contribute to lower birth weights when compared to Bup-exposed newborns

BUPRENORPHINE

- Gaining First-line recognition for treatment of opioid use disorder in pregnancy
- Pregnancy category C
- When compared to methadone:
  - Lower preterm delivery rate*
  - Higher birth weight*
  - Larger head circumference*
- Allows for adjustable dosing (split dosing)
- Treatment retention for pregnant women may favor buprenorphine over methadone(2)
Medication Assisted Treatment Should be Continued after the Delivery
Is there a difference between Suboxone and Subutex?
Follow up care

• Opiate addiction in particular but all addictions are chronic relapsing diseases
• Ongoing treatment is most often necessary and patient should be encouraged to continue in treatment and referred if not engaged
• Relapse rates very high if ORT stopped before 2 years
• When to “get off”? (Stability and readiness)
What to do with behavioral problems

- Recognize our own feelings
- Recognize patient frustrations
- Recognize that these are complex and difficult issues to address
- Embrace uncertainty
- Do what is right
- Do your best
Breastfeeding

Methadone and buprenorphine are safe for breastfeeding
<1% of maternal opioid intake transmitted to breastmilk (1)

*Published guidelines from the American Academy of Pediatrics (AAP), the American College of Obstetricians and Gynecologists (ACOG), and the Academy of Breastfeeding Medicine (ABM) all support breastfeeding for women on opioid pharmacotherapy

• **Maternal benefits:** increased oxytocin levels are linked to lower stress, increased maternal-infant bonding both lower the risk of postpartum relapse (2)

• **Newborn benefits:** reduction in pharmacologic treatment for NAS, shorter hospital stays (2)
Reducing stigma

• Individuals with substance use disorders (SUDs) are highly stigmatized
• Although addiction is a brain disease, people with SUDs are often regarded as simply needing more willpower, rather than treatment
• Language use perpetuates stigma in healthcare and in society at large
• Stigma prevents people from seeking care
• Health care teams can send a powerful message by avoiding stigmatizing language and behavior
What We Saw

• A dramatic increase in number of people seeking treatment for OUD (300 patients in 2000 now over 850) with the age of the patients decreasing
• Demographic shift in the primary opioid of abuse (From heroin to prescription opioids and back to heroin again)
• A significant rise in the complications of OUD (OD, medical complications)
• An exponential increase in the number of women with SUD delivering babies through CHS and in the number of cases of NAS
What Happened?

OVERWHELMED
Sure, I can handle the load. No problem.
A Patients Experience

- 25 yo WF with a history of OUD stable on MAT for several years
- Delivered a full term baby without complications at the CHS
- During MAT follow up appointment expressed her dissatisfaction with the medical care she received during her delivery. In particular felt she was treated “like an addict”
How to Respond?

• This was not the first complaint we had heard
• Was this legitimate (Internal bias), she was a “good patient”
• Was there some way to address this?
What We Found

• Made an appointment with the OB department and expressed my concerns
• Within a few weeks I was asked back to discuss what they discovered
• Fairly widespread misunderstanding about patients with addiction and how to care for them and their babies
• Significant bias towards these women both implicit and explicit
What We Did

• After a few more discussions a work group was convened to look at the way we cared for women who were pregnant with SUD and their babies

• Work group involved many professions:
  – Providers (OB, Anesthesia, Addiction, Pediatrics)
  – Nursing (NICU, OB, Lactation, Home Care)
  – Social Work
  – Administration
  – Pharmacy
What Next?

- Recognized we were not giving care to the level that would could or should

- **Recognized education was a key component of changing attitudes and improving care**

- Developed system wide initiative to educate staff on addiction

- Developed policies to standardize the approach we have and developed a consistent message ("MAT is good for you and your baby")
Ongoing Work

• Work group became recurring
• Uncovered many areas of care delivery that needed to be addressed
  – NICU
  – Social Work role (CPS reporting)
  – Administrative Battles
  – Expansion of MAT (OB buy in)
  – Pain Management
  – What resources do these families really need?
Where Are We Now?

• Babies and Families with Substance Use Disorders Meeting
• Dramatic change in the patients experience
• Clinical expertise has grown and expanded
• Center of Excellence
• Tower Foundation Grant
Summary

• Addiction is a complicated biopsychosocial disease
• There are effective treatments that dramatically decrease the harms associated with untreated addiction
• Treatment of addiction during pregnancy while potentially complicated is very effective and rewarding.
Summary

• Education is a key weapon in the battle against stigma
• You never know when you can make a difference
• Our bias can really affect the care we deliver to our patients
• It is possible to address these biases and improve both the patients and providers experiences
Get Waivered
General Next Steps

Kristen Lawless, MS
Program Director, Division of Family Health
New York State Department of Health
NYSDOH Caregiver Education Tools for NAS

• **Newborn Care Journal**
  o To be used by parents in the hospital (and the first few days after discharge to home) and shared with their newborn’s providers to increase family-centered care for their opioid-exposed newborn (can also be used for non-opioid exposed newborns)
  o Adapted from Northern New England Perinatal Quality Improvement Network

• **Neonatal Abstinence Syndrome (NAS): What You Need to Know**
  o Key message: Be with your baby: You are the treatment!
  o To be used by parents in the hospital to better understand nine strategies for non-pharmacologic treatment for NAS
  o Adapted from Illinois Perinatal Quality Collaborative
Post Event Survey

New York State Opioid Use Disorder (OUD) in Pregnancy and Neonatal Abstinence Syndrome (NAS) Project Webinar: The Importance of Buprenorphine Waiver Training Evaluation Survey

1. Please indicate your level of agreement with the following statements regarding the September 2019 New York State Opioid Use Disorder (OUD) in Pregnancy and Neonatal Abstinence Syndrome (NAS) Project Webinar - The Importance of Buprenorphine Waiver Training Evaluation Survey

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<tr>
<th>Statement</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
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<tr>
<td>Dr. Paul Updike's presentation on Opioid Use Disorder in Pregnancy was informative.</td>
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<td>Dr. Paul Updike's presentation increased my knowledge of the pathophysiology and consequences of opioid use disorder.</td>
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https://www.surveygizmo.com/s3/5194938/b933fbbe6dbd
Contact

New York State Opioid Use Disorder in Pregnancy & Neonatal Abstinence Syndrome Project

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