Preventing and Addressing Neonatal Abstinence Syndrome From Opioids

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Introduction
Disclosures

• The presenters of this session have no dualities of interest to disclose.

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Objectives

By the end of this session, participants should be able to...

• Realize the impact of neonatal abstinence syndrome (NAS) on SC citizens and communities

• Take one action to address or prevent NAS in SC
• Our experience
• Why focus on exposed newborns
• Scope and impact of NAS in SC
• Addressing NAS due to opioids
• Preventing NAS due to opioids
Definitions

• Neonatal Abstinence Syndrome (NAS)
  – Symptoms of withdrawal from one or more drugs after fetal exposure
  – Diagnosis is nonspecific
  – Term falling out of favor: abstinence implies a willful decision not to use

• Neonatal Opioid Withdrawal Syndrome (NOWS)
  – Symptoms of withdrawal specifically attributable to fetal opioid exposure

• Opiate? Opioid? Narcotic?
  – Opiate: natural derivative of opium, such as morphine or heroin
  – Opioid: synthetic or semi-synthetic opiate-like substance
    • Term currently used to refer to all categories acting on the brain’s opioid receptors
  – Narcotic: an agent that produces “narcosis” or insensibility
    • Implies illegal substances
    • Term not generally used in medical practice
Definitions

• Choosing the right words
  – Dependence: physiologic adaptation to a drug’s presence, resulting in a withdrawal syndrome when the drug is discontinued
  – Addiction: behavioral disorder characterized by craving, compulsive use, and continued use of a drug despite negative consequences
  – Tolerance: needing more drug over time to achieve the desired effect
Typical Case

26 year-old first-time mother

Emotional, sexual, and physical abuse in childhood

Anxiety, depression, PTSD, past suicide attempts

Positive drug screens for 8 years (marijuana and opiates) but negative at delivery

Chronic hepatitis C

Marginal prenatal care: 6 visits, left one without being seen

Admitted to OB misusing opioids and would take more if she could get them

Tried methadone for 4 months during pregnancy but quit due to cost

Swears she has taken nothing for 2 weeks before delivery

Photo shared for educational purposes with maternal consent.
• Our experience
• **Why focus on exposed newborns**
• Scope and impact of NAS in SC
• Addressing NAS due to opioids
• Preventing NAS due to opioids
Newborns are our most vulnerable citizens

“A lot of officials – nurses, social workers – say, ‘We don’t report when the mother is trying to get better.’ I always come back and say, ‘Well, it’s not about the mother. What about the baby?’”

Ila Baugham, retired pediatrician and member of child-fatality review team

A Reuters investigation found 110 examples of children whose mothers used opioids during pregnancy and who later died preventable deaths after they were sent home from the hospital. A federal law meant to protect those children has largely been ignored by states across America.

Helpless & Hooked, Reuters.com, 2015

Jennifer Frazier with Jacey. In a letter from prison, Frazier laments that she couldn’t get more help before accidentally killing her daughter.
Child Maltreatment

• Any act or series of acts of commission or omission by a parent or other caregiver that results in harm, potential for harm, or threat of harm to a child (CDC, 2008)

• Child maltreatment can cause adverse childhood experiences, permanent disability or fatality

• Adverse childhood experiences linked to higher risk of
  – Chronic disease, negative health behaviors in adulthood
  – Injury resulting in disability, temporary or permanent developmental delays
  – Sustained stress responses with subsequent abnormal stress reactions
  – Higher rates of substance abuse, smoking, poor coping skills in adulthood
At-Risk Families

- Many high-risk family situations can be identified very early in a child’s life

- Characteristics of families whose children are at risk of maltreatment
  - Substance misuse
  - Domestic violence
  - Poverty
  - Homelessness
  - Major life stressors – death, birth, unemployment, moving
  - Emotional disconnection and social isolation
  - Children living with one or more unrelated adults, especially adult men
  - Children at vulnerable age (0-5 years)

- 8.7M children (12.5% in US) live in a household with at least one parent who had a substance use problem within past year (SAMHSA, 2017)
Fetal Drug Exposure

• Exposed infants are often POLYSUBSTANCE exposed

• Prescription opioids and sedatives, heroin
  – Reduced overall brain growth
  – Neonatal abstinence (withdrawal) syndrome; distress and discomfort
  – Learning, communication and behavioral problems

• Marijuana
  – Smaller size and possible feeding problems at birth
  – No birth defects or withdrawal
  – Linked to cognitive impairment and reduced academic achievement, problems with memory and attention during childhood

• Cocaine and methamphetamine
  – Low birth weight, small head
  – Birth defects
  – Higher risk of developmental delay, seizures, cerebral palsy, mental retardation
  – Higher risk of SIDS
What’s the Evidence?

• All retrospective studies

• Lack of controls
  – Dose, concentration, frequency, comparison group

• Confounders
  – Genetics
  – Home environment, nutrition, education
  – Multiple drug exposures
  – Adverse childhood experiences
Why Newborns

• Pregnancy provides a “window of opportunity” for women to engage in lifestyle changes to improve the outcomes for newborns and families
  – Empower and engage parents struggling with substance use disorders
  – Improve family success
    • Promote change and healthy choices
    • Promote family planning and healthy pregnancies
    • Reduce rates of child neglect and abuse, kinship and foster care

• Substance-misusing women and their exposed infants benefit from a coordinated circle of long-term care utilizing community and hospital support systems
• Our experience
• Why focus on exposed newborns
• **Scope and impact of NAS in SC**
• Addressing NAS due to opioids
• Preventing NAS due to opioids

Oceanographic Museum of Monaco
30% of young Medicaid women have a current opioid prescription

Among women using opioids, 86% of pregnancies are unplanned

Rates of NAS cases from rural communities has risen from 12.9% to 21.2%

Over 80% of NAS cases are billed to Medicaid

– $1.2 billion in 2012


State NAS Incidence, 2012

NAS per 1,000 Hospital Births
- 15–20
- 10–15
- 5–10
- 0–5
Greenville County
6421 births in 2015
52 cases

Source of Data:
South Carolina Office of Research and Statistics
NAS in South Carolina

Growing Concern
Neonatal abstinence syndrome—or NAS—is a drug withdrawal syndrome in newborns caused by the mother's opiate use during pregnancy.

U.S. rate of babies born with NAS, per 1,000 hospital births

<table>
<thead>
<tr>
<th>Year</th>
<th>U.S. Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>1.0</td>
</tr>
<tr>
<td>2003</td>
<td>2.0</td>
</tr>
<tr>
<td>2006</td>
<td>3.0</td>
</tr>
<tr>
<td>2009</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Source: JAMA, The Wall Street Journal

SC 7.0 births

Mean SC Hospital Charges (All Payers) per NAS Birth, 2014

<table>
<thead>
<tr>
<th>Category</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>$60,176</td>
</tr>
<tr>
<td>In NICU</td>
<td>$157,912</td>
</tr>
<tr>
<td>Total</td>
<td>$24,250,928</td>
</tr>
</tbody>
</table>

Source of Data:
South Carolina Office of Research and Statistics
Division of Research and Statistics
UB-04 Hospital Billing Data
• Our experience
• Why focus on exposed newborns
• Scope and impact of NAS in SC
• **Addressing NAS due to opioids**
• Preventing NAS due to opioids

The Poison Garden. Blarney Castle, Ireland
Challenges in NAS Care

• There is no singular recommended approach for NAS care

• Most NAS care currently takes place in neonatal ICUs
  – Higher cost
  – Separation of mom and baby
  – Beds used for non-critical care

• Predicting which babies will develop NAS is difficult
  – Methadone or buprenorphine supervised replacement therapy
  – Chronic pain therapy
  – Psychiatric or neurologic therapies
  – Added risk with maternal smoking
About 80% of NAS cases in TN are due to maternal supervised replacement therapy

Figure 3: Class of Drug Exposure of Neonatal Abstinence Syndrome Cases with Prescription Drug Exposure Only, Tennessee 2013-2015. Trends were not statistically significant.
### POTENTIALLY BETTER PRACTICES (PBPs)

The suggested PBPs are focused on developing and implementing a standardized process for the identification, evaluation, treatment, and discharge management of an infant with neonatal abstinence syndrome:

<table>
<thead>
<tr>
<th>PBP 1</th>
<th>Develop and implement a standardized process for the identification, evaluation, treatment and discharge of infants with NAS.</th>
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</thead>
<tbody>
<tr>
<td>PBP 2</td>
<td>Develop and implement a standardized process for measuring and reporting rates of neonatal abstinence syndrome and drug exposure.</td>
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<tr>
<td>PBP 3</td>
<td>Create a culture of compassion, understanding, and healing for the mother-infant dyad affected by the problem of neonatal abstinence syndrome.</td>
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<tr>
<td>PBP 4</td>
<td>Provide care for infants and families in sites that promote parental engagement in care and avoid separation of mothers and infants.</td>
</tr>
<tr>
<td>PBP 5</td>
<td>Engage mothers and family members in providing non-pharmacologic interventions as &quot;first-line&quot; therapy for all substance-exposed infants.</td>
</tr>
<tr>
<td>PBP 6</td>
<td>Develop clear eligibility criteria for breastfeeding and actively promote and support breastfeeding by eligible mothers.</td>
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<tr>
<td>PBP 7</td>
<td>Develop a standardized process to ensure safe discharge into the community.</td>
</tr>
<tr>
<td>PBP 8</td>
<td>Provide interdisciplinary universal education and training to all caregivers who may encounter substance-exposed infants and families.</td>
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This list of PBPs to improve care delivered to infants and families affected by NAS is not an exhaustive or exclusive list. We refer to these practices as "potentially better" rather than "better" or "best" because we believe that until the practices are evaluated, customized, and tested in your own NICU, you will not know whether they are truly "better" or "best". Depending on the particular circumstances in your unit, you may have to implement other PBPs in order to successfully improve care for infants with NAS in your unit. As you implement these PBPs, you should monitor the results closely to ensure that you are obtaining the desired results, that no harm is being done, and no unanticipated results are seen.

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MAIN (Managing Abstinence in Newborns) Program Aim:

To provide multidisciplinary, coordinated care to families with newborns at risk for or diagnosed with neonatal abstinence syndrome, in order to achieve a cost-effective, family-centered experience with best potential outcomes for mothers with substance dependence and their exposed and/or treated infants.

Obstetrics, ER, Primary Care, Treatment Programs
Screen pregnant women with History, UDS, SBIRT and Refer to MAIN Case Manager at any gestational age:
1. Chronic short- or long-acting opioid or benzodiazepine use, for any reason, prescribed or non-prescribed
2. Alcohol or illicit drug use documented during pregnancy

Birth Hospital
1. Same criteria above but not referred prenatally
2. Positive drug screen at birth for non-prescribed or illicit drug

OR

MAIN Case Manager

Prenatal Pathway
Receives referral
At/after 35 weeks’ gestation
Contacts mother by phone
Enrolls mothers on chronic opioid therapy
Arranges prenatal consult
Targeted education

Inpatient Pathway
Enrolls new patients
Makes all supporting referrals
Documents inpatient mother/baby outcomes

Inpatient Pathway

Receives referral

At/after 35 weeks’ gestation
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Targeted education

Inpatient Pathway
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Treatment Care Map
Exposed to methadone or buprenorphine with early treatment: 7-10 day stay

Observance Care Map
Exposed to short-acting prescription drug, alcohol or illegal drug: 3-5 day stay

Observance Care Map
Exposed to methadone or buprenorphine with early treatment: 7-10 day stay

DSS or SAFY when indicated

Level I Newborn
Drug-free at birth: 2-day stay

Routine Care

Observance at birth: 2-day stay

Palliation Care Map
Exposed to short-acting prescription drug, alcohol or illegal drug: 3-5 day stay

Palliation Care Map
Exposed to methadone or buprenorphine with early treatment: 7-10 day stay

Level I Newborn

Routine Care

Observance at birth: 2-day stay

Palliation Care Map
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Exposed to methadone or buprenorphine with early treatment: 7-10 day stay

Level I Newborn

Routine Care

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Palliation Care Map
Exposed to short-acting prescription drug, alcohol or illegal drug: 3-5 day stay

Palliation Care Map
Exposed to methadone or buprenorphine with early treatment: 7-10 day stay

Home Caremap
Weekly Medical Home visits
4-week home medication wean
1-2 DHEC Newborn Home visits
Ongoing Case Management
Developmental screen at 3m
Utilization Outcomes


SC Data Courtesy of SC Birth Outcomes Initiative Data Committee, 2016
Another Case

25 year old first-time mother

Good prenatal care

History of anxiety and depression

Married
Planned pregnancy

History of addiction to medications prescribed for menstrual pain; now on methadone maintenance therapy

Photograph with mother’s permission
• Our experience
• Why focus on drug-exposed newborns
• Scope and impact of NAS in SC
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System Strategies

• Coordination of state, regional, and hospital level approaches
  – Clear shared purpose goals and values
  – Effective communication

• Reduce stigma and avoid criminalization of pregnant women
  – Treat substance misuse and dependency as chronic disease

• Ensure child protective services involvement when appropriate
  – Minimize ongoing and future exposures
  – Ensure formal developmental/behavioral monitoring for substance-exposed infants and young children

• Support continuity with medical homes

• Support home visiting programs and voluntary case management

• Promote prevention efforts
The only way to prevent NAS is to avoid fetal substance exposures during pregnancy.
SC Birth Outcomes Initiative

**Data**
- Access to prenatal care
- Long-acting contraception
- Access to progesterone injections

**Care Coordination**
- Reducing health disparities
- Centering Pregnancy

**Quality and Safety**
- Supporting vaginal birth
- Safety bundles
- Immunizations
- SimCoach

**Baby-Friendly**
- Baby-Friendly designation
- Sustaining breastfeeding
- SC Human Milk Bank
- Safe sleep

**Behavioral Health**
- Substance use screening, treatment
- Neonatal abstinence syndrome
- Smoking cessation
- Mental health

**Health Disparities**
- Stakeholder engagement
- Organization

**Leadership**
- Leadership

**SC BOI**
- Stakeholder engagement
- Organization

**SC Birth Outcomes Initiative**

**SC Human Milk Bank**

**SimCoach**
Access

• Family planning services and contraception
  – Rural communities
  – Opioid prescribers
• Quality prenatal care
• Non-opioid pain management therapies
• Supervised replacement therapies, behavioral and mental health services during pregnancy
• Public education
  – Opioid and other medication use and misuse topics
  – Reproductive health education and pregnancy prevention
  – Parenting, behavioral and mental health
  – Reducing childhood adverse experiences

• Provider education
  – Prescribing strategies and PMP utilization
  – Screening for, identification and management of substance misuse
  – Local, regional and state resources available
  – Reporting concerns to DSS, law enforcement, Bureau of Drug Control
Early Identification

- Universal SBIRT screening during pregnancy
  - tobacco, alcohol and substance use
  - depression and domestic violence

- Toxicology screening
  - Compulsory vs. targeted

- Provider tools and resources
  - Standardized office approach to managing complex patient care issues
  - Recognition of aberrant drug-related behaviors
  - Motivational interviewing
  - Mandated reporting

Exhibit 2.9 Elements of Screening, Brief Intervention, and Referral to Treatment

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening</td>
<td>Identifies individuals with problems related to substance use. Screening can be through interview and self-report.</td>
</tr>
<tr>
<td>Brief Intervention</td>
<td>Follows a screening result indicating a moderate risk. A successful brief intervention encompasses support of the patient's ability to make behavioral change.</td>
</tr>
<tr>
<td>Brief Treatment</td>
<td>Follows a screening result of moderate to high risk. Brief treatment includes assessment, education, solving problems, introducing coping mechanisms, and building a supportive social environment.</td>
</tr>
<tr>
<td>Referral to Treatment</td>
<td>Follows a screening result indicating severe abuse or dependence. This process facilitates access to care for individuals requiring more extensive treatment than SBIRT provides and ensures access to the appropriate level of care for all who are screened.</td>
</tr>
</tbody>
</table>

SAMHSA TIP 54, 2012
Communication and Feedback

• Communication between opioid treatment providers, obstetricians, and newborn care providers
• Reduce fragmentation of care
• Overdose and arrest reporting to prescribers

Diversion Alert is a not-for-profit organization created and funded by Maine’s Office of the Attorney General.
Reducing Misuse and Diversion

- Safe storage and disposal

How to properly dispose of unused prescription drugs at home:

1. Mix unused medication with garbage, coffee grounds, cat litter or sawdust.
2. Place mixture in a disposable container such as a sealable plastic bag.
3. Discard sealed container in trash bin.
4. Remove and dispose of label from the empty medicine container.

Source: Substance Abuse and Mental Health Services Administration
THE COLUMBUS DISPATCH

NEARLY 25% OF TEENS REPORT abusing or misusing a prescription drug at least once in their life.

1/3 OF TEENS BELIEVE IT IS OK TO TAKE A PRESCRIPTION DRUG WITHOUT A PRESCRIPTION FOR AN INJURY OR TO DEAL WITH PAIN.

OVER 70% OF PEOPLE WHO'VE ABUSED PRESCRIPTION PAIN RELIEVERS SAY THEY GOT THEM FROM FRIENDS OR RELATIVES.
System-Building

- Promote support for DSS
  - Appropriate plans of care and accountability for compliance
  - Appropriate length of involvement
    - Successful behavioral change related to substance misuse may take years
    - The minimum recommended length of methadone maintenance treatment is 12 months; average length of treatment is 3-5 years (NIDA, 2012)
  - Employee training related to substance misuse and infant exposures
  - Support for optimal organization
    - Case loads
    - Oversight
    - Database maintenance
    - Communication – with mandated reporters, across county lines, statewide
Legislative Efforts and Opportunities

- Advocate against legalization of marijuana and other plant-based psychotropics, unless FDA regulation is ensured

- Reporting into SCRIPTS by medication-assisted treatment centers that dispense long-acting opioids

- Resource allocation for system-building efforts and improving capacity

- Support for case management by payers for neonates diagnosed with NAS or substance exposure to ensure a long-term plan of safe home and medical care
Where Do We Go From Here?

**Obstetricians**
- Do you screen every first prenatal visit with SBIRT?
- Do you know your resources for mental health and substance abuse treatment services?
- Do you have access to and use SCRIPTS?
- Do you report third trimester substance misuse to DSS?
- Do you participate in the Birth Outcomes Initiative?

**Pediatricians and family physicians**
- Do you refer opioid- and substance-exposed newborns for formal developmental screening?
- Can you help your local nursery adopt the MAiN program?

**MAT or opioid treatment providers**
- Do you discuss avoidance of unplanned pregnancies with your female clients of child-bearing age?
- Do you regularly communicate with primary care providers?

**Pharmacists**
- Do you counsel young women about contraception and the consequences of opioid use during pregnancy, including NAS?
Where Do We Go From Here?

• Taxpayers
  – If a family member was struggling with substance use, would you want for your tax dollars to support timely and affordable treatment services?

• Payers
  – Do you have a program for case management of pregnant women using opioids, or newborns diagnosed with NAS?

• Legislators
  – What opportunities are available for addressing and preventing NAS?

• Everyone
  – Do you keep old opioids unsecured in your home?
  – Do you know how to dispose of old medications to prevent access by children, family and guests?
  – Do you know how to help someone you care about deal with substance misuse?
People who work together will win, whether it be against complex football defenses, or the problems of modern society.

- Vince Lombardi