# Opioid Response Toolkit: Neonatal Abstinence Syndrome Prevention, Screening, and Treatment

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Toolkit Overview

Subject: Neonatal Abstinence Syndrome (NAS) Prevention, Screening, and Treatment

Purpose: This toolkit aims to present PR DOH with NAS-related resources that it can modify according to its needs and capacity and share and implement within its healthcare system. This toolkit discusses how to screen pregnant women for substance use, screen infants for prenatal exposure to substances, recognize the signs of NAS, utilize validated screening tools, understand the importance of provider education, and engage pregnant women in the process of treatment and referral. ASTHO, in collaboration with the Centers for Disease Control and Prevention (CDC), created this resource for the Puerto Rico Department of Health (PR DOH).

Objectives:
1) Emphasize the importance and benefits of the mother-baby dyad.
2) Provide evidence-based, validated NAS screening tools for clinical staff.
3) Discuss how to screen for substance use in pregnant women and NAS in infants.
4) Discuss how to effectively treat infants with NAS and pregnant women who use substances or have substance use disorder (SUD).
5) Present best practices for screening pregnant women throughout prenatal check-ins.
6) Present best practices for comprehensive care for both infants and their caregivers affected by substance use.
7) Recommend strategies to achieve provider education and buy-in.

Conclusion: State and territorial health agencies have the opportunity to build a strong, comprehensive care approach for substance-using pregnant and postpartum women and NAS-affected infants. Planning and implementing these steps demand constant engagement with state and territorial health agencies’ internal and external partners.
Introduction

What is Neonatal Abstinence Syndrome?
The Illinois Department of Public Health defines neonatal abstinence syndrome as “the collection of signs and symptoms that occur when a newborn prenatally exposed to prescribed, diverted, or illicit opiates experiences opioid withdrawal” and notes that NAS symptoms include “irritability, tremors, feeding problems, vomiting, diarrhea, sweating, and, in some cases, seizures.” Although NAS is most often discussed in regard to opiates, other drugs, such as antidepressants, barbiturates, and alcohol, can be associated with NAS. This toolkit focuses on preventing and responding to opioid-related NAS, and public health and clinical professionals should note that other drug-related NAS may require adjusted or different strategies and approaches for treating and caring for infants.

Pregnant Women

Screening Pregnant Women for Substance Use Disorder

<table>
<thead>
<tr>
<th>Key Points</th>
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</thead>
<tbody>
<tr>
<td>• The pregnant women’s health inevitably impacts the health and well-being of their babies.</td>
</tr>
<tr>
<td>• Pregnant women should be universally screened for substance use starting from their first prenatal visits.</td>
</tr>
<tr>
<td>• Health agencies should partner with hospital associations, addiction treatment providers, and the Mental Health and Anti-Addiction Services Administration Health to create and establish comprehensive care plans to refer and treat pregnant women with substance use disorder (SUD).</td>
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</table>

For pregnant and postpartum women with SUD, stigma continues to be a barrier to seeking and accessing care. Educating healthcare staff about the harmful effects of stigma and training them to use a person-centered, non-stigmatizing approach to care may reduce this barrier and increase access to care. Under this approach, providers can help motivate pregnant women to reduce high-risk behaviors and seek treatment, when necessary, for the health of both mother and baby. Therefore, it is critical for healthcare staff to (1) view and treat SUD as a chronic disease, (2) be knowledgeable about available comprehensive substance use treatment services for pregnant and postpartum women, (3) understand and support the mother-baby dyad, and (4) understand the harmful barriers stigma causes in access to care.

Early recognition of SUD and early intervention to reduce or eliminate substance use improves prenatal health. To accomplish this, providers should begin using validated screening tools for SUD and mental health disorders for all patients as early as the first prenatal check-up. At this time, providers should also share educational materials that discuss the implications of substance use during pregnancy, the symptoms of NAS, hospital stay expectations, addiction treatment for pregnant or postpartum women, community resources (such as peer recovery programs, mental health services, individual or family counselling, transportation services, and childcare services), and the importance of primary caregiver engagement in infant care.

Universal screening—the process of screening all pregnant women regardless of suspected substance use—is recommended by both CDC and the American Medical Association. There are three validated verbal SUD screening tools for pregnant women: T-ACE, TWEAK, and 4Ps from the Substance Abuse and
Mental Health Services Administration. These tools and other frequently used screening tools are described in Table 1. Illinois Department of health has also created a verbal screening tool modelled after the Screening, Brief Intervention, and Referral to Treatment (SBIRT) approach, an evidenced-based way to deliver early intervention and treatment services to patients with (or at risk for developing) SUD.

It is crucial for public health, hospitals, and healthcare staff to be aware of any punitive laws or other legal consequences that pregnant women may face when they test positive for SUD. Protective laws and comprehensive care should be established by policy makers before implementing universal screening practices to allow pregnant women the opportunity to seek care and treatment without fear of criminal charges.
Table 1: List of Frequently Used Screening Tools for Pregnant Women

<table>
<thead>
<tr>
<th>Screening Tool</th>
<th>Target Area (Alcohol, Drugs, etc.)</th>
<th>Description</th>
<th>Questions</th>
<th>Additional Sources</th>
</tr>
</thead>
</table>
| 4 P’s          | Alcohol, tobacco, and other substance use. | Designed to identify obstetrical patients at risk for alcohol or illicit drug use. The four questions are broad-based and highly sensitive. The 4 P’s relate to past, present, parents, and partner substance use. One positive answer to any question is considered a positive screen. | 1. Have you ever used drugs or alcohol during pregnancy?  
   - 0-No  
   - 1-Yes  
  2. Have you had a problem with drugs or alcohol in the past?  
   - 0-No  
   - 1-Yes  
  3. Does your partner have a problem with drugs or alcohol?  
   - 0-No  
   - 1-Yes  
  4. Do you consider one of your parents to be an addict or alcoholic?  
   - 0-No  
   - 1-Yes | 1. 4 P’s Screening Tool  
2. 4P’s Questions |
| T-ACE          | Identifies at-risk drinking (i.e., alcohol intake sufficient to potentially damage the fetus/embryo). | Made up of four questions titled as tolerance, annoyance, cut down, and eye opener that are significant identifiers of at-risk drinking and is completed at intake in a score range of 0-5. The value of each answer to the four questions is totaled to determine the final T-ACE score. A total score of 2 or greater indicates potential risk for the purposes of Pregnancy Outreach Program identification of prenatal risk. | 1. How many drinks does it take to make you feel high?  
   - 0-less than or equal to 2 drinks  
   - 2-more than 2 drinks  
  2. Have people annoyed you by criticizing your drinking?  
   - 0-No  
   - 1-Yes  
  3. Have you felt you ought to cut down on drinking?  
   - 0-No  
   - 1-Yes  
  4. Have you ever had a drink first thing in the morning to steady your nerves or to get rid of a hangover?  
   - 0-No  
   - 1-Yes | T-ACE Measurement Tool |
| TWEAK          | Identifies at-risk drinking (i.e., alcohol intake sufficient to potentially damage the fetus/embryo). | Consists of five questions designed to screen pregnant women for harmful drinking habits. TWEAK stands for Tolerance, Worried, Eye opener, Amnesia, and (K)Cut down. | 1. How many drinks does it take you to feel high? (3 or more drinks = 2 points)  
  2. Have close friends or relatives worried or complained about your drinking in the past year? (Yes = 2 points)  
  3. Do you sometimes take a drink first thing in the morning to steady your nerves or to get rid of a hangover? (Yes = 1 point) | 1. TWEAK Screening Tool  
2. TWEAK Questions |
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CRAFFT</strong></td>
<td>Designed to identify substance use, substance-related riding or driving risk, and substance use disorder (including vaping as a method of administrating marijuana) among youth ages 12-21 years old.</td>
<td>Screened includes asking patients questions regarding substance use frequency within the past 12 months, as well as asking the six CRAFFT (car, relax, alone, forget, family or friends, and trouble) questions. A score of two or more positive items indicate the need for further assessment.</td>
</tr>
</tbody>
</table>

|   | TWEAK is scored on a seven-point scale. A woman who has a total score of two or more points is likely to be an at-risk drinker. | 4. Are there times when you drink and afterwards can't remember what you said or did? (Yes = 1 point) 5. Do you sometimes feel the need to cut down on your drinking? (Yes = 1 point) |

| PART A | During the past 12 months, did you: 1. Drink any alcohol (more than a few sips)? (Do not count sips of alcohol taken during family or religious events.)  〇 No  〇 Yes 2. Smoke any marijuana or hashish?  〇 No  〇 Yes 3. Use anything else to get high? (“anything else” includes illegal drugs)  〇 No  〇 Yes |

| PART B | 1. Have you ever ridden in a car driven by someone (including yourself) who was “high” or had been using alcohol or drugs?  〇 0-No  〇 1-Yes 2. Do you ever use alcohol or drugs to relax, feel better about yourself, or fit in?  〇 0-No  〇 1-Yes 3. Do you ever use alcohol or drugs while you are by yourself, or alone?  〇 0-No  〇 1-Yes 4. Do you forget things you did while using alcohol or drugs?  〇 0-No  〇 1-Yes 5. Do your family or friends ever tell you that you should cut down on your drinking or drug use?  〇 0-No | 1. Interview Questions 2. CRAFFT Validity |
| NIDA Quick Screen | Designed to identify use of drugs (mood-altering, illegal, or prescription for nonmedical reasons), alcohol, or tobacco products within the past year and how often these substances have been used. | Patients are screened about past drug use using the National Institute on Drug Abuse Quick Screen (NIDA), and then begin the NIDA-Modified ASSIST screen to determine risk level. After a brief intervention, a facilitator will determine a patient’s “Substance Involvement” score to identify their risk level, and will “Advise, Assess, Assist, and Arrange” accommodations accordingly. | Please refer to the additional source column for NIDA Quick Screen Questions. | 1. Quick Screen Tool  
2. NIDA Quick Screen Tool |
The flowchart below is a basic example of the process for screening pregnant women during a prenatal visit, following up, and referring patients to treatment services, if necessary. (The Northern New England Perinatal Quality Improvement Network has developed an even more in-depth chart for screening, brief intervention, and referral, along with a screening flow chart for hospitals.)

Figure 1. Flow Chart for Screening Pregnant Women on Initial Prenatal Visit

- **Patient’s prenatal visit with provider**
  
  **Provider uses a substance use validated screening tool**

- **Negative Screen**
  
  **Positive Screen**
  
  **Follow up questions and brief discussion**

- **Low/moderate substance use**
  
  **Moderate/severe substance use**

- **Transfer to an addiction specialist for further evaluation**

- **Continue prenatal checkup, share educational resources, and encourage abstinence**

- **Refer to treatment and comprehensive care program**

- **Continue normal checkup routine**

- **Share educational resources**
Treat pregnant women for substance use disorder

Key Points

- Substance use treatment for pregnant women should involve both clinical and non-clinical services.
- A family-centered approach promotes support for pregnant or postpartum women with SUD, their infants, and other members of their household affected by addiction.
- Comprehensive care programs should partner with Child Welfare Services, peer recovery programs, and therapists and psychologists specializing in SUD.

Medication-assisted treatment (MAT) is an evidence-based protocol for caring for people with SUD. Studies have shown that prescribing methadone and buprenorphine during pregnancy can decrease pregnant women’s illicit drug use, support prenatal health, reduce the risk of fetal withdrawal symptoms, and improve pregnancy outcomes for women with opioid use disorder. However, infants exposed to methadone in utero may still need treatment for withdrawal symptoms.

Addiction affects both pregnant and parenting women and their families. Therefore, optimal health outcomes are achieved through a comprehensive, family-centered approach, which includes a broad range of services to support a mother and family during recovery (see Table 2). This approach includes access to substance use and mental health treatment, peer recovery and community-based resources, child development services, and family therapy. Family-centered treatment requires care teams to coordinate both clinical and non-clinical services needed during pregnancy and postpartum.

- Health professionals should consider certain criteria that will support a pregnant women’s ability to successfully participate in a comprehensive treatment plan. These services help to break down barriers to receiving treatment and encourage women to continue recovery. A model program for pregnant women with SUD should include:
  - Parenting education
  - Staff with medical, mental health, and addiction treatment expertise
  - Consistent meetings with qualified counselors
  - Childcare services
  - Transportation services
  - Housing services
  - Peer support services

- Comprehensive addiction treatment plans for pregnant women may include:
  - MAT, if necessary
  - A specialized treatment plan developed by professionals in the addiction and behavioral health field
  - Pregnancy education and counselling
  - Individual and family therapy
  - Assessment and therapy for co-occurring disorders
  - Twelve-step programs
  - Prenatal care
  - Life skills workshops
  - Aftercare planning
  - Peer recovery support
Newborns

**Neonatal Abstinence Syndrome Screening**

<table>
<thead>
<tr>
<th>Key Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Care and recovery support for infants should take a comprehensive approach.</td>
</tr>
<tr>
<td>• To assess a baby's health, abstinence scoring should be used in addition to other approaches, like using a screening tool, assessing infant’s daily habits, and consulting with a baby’s caregiver.</td>
</tr>
<tr>
<td>• Using the Eat, Sleep, Console model allows for a more family-centered treatment approach.</td>
</tr>
</tbody>
</table>

The hospital administration and state or territorial health agency should work together to develop clear guidance on screening, testing standards, and approach to treating NAS. In addition, providers should use NAS scoring tools in conjunction with assessing feeding habits and growth patterns and consulting with caregivers and their healthcare providers to determine proper support and treatment for the infant. The Eat, Sleep, Console model helps to assess how the baby is doing and can guide decisions on whether pharmacologic treatment is necessary (see the Treatment for Substance-Exposed Newborn section for a description of this model).

**Modified Finnegan Neonatal Abstinence Severity Score Sheet**

One standardized screening tool commonly used in many states across clinical settings is the Finnegan Neonatal Abstinence Score Sheet. This tool helps providers develop an assessment, identify symptoms of withdrawal, and decide on an appropriate treatment routine and enables practitioners to teach mothers how to utilize the screening tool and be active participants in monitoring their infant. The Finnegan Neonatal Abstinence Score Sheet lists 21 symptoms most frequently observed in opiate-exposed infants. These symptoms are organized into three categories: central nervous system, gastrointestinal, and metabolic/vasomotor/respiratory.

- Each symptom is assigned a score between 1-5 points to indicate the associated degree of severity.
- The scores for each symptom are listed on the score sheet.
- The first abstinence score should be recorded approximately two hours after birth as the baseline score, and then scores should be recorded every four hours for the first five days of life.
- The total abstinence score is determined by totaling the scores assigned to each symptom over the scoring period.
- The score sheet allows for scoring every two hours over the 24-hour period, and a new sheet should be started at the beginning of each day.
- If the infant’s score during any scoring interval is greater than or equal to eight, scoring should be increased from every four hours to every two hours.
- If the two-hourly score is less than or equal to seven for 24 hours, then four-hourly scoring intervals may be resumed.
### Figure 2. Neonatal Abstinence Syndrome Screening Checklist 17

**Modified Finnegan Neonatal Abstinence Score Sheet**

<table>
<thead>
<tr>
<th>System</th>
<th>Signs and Symptoms</th>
<th>Score</th>
<th>AM</th>
<th>PM</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Central Nervous System Disturbances</strong></td>
<td>Excessive high-pitched (or other) cry &lt; 5 mins</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Continuous high-pitched (or other) cry &gt; 5 mins</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sleeps &lt; 1 hour after feeding</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sleeps &lt; 2 hours after feeding</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sleeps &lt; 3 hours after feeding</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hyperactive Moro reflex</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Markedly hyperactive Moro reflex</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mild tremors when disturbed</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Moderate-severe tremors when disturbed</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mild tremors when undisturbed</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Moderate-severe tremors when undisturbed</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Increased muscle tone</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Excoriation (chin, knees, elbow, toes, nose)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metabolic/Vasomotor/Respiratory Disturbances</td>
<td>Myoclonic jerks (twitching/jerking of limbs)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Generalized convulsions</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sweating</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hyperthermia 37.2-38.3C</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hyperthermia &gt; 38.4C</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Frequent yawning (&gt; 3-4 times/scoring interval)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mottling</td>
<td>1</td>
<td></td>
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<tr>
<td></td>
<td>Nasal stuffiness</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sneezing (&gt; 3-4 times/scoring interval)</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Nasal flaring</td>
<td>2</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Respiratory rate &gt; 60/min</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Respiratory rate &gt; 60/min with retractions</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gastrointestinal Disturbances</td>
<td>Excessive sucking</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Poor feeding (infrequent/uncoordinated suck)</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Regurgitation (≥ 2 times during/post feeding)</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Projectile vomiting</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loose stools (curds/seedy appearance)</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Watery stools (water ring on nappy around stool)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Score</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Date/Time</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Initials of Scorer</strong></td>
<td></td>
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</tbody>
</table>
The flowchart below, adapted from the *Pediatrics* article “Neonatal Abstinence Syndrome,” notes that “Medications are to be initiated, increased, decreased, or discontinued depending on the Finnegan score. Morphine can be initiated at a higher dose if scores are high; for example, if the scores are 17 to 20, morphine can be started at 0.12 mg per dose, and if the scores are [equal or greater than] 25, morphine can be initiated at 0.20 mg per dose. Morphine does can also be escalated by [greater than] 10% for higher scores. Methadone can be substituted for morphine for opioid withdrawal. Cardiopulmonary monitoring of the infant is preferred during the acute stage.”

**Figure 3. Screening and Treatment Algorithm for Baby Flowchart**

1. Start Finnegan scoring within 24 hours of birth
   - Monitor score every 3-4 hours
2. 2 consecutive scores ≥ 12 or 3 consecutive scores ≥ 8
   - Yes: Is the mother on opioids?
   - No: Continue to monitor scores at every 3-4 hour intervals; when scores are consistently ≤ 8, observe for 3-5 days more
3. Are the scores increasing?
   - No: Discharge Plan
     - Pediatrician follow-up in two days
     - Home visiting referral
     - Anticipatory guidance
   - Yes: Start phenobarbital at 16 mg/kg
     - Maintenance dose: 5mg/kg/day in two divided doses
     - Change the dose every 24-48 hours
     - Increase/decrease the dose by 10% or 1mg
     - Monitor phenobarbital level
     - Add other medications if levels are high
4. Is the mother on opioids?
   - Yes: Start morphine 0.05 mg/kg/dose
     - Increase/decrease the dose by 10% or 0.05mg
     - Change the dose every 24-48 hours
     - Rescue dose: if scores are ≥ 12 for 2 consecutive times
       - Maximum dose: 1.3 mg/kg/day
       - Add phenobarbital/clonidine if maximum dose is reached
   - No: For scores consistently ≥ 12: increase the dose
     - For scores between 9 and 11: no change in the dose
     - For scores consistently ≤ 8: decrease the dose
   - When the infant is off morphine for two days, when scores are consistently ≤ 8 for 2 days, and when the infant is cleared medically and socially
Treatment for Substance-Exposed Newborns

Key Points

- NAS treatment should take a comprehensive approach.
- Mothers should be involved throughout their babies’ recovery.
- Nonpharmacologic action should be the first line of treatment.
- Consider partnering with Child Welfare Services, who are most likely to be involved with developing plans of safe care.

The hospital administration and the state or territorial health agency should assess pre-existing standards and develop new protocols and tools necessary to fill in potential gaps for transferring substance-exposed newborns to a higher level of care. Transferring to higher-level care would include prescribing nonpharmacologic and, if necessary, pharmacologic NAS treatment (see Table 2), and requiring that newborns meet safe discharge criteria. According to recent studies, a mother-centered approach for NAS recovery decreases infants’ need for pharmacological treatment and shortens hospital stays. The Eat, Sleep, Console model aims to actively involve mothers and empower them to have influence in the care of their infant by keeping mothers should with their infants whenever possible so they can resume the role of a caregiver and attend to their infant’s needs. There is significant benefit to infants’ recovery from substance exposure by having a mother breastfeed, provide skin-to-skin contact, and room-in with baby. Lastly, the infant’s care team should develop a plan of safe care (which may involve child welfare staff) and provide it to the mother upon discharge. The plan should include follow-up for both mother and baby to ensure the well-being of the family.

Table 2. Neonatal Abstinence Syndrome Treatment Approaches

<table>
<thead>
<tr>
<th>Nonpharmacologic Treatment</th>
<th>Pharmacologic Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Skin to skin care</td>
<td>- Should be used as a second line of treatment when the non-pharmacologic approach fails;</td>
</tr>
<tr>
<td>- Swaddling techniques</td>
<td>baby’s assessment score remains high; or alarming symptoms, such as seizures, occur</td>
</tr>
<tr>
<td>- Breastfeeding</td>
<td>- Medications for tapering</td>
</tr>
<tr>
<td>- Rooming-in</td>
<td>o Morphine</td>
</tr>
<tr>
<td>- On-demand high caloric (22 cal/oz) feeding</td>
<td>o Methadone</td>
</tr>
<tr>
<td>- Avoiding waking the sleeping baby</td>
<td>o Buprenorphine</td>
</tr>
<tr>
<td>- Environment control (low noise, dim light)</td>
<td>o Phenobarbital</td>
</tr>
<tr>
<td>- Volunteers to provide care (comforting, feeding,</td>
<td>o Clonidine</td>
</tr>
<tr>
<td>and rocking)</td>
<td></td>
</tr>
</tbody>
</table>

Plans of Safe Care

A plan of safe care is a document that lists and directs services and support for the safety and well-being of an infant affected by substance abuse by reducing withdrawal symptoms resulting from prenatal drug exposure or a fetal alcohol spectrum disorder. This plan should specify the agencies that will provide specific services for the family, outline communication procedures for the family and provider team, and guide the coordination of services across various agencies. Lastly, these plans may incorporate services and supports for diverse, longer-term needs, including treating physical, substance use, and mental health needs; providing parenting education and infant developmental screening; and addressing other family needs. Please see the Pennsylvania Plan of Safe Care Guidance for information on how to develop a plan of safe care.
Neonatal Abstinence Syndrome Case Definition

Key Points

- Administrative rules help standardize screening and treatment of pregnant women and newborns.
- NAS case definitions are used to monitor and identify cases within a state.
- Consider collaborating with partners to create a case definition and develop a standard approach to surveillance. Example partners include:
  - Epidemiologists
  - Policy-makers
  - Hospital associations
  - Public health attorneys

Various states have developed case definitions for NAS to effectively monitor and identify cases within their communities. These case definitions may include the clinical description (symptoms over a duration of time), laboratories’ criteria for reporting, exposure criteria, and case classifications. The NAS case definition can be broken down into four parts: clinical criteria for the neonate, clinical evidence for the mother, laboratory evidence from the neonate and mother, and case classification. Each of these parts is summarized below.

Clinical criteria: The clinical effects of NAS on the neonate include central nervous, autonomic, gastrointestinal, and respiratory system disturbances, which may manifest in the following ways:

- **CNS hyperirritability**: continuous, excessive, or high-pitched cry; hypertonia; exaggerated tremors; myoclonus; hyperactive Moro reflex; poor sleep; poor feeding; or seizures.
- **Autonomic over-reactivity**: sneezing, nasal congestion, frequent yawning, fever, or cutaneous mottling.
- **Gastrointestinal hypermotility**: excessive regurgitation and/or vomiting or loose or watery stools.
- **Respiratory**: tachypnea or respiratory distress

Clinical evidence is found in the mother, such as maternal history of chronic opioid use or maternal history of chronic drug use in the four weeks prior to delivery.

- **Laboratory evidence** can be broken down into the following three categories: neonate confirmatory, maternal presumptive, and maternal supportive.
- **Neonate confirmatory laboratory evidence** exists when there is detection of opioids, including positive immunoassay results and confirmatory testing.
- **Maternal presumptive laboratory evidence** exists when there is detection of opioids in the four weeks prior to delivery, including positive immunoassay results and confirmatory testing.
- **Maternal supportive laboratory evidence** exists when there is detection of non-opioid drug abuse four weeks prior to delivery, including positive immunoassay results and confirmatory testing.

Case classification consists of the following three levels: suspect, probable, and confirmed.

- **A suspected case** exists when a neonate (30 days old or younger) is being evaluated by healthcare workers or public health officials for NAS, but history or suspicion of perinatal chemical exposure is unknown or undetermined.
• A probable case is a clinically compatible case in which a neonate (30 days old or younger) is being evaluated for NAS by healthcare workers or public health officials, but a history of perinatal opioid exposure is unknown or undetermined.

• A confirmed case is a clinically compatible case within 30 days of birth and maternal history of exposure.31

Administrative rules can be adopted by an agency to help implement or interpret the statutes that the agency must administer or enforce. These rules have the full force and effect of law, are enforceable, and violators of the rules may be subject to penalty. For example, healthcare providers or hospitals that violate an administrative rule may face the loss of license, funding, or accreditation status. Agencies issuing administrative rules often have subject matter experts on staff who are familiar with the issues being addressed. It is important to note that the rulemaking process provides public notice and comment opportunities, which allows the stakeholders impacted by the rules an opportunity to provide input and feedback on the rules.

Beginning in 2019, states began to progress toward standardizing the screening and treatment of substance-using pregnant women and substance-exposed newborns. This legislation included adding NAS to the list of notifiable conditions, creating NAS reporting requirements, and developing plans of safe care for infants with NAS and their caregivers.32 According to CDC, Arizona, Florida, Georgia, Kentucky, Tennessee, and Virginia now have administrative codes related to reporting NAS.33 An administrative code provides legal weight to reporting NAS and usually includes who should report NAS cases, how they should report it and to whom, and the timeframe for reporting. Some states include an NAS case definition in their laws.

Under the Arizona Administrative Code, a health professional or the administrator of a healthcare institution licensed under rule/law title must, either personally or through a representative, submit a report to the Arizona Department of Health Services, in a department-provided format, within five business days after an encounter with an individual with suspected NAS. The report should include:

1) Contact information for the health professional or healthcare institution.
2) If different, the name and contact information of the individual reporting.
3) Information about the newborn with suspected NAS (including the baby’s name, date of birth, gender, and race) and information about the mother.
4) Information about the NAS diagnosis, including the reason for suspecting a case, date of onset, date of diagnosis, laboratory information (if confirmed through tests), and if there is a maternal history of opioid or other substance use oral positive laboratory test for opioid use or other substance use in the mother.
5) If known, the source of the opioid believed to have caused NAS.
6) The date of the report.
Provider Education and Buy-In

<table>
<thead>
<tr>
<th>Key Points</th>
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<tbody>
<tr>
<td>• Provide education and training for providers on how to treat and screen pregnant women with SUD and infants with NAS.</td>
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<tr>
<td>• Establish standardized services for treating and managing care for pregnant and postpartum women with SUD.</td>
</tr>
<tr>
<td>• Create programs and policies that address social stigma.</td>
</tr>
<tr>
<td>• Identify a physician champion who will advocate for the above strategies.</td>
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</table>

Provider Education and Training

Research shows that training providers on the early recognition of SUD (particularly opioid use disorder) supports the overall decrease in NAS rates. In one example of a provider education approach, the Connecticut Healthcare Research and Education Foundation-developed the Neonatal Abstinence Syndrome Comprehensive Education and Needs Training to raise awareness about NAS and increase knowledge regionally in the state. This training effort included an advisory board, a focus group, online and in-person modules, and academic detailing. The program demonstrates the importance of states and territories developing a multi-faceted approach that can cover a broader audience across the region. Below are other best practices for supporting provider education and training.

- Provide education and training for providers on standardized care and treatment protocols, screening and referral for treatment, clinical or social service resources, and laws and policies (e.g., plans of safe care).
- Create guidance documents that include best practices for serving pregnant and postpartum women for outpatient treatment programs and other treatment providers.
- Educate providers and other healthcare community members on counselling services, MAT, and the importance of both.
- Educate providers and other healthcare community members on requirements for plans of safe care.
- Train providers and other healthcare staff members on SBIRT practices.
- Establish a perinatal quality collaborative to develop protocols regarding prescribing, clinical practices, and standardized services for treating NAS in infants and SUD in pregnant and postpartum women.
- Train providers on implicit bias and discrimination toward pregnant women who have SUD and other mental health conditions.

Stigma and Substance Use

Pregnant women with SUD require supportive care, which focuses on positive, long-term change for both mother and baby. During interactions with providers, women may receive misinformation and judgment regarding their substance use. Pregnant and parenting women with SUD may struggle with guilt, shame, and fear, which can further deter them from seeking care. In addition, fear of losing custody may limit a women’s level of disclosure of substance use. Developing and implementing systems of care that have multiple points of entry, encouraging informed and well-equipped providers, and fostering strong multi-sector
referral relationships are all potential strategies for reducing stigma. Providers should also use non-stigmatizing language when referring to pregnant women with SUD and their infants. Finally, providers should create programs and policies to address social stigma and develop mandatory reporting policies that increase the access to and provision of mental health services for pregnant and postpartum women with SUD.

**Identifying and Supporting a Physician Champion**

A physician champion is a liaison between the physician community, hospital administration, public health, and the community. Physician champions are important for initiating, developing, and implementing innovations, as they take ownership of an initiative and give credibility to the change and help get buy-in from other physicians. As hospitals begin to navigate new strategies in addressing NAS, a physician champion can support and propel the implementation process.

The responsibilities of a physician champion include developing an effective process to gather broad-based physician input; representing physician interests in governance and design meetings; and effectively dealing with naysayers, conflict, and setbacks within their project. Some physician champions self-identify, and in other cases, the healthcare team or external partners can recommend someone to be a physician champion who demonstrates good standing among their peers.

Starting at the beginning of the initiative, it is important to set expectations for the physician champion, and to encourage networking among champions throughout the initiative. Physician champions new to the role need to be supported by their teams and leadership to build necessary skills. Champions are often not compensated for their leadership role and still maintain their full clinical workloads. It is important to provide champions with leadership training to help them build teams and rally clinicians behind change. Utilize the following strategies for identifying and supporting a physician champion:

- Identify a physician champion to promote NAS screening and treatment.
- Create a community-wide understanding of prenatal substance exposure and its effects on infants.
- Educate target populations about the teratogenic effects of substance use while pregnant.
- Promote understanding about safe haven laws and safe sleep methods.
- Build consensus and an understanding about current screening protocols for infant substance exposure.
- Build community-based capacity to improve both trauma care and family-centered care and implement evidence-based strategies to engage pregnant women in SUD treatment.

**Suggested Next Steps**

- Conduct a hospital inventory to determine which hospitals have the highest rates of NAS.
- Set up a meeting with the Puerto Rico Hospital Association to discuss NAS and NAS strategy.
- Partner with the Puerto Rico Hospital Association to develop and implement a universal screening protocol for pregnant women.
- Inventory the services available in Puerto Rico for opioid use disorder in pregnant women.
- Partner with the Puerto Rico Hospital Association to develop care plans for referring pregnant women to treatment.
• Partner with the Puerto Rico Hospital Association to discuss the NAS screening tool.
• Partner with Child Welfare Services to discuss developing plans of safe care for a substance exposed infant.
• Consult with your public health attorney and other partners on the development of an NAS case definition and an administrative rule on NAS reporting.
• Work with the Puerto Rico Hospital Association to develop and conduct provider education and training around stigma related to substance use during pregnancy, NAS, screening tools, and treatment options.
• Work with the Puerto Rico Hospital Association to identify a physician champion for your future NAS work.

Additional Resources

• University of Missouri–Kansas City Clinical SBIRT Forms and Tools
• American College of Obstetricians and Gynecologists committee opinion “Opioid Use and Opioid Use Disorder in Pregnancy”
• Western Australian Centre for Evidence Based Nursing & Midwifery Neonatal Abstinence Scoring System
• Connecticut Safe Plans of Care Template
• Informational Bulletin: Guidance to Improve Care for Infants with Neonatal Abstinence Syndrome and Their Families
• English Illinois Department of Health NAS Resources
  o Neonatal Abstinence Syndrome (NAS): What You Need to Know/Be with your baby: You are the treatment! Half-Page Card
  o Neonatal Abstinence Syndrome (NAS): What you need to know booklet
  o General patient education: Pain medications, opioids and pregnancy
  o Pregnancy and MAT one-pager
  o Are you in Treatment or Recovery? Contraception Counseling for Women with OUD, from OPQC
• Spanish Translated Illinois Department of Health NAS Resources (courtesy of the Illinois Department of Health)
  o Síndrome de Abstinencia Neonatal: Lo Que Debe Saber
  o Embarazo: Metadona y Buprenorfina
  o Síndrome de Abstinencia Neonatal: Permanezca Con Su Bebe
  o Instrumento de Diagnóstico Integrado del Institute for Health and Recovery
  o Medicamentos Recetados Para el Dolor, Opioides y Embarazo

Recorded Videos and Simulive Webinar Links

• NAS Simulive Webinar Recorded on September 22, 2020
• Provider Education and Stigma video by Dr. Terplan:
  o English
  o Spanish
• Pregnant Women Screening, Screening and Treatment video by Dr. Terplan:
- English
- Spanish

- West Virginia’s Screening and Treatment video by Denise Smith:
  - English
  - Spanish

- Connecting the Dots and Next Steps video by Philicia Tucker:
  - English
  - Spanish
References


4. Ibid.


6. Ibid.


8. Ibid.


14. Ibid.


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Ibid.


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