REDUCING NEONATAL ABSTINENCE SYNDROME BY IMPROVING CARE OF THE MATERNAL-INFANT DYAD AFFECTED BY SUBSTANCE USE DISORDER

Transitioning Models of Care: An Implementation Guide

MHA
MISSOURI HOSPITAL ASSOCIATION

ACKNOWLEDGEMENTS

This body of work represents the collective efforts of the Missouri Hospital Association, Missouri Telehealth Network through the Show-Me Extension for Community Healthcare Outcomes program, and Missouri Maternal-Child Learning and Action Network. Members of these organizations are dedicated to improving the health outcomes of mothers and infants throughout Missouri.

Improving health care delivery for maternal and infant populations is a critical priority in Missouri. Working collaboratively, several stakeholders throughout the state joined forces to leverage resources and subject matter experts to drive momentum in the reduction of maternal and infant morbidity and mortality, as well as improve the health care experiences and outcomes for moms and babies in Missouri.

- MHA delivers, through various opportunities, quality care initiatives that improve health care provided throughout the state. MHA also offers educational and operational tools and resources to help hospitals deliver evidence-based care. Through this work, MHA has been awarded state and federal grants and contracts to expand their work specifically related to maternal-child health programing and has been awarded as the state-designated subcontractor organization to implement the Alliance for Innovation on Maternal Health initiatives.

- The Show-Me ECHO utilizes videoconferencing technology to connect a team of interdisciplinary experts with primary care providers, nurses and ancillary staff. The discussions with, and mentoring from, specialists enable care providers to give their patients the right care, in the right place and at the right time. The benefits of the Show-Me ECHO expand to community networks and agencies, as well as allow for broader knowledge-sharing of critical information.

- The MC LAN launched in 2018 and continues to be integral in driving momentum to improve maternal and infant health outcomes. Through peer-to-peer networking and passionate engagement, the current group of 55 subject matter experts provides guidance and oversight to deploy broad and sustainable evidence-based practices in Missouri. The vision of "Healthy Moms, Healthy Babies, Healthy Missouri" is a call to all stakeholders in women's and children's health care to assess current practices, collaborate and innovate to improve care, and close the gap on health care disparities.

Combining the expertise of these three entities created the foundation for a dynamic collaborative; one that is built upon MHA's expertise of evidence-based practice implementation, MTN's expert panel of clinicians and the network power of the MC LAN.

Special thanks and recognition to the Mothers, Infants and NAS ECHO HUB team faculty for their contributions and oversight to this evidence-based guidance toolkit.

Katie Althoff-Moore, R.N., BSN
Alan Barnette, M.D., FAAP
Becky Boedeker, DNP, R.N., IBCLC
Mary Hope, R.N., BSN
Laurie Niewoehner, Pharm.D.
Melissa Odegard-Koester, Ph.D., LPC, NCC, CCH
Cari Pointer
Maria Roundtree, MSW, LCSW
Elizabeth Simpson, M.D.
Kimberly Spence, M.D.
Jaye Shyken, M.D.

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THE EVIDENCE

The American Academy of Pediatrics states neonatal abstinence syndrome is a multifactorial public health crisis and must be solved with a thoughtful approach focused on prevention, expansion of treatment for women with substance use disorder and increased funding for child welfare systems to ensure the health of the mother-infant dyad exposed to substance use. NAS affects infants who are exposed to substances in-utero. In the past two decades, the incidence of NAS has risen sharply. Researchers have examined the incidence of NAS from various perspectives, including hospital birth data from Medicaid claims. One study examined Medicaid programs from three states and found 2.2% of the sample had an opioid use disorder and 5.9% of the sample had an SUD other than OUD. Of the sample with OUD, the women had delayed prenatal care, lower rates of prenatal care, and higher rates of hospital and emergency department use compared to other groups in the study.[i] A recent nationwide study analyzed data from the Healthcare Cost and Utilization Project. These results showed 83.8% had Medicaid as the primary payer, and 40.2% had income levels that were within the first quartile of national averages.[ii] The Centers for Disease Control and Prevention reports that, nationally, one in seven infants per 1,000 are born with NAS, or one infant per 19 minutes are diagnosed with NAS.[iii]

In the U.S., NAS incidence increased more than fivefold in a decade, rising from 2.8 per 1,000 births in 2004 to 14.4 per 1,000 births in 2014.[iv] In Missouri, the reported NAS rate climbed year over year from 2012 to 2015, with a slight downward trend in the following years. The reported highest number of NAS infants was 567 in 2016, with a low of 490 in 2018. Anecdotal reports of NAS rates by Missouri nurseries indicate a perceived under-reporting of NAS infants, primarily attributed to a lack of coding and inclusion on billing forms used for claims data. Of significance, the Missouri Department of Health and Senior Services reports that infants who had potential exposure to substance abuse far exceeds those diagnosed with NAS. From 2016 to 2018, the number of infants with potential exposure was 1,787, 1,808 and 1,711, respectively.[v]

Knowing which infants will experience NAS poses a challenge, as not all infants exposed to substance abuse will develop signs of withdrawal. Researchers found that infants exposed to opioids, antidepressants, benzodiazepines and gabapentin had an increased NAS risk of 30% to 60%.[vii] Additionally, research suggests there is a genetic component for NAS severity and risk. With continued genetic and polysubstance exposure research, advances could allow for specified treatment approaches based upon genetic risk profiles.[viii]

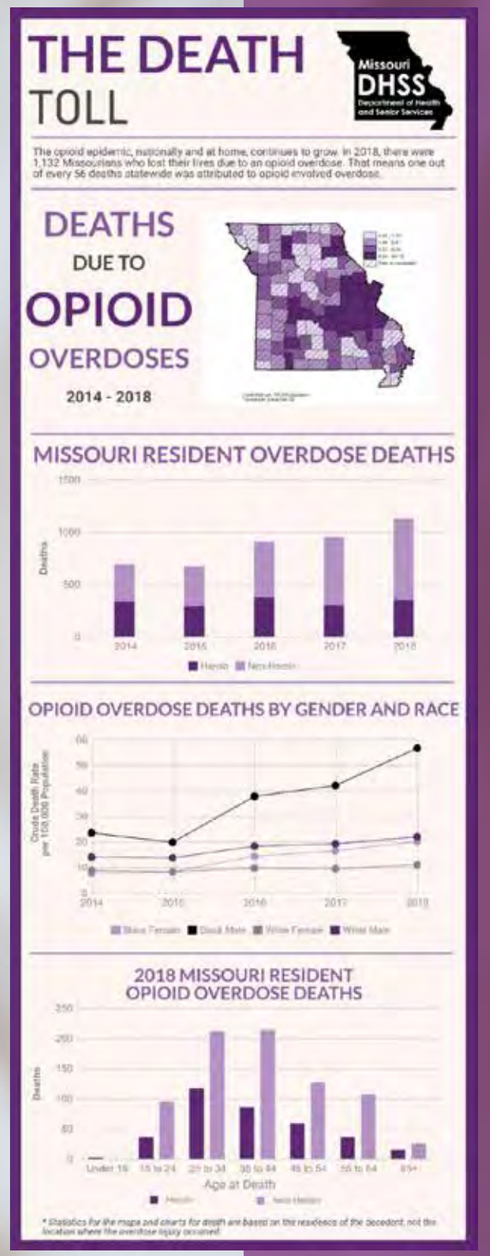
UPSTREAM NAS PREVENTION AND RECOGNITION

Maternal opioid use rates and overdoses have continued to increase throughout the U.S. and Missouri throughout the past decade. Nationally, the CDC reports that as many as 22% of pregnant women filled an opioid prescription during their pregnancy. From 1999 to 2014, the prevalence of OUD during pregnancy increased from 1.5 to 6.5 per 1,000 hospital births per year.[ix] The increase of NAS is correlated directly with the increase in opioid use in pregnancy, with these impacts disproportionately seen in rural communities. Rates of NAS increased from 1.2 to 7.5 per 1,000 rural hospital infants, compared to 1.4 to 4.8 per 1,000 urban hospital infants. Correspondingly, the frequency of hospital deliveries that were associated with maternal OUD increased from 1.3 to 8.1 per 1,000 hospital deliveries among rural mothers, and from 1.6 to 4.8 per 1,000 hospital deliveries among their urban counterparts.[x] Racial disparities also exist. From 2014 to 2018 in Missouri, all gender and race groups experienced increases in opioid overdose deaths. Black females experienced the largest increase of 170%, moving from the lowest rate to only slightly lower than the white male rate. White females remained the lowest throughout this four-year timeframe.[xi]

Pregnant women most commonly seek substance use treatment for OUD.[vi] Pregnant women are more likely to access treatment options while pregnant, as they are concerned for the health of their baby, as well as thinking about a new and different future for herself and her child.[xii] Additionally, pregnancy may be the only time an SUD is identified.

The American College of Obstetricians and Gynecologists and the American Academy of Pediatrics recommend early and ongoing universal screening, brief intervention and referral to treatment as needed for all pregnant women. SBIRT has been shown to improve maternal and infant health outcomes. ACOG notes that screening based upon limited factors, such as poor adherence to prenatal care or prior adverse pregnancy outcomes, can lead to a missed positive screening. Using limited and nonvalidated screening tools can lead to stereotyping and further stigma.[xiii, xiv]

ACOG and AAP both released opinion statements recommending not to take punitive measures against pregnant women with SUD, as these actions are not in the best interest of the health of the mother-infant dyad. [xiii, xiv] Instead, efforts should focus on a public health approach with primary prevention strategies, increasing public awareness on the cycle of addiction, and allocating additional funding for psychosocial and child welfare services. These efforts would serve to improve the safety and health outcomes of substance-exposed infants and families. Evidence suggests the incidence of NAS increases for infants born in states with punitive maternal substance use policies, both in the first year after enactment and in subsequent years. This suggests the punitive policies contribute to detrimental effects on the health of mothers and infants without addressing root causes. An approach grounded in public health and primary prevention, access to treatment programs, and engagement with the health care system would be more beneficial than punitive approaches.[xv] ACOG calls for physicians to work with policymakers and legislators to retract punitive legislation and implement evidence-based strategies outside the legal system to address and assist women with SUD. ACOG and AAP continue to align in their recommendations for providers to be aware of state-mandated reporting requirements regarding illicit drug use during pregnancy and to provide education to their patients. Missouri's state law specifies that children exposed to substance abuse are to have a physician referral to the Missouri Department of Social Services Children's Division, and physicians are to counsel pregnant patients on the effects of cigarettes, alcohol and controlled substances.



THE ROLE OF THE HEALTH CARE PROVIDER

The health care provider plays an important role in the care of the mother-infant dyad; however, this role is challenged when caring for a substance-exposed newborn, and when providing care and education to the mother. HCPs are taught to provide care in an unbiased, nonjudgmental manner; however, research has demonstrated bias is experienced by mothers and infants with substance exposure. The literature suggests a sense of tension can exist between nurses caring for a NAS infant and the mother. Mothers report feeling judged by the staff, and thus are less interested in visiting their infant and participating in care. Nurses experience compassion fatigue, and moral and ethical distress when providing care to a substance-exposed newborn and when working with the mother due to the complexity of the maternal-infant dyad situation.

Romisher et. al (2018) found increased communication between neonatal intensive care unit nurses and mothers of NAS infants is needed to create a collaborative relationship.[xvii] Further, the literature offers recommendations for interventions to help close knowledge gaps. Offering education on NAS, understanding addiction and treatment, implementing up-to-date evidence-based practices, and assessing professional readiness has been shown to improve knowledge and understanding for nurses caring for the NAS infant.[xviii]

IMPROVING CARE FOR THE MOTHER-INFANT DYAD

NAS signs can appear from within hours after birth to several days later. Not all infants with in-utero exposure will develop NAS. The clinical presentation of NAS is dependent upon a variety of factors, which include the following.

- the type of opiate used by the mother during pregnancy
- maternal drug use history (both prescription and illicit)
- placental transfer rate of the substance
- other abused substances, such as tobacco or alcohol[xix]

Environmental factors also affect the incidence and severity of NAS. These exposures to the central nervous system active agents include nicotine in cigarette smoke, medications such as benzodiazepines, gabapentine, selective serotonin reuptake inhibitors, and illicit drugs, such as marijuana.[viii]

NAS signs most commonly reflect central nervous system irritability, autonomic over-reactivity and gastrointestinal tract dysfunction (Table 1). Infants born with NAS require a calm, quiet and low-light environment. External environmental stimulation tends to exacerbate the signs of NAS.

Table 1: Common Signs of Neonatal Abstinence Syndrome

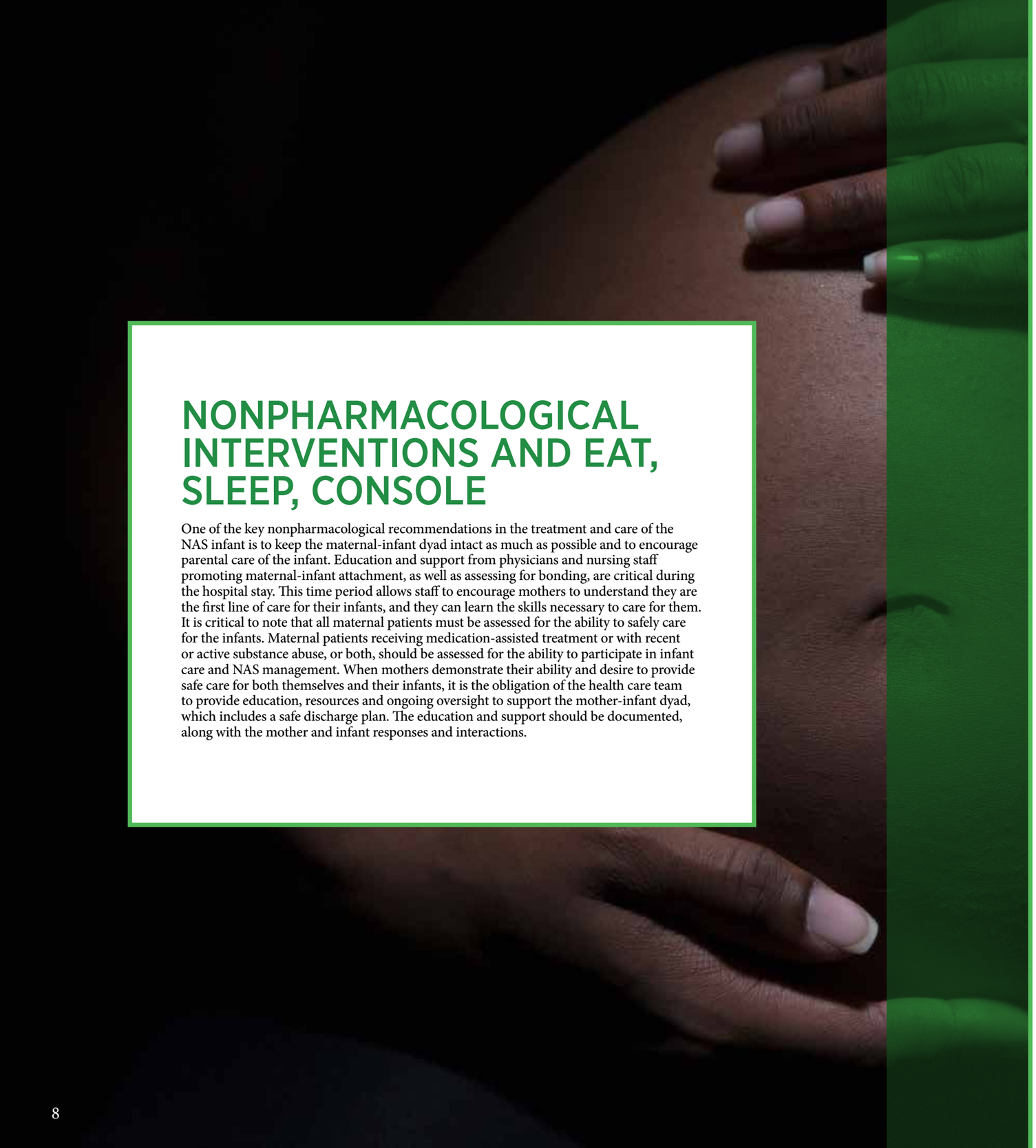
Neurologic Excitability & Other Signs	Gastrointestinal Dysfunction & Autonomic Nervous System Dysfunction
Tremors	Poor feeding
Irritability	Uncoordinated and constant sucking
Increased wakefulness	Vomiting
High-pitched crying	Diarrhea
Increased muscle tone	Dehydration
Hyperactive deep tendon reflexes	Poor weight gain
Exaggerated Moro reflex	Increased sweating
Frequent yawning and sneezing	Nasal stuffiness
Seizures	Mottling
	Temperature instability

The AAP recommends monitoring infants based upon the specific drug type to which they were exposed. For low-dose opioids with a short half-life, such as hydrocodone, infants should be monitored for two to three days. For longer-acting opioids with a longer half-life, such as methadone, infants should be monitored for a minimum of five to seven days.[xix] During this time the mother-infant dyad should remain together for optimal outcomes.

ACOG outlines four comprehensive treatment goals for the NAS infant.

- support vital neonatal functions and development
  - nutrition, sleep, social interaction
- initiate family bonding
  - integrate care and breastfeeding, if possible
- prevent complications
  - dehydration, weight loss, skin breakdown, inadequate rest, central nervous system hyperactivity, seizures
- educate the family, and provide adequate medical and social resources for the neonate and family after discharge[viii]

Every organization caring for NAS infants should develop a protocol for evaluation and treatment, including neonatal withdrawal signs. Staff need continuous, ongoing training on the protocol and assessment of withdrawal signs, as NAS infants will present differently depending upon the type of substance exposure. It is important to note the goal of treating and caring for the maternal-infant dyad with substance use exposure always is to ensure the safety of the infant and appropriate intervention for the mother through the SBIRT process.



NONPHARMACOLOGICAL INTERVENTIONS AND EAT, SLEEP, CONSOLE

One of the key nonpharmacological recommendations in the treatment and care of the NAS infant is to keep the maternal-infant dyad intact as much as possible and to encourage parental care of the infant. Education and support from physicians and nursing staff promoting maternal-infant attachment, as well as assessing for bonding, are critical during the hospital stay. This time period allows staff to encourage mothers to understand they are the first line of care for their infants, and they can learn the skills necessary to care for them. It is critical to note that all maternal patients must be assessed for the ability to safely care for the infants. Maternal patients receiving medication-assisted treatment or with recent or active substance abuse, or both, should be assessed for the ability to participate in infant care and NAS management. When mothers demonstrate their ability and desire to provide safe care for both themselves and their infants, it is the obligation of the health care team to provide education, resources and ongoing oversight to support the mother-infant dyad, which includes a safe discharge plan. The education and support should be documented, along with the mother and infant responses and interactions.

The Eat, Sleep, Console model of NAS care is an evidence-based functional assessment tool developed by staff at Yale New Haven Children's Hospital. This tool was developed through a quality improvement collaborative and supports the practice of the infant's mother being the first and best intervention for NAS management.[xx] The premise of ESC is to assess how well the NAS infant can eat, sleep and be consoled. The functional assessment includes the following.

- Can the infant breastfeed effectively or take greater than one ounce from a bottle per feed?
- Can the infant sleep undisturbed for greater than one hour?
- Can the crying infant be consoled within 10 minutes?

Several integral components to the success of ESC are noted below.

- place infants in low-stimulation environments with dimmed lights and reduced noise
- engage parents in the care of the newborn, with rooming-in encouraged
- identify parents as the first-line caregivers, supported by physicians and nurses
- train staff to value nonpharmacological interventions in the same manner as medications
- promote breast milk feeding to all infants, barring contraindications[xx]

ESC also fosters an environment that promotes bonding between the mother, or designated support person, and the infant. This may require that the infant be cared for in an inpatient room, allowing the mother to room-in with the infant after her discharge, or for the infant to be transferred to a pediatric unit instead of being cared for in the NICU or in a special care nursery. This is a new approach to caring for the NAS infant since care primarily has occurred in the NICU or SCN. Keeping the mother-infant dyad intact allows for attachment and promotes bonding, enables the mother to become more familiar with the symptoms of NAS, and empowers the mother to learn functional interventions early to mitigate NAS severity.

The physical environment of the infant plays a significant role, with NAS infants responding negatively to stimuli, therefore, the environment needs to be calm and quiet. Examples for the room arrangement include dimmed lights, muted TVs, low volume when speaking and use of a sound machine with ocean waves to provide even-toned background noise. The NAS infant also does best being swaddled and held. Kangaroo care can promote maternal bonding and breastfeeding. Swaying and rocking the infant also are interventions to be considered.[xix]

Several additional research studies have implemented ESC and found decreased lengths of stay and pharmacological doses.[xxi, xxii, xxiii] The ESC Neonatal Opioid Withdrawal Syndrome Care Tool has been successfully implemented throughout several state collaboratives with similar results.[xxiv, xxv] Studies also found a decreased cost of care with implementation of the ESC model. [xxi xxiii]

It is important to note the ESC assessment may indicate the need for pharmacological intervention if nonpharmacological interventions fail to alleviate the withdrawal signs, if the infant's condition deteriorates or both. For example, if the infant can meeting the eating, sleeping, and consoling criteria, then morphine is not initiated or increased, even if other signs of withdrawal are present. However, if the infant does not meet the eat, sleeping, or consoling criteria, staff first would attempt to maximize the nonpharmacological interventions. If these attempts are unsuccessful, then pharmacologic intervention either would be started or increased, per organization policy.

PHARMACOLOGICAL

If the substance-exposed infant cannot be managed by supportive, nonpharmacological interventions, medication to decrease withdrawal signs should be initiated. According to the AAP, the first-line medications for treating NAS infants are morphine or methadone.[xix] However, there is no universal standard of care for pharmacologically treating NAS, which leaves each organization to decide which medication to use.[xxvii] Morphine is the medication most used in hospitals throughout the U.S., with methadone only being used in 10% to 20% of hospitals.[xxvi] Once medication therapy has been implemented, it is important to follow a standard policy for the monitoring, ongoing assessment, subsequent dosing and weaning of the infant to ensure safe, quality care and improved outcomes.[xix, xxvii] A new approach for morphine dosing includes giving medication only as needed instead of scheduled doses.[xxii,xxvii] In these approaches, NAS infants were found to have decreased lengths of stay and a decreased need for opioid replacement without adverse events.

When developing pharmacological policies, organizations should consider what medication(s) to use to treat the NAS infant. Additionally, organizations need to determine criteria for pharmacological therapy initiation and weaning based upon a specific tool or criterion. Standardized procedure algorithms have shown decreased pharmacological treatment days, hospital stays and use of adjunctive drug therapy.[viix, xvii]

CALL TO ACTION

The growing increase of NAS is an escalating problem throughout the U.S. and Missouri. Recent research suggests that ESC is an evidence-based functional assessment tool that integrates multiple novel approaches to the care of the substance-exposed newborn. One of the most important interventions is keeping the mother-infant dyad intact when providing care to the NAS infant. Finding the balance between nonpharmacological and pharmacological interventions can be challenging, but it is important to be mindful of the environment in which the infant is being cared for, and ensure it is arranged to safeguard the success of the NAS infant and mother bonding.

For organizations interested in finding solutions for this public health crisis, offering assistance to mothers with OUD, and implementing policies and practices of change related to the care of the maternal-infant dyad with NAS, the next several pages offer evidence-based interventions and initiatives to help advance health outcomes for infants with NAS.

RECOMMENDED RESOURCES

Alabama Department of Mental Health: Stop Judging

American Academy of Pediatrics: SIDS and Other Sleep-Related Infant Deaths: Expansion of Recommendations for a Safe Infant Sleeping Environment

American College of Obstetricians and Gynecologists & American Society of Addiction Medication: Joint Policy Statement: Opioid Use and Opioid Use Disorder in Pregnancy

American Society of Addition Medicine: Public Policy Statement on Substance Use, Misuse, and Use Disorders During and Following Pregnancy, with an Emphasis on Opioids

California Perinatal Quality Care Collaborative, California Maternal Quality Care Collaborative, and HMA Institute on Addiction: Mother & Baby Substance Exposure Toolkit

Dr. Krisanna Deppen, OhioHealth Grant Medical Center: Substance Abuse 101: Mythbusters
*Sourced from the Illinois Perinatal Quality Collaborative

Guttmacher Institute: Substance Use During Pregnancy

Institute for Healthcare Improvement: Science of Improvement: Forming the Team

International Hip Dysplasia Institute: Hip-Healthy Swaddling

March of Dimes: Beyond Labels

Missouri Department of Elementary and Secondary Education: First Steps: How to Make a Referral

Mid-America ATTC Region 7: Tools for Treatment: Family-Centered Behavioral Health Support for Pregnant & Postpartum Women

National Council for Behavioral Health: Fostering Resilience and Recover: Advancing Trauma-Informed Primary Care

National Institute on Drug Abuse: NIDI Quick Screen or NIDI Quick Screen in PDF

Nurse-Family Partnership: Website

SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES ADMINISTRATION

- Clinical Guidance for Treating Pregnant and Parenting Women with Opioid Use Disorder and Their Infants
- Words Matter: How Language Choice Can Reduce Stigma
  *Sourced from the Illinois Perinatal Quality Collaborative
- Treatment Locator Map

The Center for Adolescent Substance Abuse Research: CRAFFT 2.1 Screening Tool and Manual

U.S. Department of Health and Human Services: Safe Infant Sleep Basics

Virginia Department of Behavioral Health & Developmental Services: Screening Tools for Drug and Alcohol Use: 4 Ps

PROJECT OVERVIEW

PROJECT GOALS

Participating organizations will convene a multidisciplinary team to address policy, care provision and referral services to best support the mother-infant dyad with substance exposure. The focus of the project is four-fold.

- Use evidence-based, nonpharmacological treatment to support the infant through the ESC model to foster an environment that promotes mother-infant attachment and health outcomes.
- Collaborate to develop safe plans of care for both the infant and the mother.
- Identify psychosocial and addiction recovery services locally and ensure transitions of care occur.
- Monitor and report identified data metrics toward performance improvement.

TIMELINE

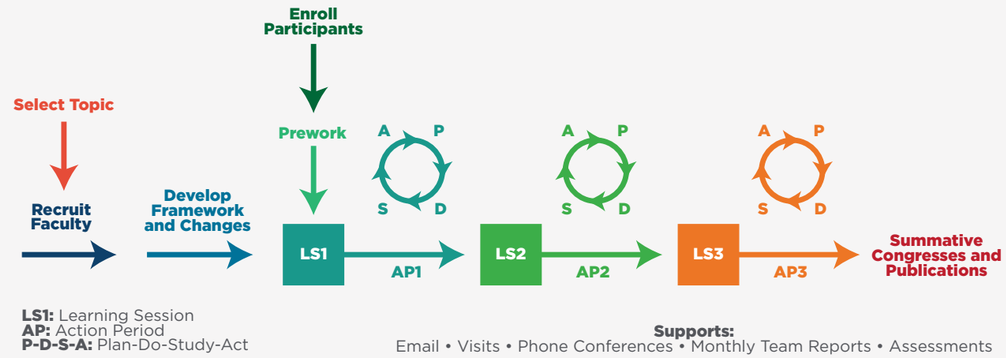
Implementation of the collaborative interventions is estimated to take two years, with the initial six months used for team formation, planning development and baseline data collection.

METHODOLOGY

IHI'S BREAKTHROUGH SERIES MODEL

The collaborative will use the Institute for Healthcare Improvement Breakthrough Series Model of Rapid Process Improvement designed to seek incremental changes toward an end improvement goal. Cycles of 90 days will be used with learning and action components (Figure 3).

Figure 3: Institute of Healthcare Improvement's Breakthrough Series Model



Source: Institute for Healthcare Improvement's Breakthrough Series Model.

Participants are encouraged to follow the Lean Six Sigma DMAIC model of define, measure, analyze, implement and control during the 90-day cycles to approach this bundle implementation. Resources and education on these process steps are included during the project webinars and through other recommended resources. Participants should approach the bundle with the goal of 100% implementation with minimal variation.

Learning phases will include quarterly informational and coaching webinars with the following purposes.

- review and discuss data outcomes relative to the project
- provide a platform for shared learning, barrier mitigation and sharing of successes
- inform project participants of next interventions
- provide resources and opportunity for Q&As

TEAM-BASED PROCESS IMPROVEMENT RECOMMENDATIONS

- Establish team and identify roles and accountability.
    - Multidisciplinary teams should, at a minimum, include the following.
        - Unit director/manager
        - Pharmacist
        - Pediatrician(s) Clinical Champion
        - Obstetrician(s)
        - Neonatologist (connect with transfer facility)
        - L&D & WBN Staff Members
        - Executive leadership champion
        - Social worker
        - Local Division of Family Services representative
        - Patient and/or family member with lived experience
    - Determine roles during an initial meeting.
        - Who is the team lead?
        - Who is supporting data collection?
        - Who will have peer discussions?
        - Who will lead staff education?
    - Accountability and expectations also should be determined during an initial meeting.
        - The simple statement, "Who, what, by when?" will help outline the expectations before the end of each team meeting and create momentum for action.
- Complete a gap analysis for NAS and maternal-infant dyad management.
    - This task helps determine current bundle implementation within your area and identifies "gaps" in the process and actions for the team.
    - While components previously may have been implemented, it is important to measure and consider how reliable the process is and its impact on your outcomes.
- Complete a rapid process improvement workshop with the team.
    - The goal of an RPIW is to outline the process to ensure highly reliable task implementation.
    - The team should review the process for opportunities to increase efficiency and effectiveness.
    - Not sure if something is working or necessary? This is what you measure and how you intervene to improve the process.
    - Non-pharmacological interventions, first line medication administration, and transfer to higher level of care, as indicated.
    - Cycle times should be determined and set by the team, i.e. clinician notification parameters, first-line medication administration.
- Develop the action plan and timeline and share it with the team.
    - Your plan will be individualized but will include all recommended and applicable tasks.
    - Track task completion within your organization, and plan to report it as outlined through the identified project platforms.
- Complete the data collection plan (see data specifications sheet).
    - Review which metrics are reportable and how the organization will collect them monthly/quarterly as required.

COLLABORATIVE INTERVENTIONS

Task #1: Develop a nonpharmacological policy for the care of the substance-exposed newborn.

- Provide training and education on a standardized, validated NAS screening tool to 100% of providers and staff members providing infant care.
    - Assess educational effectiveness of 100% of staff via pre- and post-tests.
    - Assess professional readiness and knowledge gaps.
- Implement a standard screening tool for NAS in the newborn nursery, postpartum setting or any other environment where the newborn with NAS might be transferred.
    - Provide training on ESC as a functional assessment tool.
        - » With ESC, 20% to 40% of infants still will require pharmacological intervention.
        - » ESC is the recommended solution in this collaborative based on evidence-based practice in the literature.
    - Promote awareness of the signs of NAS.
        - » Commonly described NAS signs include central nervous system irritability (e.g., tremors, hypertonia, sleep disturbance, high-pitched cry), autonomic nervous system overactivity (e.g., nasal stuffiness, tachypnea) and gastrointestinal dysfunction (e.g., feeding intolerance, diarrhea).
    - Apply environmental modifications to decrease infant stimulation (e.g., dim lights, decreased noise), and care for NAS infants in hospital locations where nonpharmacological management can be optimized.
    - Consider pain treatment prior to minor infant procedures (e.g., use of sucrose).
    - If the organization previously implemented a different method for screening, measure gaps in compliance, and provide additional training or review for opportunities for process and system-level improvements.
- Ensure exposed or at-risk infants have been properly monitored for development of NAS before discharge.
    - Monitor and document assessments for all infants at risk for NAS for a minimum of two to seven days in a hospital setting or per policy recommendation.
- Educate the mother, parents and other caregivers on safe sleep practices.
- Assess and document, per shift, maternal-infant bonding.
- Assess and document, per shift, maternal-demonstrated capability to care for the infant (physical, mental and emotional).
- Maintain breastfeeding, and provide a pumping option and lactation support, as appropriate.
    - Encourage breastfeeding in women who are stable on opioid agonists, not using illicit drugs and have no other contraindications, such as human immunodeficiency virus infection.
    - Initiate a lactation consultation.
    - Counsel women about the need to suspend breastfeeding in the event of a relapse.
- Teach and encourage the mother and other caregivers to participate in infant care, and practice grouping of infant care as much as possible to minimize stimulation.
    - Encourage skin-to-skin care.
    - Use volunteers to provide support to infants when primary caregivers are not present, as available.
    - Teach and use an appropriate swaddling technique to mother and primary caregivers.
    - Promote and provide a supportive environment for rooming-in, when possible.
- Promote attachment of the maternal-infant dyad – do not separate mother and baby unless clinical care needs for either or both warrant separation.
    - Use teleservices to connect mother to NICU staff and infant if the infant is transferred.
    - Provide treatment through appropriate medication, low stimulation environment and emotional support if mother is demonstrating withdrawal symptoms.

Task #2: Establish a policy and protocol for pharmacological treatment of the NAS infant.

- Ensure nonpharmacological interventions have been effectively employed before beginning medication therapy.
- Consider pharmacological treatment to prevent complications when moderate to severe signs of NAS occur in infants who do not respond to nonpharmacological therapies or when the chosen NAS assessment tool has reached the threshold to begin treatment based on organizational guidelines.
- Consider the following when creating policies and protocols.
  - medication initiation
  - location of infant when pharmacological interventions begin
  - monitoring requirements
  - scheduled dosing versus as needed
  - fixed weight-based versus nonweight-based dosing
  - medication usage
  - dose escalation
  - medication weaning and discontinuation
  - duration of monitoring after medication discontinuation
  - provider requirements (on-site versus readily available, etc.)

Task #3: Provide stigma reduction and trauma-informed care training for 100% of providers and staff caring for mothers and infants affected by NAS.

- Emphasize the issues of stigma, bias and discrimination, including how they negatively affect pregnant women with OUD and SUD, as well as their ability to receive high quality care.
- Conduct training on implicit bias and trauma-informed care to decrease stigma and increase individual awareness and safety culture. Understanding the mother's lived experiences improves the provider-patient relationship and clinical outcomes.
- Training will be provided by MHA to meet this task.

Task #4: Provide training and education on standardized screening tools to 100% of providers and staff members providing care to obstetrical patients.

- Implement early universal screening, brief intervention (such as engaging the patient in a short conversation, providing feedback and advice), and referral for treatment of pregnant women with OUD or SUD to improve maternal and infant outcomes.
  - Identify patients prescribed MAT and ensure access to prescriptions during any inpatient, outpatient or observation admission.
  - Identify patients referred to a treatment program.
- Screen all pregnant women for substance use at the first prenatal visit and throughout pregnancy.
  - Screen and document substance use at prenatal appointments, obstetric triage, and labor and delivery, at a minimum.
- Rely on validated screening tools, including the 4 Ps Plus®, NIDA Quick Screen and CRAFFT (for women 26 years or younger), for routine screening.
  - Use motivational interviewing techniques when screening for SUDs.
- Emphasize that SUDs are chronic medical conditions and can be treated.

Task #5: Establish guidelines for when to transfer the NAS infant to a higher level of care.

- Implement, in every unit, a systemized plan for care escalation, obtaining appropriate consultation and neonatal transport to a higher level of care, as medically necessary.
  - Determine an efficient plan of care escalation with parameters to initiate the escalation plan.
    - » Explore nonpharmacological care FIRST, prior to transfer.
    - » Identify limitations for pharmacological interventions to manage symptoms.
    - » Define time points and criteria necessitating transfer.
  - Develop a checklist for NAS transfers.
    - » Consider pertinent information that should be included specifically related to the NAS infant.
    - » Consider maternal resources and communication needs as part of this checklist.
  - Connect with transferring organizations and transport services to align standardized care protocols, transport expectations and patient hand-off communication to achieve efficient and effective patient care coordination.
    - » Establish a contact person and line with a regional referral center.

Task #6: Establish a safe plan of care for the NAS infant.

- Review DSS protocols for supportive services provision and escalation to Family Support Division, as appropriate and required.
  - Promote care coordination and integration of services that align with keeping the mother-infant dyad intact.
- Initiate discharge planning for NAS infants upon admission with the multidisciplinary team, including the mother and family, or applicable caregivers.
  - Collaborate with post-discharge primary caregivers, social workers and community services.
    - » WIC
    - » Head Start
    - » Maternal Infant and Early Childhood Home Visiting Program
  - Consider ongoing care needs, referrals and access to services upon discharge, such as physical therapy, lactation support, etc.
    - » Consider modifying the infant discharge checklist developed by SAMHSA to assist with the organization's criteria for infant discharge.

Task #7: Establish a safe plan of care for the mother.

- Promote care coordination and integration of services that align with keeping the mother-infant dyad intact.
  - Complete and document the SBIRT process with the mother, connect to peer counselors (as available), and provide transition to a community mental health agency or other SUD providers for outpatient follow-up.
  - Engage obstetric and addiction medicine services, if available.
  - Establish access to adequate postpartum psychosocial support services, including SUD treatment and relapse prevention programs.
  - Develop a communication strategy to facilitate coordination among the obstetric provider, SUD treatment provider and health system clinical staff (i.e. inpatient maternity staff, DSS).
  - Collaborate with local agencies and FSD to update the approach to promote keeping the mother-infant dyad intact, as appropriate, and meet safe care criteria.
  - Encourage screening for postpartum depression at infant and mother's routine follow-up appointments.
    - » Collaborate with local pediatricians, Federally Qualified Health Clinics and primary care providers to provide this screening.
- Establish contraceptive counseling and access to contraceptive services as part of SUD treatment among women of reproductive age to minimize the risk of unplanned pregnancy, ideally before inpatient discharge.

Task #8: Provide education to the mother and other caregivers regarding the infant's risk for developmental delays and the importance of routine preventative care.

- Schedule the mother and infant follow-up appointments prior to discharge.
  - Ensure follow-up within 72 hours of hospital discharge for both.
- Arrange for First Steps referral prior to hospital discharge, if available, or another home visit service.
- Coordinate and communicate state and local resources available for developmental follow-up and monitoring.

SUGGESTED CITATION

Hussey, K. (2020). *Reducing Neonatal Abstinence Syndrome by Improving Care of the Maternal-Infant Dyad Affected by Substance Use Disorders. Transitioning Models of Care: An Implementation Guide*. Missouri Hospital Association.

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