Neonatal Abstinence Syndrome

Education Material for Medication-Assisted Treatment (MAT) Providers

Tennessee Department of Mental Health & Substance Abuse Services

Division of TennCare

Tennessee Department of Health

December 2020

INTRODUCTION[1,2]

In June 2020, the Tennessee General Assembly directed the Department of Health (TDH), the Department of Mental Health and Substance Abuse Services (TDMHSAS), and the Division of TennCare to collaborate to develop educational materials regarding the risk and effects of Neonatal Abstinence Syndrome (NAS), access to and the availability of Family Planning (FP) services and contraception, and approaches to client-centered counseling. These materials were to be made available for providers and facilities where medication-assisted treatment (MAT) for opioid use disorder is prescribed or provided.

NAS is a condition in which an infant undergoes withdrawal from a substance to which he or she was exposed in-utero. Substances, such as opioids, antidepressants, benzodiazepines, and barbiturates, may cause NAS when used during pregnancy. The most common substances causing NAS are opioids. Neonatal opioid withdrawal syndrome (NOWS) is used to describe opioid only withdrawal symptoms. This can include legally prescribed opioids, including pain relievers (e.g., morphine) and MAT opioid agonists (e.g., buprenorphine, methadone), or illegally obtained opioids (e.g., heroin). Maternal use of other substances, such as cigarettes, benzodiazepines, and gabapentin, may influence the onset, severity, or duration of the withdrawal syndrome. In addition, a pregnant woman may obtain a substance through drug diversion, i.e., transfer of a legally prescribed controlled substance from the individual for whom it was prescribed to another person for an unprescribed use.

TN STATISTICS STATEWIDE[3]

- The number of NAS cases decreased by 15.0% from 949 in 2018 to 808 in 2019.
- The rate of NAS cases per 1,000 live births decreased for the second consecutive year, from 11.7 in 2018 to 10.0 in 2019. This decrease underscores the statewide collaborative efforts to curb the opioid epidemic and associated NAS cases.
- The majority of cases of NAS (65%) involved Medication-Assisted Treatment (MAT).
- The geographic distribution of cases of NAS varied across the counties of Tennessee. Counties in the east of Tennessee had the highest rate (68.6 cases of NAS per 1,000 live births).
- Exposure to various substances varied across geographic regions:
  - Exposure to prescription medication was highest in East Tennessee (with 71.9% of NAS cases) being lowest in West Tennessee at 15.1% in Shelby county.
  - In Shelby county, over 50% of NAS cases were exposed to illicit substances compared to less than 30% in East Tennessee.
  - There was an increase in NAS cases exposed to illicit substances from 25% in 2018 to 29% in 2019.
- The high percentage of infants diagnosed with NAS with exposure to prescribed medications highlights the need for primary prevention of NAS. Primary prevention includes preventing substance misuse/abuse among women of childbearing age and assessing the reproductive goals (using a client-centered approach) of women at risk of misusing/abusing substances (see PREGNANCY PLANNING section).

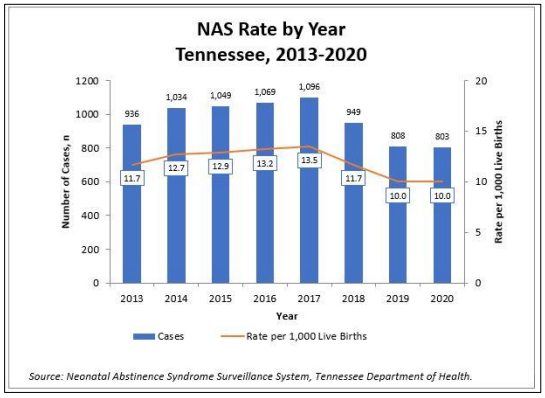


Figure 1: Number of Cases of Neonatal Abstinence Syndrome as a Percentage of Live Births, Tennessee 2013-2020

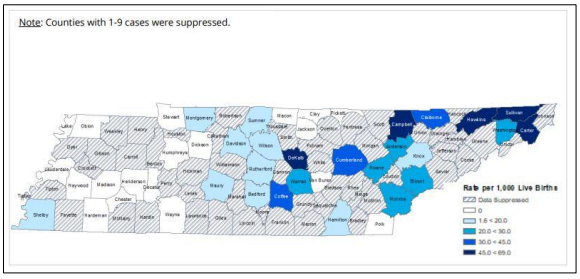


Figure 2: Rate of NAS Cases by County, 2019

TENNCARE STATISTICS[4]

In 2018, 93% of TennCare-enrolled infants diagnosed with NAS were born to mothers who had TennCare coverage at the time of delivery. The remaining 7% of TennCare-enrolled infants diagnosed with NAS were born to mothers who were not TennCare-eligible at the time of delivery.

Calendar Year	TennCare Newborns Treated for NAS During Year	Mothers on TennCare at Time of TennCare NAS Birth	Percent of TennCare NAS Infants Born to TennCare Mothers	Mothers NOT on TennCare at Time of TennCare NAS Birth	Percent of TennCare NAS Infants NOT Born to TennCare Mothers
2008	264	229	87%	35	13%
2009	444	335	75%	109	25%
2010	512	424	83%	88	17%
2011	528	483	91%	45	9%
2012	736	613	83%	123	17%
2013	943	823	87%	120	13%
2014	1,101	1,017	92%	84	8%
2015	1,197	1,098	92%	99	8%
2016	1,357	1,261	93%	96	7%
2017	1,363	1,254	92%	109	8%
2018	1,181	1,093	93%	88	7%

SIGNS & SYMPTOMS OF NAS[5,6]

Central Nervous System
- Irritability, fussiness
- High-pitched, continuous crying
- Hypersensitivity to stimuli
- Tremors
- Seizures
- Skin excoriation on knees and face from hyperactivity
- Increased muscle tone
- Sleep problems

Gastrointestinal
- Dehydration
- Poor feeding
- Regurgitation
- Diarrhea
- Skin excoriation on buttocks
- Excessive sucking

Metabolic,Vasomotor, Respiratory
- Nasal stuffiness
- Frequent yawning, sneezing
- Frequent episodes of hiccups
- Fever
- Sweating
- Tachypnea
- Apnea

ASSESSMENT[1,6]

The onset of opioid withdrawal can occur during the first 0-7 days. Timing of withdrawal tends to reflect the half-life of the opioid involved. For example, withdrawal from heroin often begins within 24 hours of birth, whereas withdrawal from methadone usually begins within ~24 to 72 hours of age. However, withdrawal may be delayed until 5 to 7 days of age, typically after hospital discharge for uncomplicated term infants. For this reason, the American Academy of Pediatrics (AAP) recommends observation for at least 4-7 days depending on the opioid the infant was exposed to so that the infant is in the hospital should withdrawal occur.

Assessment of NAS is determined by infant and maternal clinical indicators, maternal history, and maternal urine testing. Infant testing is no longer recommended when maternal labs are available. The risk of NAS for women on MAT ranges between 24-70% depending on treatment type and additional drug exposures, including amount of nicotine, stability in recovery, and gestational age at delivery.

Maternal Screening

Universal Screening for Substance Use in Pregnancy is recommended using a validated screening tool such as NIDA Quick Screen or 4 Ps.[7,8]

- Current prescription edications
- Drugs and alcohol use history

- Treatment records from methadone treatment clinics
- Non-adherence with prenatal care
- Unexplained poor weight gain during pregnancy
- Preterm labor
- Previous or current placental abruption or unexplained bleeding
- Prior referrals to child protection services

Management and Follow-up of Infants with Opioid exposure or NAS[6,9]

- Length of observation of infants exposed to opioids will vary depending on the type of opioid the infant was exposed to. For infants exposed to buprenorphine or methadone, a 5 day observation stay is recommended.
- Counseling to the mother should be provided by a provider, if possible, to educate on the clinical signs of withdrawal and enhance maternal understanding of postnatal treatment.
- Treatment of withdrawal symptoms should involve nonpharmacologic care measures and may require pharmacologic treatment.
- Nonpharmacologic treatment includes: rooming in, swaddling, sucking, avoiding overstimulation by holding the infant close and gently rocking in a quiet environment, and gradually increasing stimuli (light, sound, touch, and voice) one at a time, as tolerated.
- Pharmacologic treatment is given if significant withdrawal symptoms are present despite maximal supportive measures. Opioids are the first-line therapy for NAS.
- Early discharge is not an option for these infants.
- Medical follow-up - Infant medical follow-up within 48 hours of discharge should include regular assessments of weight and withdrawal symptoms. Follow-up can include a combination of more frequent assessments by the pediatric care provider and home health visits.
- Developmental follow-up - Infants exposed to opioids prenatally have a greater risk for developmental problems. Infant follow-up should include comprehensive developmental assessments.
- Sudden Infant Death Syndrome (SIDS) - Infant mortality rates are higher for infants whose mothers received opioids during pregnancy. Healthcare providers should counsel families about usual measures to minimize SIDS, such as breastfeeding (unless contraindicated), avoiding exposure to smoke, and ensuring appropriate sleep position and sleep environment.

AVAILABLE PARENTAL SUPPORT

Several state programs may offer support and services for parents and families of infants exposed to substances in-utero, including infants with NAS.

Community Health Access and Navigation in Tennessee (CHANT)

Navigating the complex system of health and social services can be challenging for many individuals and families, and depending on individual needs and medical diagnoses, care may involve a number of programs, providers, and personnel. To overcome these challenges, the Tennessee Department of Health developed a care coordination program, CHANT. CHANT teams provide enhanced patient-centered engagement and navigation of medical and social services referrals. Additional information about the CHANT program is available here.

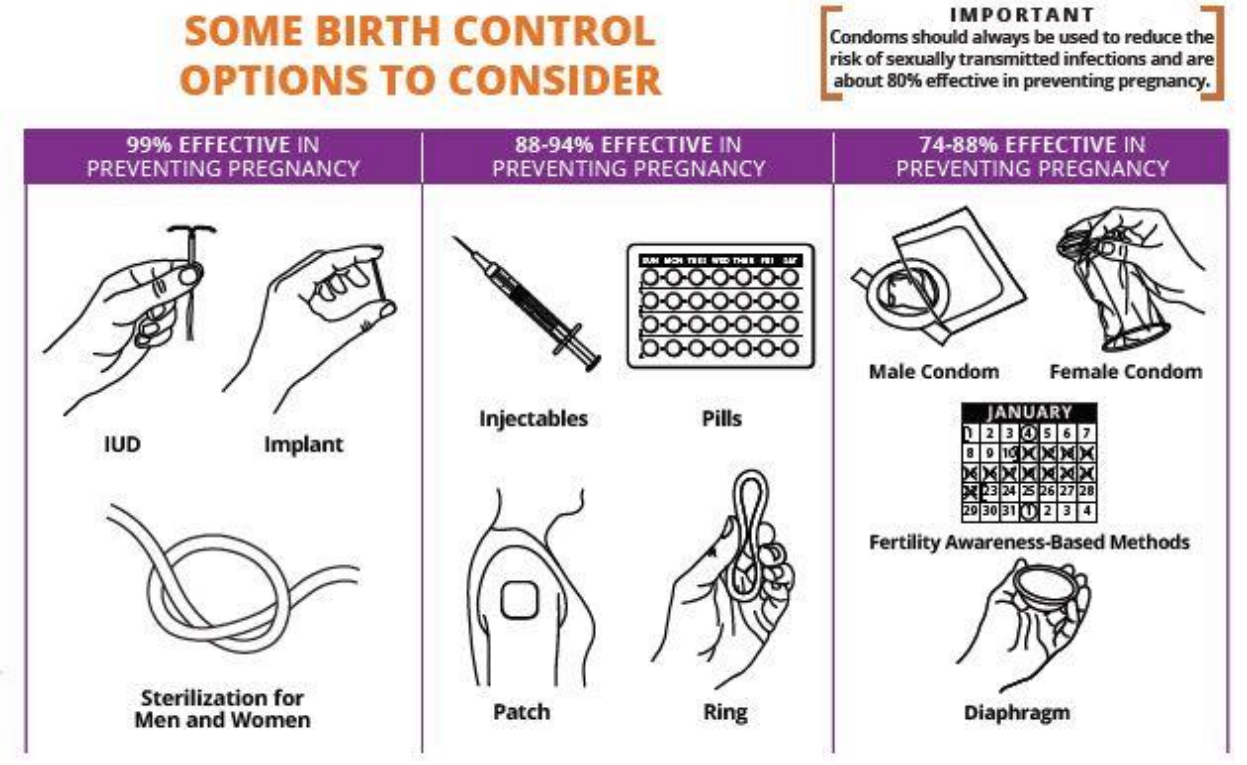
Tennessee Early Intervention System (TEIS)

TEIS is a program that provides services to children from birth to age three who have disabilities or other developmental delays. TEIS is a critically important program to support young children and their families. TEIS helps families navigate available resources for their child to reach their optimal development.

Information for parents can be found here. Children can be referred to TEIS by completing an online referral form or calling (800) 852-7157.

PREGNANCY PLANNING – An effective way to prevent NAS

- All women of childbearing age should have their reproductive goals assessed. This includes women with substance use disorders and those who are receiving MAT.
- This assessment and referral should be free from coercion and client-centered. Client-centered care is respectful of and responsive to individual client preferences, needs, and values; client values guide all clinical decisions.[10]
- Regardless of their pregnancy intentions, clients need appropriate counseling:
  - Desires pregnancy - risks of NAS, alternative therapies for pain management, and referral for preconception counseling
  - Does not desire pregnancy - comprehensive contraceptive options and risks of NAS
  - Ambivalent - risks of NAS, alternative therapies for pain management, and comprehensive contraceptive options
- Birth control options are available at all local health departments or through primary care providers.
- Charges for family planning services at health departments are free or adjusted according to the patient's ability to pay.
- A patient brochure on NAS and how to prevent NAS, including family planning options, is available here. Additional information on family planning services or on finding a family planning clinic is available on the Tennessee Department of Health's Family Planning website.



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