



Issue Brief

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Neonatal Abstinence Syndrome: Guidance to Improve Clinical Documentation and Data Capture

EXECUTIVE SUMMARY

In a recent [policy brief](#) published by the Missouri Hospital Association, analysis of neonatal abstinence syndrome and maternal opioid use data identified a possible gap in the ability to accurately identify the actual prevalence of NAS in Missouri, potentially resulting in a four-fold underestimation.ⁱ The accuracy and reliability of health care data collection primarily relies on precise clinical documentation by physicians and mid-level practitioners, which is translated into International Classification of Diseases, Tenth Revision medical codes. Coded data is then translated into quality reporting, physician report cards, reimbursement, public health data, and disease tracking and trending.ⁱⁱ Strong clinical documentation and coding programs support both the revenue cycle and patient health outcomes. In the age of diverse electronic medical record systems that lack interoperability, documentation and coding capture remain challenging. This brief identifies five challenges associated with data capture of NAS and related maternal substance abuse, and provides improvement strategies for practitioners, clinical documentation integrity specialists and medical coding specialists. Reliable data will provide better understanding of this critical health care issue and help identify target areas for focused improvement.

CLINICAL DOCUMENTATION OF NAS – CHALLENGES AND STRATEGIES

Challenge #1: ICD-9 to ICD-10 Medical Codes and an Evolving Definition of NAS

Challenge #2: Clear, Consistent Documentation with Standardized Chart Placement and Capture

Challenge #3: Ability to Stratify NAS-Related Data to Target Interventions

Challenge #4: Varied Onset of NAS Affects the Ability to Diagnose

Challenge #5: Improving Maternal Care Prenatally – Documenting and Coding for Opioid Use Disorder

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CHALLENGE #1: ICD-9 TO ICD-10 MEDICAL CODES AND AN EVOLVING DEFINITION OF NAS

The use of ICD codes related to NAS is not standardized. The two most common medical codes used for NAS are P961 and P962. P961 is most commonly used for newborns exhibiting signs and symptoms from maternal substance abuse. P962 is meant to capture NAS related to use of therapeutic drugs in the newborn, such as for newborn pain relief, sedation, etc. The codes P044 and P0449 are for those newborns now “affected by” maternal drug use or other drugs of addiction versus previously only “suspected-to-be” affected, but without confirmed diagnostic information (Table 1). All documentation relative to NAS should occur and be coded from the newborn chart, not the maternal chart.

Table 1: Timeline of ICD Codes for NAS			
		ICD-CM Code	Long Description
ICD-9-CM (2015)	2014-Q1 through 2015-Q3	76072	Narcotics affecting fetus or newborn via placenta or breastmilk
		7795	Drug withdrawal syndrome in newborn
ICD-10-CM (2016)	2015-Q4 through 2016-Q3	P044	Newborn (suspected to be) affected by maternal use of drugs of addiction
		P0449	Newborn (suspected to be) affected by maternal use of other drugs of addiction
		P961	Neonatal withdrawal symptoms from maternal use of drugs of addiction
		P962	Withdrawal symptoms from therapeutic use of drugs in newborn
ICD-10-CM (2017)	2016-Q4 through present	P044	Newborn affected by maternal use of drugs of addiction
		P0449	Newborn affected by maternal use of other drugs of addiction
		P961	Neonatal withdrawal symptoms from maternal use of drugs of addiction
		P962	Withdrawal symptoms from therapeutic use of drugs in newborn

The Council of State and Territorial Epidemiologists is working to standardize the definition of NAS; however, to date, minimal consensus has borne out. The lack of a standardized case definition and standardized criteria for diagnosing NAS and capturing reliable surveillance data affects the ability to treat, evaluate and understand the magnitude of the health issues and increases difficulty in tracking the long-term effects from exposure. The definition and criteria for diagnosis varies by provider, hospital and state. The Centers for Disease Control and Prevention, in a March 2015 Morbidity and Mortality Weekly Report, defined “confirmed NAS” as meeting all three of the following criteria.

- clinical signs consistent with NAS (NAS score > 8) and not explained by another etiology
- history of maternal use of prescription or illicit drugs associated with NAS during pregnancy, or lab confirmation of maternal narcotic use
- severity of illness that resulted in a prolonged (> 2 days) neonatal hospitalizationⁱⁱⁱ

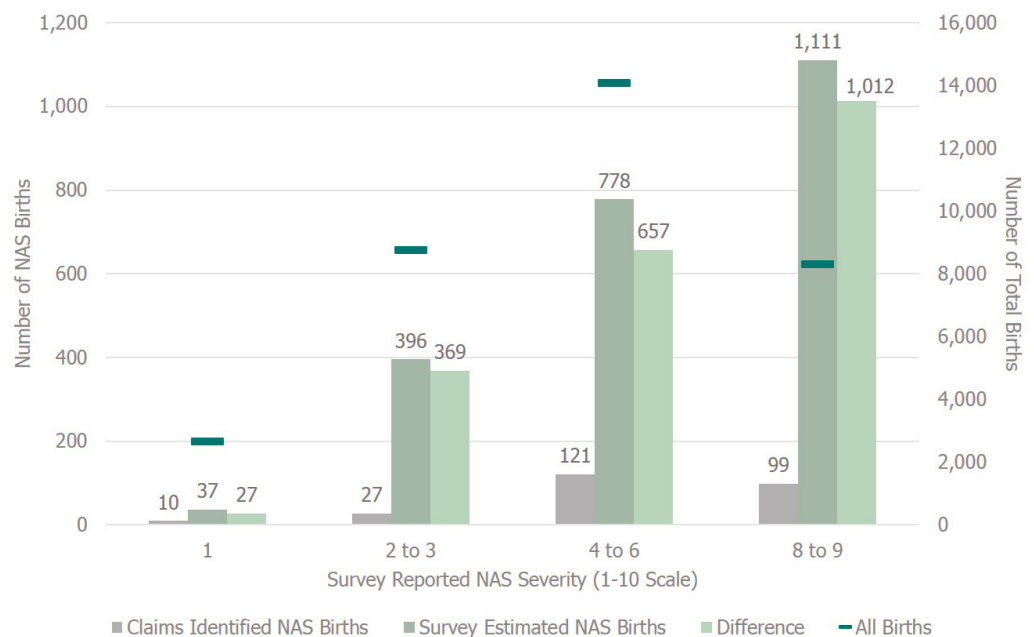
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In April 2018, MHA conducted a survey of Missouri’s birthing hospitals to gather information on perceptions of the severity of NAS, use of screening instruments and potential barriers to coding in administrative claims data. The survey was designed, in part, to test the hypothesis of the undercoding of NAS. The key findings include the following.

- The perceived severity of NAS in respondents’ hospitals featured agreement with actual NAS rates identified through claims data.
- Large differences were observed between the estimated frequency of NAS births at respondent hospitals and actual NAS births identified with claims data.
 - During 2017, responding hospitals reported 2,369 survey-estimated NAS births versus 257 NAS births identified with claims data.
 - Claims-based NAS rate per 1,000 births is 7.6.
 - Survey-estimated NAS rate per 1,000 births is 70.1.
- Perceived accuracy of claims-based NAS coding in respondents’ hospitals featured disagreement with differences between survey-estimated and claims-identified NAS births.

FIGURE 1: SURVEY-ESTIMATED NAS BIRTHS AND ACTUAL NAS BIRTHS IDENTIFIED BY HOSPITAL CLAIMS DURING 2017 BY REPORTED NAS SEVERITY



Source: MHA, 2018 Maternal Substance Abuse Disorder and NAS Survey and Hospital Industry Data Institute, 2008-2017 Missouri Hospital Inpatient and Outpatient Discharge Databases

One recommendation to improve data collection is to align with a standardized case definition at the state level. Another is to review inpatient care practices across providers and strive to standardize care algorithms, diagnostic assessment and testing practices. With these changes, fluctuations in rates will arise and should be analyzed with caution. For example, recent data from the Missouri Department of Health and Senior Services notes regional differences in NAS rates from 205 percent in the Eastern region to 634 percent in the Southwest region. Hospitals in the Southwest region have reported implementation of maternal substance abuse and NAS treatment protocols, so it is unknown if the rise is attributed to actual increases or improved screening, documentation and coding.^{iv}



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CHALLENGE #2: CLEAR, CONSISTENT DOCUMENTATION WITH STANDARDIZED CHART PLACEMENT AND CAPTURE

The first challenge leads to the second, which is the lack of clear, consistent diagnosis documentation in the medical record in a standardized place in the chart, allowing for improved coding capture. According to the American Health Information Management Association, high quality clinical documentation consists of seven key characteristics – documentation should be clear, consistent, complete, reliable, precise, legible and timely. Documentation always should include symptoms, abnormal findings, treatment and response to treatment to support a specific diagnosis.¹

Coding is informed primarily through documentation sources derived from physicians and mid-level practitioners. Examples include history and physical, discharge summaries, physician notes, laboratory results, and radiology reports; however, the majority of charting is provided by nursing and allied health workers. Examples include admission and shift assessments, specialty topic assessments and nurses' notes.

Education for practitioners, clinical documentation improvement staff, and coders is necessary to ensure accurate capture of NAS and maternal substance use disorder rates. Providers are encouraged to collaborate with health care informatics staff to standardize the location of NAS documentation in the patient's chart to ensure capture, coding and billing, as well as to support surveillance data to better inform this important health issue. It may well take

time to assess the true magnitude of NAS. Until then, the question will be: Is the rate of NAS increasing, or is health care capturing the prevalence more accurately? Regardless, there is a need to respond to maternal SUD and NAS.

NAS typically is documented through an abstinence scoring model, such as the [Modified Finnegan^v](#) Assessment Scoring Tool or the Eat, Sleep, Console approach. The 2018 MHA survey of Missouri's birthing hospitals found that 94 percent of responding hospitals (n=38/70) use an evidence-based assessment tool that allows for scoring of an infant with signs and symptoms of NAS; however, several different models are used (Figure 2).ⁱ Regardless of the model utilized, nurses assign a score based on clinical signs and symptoms in an affected infant at three to four hour intervals per hospital guidelines. Treatment and further monitoring frequency is gauged based on this score. However, the physician or mid-level practitioner must synthesize this information in their notes to ensure that coding specialists are able to identify the need to code for NAS on the infant's discharge record.

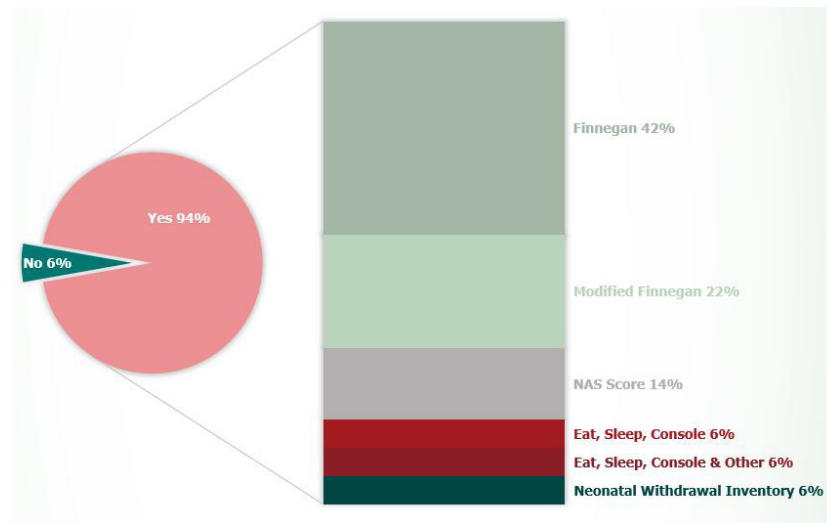
Abstinence scoring models were developed to determine pharmacological treatment thresholds for opioid-exposed neonates; however, these scoring tools have not been scientifically validated. Although designed to be as objective as possible, they are subject to strong inter-observer variability, and often are used for non-opioid-exposed infants. But again, this use has not been validated. Varying modifications of the original Finnegan model exist, and literature supports the need for two observers to sign off on the assessment.^{vi}



¹ While 42 percent of responding birthing hospitals reported using the original Finnegan NAS scoring model, it is suspected they are actually using the Modified Finnegan. The original Finnegan model is very complex and, for this reason, is not commonly used in daily practice any longer.

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FIGURE 2: HOSPITAL USE OF AN EVIDENCE-BASED ASSESSMENT TOOL THAT ALLOWS FOR SCORING OF AN INFANT WITH SIGNS AND SYMPTOMS OF NAS FROM WHICH TO BASE DIAGNOSIS AND TREATMENT



Source: MHA, 2018 Maternal Substance Abuse Disorder and NAS Survey

CHALLENGE #3: ABILITY TO STRATIFY NAS-RELATED DATA TO TARGET INTERVENTIONS

While documentation and coding of NAS as a diagnosis is believed to be underreported, stratification of the data is almost nonexistent. To date, coding is not capturing information that would better inform health care providers in treating both the mother and the newborn. Examples of potentially beneficial information include the following.

- drug type
- prescribed versus illicit
- prescribed — taking as indicated or abusing
- not illicit, but not prescribed (taking another’s prescription)
- polysubstance use and/or abuse
- concomitant pharmacology issues — selective serotonin reuptake inhibitors, benzodiazepines, tobacco
- maternal patient on SUD medication therapy and type, i.e. buprenorphine, methadone, etc.
- tracking of NAS-diagnosed newborns for longitudinal study — health outcomes, development implications, birth defects, etc.

Further, outside of claims-based data repositories, no other opportunity currently exists to document NAS. It is not included as an option to complete on the birth record in Missouri, nor is there any other statewide data repository for reportable maternal-child health-related data.

The National Center on Birth Defects and Developmental Disabilities is supporting research efforts to link a group of infants identified with NAS in Tennessee Medicaid claims information to Tennessee Department of Education information to understand the long-term neurodevelopmental outcomes potentially related to NAS. This pilot project is the first to look at connections between NAS and special education needs in American children.^{vii}

Several states, including Georgia, Tennessee, Florida, Arizona, Kentucky and Virginia, currently have state-mandated reporting of NAS, although the analysis and value of an additional reporting requirement on health outcomes is not known. Hospital self-reported and internal data review also would better inform care and

treatment. Understanding the variables contributing to NAS will subsequently support a better understanding of how to address maternal and infant treatment initially and throughout the life span.

CHALLENGE #4: VARIED ONSET OF NAS AFFECTS THE ABILITY TO DIAGNOSE

Onset of the symptoms for NAS varies due to several factors, further complicating documentation and capture of the diagnosis. The majority of infants exposed to heroin or other short-acting opioids typically will show symptoms within the first 48 to 72 hours after birth. Those exposed to longer-acting opioids, such as methadone or buprenorphine, often present symptoms later than 72 hours, but usually within the first four days. The severity and duration of the withdrawal symptoms can be influenced by exposure to other substances, such as tobacco and barbiturates.^{viii}

While most NAS cases are diagnosed in the inpatient setting following birth, due to the variation in onset of symptoms, it is critical for community pediatricians, clinic staff and emergency department staff to be educated on identifying the signs and symptoms of NAS. Medical record coding from the clinic setting also presents an opportunity to observe for NAS cases to ensure a robust data set. Universal verbal screening of all childbearing age patients and all prenatal patients is recommended by professional organizations, such as the American College of Obstetricians and Gynecologists and the American Academy of Pediatrics, during the course of the pregnancy. Screening methods primarily include use of verbal screening tools with follow-up maternal urine toxicology screening

for confirmation after positive verbal screening. The common newborn screenings methods include meconium stool collection, urine drug screens and, more recently, umbilical cord testing for those who meet certain criteria. Each screening option has its advantages and disadvantages, primarily revolving around the ability to capture a substance based on excretion profiles, collection practices, timeliness of results and cost.

The variability of the onset of NAS and the fact that some newborns, despite exposure to opioids and other substances, will not exhibit signs and symptoms of NAS, creates the need for reliable, ongoing screening tools and diagnostic tests. Although not validated, current abstinence scoring models are tools for practitioners in assessing the severity of NAS and providing treatment options. Further, a compassionate, nonjudgmental approach to communicating with mothers and family members on the importance of accurate reporting of their drug use is critical to ensure safe and proper care of their children and to support maternal patients in seeking addiction recovery support.

CHALLENGE #5: IMPROVING MATERNAL CARE PRENATALLY — DOCUMENTING AND CODING FOR OPIOID USE DISORDER

Stigma may be a greater hindrance to individuals seeking support and treatment for addiction than any other variable. In the maternal population specifically, stigma, fear of judgment and having children removed from the home often prevent individuals from seeking help. To turn this tide, health care providers must begin classifying addiction as a chronic medical condition, including documenting and coding the diagnosis as such.

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Practitioners must be able to conduct open, empathetic conversations that support the mother's role, begin medication treatment, and refer to effective mental health and social support services that serve their patients the best.

Universal screening of childbearing age women, pregnant women at first and subsequent prenatal visits, and women during the postpartum period of up to one year after birth, is a critical first step. Practitioners must be able to conduct open, empathetic conversations that support the mother's role, begin medication treatment, and refer to effective mental health and social support services that serve their patients the best. Further, documentation of screenings and subsequent treatment plans by physicians and mid-level practitioners would greatly increase knowledge and understanding of the opioid epidemic as a whole.

For patients who must be prescribed an opioid during pregnancy, practitioners should follow opioid prescribing guidelines and should document the medical necessity, planned course of treatment and patient follow-up. Potential adverse effects of taking narcotics during pregnancy should be communicated to all pregnant women. These include risks for developing dependency, overdose and infants suffering from NAS after birth. Additionally, practitioners should offer and document nonpharmacologic methods used and treatment responses to maternal pain in the prenatal period. Ongoing screening, discussions with the patient on appropriate medication use, monitoring for continued opioid need and discontinuation options also should be documented. Developing checklist modules in the EMR may assist with streamlining this documentation.

Ultimately, documentation and the ability to use clinical data from this documentation is key to improving care across the health care spectrum. For NAS and maternal SUD, five challenges exist to improving documentation, data capture and clinical management improvement capabilities. A focused approach based on a consensus definition is necessary to better identify NAS and maternal SUD cases and increase the reliability of the data. Additionally, physicians and mid-level providers should ensure their documentation is consistent, clear and noted in a standard location on the chart. Working with health information management teams and medical coders is a good first step toward increasing consistency. Clinically, increased education to more reliably use screening tools and monitoring of neonates up to ten days postpartum is needed to ensure broad capture of cases. Finally, NAS will not decrease until management of prenatal pain and discomfort is altered through decreasing opioid prescriptions by increasing the use of nonpharmacological methods and non-opioid medications.

SPECIAL RECOGNITION

Special recognition and appreciation to the guest editor for this quality resource brief, Dr. Steve M. Liao, M.D., MSCI, Assistant Professor of Pediatrics at Washington University School of Medicine and Associate Medical Director at Missouri Baptist Hospital Neonatal Intensive Care Unit.



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