Neonatal Abstinence Syndrome Standardized Case Definition

Summary of proposed revisions to CSTE position statement 19-MCH-01

Overview

The CSTE position statement 19-MCH-01 created a standardized case definition for neonatal abstinence syndrome surveillance (NAS). It includes distinct definitions for two types of surveillance: Tier 1 surveillance for jurisdictions where NAS is reportable by providers and Tier 2 surveillance for surveillance utilizing administrative datasets. After jurisdictions and CDC utilized the new case definition to conduct NAS surveillance through Tier 1 surveillance, it was determined that updates were needed to allow for clarity in interpretation, consistency in reporting across jurisdictions, and address concerns identified during implementation. A group of CSTE Maternal and Child Health (MCH) Subcommittee members convened the NAS Work Group and smaller Leadership Group to collect data and gain consensus for position statement updates through regular meetings and conversation within shared documents. This document provides an overview of changes made in the proposed revision.

Summary of Revisions

Overall Format Change	To align with the current position statement template, this revision defines levels of clinical, laboratory, and epidemiological linkage criteria to utilize within case classification. This also achieves the goal of providing increased simplicity and clarity.
Feedback that Informed the Proposed Changes	CDC worked with jurisdictions to conduct a pilot study with sites preforming Tier 1 surveillance to classify cases of NAS in line with 19-MCH-01. Data from this study and concerns about implementation of 19-MCH-01 were presented by CDC to the NAS Leadership Group in February 2022.[1] CSTE directed a key informant interview process to gain insight from medical providers in the NAS field, champions in surveillance at the jurisdiction level, and partners in surveillance at the federal or national level.[2] Papers published since adoption of 19-MCH-01 were used to inform revisions, including the Clinical Case Definition for Neonatal Opioid Withdrawal Syndrome (NOWS) published by the US Department of Health and Human Services (HHS) and papers addressing clinical signs seen in NAS.[3,4,5,6] After major revisions were completed, CSTE led a membership assessment process to gather opinions on the revisions from members of the CSTE MCH Subcommittee.[7] Respondents to the assessment indicated support of all key revisions and unanimously indicated they would vote to pass the revision at the annual conference.

Who is Captured by this Revised Definition?	Neonates experiencing withdrawal who have evidence of *in utero* exposure to opiates, barbiturates, or benzodiazepines (OBBs) are captured as confirmed cases. These substances are most commonly associated with NAS. Neonates experiencing withdrawal who have evidence of *in utero* exposure to a substance of unknown type or substance that is not an opiate, barbiturate, or benzodiazepine (non-OBB) are captured as suspect cases. This allows for public health surveillance for novel substances, substances less commonly associated with withdrawal in neonates, and polysubstance exposure.	
Summary of Changes in Case Classification – Tier 1 Surveillance	**19-MCH-01:** <u>Confirmed Cases:</u> Neonates with an NAS diagnosis, chief complaint, or 3+ clinical signs AND Evidence of OBB exposure through neonatal lab results <u>Probable Cases:</u> Neonates with an NAS diagnosis, chief complaint, or 3+ clinical signs AND Evidence of OBB exposure through maternal history of use or positive maternal OBB lab result in the 4 weeks prior to delivery <u>Suspect Cases:</u> (Neonates with an NAS diagnosis, chief complaint, or 3+ clinical signs AND Evidence of non-OBB or unknown type of substance exposure through maternal history of use or positive maternal non-OBB lab result in the 4 weeks prior to delivery) OR (Neonates with 1 or 2 clinical signs of NAS AND Evidence of OBB exposure through maternal history of use or positive maternal OBB lab result in 4 weeks prior to delivery)	**Proposed Revision:** <u>Confirmed Cases:</u> Neonates with an NAS diagnosis, chief complaint, or 2+ clinical signs AND Evidence of OBB exposure through maternal history of use in current pregnancy or positive lab test of mother or neonate <u>Probable Cases:</u> N/A <u>Suspect Cases:</u> Neonates with a diagnosis, chief complaint, or 2+ clinical signs AND Evidence of non-OBB or unknown type of substance exposure through maternal history of use in current pregnancy or positive lab test of mother or neonate Neonates with 1 clinical sign of NAS and evidence of exposure to OBBs previously included as suspect cases are no longer included in this case classification.

Summary of Changes in Case Classification – Tier 2 Surveillance	After review by subcommittee leadership, ethical concerns were identified with collecting data on neonates with *in utero* substance exposure without indication of signs of withdrawal. In this revision the previous suspect classification for Tier 2 surveillance has been removed. Confirmed cases: P96.1 Neonatal withdrawal symptoms from maternal use of drugs of addiction ~~Suspect cases:~~ ~~P04.14 Newborn affected by maternal use of opiates~~ ~~P04.17 Newborn affected by maternal use of sedative hypnotics~~ ~~P04.1A Newborn affected by maternal use of anxiolytics~~
Updates in Wording to Address Coherence and Precision	The initial case classification section includes many instances of wording to specify "AND no or unknown laboratory results in the neonate" or "AND no or unknown maternal laboratory results". This wording was interpreted and implemented differently by different sites and including this wording has led to decreased sensitivity of the case definition.[8] Negative or unknown neonatal or maternal laboratory testing should not rule out a neonate from meeting the case definition if they meet other criteria and this wording has been removed. In the revision the list of signs has been formatted for clarity and four additional signs have been added to incorporate items seen documented in medical records using NAS documentation other than the Finnegan scoring system.[3,4,5,6] Where appropriate, the wording in this revision has been updated to be more inclusive, changing terms such as “pregnant women” to “pregnant people”. Gendered language remains in the case ascertainment/classification section where changes may have affected interpretation, but an inclusivity statement has been incorporated: “This document uses the terms “mother”, “maternal”, or “women” throughout; these should be taken to include birth parents and pregnant people who do not identify as women or mothers.”

Rationale for Updates that Affect Case Classification	Confirmed and probable cases were combined as they were previously separated based on type of evidence of OBB exposure. In clinical practice, positive maternal history has been found to be more equitable evidence of in utero substance exposure than laboratory findings due to variability in who is tested, when testing occurs with respect to delivery, and the sensitivity and specificity immunoassay screening tests.[9] The public health action does not change based on the type of exposure evidence, therefore separation of confirmed and probable cases based on laboratory evidence was inappropriate and unnecessary, and the classifications have been combined. Confirmatory clinical criteria previously included neonates with 3+ clinical signs of NAS, but medical record abstractors noted difficulty in identifying signs due to changes in documentation as facilities adopt the Eat-Sleep-Console method of NAS treatment over traditional scoring systems.[1] The consensus in feedback received was that decreasing the signs required from 3 to 2 would allow for appropriate classification of more cases rather than misclassification of non-cases.[2] One group of neonates captured by the original suspect classification was neonates with 1-2 clinical signs and OBB exposure. In this revision, neonates with two clinical signs will be captured as confirmed cases. Neonates with one clinical sign will no longer be captured by this definition. This revision also changes the wording in reference to clinical signs requiring "in the absence of another known cause/diagnosis", as NAS can exist with comorbid conditions and this wording was implemented differently across jurisdictions.[1,2] The new wording specifies “where the signs have not been explicitly attributed by a provider to an alternate diagnosis or condition“, which removes the burden of attributing signs to specific etiologies from the person classifying cases. The change of this wording also contributed to the decision to remove neonates with one clinical sign from the suspect classification. Sites utilizing the original position statement found it difficult and time-consuming to look for maternal evidence of exposure "in the four weeks prior to delivery", and often could not identify documentation containing that level of specificity.[1,2] The wording has been updated to "in the current pregnancy" for history of use, and "in the current pregnancy through one day post-delivery" for laboratory testing. Previously, evidence of non-OBB exposure was only captured through maternal history or maternal laboratory testing. This revision includes positive non-OBB neonatal laboratory evidence for classification as a suspect case to align with the types of evidence allowed for a confirmed case.

References

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