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**Recommendations 1**

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| NOWS is a major consequence of the opioid crisis, with dramatic increases over the last decade. Pediatric care clinicians can help reduce newborn morbidity, hospitalization, and costs and help improve maternal screening, referral, and follow-up for the mother-infant dyad. The authors of *Neonatal Opioid Withdrawal Syndrome* present the following recommendations for care. |

**Access to Treatment**

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| 1. | All pregnant women should have access to medications for OUD because they have been shown to reduce risk of overdose death and improve pregnancy outcomes. |
| 2. | Pediatricians should partner with state and local child welfare agencies to advocate for funding to improve access to quality treatment of OUD. |

**Antenatal Counseling and Screening**

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| 1. | Pregnant women with OUD should receive antenatal counseling to provide education on the clinical signs of withdrawal and enhance maternal understanding of postnatal treatment (e.g., nonpharmacologic treatment, including breastfeeding and pharmacotherapy). When possible, maternal antenatal counseling should be provided by a pediatric provider. |
| 2. | Multiple modalities of testing should be considered for the infant, including, infant urine, meconium, and umbilical cord tissue testing. |
| 3. | For women in treatment of OUD who receive frequent toxicology testing, infant meconium and/or umbilical cord tissue testing may not be necessary. |
| 4. | For many substances, urine toxicology only captures a short window of substance use for some systems. |
| 5. | Pediatricians should assess additional social risks, including, but not limited to, food and housing insecurity, and connect to community resources. |

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| 1. | Reprinted from: Patrick et al. 2020. Neonatal Opioid Withdrawal Syndrome. *Pediatrics* 146(5): e2020029074. |

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**Observation**

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| All infants with chronic opioid exposure should be observed for at least 72 hours to monitor for the development of withdrawal. Although there is increasing evidence that multiple factors may increase an opioid-exposed infant’s risk of withdrawal (e.g., gestational age, specific genotypes, tobacco use, benzodiazepine, and gabapentin), there remains insufficient evidence of how to use these exposures to tailor an infant’s postnatal observation period.  Institutions may use the following approach for observation of infants with opioid exposure: | | |
|  | ✓ | immediate-release opioids: 3 days |
|  | ✓ | buprenorphine and sustained-release opioids: 4 to 7 days |
|  | ✓ | methadone: 5 to 7 days. |

**Diagnosis**

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| 1. | For all infants at risk for NOWS, a standardized assessment approach by using a commonly used tool (e.g., modified Finnegan score) should be employed to measure the presence and severity of withdrawal symptoms as well as the response to treatment (e.g., [Neonatal Abstinence Measure: MOTHER](#MOTHER)). |
| 2. | Comorbidities should also be considered, including infectious and neurologic conditions. If no clear in utero exposure is identified through maternal history, screening, or testing, NOWS is a diagnosis that should be used only if other potential causes of an infant’s symptoms have been evaluated fully and no other cause has been identified. |

**Treatment**

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| 1. | Hospitals should prioritize keeping the mother-infant dyad intact throughout observation and treatment of an infant with opioid exposure. Rooming-in is the preferred model of care. |
| 2. | Hospitals should have a written protocol for the nonpharmacologic and pharmacologic treatment of an infant with opioid exposure. |
| 3. | Admission to a NICU only for opioid exposure or NOWS is not required. |

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| 4. | All hospitals should have a written protocol for initiating nonpharmacologic and pharmacologic treatment of an infant with opioid exposure. |
| 5. | Nonpharmacologic interventions should be used for all infants with opioid exposure and should be considered the foundation of care. |
| 6. | Nonpharmacologic treatment should be tailored to the clinical signs of the infant. |
| 7. | All hospitals should have a protocol for breastfeeding an infant with substance exposure. |
| 8. | For infants of mothers in treatment of OUD with buprenorphine or methadone who have not had relapse for ≥ 90 days, breastfeeding should be supported if there are no other contraindications. |
| 9. | For infants of women with active substance use or with relapses within the last 30 days, breastfeeding should be discouraged. |
| 10. | For infants of women in treatment between 30 and 90 days without relapse, breastfeeding should be considered. |
| 11. | HIV is a contraindication to breastfeeding in high-income countries, such as the United States. HCV-positive mothers with cracked or bleeding nipples should consider abstaining from breastfeeding. |
| 12. | Lactation support should be provided in the inpatient setting and after discharge. |
| 13. | Pharmacologic therapy should be considered for severe opioid withdrawal (e.g., [MOTHER](#MOTHER) score >8 × 2 or >12 × 1) in addition to nonpharmacologic interventions. Vomiting and loose stools are associated with dehydration and poor weight gain and are relative indications for treatment. |
| 14. | Opioids should be used as a first-line therapy for severe NOWS. |
| 15. | Infants who require pharmacologic treatment should be monitored (e.g., pulse oximetry). |
| 16. | Recent data suggest that opioids with a longer half-life, such as buprenorphine and methadone, may reduce length of treatment. However, caution should be considered if the preparation has a high alcohol content. |

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| 17. | Paregoric and deodorized tincture of opium should not be used. |
| 18. | If a second agent is needed for severe opioid withdrawal, the use of clonidine should be considered over phenobarbital. |
| 19. | Naloxone should never be used in the treatment of an infant with chronic opioid exposure because it may precipitate rapid withdrawal and seizure. |

**Discharge**

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| 1. | Discharging infants from hospital on pharmacotherapy should be avoided and should only occur if there is a structured, close outpatient follow-up plan for the mother-infant dyad. | |
| 2. | A discharge checklist should be completed (e.g., [Discharge Checklist for Infants with Opioid Exposure](#DischargeChecklist)): | |
|  | ✓ | No significant clinical signs of withdrawal for 24 to 48 hours after treatment |
|  | ✓ | Parent education about NOWS and routine newborn care, emphasizing safe sleep |
|  | ✓ | Pediatrician or primary care provider follow-up visit with 48 hours of discharge |
|  | ✓ | Early intervention services referral |
|  | ✓ | Consideration of home-nurse visitation and Early Head Start |
|  | ✓ | Hepatitis C and HIV testing referral, including referral to pediatric infectious disease when appropriate |
|  | ✓ | Plan of safe care, coordinating with child welfare |
|  | ✓ | Developmental-behavioral pediatrician referral, as appropriate |
|  | ✓ | Consideration of behavioral and/or mental health system referrals to address dyadic relational health. |

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| PATIENT ID# | | |  | | | | |  | | | | | | | | | |  | | **Morphine Maintenance** | | | | | | | | | | | | | | | | | | | | | | | |
|  | | |  | | | | |  | | | | | | | | | |  | | ●  ●  ●  ● | | Maintain dose if score 0-8  Increase dose by 0.02 if score is 9-12 (rescore before dosing)  Increase dose by 0.04 if score 13-16  Increase dose by 0.06 if score 17-20 | | | | | | | | | | | | | | | | | | | | | |
| **Dose given q 3-4 hrs with feeds; do not exceed 4 hrs between doses** | | | | | | | | | | | | | | | | | |  | |
| SCORE Morphine (0.04mg/0.1ml) DOSE FOR INITIATION | | | | | | | | | | | | | | | | | |  | |
| 0-8 | | 0 | |  | | | | | | | | | | | | | |  | |
| 9-12 | | 0.04 | | mg/dose | | | | | | | | | | | | | |  | | **Weaning Instructions** | | | | | | | | | | | | | | | | | | | | | | | |
| 13-16 | | 0.08 | | mg/dose | | | | | | | | | | | | | |  | | ● | | Maintain on dose 48 hrs before starting weaning | | | | | | | | | | | | | | | | | | | | | |
| 17-20 | | 0.12 | | mg/dose | | | | | | | | | | | | | |  | | ● | | Wean 0.02 mg morphine every day if score is 0-8 | | | | | | | | | | | | | | | | | | | | | |
| 21-24 | | 0.16 | | mg/dose | | | | | | | | | | | | | |  | | ● | | Defer wean if score is 9-12 | | | | | | | | | | | | | | | | | | | | | |
| 25 or above | | 0.20 | | mg/dose | | | | | | | | | | | | | |  | | **Re-escalation** | | | | | | | | | | | | | | | | | | | | | | | |
| **Morphine Initiation:** | | | | | | | | | | | | | | | | | |  | | ● | | If neonate score is 9-12, re-score as described for initiation | | | | | | | | | | | | | | | | | | | | | |
| ● | If neonate scores 9-12 re-score after feeding or within the hour and if re-score is 9-12 | | | | | | | | | | | | | | | | |  | | ● | | If second score is 9-12, increase morphine 0.01 mg q3-4 hrs | | | | | | | | | | | | | | | | | | | | | |
|  | start treatment based on highest score. If re-score is 0-8, do not initiate treatment. | | | | | | | | | | | | | | | | |  | | ● | | If 2 consecutive scores of 13-16, increase 0.02 mg q3-4 hrs | | | | | | | | | | | | | | | | | | | | | |
| ● | If initial score is 13 or greater, start treatment immediately without reassessment. | | | | | | | | | | | | | | | | |  | | ● | | If 2 consecutive scores of 17-20, increase 0.04 mg q3-4 hrs etc | | | | | | | | | | | | | | | | | | | | | |
| **Timing of Scoring**: Hospitalized infants scored every 3-4 hrs **before** feeds. Reassessment occurs immediately **after feeds** or within 1 hour.  Discharged (e.g., in GCRC) infants scored twice a day, scores must be separated by 8 hrs  \*\*\*NOTE: Discharged infants are to be admitted to hospital if the infant receives a single score of 9 or more\*\*\* | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **SIGNS AND SYMPTOMS**  Please note **presence (pr)** or **absence (ab)** of items where indicated. Include observations  for the past 4 hour period. | | | | | | | SCORE | | Date/time | | | | Date/time | | | | Date/time | | | | | | | Date/time | | | | Date/time | | | | Date/time | | | | Date/time | | | | Date/time | | | |
|  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
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| Crying: Excessive High Pitched  Crying: Continuous High Pitched | | | | | | | 2  3 | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| Sleeps < 3 hours after feeding  Sleeps < 2 hours after feeding  Sleeps < 1 hour after feeding | | | | | | | 1  2  3 | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| Hyperactive Moro Reflex  Markedly Hyperactive Moro Reflex | | | | | | | 1  2 | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| Mild Tremors: Disturbed  Moderate-Severe Tremors: Disturbed | | | | | | | 1  2 | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| Mild Tremors: Undisturbed  Moderate-Severe Tremors: Undisturbed | | | | | | | 1  2 | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| Myoclonic Jerks | | | | | | | present/absent | |  | pr |  | ab |  | pr |  | ab |  | | pr | |  | | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |
| Increased Muscle Tone | | | | | | | 1-2 | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| Excoriation (indicate specific area): | | | | | | | 1-2 | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| Mottling | | | | | | | present/absent | |  | pr |  | ab |  | pr |  | ab |  | | pr | |  | | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |
| Generalized Seizure (or convulsion) | | | | | | | 8 | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| Convulsions | | | | | | | present/absent | |  | pr |  | ab |  | pr |  | ab |  | | pr | |  | | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |
| Fever ≥ 37.3 C (99.2 F) | | | | | | | 1 | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| Fever ≥ 38.4 C (101.2 F) | | | | | | | present/absent | |  | pr |  | ab |  | pr |  | ab |  | | pr | |  | | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |
| Frequent Yawning (4 or more successive times) | | | | | | | 1 | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| Sweating | | | | | | | 1 | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| Nasal Stuffiness | | | | | | | 1 | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| Sneezing (4 or more successive times) | | | | | | | 1 | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| Tachypnea (Respiratory Rate > 60/min) | | | | | | | 2 | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| Retractions | | | | | | | present/absent | |  | pr |  | ab |  | pr |  | ab |  | | pr | |  | | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |
| Nasal Flaring | | | | | | | present/absent | |  | pr |  | ab |  | pr |  | ab |  | | pr | |  | | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |
| Poor Feeding | | | | | | | 2 | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| Excessive Sucking | | | | | | | present/absent | |  | pr |  | ab |  | pr |  | ab |  | | pr | |  | | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |
| Vomiting (or regurgitation) | | | | | | | 2 | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| Projectile Vomiting | | | | | | | present/absent | |  | pr |  | ab |  | pr |  | ab |  | | pr | |  | | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |
| Loose Stools | | | | | | | 2 | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| Watery Stools | | | | | | | present/absent | |  | pr |  | ab |  | pr |  | ab |  | | pr | |  | | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |  | pr |  | ab |
| Failure to Thrive (Current weight ≥ 10% | | | | | | | 2 (record weight in score box 1x/day) | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| below birth weight) 90% BWT= | | | | |  |  |
|  | | | | |  |  |
| Excessive Irritability | | | | | | | 1-3 | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| TOTAL SCORE | | | | | | |  | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| CURRENT MORPHINE DOSE | | | | | | | Dose in mg | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| Time Given | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| STATUS OF TREATMENT ⭐ | | | | | | | N.I.M.W.R. | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| INITIALS OF SCORER | | | | | | |  | |  | | | |  | | | |  | | | | | | |  | | | |  | | | |  | | | |  | | | |  | | | |
| ⭐ Note: Code Status of Treatment as follows: N="No treatment", I="Initiation", M="Maintenance", W="Weaning", R="Re-Escalation" | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Maternal Opioid Treatment: Human Experimental Research (MOTHER) Neonatal Abstinence Measure. Adapted from SW Patrick, WD Barfield, BB Poindexter, Committee on Fetus and Newborn, & Committee on Substance Use and Prevention. 2020. Neonatal Opioid Withdrawal Syndrome. *Pediatrics*, 146(5). |

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**Scoring MOTHER Neonatal Abstinence Measure 2**

| **Criteria** | **Operational Definition** |
| --- | --- |
| **Crying** |  |
| Crying = 0 | Non-high pitched and /or crying stops with caretaker or self-soothing |
| Crying: Excessive high pitched = 2 | High pitched cry more than 15 seconds or intermittently up to 5 minutes |
| Crying: Continuous high pitched = 3 | High pitched cry more than 15 seconds **and** intermittently more than 5 minutes |
| **Sleeping** |  |
| Sleeping = 0 | Sleeping 3+ hours after feeding. Use the longest single continuous time sleeping since last feeding |
| Sleeping = 1 | Sleeping < 3 hours after feeding. Use the longest single continuous time sleeping since last feeding |
| Sleeping = 2 | Sleeping < 2 hours after feeding. Use the longest single continuous time sleeping since last feeding |
| Sleeping = 3 | Sleeping < 1 hour after feeding. Use the longest single continuous time sleeping since last feeding |
| **Moro Reflex** |  |
| Hyperactive Moro = 0 | Arms return to chest within 1 to 2 seconds after extension |
| Hyperactive Moro = 1 | Arms stay up 3-4 seconds and/or pronounced jitteriness of the hands during or at the end of the Moro reflex |
| Markedly Hyperactive Moro = 2 | Arms stay up 5 seconds or more. Jitteriness may or may not be noted |
| **Tremors Disturbed** |  |
| Mild Tremors: Disturbed = 0 | No tremors when disturbed |
| Mild Tremors: Disturbed = 1 | Hands or feet only. Tremors last for up to 3 seconds |
| Moderate-Severe Tremors: Disturbed = 2 | Arms or legs. Tremors last for more than 3 seconds |

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| 2. | Opearational definitions of scores adapted from: Jones et al. 2010. Neonatal Abstinence Syndrome after Methadone or Buprenorphine Exposure (Supplementary Appendix). *New England Journal of Medicine*. 363(24): 2320-2331. |

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| **Criteria** | **Operational Definition** |
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| **Tremors Undisturbed** |  |
| Mild Tremors: Undisturbed = 0 | No tremors undisturbed. If the infant is asleep, a few jerking movements of the extremities may be present |
| Mild Tremors: Undisturbed = 1 | Hands or feet only. Tremors last for up to 3 seconds |
| Moderate-Severe Tremors: Undisturbed = 2 | Arms or legs. Tremors last for more than 3 seconds |
| **Myoclonic Jerks** (present or absent) | Infant must be awake when involuntary spasms or twitching of muscle in face or extremities are observed |
| **Increased Muscle Tone** |  |
| Increased muscle tone = 0 | Some resistance to extension or flexion, but slight flexion or extension is possible and the extremity returns spontaneously to it prior position |
| Increased muscle tone = 1 | Difficult to straighten or bend the arms but is possible AND head lag is present |
| Increased muscle tone = 2 | No head lag noted and/or arms or legs won’t straighten or bend |
| **Excoriation** |  |
| Excoriation = 0 | No excoriation present |
| Excoriation = 1 | Skin is red but intact or healing and no longer broken (indicate specific area) |
| Excoriation = 2 | Skin is broken (indicate specific area) |
| **Mottling** (present or absent) | Make sure infant is not chilled when evaluated. The presence of mottling is defined by identification of marbling/discoloration of chest, trunk, arms, or legs |
| **Generalized Seizure (or convulsion)** |  |
| Generalized Seizure (or convulsion) = 0 | No seizure or convulsion present |
| Generalized Seizure (or convulsion) = 8 | Eye staring, rapid involuntary movements of the eyes, chewing, back arching, fist clenching, etc. |
| **Convulsion** (present or absent) | The presence of convulsions is defined by the jerking or tonic clonic movements, present in conjunction with or in the absence of seizure |

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| **Criteria** | **Operational Definition** |
| --- | --- |
| **Fever** |  |
| Fever = 0 | Temperature < 37.3 C (99.2 F) |
| Fever = 1 | Temperature ≥ 37.3 C (99.2 F) |
| Fever ≥ 38.4 C (101.2 F) (present or absent) | Temperature ≥ 38.4 C (101.2 F) |
| **Yawning** |  |
| Yawning = 0 | Infant yawns 3 times or less in succession |
| Yawning = 1 | Infant yawns 4 or more times in succession. This may have occurred at any point within the 3-4 hour period prior to assessment |
| **Sweating** |  |
| Sweating = 0 | Wetness due to sweat may be present on back of neck due to overheating |
| Sweating = 1 | Wetness is felt on the infant’s forehead or upper lip |
| **Nasal Stuffiness** |  |
| Nasal Stuffiness = 0 | No nasal noise |
| Nasal Stuffiness = 1 | Any nasal noise – may or may not have a runny nose |
| **Sneezing** |  |
| Sneezing = 0 | Sneezing occurs 3 times or less in succession |
| Sneezing = 1 | Sneezing occurs 4 or more successive times |
| **Tachypnea** |  |
| Tachypnea = 0 | Respiratory rate ≤ 60 minute. Infant must be at rest and respirations must be counted for a full minute |
| Tachypnea = 2 | Respiratory rate > 60 minute. Infant must be at rest and respirations must be counted for a full minute |
| **Retractions** (present or absent) | Retractions occur due to the use of intercostals muscles to assist respiration |
| **Nasal Flaring** (present or absent) | Outward spreading of the nostrils during breathing |

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| **Criteria** | **Operational Definition** |
| --- | --- |
| **Poor Feeding** |  |
| Poor Feeding = 0 | Feeding occurs smoothly, takes less than 20 minutes |
| Poor Feeding = 2 | Feeding takes more than 20 minutes and any one or more of the following: Excessive sucking prior to feeding but infrequent sucking during feeding; Takes a small amount of formula/breast milk or loses formula/breast milk out sides of mouth; Uncoordinated suck-swallow mechanism; Continuously gulps formula/breast milk but stops frequently to breathe, burp, or spit up; Places tongue above or to the side of nipple |
| **Excessive Sucking** (present or absent) | Four or more times in 3 to 4 hour assessment period, infant displays increased rooting (turns head to one side in search of food) while displaying rapid swiping movements with the hand across the mouth in an attempt to suck on fist, hands, or pacifier. May occur prior to or after feeding |
| **Vomiting** |  |
| Vomiting (or regurgitation) = 0 | No vomit or regurgitation associated with burping |
| Vomiting (or regurgitation) = 2 | Vomits whole feeding or vomits 2 or more times during feed but not associated with burping or large amounts during burping |
| **Projectile Vomiting** (present or absent) | Forceful ejection of stomach contents from mouth during or immediately after feeding |
| **Loose Stools** |  |
| Loose Stools = 0 | Normal stool |
| Loose Stools = 2 | Stool is half liquid/half solid – may or may not leave water ring in diaper |
| **Watery Stools** (present or absent) | Soft mushy, liquid or had stool that is accompanied by a water ring on the diaper |



| **Criteria** | **Operational Definition** |
| --- | --- |
| **Failure to Thrive** | Current weight divided by Birth Weight = \_\_\_%. Record birth weight in score sheet box at admission and then in the score sheet box once a day |
| Failure to Thrive = 0 | Current weight is 91% to 100% or more of birth weight |
| Failure to Thrive = 2 | Current weight is 90% of birth weight or less |
| **Excessive Irritability** |  |
| Excessive Irritability = 0 | Not sensitive to sound, light, or touch. Can achieve calm or relaxed state by self. Able to be consoled by caretaker |
| Excessive Irritability = 1 | Consoling calms infant in 5 minutes or less. |
| Excessive Irritability = 2 | Consoling calms infant in 6-15 minutes. Sensitive or aversive to sound, light, or touch. Cannot achieve calm or relaxed state by self. |
| Excessive Irritability = 3 | Consoling takes 15 or more minutes or is unsuccessful. Sensitive or aversive to sound, light, or touch. Cannot achieve calm or relaxed state by self. |

**Com**A picture containing graphical user interface

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|  |  |  |  |
| --- | --- | --- | --- |
| **Drug** | **Immediate Release** | **Sustained Release** | **Maintenance** |
| Buprenorphine | — | — | ✓ |
| Codeine | ✓ | — | — |
| Dihydrocodeine | ✓ | — | — |
| Fentanyl | ✓ | ✓ |  |
| Hydrocodone | ✓ | — | — |
| Hydromorphone | ✓ | ✓ | — |
| Levorphanol | ✓ | — | — |
| Meperidine | ✓ | — | — |
| Methadone | — | — | ✓ |
| Morphine | ✓ | ✓ | — |
| Oxycodone | ✓ | ✓ | — |
| Oxymorphone | ✓ | ✓ | — |
| Tramadol | ✓ | — | — |

|  |  |
| --- | --- |
| 3. | Common Immediate-Release, Sustained-Release, and Maintenance Opioids. Adapted from SW Patrick, WD Barfield, BB Poindexter, Committee on Fetus and Newborn, & Committee on Substance Use and Prevention. 2020. Neonatal Opioid Withdrawal Syndrome. *Pediatrics*, 146(5). |

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| --- | --- | --- | --- | --- | --- |
|  | | **Signs of NOWS 4** | | | |
| **Central Nervous System Irritability** | | | | | |
|  | High-pitched, continuous crying | |  |  | Increased muscle tone |
|  | Decreased sleep | |  |  | Hyperactive Moro reflex |
|  | Tremors | |  |  | Seizures |
| **Gastrointestinal Dysfunction** | | | | | |
|  | Feeding difficulties | |  |  | Loose or watery stools |
|  | Vomiting | |  |  |  |
| **Autonomic Nervous System Activation** | | | | | |
|  | Sweating | |  |  | Increased respiratory rate |
|  | Fever | |  |  | Nasal stuffiness and flaring |
|  | Frequent yawning and sneezing | |  |  |  |

|  |  |
| --- | --- |
| 4. | Signs of NOWS. Adapted from SW Patrick, WD Barfield, BB Poindexter, Committee on Fetus and Newborn, & Committee on Substance Use and Prevention. 2020. Neonatal Opioid Withdrawal Syndrome. *Pediatrics*, 146(5). |

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|  |  |
| --- | --- |
|  | **Discharge Checklist for Infants with Opioid Exposure 5** |
|  | No significant clinical signs of withdrawal for 24–48 h |
|  | Parent education about NOWS and routine newborn care, emphasizing safe sleep |
|  | Pediatrician or PCP follow-up visit scheduled within 48 h of discharge |
|  | Early intervention services referral |
|  | Home-nurse visitation referral |
|  | Hepatitis C testing follow-up, including referral to pediatric infectious disease when appropriate |
|  | Plan of safe care, coordinating with child welfare as appropriate |
|  | Developmental-behavioral pediatrician referral as appropriate |

|  |  |
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| 5. | Discharge Checklist for Infants with Opioid Exposure. Adapted from SW Patrick, WD Barfield, BB Poindexter, Committee on Fetus and Newborn, & Committee on Substance Use and Prevention. 2020. Neonatal Opioid Withdrawal Syndrome. *Pediatrics*, 146(5). |

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**Screening** **for Substance Use**

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| --- | --- | --- | --- |
| **4 Ps 6, 7** | | **Yes** | **No** |
| **Parents:** | Did any of your parents have a problem with alcohol or other drug use? |  |  |
| **Partner:** | Does your partner have a problem with alcohol or drug use? |  |  |
| **Past:** | In the past, have you had difficulties in your life because of alcohol or other drugs, including prescription medications? |  |  |
| **Present:** | In the past month, did you drink any alcohol or use any other drugs? |  |  |
| Scoring: Any “yes” answer indicates that additional assessment is needed. | | | |

|  |  |
| --- | --- |
| 6. | Screening for Substance Use. Adapted from SW Patrick, WD Barfield, BB Poindexter, Committee on Fetus and Newborn, & Committee on Substance Use and Prevention. 2020. Neonatal Opioid Withdrawal Syndrome. *Pediatrics*, 146(5). |
| 7. | Ewing H. A practical guide to intervention in health and social services with pregnant and postpartum addicts and alcoholics: Theoretical framework, brief screening tool, key interview questions, and strategies for referral to recovery resources. Martinez, CA: *The Born Free Project*, Contra Costa County Department of Health Services; 1990. |

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**Screening for Substance Use**

|  |  |  |  |
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| **CRAFFT Substance Abuse Screen for Adolescents and Young Adults (≤ 26 y/o) 6, 8** | | **Yes** | **No** |
| **C:** | Have you ever ridden in a car driven by someone (including yourself) who was high or had been using alcohol or drugs? |  |  |
| **R:** | Do you ever use alcohol or drugs to relax, feel better about yourself, or fit in? |  |  |
| **A:** | Do you ever use alcohol or drugs while you are by yourself or alone? |  |  |
| **F:** | Do you ever forget things you did while using alcohol or drugs? |  |  |
| **F:** | Do your family or friends ever tell you that you should cut down on your drinking or drug use? |  |  |
| **T:** | Have you ever gotten in trouble while you were using alcohol or drugs? |  |  |
| Scoring: Two or more “yes” answers indicate that additional assessment is needed. | | | |

|  |  |
| --- | --- |
| 6. | Screening for Substance Use. Adapted from SW Patrick, WD Barfield, BB Poindexter, Committee on Fetus and Newborn, & Committee on Substance Use and Prevention. 2020. Neonatal Opioid Withdrawal Syndrome. *Pediatrics*, 146(5). |
| 8. | Center for Adolescent Substance Abuse Research, Children's Hospital Boston. The CRAFFT screening interview. Boston (MA): CeSAR; 2009. Available at: <http://www.ceasar.org/CRAFFT/pdf/CRAFFT_English.pdf>. Copyright John R. Knight, MD, Boston Children’s Hospital, 2018. All rights reserved. For more information, contact [crafft@childrens.harvard.edu](mailto:crafft@childrens.harvard.edu). |

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**Screening for Substance Use**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **NIDA Quick Screen V1.0F 9** | | | | | | | | | | | | |
| **Name:** |  | | |  | | | **Date:** | |  | | |  |
|  |  | | |  | | |  | |  | | |  |
| **Interviewer:** | |  | | | |  | | | | | | |
|  | |  | | | |  | | | | | | |
| **Introduction (Please read to patient)** | | | | | | | | | | | | |
| *Hi, I’m \_\_\_\_\_\_\_\_\_\_, nice to meet you. If it’s okay with you, I’d like to ask you a few questions that will help me give you better medical care. The questions relate to your experience with alcohol, cigarettes, and other drugs. Some of the substances we’ll talk about are prescribed by a doctor (like pain medications). But I will only record those if you have taken them for reasons or in doses other than prescribed. I’ll also ask you about illicit or illegal drug use––but only to better diagnose and treat you.*  **Instructions**: For each substance, mark in the appropriate column. For example, if the patient has used cocaine monthly in the past year, put a mark in the “Monthly” column in the “illegal drug” row. | | | | | | | | | | | | |
| **NIDA *Quick Screen* Question:**  **In the past year, how often have you used the following?** | | | **Never** | | **Once or twice** | | | **Monthly** | | **Weekly** | **Daily or almost daily** | |
| **Alcohol: 4 or more drinks a day** | | |  | |  | | |  | |  |  | |
| **Tobacco Products** | | |  | |  | | |  | |  |  | |
| **Prescription Drugs for Non-Medical Reasons** | | |  | |  | | |  | |  |  | |
| **Illegal Drugs** | | |  | |  | | |  | |  |  | |

**Next Steps:**

* If the patient says “**Never**” for all drugs in Quick Screen, reinforce abstinence. **Screening is complete**.
* If the patient says “**Yes**” to one or more days of heavy drinking, *patient is an at-risk drinker*. Please see NIAAA website “[How to Help Patients Who Drink Too Much: A Clinical Approach](https://pubs.niaaa.nih.gov/publications/Practitioner/CliniciansGuide2005/clinicians_guide.htm),” for information to **Assess**, **Advise**, **Assist**, and **Arrange** help for at risk drinkers or patients with alcohol use disorders.
* If patient says “**Yes**” to use of tobacco: *Any* current tobacco use places a patient at risk. Advise *all tobacco users to quit*. For more information on smoking cessation, please see “[Helping Smokers Quit: A Guide for Clinicians](https://www.ahrq.gov/prevention/guidelines/index.html).”
* If the patient says “**Yes**” to **use of illegal drugs or prescription drugs for non-medical reasons**, proceed to **Question 1** of the NIDA-Modified ASSIST (Next page)

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| --- | --- | --- |
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|  |  |  |
| 9. | This guide is designed to assist clinicians serving adult patients in screening for drug use. The NIDA Quick Screen was adapted from the [single-question screen for drug use in primary care by Saitz et al](https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/225770). and the [National Institute on Alcohol Abuse and Alcoholism’s screening question on heavy drinking days](https://pubs.niaaa.nih.gov/publications/Practitioner/CliniciansGuide2005/clinicians_guide.htm). The NIDA-modified ASSIST was adapted from the [World Health Organization (WHO) Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)](https://www.who.int/publications/i/item/978924159938-2), Version 3.0, developed and published by WHO. | |

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| **Questions 1 – 8 of the NIDA-Modified ASSIST V2.0** | | | | | |
| **Instructions**: Patients may fill in the following form themselves, but screening personnel should offer to read the questions aloud in a private setting and complete the form for the patient. To preserve confidentiality, a protective sheet should be placed on top of the questionnaire so it will not be seen by other patients after it is completed but before it is filed in the medical record. | | | | | |
| **Question 1 of 8, NIDA-Modified ASSIST**  **1. In your *LIFETIME*, which of the following substances have you ever used?** | | | | | |
| *\* Note for clinicians: For prescription medications, please report nonmedical use only.* | | | | **Yes** | **No** |
| a. | **Cannabis** (marijuana, pot, grass, hash, etc.) | | |  |  |
| b. | **Cocaine** (coke, crack, etc.) | | |  |  |
| c. | **Prescription stimulants** (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.) | | |  |  |
| d. | **Methamphetamine** (speed, crystal meth, ice, etc.) | | |  |  |
| e. | **Inhalants** (nitrous oxide, glue, gas, paint thinner, etc.) | | |  |  |
| f. | **Sedatives or sleeping pills** (Valium, Serepax, Ativan, Xanax, Librium, Rohypnol, GHB, etc.) | | |  |  |
| g. | **Hallucinogens** (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.) | | |  |  |
| h. | **Street opioids** (heroin, opium, etc.) | | |  |  |
| i. | **Prescription opioids** (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.) | | |  |  |
|  |  | | |  |  |
| j. | **Other – specify**: |  |  |  |  |
|  |  | | |  |  |

**Next Steps:**

* Given the patient’s response to the Quick Screen, the patient *should not indicate* “**NO**” for all drugs in Question 1. If they do, remind them that their answers to the Quick Screen indicated they used an illegal or prescription drug for nonmedical reasons within the past year and then **repeat Question 1**. If the patient indicates that the drug used is not listed, please mark ‘**Yes’** next to ‘Other’ and continue to **Question 2** of the NIDA-Modified ASSIST (Next page)
* If the patient says “**Yes**” to any of the drugs, proceed to **Question 2** of the NIDA-Modified ASSIST (Next page).

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| **Question 2 of 8, NIDA-Modified ASSIST** | | | |  |  |  |  |  |
| **2.** | **In the past three months, how often have you used the substance you mentioned (first drug, second drug, etc.)?** | | | **Never** | **Once or twice** | **Monthly** | **Weekly** | **Daily or almost daily** |
| a. | | **Cannabis** (marijuana, pot, grass, hash, etc.) | | 0 | 2 | 3 | 4 | 6 |
| b. | | **Cocaine** (coke, crack, etc.) | | 0 | 2 | 3 | 4 | 6 |
| c. | | **Prescription stimulants** (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.) | | 0 | 2 | 3 | 4 | 6 |
| d. | | **Methamphetamine** (speed, crystal meth, ice, etc.) | | 0 | 2 | 3 | 4 | 6 |
| e. | | **Inhalants** (nitrous oxide, glue, gas, paint thinner, etc.) | | 0 | 2 | 3 | 4 | 6 |
| f. | | **Sedatives or sleeping pills** (Valium, Serepax, Ativan, Xanax, Librium, Rohypnol, GHB, etc.) | | 0 | 2 | 3 | 4 | 6 |
| g. | | **Hallucinogens** (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.) | | 0 | 2 | 3 | 4 | 6 |
| h. | | **Street opioids** (heroin, opium, etc.) | | 0 | 2 | 3 | 4 | 6 |
| i. | | **Prescription opioids** (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.) | | 0 | 2 | 3 | 4 | 6 |
|  | |  | | 0 | 2 | 3 | 4 | 6 |
| j. | | **Other – specify**: |  |
|  | |  | |

**Next Steps:**

* For patients who report “**Never**” having used any drug in the past 3 months: **Go to Questions 6-8**.
* For any recent **illicit or nonmedical prescription drug use**, go to **Question 3** (Next page).

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| **Question 3 of 8, NIDA-Modified ASSIST** | | | |  |  |  |  |  |
| **3.** | **In the past three months, how often have you had a strong desire to use (first drug, second drug, etc.)?** | | | **Never** | **Once or twice** | **Monthly** | **Weekly** | **Daily or almost daily** |
| a. | | **Cannabis** (marijuana, pot, grass, hash, etc.) | | 0 | 3 | 4 | 5 | 6 |
| b. | | **Cocaine** (coke, crack, etc.) | | 0 | 3 | 4 | 5 | 6 |
| c. | | **Prescription stimulants** (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.) | | 0 | 3 | 4 | 5 | 6 |
| d. | | **Methamphetamine** (speed, crystal meth, ice, etc.) | | 0 | 3 | 4 | 5 | 6 |
| e. | | **Inhalants** (nitrous oxide, glue, gas, paint thinner, etc.) | | 0 | 3 | 4 | 5 | 6 |
| f. | | **Sedatives or sleeping pills** (Valium, Serepax, Ativan, Xanax, Librium, Rohypnol, GHB, etc.) | | 0 | 3 | 4 | 5 | 6 |
| g. | | **Hallucinogens** (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.) | | 0 | 3 | 4 | 5 | 6 |
| h. | | **Street opioids** (heroin, opium, etc.) | | 0 | 3 | 4 | 5 | 6 |
| i. | | **Prescription opioids** (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.) | | 0 | 3 | 4 | 5 | 6 |
|  | |  | | 0 | 3 | 4 | 5 | 6 |
| j. | | **Other – specify**: |  |
|  | |  | |

**Next Steps:**

* Proceed to **Question 4** (Next page).

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| **Question 4 of 8, NIDA-Modified ASSIST** | | | |  |  |  |  |  |
| **4.** | **During the past three months, how often has your use of (first drug, second drug, etc.) led to health, social, legal, or financial problems?** | | | **Never** | **Once or twice** | **Monthly** | **Weekly** | **Daily or almost daily** |
| a. | | **Cannabis** (marijuana, pot, grass, hash, etc.) | | 0 | 4 | 5 | 6 | 7 |
| b. | | **Cocaine** (coke, crack, etc.) | | 0 | 4 | 5 | 6 | 7 |
| c. | | **Prescription stimulants** (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.) | | 0 | 4 | 5 | 6 | 7 |
| d. | | **Methamphetamine** (speed, crystal meth, ice, etc.) | | 0 | 4 | 5 | 6 | 7 |
| e. | | **Inhalants** (nitrous oxide, glue, gas, paint thinner, etc.) | | 0 | 4 | 5 | 6 | 7 |
| f. | | **Sedatives or sleeping pills** (Valium, Serepax, Ativan, Xanax, Librium, Rohypnol, GHB, etc.) | | 0 | 4 | 5 | 6 | 7 |
| g. | | **Hallucinogens** (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.) | | 0 | 4 | 5 | 6 | 7 |
| h. | | **Street opioids** (heroin, opium, etc.) | | 0 | 4 | 5 | 6 | 7 |
| i. | | **Prescription opioids** (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.) | | 0 | 4 | 5 | 6 | 7 |
|  | |  | | 0 | 4 | 5 | 6 | 7 |
| j. | | **Other – specify**: |  |
|  | |  | |

**Next Steps:**

* Proceed to **Question 5** (Next page).

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| **Question 5 of 8, NIDA-Modified ASSIST** | | | |  |  |  |  |  |
| **5.** | **During the past three months, how often have you failed to do what was normally expected of you because of your use of (first drug, second drug, etc.)?** | | | **Never** | **Once or twice** | **Monthly** | **Weekly** | **Daily or almost daily** |
| a. | | **Cannabis** (marijuana, pot, grass, hash, etc.) | | 0 | 5 | 6 | 7 | 8 |
| b. | | **Cocaine** (coke, crack, etc.) | | 0 | 5 | 6 | 7 | 8 |
| c. | | **Prescription stimulants** (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.) | | 0 | 5 | 6 | 7 | 8 |
| d. | | **Methamphetamine** (speed, crystal meth, ice, etc.) | | 0 | 5 | 6 | 7 | 8 |
| e. | | **Inhalants** (nitrous oxide, glue, gas, paint thinner, etc.) | | 0 | 5 | 6 | 7 | 8 |
| f. | | **Sedatives or sleeping pills** (Valium, Serepax, Ativan, Xanax, Librium, Rohypnol, GHB, etc.) | | 0 | 5 | 6 | 7 | 8 |
| g. | | **Hallucinogens** (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.) | | 0 | 5 | 6 | 7 | 8 |
| h. | | **Street opioids** (heroin, opium, etc.) | | 0 | 5 | 6 | 7 | 8 |
| i. | | **Prescription opioids** (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.) | | 0 | 5 | 6 | 7 | 8 |
|  | |  | | 0 | 5 | 6 | 7 | 8 |
| j. | | **Other – specify**: |  |
|  | |  | |

**Next Steps:**

* Proceed to **Question 6** (Next page).

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| **Question 6 of 8, NIDA-Modified ASSIST** | | | |  |  |  |
| **6.** | **Has a friend or relative or anyone else ever expressed concern about your use of (first drug, second drug, etc.)?** | | | **No,**  **never** | **Yes, but not in the past 3 months** | **Yes, in the past 3 months** |
| a. | | **Cannabis** (marijuana, pot, grass, hash, etc.) | | 0 | 3 | 6 |
| b. | | **Cocaine** (coke, crack, etc.) | | 0 | 3 | 6 |
| c. | | **Prescription stimulants** (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.) | | 0 | 3 | 6 |
| d. | | **Methamphetamine** (speed, crystal meth, ice, etc.) | | 0 | 3 | 6 |
| e. | | **Inhalants** (nitrous oxide, glue, gas, paint thinner, etc.) | | 0 | 3 | 6 |
| f. | | **Sedatives or sleeping pills** (Valium, Serepax, Ativan, Xanax, Librium, Rohypnol, GHB, etc.) | | 0 | 3 | 6 |
| g. | | **Hallucinogens** (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.) | | 0 | 3 | 6 |
| h. | | **Street opioids** (heroin, opium, etc.) | | 0 | 3 | 6 |
| i. | | **Prescription opioids** (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.) | | 0 | 3 | 6 |
|  | |  | | 0 | 3 | 6 |
| j. | | **Other – specify**: |  |
|  | |  | |

**Next Steps:**

* Proceed to **Question 7** (Next page).

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| **Question 7 of 8, NIDA-Modified ASSIST** | | | | |  |  |  |
| **7.** | **Have you ever tried and failed to control, cut down, or stop using (first drug, second drug, etc.)?** | | | | **No, never** | **Yes, but not in the past 3 months** | **Yes, in the past 3 months** |
| a. | | **Cannabis** (marijuana, pot, grass, hash, etc.) | | 0 | | 3 | 6 |
| b. | | **Cocaine** (coke, crack, etc.) | | 0 | | 3 | 6 |
| c. | | **Prescription stimulants** (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.) | | 0 | | 3 | 6 |
| d. | | **Methamphetamine** (speed, crystal meth, ice, etc.) | | 0 | | 3 | 6 |
| e. | | **Inhalants** (nitrous oxide, glue, gas, paint thinner, etc.) | | 0 | | 3 | 6 |
| f. | | **Sedatives or sleeping pills** (Valium, Serepax, Ativan, Xanax, Librium, Rohypnol, GHB, etc.) | | 0 | | 3 | 6 |
| g. | | **Hallucinogens** (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.) | | 0 | | 3 | 6 |
| h. | | **Street opioids** (heroin, opium, etc.) | | 0 | | 3 | 6 |
| i. | | **Prescription opioids** (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.) | | 0 | | 3 | 6 |
|  | |  | | 0 | | 3 | 6 |
| j. | | **Other – specify**: |  |
|  | |  | |

**Next Steps:**

* Ask **Question 8** if the patient reports using any drug that might be injected, including those that might be listed in the other category (e.g., steroids). (Next page).

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| --- | --- | --- | --- | --- |
| **Question 8 of 8, NIDA-Modified ASSIST**  \* *Ask only if the patient reports using any drug that might be injected, including those that might be listed in the other category (e.g., steroids).* | | **No, never** | **Yes, but not in the past 3 months** | **Yes, in the past 3 months** |
| 8. | Have you ever used any drug by injection (NONMEDICAL USE ONLY)? |  |  |  |

**Next Steps:**

* Recommend to patients reporting any prior or current intravenous drug use that they get tested for HIV and Hepatitis B/C.
* If patient reports using a drug by injection in the past three months, ask about their pattern of injecting during this period to determine their risk levels and the best course of intervention.
* If patient responds that they inject once weekly or less OR fewer than 3 days in a row, provide a brief intervention including a discussion of the risks associated with injecting.
* If patient responds that they inject more than once per week OR 3 or more days in a row, refer for further assessment.
* For all patients, proceed to ***Tally Sheet for Scoring the Full NIDA-Modified ASSIST*** (Next page).

**Note**: Recommend to patients reporting any current use of alcohol or illicit drugs that they get tested for HIV and other sexually transmitted diseases.

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| --- | --- | --- | --- | --- | --- | --- |
| **Tally Sheet for Scoring the Full NIDA-Modified ASSIST:** | | | | | | |
| **Instructions**: For each substance (labeled a–j), add up the scores received for **Questions 2-7** above. This is the Substance Involvement (SI) score. Do not include the results from either Question 1 or Question 8 (above) in your SI scores. | | | | | | |
| **Substance Involvement (SI) Score** | | | | **Total (SI SCORE)** | | |
|  |  | | |  |  |  |
| a. | **Cannabis** (marijuana, pot, grass, hash, etc.) | | |  |  |  |
|  |  | | |  |  |  |
|  |  | | |  |  |  |
| b. | **Cocaine** (coke, crack, etc.) | | |  |  |  |
|  |  | | |  |  |  |
|  |  | | |  |  |  |
| c. | **Prescription stimulants** (Ritalin, Concerta, Dexedrine, Adderall, diet pills, etc.) | | |  |  |  |
|  |  | | |  |  |  |
|  |  | | |  |  |  |
| d. | **Methamphetamine** (speed, crystal meth, ice, etc.) | | |  |  |  |
|  |  | | |  |  |  |
|  |  | | |  |  |  |
| e. | **Inhalants** (nitrous oxide, glue, gas, paint thinner, etc.) | | |  |  |  |
|  |  | | |  |  |  |
|  |  | | |  |  |  |
| f. | **Sedatives or sleeping pills** (Valium, Serepax, Ativan, Xanax, Librium, Rohypnol, GHB, etc.) | | |  |  |  |
|  |  | | |  |  |  |
|  |  | | |  |  |  |
| g. | **Hallucinogens** (LSD, acid, mushrooms, PCP, Special K, ecstasy, etc.) | | |  |  |  |
|  |  | | |  |  |  |
|  |  | | |  |  |  |
| h. | **Street opioids** (heroin, opium, etc.) | | |  |  |  |
|  |  | | |  |  |  |
|  |  | | |  |  |  |
| i. | **Prescription opioids** (fentanyl, oxycodone [OxyContin, Percocet], hydrocodone [Vicodin], methadone, buprenorphine, etc.) | | |  |  |  |
|  |  | | |  |  |  |
|  |  | | |  |  |  |
| j. | **Other – specify**: |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  | | |  |  |  |
| **TOTAL SI (Sum of substance-specific SI scores):** | | | |  |  |  |
|  |  | | |  |  |  |

**Use the resultant Total Substance Involvement (SI) Score**

**to identify the patient's risk level using the table below.**

|  |  |
| --- | --- |
| Level of risk associated with different Substance Involvement Score ranges for illicit or nonmedical prescription drug use | |
| **0 – 3** | **Lower Risk** |
| **4 – 26** | **Moderate Risk** |
| **27+** | **High Risk** |

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**Stimulant Use: Maternal, Perinatal, Fetal, & Childhood Outcomes 10**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Substance** | **Maternal effects** | **Perinatal effects** | **Structural fetal anomalies** | **Childhood neurodevelopmental effects** |
| Cocaine | Cardiovascular complications including:   * Hypertension * Myocardial ischemia and infarction * Cardiotoxicity   Infectious disease (HIV, Hepatitis B and C)  Renal failure  Hepatic rupture  Thrombocytopenia  Cerebral ischemia and infarction  Maternal death | Preterm birth  Low birth weight  Small for gestational age infant  Shorter gestational age at delivery  Reduced birth weight  Perinatal infection (HIV, hepatitis, syphilis)  Placental abruption | Genitourinary defects  Limb reduction  Intestinal atresia | Some evidence of adverse behavioral, growth, cognition and learning outcomes, which may be attributable to other social and other perinatal factors. |
| Amphetamine/ methamphetamine (illicit) | Cardiovascular complications including:   * Hypertension * Myocardial ischemia and infarction * Cardiomyopathy   Infectious disease (HIV, Hepatitis B and C)  Dental disease  Adolescent pregnancy | Intrauterine growth restriction  Preterm birth  Fetal death  Earlier gestational age  Lower birthweight  Smaller head circumference | Cleft Palate | Increased anxiety and depression & attention problems at 3 and 5 years old  Poorer cognitive outcomes at 7.5 years old  Frontal and striatal brain changes at age 7–15 years old with differential effects by sex |
| Ecstasy (MDMA) | Limited information  Work and social problems | Limited | Cardiovascular  Musculoskeletal (clubbed foot)  Gastroschisis | Poor motor quality and lower milestone attainment at 4 and 12 months of age  Fine and gross motor delays at 24 months of age |
| Ephedra | Limited information  Cardiovascular complications  Death  Among those with co-existing psychiatric conditions, psychosis, severe depression, mania, suicidal ideation  \*\* Based on data from non-pregnant populations | Limited | Limited | Limited |
| Synthetic Cathinone (“Bath salts”) | None available | None available | None available | None available |

|  |  |
| --- | --- |
| 10. | Maternal, perinatal, fetal, and childhood outcomes associated with stimulant use. Adapted from MC Smid, TD Metz, & AJ Gordon. 2019. Stimulant Use in Pregnancy: An Under-Recognized Epidemic Among Pregnant Women. *Clinical Obstetrics and Gynecology*, 62(1): 168-184. |