Perinatal substance use: neonatal

Clinical Guideline Presentation v3.0

45 minutes

Towards CPD Hours

Clinical Excellence Queensland

Queensland Government

References:

Queensland Clinical Guideline: Perinatal substance use: neonatal is the primary reference for this package.

Recommended citation:

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Disclaimer:

This presentation is an implementation tool and should be used in conjunction with the published guideline. This information does not supersede or replace the guideline. Consult the guideline for further information and references.

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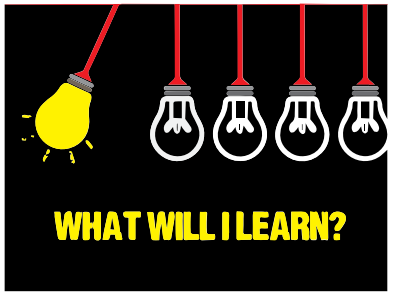
Objectives



- Identify common substances associated with neonatal abstinence syndrome (NAS)
- Identify signs of NAS
- Discuss methods of assessment
- Discuss supportive care and pharmacological treatments for NAS
- Discuss considerations for discharge and follow-up following diagnosis of NAS

Abbreviations

Abbreviation	Time to onset after birth
NAS	neonatal abstinence syndrome
SNRI	Serotonin and norepinephrine reuptake inhibitors
SSRI	Selective serotonin reuptake inhibitors
TCA	Tricyclic antidepressants

Neonatal abstinence syndrome (NAS)

- Umbrella term used to describe the syndrome of withdrawal in babies exposed to opioids and other substances in-utero
- Includes
  - NOWS: neonatal opioid withdrawal syndrome
  - Poor neonatal adaption syndrome: withdrawal from SSRI, SNRI and other antidepressants

Substances associated with NAS

Class	Example substance
Opioids	Heroin, methadone, buprenorphine
CNS depressants	Benzodiazepines, alcohol, barbiturates
CNS stimulants	SSRI, SNRI, TCA, amphetamines, methamphetamines, cocaine
Others	Nicotine, cannabinoids

Resuscitation

- Usual neonatal resuscitation as required
- If in-utero exposure to opioids, do not administer naloxone
  - May precipitate severe rapid onset of seizures

Monitoring for NAS

If in-utero substance exposure is:

- **opioid, polysubstance or unknown**
  - Commence formal assessment for signs of NAS within 2 hours of birth

- **non-opioid**
  - Routine newborn observations
  - Commence formal assessment if baby shows signs of NAS

Formal assessment=Finnegan Neonatal Abstinence Score or Eat-Sleep-Console

Onset of withdrawal

Substance	Time to onset after birth
Methadone	24–72 hours
Heroin	Within 24 hours up to 5–7 days
SSRI	First 48 hours
Cocaine	24–48 hours
Amphetamines	24 hours
Cannabinoids	Usually no clinical signs

Clinical signs of NAS

- Suspect NAS if baby:
  - Is unsettled
  - Has sleeping problems
  - Is irritable
  - Has a high-pitched cry
  - Is jittery or has tremors
  - Feeds poorly
  - Has vomiting/diarrhoea

Clinical assessment

- Review maternal history of substance use
- Review risk factors for neonatal sepsis
- Conduct a full clinical examination
- Consider concurrent illness
- Investigate as required to exclude infection or metabolic disturbances
- Treat identified illness

Differential diagnosis

- Infection
- Hypoglycaemia
- Hypocalcaemia
- Metabolic disorders
- Brain injury

Assessment tool: Finnegan

- Scores 21 signs across three systems
  - CNS, gastrointestinal, vasomotor/respiratory
- Score 4–6 hourly 30–60 minutes after feeds
- Assign one score for each sign
- Reflects behaviour since last assessment
- Do not disturb baby to assess signs
- Make allowances if baby preterm

Finnegan Score

SYSTEM	SIGN	SCORE								
Central nervous system disturbances	Excessive high pitched cry	2								
	Continuous high pitched cry	3								
	Sleeps < I hour after feeding	3								
	Sleeps < 2 hours after feeding	2								
	Sleeps < 3 hours after feeding	1								
	Hyperactive Moro reflex	2								
	Markedly hyperactive Moro reflex	3								
	Mild tremors disturbed	1								
	Moderate–severe tremors disturbed	2								
	Mild tremors undisturbed	3								
	Moderate–severe tremors undisturbed	4								
	Increased muscle tone	2								
	Excoriation	1								
	Myoclonic jerks	3								
	Generalised convulsions	5								
Gastrointestinal disturbances	Excessive sucking	1								
	Poor feeding	2								
	Regurgitation	2								
	Projectile vomiting	3								
	Loose stools	2								
	Watery stools	3								
Respiratory/ vasomotor disturbances	Sweating	1								
	Fever 37.3 to 38.3 °C	1								
	Fever 38.4 °C and above	2								
	Frequent yawning > 3–4 in half hour	1								
	Mottling	1								
	Nasal stuffiness	1								
	Sneezing > 3–4 in half hour	2								
	Nasal flaring	1								
	Respiratory rate > 60/minute	1								
	Respiratory rate > 60/minute and retractions	2								
	TOTAL SCORE									
	SCORER'S INITIALS									

Finnegan scoring

2 consecutive scores 12 or more

OR

3 consecutive scores average 8 or more

Admit to neonatal unit
and
commence pharmacotherapy

Assessment tool: Eat-Sleep-Console

- Ask:
  - Does the baby have poor eating?
  - Did the baby sleep less than 1 hour after feeding?
  - Is the baby unable to be consoled within 10 minutes?
- Assess every 3–4 hours after feeds
- Reflects behaviour since last assessment

Eat-Sleep-Console

- If any of three questions answered “YES” (and is attributed to NAS)
  - Team huddle: review and optimise supportive care with parent/carer
- If despite optimisation any question continues to be answered “YES”
  - Full healthcare review
  - Consider initiation of pharmacotherapy and transfer to neonatal unit

Eat-Sleep-Console

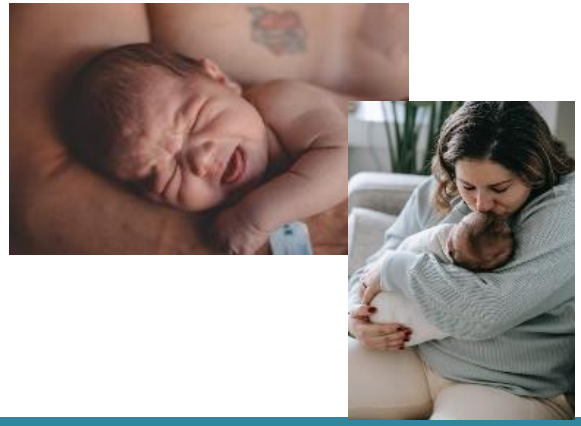
Date Time												
ESC ASSESSMENT (due to NAS)												
Poor eating? (Y or N)												
Sleeping less than 1 hour? (Y or N)												
Unable to console within 10 minutes? (Y or N)												
Consoling support needed (1, 2 or 3) 1. Able to console on own 2. Able to console with caregiver support within 10 minutes 3. Unable to console with caregiver support within 10 minutes												
CARE PLAN												
Recommend parent/carer and staff huddle (Y or N)												
Recommend full team review (Y or N)												
Management decision 1. Optimise supportive care 2. Initiate medication treatment 3. Continue medication treatment 4. Other												
Presence of caregiver 0. No caregiver present 1. Less than 1 hour 2. 1–2 hours 3. 2–3 hours 4. More than 3 hours												
SUPPORTIVE CARE check as increase (I) or reinforce (R)												
Rooming in												
Caregiver presence												
Holding by caregiver												
Safe swaddling												
Optimal feeding at early hungry cues												
Quiet low light environment												
Non-nutritive sucking/pacifier												
Limiting visitors												
Clustering care												
Safe sleep/fall prevention												
Caregiver self-care and rest												

Management approach

- Use non-pharmacological management (supportive care) as first line treatment
  - Continue with supportive care if medication subsequently required
- Use pharmacological treatment if signs of NAS not adequately controlled

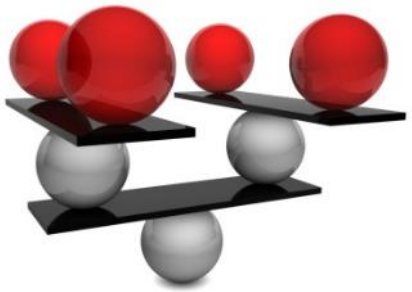
Supportive care

- Partner with parent/carer for supportive care strategies
- Support rooming-in, skin-to-skin
- Cluster care, avoid over-stimulation
- Decrease environmental stimuli (e.g. light and sound)
- Early response to baby cues
- Minimise hunger



Feeding

- Support a woman's choice of feeding method (breast or formula)
- Encourage/support breastfeeding where possible
- Develop individual feeding plan
  - If substance use continues, identify risk minimisation strategies



balance risk v benefit

Breast milk/feeding importance

- Analgesic for baby
- Soothes agitated baby
- Helps meet higher caloric requirements
- Helps reduce stress response in mother

Pharmacological therapy

- Goals of pharmacological therapy
  - Allow proper nutrition and development
  - Foster parental/carer bonding
  - Relieve discomfort
  - Reduce risk of seizures

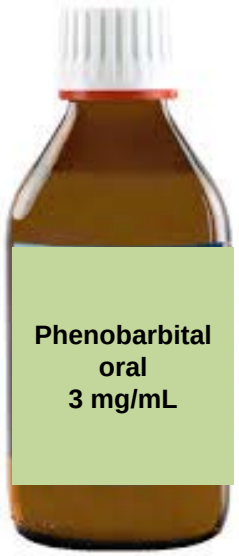
Morphine

- Opiate of choice for opioid NAS
- Less likely to require treatment with a second line agent
- Duration of treatment may be less

NeoMedQ: morphine neonatal medicine monograph

Phenobarbital

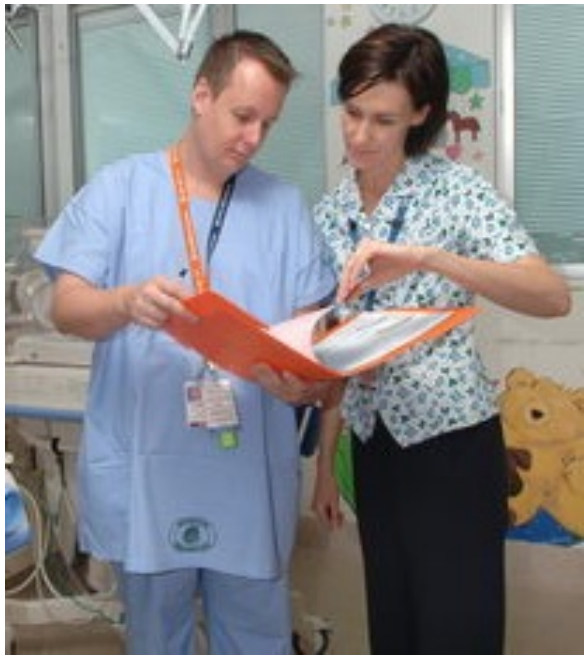
- Use as an adjunct to morphine when signs of NAS not controlled
- Initial treatment where substance exposure is :
  - Unknown or polysubstance
  - Alcohol (intoxication at birth)
  - Sedatives (benzodiazepines)
  - SSRIs or other anti-depressant



NeoMedQ: phenobarbital neonatal medicine monograph

Neonatal review

- Early and daily consultation
- When showing signs of NAS
- If commencing morphine or phenobarbitone
- When receiving maximum dose of medication
- Exclusion of other causes not possible



Discharge planning

- Child protection/safety assessment as required
- All routine parent/carer education
- Engage with members of multidisciplinary team – including primary and local service providers
- Home medication requirements (if indicated)

Discharge criteria

- Baby is clinically well
- Weight gain
- Feeding well
- Demonstrating neurobehavioural recovery (e.g. responds to social stimuli, can be consoled)
- Home environment considered safe
- Education/information provid parent/carer
- Follow-up plan initiated

Delay discharge if:

- Discharge criteria not met
- Weight loss more than 10% of birth weight
- Ongoing signs of NAS
- Pharmacological therapy commenced

Anticipated timing of discharge

- Opioid exposure
  - Immediate release opioids 3 days
  - Buprenorphine and sustained release opioids 4–7 days
  - Methadone 5–7 days
- Non-opioid
  - Discourage early discharge
  - 24–48 hours

Follow-up

- Recommend regular follow-up
  - If required medication – one week after discharge
  - If home medication – weekly until ceased
  - Child Health Services
  - Early intervention programs
  - Ophthalmology
  - Infant mental health