Opioid Safety Toolkit:
Emerging Treatment Options for Neonatal Abstinence Syndrome (NAS)

This infographic compares the standard of care with emerging models for treating babies born with Neonatal Abstinence Syndrome (NAS). You can use this infographic in presentations or other materials to build awareness for new models of care that are showing very promising results – both in terms of health outcomes for babies and in terms of cost-effectiveness.

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This infographic is part of the Opioid Safety Toolkit. Explore the full toolkit at chcf.org/opioidsafetytoolkit.

Emerging Treatment Options for Neonatal Abstinence Syndrome

The incidence of Neonatal Abstinence Syndrome (NAS) – withdrawal symptoms experienced by some newborns exposed to opioids while in utero – has increased dramatically in recent years, with some states experiencing incidence rates of 15 out of every 1,000 births. Health care providers are advancing novel models of care that are showing very promising results.

Key Attributes of Current and Emerging Models of Care for NAS

Current Standard of Care

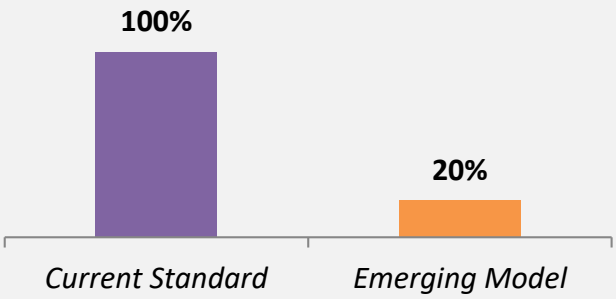
- Transfer infant to a specialized NICU
- Assess using Finnegan Neonatal Abstinence Scoring System (FNASS), and treat according to the score
- Round-the-clock dosing with scheduled tapers, typically over 30 days

Emerging Models of Care

- Keep infant with mother
- Assess infant ability to Eat, Sleep and Be Consoled (ESC scale)
- Coach mother on how to soothe infant and breastfeed
- Use morphine as needed instead of on a schedule

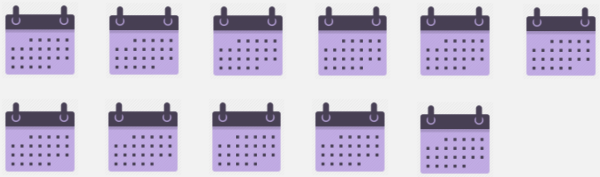
Outcomes from Yale New Haven Children's Hospital's Initiative to Improve the Quality of Care for Infants with Neonatal Abstinence Syndrome (n= 287)

Percent of babies with NAS admitted directly to the NICU



Average Length of Stay in NICU

Current Standard (22 days)



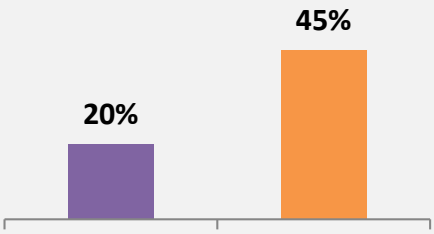
Emerging Model (6 days)

Methadone-exposed infants treated with morphine

Current Standard ***(98%)***

Emerging Model ***(14%)***

Percent of infants who took majority of feeds from breast



Average cost of hospitalization

Current Standard ***($44,824)***

Emerging Model ***($10,289)***

Source: Grossman, MR, Berkwitt AK, Osborn RR, et al. An Initiative to Improve the Quality of Care of Infants with Neonatal Abstinence Syndrome. *Pediatrics.* 2017; 139(6):e20163360.

Comparison of Approaches to Treating Neonatal Abstinence Syndrome

Category	Current Standard	Emerging Models of Care *(based on Yale New Haven Children's Hospital Model)*
Site of Care	• NICU (high stimulation environment)	• Infants are cared for outside of NICU • Allow mother to room-in • Low-stimulation environment (dimmed lights, reduced noise)
Assessment	• Finnegan Scores – "Treat the Score"	• Functional assessment based on infant's ability to eat, sleep, and be consoled – "Treat the Baby"
Treatment Approach & Use of Morphine	• Initiate morphine around the clock and wean slowly, typically over 2-4 weeks	• Morphine is neither started nor increased if infant able to: (1) Breastfeed effectively or take >= 1oz from bottle (2) Sleep undisturbed for >= 1 hour, and (3) Be consoled within 10 minutes, if crying • Morphine given if non-pharmacological interventions unsuccessful • Morphine may be given as single dose (prn); if needed around the clock, tapered by 10% as often as three times a day
Role of Mother/ Parents	• Visit infant	• Care for infant: parents considered "treatment" for infant – expected to be present as much as possible and play an active and continuous role in baby's care • Breastfeed if not contra-indicated
Role of Clinical Staff	• Care for infant	• Provide prenatal counseling for parents • Care for mother and parents: coach them on caring for infant

How Health Plans Can Support Better Care for Infants with Neonatal Abstinence Syndrome

Understand Current State

- Assess magnitude of issue: number of NAS infants and associated costs to treat
- Survey network hospitals on current practices for NAS treatment

Align Policies and Procedures

- Assess reimbursement policies and align if necessary to support emerging models *(e.g. is "rooming-in" a covered benefit?)*

Support Initiatives to Implement New Treatment Approaches

- Provide trainings and technical assistance to clinical staff
- Provide grants and/or P4P to support emerging models
- Provide data to support measurement of outcomes

For more information:

- Addressing Opioid Exposure During Pregnancy – Best Practices for Women and Newborns, CHCF Event, 10/01/18 : https://www.chcf.org/event/addressing-opioid-exposure-pregnancy-best-practices-women-newborns/
- Incidence of NAS by CA county: https://www.urban.org/research/publication/neonatal-abstinence-syndrome-and-maternal-access-treatment-opioid-use-disorder-california-counties