

TEAM LEADERS

Lawrence Bennett, MD – Neonatologist
Lauren Astrug, MD – Neonatologist

TEAM MEMBERS

Anne Cunningham, MSN, RNC-NIC, NICU Manager
Lisa Festle, MSN, RNC-NIC, APRN/CNS
Lindsey Young, MSN, Educator
Margaret Naber, MSN, APRN/NNP-BC
Pamela Nicoski, PharmD BCPS



Breastfeeding

2019 – 33% discharged on BM + formula;
0 exclusively Bf/BM
2020 – 100% discharged on formula

Pharm/Non-Pharm Treatments

2019 – 1 pt received 3 PRN doses of morphine
2020 – 1 pt received 1 dose of morphine

Coordinated Discharge Plans

2019 & 2020 - SW involved with all cases
All patients discharged with EI Referral
60% went home with mom/dad
(See slide 2)

NAS Assessment Tools

- ESC (no longer using Finnegan for MNO)
- ESC documentation in EPIC
- Team Huddles PRN

MNO-Neo Folders

Implemented folders in January 2019 with
MNO Program Kick-off

Left Pocket – STAFF information:

- Neonatal Abstinence Syndrome Algorithm
- ESC Tool & Explanations (double-sided)
- ESC Tool Scoring in EPIC

Right Pocket – FAMILY information:

- Pamphlet
- 2-Sided Handout
- 5 Newborn Care Diary sheets (double-sided)

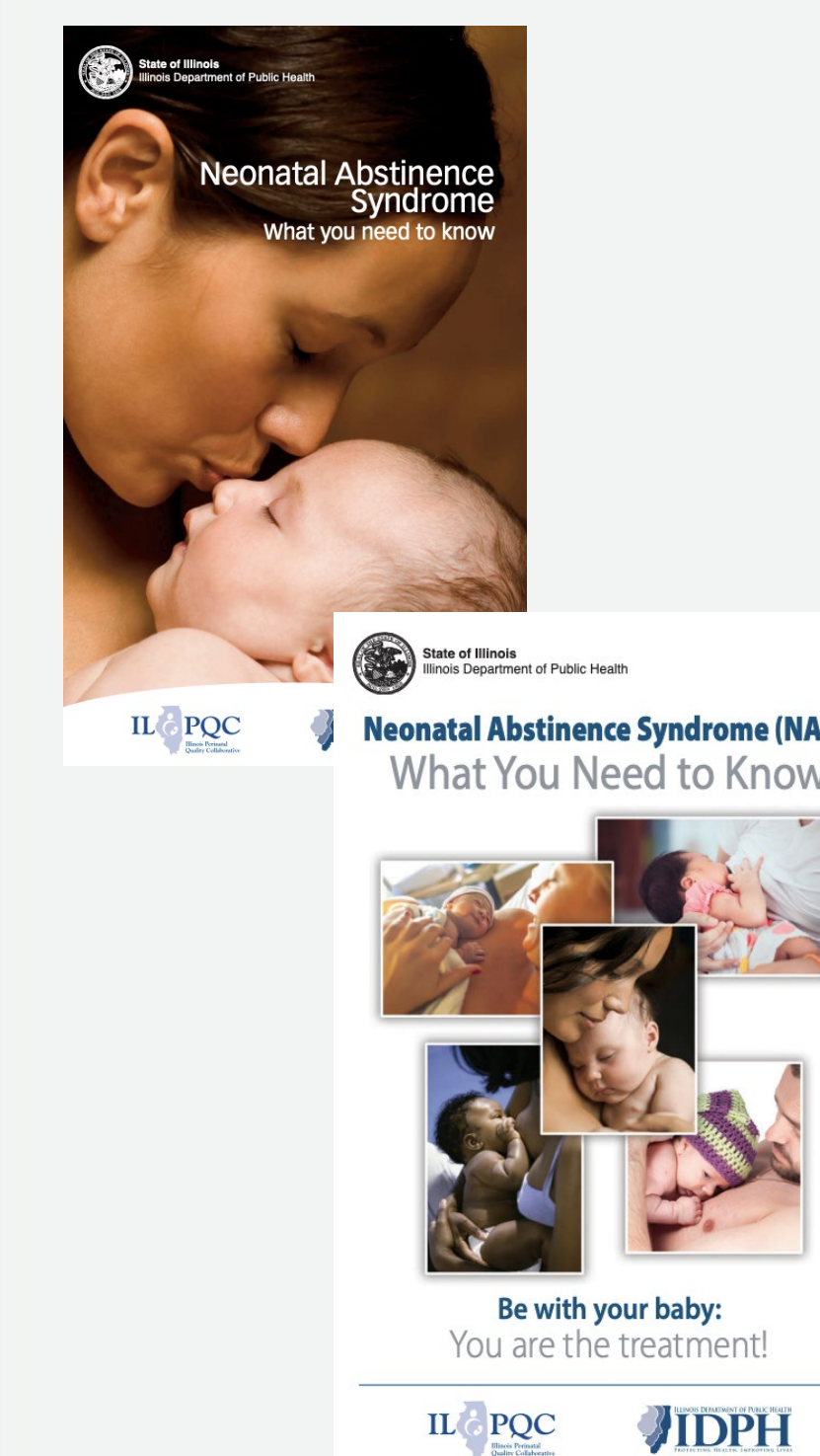


Education Campaign

- Grand Rounds for new Pediatric Residents
- eLearning for staff - all new RNs complete during orientation; Case studies/Quiz/IRR
- Annual competency
- Chart audits

Review of all NAS cases

- Discharge Planning
- Chart reviews
- Debriefings
- Review at Quality Meetings



- Mothers given NAS pamphlets upon admission to NICU
- 1:1 nursing care throughout NICU course
- Social Worker provides MAT and other necessary services/referrals as needed
- Weekly multidisciplinary discharge rounds assess clinical readiness of infant and mother, ensure family preparedness and coordinate transfer of care to parents or guardians/DCFS as appropriate

2020 Antibiotic Stewardship Collaborative

Sachin Amin, MD – Neonatologist
Lauren Astrug, MD – Neonatologist
Maika Manalastas – Neonatal Fellow
Anne Cunningham, MSN, RNC-NIC, NICU Manager
Lisa Festle, MSN, RNC-NIC, APRN/CNS
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2017 Early & Late Onset Sepsis Algorithms developed for NICU

Neonatal Abstinence Syndrome Algorithm

Prenatal Clinics/L&D

1. Universal Screening (Audit-C and NIDA): 1st visit, 3rd Trimester, and in L&D
2. Treatment Program: Refer to, if not already in one
3. Contract/Agreement: Documentation to ensure aware of plan ahead of time
 - o Rooming in: With infant after delivery in PostPartum and Peds
 - o Support: Family, friends, Cuddlers, RNs
4. Social Worker: Treatment Centers, Follow up appointments, DCFS/Child Advocacy Team
5. Neo Consult: During 2nd trimester

Delivery at ≥ 35 wks and meets criteria:

1. Mom stays in PP with infant
2. After Mom discharged, admit infant to Peds Floor and Mom rooms in
3. Infant managed by NB service
4. Follow MNO Order Set
5. ESC scores; "Team Huddle" PRN
 - Unstable ESC scores – may need to admit to Peds IMC or NICU

Delivery at ≥ 35 wks but does NOT meet criteria (i.e. Mother not in treatment and unable to care for infant, Support not available, Unstable ESC scores, Other medical issues):

1. Admit infant to NICU
2. Micro Unit, Bed 42
3. 1:1 RN:Infant, Cuddlers
4. Follow MNO Order Set
5. ESC scores; "Team Huddle" PRN

Delivery at < 35 wks:

1. Infant admitted to NICU
2. Micro Unit, Bed 42 when stable
3. 1:1 RN:Infant, Cuddlers
4. Follow MNO Order Set
5. ESC scores for all patients (and NWI for patients not eating); "Team Huddle" PRN

Morphine needed?

NO

Reinforce/Increase non-pharm interventions

Home after stable ESC scores:

1. If maternal heroin or oxycodone use, discharge after 48-72 hours of observation with safe discharge plan
2. If maternal methadone or buprenorphine use, discharge after 4-7 days of observation with safe discharge plan

YES

1. Continue ESC (and NWI if <35 wks and/or not eating)
2. PRN Doses:
 - a. Dose per order set
 - b. Consider scheduled doses after 3 PRN doses given within 12 hours
 - c. Monitor/ESC (NWI) for at least 24 hrs after last PRN dose*
 - d. Home if ESC scores stable/NWI < 8
3. Scheduled Doses:
 - a. Wean 1-3x/day
 - b. Monitor/ESC (NWI) for 48 hrs after last scheduled dose*
 - c. Home if ESC scores stable/NWI < 8

*Minimum Stay:

If maternal heroin or oxycodone use, discharge after 48-72 hours of observation; If maternal methadone or buprenorphine use, discharge after 4-7 days of observation

2/2020

Outcomes: MNO patients in the NICU

January 2019 – March 2020

Patient/ Month	Baby 1 Feb 2019	Baby 2 March 2019	Baby 3 March 2019	Baby 4 May 2019	Baby 5 July 2019	Baby 6 October 2019
GA	39.5	37.0	37.2	39.0	35.6	39.0
BW	3.13kg	2.418kg	3.02kg	2.835kg	1.915kg	2.81kg
Gender	Female	Female	Male	Female	Male	Female
Place of Birth	Inbom	OSH - Transfer	Inbom	Inbom	Inbom	Inbom
Diagnosis	RDS	RDS & NAS	RO sepsis & anomalies	NAS	Prematurity & NAS	RDS & SGA
Mat Age	36	26	28	33	33	32
Race	Caucasian	Caucasian	Caucasian	African Am		Caucasian
Prenatal Care	Yes	Yes	Yes	Yes	Yes	No
OID Identified	Delivery admission (self-report; urine tox)	During current pregnancy (self-report; med record)	Prior to pregnancy (urine tox)	Prior to pregnancy (self-report; cord)	Prior to pregnancy (self-report)	Delivery admission (self-report; urine tox)
Prescribed Opiates	Yes	MAT - buprenorphine	No (illicit opiates)	Yes	Yes	No
Other Exposures	Tobacco	Tobacco, benzodiazepines	Cocaine	Tobacco	Benzodiazepines	Heroin, Marijuana, Tobacco
Maternal Psychiatric Dx	No	Yes – depression, anxiety	No	Yes – anxiety, PTSD	Yes – anxiety, depression	No
Evidence of NAS/ ESC	Yes/ Yes - modified	Yes/ Yes - modified	Yes/ Yes - modified	Yes/ Yes - modified	Yes/ Yes - modified	Yes/ Yes - modified
Withdrawal Meds	No	No	No	No	No	Yes – Morphine 3 PRN doses (1/D x 3D)
Feeds	Breast milk & formula	Formula	Formula	Formula	Breast milk & formula	Formula
EI Referral	Yes	Yes	Yes	Yes	Yes	Yes
LOS	9 days	16 days	13 days	3.5 days	15 days	14 days
Safe DC Plan	Yes - mom	Yes - DCFS safety plan of care mat aunt	Yes - DCFS temp guardianship maternal aunt	Yes - mom and dad (infant d/c'd before recommended period of time)	Yes - mom	Yes - foster family

Patient/ Month	Baby 1 Jan 2020	Baby 2 Jan 2020	Baby 3 Feb 2020	Baby 4 March 2020
GA	37.0	39.0	36.0	37.0
BW	2.66kg	3.243kg	2.73kg	2.74kg
Gender	Female	male	male	Male
Place of Birth	OSH- Transfer	Inborn	Inborn	Inborn
Diagnosis	Stridor & NAS	NAS	RDS	NAS
Mat Age	34	32	32	36
Race	Caucasian	Hispanic	Caucasian	Caucasian
Prenatal Care	Yes	Yes	No	No
OID Identified	Delivery admission (urine tox)	During current pregnancy (self-report and urine tox)	Delivery admission (screening tool, self-report, urine tox)	Delivery admission (urine tox)
Other Exposures	Prescribed MAT, methadone (prescribed and illicit)	Prescribed, methadone (prescribed & illicit), + opiates, ETOH	Tobacco, marijuana, cocaine	Benzodiazepines
Maternal Psychiatric Dx	No	Yes - depression anxiety	No	No
Evidence of NAS/ ECS	Yes/Yes - modified	Yes/Yes - modified	Yes/Yes - modified	Yes/Yes - modified
Withdrawal Meds	No	No	Yes – morphine x1	No
Feeds	Formula	Formula	Formula	Formula
EI Referral	Yes	Yes	Yes	Yes
LOS	19 days	8 days	11 days	9 days
Safe DC Plan	Yes - mom	Yes - dad	Yes – mat grandmother	Yes - mom