

Development and use of the Eating, Sleeping, Consoling (ESC) Care Tool to promote healthy beginnings for opioid-exposed newborns and their families in Northern New England

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Healthy Moms/Healthy Babies

NAS QI/Learning Collaborative formed in 2015

16/17 NH, 11/12 VT & 4 ME hospitals participating

Monthly webinars, regional trainings, provider & family education, clinical care guidelines, QI initiatives, sharing of materials, peer strategizing, brainstorming & support

NNEPQIN NAS “BUNDLE”

- Prenatal / parental education
- Maternal presence and rooming-in
- Breastfeeding if no concerning maternal substance use
- Baby-centered care / scoring
 - Care / score based on infant’s waking & feeding schedule
 - Skin-to-skin & (breast)feed pre-scoring
 - Skin-to-skin / hold during scoring
- Involve family in care / scoring



TIME				
EATING				
Poor eating due to NAS? Yes / No				
SLEEPING				
Sleep < 1 hr due to NAS? Yes / No				
CONSOLING				
Unable to console within 10 min due to NAS? Yes / No				
Consoling Support Needed				
1: Able to console on own				
2: Able to console with caregiver support within 10 min				
3: Unable to console with caregiver support within 10 min				
PLAN OF CARE				
Recommend Formal Parent/Caregiver Huddle? Yes / No				
Recommend Full Care Team Huddle? Yes / No				
Management Decision				
1: Continue Optimize Non-pharm Care				
2: Initiate Medication Treatment				
3: Continue Medication Treatment				
4: Other (please describe)				
PARENTAL / CAREGIVER PRESENCE				
0: No parent present				
1: < 1 hour				
2: 1-2 hours				
3: 2-3 hours				
4: ≥ 3 hours				
NON-PHARM CARE INTERVENTIONS				
Rooming-in: Increase / Reinforce				
Parent/caregiver presence: Increase / Reinforce				
Skin-to-skin contact: Increase / Reinforce				
Holding by caregiver / cuddler: Increase / Reinforce				
Safe swaddling: Increase / Reinforce				
Optimal feeding at early hunger cues: Increase / Reinforce				
Quiet, low light environment: Increase / Reinforce				
Non-nutritive sucking / pacifier: Increase / Reinforce / Not Needed				
Additional help / support in room: Increase / Reinforce				
Limiting # of visitors: Increase / Reinforce				
Clustering care: Increase / Reinforce				
Safe sleep / fall prevention: Increase / Reinforce				
Parent/caregiver self-care & rest: Increase / Reinforce				
Optional Comments:				



TIME				
EATING				

Indicate **Yes** if **Poor eating** is due to **NAS/opioid-withdrawal symptoms**:

- **Unable to coordinate feeding within 10 minutes** of showing hunger *OR*
- **Unable to sustain breastfeeding for at least 10 minutes** *OR*
- **Unable to feed with at least 10 mL** by bottle or other feeding method (*or other age-appropriate duration / volume*)

2: Able to console with caregiver support within 10 min				
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Indicate **Yes** if **Sleep < 1 hour** is due to **NAS/opioid-withdrawal symptoms** (e.g., tremors, increased startle)

Management Decision				
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Indicate **Yes** if **Unable to Console within 10 minutes** due to **NAS/opioid-withdrawal symptoms** (e.g., tremors, increased startle)

PARENTAL / CAREGIVER PRESENCE				
0: No parent present				
1: < 1 hour				
2: 1-2 hours				
3: 2-3 hours				
4: ≥ 3 hours				
NON-PHARM CARE INTERVENTIONS				
Rooming-in: Increase / Reinforce				
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Optional Comments:				



NON-PHARM CARE INTERVENTIONS

Rooming-in: Increase / Reinforce

Parent/caregiver presence: Increase / Reinforce

Skin-to-skin contact: Increase / Reinforce

Holding by caregiver / ~~cuddler~~: Increase / Reinforce

Safe swaddling: Increase / Reinforce

Optimal feeding at early hunger cues: Increase / Reinforce

Quiet, low light environment: Increase / Reinforce

Non-nutritive sucking / pacifier: Increase / Reinforce / Not Needed

Additional help / support in room: Increase / Reinforce

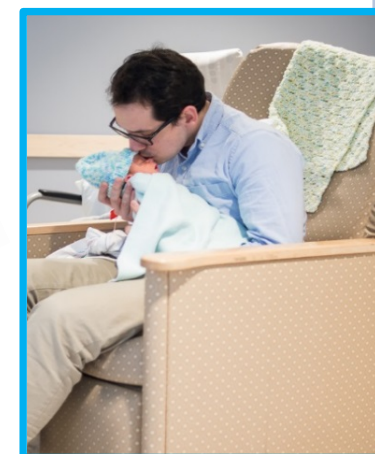
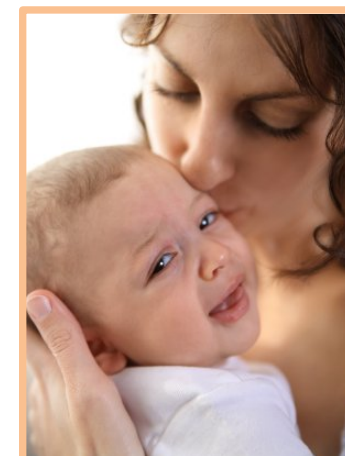
Limiting # of visitors: Increase / Reinforce

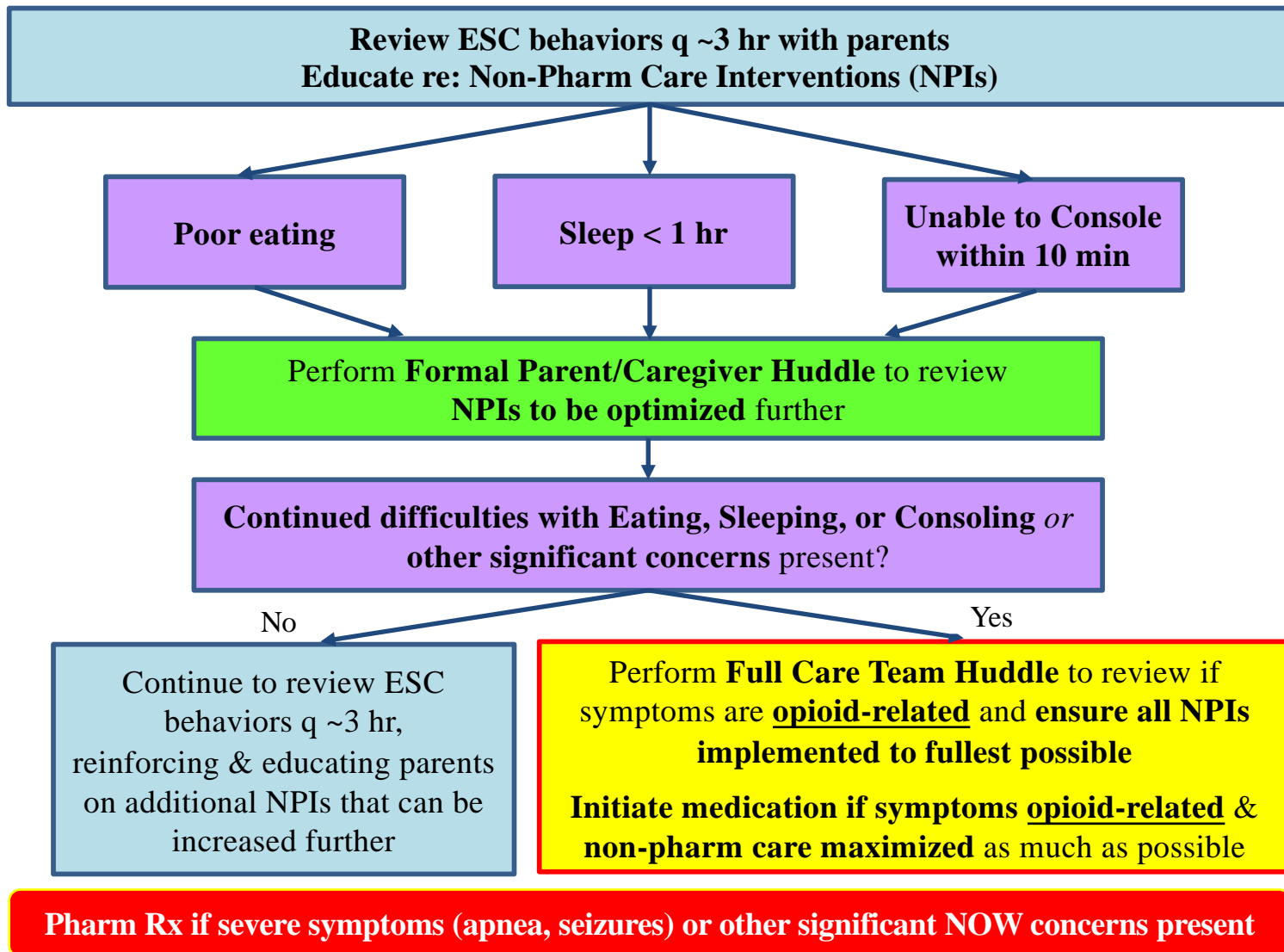
Clustering care: Increase / Reinforce

Safe sleep / fall prevention: Increase / Reinforce

Parent/caregiver self-care & rest: Increase / Reinforce

Optional Comments:





WHERE WE ARE NOW

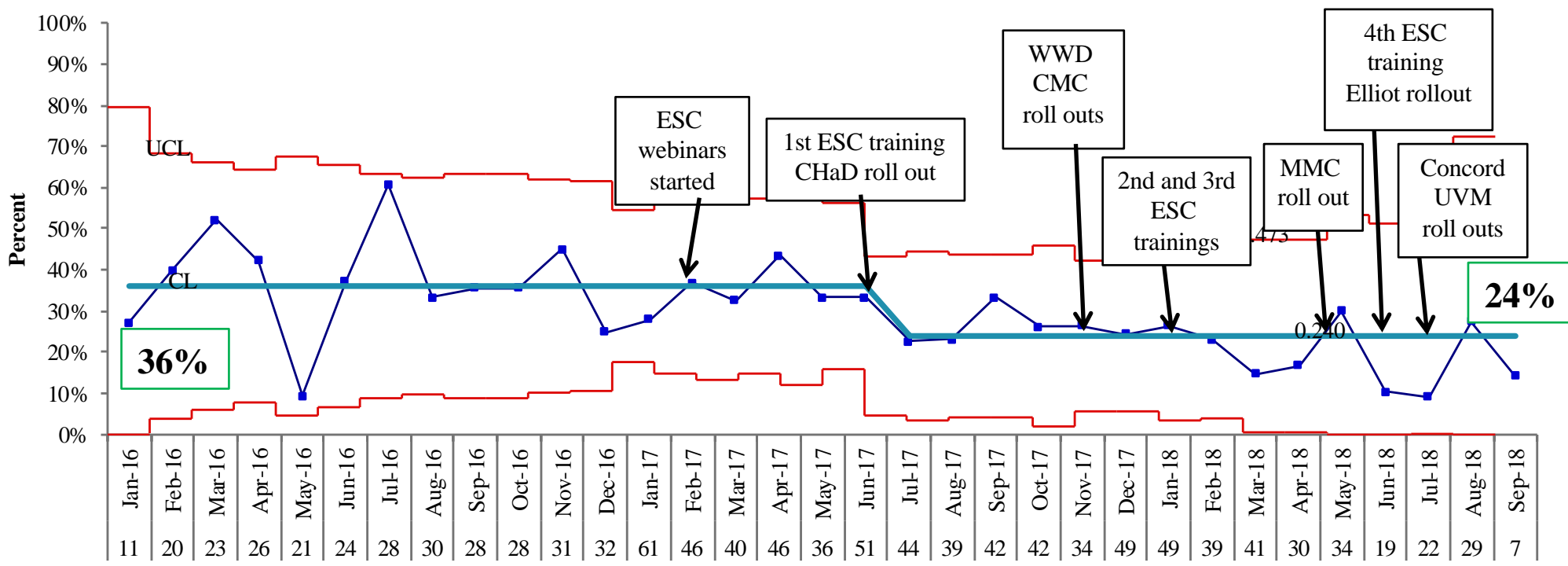
PRE-ESC JAN 2016 TO MAY 2017

POST-ESC INTRO JUNE 2017 TO AUG 2018

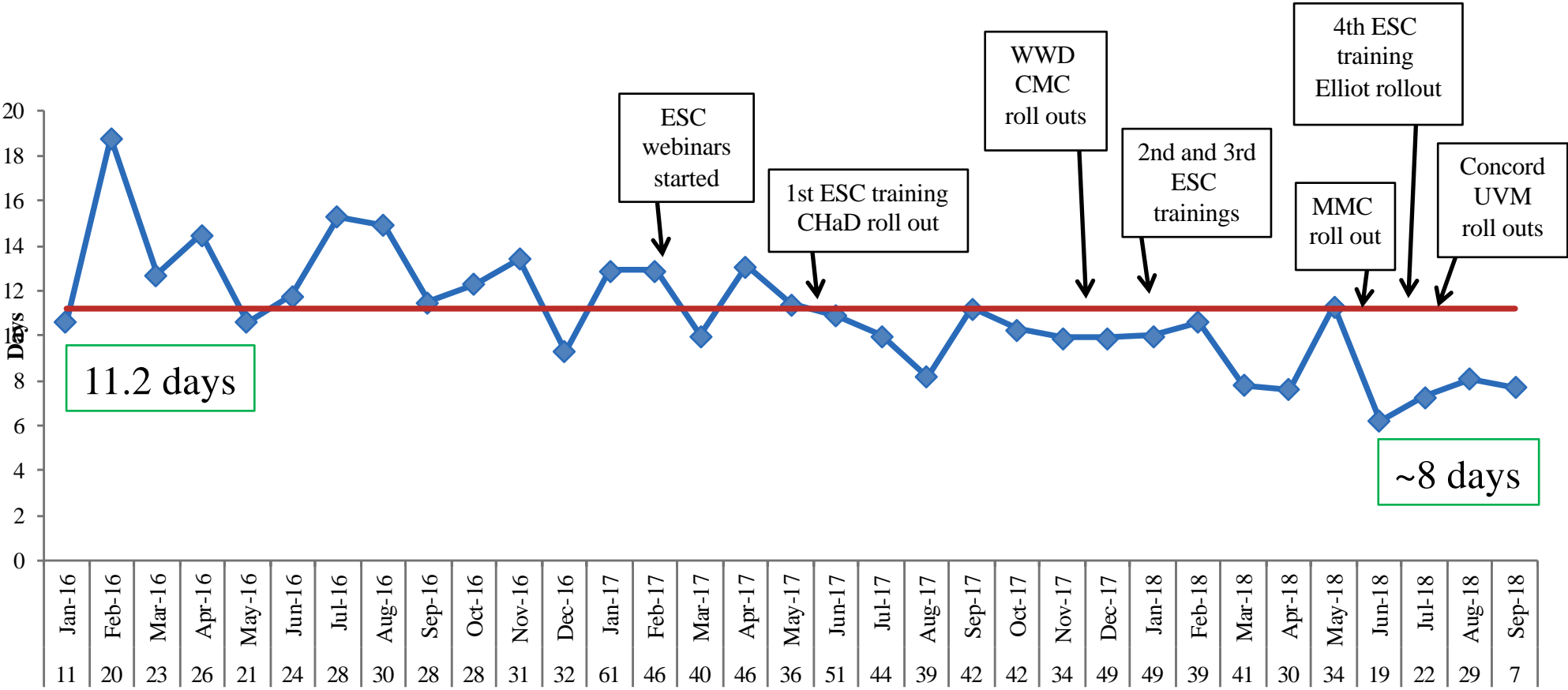
All Newborns >35wks with prenatal opioid exposure	Number Patients	Percent Pharm Tx	Mean LOS	Weight Change Day of Life 4	Breastfeeding: MBM at Discharge
Pre-ESC Intro	124	19.4%	7.0	-6.5%	58%
Post-ESC Intro	96	12.5%	6.6	-6.9%	67%
Newborns >35wks with prenatal opioid exposure, no other NICU indication	Number Patients	Percent Pharm Tx *	Mean LOS	Weight Change Day of Life 4	Breastfeeding: MBM at Discharge
Pre-ESC Intro	102	14.7%	5.9	-7.0%	66%
Post-ESC Intro	76	*6.6%	5.5	-7.7%	70%
Newborns >35wks with prenatal opioid exposure, no NICU/PICU	Number Patients	Percent Pharm Tx *	Mean LOS	Weight Change Day of Life 4	Breastfeeding: MBM at Discharge
Pre-ESC Intro	98	13.3%	5.8	-7.0%	67%
Post-ESC Intro	68	**4.4%	5.7	-7.7%	71%

*Statistically significant using 1-tailed Test of Proportions; **Statistically significant using 1 and 2-tailed Test of Proportions;

Percent Opioid-exposed Newborns Requiring Pharmacologic Treatment ≥ 35 weeks



Length of Stay (LOS) for all Opioid-exposed Newborns ≥ 35 weeks



WHAT ABOUT LONG-TERM OUTCOMES?

Visual problems?

Strabismus, reduced visual acuity, nystagmus, refractive errors, cerebral visual impairment



Visual motor problems?

Decreased eye-hand coordination, visual-spatial ability of organization



WHAT ABOUT LONG-TERM OUTCOMES?

Developmental Problems?

- Some studies show no differences in Bayley Mental and Psychomotor Developmental Indexes for infants ≤ 12 mo but differences > 12 mo
 - However, studies have methodological limitations (e.g., varied opioid & other exposures not controlled for, case control studies, etc.)
- Recent study by Kaltenbach, *et al* of 96 children followed over 3 years demonstrated no significant neurodevelopmental affects
 - Only 2/37 had significant findings for buprenorphine or methadone exposed children



WHAT ABOUT LONG-TERM OUTCOMES?

Behavioral / Cognitive Problems?

- Some studies suggest hyperactivity, impulsivity, attention problems, impaired verbal and performance skills, visual-motor weakness, memory and perceptual problems
 - Similar methodological limitations – unclear of impact of other prenatal & postnatal exposures / home environment, etc.



PREVENTION IS KEY!

- **Primary Prevention:** Community education, limiting opioid prescriptions, optimizing alternative measures of pain control, increased supports / resources for families for social determinants of health
- **Secondary Prevention:** Prenatal care, MAT, prenatal/parental education, optimal in-hospital baby- and family-centered care, ESC assessments, non-pharm care optimized to fullest, opioid Rx only if baby w/ significant opioid w/d symptoms, referrals to early intervention / VNA, safe transitions to home for mother-baby dyad with close primary care and neurodevelopmental follow-up, community referrals for mom, baby and family, etc.
- **Tertiary Prevention:** Increased early intervention & neurodevelopmental services if concerns present

