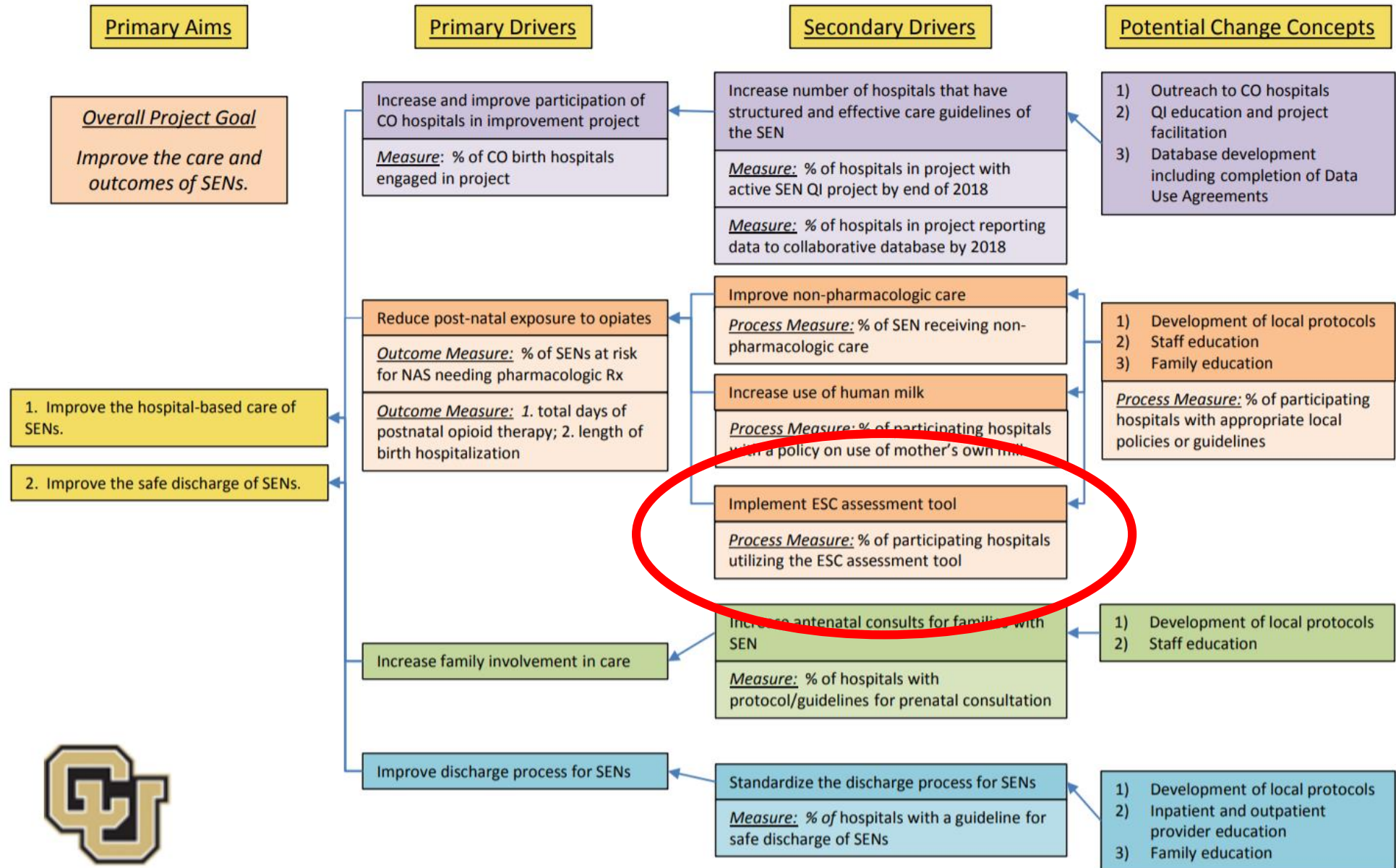


Implementation of ESC (Eat, Sleep, Console)

Colleen Wheeler, PA-C

CUSOM Substance Exposed Newborn Quality Improvement Initiative 2017



Objectives

- Review rationale behind the ESC approach
- Review ESC Assessment tool
- Review steps to successful implementation
- Review Denver Health NAS data

The Old Way

- Infant rooming-in with mother on postpartum floor
- Infant assessed with Finnegan scale every 3-4 hours
- Scores >8 \rightarrow Infant removed from mother and transferred to neonatal ICU (some units allow boarding)
- Opioids titrated according to Finnegan scores with goal scores <8
- Length of stay is about 3 weeks

What's wrong with this approach?

- FIRST-line treatment is non-pharmacologic care → not promoted well using Finnegan
- Overlap with normal baby behaviors
- Does not account for coexposures (nicotine)
- Goals of treatment are to reach scores <8
- Nasal stuffiness/sneezing does not warrant opioid treatment

What is a baby's job description

- Eat
- Sleep
- Console
- Mothers + Non-pharm Care=
FIRST-LINE TREATMENT



ESC: a simple function-based tool to replace Finnegan

3 questions:

Eat: Does the newborn eat expected amounts for postnatal/gestational age?

Sleep: Does the newborn sleep at least one hour continuously?

Console: Is the infant consolable and level of soothing support needed?



ESC Assessments

- Every 3-4 hours at times of feeding/care
- Encompass the last 3-4 hours since the prior assessment
- Feedback from all caregivers
- Does not require the infant to be removed from the mother to complete

Implementation of ESC

- Start with hospital checklist
- Epic build of ESC Assessment tool
- Provider and nursing education

Implementation

Hospital checklist

- Team development
- Training
- Hospital Systems
- Monitoring Impact

CHoSEN Collaborative

Hospital Checklist for Adoption to Eat, Sleep, Console NAS Assessments

Item

TEAM DEVELOPMENT

- Create multidisciplinary NAS quality Improvement team
 - Consider including nurses, physicians, therapists, social workers, nutritionist, pharmacist, care coordinator, family members, and others
 - Ideally, team includes representatives from obstetrics, labor and delivery, post-partum, newborn nursery, and SCN/NICU
- Identify team leads
 - One or two team leads is ideal
- Obtain support from hospital leadership

EPIC and ESC

- Allow one to two months to complete
- Adapts NeoQIC ESC tool with definitions
- Denver Health will post in National Epic database; will share tool with other Epic users in meantime

Epic and ESC: Nursing Assessment

Flowsheets

File | Add Rows | Add LDA | Cascade | Add Col | Insert Col | Data Validate | Hide Device Data | **Last Filed** | Reg Doc | Graph | Gg to Date | Values By | Refresh | Legend | Cosign | Link Lines

Vitals NICU | NICU I/O | NICU Cares/Safety | Assessment | IV Assessment | Security | Critical Lab Value | NICU Discharge | Vent Settings (RN) | Newborn/NICU Testing | Blood | **NAS Assessment Tools**

2/05/17 0600

Admission (Current) from 10/19/2017 in DH PAV C NICU with Patricia M Hagan, MD
12/4/17 | 12/5/17

	1500	1600	1700	2000	0600	Last Filed
ESC Care Tool (Yale New Haven Children's)						
Poor eating due to NAS?						
Sleep < 1 hour due to NAS?						
Unable to console within 10 min due to						
Soothing support used to console						
Parental/caregiver presence since last						
Finnegan CNS Disturbances						
Increased Muscle Tone						
Excoriation						
Myoclonic Jerks or Convulsions						
Duration of cry:						
Sleep Amount After Feeding						
Moro Reflex						
Tremors: Disturbed						
Tremors: Undisturbed						
Central Nervous System Subtotal						
Finnegan Metabolic/Vasomotor/Respiratory Disturbances						
Sweating						
Yawning						
Mottling						
Nasal Stuffiness						

NAS Assessment Tool:

Poor eating due to NAS?

Select Single Option: (F5)

Yes

No

Comment (F6)

Group Information

Eating, Sleeping, Consoling (ESC) Care Tool

- Assess infant after feedings, preferably while skin to skin or held swaddled by mother/caregiver.
- Review baby's ESC behaviors since last assessment (3-4 hours ago)
- If infant is YES for ANY ESC item or receives a 3 for "Soothing Support used to Console Infant", perform TEAM HUDDLE with parent/caregiver and RN
- If infant continues with YES for any ESC item or receives a 3 for "Soothing Support used to Console Infant" DESPITE optimal non-pharm care and symptoms felt likely due to NAS, perform FULL TEAM HUDDLE with mother/parent, RN and infant

Nursing Assessment - continued

Flowsheets

File Add Rows Add LDA Cascade Add Col Insert Col Data Validate Hide Device Data Last Filed Reg Doc Graph Go to Date Values By Refresh Legend Cosign Link Lines

Vitals NICU NICU I/O NICU Cares/Safety Assessment IV Assessment Security Critical Lab Value Newborn/NICU Testing Newborn Hearing Scree... **NAS Assessment Tools** NAS Assessment Tool?

Hide All Show All

ESC YALE NEW HAVEN

ESC Care Tool (Yale Ne...

Yale New Haven ESC C...

FINNEGAN

Accordion Expanded **View All** 1m 5m 10m 15m 30m **1h** 2h 4h 8h 24h Based On: 0700 | Reset | Now

Admission (Current) from 11/30/2017 in DH PAV C NICU with Patricia M Hagan, MD

	12/4/17	12/5/17	
1444	1800	2100	0700 Last Filed
ESC Care Tool (Yale New Haven Children's)			
Poor eating due to NAS?			
Sleep < 1 hour due to NAS?			
Unable to console within 10 min due to			Yes
Soothing support used to console			
Parental/caregiver presence since last			
Yale New Haven ESC Care Plan/Interventions			
Huddle recommended?			
Huddle decisions for NAS management			
Non-pharm interventions			Quiet environ
Swaddling			Implement
Quiet environment			Implement
Finnegan CNS Disturbances			
Increased Muscle Tone			
Excoriation			
Myoclonic Jerks or Convulsions			
Duration of cry:			
Sleep Amount After Feeding			
Moro Reflex			
Tremors: Disturbed			
Tremors: Undisturbed			
Central Nervous System Subtotal			
Finnegan Metabolic/Vasomotor/Respiratory Disturbances			

12/05/17 0700

Non-pharm interventions

Quiet environment;Swaddling

Select Multiple Options: (F5)

- Rooming-in
- Parental presence
- Skin-to-skin contact
- Holding by caregiver/cuddler
- Swaddling**
- Optimal feeding
- Non-nutritive sucking
- Quiet environment**
- Limit visitors
- Cluster care

Comment (F6)

Value Information

(P) Quiet environment;Swaddling

Taken by: Karen Albrecht, RN at 12/05/17 0700 (today)

Recorded by: Karen Albrecht, RN at 12/05/17 0745 (today)

Row Information

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Epic and ESC: Provider View

Summary

← →

← ↻ 🔍 | NICU NEO Overview | Index | Peds Flowsheet | Apnea/Bradycardia | Meds History | Nutrition | Delivery | WT | TPN Report | More ▾

Neonatal/Peds Withdrawal 🔍

Withdrawal, Abstinence

Go to now: 12/4/2017

Yesterday 1800 - Today 0959

Adult Timeline | 24 Hrs | 8 Hrs | 4 Hrs | 1 Hr | All

	DH PAV C NICU										12/05 0700 - 12/06 0659					
	18-19	19-20	20-21	21-22	22-23	23-00	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10
Unable to console within 10 min due to...														Yes	Yes	Unable to consol...
Soothing support used to console infant														3	3	Soothing support...
Parental/caregiver presence since last...														0	0	Parental/caregiv...
Huddle recommended?														RN/Par...	Full T...	Huddle recomme...
Huddle decisions for NAS management														Optimi...	Initia...	Huddle decisions...
Non-pharm interventions														Limit ...	Swaddl...	Non-pharm inter...
Parental presence intervention														Implem...	Implem...	Parental presenc...
Swaddling														Reinfo...+	Increase	Swaddling
Quiet environment														Reinfo...+	Increase	Quiet environment
Limit visitors														Implem...	Reinfo...	Limit visitors
Clustering care														Implem...	Implem...	Clustering care
▼ Finnegan																
Increased Muscle Tone															2	Increased Muscl...
Excoriation															1	Excoriation
Myoclonic Jerks or Convulsions															0	Myoclonic Jerks...
Duration of cry:															0	Duration of cry:
Sleep Amount After Feeding															0	Sleep Amount Af...
Moro Reflex															0	Moro Reflex
Tremors: Disturbed															0	Tremors: Disturbed
Tremors: Undisturbed															3	Tremors: Undist...
Central Nervous System Subtotal															6	Central Nervous...
Sweating															0	Sweating
Yawning															0	Yawning
Mottling															0	Mottling
Nasal Stuffiness															0	Nasal Stuffiness
Sneezing															0	Sneezing
Nasal Flaring															0	Nasal Flaring
Fever															0	Fever
Tachypnea															0	Tachypnea
Metabolic/Vasomotor/Respiratory Subt...															0	Metabolic/Vaso...
Excessive Sucking															0	Excessive Sucking
Poor Feeding															0	Poor Feeding
Regurgitation/Vomiting															0	Regurgitation/Vo...
Projectile Vomiting															0	Projectile Vomiting
Stools															0	Stools
Gastrointestinal Disturbances Subtotal															0	Gastrointestinal...
Finnegan Neonatal Abstinence Scale...															6	Finnegan Neona...
Comfort																Comfort
▼ Withdrawal Medications																
cloNIDine suspension (mcg)														7		cloNIDine suspe...
METHADONE ORAL (mg)														0.5		METHADONE O...
morphine (mg)															1.16	morphine (mg)
PHENobarbital ORAL (mg)																7.6

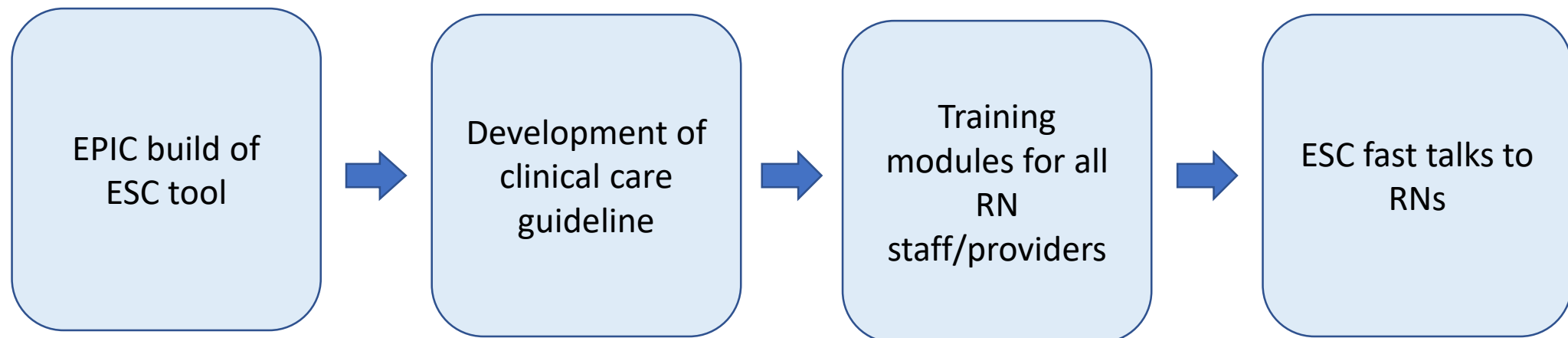
Customize

Nursing Education

- Give fast talks to explain current practices and rationale for new approach
- Assign learning modules with training videos followed by case study and quiz (aim for 80% accuracy)
- Goal is to educate all staff on ESC methods
- Make learning materials widely available

Implementation Timeline

- NAS team leads and nurse champions identified
- Collaboration with all well baby/NICU providers, pharmacists, nurse educators
- Allow ~ 6 months for full implementation



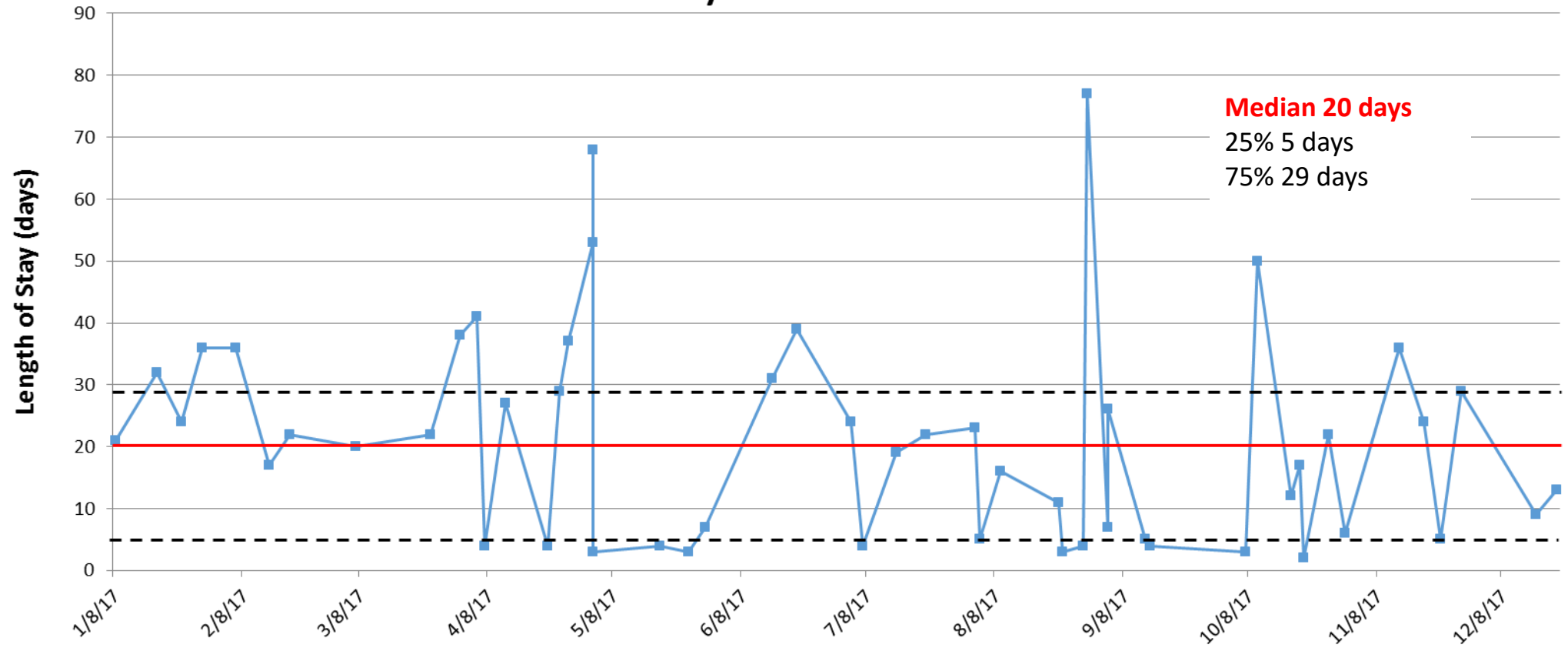
ESC Training video

<https://www.neoqicma.org/eat-sleep-console-video>

NAS at Denver Health

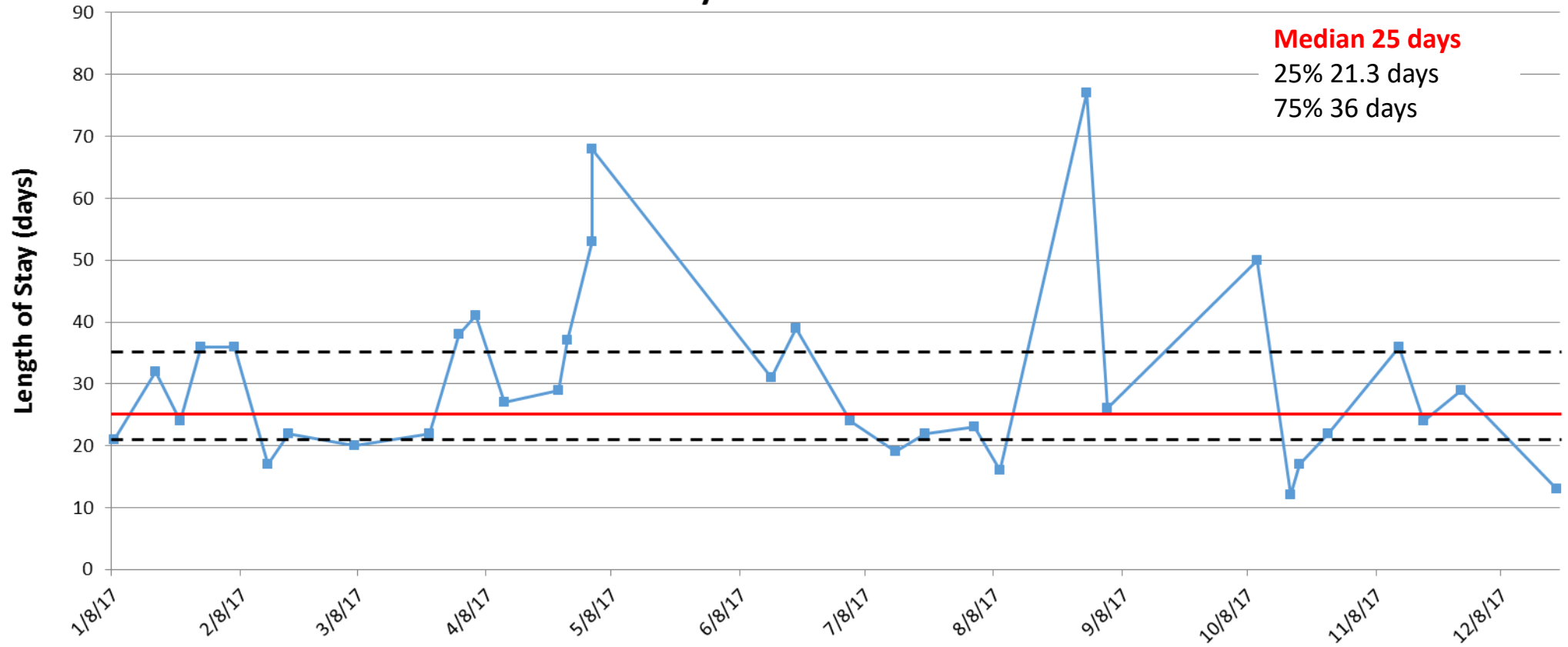
- 3250 deliveries in 2017
- Approximately 2% of infants delivered are opioid-exposed
- 34 infants were treated with methadone for NAS in 2017

Hospital Length of Stay for All Substance Exposed Newborns January 2017- December 2017



Hospital Length of Stay for Patients Treated with Methadone January 2017 - December 2017

Median 25 days
25% 21.3 days
75% 36 days



Aim Statement

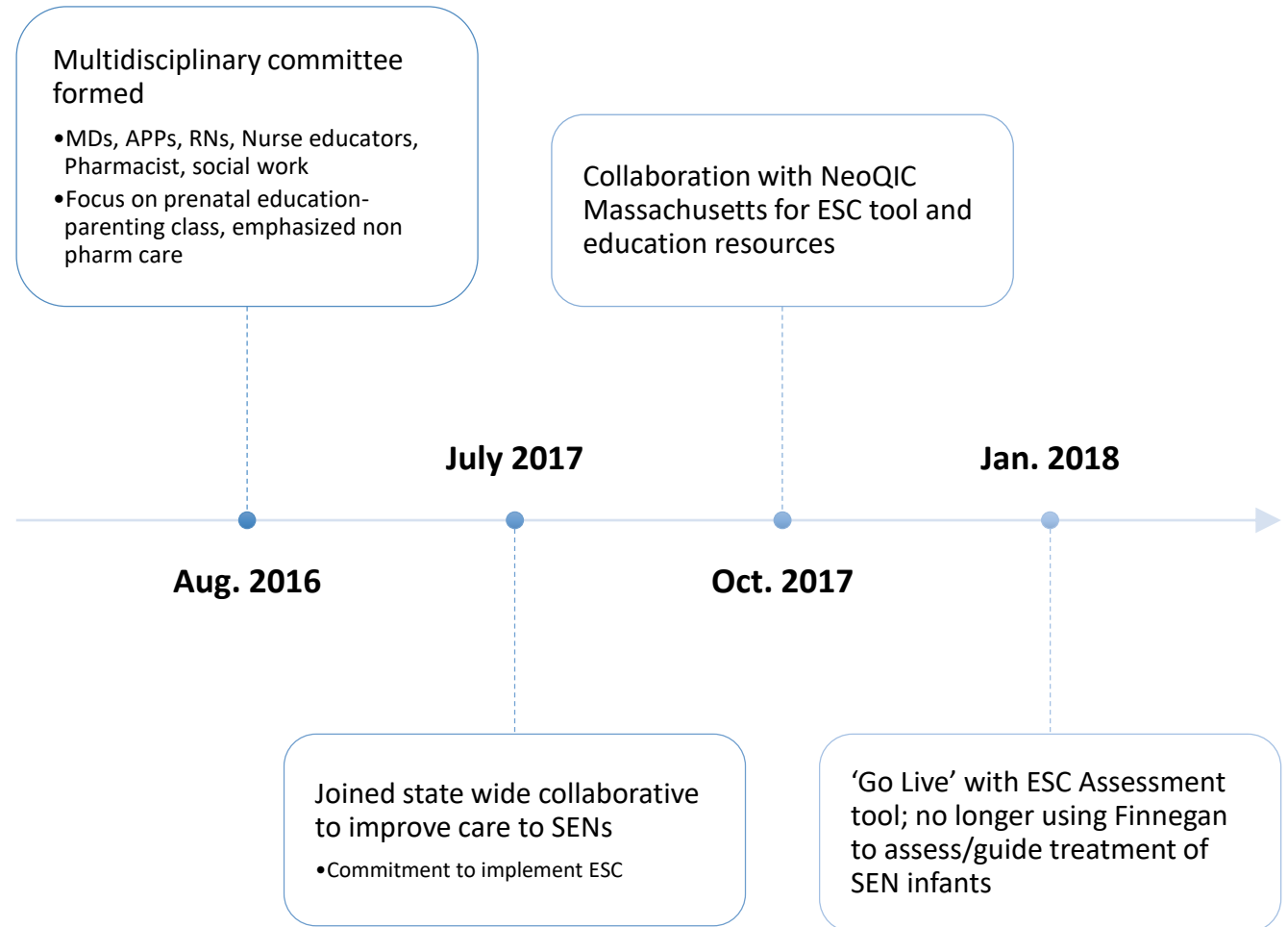
To decrease the use of postnatal methadone among opioid-exposed newborns, we will use the ESC approach on all opioid-exposed newborns in 2018.

Denver Health NAS Committee

- Advanced Practice Providers, Neonatologist, Well Baby Pediatrician
- Well Baby and NICU nurse educators, pharmacist
- NICU/Mom baby social worker

*Support from hospital administration to prioritize the improvement of care to substance-exposed newborns and their families.

ESC Implementation at Denver Health



ESC Feedback

- Very easy to understand and use the ESC tool
- Training was straightforward and didn't take a lot of time
- Families are more focused on caring for the baby

Acknowledgements

- Boston Medical Center NAS QI team
- Elisha Wachman, BMC neonatologist
- NeoQIC ESC conference
- Karen Albrecht, DH Epic team specialist