

Colton Hageman BS, Jesse Davidson, MD, MPH, Kelly R Wolfe PhD, ABP-CN, Emily H Maloney, PT, DPT, PCS, Suhong Tong, MS, Sarah Kelly, PsyD, Sherrill Caprarola, MD, Laura Evers, RN, Hilary Patteson, RN, Alyse Talbot, RN, Caelah Clark, MS, CCC-SLP, Brenda Abbey, MS, CCC-SLP, Kimberly L DiMaria, CPNP-AC, CCRN
University of Colorado, Department of Pediatrics

BACKGROUND

- Children with congenital heart disease (CHD) are at risk for neurodevelopmental delays¹⁻⁵
- Neurodevelopment can be impacted by many factors including, sleep interruptions, limited holding, and reduced developmental stimulation⁶⁻⁸
- We created an interdisciplinary inpatient neurodevelopmental care program to address these concerns

METHODS

Figure 1: Illustrations of Selected CINCO Interventions

A. Electronic Medical Record Order Panel

Vital Signs:
 CICU: Only obtain hands-off vitals that automatically pull in from EMR every hour. Hands-on vitals every 3 hours.
 CPCU: Skip midnight hands-on vital signs and assessment (vital signs from monitor only at midnight)

Nursing:
 Discontinue bedrest orders to encourage skin-to-skin/holding and out-of-bed activities
 Contact pharmacy to coordinate clustering medications and aligning administration times with patient hands-on care
 Cluster assessments, vital signs, and cares with feeds or other awake times

D. Developmental Kits

<p>Age 0-3 Months</p> <input type="checkbox"/> 2 board books <input type="checkbox"/> Teether <input type="checkbox"/> Hand/foot rattles <input type="checkbox"/> Links	<p>Age 3-6 Months</p> <input type="checkbox"/> 2 board books <input type="checkbox"/> Teether <input type="checkbox"/> Small ball <input type="checkbox"/> Maracas	<p>Age 6-12 Months</p> <input type="checkbox"/> 1 board book <input type="checkbox"/> Shape sorter <input type="checkbox"/> Musical instrument toy <input type="checkbox"/> Stackable blocks <input type="checkbox"/> Interlocking blocks	<p>Age 12-24 Months</p> <input type="checkbox"/> 1 board book
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Note: Board books and teethers are different across different age kits

B. Bedside Developmental Plans

CARDIAC INPATIENT NEURODEVELOPMENTAL CARE OPTIMIZATION (CINCO) SUPER

MY DEVELOPMENTAL ACTIVITIES
 When I am awake and interested in playing please help me learn to do new things!

Developmental Activities	M	T	W	Th	F	S	S
Head Stimulation							
Head Stimulation							
Head Stimulation							

THINGS I LIKE: [] [] [] [] [] [] [] []
 THINGS I DON'T LIKE: [] [] [] [] [] [] [] []
 OTHER THINGS TO KNOW ABOUT ME: [] [] [] [] [] [] [] []

C. Stickers Used on Bedside Plans to Communicate Sternal and Wound Vac Precautions

Sternal Precautions:
 - Do not lift me under my arms
 - Do not pull me to sitting by my arms

Wound Vac Precautions:
 - I cannot go on my tummy (flat or modified)

E. Yellow Star Sticker on Patient Name Card by Door Easily Identifies CINCO Patients for Staff, Volunteers

Doe, J.
Room 306

F. Larger Items that were Able to be Sanitized were Purchased for the Units

- Crib mobiles (black/white and colorful versions)
- Push toys
- Ride-on toys
- Cause/effect toys
- Tea party sets
- Farmhouse play sets
- Mirrors
- Play gyms
- Sound machines
- High chairs
- Rocking chairs
- Bouncers (for babies to spend time out of bed)

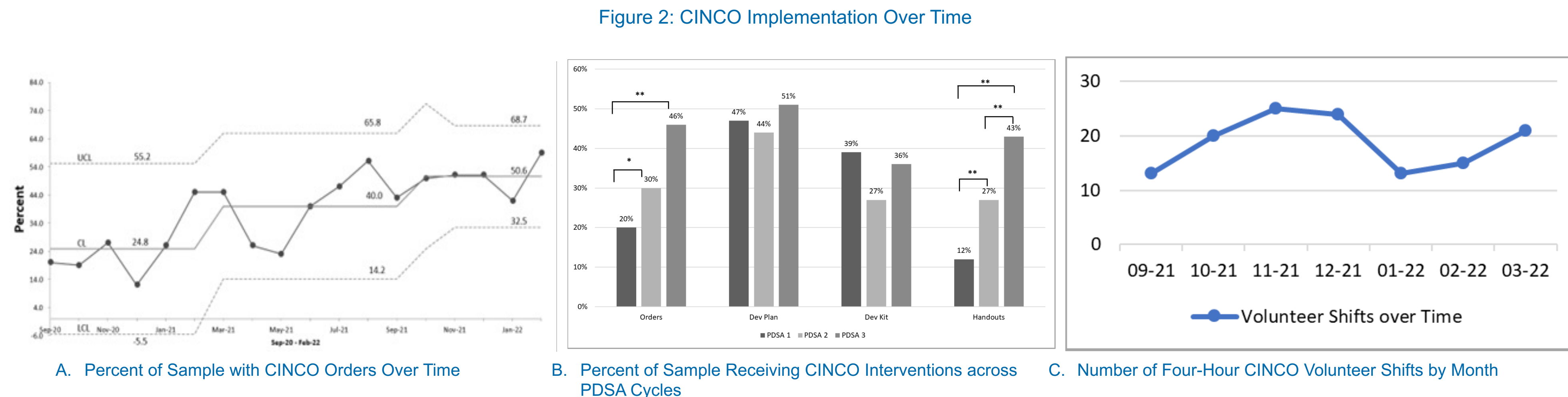
CONCLUSIONS

- A QI project was developed
- Stakeholders were interviewed and interventions were selected including medical/nursing orders, developmental plans, caregiver education and support, developmental care rounds, and a volunteer program
- 3 PDSA cycles were implemented
- Data was obtained from the EHR for patients aged 0-2 and admitted for >7 days

- We implemented a low-cost program that was able to systematize and expand on neurodevelopmental practices in cardiac inpatient units
- The project was feasible demonstrated by increasing rates over time
- This project was able to be implemented in existing clinical workflows

RESULTS

- 619 admissions in 18 months
- CINCO utilization increased over time specifically with medical/nursing orders and caregiver handouts
- The volunteer program was initially delayed but grew rapidly over 6 months with over 500 hours of developmental interaction



FUTURE CONSIDERATIONS

- Sustaining and improving implementations rates
- Ongoing provider and staff education
- Implementing more environmental care-based interventions including light/noise reduction
- Expand project with regards to health equity
- Add interventions for complex patients and ages 3-18
- Evaluate long term ND outcomes

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DISCLOSURES

- No relevant disclosures
- IRB approval not required as a QI project