



2023

CPQCC | Annual Report



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# Introduction

The past year has brought significant change for the California Perinatal Quality Care Collaborative (CPQCC). For the first time in 27 years we are transitioning to new leadership. Under Dr. Jeff Gould's guidance, and with the help of our staff, our members, and many partners across the state, CPQCC has become a global leader in perinatal quality improvement. As Drs. Profit and Lyell assume Co-Directorship of the CPQCC and California Maternal Quality Care Collaborative (CMQCC), and Dr. Gould transitions into a position of Senior Advisor, we look forward to continuing to pursue our mission as a perinatal improvement collaborative.

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**“Together, we are improving care, expanding knowledge, and striving towards improving systems of care in NICUs across the state of California.”**

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We are immensely proud of the milestones we have accomplished in the past year. Among them, we have gathered data for the first time on every baby in our neonatal intensive care units (NICUs) and continued our statewide quality improvement collaborative, NICUs Enabling Optimal Brain Health (NEOBrain),

to improve neuroprotective care for our patients. We also came together at Improvement Pooza 2023: Restoration and Teamwork, shared learning in webinars available to everyone, convened CPQCC's first statewide Family Advisory Council, and completed three Quality Improvement (QI) collaboratives this year, including Growth Advancement in the NICU (GAIN) 10.9; GAIN Surgical; and Optimizing Antibiotic Stewardship in California NICUs (OASCN).

Equity is an integral part of our mission and values. We recognize through our data reports and dashboards that families continue to face numerous disparities, barriers, and challenges in their ability to care for their infant, and we are dedicated to addressing those challenges head-on.

None of this would have been possible without the tireless work and dedication of our faculty, staff, members, volunteers, and partners. Together, we are improving care, expanding knowledge, and striving towards improving systems of care in NICUs across the state of California. We have accomplished so much this year, but more remains to be done as new exciting opportunities arise for data-driven quality improvement organizations, such as ours. We are confident that with our continued dedication and focus on equity, we will continue to make great strides towards a brighter future for all of California's infants and families.

*Sincerely,*

## CPQCC Leadership

**JOCHEN PROFIT**, Co-Director & Co-Principal Investigator

**DEIRDRE LYELL**, Co-Director & Co-Principal Investigator

**SUSAN HINTZ**, HRIF Medical Director

**LESLIE KOWALEWSKI**, Executive Director

**REBECCA ROBINSON**, Administrative Director

**COURTNEY BREault**, Assoc. Director of Quality

**JEFFREY GOULD**, Senior Advisor







FEATURE I

# Health Equity

## Equity-Focused QI Approach

At CPQCC, we are deeply committed to advancing health equity across all aspects of our work. Our health equity efforts are integrated seamlessly into our key activities, which include data feedback, quality improvement, education, research, and partnerships.

### DATA FEEDBACK

We have developed health equity dashboards for maternal, neonatal, and HRIF populations. Providers can assess their individual performance against their peers which anecdotally has guided efforts at remedying inequities.

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**The NICU Families with a Non-English Language of Preference (NELP) Resource Bundle aims to reduce the disparities that families with a non-English language of preference experience in the NICU.**

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### QUALITY IMPROVEMENT

We have formed several subcommittees within the Perinatal Quality Improvement Panel (PQIP) to address disparities between and within NICUs, as well as after discharge. These subcommittees have been developing priorities for action, seeking funding support, and conducting research to inform activities. For example, the Within NICU Subcommittee developed the NICU Families with a Non-English Language of Preference (NELP) Resource Bundle available on the CPQCC website. The Between NICU Subcommittee conducted **formative research** to define safety net NICUs and understand variation in quality and practice. The Transition to Home Subcommittee conducted a COVID impact study among other activities. CPQCC's Maternal Substance Exposure (MatEx) Database & Reports play a critical role in enhancing understanding and addressing the public health issue of maternal and neonatal substance exposure. By collecting data on all maternal substance exposures (including but not limited to opioids), we aim to improve the outcomes for exposed newborns by focusing on treatment and length of stay in the hospital. Reports allow for monitoring and identifying key improvement opportunities.

### NICU FAMILIES WITH A NON-ENGLISH LANGUAGE OF PREFERENCE (NELP) RESOURCE BUNDLE

This document aims to reduce the disparities that families with a NELP experience in the NICU. Two primary drivers of disparity were identified and a list of action oriented, evidence-based or evidence-derived change ideas were formed. While many of the recommendations below may fall into the Social Worker's job description, it is important that multiple members of the team take ownership to care for patient families with a NELP to ensure they have the most supportive experience.

Download: [Resource Bundle](#)



## EDUCATION

CPQCC leverages multiple avenues for health equity education. Through events like Improvement Palooza and Conversation Circle webinars CPQCC educates and learns from NICU teams on sustainable and equitable practices both within the NICU setting and beyond, emphasizing the importance of continuous improvement in advancing health equity.

## RESEARCH

We have engaged in multiple areas of equity research including National Institutes of Health (NIH) funded efforts to understand disparities across Asian American, Native Hawaiian, and Pacific Islander groups in California. This research is ongoing and has yielded stark differences across groups in numerous health outcomes. We also explored disparities between rural and urban populations as well as different health system configurations by race and ethnicity. Health equity research informs our future quality improvement and policy action and is a bedrock of our organization.

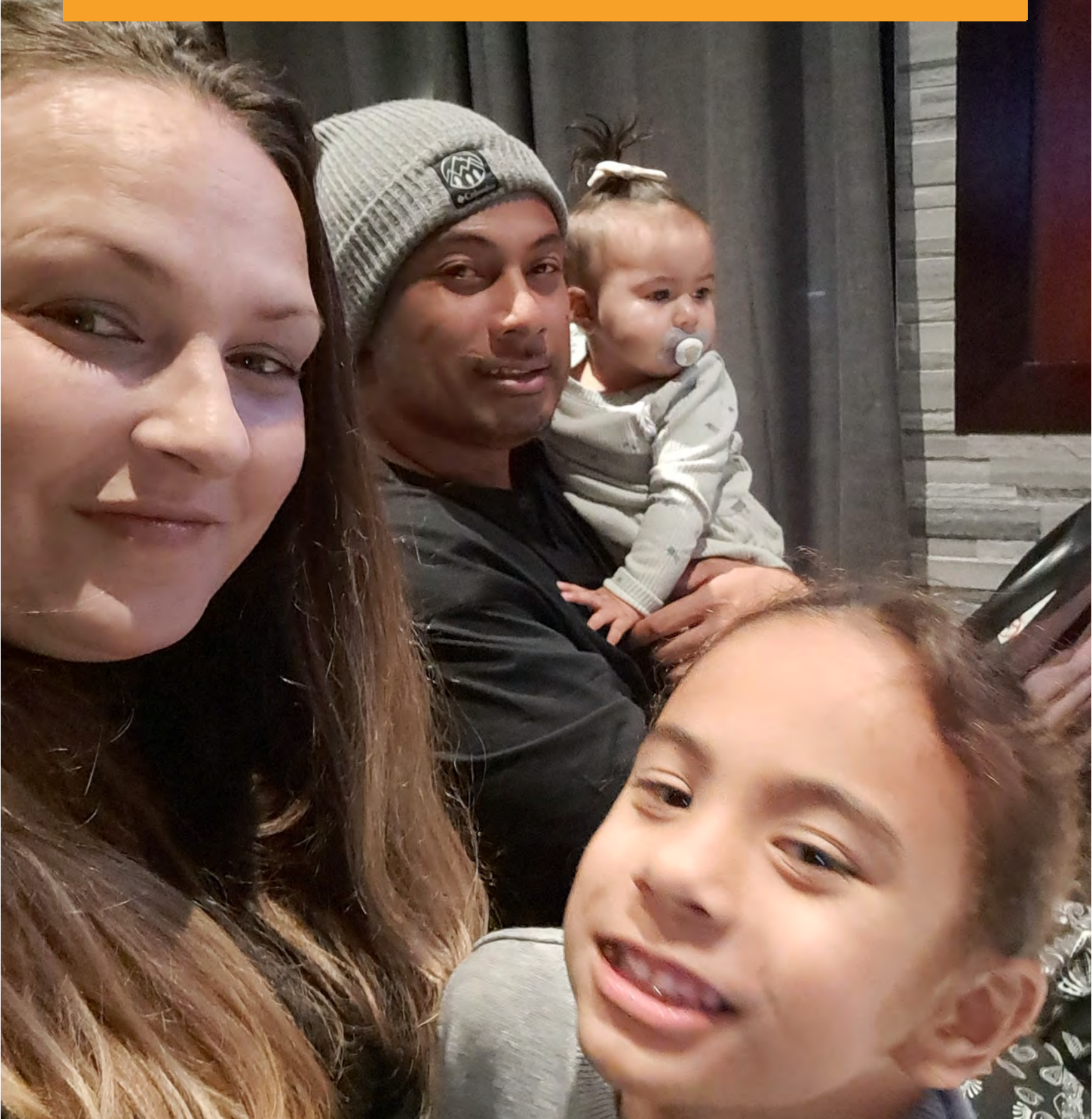
## PARTNERSHIPS

We strive to partner with diverse populations and community organizations. For this reason our Family Advisory Council has diverse representation from a broad range of racial and ethnic backgrounds, allowing us to capture different experiences and points of view to inform our improvement work. We also recognize the importance of reaching beyond the walls of the NICU into the community to address health related social needs and are looking to form partnerships with community groups to further support our NICU families during their stay and after discharge.

By embedding health equity principles into our core activities, CPQCC is dedicated to driving meaningful change and promoting equitable access to high-quality perinatal care for all families.







FEATURE II

# Family Advisory Council



# Family Advisory Council

The Family Advisory Council (FAC) has made significant strides since its inception in the fall of 2022. With the participation of 13 members, the FAC has been successful in building a strong community and sharing ideas through monthly meetings and events.

The council has been involved in creating a statewide NICU Parent Experience Survey. Moreover, the council has been proactive in engaging with the advocacy arm of the California Association of Neonatologists and the Children's Specialty Care Coalition, to discuss levers for change and share international best practices.

FAC members have also participated on other CPQCC committees, such as the Within the NICU Health Equity Subcommittee, spreading the family and patient perspective to more of our work.

The FAC has shown high levels of engagement, with members speaking passionately and listening intently to others' shared experiences. The FAC members have demonstrated their powerful voices for families in the NICU, and we look forward to seeing their continued progress in 2024.



*Photos are from our Family Advisory Council members and their families who inspire their volunteer work with us.*





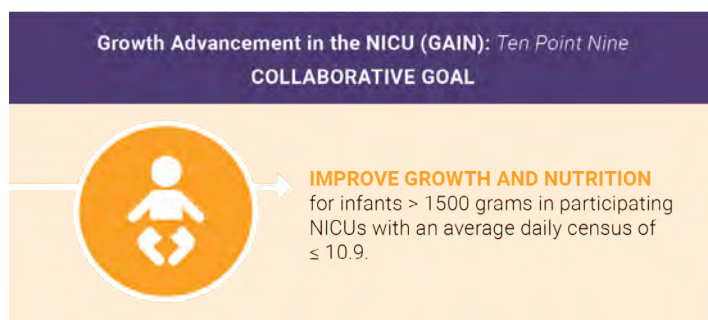
**FEATURE III**

# Quality Improvement Collaboratives & QI Toolkit Revisions

## Growth Advancement in the NICU (GAIN) Ten Point Nine



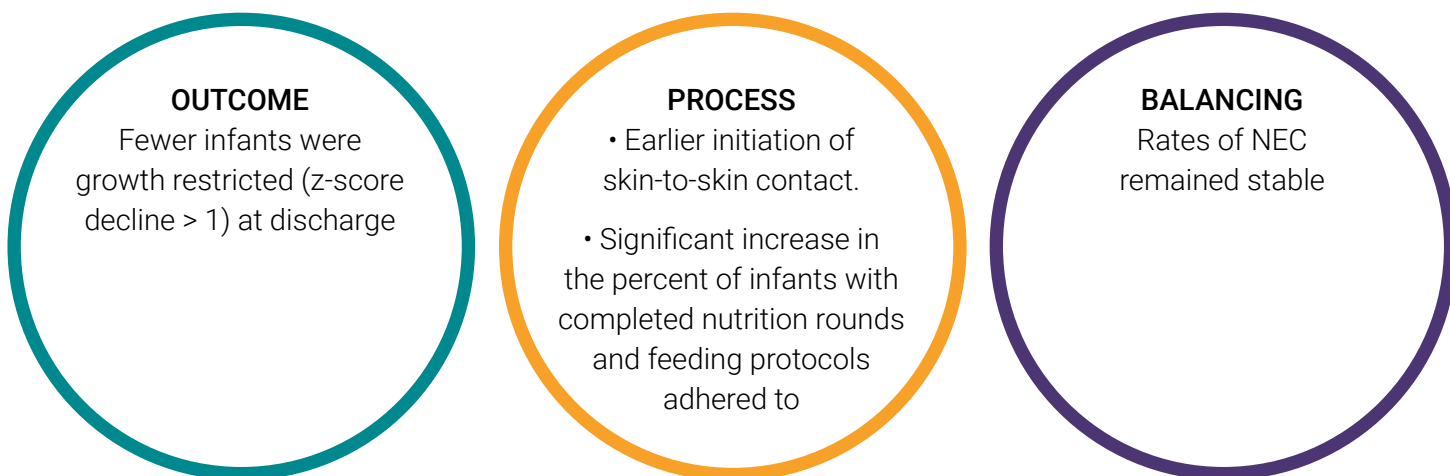
The GAIN: Ten Point Nine Collaborative aimed to improve growth and nutrition for infants with a birth weight between 1500 and 2500 grams in NICUs with an average daily census of  $\leq 10.9$ . **This collaborative was specifically designed for NICUs with a lower average daily census, with direct input from CPQCC's member led Ten Point Nine Workgroup.** The collaborative launched simultaneously with the GAIN: Surgical Collaborative in July 2021. Grow, Babies, Grow! (GBG) was CPQCC's statewide QI collaborative for very low birthweight (VLBW) nutrition that inspired the GAIN collaboratives. Based on what we learned with GBG, and working with two of our member-led workgroups, we determined that two groups were not able to take full advantage of GBG, so we designed these QI collaboratives especially for them. Our "smaller NICU" (10.9) workgroup asked for a collaborative aimed at bigger babies in CPQCC's smaller NICUs. 10.9 teams had great success working collaboratively around growth and nutrition.



### GAIN: 10.9 teams:

- Focused on the larger, lower acuity babies that represent a substantial portion of their patient population
- Met on a monthly basis and shared experiences, lessons, materials, data, and strategies with similar sized NICUs
- Addressed the challenges of improving the growth of NICU infants (1500-2500g at birth)
- Learned about evidence-based, potentially better practices for improving growth and nutrition in the NICU

### The 2-year collaborative ended in June 2023 with the following lessons learned:



Look out for an upcoming publication for GAIN collaboratives.



# Growth Advancement in the NICU: Surgical Patients



The Growth Advancement in the NICU (GAIN): Surgical Patients Collaborative aimed to improve growth and nutrition for infants who have had intestinal surgeries. **This collaborative was specifically designed for NICUs that frequently treat surgical patients, with direct input from CPQCC's member-led Children's Hospital Workgroup.**

Eight NICUs participated in the GAIN: Surgical Collaborative. They met on a monthly basis and shared experiences, lessons, materials, data, and strategies with similar surgical NICUs.

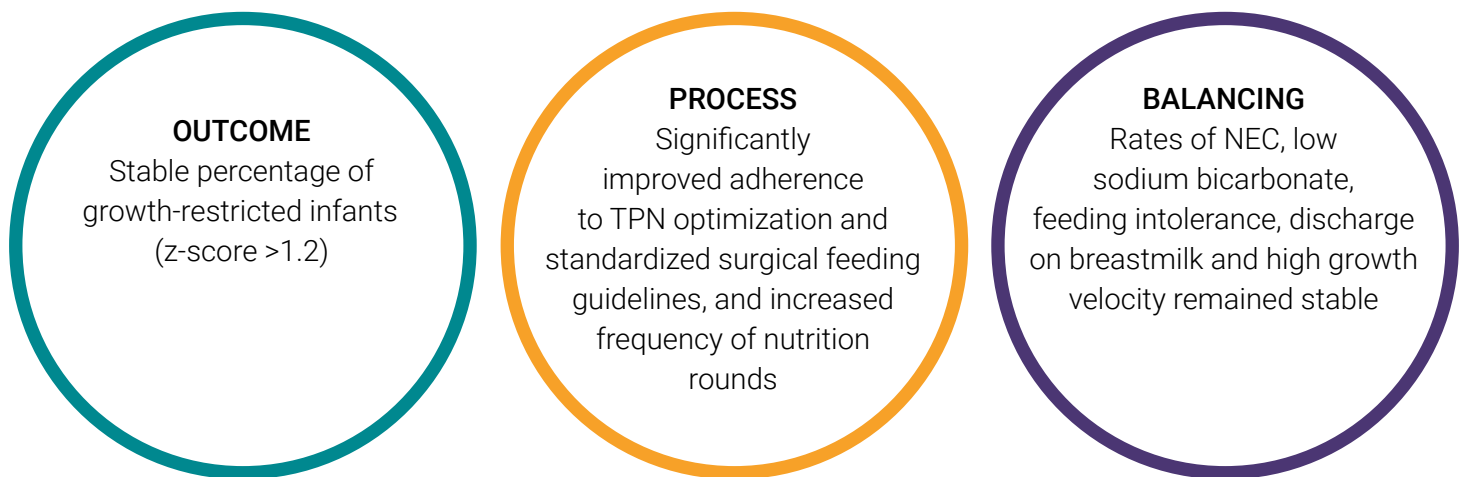
Teams shared that the following parts of the collaborative were most meaningful:

- Development of feeding protocol made approach to feeding more uniform and so nursing and families felt more certain of the plan which I think made them more trusting of the team overall.
- Discussions with various centers and learning from what others are doing.
- Nutrition Rounds, creating an atmosphere supportive for dieticians.
- Providing a structured way to collect data and monitor the nutrition status of our babies; provided additional motivation for us to work on and roll out guidelines; provide a setting in which more collaborative interdisciplinary care can be provided to patients and families.

Teams felt the following areas changed in their NICU due to their participation in the collaborative:

- Much more consistent approach to feedings, better collaboration with surgical and GI colleagues.
- More consistent use of the surgical feeding protocols.
- Increased communication with GI and surgery.

**The 2-year collaborative ended in June 2023 with the following lessons learned:**



Look out for an upcoming publication for GAIN collaboratives.

## GAIN COLLABORATIVES FACULTY PANEL

- Dietitian - Maria Hetherton, RD, CSP, CSPCC (UCSF Benioff Children's Hospital)
- Dietitian - Shannon Burke, RD, CSP (UCSF Benioff Children's Hospital)
- NICU Parent - Jennifer Canvasser, MSW (NEC Society)
- Neonatal CNS - Mindy Morris, DNP, NNP-BC, CNS (Engage/Grow/Thrive, LLC)
- NICU RN- Courtney Breault, MSN, RN, CPHQ (CPQCC)
- Biostatistician – Jessica Liu, PhD, MPH (CPQCC)
- Surgeon for GAIN Surgical Patients - Ashley Walther, MD (Children's Hospital Los Angeles)
- Neonatologist/Collaborative Co-Director for GAIN: Ten Point Nine - Guadalupe Padilla, MD (Harbor UCLA)
- Neonatologist/Collaborative Co-Director for GAIN: Surgical Patients - Irfan Ahmad, MD (CHOC Children's)
- CPQCC Lead/Collaborative Co-Director for GAIN: Ten Point Nine - Anjali Chowfla, MPA (CPQCC)
- CPQCC Lead/ Collaborative Co-Director for GAIN: Surgical Patients - Caroline Toney-Noland, MSc (CPQCC)





# Optimizing Antibiotic Stewardship in California NICUs (OASCN)

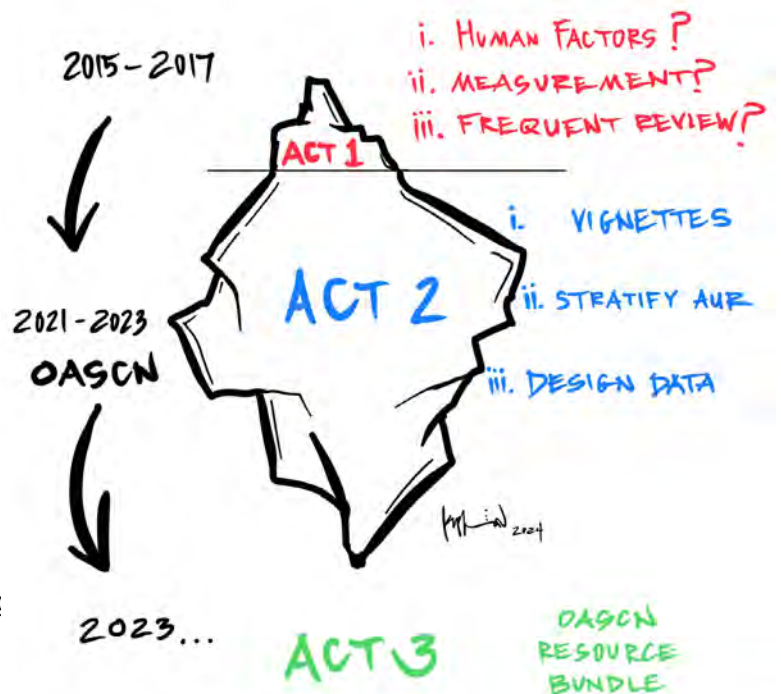


CPQCC's experts around California have been dedicated to reducing unnecessary antibiotic use and improving antibiotic stewardship in the NICU for many years. The Antibiotic Stewardship collaborative (2015-2017) resulted in a number of important lessons:

- Human factors and the psychology of change are vital factors and must be taken into account in antibiotic stewardship, or indeed any continuous quality improvement (CQI) project. Vignettes were used as a novel method for identifying individual prescriber variation as a target for QI efforts.
- “Total antibiotic use rate” (AUR) (days of antibiotic usage over total NICU admission days) was of limited use in accurately assessing performance during quality improvement PDSA (Plan, Do, Study, Act) cycles.
- Frequent antibiotic utilization reviews were identified by high performing sites as drivers of success.

This statewide work set the stage for the Optimizing Antibiotic Stewardship in California NICUs (OASCN), pronounced “Ocean”, a 2021-23 statewide antibiotic stewardship QI collaborative.

This statewide quality improvement collaborative started in 2021. Its overall evolution, however, was much longer and is depicted in the figure below. The figure shows an iceberg metaphor visually displaying the backstory, rising action, and culmination of this three-act antibiotic stewardship play that spanned 10 years. This is a helpful reminder of the power of structured collaboration among NICUs working toward improving outcomes. In 2015, CPQCC launched the first antibiotic stewardship collaborative. That project uncovered many stewardship lessons and set the stage for the OASCN study. Three of the primary lessons provided guidance to help NICUs optimize stewardship and also support collaborative QI methodology<sup>1</sup>. First, the study highlighted human factors and psychology of change as a primary part of AS and CQI. Vignette research methods were used for the first time during the collaborative. The vignette results, collected near the end of the collaborative in 2017, described individual prescriber variation as a target for QI efforts. Second, we identified limitations in how well total AUR accomplishes the goal of accurately assessing performance during PDSA cycles. Third, higher performing sites noted “frequent antibiotic utilization review” as one of the primary drivers of their success.



In 2018, Peter Mendel, a sociologist at RAND, and Ken Zangwill, an infectious disease specialist at The Lundquist Institute at Harbor UCLA, contacted Kurlen Payton, MD, Medical Director of the Division of Neonatology, Department of Pediatrics at Cedars-Sinai Medical Center, and Henry C. Lee, MD, MS, Professor of Clinical Pediatrics at the University of California San Diego and Rady Children’s Hospital, with a vision of building on the past antibiotic stewardship collaborative. The four finalized the approach to OASCN. The AHRQ-funded project aimed to implement a QI collaborative blending the traditionally used IHI model for improvement, the ECHO learning model, and vignette methodology to support antibiotic stewardship in 30 NICUs in California.

Peter Mendel coined the acronym OASCN, and the team sailed off toward the island of “optimal antibiotic use”. The project started in 2021 and included one year of twice monthly learning sessions and a second year of quarterly learning sessions. OASCN was unique in that it blended these two traditionally used improvement models and added a third method using vignettes that is not considered a standard part of QI. Overall, the project resulted in notable reductions in total antibiotic utilization rates (AURs) in babies born at more than 35 weeks' gestation, or at less than 35 weeks' gestation. In addition to meeting our primary outcomes, this collaborative yielded lessons specific to antibiotic stewardship as well as for future QI collaboratives on any subject. Regarding antibiotic stewardship, we compiled hundreds of lessons on the CPQCC website, where they are available for individuals, QI teams, and antibiotic stewardship educators. Regarding broader QI collaborative applicability, OASCN provided a blueprint for using vignettes, demonstrating NICU provider perceptions on practice and their evolution throughout the project<sup>2</sup>. We also reaffirmed the central importance of nursing engagement in collaborative success through spreading potentially better practices, such as standardizing the processes for obtaining blood cultures<sup>3</sup>. There were hundreds of lessons resulting from these novel quality improvement collaborative methods. These lessons and videos were compiled in an easy to access format and are publicly available on CPQCC's website. The resources are organized and can be searched by topic for use by individuals, QI teams, or educators targeting antibiotic stewardship.

Learn more: [Antimicrobial Stewardship in the NICU: OASCN Learning Points](#)



1. Payton KSE, Bennett MV, Schulman J, Benitz WE, Stellwagen L, Darmstadt GL, Quinn J, Kristensen-Cabrera AI, Breault CC, Bolaris M, Lefrak L, Merrill J, Sharek PJ. "28 NICUs Participating in a Quality Improvement Collaborative Targeting Early-Onset Sepsis Antibiotic Use." *J Perinatol*, Epub ahead of print 20 Feb. 2024, doi: 10.1038/s41372-024-01885-8.
2. Qureshi N, Kroger J, Zangwill KM, Joshi NS, Payton K, Mendel P. "Changes in Perceptions of Antibiotic Stewardship Among Neonatal Intensive Care Unit Providers Over The Course of a Learning Collaborative: A Prospective, Multisite, Mixed-Methods Evaluation." *J Perinatol*, vol. 44, no. 1, 2024, pp. 62-70, doi: 10.1038/s41372-023-01823-0.
3. Lefrak L, Schaffer KE, Bohnert J, et al. "Blood Culture Procedures and Practices in the Neonatal Intensive Care Unit: A Survey of a Large Multicenter Collaborative in California." *Infection Control & Hospital Epidemiology*, vol. 44, no. 10, 2023, pp. 1576-1581, doi:10.1017/ice.2023.33.



# The NICUs Enabling Optimal Brain Health (NEOBrain) Collaborative



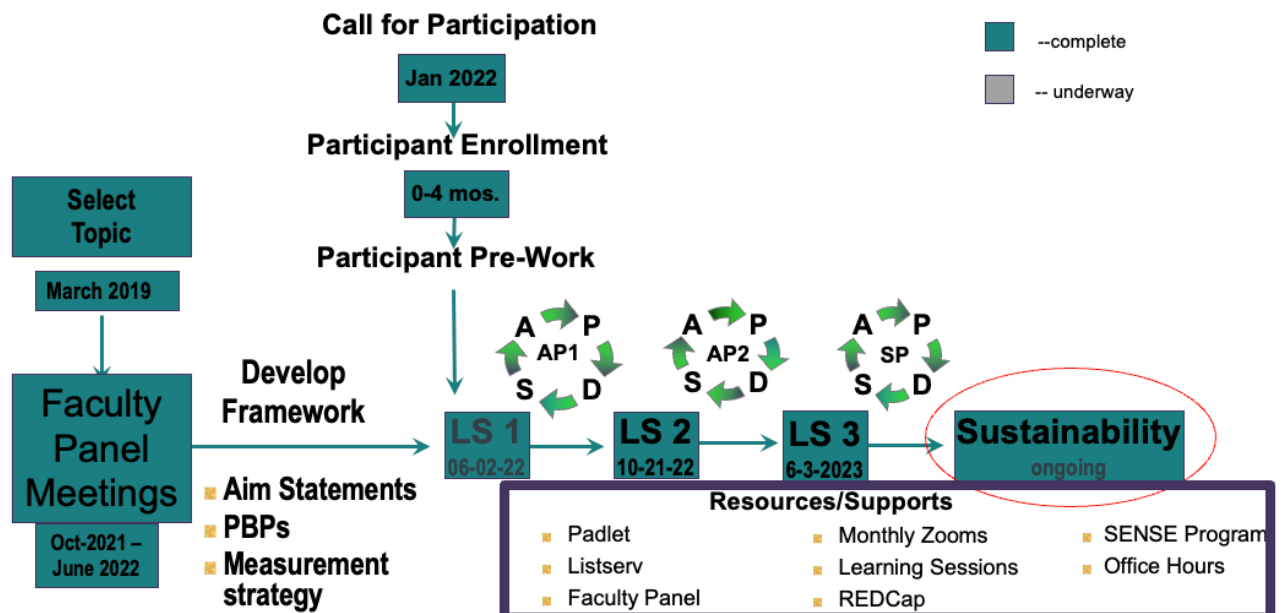
CPQCC's 11th QI Collaborative launched with 25 CPQCC NICUs participating in June 2022. These teams are currently in their sustainability phase of the collaborative and continue to make great strides in "holding the gains". The NEOBrain collaborative is the first CPQCC collaborative to require that teams have family partners on their QI team. Teams have had interactive focused sessions on culture which links work experience to patient safety. There have been monthly specialized office hours to better support the teams and specialized workgroups around:

- Data
- Glucose monitoring project
- Supporting and Enhancing NICU Sensory Experiences (SENSE) Program
- Family partners

Teams have actively implemented potentially better practices around the following focus areas:

- Utilize a protocol/guideline/bundle of evidence-based practices to minimize brain injury and promote neurodevelopment.
- Decrease noxious stimuli: appropriate light, sound, movement.
- Make skin-to-skin with the parent the preferred locus of care for the infant.
- Develop a process for Developmental Time Outs

## NEOBRAIN COLLABORATIVE



## NEOBRAIN FACULTY PANEL



**Collaborative  
Codirector/  
Physician Lead**

Elizabeth Rogers,  
MD



**Collaborative  
Codirector/  
CPQCC Lead**

Courtney Breault,  
MSN, RN, CPHQ



**Research  
Scientist/  
Neonatal  
Occupational  
Therapist**

Bobbi Pineda,  
PhD, OTR/L, CNT



**CNS/NNP**

Mindy Morris,  
DNP, NNP-BC,  
CNS, C-ELBW



**NICU Parent**

Jennifer  
Canvasser, MSW



**NICU Parent**

Necole McRae



**Epidemiologist/  
Biostatistician**

Xin Cui, PhD, MPH



**Epidemiologist/  
Biostatistician**

Jessica Liu, PhD,  
MPH

## NEOBRAIN GLOBAL AIM

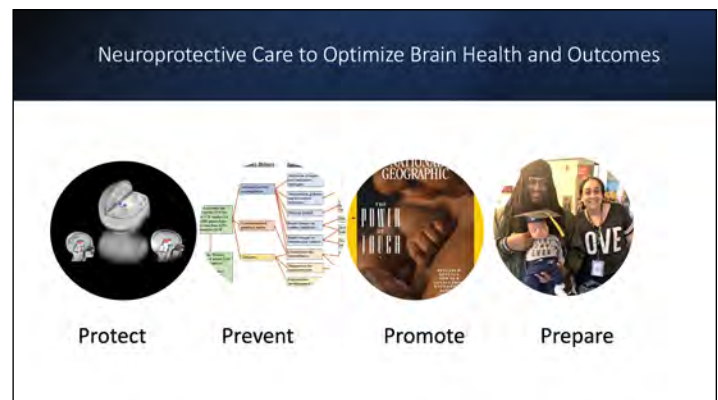
To encourage a neuroprotective approach to care which promotes positive interactions, minimizes unnecessary interventions, and integrates families as partners.

### PRIMARY AIM

Increase positive touch for all eligible infants, emphasizing parental touch, within 72 hours of admission and ongoing for at least 5 out of 7 days/week with parents and 7 out of 7 days/week with the care team until 36 weeks postmenstrual age (PMA) by May 31, 2023.

### SECONDARY AIMS

- To increase the percentage of eligible infants who receive skin to skin care within the first week of life.
- To decrease the time from birth to first skin to skin encounter.
- To decrease noxious stimuli, including but not limited to:
  - Adherence to two-person care
  - Decreasing # of labs, X-Rays
  - Ensuring appropriate sound and light exposure in the environment
- To increase family self-perceived competence in care at time of discharge.



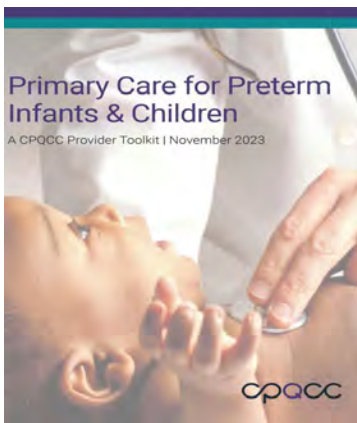
*"Neuroprotective Care to Optimize Brain Health and Outcomes: 4 Pillars" by Dr. Elizabeth Rogers, Collaborative Co-director/ Physician Lead.*



## QI Toolkit Revisions 2023

On behalf of CPQCC, we extend our deepest gratitude to the authors of these toolkits, as well as our Perinatal Quality Improvement Panel (PQIP) committee members, for their invaluable expertise and dedication in their respective fields. Their wealth of knowledge has been instrumental in shaping these toolkits and revisions, providing high-quality, up-to-date information essential for healthcare professionals. Their collaborative efforts have ensured the relevance and effectiveness of the resources provided. In conclusion, the commitment and collaborative spirit demonstrated by all those involved in CPQCC's QI efforts continue to be crucial in creating comprehensive and impactful toolkits that will undoubtedly benefit healthcare providers and improve patient care across the state and nation.

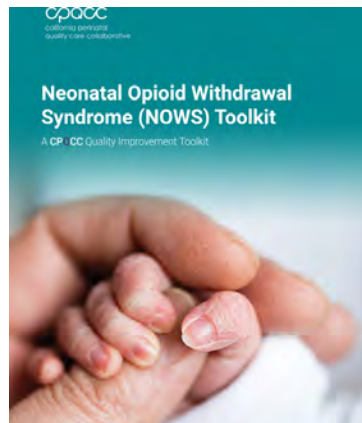
### PRIMARY CARE FOR INFANTS & CHILDREN TOOLKIT



This toolkit provides updated information in an easily-accessible reference for busy primary care pediatric providers. Revisions include a supplemental NICU Discharge Provider Template modifiable word document that NICUs can edit for their specific needs and include in their discharge summaries.

Download: [Primary Care Toolkit](#)

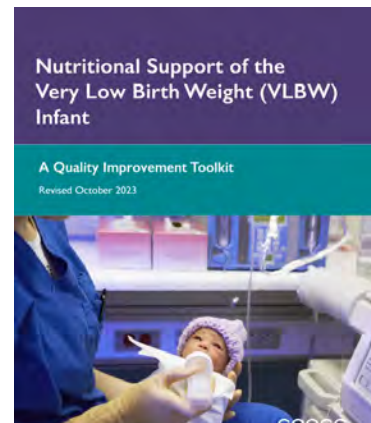
### NEONATAL OPIOID WITHDRAWAL SYNDROME (NOWS) TOOLKIT



This toolkit aims to provide healthcare staff with a straightforward manual of care that they can use as a reference to manage infants with NOWS.

Download: [NOWS Toolkit](#)

### NUTRITIONAL SUPPORT OF THE VLBW INFANT TOOLKIT



The 2023 update of the Nutritional Support of the VLBW Infant Toolkit includes FDA's Probiotics Warning issued in September 2023.

Download: [Nutrition Support Toolkit](#)

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**“As a primary care provider serving an underserved community, I am thrilled to now have the toolkit to guide my practice. I shared with the Medical Director for La Clinica Contra Costa County how beneficial your talk was and how the toolkit is. Thank you!**

*– Rebecca Maher, Pediatric Nurse Practitioner at La Clinica de la Raza, Oakley and Concord, CA*

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## Additional Program Highlights



# Improvement Palooza 23 - Conference

Held in conjunction with the 2023 California Association of Neonatologists (CAN) Cool Topics in Neonatology Meeting, CPQCC's Improvement Palooza 2023 (IP23) was an opportunity for NICU caregivers and parents to build an environment in partnership that reduces stress and burnout and promotes patient safety and staff wellbeing. By the end of the conference, attendees were refreshed and inspired to make equitable, innovative and high-quality changes in their NICUs.

IMPROVEMENT PALOOZA 2023

## RESTORATION & TEAMWORK



### 197 Participants

**104**

in-person attendees

**93**

virtual attendees

### From 9 Countries

**95%**

United States

**2%**

Sweden

**< 1%**

Finland, Netherlands,  
Austria, Australia, Germany,  
UK, Puerto Rico



### And 9 States

**57%**

California

**14%**

Virginia

**7%**

Washington

**4%**

Oregon

**< 3%**

Texas, Nevada, Idaho,  
Florida, and Iowa

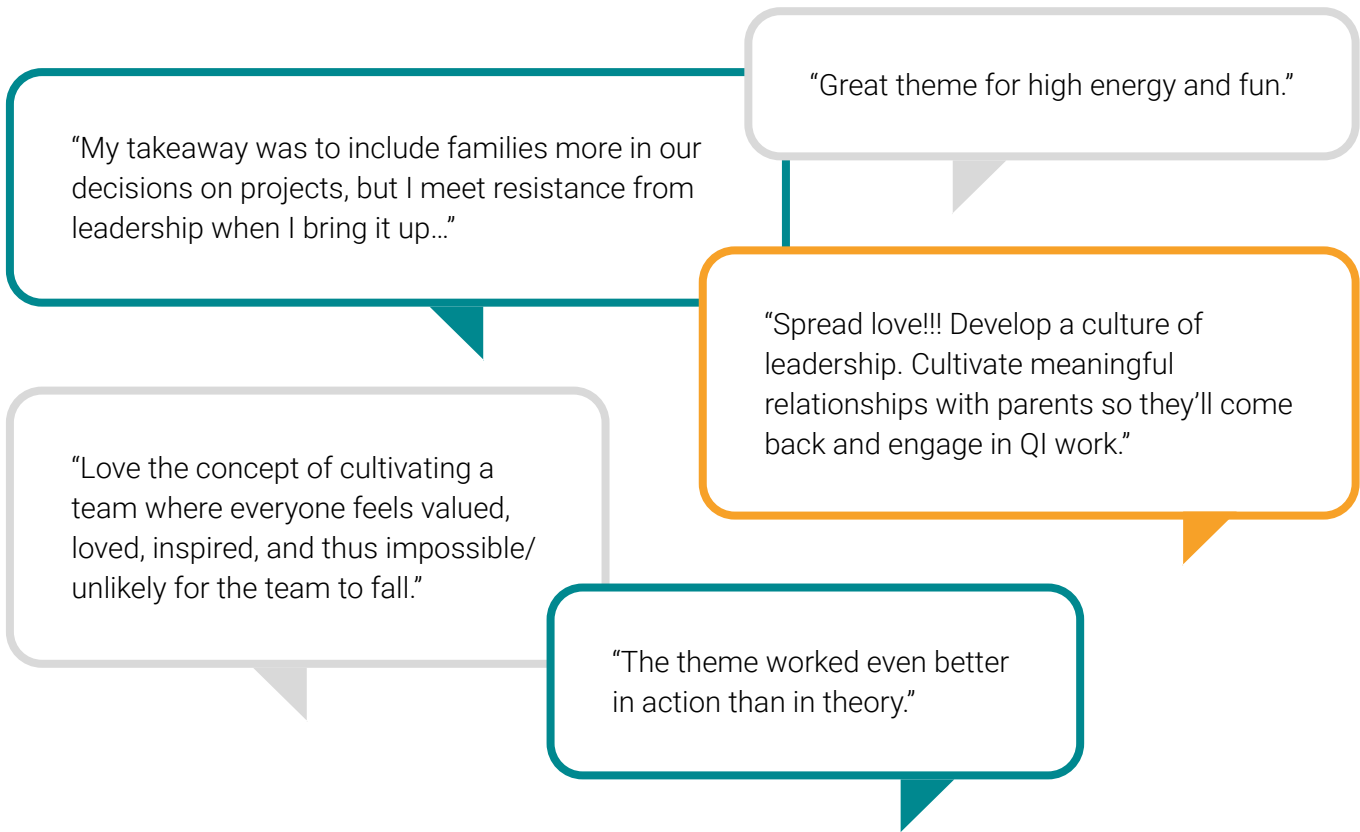
**“A wonderful eye opener to seeing areas that need improvement, or where we are doing well.”**

**“Wonderful variety of topics, there was really something for everyone. Presenters ‘spoke different languages’ like data, QI, emotion, humor.”**



CPQCC's fourth annual Improvement Palooza helped teams reap the benefits of restoration and understand how it leads to more successful teamwork in the NICU. Throughout the day, attendees learned how positivity and resilience impact NICU teams, patients, and families.

**Key takeaways from IP23 Attendees:**



## IP23 - Conversation Circles Webinars

Furthermore, IP23 served as a pivotal opportunity for NICU caregivers and parents to collaboratively cultivate an environment fostering patient safety and staff wellbeing. Through partnership and shared commitment, participants engaged in meaningful discussions aimed at nurturing a culture of inclusivity and equity within





the NICU setting. The conference provided a platform for critical dialogue surrounding important themes such as equity and inclusion. In alignment with this objective, CPQCC facilitated three Conversation Circles, each focusing on distinct yet interconnected aspects of the NICU experience.

The Conversation Circles offered attendees the chance to delve deeper into topics introduced during IP2023, centering discussions around Restoration, Revelation, and Relationships in the NICU. These circles were designed to encourage reflective exploration and shared insights, fostering a sense of community and collective learning.

By engaging in these conversations, participants were able to gain valuable perspectives, share experiences, and collaborate on strategies to promote positive change within their NICU environments. Ultimately, these efforts contribute to the ongoing advancement of patient-centered care, staff resilience, and a culture of equity and inclusion within NICUs across the state.

# High Risk Infant Follow-up Program

The California HRIF program has accomplished a great deal this year. We supported referral to HRIF for 9,000 children discharged from NICUs in CA, 44% of whom were very preterm. In addition, we have launched and improved tools to allow HRIF sites to understand and work to eliminate site-specific disparities, improve quality of follow-up care, share site-specific and statewide HRIF outcomes with NICU teams to improve parent and family counseling, and understand variation in HRIF team resources and staffing across the state.

In January 2023, the program released the Health Equity (HE) Dashboard, a powerful tool that allows clinics to view data about children and families referred to and seen at their site by race and ethnicity. Below you can see an example of viewing follow-up rates by race/ethnicity. The HE dashboard has the potential to promote equity and reduce disparities in care.

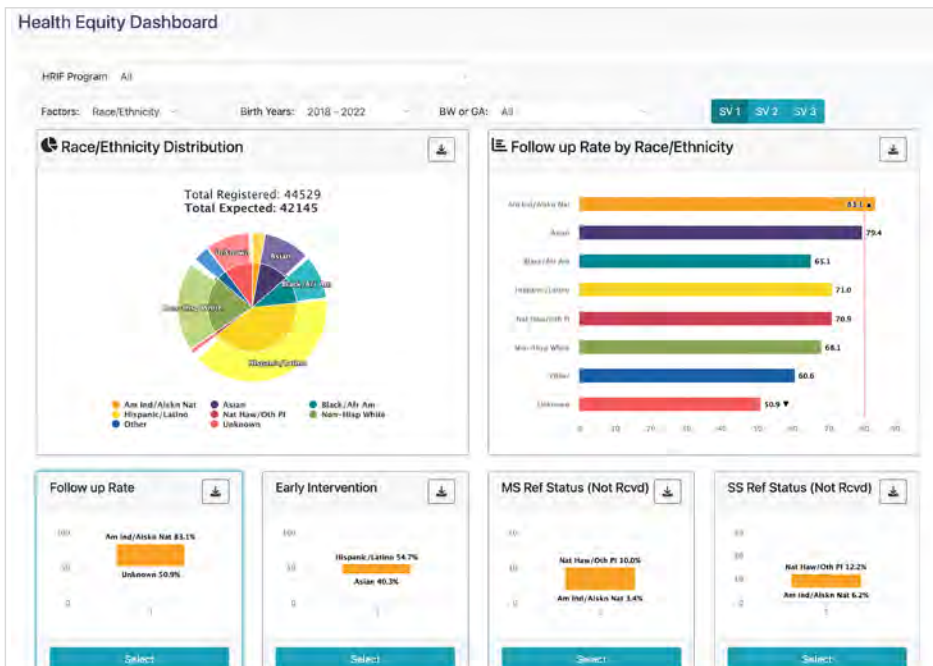
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**“This was an incredible accomplishment due to the hard work of the staff at the HRIF clinics in entering and finalizing their data.”**

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In spring of 2023, the HRIF program launched several exciting new database features, including an announcement box, clinical activity reports, case transfer feature, and improvements to the actionable clinic dashboard. These features have made it easier for HRIF staff to manage and track patient progress and ensure that they receive the care they need. By August 2023, the HRIF Program finalized 8,700 referral/registrations and 13,300 standard visits for infants born in 2019; closed 8,900 referral/registrations for infants born in 2021;

and all expected infants born in 2021 received an initial standard visit. This was an incredible accomplishment due to the hard work of the staff at the HRIF clinics in entering and finalizing their data. The HRIF program recognized 50 superstar, award-winning HRIF clinics for completing the closeout items one month prior to the deadline.



Finally, the HRIF program hosted multiple presentations and pop-up training workshops and sessions throughout the year, ensuring that all 67 HRIF program clinic centers are up to date on the latest system developments, best practices, and

research. In addition, the HRIF program convened the Resources and Opportunities in Clinics (ROCs) workgroup. This group consists of HRIF clinic coordinators from across the state, with a primary goal of standardizing HRIF Program clinic processes. The work from this group will help to connect HRIF staff with valuable resources and better practices for high-risk infants and their families. Overall, the HRIF program has had a successful year and is poised to continue making great strides in the future.



## NICU Data Center

The NICU Data Center team had a productive year in 2023. In January and March, the team hosted two pop-up webinars dedicated to educating individuals on data collection and closeout items. These webinars were a huge success, and many CPQCC members benefited from the information shared. In addition, the data center team finalized the higher acuity data for the CCS, the California Perinatal Transport System (CPeTS), NICU data sets, which included HRIF registration. This was an important accomplishment that helped to streamline data collection and analysis.

The NICU Data Center team supported NICUs to successfully complete all NICU Admissions Database closeouts, which included lower acuity NICU admissions, which make up about 70% of the NICU population. We have met the CCS requirement to report on all NICU admissions, not just the 30% of admissions that are high acuity babies and very low birthweight (VLBW) infants.

Throughout, the data center team offered four data training sessions. These training sessions, hosted annually, educated CPQCC members on best practices for data collection and report analysis used for QI measures in their NICUs. Furthermore, the team implemented the chronic lung disease of prematurity (CLD) Focus board. This board evaluates each NICU's efforts in changing practice and CLD over time. Additionally, the team created the antibiotic (ABX) Focus board which explores the relationship between newborn antibiotic exposures (NAE) and early onset sepsis (EOS) and/or late onset sepsis (LOS) in inborn infants.

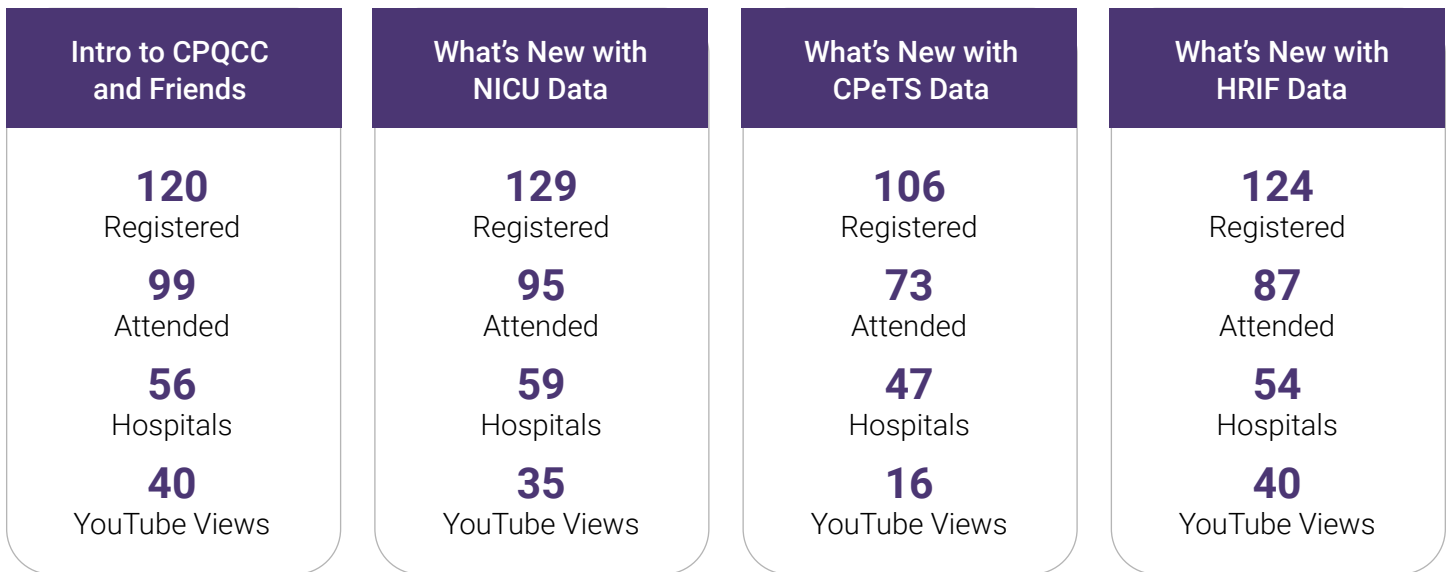


# Data Training Sessions

CPQCC’s data training sessions are an opportunity for our members to learn what’s new with CPQCC. Each session covers a different topic related to CPQCC including our NICU, CPeTS, and HRIF data sets and reports. The first data training session overviews the history and connections between CPQCC, CMQCC, HRIF, and CPeTS. as well as our Quality Improvement offerings.

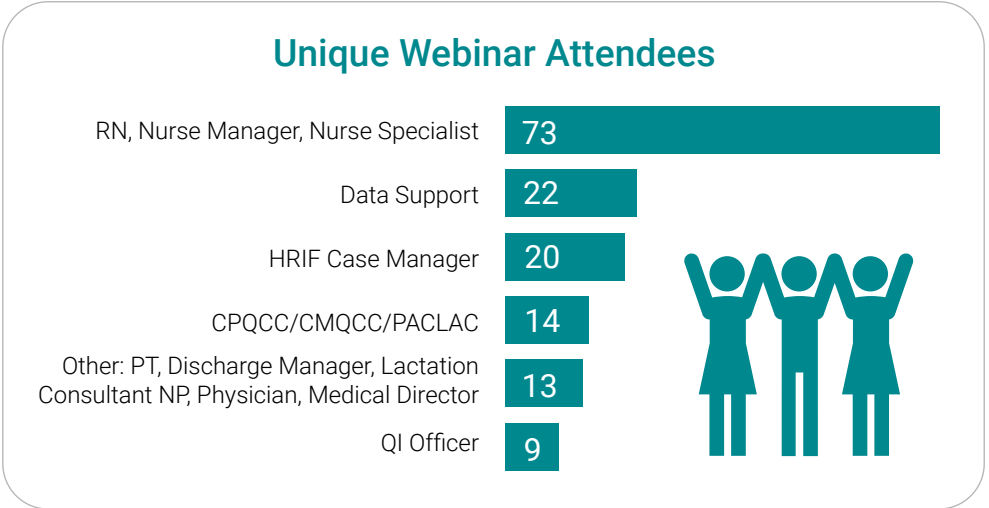
**“I loved seeing how that data has directly translated to improvement projects that have tangibly improved outcomes.”**

– CPQCC Data Training Attendee



**“A wonderful eye opener to seeing areas that need improvement, or where we are doing well.”**

**“The speakers were all knowledgeable and very approachable.”**





# A Look Ahead 2024

## Motivating & Optimizing Maternal Milk in Safety (MOMMS) Net NICUs Collaborative

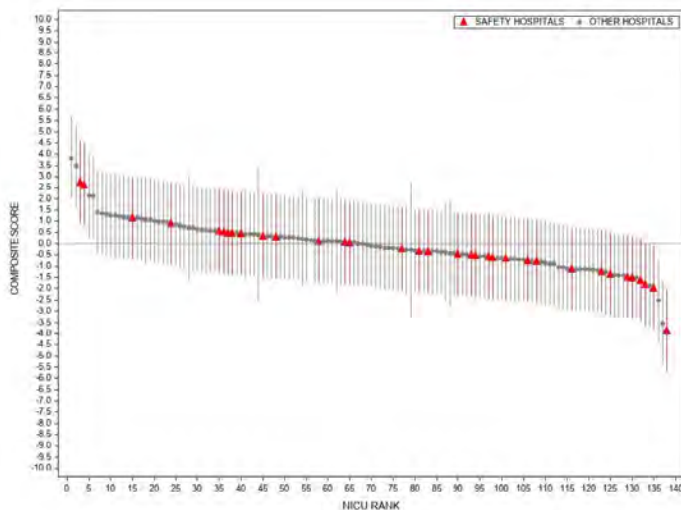
"Safety net" hospitals and NICUs in California provide care for patients with socioeconomic challenges, often while working under their own resource constraints. Care and outcomes among these NICUs vary widely, yet they rarely have the time and the resources to participate in CPQCC's statewide QI collaborative projects.

Dr. Jochen Profit has secured a grant from the National Institute of Child Health and Human Development (NICHD), one of the National Institutes of Health to fund a community of learning around supporting breastmilk feeding in safety net NICUs. The grant allows CPQCC to offer a quality improvement and learning opportunity specifically for California's safety net NICUs, free of charge.

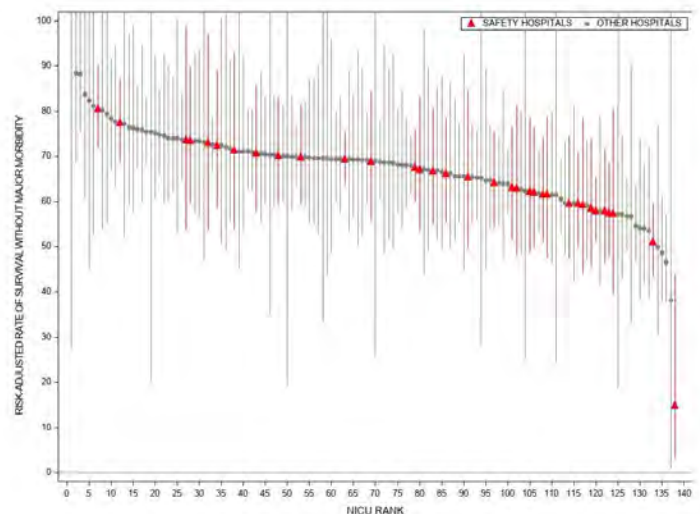
The percentage of infants who go home while still receiving breastmilk varies from 33% to 88% among the safety net NICUs. We look forward to developing a community of learning in this group, supporting them in building their quality improvement capacity, and gaining a better understanding of the factors that differentiate the NICUs and the care they provide.

MOMMS will launch in June 2024. [Learn more](#)

**Baby-MONITOR Score**



**Survival Without Major Morbidity**



Liu J, Profit J, et al. *J Pediatr.* 2022 Apr;243:99-106

## Health-Related Social Needs Collaborative

We are also excited to share another 2024 QI project: The Health-Related Social Needs Collaborative.

Approximately one quarter of U.S. families with preterm infants have unmet basic needs, such as housing or job insecurity (Parker, 2020)

- 26% of families experienced food insecurity,
- 33% experienced housing insecurity, and
- 28% experienced energy insecurity

Only a quarter of neonatal intensive care units have a standardized screening/referral process for social determinates of health (SDOH).

Addressing unmet health-related social needs is a CPQCC priority. We look forward to partnering with CPQCC teams to promote a culture of equity while connecting families with key community providers, partners and resources.



*Healthy People 2030, U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Retrieved March 5, 2024.*





# Publications

In 2023, CPQCC published 17 new articles in peer-reviewed journals with collaborators from across the state and country. We are incredibly grateful to CPQCC members for contributing data for quality improvement that makes this research possible and advances our understanding of neonatal care.

Multiple manuscripts co-authored in 2023:

- 16** Published
- 10** Submitted and under review or revision
- 16** In preparation for submission

1. **Racial Disparities in Postnatal Growth among Very Low Birthweight Infants in California**. Lee S-M, Sie L, Liu J, Profit J, Lee HC. J Perinatol. 2023 Mar;43(3):371-377. PMID: 36737570.
2. **Evaluating epidemiologic trends and variations in NICU admissions in California, 2008-2018. Hospital Pediatrics**. Pang EM, Liu J, Lu T, Joshi NS, Gould J, Lee HC. 2023 Nov 1;13(11):976-983. PMID: 37867440.
3. **Association of Primary Language with Very Low Birth Weight Outcomes in Hispanic Infants in California**. Feister J, Kan P, Bonifacio SL, Profit J, Lee HC. J Pediatr. 2023 Oct;261:113527. PMID: 37263521.
4. **Early Childhood Outcomes of NICU Graduates with Cytomegalovirus Infection in California**. Lanzieri TM, Lu T, Bennett MV, Hintz SR, Sugerman DE, Dollard SC, Pesch MH, Jocson MAL, Lee HC. Birth Defects Res. 2023 Jun 15;115(11):1093-1100.
5. **Cohort selection and the estimation of racial disparity in mortality of extremely preterm neonates**. J Gould, M Bennett, J Profit, and H Lee, Pediatr Res. 2024 Feb;95(3):792-801.
6. **In Situ Simulation and Clinical Outcomes in Infants Born Preterm**. R Chitkara, M Bennett, J Bohnert, N Yamada, J Fuerch, LP Halamek, J Quinn, K Padua, J Gould, J Profit, X Xu, H Lee. J Pediatr. 2023 Aug 31:113715.
7. **Quality, Outcome, and Cost of Care Provided to Very Low Birth Weight Infants in California**. W Lapcharonensap, M Bennett, X Xu, H Lee, J Profit, D Dukhovny, J Perinatol. 2024 Feb;44(2):224-230.
8. **Neonatal Healthcare Professionals' Experiences When Implementing a Simulation and Debriefing Program in Neonatal Intensive Care Settings: A Qualitative Analysis**. Quinn J, Quinn M, Lieu B, Bohnert J, Halamek LP, Profit J, Fuerch JH, Chitkara R, Yamada NK, Gould J, Lee HC. Adv Neonatal Care. 2023 Oct 1;23(5):425-434.
9. **Getting to health equity in NICU care in the USA and beyond**. Profit J, Edwards EM, Pursley D. Arch Dis Child Fetal Neonatal Ed. 2023 Jul;108(4):326-331.

10. **Blood culture procedures and practices in the neonatal intensive care unit: A survey of a large multicenter collaborative in California.** Lefrak L, Schaffer KE, Bohnert J, Mendel P, Payton KSE, Lee HC, Bolaris MA, Zangwill KM. Infect Control Hosp Epidemiol. 2023 Oct;44(10):1576-1581.
11. **Linked birth cohort files for perinatal health research: California as a model for methodology and implementation.** Danielsen BH, Carmichael SL, Gould JB, Lee HC. Ann Epidemiol. 2023 Mar;79:10-18.
12. **Severity of small-for-gestational-age and morbidity and mortality among very preterm neonates.** Minor KC, Bianco K, Sie L, Druzin ML, Lee HC, Leonard SA. J Perinatol. 2023 Apr;43(4):437-444.
13. **Factors Associated with Transfer Distance from Birth Hospital to Repair Hospital for First Surgical Repair among Infants with Myelomeningocele in California.** Kancherla V, Ma C, Purkey NJ, Hintz SR, Lee HC, Grant G, Carmichael SL. Am J Perinatol. 2023 Jan 16.
14. **Validation of ICD-10-CM Diagnosis Codes for Gestational Age at Birth.** Leonard SA, Panelli DM, Gould JB, Gemmill A, Main EK. Epidemiology. 2023 Jan 1;34(1):64-68.
15. **Measuring Variation in Interpregnancy Interval: Identifying Hotspots for Improvement Initiatives.** Karakash SD, Main EK, Chang SC, Shaw GM, Stevenson DK, Gould JB. Am J Perinatol. 2023 Jan;40(2):201-205.
16. **Outcomes of Preterm Infants: Shifting Focus, Extending the View.** Hintz SR, deRegnier RA, Vohr BR. Clin Perinatol. 2023 Mar;50(1):1-16



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**LESLIE KOWALEWSKI**, Executive Director  
**REBECCA ROBINSON**, Administrative Director  
**COURTNEY BREAULT**, Associate Director of Quality

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**ANNALISA WATSON**, Program Manager



*This photo was taken at Stanford, CA during our townhall meeting in February 2024 with our team members from CPQCC, CMQCC and the Prematurity Research Center.*