

cpqcc

A photograph of a woman in a light blue hospital gown with a snowflake pattern, holding a newborn baby. The baby is wearing a white knit hat and has a white bandage on its nose. The baby's mouth is open as if crying. The background is a blurred hospital room.

2019 ANNUAL REPORT

www.cpqcc.org

CPQCC is a statewide network of California's neonatal intensive care units (NICUs) and High Risk Infant Follow-up (HRIF) clinics, housed at the Stanford University School of Medicine. CPQCC was founded in 1997 as the quality action arm of the California Association of Neonatologists (CAN).

CPQCC is committed to improving the quality of care for California's most vulnerable infants. As a member-driven organization, we strive to ensure that our work is guided by and responsive to the needs of health workers on the front line of care, as well as to the needs of their patients. Together, we are proud to be making substantial improvements to the health and wellbeing of California's infants.

Dear Friends,

CPQCC spent 2019 focusing on “extending our reach.” Collaborating with our partners at CMQCC and Health Management Associates, we launched a statewide quality improvement collaborative aimed at improving care for substance-exposed mothers and babies. Increased focus on health equity produced two new tools that allow our member NICUs to examine their quality of care and surface potential systemic issues and to clarify disparities in processes and outcomes by race and ethnicity, within or between hospitals.

Working with members, we identified a set of infants with congenital heart disease who were eligible for but not referred to HRIF and created tools to improve the referral process. Our Children’s Hospital workgroup is concentrating on perinatal surgical patients, and the maternal substance exposures workgroup is tracking substance-exposed infants cared for anywhere in their hospitals. CPeTS is studying instances where mothers could have been transported to a facility with a higher level NICU before birth rather than transferring the neonate after delivery. Lastly, we have begun reaching out to lower volume NICUs, which make up a large part of our membership, to learn how we can better partner with them in improving care.

In 2020, we look forward to a renewed focus on the issues facing smaller NICUs, a pilot program to increase our QI education offerings to members, further attention to low acuity NICU admissions and strengthening family-centered care in the NICU. We will continue to work hand in hand with our member hospitals; state partners; our host, Stanford University; our tireless volunteers; and the California Association of Neonatologists to achieve these goals.

As we reflect on a busy year, we want to express our gratitude for the hard work and dedication of every member of our community who dedicates themselves to improving the care and outcomes of California’s most vulnerable babies.

JEFFREY B. GOULD
Chief Executive Officer

HENRY C. LEE
Chief Medical Officer

JOCHEN PROFIT
Chief Quality Officer

SUSAN HINTZ
HRIF Medical Director

REBECCA ROBINSON
Administrative Director

What was CPQCC focused on in 2019?

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ADVANCING
HEALTH EQUITY IN THE NICU

As inequality in health access and outcomes grows as a problem of national importance, CPQCC has recommitted its efforts to reducing perinatal disparities in California. Learn more about what CPQCC is doing to advance health equity.

HEALTH EQUITY TASKFORCE

In December 2018, CPQCC launched the Health Equity Taskforce to “achieve health equity and improve care outcomes for small and sick newborns and their families across California.” The 31-member task force is a multidisciplinary, multi-stakeholder effort that engages providers and family representatives from across the state and includes leadership from both CPQCC and the California Maternal Quality Care Collaborative (CMQCC). The taskforce has formed three subgroups to tackle issues of equity between NICUs, within NICUs, and during the transition to home.

CPQCC research has found differences in care between hospitals, with hospitals which score low on overall quality of care tending to treat more Black and Hispanic infants, and within hospitals, where minority families tend to receive less

support in becoming active participants in their infant’s care. Considerable disparities in the referral of vulnerable infants to follow-up care post discharge have also been found.

The subgroups are currently working on the following priority areas and are looking for interested hospitals to partner with.

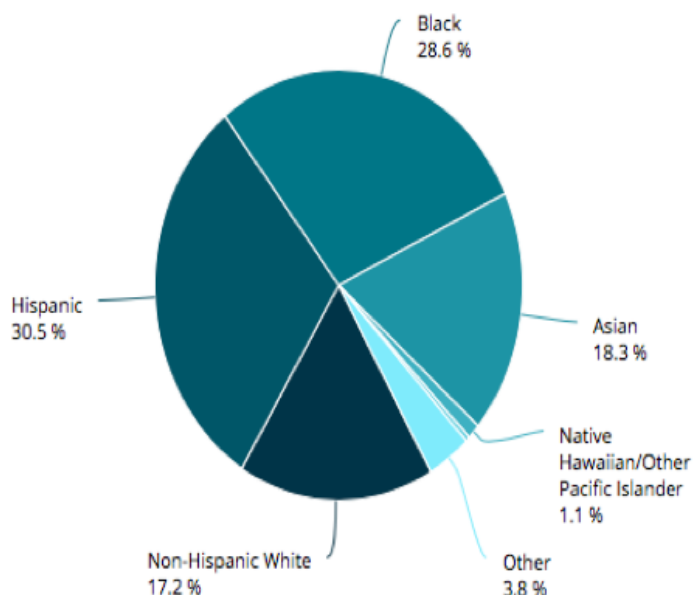
- Reducing racial/ethnic disparities in the use of a mother’s own milk-
(Disparities within NICUs)
- Understanding and addressing quality challenges in safety net hospitals
(Disparities between NICUs)
- Evaluating the impact of racial/ethnic disparities on the utilization of high risk infant follow up services, with a focus on extremely premature infants
(Transitions to home)

**** Interested in participating in CPQCC’s Health Equity work? ****

Contact Ravi Dhurjati (dhurjati@stanford.edu).

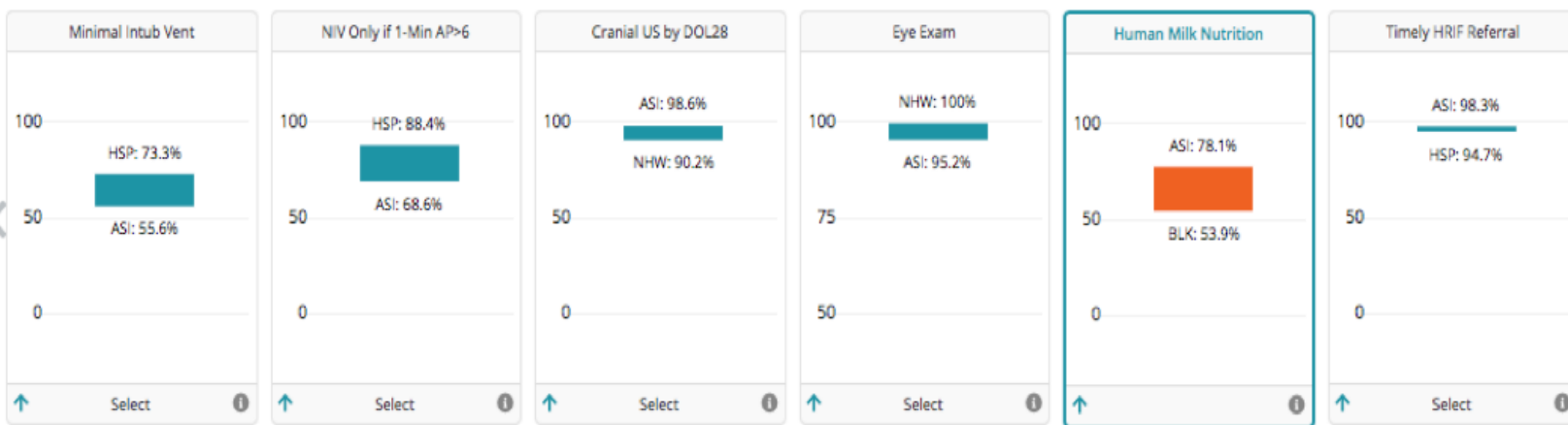
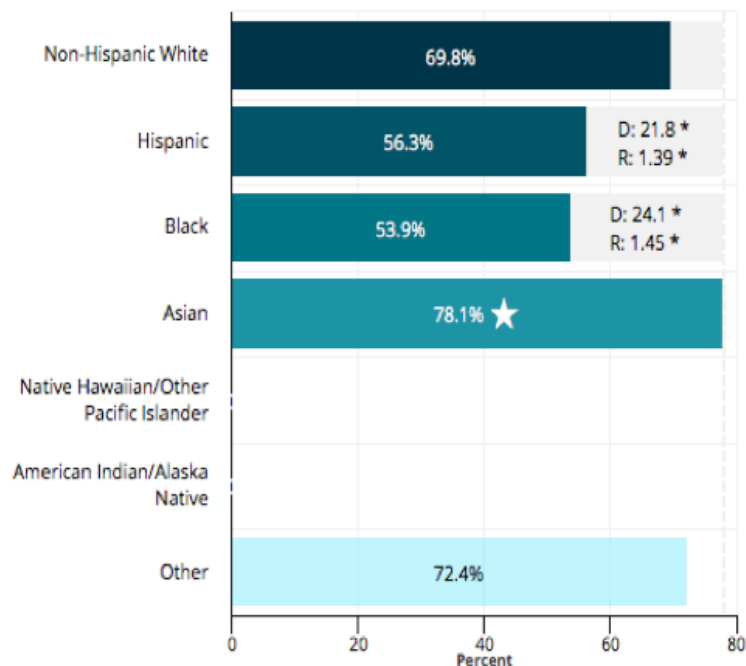
HEALTH EQUITY DASHBOARD

Race/Ethnicity Distribution for all VON Small Babies



Human Milk Nutrition by Race/Ethnicity

Reset zoom



CPQCC has recently launched a new tool that provides members with a snapshot of health equity in their NICU. The **Health Equity Dashboard**, available on CPQCC's NICU Reports site, displays key process and outcome measures by race and ethnicity to allow NICU teams to see if and where disparities in care exist.

MEASURING FAMILY-CENTERED CARE

“I see this all the time...the way we treat black moms is definitely different than how we treat white moms. And age plays a factor too – young moms are judged very unfairly. One black mom was judged very harshly for being late for a feeding even though she had a long and challenging transit ride to get to the hospital. A white mother who was late on the same day was greeted with sympathy.”

A 2018 CPQCC study of 324 narrative accounts of disparate care witnessed by family advocates and clinicians in the NICU found that while infants themselves generally receive the same care in the NICU regardless of race/ethnicity, their families are often subject to disparate treatment as they engage with healthcare providers.

In response, CPQCC has developed a set of five measures of family-centered care to help NICUs gauge the extent to which they integrate all families into the care of their infants. The measures were selected through a modified Delphi panel that included family representatives.

Measurement of family centered care has typically been plagued by the low feasibility of current methods (e.g. poor

response rates and respondent bias when surveying families), lack of correlation with clinical outcomes, and limited acceptance by providers. CPQCC’s goal is to bridge this gap by developing an objective set of measures that derive information on family-centered care directly from the electronic medical record. These measures will make it easier to track the treatment of all families and how well integrated they are into the care of their infants and to initiate quality improvement efforts when necessary.

Family-centered care is critical to the long-term outcomes of NICU babies. Measuring it is the first step in ensuring that all families, regardless of race, ethnicity, or socioeconomic background, are treated as essential partners in the care of their infants.

5 MEASURES OF FAMILY-CENTERED CARE

- 1 Is there a NICU family advisory council?
- 2 Days to first skin-to-skin care
- 3 Time to priming with oral colostrum
- 4 Delayed social worker encounter
- 5 Frequency of updates to families by MD/ NNP/RN

LEARN MORE ABOUT HEALTH EQUITY

- Profit J, Gould JB, Bennett M, et al. **“Racial/Ethnic Disparity in NICU Quality of Care Delivery.”** Pediatrics. 2017;140(3).
- Sigurdson K, Morton C, Mitchell B, Profit J. **“Disparities in NICU quality of care: a qualitative study of family and clinician accounts.”** J Perinatol. 2018;38(5):600-607.
- Beck AF, Edwards EM, Horbar JD, Howell EA, McCormick MC, Pursley DWM. **“The color of health: how racism, segregation, and inequality affect the health and well-being of preterm infants and their families.”** Pediatr. Res.2020;87(2):227-234.
- Parker MG, Burnham LA, Melvin P, et al. **“Addressing Disparities in Mother’s Milk for VLBW Infants Through Statewide Quality Improvement.”** Pediatrics. 2019;144(1).



CARING FOR
**MOTHERS & BABIES WITH
SUBSTANCE EXPOSURE**

With opioid use during pregnancy on the rise, infants across California are at an increased risk of in utero exposure and of developing withdrawal symptoms at birth, a condition known as neonatal abstinence syndrome (NAS). Between 1999 and 2013, NAS incidence increased 300% from 1.5/1,000 hospital births to 6.0/1,000 hospital births. By 2012, one infant was born every 25 minutes, on average, experiencing signs of withdrawal. Infants who are also exposed to other illicit drugs, alcohol, nicotine, and selective serotonin reuptake inhibitors (SSRIs) are at increased risk of developing NAS.

In response to the rising concern around substance exposure in utero, CPQCC launched two initiatives in 2019 designed to improve outcomes for affected mothers and newborns.

THE MOTHER & BABY SUBSTANCE EXPOSURE INITIATIVE

In January 2019, CPQCC launched the Mother & Baby Substance Exposure Initiative in partnership with the California Maternal Quality Care Collaborative (CMQCC) and Health Management Associates. The Mother & Baby Substance Exposure Initiative, part of California's Medication Assisted Treatment Expansion Project, is a hospital and community-based effort to improve outcomes for mothers and newborns impacted by substance exposure, with a specific focus on Opioid Use Disorder.

THE TOOLKIT

- Includes best practices for screening, treatment, care transitions, and education.
- Aims to preserve the mother-baby dyad, refer and keep mothers in treatment, optimize care for newborns with neonatal abstinence syndrome, and promote integration with community services.
- Will be available on the cpqcc.org website in Spring 2020

THE MESSAGES

- **Screening:** If you don't look for it, you won't find it.
- **Medication Assisted Treatment:** Evidence-based medical treatments exist and must be offered; MAT is the standard of care.
- **Neonatal Abstinence Syndrome:** If you don't look for it, you won't find it. When you find it, non-pharmacologic treatment may be sufficient for many infants with NAS; some may require pharmacologic treatment.
- **Transitions of care:** Systems of care for women with OUD or SUD, as for any other medical disorder, should always address transitions from one location of care to another.
- **Effectively engage women with or at risk for OUD and other SUDs:** Start with humanity as the deepest element of your initial contact with women who have SUD.
- **Preserve the mom and baby dyad:** Provide support to enable moms, babies and families to stay together.

THE COLLABORATIVE

- 33 hospitals across 9 California counties (Lake, Shasta, Humboldt, Sacramento, Stanislaus, San Joaquin, Ventura, Orange, and San Diego).
- Hospitals are divided into 5 cohorts (one cohort for Northern California and two each for Central and Southern California); each cohort is assigned a maternal and a neonatal “mentor” who guide them through implementing the best practices from the toolkit.


THE MATERNAL SUBSTANCE EXPOSURE

WORKGROUP & DATA PILOT

Our Maternal Substance Exposure Workgroup was formed to address the growing incidence of substance exposure in utero within CPQCC member hospitals, and the increase in cases of Neonatal Abstinence Syndrome (NAS). The workgroup is led by Robert Castro, MD (Salinas Valley Memorial Medical Center); Lisa Chyi, MD (Kaiser Permanente Walnut Creek Medical Center); and Angela Huang, BSN, RNC-NIC (Santa Clara Valley Medical Center).

In July 2019, the workgroup launched a data collection pilot to better understand how infants with NAS are being treated within CPQCC hospitals and their length of stay. The data collection effort includes but is not limited to exposure to opioids. While the pilot will be NICU focused, data may also be collected on babies cared for elsewhere in the hospital who have been exposed to drugs in utero.

The data collected as part of this pilot will be used to drive improvement in the care provided to exposed infants through a range of reports designed to help hospitals identify areas of variability in performance; compare their outcomes with other centers; monitor the effects of improvement interventions; and conduct research that advances the quality of care.



SPREADING
QUALITY IMPROVEMENT
FROM THE BOTTOM UP

Member Profile: Rady Children's Hospital San Diego at Scripps La Jolla

Rady Children's Hospital San Diego at Scripps La Jolla was one of 22 hospitals that participated in CPQCC's *Grow, Babies, Grow!* quality improvement collaborative from September 2018 through March 2020.

The collaborative focused on helping NICU teams improve growth and nutrition of very low birth weight infants with the aim of reducing the number of infants discharged with growth restriction.

“The best thing about participating in this collaborative has been the ability to spread a successful practice to all of the other NICUs in the [Rady's] network [which did not participate in the initiative]. This has been huge. Currently, our main level IV NICU is in the process [of eliminating gastric residual checks] and five of our other level II and level III [NICUs] have already adopted this change. We are spreading quality from the bottom up.”

- Casey Cohenmeyer, MD, Rady Children's Hospital San Diego at Scripps La Jolla

“Quality improvement can be viewed as taking the best evidence and inserting these practices into your own unique local context. This becomes a creative endeavor and many very effective QI tools are underutilized by QI teams. In this collaborative, we empowered sites to take improvement to the next level by using these QI tools to innovate in their improvement efforts. We’ve used A3 reports from sites to help understand and tell the story of their work from a “satellite view”. We used detailed PDSA tables to view their efforts as if we were looking through a magnifying glass. We empowered sites to create their own control charts to accurately interpret their outcomes and communicate with effective data visualization.”

- **Kurlen Payton, MD, Co-Director, Grow, Babies, Grow!**

EXCERPTS FROM A3 REPORT

RCHSD AT SCRIPPS LA JOLLA

THE PROBLEM

- Many VLBWs being discharged from the unit growth restricted
- Limited understanding of the factors contributing to the problem

THE DATA

- Baseline data showed 30% of VLBWs discharged home growth restricted.
- Review of historical data shows hesitancy to feed critically ill patients especially those with respiratory issues and inconsistencies in measurements and charting

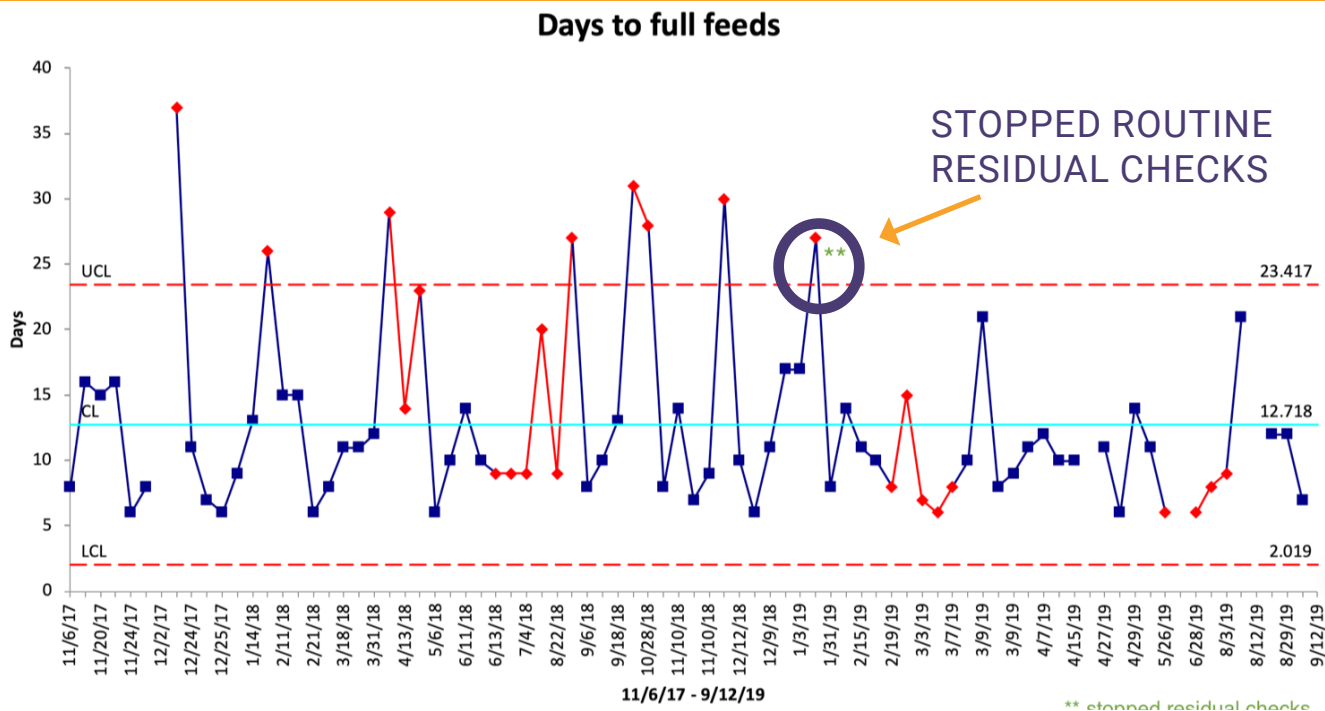
THE BABY STEP METRIC

- Number of days to full feeds

PDSA CYCLE #1

- Conducting a nutrition time-out leads to asking “are we on 120 cal/kg” more routinely
- Question whether routine gastric residuals are impairing progression in volume as well as calorie fortification

PDSA CYCLE #2



PDSA CYCLE #3

- Verifying consistent calorie counts in charting
- Ensuring fortification at 90ml/kg and 120mk/kg
- Attempting to transition to earlier fortification

OUTCOME

- Reduced days to full feeds to 11.3 days from 14.2 after eliminating residual checks

LESSONS LEARNED

Positives

- Elimination of routine residuals helped progression to full feeds
- Need for RN education on charting calories
- Made growth chart evaluation part of daily rounds for MDs and RNs

Negatives

- Continued struggle with perception that NEC is associated with fortification
- Difficulty in tracking patients with a large number of transfers out due to acuity and a busy unit over-census

SUSTAINABILITY PLAN

Process:

- Change feeding orders to ensure earlier fortification
- Make elimination of residual checking part of admission and feeding orders and reinforce change as part of unit culture

Tracking outcome measures:

- Possibility of EMR data reporting
- Consider tracking patients to discharge from our other NICUs



IMPROVING THE EASE OF REFERRAL TO FOLLOW-UP CARE

CPQCC is committed to extending our reach to better serve California's high-risk infants, wherever they are receiving care. Our HRIF-CVICU Expansion Project aims to connect with cardiac intensive care units (CVICUs) and help them identify and refer neonates with complex congenital heart disease (CHD) that are eligible for care in a CCS high risk infant follow up (HRIF) clinic upon discharge from the hospital.

As part of this initiative, CPQCC examined ways to streamline the HRIF Reporting System to make the referral and registration process easier for CVICUs across the state. In October 2019, CPQCC introduced two new features to the HRIF Reporting System: a cardiac referral tracking feature which includes summary reports and an electronic data submission (EDS) option.

While these features are currently limited to cardiac users, beginning in summer 2020, CPQCC will offer the electronic data submission option to ALL users of the HRIF Reporting System, including member NICUs and HRIF clinics. By improving the ease of referral for all users, CPQCC will continue to extend its reach to all infants that could benefit from HRIF.

BY THE NUMBERS

In 2013, CPQCC began offering site-specific reports which matched NICU discharges with confirmed referrals to HRIF leading to a:

12% ↑

IN THE REFERRAL OF VLBWS TO HRIF

FROM 83% TO 95%

FOLLOWING THE CREATING OF
THE MATCH REPORTS.

REFERRAL RATES INCREASED
THE MOST FOR INFANTS ≥ 32
WEEKS WHO WERE SMALL FOR
GESTATIONAL AGE (1251 - 1500 G)

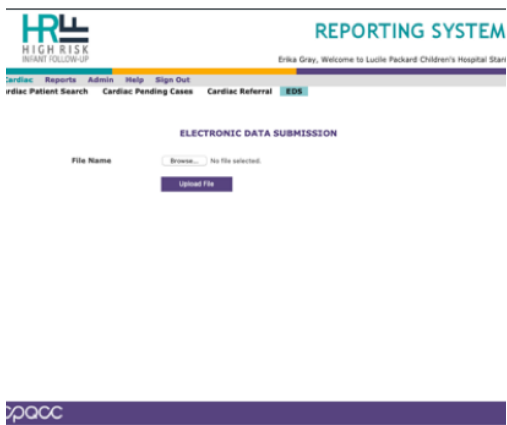
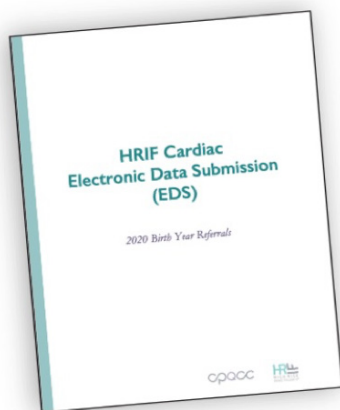
27%

AND FOR THOSE IN INTERMEDIATE &
LOWER VOLUME NICUS.

READ MORE: Pai VV, Kan P, Bennett M, Carmichael SL, Lee HC, Hintz SR. "Improved Referral of Very Low Birthweight Infants to High-Risk Infant Follow-Up in California." J. Pediatr. 2019.

ELECTRONIC DATA SUBMISSION

The electronic data submission option allows cardiac units to use their existing electronic medical record systems to identify HRIF-eligible patients and then upload those records into the HRIF Reporting System automatically using a comma-separated values (.csv) file. This feature saves teams the time and effort required to enter each record manually.



Row Id	NICU Osphd Code-NICU Report ID	DOB	Gender	Birth Hospital	HRIF Clinic	Issues	Submit	Action
1	000002-0011	02-01-2019	M	Dorne ChdHsp	Westeros MedCtr		<input checked="" type="checkbox"/>	Review Delete
2	000002-0014	03-14-2019	M	Dorne ChdHsp	Westeros MedCtr		<input checked="" type="checkbox"/>	Review Delete
3	000002-0015	04-20-2019	F	Dorne ChdHsp	Westeros MedCtr		<input checked="" type="checkbox"/>	Review Delete

[Submit Records](#)

CARDIAC REFERRAL TRACKING FEATURE AND SUMMARY REPORTS

The cardiac referral tracking feature and summary reports allow CVICUs to view data on patients who are receiving follow-up care in an HRIF clinic. The reports include:

- Demographic information on patients and primary caregivers including education, employment, living arrangement, and key parental concerns
- The different medical or special services patients are receiving or being referred to as a result of HRIF visits or the reasons they are not receiving these services
- Outcomes from neurosensory, neurological and developmental assessments



Santa Monica UCLA
Medical Center &
Orthopaedic Hospital

UCLA Mattel
Children's Hospital at
Ronald Reagan

**MAXIMIZING
THE ENTHUSIASM OF
OUR VOLUNTEERS**

CPQCC benefits from over 200 hours of volunteer time a month from the physicians, nurses, developmental care specialists, data abstractors, and quality improvement experts who represent our member hospitals. These dedicated volunteers serve on our Perinatal Quality Improvement Panel (PQIP) and its four subcommittees, our Data Committee Advisory Group (DCAG), and the HRIF Executive Committee. They share our commitment to high quality neonatal care.



We asked our four PQIP committee chairs why they volunteer their time to CPQCC...

Education Committee

“When I found CPQCC’s NICU Reports site, my whole world opened up when I realized what [data] we could track and [what we could] know in real time about our efforts to [improve care]. I volunteer because there are a lot of people out there like me who are trying to improve outcomes [and who don’t know about these tools]. I want to get these tools into the hands of the people who are doing the work so they can feel as inspired as I do.”

- Elizabeth Rogers, MD, UCSF Benioff Children’s Hospital San Francisco



The Education Committee plans the annual “CPQCC at Cool Topics in Neonatology” day and disseminates QI tools and educational products.



Research Committee

“ I volunteer for the opportunity to work in a stimulating and progressive environment with healthcare providers that are passionate about continuous improvement. The people, the infrastructure, and relationships with NICUs across the state create a fertile ground for collaboration and innovation. The interaction among diverse individuals from many different NICUs continually challenges us to be our best.”

- Kurlen Payton, MD, Cedars-Sinai Medical Center

The Research Committee designs and executes research studies on the impact and effectiveness of CPQCC’s QI collaboratives.

Data Interface & Opportunities Committee

“I volunteer because I feel passionate about the work that’s done by CPQCC to improve the lives of babies and their families, and I want to give back. Although there is a great team [at CPQCC] that works hard each day to ensure that the initiatives, collaboratives, data, reports, toolkits, advocacy, and everything else happens, there is still so much more to do. Volunteers help to make that happen. And I’m fortunate to take a small part in this great work.”

- Antoine Soliman, MD, Miller Children’s and Women’s Hospital



The Data Interface & Opportunities Committee (DIOC) reviews and refines CPQCC metrics and reports and helps to deliver improvements to data interfaces.



QI Infrastructure Committee

“When you have the opportunity to work with other like-minded clinicians who are driven to make improvements in the experience and outcomes of babies and families it’s hard not to be a part of it. That’s why I volunteer. It takes time, sometimes a lot of it, but if you have that opportunity to make things better, you do it.”

**- Mindy Morris, DNP, NNP-BC, CNS,
Engage/Grow/Thrive, LLC**

The QI Infrastructure Committee plans, executes, and improves upon the QI projects and tools that CPQCC offers to its members.

View the full list of our PQIP volunteers on our website at:
www.cpqcc.org/improvement/pqip.

A healthcare professional, likely a nurse or doctor, is shown from the waist up, wearing teal scrubs and a white surgical mask. They are holding a clipboard with a white sheet of paper and a black pen, appearing to be writing or reviewing a document. The background is a blurred clinical setting with light-colored walls and a desk. The image is framed by a thin orange border on the left and top.

CREATING OPPORTUNITIES TO ENGAGE IN 2020

IMPROVE ANTIBIOTIC STEWARDSHIP BY JOINING A NOVEL VIDEO-BASED COLLABORATIVE

- Participate in a new QI project using an AAP endorsed video-based platform (<https://echo.unm.edu/>). This collaborative is free to join; CPQCC will not be charging its usual fee.
- ➔ **Contact Kurlen Payton at kurlen.payton@cshs.org to participate.**

MEASURE AND IMPROVE FAMILY CENTERED CARE

- Join a group of NICUs piloting electronic health record (EHR)-derived measures of family centered care to engage diverse families as active partners in care.
- ➔ **Contact Ravi Dhurjati at dhurjati@stanford.edu to join.**

LEARN ABOUT SUBSTANCE EXPOSURE IN UTERO

- Take part in an effort to better understand treatment options and length of stay for infants with Neonatal Abstinence Syndrome by collecting data on infants exposed to substances in utero.
- ➔ **Contact Carolyn Pham at carolyn@cpqcc.org to sign-up.**

COLLECT DATA ON DELIVERY ROOM OXYGEN LEVELS

- Join our pilot project to collect data on delivery room oxygen saturation and FiO₂ at 5 minutes for VLBW infants to better understand ideal oxygen concentration levels for preterm infants.
- ➔ **Contact the CPQCC Help Desk (www.cpqcchelp.org) to join.**

ADDRESS THE NEEDS OF SMALLER VOLUME NICUS

- Make your voice heard in this new workgroup for NICUs with an average daily census ≤ 10.9 designed to address the unique priorities and challenges of smaller volume units.
- ➔ **Contact Anjali Chowfla at anjali@cpqcc.org to participate.**

STREAMLINE HRIF DATA SUBMISSION

- Become one of the first to utilize our new electronic data submission option within the HRIF Reporting System. Starting summer 2020, all NICUs and HRIF clinics will be able to upload records automatically using a .csv file.
- ➔ **Contact Erika Gray at erika@cpqcc.org to gain access.**

EMPOWER NICU MOTHERS TO REDUCE PRETERM BIRTHS

- Join our Moms in the NICU project to engage NICU moms to improve health, reduce risks for future pregnancies, and lower the chances of repeat preterm birth.
- ➔ **Contact Jeffrey Gould at jbgould@stanford.edu to join.**

CPQCC

CPQCC.ORG

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