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**SAVE the DATE**

\*10/19 ECMO conference

\*11/30 CCANN Officer's meeting

\*12/12 Christmas Gala



**CCANN's Spring Conference 2023**  
by : **Hannah Gissler RN**



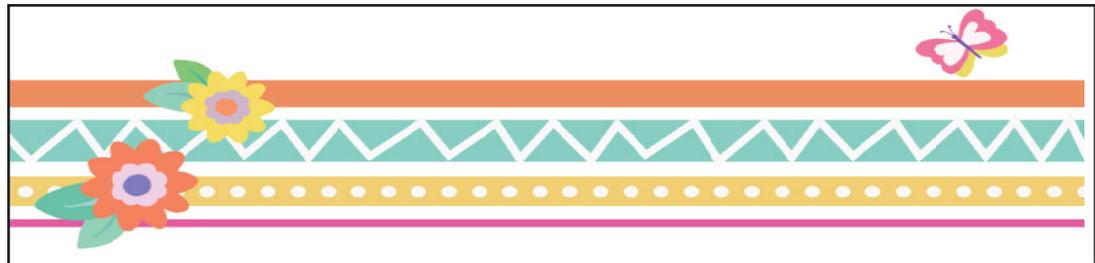
On Saturday, April 15th, CCANN held its Spring Conference, welcoming almost 100 members, students, and clinicians in our community on "A Journey through Genetics."

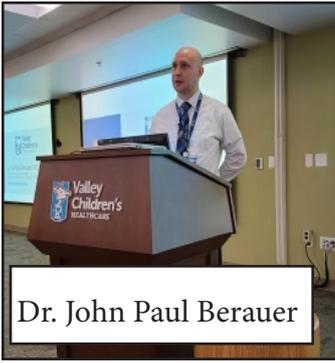


Ma. Cristin Padilla  
Cerave Product Winner

We were joined by multiple physicians and staff from Valley Children's Hospital who provided their insight into the blossoming field of genetics and its implications in their specialties and the NICU.

The morning kicked off with breakfast and an exhibition from our vendors, who provided free samples and a review of exciting innovations and products. Vendors included representatives from Cerave, Mead Johnson Nutrition, Johnson's Baby, Kentec Medical, Dandelion, Draeger, Pacific Biomedical, and Silentia.





Dr. John Paul Berauer



Dr. Bindu Sathi



Dr. Denna Yousif



Dr. John-Paul Berauer, an expert in Pediatric Gastroenterology and Pediatric Transplant Hepatology, and a recent addition to our Valley Children's team, began the presentations with a review of Neonatal Cholestasis. This condition, which differs from the unconjugated hyperbilirubinemia often seen in NICU populations related to liver immaturity, feedings, and fetal blood cell destruction, is instead caused by changes in bile formation and flow. Dr. Bauer discussed current advances in genetic testing used to diagnose defects in these processes early in order to initiate treatment of the underlying cause prior to further deterioration of liver function. Beyond genetic causes, patients in the NICU are predisposed to acquired cholestasis related to PN use and sepsis-induced cholestasis. Indicators of cholestasis that should be monitored in the NICU include pale, clay-colored stools, jaundice extending beyond day 14 to 21 of life, direct bilirubin  $>1$ , and an enlarged liver.

Dr. Bindu Sathi, a Pediatric Hematology and Oncology physician and the director of Valley Children's Sickle Cell Disease and Apheresis Programs, followed to review neonatal anemias and their genetic considerations. Inherited traits can impact both red blood cell destruction, like those seen in Hemolytic Disease of the Fetus and Newborn (HDFN), and production, in which anomalies can lead to inherited bone marrow failure syndromes. Early identification of infants displaying symptoms of anemia or high red blood cell turn over can impact patients long beyond the neonatal period.

After a brief recess, the conference proceeded with a discussion of Childhood Interstitial Lung Disease and Ciliopathies by Dr. Denna Yousif, a Pediatric Pulmonologist at Valley Children's Hospital whose dedication to research in areas such as bronchopulmonary dysplasia and neonatal bronchoscopy provided great insight into NICU population. Childhood Interstitial Lung Disease (chILD syndrome), Dr. Yousif reports, is the remodeling of the lung tissue and airspaces due to a range of different mutations in genes that code for surfactant proteins or other lung components. The severe tissue injury that the lung can sustain with different types of chILD necessitates the early diagnosis using CT scans and genetic testing. Any infant that exhibits unexplained respiratory distress warrants further work-up and a consultation with pulmonology to rule out these conditions. This is especially true for those born full-term or with commonly associated conditions such as congenital heart disease, dysphagia, reflux, or recurrent aspiration.



The final two presentations were given by Valley Children's Genetic Counselors. Jason Carmichael, Valley Children's lead Genetic Counselor, discussed the new California Prenatal Screening Program which aims to identify pregnancies at risk for genetic anomalies and promote appropriate follow-up across all socioeconomic backgrounds.

Lily Radanovick, another Genetic Counselor at Valley Children's, followed in cooperation with Melissa Martz, a Nurse Practitioner from Valley Children's Neurology Clinic, to discuss Spinal Muscular Atrophy (SMA), an autosomal recessive trait detected on the Newborn Screen, which can lead to loss of motor function and death without treatment in the first few days of life. With early pharmaceutical intervention many SMA patients can have considerable improvement in neuromuscular development and life expectancy.

A special thank you to all of our sponsors and presenters, as well as to Dr. Chokshi and Kamela Loo for all they did to coordinate this event. Mark your calendars for our next in-person conference on September 16th !

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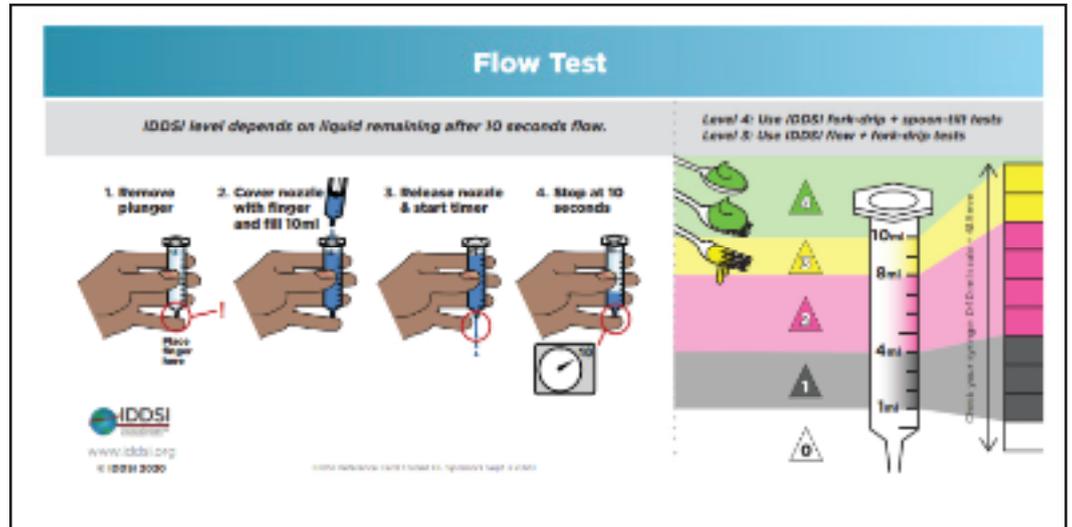
**Feeding Our Babies with an IDDSI Approach**  
 By : Kamela Loo, NNP- BC  
 April 27, 2023

Maria Provencio, M.A. CCS-SLP, Speech Therapy Supervisor at Valley Children's Hospital presented 'Feeding Our Babies with an IDDSI Approach' at Manhattan Restaurant, Fresno.

She presented the key differences between (old) NDD (National Dysphagia Diet) and (new) IDDSI (International Dysphagia diet Standardization Initiatives). The rationales for change was to improve patient safety, deliver better treatment outcomes because the field of dysphagia has resolved, and the need of standardization process in place.

National Association of  
 Dietetic Nutritionists  
 Central California Chapter  
 4/27  
**Dine & Discover**  
 Topic: **Feeding our Babies with an IDDSI Approach**  
 Breast Milk, Known & Unknown  
 Where: **Manhattan Restaurant**  
 1731 W Bullard @ 1800  
 CEU Provider Approved by California B.O.N.L. EBN 15253, 2.4 CEUs  
 Registration is limited to 40 CCANN members and invited non-members on a first come, first serve basis  
 Proudly Sponsored by  
 MeadJohnson  
 Nutrition  
 Scan to Register

Flow rate test :



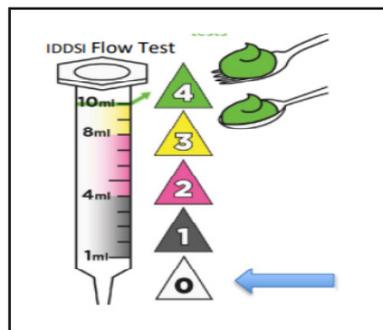
There are different levels for liquids within IDDSI.



Level 0: thin drinks, flow through a straw or nipple. Intend for children not having swallowing difficulties.

Level 1: slightly thick drinks, thicker than water, can flow through a straw nipple. Often used for children having swallowing problems with thin liquids.

Level 2; mildly thick liquids, sippable, used if thin drinks and level 1 slightly thick liquids flow too quickly to be swallowed safely.



Thickening products out there when there is a need for thickened feeds in children 0-3 years of age include: Oatmeal, Gelmix, Purathick, and Hormel. Each products' Pros and Cons were discussed as well.

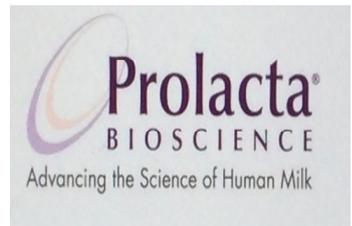
She allows us to recognize an infant's cues for feeding: when it's a GO and when it's a STOP. She helps us to understand there are feeding challenges in terms of good positioning, pacing, use of external support, etc.

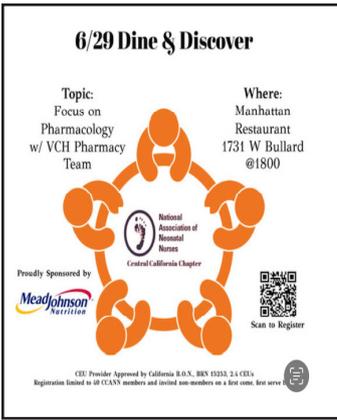
She helps us to understand the nipple flow rates as well as their importance. It is an eye opening to know that nipple flow rates and allow us to recognize which infants are at risk for not managing fast flow rates nipples. The presentation was done in an intimating setting, fine dining and great speaker, what else more we can ask for!

Thank you Ross Nicholls and Mead Johnson for supporting CCANN for a non-bias educational event.



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**Pharmacology Dinner Event**  
By : Coralee L. Agnas, RNC-NIC, CCRN

CCANN together with Mead Johnson sponsored an educational dinner event on NICU Pharmacology last June 29th at Manhattan Steakhouse Bar and Restaurant in Fresno. The conference was attended by several healthcare professionals across central valley along with the invited guest speakers : Renzio Apostol VCH PharmD and Dr. Naisha Choksi VCH Neonatologist.



Pharmacist Renzio discussed the importance of pain assessment and its adequate control and sedation management in the NICU - to prevent its negative impact to the neurodevelopment status of our babies.

He introduced the multi modal approach to manage pain : First, prevention by grouping lab draws. Second is by institution of non pharmacologic techniques to manage stress. And the last is the use of pharmacotherapy.



Drugs like Opioids, Benzodiazepines, and others. Fentanyl and Morphine are the most commonly used opioids in the NICU. Despite Morphine to have a slower onset of action compared to Fentanyl but they both have a higher half lives in the babies. So, monitoring their side effects and clearances is a must. Tolerance and withdrawal is likely to develop on prolonged exposure to these medications. Other agents like Propofol, Ketamine and Dexmedetomidine have limited published studies on the safety, drug pharmacodynamics and kinetics to the neonatal population.

Ross Nichols ,the MJ representative of central valley showed the video as to how their pharmaceutical company navigate the crisis of formula production during the time of pandemic. He also showed a video clip on the importance of checking osmolality of the milk once fortifiers are added. Once it exceeded the limit of normal body osmolality it diminishes its absorptive capacity in the gastrointestinal tract of the baby.



Dr. Choksi discussed about Brochopulmonary Dysplasia (BPD) and the medications commonly associated with this diagnosis. She started the definition of BPD, the grading system and its complications of cardiac impairment, growth failure and even death.



## ... and Our Recruitment Corner ...

Medical treatment includes non corticosteroid agents like Azithromycin which has antimicrobial and anti-inflammatory property. Introduction of Caffeine that is given within the first 72 hours of life which enhances baby's motor development and reduces risk of BPD by increasing lung compliance and minute ventilation, decrease apnea, airway resistance and inflammation yet augment airway remodelling and improve diaphragm contractility.

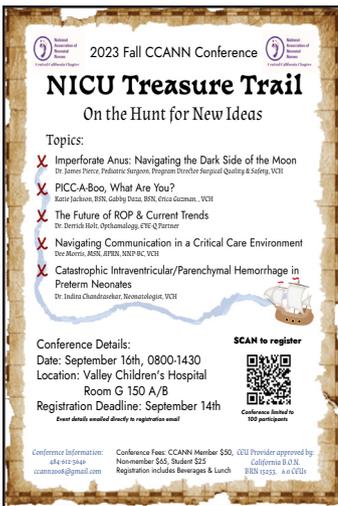
Vitamin A is needed as a key regulator of the normal respiratory tract epithelium growth that is stored in septal cells of the alveoli that is involved in alveolar septation.

Antenatal steroids indirectly reduced BPD risk by mitigating the neonate's risk to develop RDS, IVH, NEC and other early onset sepsis that will trigger infant to be hooked to ventilator and be at risk of BPD. There is also the strategy of fluid restriction, use of diuretics and inhaled bronchodilators. It is also pertinent to start infant on early parenteral support.

The lecture ended with an interactive play of Q and A portion that gave out several gift cards to audience who gave the right answers.

CCANN is a subchapter of National Association of Neonatal Nurses (NANN). Joining our professional chapter is not just about advancing the career. It is about being part of a community that values excellence, collaboration, and making a difference. Do not miss out on this incredible opportunity to enhance one's nursing career and be a force for positive change in health care. Join us today, and together, we will shape the future of neonatal nursing and healthcare as a whole! Speak to our leadership team to get more information : Kamela Loo NNP-BC, Danielle "Dee" Morris NNP-BC, Sarah Gil, NNP-BC, Gilda Aum, RNC-NIC, Coralee Agnas RNC-NIC, Linda Sepulveda RN, Angelita Co RN, Micahlah Lozano RN





## CCANN Fall Conference 2023 NICU Treasure Trail – On the Hunt of New Ideas

By : Wanda Savage , VCH- NICU RN

Our 2023 Fall Conference was truly a treasure trove of information and ideas. Participants came from as far away as Sonora and Turlock. There were an impressive number of radiology students, and VCH night shift nurses made a great showing also.

There were give aways throughout the day, and raffles for amazing prizes. Vendors were set up with free samples, great info and even some hand made items for sale. Prizes included Amazon gift cards, 3 Harriet Lane pediatric reference handbook, center table decorative plants and special gift basket with goodies.

We began with a gem of a lecture on imperforate anus from Dr James Pierce. We learned all about the condition, stages of treatment and the importance of monitoring for renal involvement. While our neonatal care can get these babies safely home, many will need long term management and Dr Pierce's team is committed to it all.

The vascular access team from Valley Children's then gave a sparkling overview of peripherally inserted central catheter devices. We reviewed types of lines, role of the bedside nurse during placement, proper placement, use, contraindications, and ways to prevent some very serious complications from these devices.

Our third lecture on retinopathy of prematurity was both passionate and priceless. Dr Holt clearly defined causes, stages and zones, and treatments available. We learned the importance of using both anti VEGF and retinal ablation to hopefully end this disease process in our babies.

Our fourth speaker shed light on a facet of communication that can affect patient care and safety. Dee Morris, NNP at VCH, provided online access to personality assessment tools which some participants had used prior the conference. Several participants shared what their assessments showed. Understanding our own personality strengths and challenges can decrease stress, and improve communication, care, and safety.



Dr Chandrasekar, neonatologist VCH, ended the conference with an energetic lesson on catastrophic IVH and parenchymal hemorrhage. She shared from her treasure chest of case studies, shedding light on a problem that has potential for a lifetime of deficits. We reviewed pathophysiology, causes, imaging, diagnosis, and treatments.

We were reminded how invaluable prevention is in the first week of life and the need for minimal handling and near prevention care bundles.

Personally, I want to put the gems of knowledge given today into the care of my patients. Knowing my personality assessment as a mediator gives me a lot to contemplate. I continue to be amazed at the advances available to us as caregivers in the NICU and also of how many distinct specialties are at work shaping the future of our babies, our most precious treasures.

CCANN would like to express their heartfelt gratitude to the following sponsors who were on site during the 2023 CCANN Fall Conference at VCH : Cassandra of Johnson's & Johnson's , Ross of MeadJohnson's , Max of Drager, and Julie of Lofty Images. . . Thank you for the support!





**Dermatology Dinner Conference  
at Ruth Chris Restaurant  
by : Gilda Aum - RNC- NIC**



Central California Association of Neonatal Nurses in coordination with Cerave presented a mini lecture on Pediatric Skincare Conditions to a group of nurses in the Central Valley on September 21, 2023.



In the above topic Dr. Jennifer Sorell talked about the structural and functional maturation of the neonatal skin at various gestational age.

Around 34 weeks the epidermis is well developed, at 37 weeks the stratum corneum is fully mature. Consequently, around 2-4 years of life is when it is fully completed.



She also differentiated the adult skin from the infant's skin. Total epidermal water loss is significantly higher in infants compared to the adults. The stratum corneum is significantly higher in the infants around 3-4 months to 24 months. The skin's enzymatic activity is also higher than the adult. All these result in increased desquamation and thinner stratum corneum and challenges for the barrier formation.

During the infant's first year of life the stratum corneum function and thickness develops. And the skin ph is elevated to plus minus 6.0. The ph of the neonatal skin ranges from 6.34-7.5. Several factors play a role in the elevated ph.

Slightly acidic surface defends the skin against infection. It also acts as a barrier in the activation of enzymes involved in the extracellular processing of the stratum corneum lipid.



The vernix caseosa is a rich ceramide coating formed during the last trimester. It consist of water containing comeocytes embedded in a lipid matrix. This protects the fetus while submerged in the amniotic fluid. Back in the day the vernix caseosa is entirely removed after birth, but now it is allowed to separate over 6 hours to 5 days after birth. The protective layer deceases skin surface ph , inhibiting pathological bacterial growth.





Skin conditions arise when the ceramide is decreased. Without proper ratio of ceramides the stratum corneum becomes incompetent. Impaired synthesis of cholesterol, ceramides and fatty acids adversely affects lamellar layer formation, thereby impairing barrier homeostasis, leading to dryness, irritation, erythema and itching.

A study was conducted and it was found out that at 6 months of life 18.7% of the infants in the study group presented with atopic dermatitis. This concludes that impairment of skin function at birth ( 2 days of life) was shown to precede clinical atopic dermatitis.

The use of moisturizer for skin hydration is the primary treatment for mild disease in conjunction with other agents for moderate and severe disease.

The care of the newborn and infant's skin should optimize stratum corneum's lipid and water content. The use of ceramides support this structure. The use of mild liquid cleansers containing emollients further protects the skin. Neonates and infants greatly benefits from frequent moisturizer use containing ceramides which mimics physiological lipids supporting homeostasis and improving skin conditions.



Dr. Jennifer Sorrell





Join the cause and make a difference!  
 We Want You!  
**CCANN Raffle Sales**  
 By : Kamela Loo , NNP-BC

CCANN have an incredible opportunity for you to make a positive impact while having a chance to win some fantastic prizes. It is time to rally together and support our beloved charity organization through CCANN annual raffle. Here is why you should consider buying those raffle tickets.

**1. Change Lives:** Every raffle ticket your purchase goes directly toward supporting our mission. Your contribution helps provide essential resources and assistance to those less fortunate in our community. We can support charity organizations such as Ronald McDonald House, Terry's House, Smile Train, Make-A -Wish, Community Food Bank, Red Cross (Maui), and Fresno Mission.

**2. Spread Hope:** In uncertain times, your support provides hope and optimism. Your ticket is a symbol of compassion and solidarity with those who need it most. It shows that we stand together, ready to make a difference.

**3. Win Big:** Let's not forget the fun part! With every ticket, you enter the exciting world of possibilities. Prizes such as trip to Emerald Bay Mazatlán, Mexico, Blue Dolphin Inn at Cambria, and Harris Ranch; \$500.00 cash in prize, free home appraisal, personal enhancement including the amazing Botox, teeth whitening; beautiful Disney Dooney & Burke Tote bag; Yeti Tundra Cooler to keep the food storage are waiting for you. Prizes await and you could be the lucky winner of something special. It is a win-win situation!

**4. Community Bonding:** Buying raffle tickets is not just about giving; it is about CCANN coming together as a community. By participating, you strengthen the bonds within our work community, making the commitment to make this community a slightly better place.

**5. Legacy of Giving:** By buying raffle tickets, you will set an inspiring example for others, especially the younger generation. Your generosity serves as a reminder that it is essential to support those in need and be part of something bigger than us.

**6. Lasting Impact:** Your contribution does not end when the raffle is over. It echoes through the lives you touch, making a lasting impact on individuals and families who will forever be grateful for your support.

So, don't hesitate! Purchase those raffle tickets today through CCANN representatives and be part of this incredible journey. Your involvement can turn dreams into reality, and your chance to win is just the icing on the cake. Together, we can make our community stronger, more compassionate, and full of hope. Thank you for your generosity, and let's make this year's raffle the most successful one yet!

