20th Annual Raul Rudoy
Pediatric Research Day

Kapiolani Medical Center for Women and Children
Nan, Inc. Auditorium ~ May 19, 2021

Sponsored by the generosity of the Hawai‘i Pediatric Association Research and Education Foundation
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Welcome from the Research Director

We welcome you to the 20th Annual Raul Rudoy Research Day. This special time reflects the ongoing commitment to research and scholarly activity of the Pediatric Residency and Neonatal-Perinatal Medicine Fellowship programs.

Our desire is to train tomorrow’s physicians and healthcare leaders by providing opportunities to practice important skills, like how to develop research ideas, establish goals, practice critical thinking, incorporate feedback, and effectively communicate findings. Exploring the ideas of today will help advance pediatric medicine, leading to a healthier future for all children.

A warm mahalo to our wonderful keynote speaker, Dr. Alika Maunakea, and all the presenters who have spent countless hours in preparation. In addition, this venture would not be possible without the support of Daniel Oswald from the HPH Information Technology Department, the Department of Pediatrics leadership and faculty, Hawai‘i Residency Programs, Inc., and the Hawai‘i Pediatric Association Research and Education Foundation.

Department of Pediatrics Faculty

Prashant Purohit, MBBS, FAAP
Pediatric Intensivist,
Kapi‘olani Medical Specialists
Resident Research Director

Kenneth Nakamura, MD
Professor & Pediatrics Dept. Chair,
Kapi‘olani Medical Specialists
Chief Medical Officer,
Neonatal-Perinatal Medicine

Venkataraman Balaraman, MBBS
Dept. Vice Chair & Neonatologist,
Kapi‘olani Medical Specialists,
Neonatal-Perinatal Medicine
Program Director

Loren Yamamoto, MD, MPH, MBA
Professor & Associate Chair
of Finance, Dept. of Pediatrics
Emergency Medicine,
Resident Research Coordinator

David Kurahara, MD
Professor, Pediatric
Rheumatologist & Research
Coordinator, Program Director
UH Pediatric Residency Program

Kara Wong-Ramsey, MD
Kapi‘olani Medical Specialists,
Dept. of Pediatrics Neonatal-
Perinatal Medicine Resident
Research Coordinator

Akshatha Aksaththa, MD
University of Hawai‘i,
Dept. of Pediatrics
Neonatal-Perinatal Medicine
Resident Research Coordinator
## Past First Place Award Recipients

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>Courtney Taum, MD</td>
<td>“Development and Implementation of a Pediatric Rotation Preparation Resource for 3rd Year Medical Students Which Aims to Decrease Anxiety”</td>
</tr>
<tr>
<td>2019</td>
<td>Scarlett Johnson, MD</td>
<td>“Optimizing Fluoride Varnish Use at an Outpatient Pediatric Clinic in a Tertiary Care Center: A Quality Improvement Project”</td>
</tr>
<tr>
<td>2018</td>
<td>Stephanie Graziani, DO</td>
<td>“Improving Pediatric Oral Health in a Community Clinic through the Provision of a Dental Tool Kit”</td>
</tr>
<tr>
<td>2017</td>
<td>Blair Nicole Limm-Chan, MD</td>
<td>“High Incidence of Acute Post-Streptococcal Glomerulonephritis in Pacific Islanders and Factors Affecting Length of Hospitalization”</td>
</tr>
<tr>
<td>2016</td>
<td>Marko Culjat, MD, PhD</td>
<td>“SCOPE Project (Structured Communication through Optimal use of Paging Elements) - Improving Communication at Kapi‘olani Medical Center for Women &amp; Children”</td>
</tr>
<tr>
<td>2015</td>
<td>Ann Kang, MD</td>
<td>“Pediatric Weight Errors and Resultant Medication Errors in the Emergency Department”</td>
</tr>
<tr>
<td>2014</td>
<td>Marina Goodman-Flider, MD</td>
<td>“Decreasing the Incidence of Severe Retinopathy of Prematurity in Very Low Birth Weight Infants at Kapi‘olani Medical Center for Women &amp; Children”</td>
</tr>
<tr>
<td>2013</td>
<td>S. Javed Zaidi, MBBS</td>
<td>“Optic Nerve Diameter Measurements in Venticuloperitoneal Shunt Obstruction”</td>
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<tr>
<td>2012</td>
<td>Prashant J. Purohit, MBBS</td>
<td>“Coronary Artery Dilation in Acute Kawasaki Disease and Acute Self-Limited Illnesses Associated with Fever”</td>
</tr>
<tr>
<td>2011</td>
<td>Matejka Cernele-Kohan, MD</td>
<td>“Critically Ill Children in 2009-2010 Novel Influenza H1N1 Season in Hawai‘i”</td>
</tr>
<tr>
<td>2010</td>
<td>Renee M. Miyashiro, MD</td>
<td>“Endotracheal Tube and Laryngeal Mask Airway Cuff Pressures Can Exceed Critical Values During Ascent to Higher Altitude”</td>
</tr>
<tr>
<td>2009</td>
<td>Josephine P.K. Quensell, MD</td>
<td>“Promoting Literacy using the Reach Out and Read Model in an Underserved Pediatric Clinic in Hawai‘i”</td>
</tr>
<tr>
<td>2008</td>
<td>Ryan W.Y. Lee, MD</td>
<td>“Early Prediction of Cerebral Palsy in Preterm and Term Infants Using the Detection of General Movements”</td>
</tr>
<tr>
<td>2007</td>
<td>Brian H. Wu, MD</td>
<td>“Limiting Excessive FiO2 and Incidence/Severity of Bronchopulmonary Dysplasia in Infants &lt;1500 Grams”</td>
</tr>
<tr>
<td>2006</td>
<td>Veeraparn Kanchananakhin, MD</td>
<td>“Impact of Prenatal Methamphetamine Exposure on Children’s Sleep and Development”</td>
</tr>
<tr>
<td>2005</td>
<td>Wendy Matsuno, MD</td>
<td>“CT Scan Diagnosis of Appendicitis in Children by Pediatric and General Radiologists”</td>
</tr>
<tr>
<td>2004</td>
<td>Brian Tanabe, MD</td>
<td>“Risk Factors Associated with Rheumatic Heart Disease”</td>
</tr>
<tr>
<td>2003</td>
<td>Paul J. Eakin, MD</td>
<td>“Sun Exposure and Sun Protection Policy in Elementary Schools in Hawai‘i”</td>
</tr>
<tr>
<td>2002</td>
<td>Selina Chen, MD, MPH</td>
<td>“Thirty Year Perspective of Cardiac Sequelae of Kawasaki Disease in Hawai‘i”</td>
</tr>
</tbody>
</table>
Schedule

12:30 – 12:40 PM  Welcome & Opening Remarks  Prashant Purohit, MBBS, FAAP
12:40 – 1:40 PM   Keynote Presentation  Alika Maunakea, PhD
  Integrative Epigenomic Analysis Support the Early Developmental Origin of Autism Spectrum Disorders
1:40 – 1:55 PM    The Effect of Maternal Diabetes on Infant Body Fat at Birth  Lauren Staiger, MD
1:55 – 2:10 PM    Association Between Regional Rail Lines and Traffic Fatality Rates  Keisuke Abe, MD
2:10 – 2:25 PM    Improving Resident Knowledge and Confidence in Participation in Code Events during COVID through the Implementation of a 2020 BLS and PALS Updates and COVID Modifications Workshop  Kriselle Gines, MD
2:25 – 2:40 PM    Characteristics of Healthcare Workers with Coronavirus Disease 2019 in Hawaii from March 10, 2020 to May 2, 2020  Lindsey Heathcock, MD
2:40 – 2:55 PM    Break
3:00 – 3:15 PM    Dextrose Gel Use in Neonatal Hypoglycemia  Rutuja Kibe, MBBS
3:15 – 3:30 PM    Standardization of PDA Screening in the NICU at KMCWC: A Quality Improvement Project  Rachel Merrifield, MD
3:30 – 3:45 PM    The Health Impact of Pediatric Diabetes and Diabetic Ketoacidosis in Hawaii  Rachel Palting, DO
3:45 – 4:00 PM    Improving the Rate of Iron Prescribing for Breastfed Infants in a Community Pediatric Clinic in Honolulu  Rachel Santiago, MD
4:00 – 4:15 PM    Hemophilia Diagnosis in an Older Patient with a Subgaleal Hemorrhage  Amy Jenkins, MD
4:15 – 4:30 PM    Closing Remarks & Gratitude  David Kurahara, MD

Scoring of Presentations

Every year, the presentations are scored by those in attendance. All scoring is submitted through electronic surveys. Each presentation has a different survey link. Scoring sheets have been provided for personal use only and include, the survey link and QR code for your convenience. Surveys will be available from the start time of each presentation and will close Thursday, May 20, 2021 at 5:00 PM (HST).
Alika Maunakea, PhD

Keynote Speaker

Born and raised in Waiʻanae, Hawaiʻi, Dr. Maunakea received his B.Sc. degree in Biology at Creighton University (2001) and Ph.D. in Biomedical Sciences at the University of California, San Francisco (2008). He completed Postdoctoral training at the National Institutes of Health (2012) and has since joined the John A. Burns School of Medicine at the University of Hawaiʻi, Mānoa.

In studying epigenetics for over 20 years, Dr. Maunakea has made several important contributions that have helped advance the field. In particular, he has developed and applied novel high-throughput, genome-wide technologies that survey DNA methylation and histone modifications, both central components of epigenetic processes, and has discovered novel roles for DNA methylation in regulating alternative promoter usage and in pre-mRNA splicing.

In his current position as Associate Professor in the Department of Anatomy, Biochemistry, and Physiology, Dr. Maunakea is applying epigenomic information toward understanding the mechanistic relationships of gene-environment interactions that underlie the development of diseases of health disparities, including autism and cardiometabolic diseases, anticipating that such studies will contribute to the development of more effective targeted diagnostic, preventative, and therapeutic strategies.

Having established several locally and nationally funded community-based research studies on health disparities, Dr. Maunakea is co-leading a multidisciplinary team to mitigate the adverse impacts of COVID-19 as part of the Pacific Alliance Against COVID-19 (PAAC), funded by the NIH Rapid Acceleration of Diagnostics of Underserved Populations (RADxUP) initiative (U54-MD007601-34S2) that combines culturally tailored infectious disease messaging and education with community capacity for rapid SARS-CoV-2 testing.

In addition, he currently serves as an expert panelist of the COVID-19 Prevention Network for the National Institute of Allergy and Infectious Diseases, to advise on COVID-19 vaccine development, especially around practices, protocols, and communications that enable outreach to communities that have a high infectivity, which include indigenous peoples and Pacific Islanders.
Integrative Epigenomic Analyses Support the Early Developmental Origin of Autism Spectrum Disorders

Aliko K. Maunakea, PhD
Associate Professor
Epigenomics Research Program
Department of Anatomy, Biochemistry, and Physiology
John A. Burns School of Medicine, University of Hawai‘i, Mānoa

Abstract

Autism spectrum disorders (ASD) are clinically heterogeneous neurobehavioral diseases suspected to originate in utero when brain cells undergo widespread epigenetic changes to the underlying chromatin landscape, including DNA methylation. Although the normal trajectory of DNA methylation is thought to be critical to transcriptional regulation in neurodevelopment, whether it is compromised in ASD is unknown. Using two complementary genome-wide approaches, we observed significant alterations to DNA methylation in a neural stem cell compartment of postmortem brain from individuals diagnosed with ASD. We found that many of these ASD-specific alterations reside within developmentally regulated chromatin domains, the methylation states of which remarkably resembled that of early fetal brain. Transcriptomic analyses independently demonstrated fetal stage-specific gene expression states in these affected individuals. Together, these findings suggest ASD may arise as a consequence of an “epigenetic delay” in shaping the chromatin landscape during neurodevelopment, providing molecular support of pathological observations implicating its early fetal origins.
Honors and Awards:
Promotion to Major, United States Army, 2021
Army Commendation Medal, United States Army, 2018

Hobbies & Interests: Lauren likes running, hiking and yoga.

Regional/National Podium Presentations:


Regional/National Poster Presentations:

Staiger LE, Felpel AS, Gramling JD. Langerhans Cell Histiocytosis Involving the Gastrointestinal Tract Presenting as Failure to Thrive in an Infant, Madigan Army Medical Center, Joint Base Lewis-McChord, WA


Staiger, LE, Wong-Ramsey K. The Effect of Maternal Blood Glucose Control on Infant Body Fat Composition. Kapiolani Medical Center for Women and Children, Honolulu, HI.


Quality Improvement Protocols:
Risk Based Approach to the Evaluation of Infants Born to Mothers with Suspected Intra-amniotic Infection. Faculty: Ibrahim, Yomna MD, 2018-Present

Developed a local clinical decision-making protocol that uses an online risk calculator and serial physical assessments to guide the management of term infants born to mothers diagnosed with chorioamnionitis.
Neonatal-Perinatal Fellow                                          Research Mentor

Abstract

The Effect of Maternal Diabetes on Infant Body Fat at Birth

Kapiolani Medical Center for Women & Children

Lauren Staiger MD, Kara Wong Ramsey MD, James Davis PhD, Sheree Kuo MD
Department of Pediatrics, John A. Burns School of Medicine, University of Hawaii

Background: There is limited data on the effect of maternal diabetes on infant body composition at birth. Air displacement plethysmography (ADP) has been widely used to assess infant body composition. Our objectives are to determine whether infants of diabetic mothers (IDM) and infants of non-diabetic mothers (Controls) have significant differences in body fat at birth and to assess the effect of maternal blood glucose and HgbA1C during pregnancy on percent body fat of IDM.

Methods: We recruited 132 infants of mothers with gestational diabetes or pregestational diabetes between 35 and 41 weeks gestational age admitted to the newborn nursery. Infant body fat percentage was measured with the Pea Pod ADP system within the first three days of life. Maternal self-reported blood glucose logs and HgbA1C were examined. Our control group is a cohort of 249 infants of mothers with uncomplicated pregnancies recruited from the same newborn nursery in 2014. Welch Two Sample t-test was used to compare body fat percentage of IDM with our control group. Unadjusted linear regression was used to measure the effect of maternal HgbA1C and average daily fasting glucose on infant body fat percentage at birth.

Results: Overall, the IDM population had good glycemic control with a mean fasting blood glucose of 88.5 mg/dL (SD +/- 8.8 mg/dL) and a mean HgbA1C of 5.9% (SD +/- 1%). Our study demonstrated that IDM had a small difference in body fat compared to controls (-1.03 percent body fat for IDM group; 95% CI 0.03-2.03; p=0.04). Unadjusted linear regression demonstrated a statistically significant relationship between fasting blood glucose during pregnancy and infant percent body fat at birth. (0.19% increase in body fat for every mg/dL increase in fasting blood glucose, standard error 0.05, p<0.01). There was not a significant relationship between HgbA1C and infant percent body fat at birth.

Conclusion: The small difference in body fat between our groups is likely reflective of good glycemic control in our diabetic group and suggests that maintaining good glycemic control during diabetes can help reduce the risk of increased body fat in infants. The effect of increased body fat at birth on future obesity risk is the target of ongoing research and has yet to be fully elucidated.
Honors and Awards:
- Resident Excellence in Teaching Award, John A. Burns School of Medicine Medical Students, Block 1, 2020; Block 2, 2020.

Language Fluency (Apart from English): Japanese

Hobbies & Interests: Keisuke enjoys playing with his daughter and video games. He also likes watching TV dramas and looking for the best fried chicken in the world.

Oral Presentations:
- **Abe K.** Grand Rounds conference: “Traditional Hawaiian Healing and Herbs.” Oral Presentation at Kapiolani Medical Center for Women & Children, Honolulu, HI, USA, January 2021.
- **Abe K.** “Rail Systems Correlate with Lower Traffic Fatality Rates.” Oral Presentation: 2021 Western Medical Research Conference (Virtual), USA, January 2021.

Publications:


Employment Experience:
- Emergency Medicine Resident at Tokyo Medical University Hachioji Medical Care Center, Hachioji, Japan, 04/2016-04/2018.
- Japanese Fellow Doctor at the United States Naval Hospital Yokosuka, Yokosuka, Japan, 04/2015-03/2016.
- General Resident Doctor at Asahikawa Red Cross Medical Center, Asahikawa, Japan, 04/2013-03/2015.
Abstract

Association Between Regional Rail Lines and Traffic Fatality Rates
Kapiolani Medical Center for Women & Children

Keisuke Abe MD and Loren Yamamoto MD, MPH, MBA
Department of Pediatrics, John A. Burns School of Medicine, University of Hawaii

Introduction: Traffic fatality has been a significant public health problem all over the world, and several factors can affect traffic fatality. This study was performed to evaluate the relationship between rail systems and traffic fatalities and investigate whether this relationship contributes to traffic fatality reduction.

Methods: Traffic fatality data, motor vehicle registrations, and rail lines of 34 U.S and 8 non-U.S. cities from 2018 were obtained. Pearson correlation (linear regression) analyses were performed between all variables.

Results: The correlation coefficient (r) for rail systems (n=42) and total traffic fatality rates, child traffic fatality rates, and the number of motor vehicle registrations per capita were -0.49 (p<0.01), -0.31 (p=0.04), and -0.46 (p<0.01), respectively, while the correlation coefficients for the number of motor vehicle registrations per capita and all traffic fatality and child traffic fatality rates were 0.54 (p<0.01) and 0.18 (p=0.24), respectively.

Conclusions: A higher number of rail lines correlated with reduced traffic fatalities and lower numbers of motor vehicle registrations per capita.
Kriselle Gines, MD

University of Santo Tomas
Faculty of Medicine and Surgery, Manila, Philippines
Doctor of Medicine, 2016
State University of New York, Buffalo, NY
B. A. in Biology/Health and Human Services, 2010

Honors and Awards:
- Honors in Junior Internship Rotation in Pediatrics, 2016
- Buffalo Summer Championships Mixed Doubles Finalist, 2014
- High Distinction in Social Sciences Interdisciplinary Degree, 2010
- State University of New York at Buffalo, Dean’s List Recognition

Language Fluency (Apart from English): Tagalog

Hobbies & Interests: Kriselle likes to hike with her family, work out, travel and drink milk tea.

Research Experience:
- Co-investigator on Hypothermia and Early Neonatal Sepsis in Term and Late Preterm Infants with Sarah Abu-Alreesh, MBBS, Atalie Lim, MBBS. Preceptor: Venkataraman Balaraman, MBBS. Department of Pediatrics, University of Hawaii John A. Burns School of Medicine, May 2020.

Oral Presentations:
- **Gines K.** Case Review Forum Quality Improvement conference: “A Complicated Case of Medical Neglect and CPS Involvement.” Oral Presentation at University of Hawaii Pediatric Residency Program; Honolulu, HI, USA, January 2021.

Employment Experience:
- Teacher’s Assistant at Edukids, Inc., Amherst, NY, 06/2011-12/2011
- Mental Health Specialist at Baker Victory Services, Lackawanna, NY, 11/2010-02/2011
- Teacher’s Assistant at Doodle Bugs! Children’s Center, East Amherst, NY, 08/2010-10/2010
- Teacher’s Assistant at Baker Victory Services Early Childhood Development Program, West Seneca, NY, Summer 2009

Volunteer Experience:
- Sub-Board Incorporated Women’s Health Educator, 06/2006-12/2009
- Big Brothers Big Sisters of America, Buffalo, NY, 11/2007-02/2011
Abstract

Improving Resident Knowledge and Confidence in Participation in Code Events during COVID through the Implementation of a 2020 BLS and PALS Updates and COVID Modifications Workshop

Kapiolani Medical Center for Women & Children

Kriselle Gines MD, Lauren Ishida MD, and Alson Inaba MD, FAAP
Department of Pediatrics, John A. Burns School of Medicine, University of Hawaii

Background: During the beginning of the COVID pandemic, pediatric residents were excluded from in-hospital code events. Furthermore, due to the restrictions of group gatherings, there has been decrease in mock codes/workshops. Concurrently, BLS and PALS Updates and COVID modifications were not released until October of 2020. Therefore, pediatric residents including those who were certified/re-certified during May-July 2020 were not aware of these new guidelines. These events have negatively impacted the knowledge, experience, and subsequent confidence of pediatric residents regarding code events.

Methods: The primary objective of this study was to increase the knowledge of pediatric residents with updates on BLS and PALS guidelines and COVID modifications, be able to perform high-performance CPR, and work with a high-performance team during code events. The secondary objective is to improve the confidence of pediatric residents to participate in code events. Through the implementation of this workshop, this project’s aim is to bring awareness of the BLS and PALS updates specifically to high-performance CPR and high-performance teams to improve patient outcomes and COVID modifications to protect our pediatric residents during these emergency events.

Results: Knowledge of BLS/PALS 2020 updates and COVID modification will be assessed using open-ended questions and confidence in code events will be assessed with yes/no questions through a survey I created, which was reviewed by a pediatric emergency medicine attending. These surveys will be distributed to the residents via email prior to the start of the initial intervention. The intervention of this project consists of the distribution of handouts prior to the workshop followed by a workshop reviewing the handouts, a PowerPoint presentation, and code simulations with the implementation of high-performance teams. A post-intervention survey will then be given to assess improvement in knowledge and confidence.
Lindsey Heathcock, MD, MPH
Baylor College of Medicine, Houston, TX  
Doctor of Medicine, 2018

University of Texas Health Science Center, Houston, TX  
Master of Public Health, 2014

Honors and Awards:
- Kenneth M. Ash Neonatal Intensive Care Unit Resident Award, 2020
- Gold Humanism Honor Society, 2018
- Mickey Leland Center Scholarship in Environmental Health, 2013
- UTSPH Outstanding New Student Scholarship Award, 2012

Hobbies & Interests: Lindsey enjoys playing and exploring with her family, hiking, watching musicals and doing crafts.

Additional Education:
- Willamette University, Salem, OR; B. A. in Chemistry, Magna cum laude, 2009.
- Universidad de San Francisco Study Abroad Program, Quito, Ecuador, Fall 2007.

Research Experience:
- Co-leader on the Breastfeeding & Lactation Support for Medical Trainees Implementation Project with Kara Wong-Ramsey, MD. Kapiolani Medical Center for Women and Children, Honolulu, HI, January 2021-July 2021.
- Research Assistant 2 in Pathology Department, M.D. Anderson Cancer Center, Houston, TX, August 2010-April 2013.
- Junior Researcher in Chemistry Department, University of Hawaii, Honolulu, HI, Summer 2008.

Publications:


Abstract

Characteristics of Healthcare Workers with Coronavirus Disease 2019 in Hawaii from March 10, 2020 to May 2, 2020

Kapiolani Medical Center for Women & Children

Lindsey Heathcock MD, MPH, Sarah Kemble MD, Douglas Hatch MD, and Caitlin Cook MD
Department of Pediatrics, John A. Burns School of Medicine, University of Hawaii

Background: Healthcare workers are considered a high-risk group for contracting Coronavirus Disease 2019 (COVID-19) given their potential occupational contact with COVID-19 positive patients. In March and April, the state of Hawaii started to experience multiple healthcare-associated clusters of COVID-19 cases. The purpose of this study is to characterize the healthcare workers with lab-confirmed COVID-19 disease in Hawaii.

Methods: The study included COVID-19 cases reported to the Hawaii Department of Health between March 10, 2020 and May 2, 2020 who reported working in a healthcare setting. Cases were confirmed using nasopharyngeal (NP) swab specimens tested for SARS-CoV-2 virus using PCR. Case interviews were conducted using a standardized COVID-19 case investigation form and a supplemental questionnaire developed for the healthcare context.

Results: Of 77 confirmed COVID-19 cases who worked in a healthcare setting prior to illness, 73 (95%) were included in the study. No deaths were reported, and four (5.5%) were known to have been hospitalized. Eighteen (25%) of 73 cases were identified as having traveled recently or had exposure to a person with recent travel. There were differences in characteristics between the travel and no travel groups, most notably a greater percentage of White healthcare workers and physicians in the travel group and Asian healthcare workers and nurses in the no travel group. Due to the study being conducted early in the pandemic, 71% of confirmed cases reported no or only partial universal masking in the workplace for the 14 days prior to illness. Among cases with suspected healthcare-related exposures, both coworker-to-coworker close contact and patient-to-healthcare worker close contacts were noted. CDC recommended PPE was used more consistently during patient encounters than coworker encounters.

Discussion: The aim of this study was to characterize possible risk factors for SARS-CoV-2 infection among healthcare workers in Hawaii during the early phase of the pandemic. One notable source of potential SARS-CoV-2 acquisition for healthcare workers was travel, particularly early in the study when disease transmission was not yet widespread in the community. Other sources (both healthcare- and non-healthcare-related) then became more prominent. While the early assumption was that healthcare workers contracted the virus due to close contact with COVID-19 patients, this study shows that exposure to coworkers may have also been a major source of transmission, which is consistent with other studies. This observation highlights the need for universal masking, social distancing, and appropriate PPE use in all areas of the healthcare setting.
Rutuja Kibe, MBBS

Byramjee Jeejeebhoy Medical College
Pune, India
Bachelor of Medicine & Bachelor of Surgery, 2016

Language Fluency (Apart from English): Hindi, Marathi

Hobbies & Interests: Rutuja is a fitness and sports enthusiast (yoga, hiking, running marathons). She enjoys different cultures, cuisines, and traveling the world.

Research Experience:
- Co-investigator on Quality Improvement Project: Implementation of Glucose Gel in Neonates with Emmanuel Kling, MD. Kapiolani Medical Center for Women and Children, Honolulu, HI, USA. January 2020-Present.
- Sub-investigator on Quality Improvement Project: Timely PEWS Documentation in Pediatric Patients Admitted to the General Wards and its Utilization to prompt Appropriate Consultative Action with Marissa Fakaosita, MD and Anna-Lena Lueker, MD. Kapiolani Medical Center for Women and Children, Honolulu, HI, USA. January 2019-Present.
- Research Scholar with Manoj Biniwale, MD. University of Southern California, Keck School of Medicine, Los Angeles, CA, USA. July 2017-April 2018. Obtained experience in clinical research methodologies, assisting in multicenter clinical trials, forming hypotheses, literature searches, data collection, analysis, writing abstracts, manuscript preparations, and presentations.

Publications:


Abstract

Dextrose Gel Use in Neonatal Hypoglycemia

Kapiolani Medical Center for Women & Children

Rutuja Kibe MBBS and Emmanuel Kling MD
Department of Pediatrics, John A. Burns School of Medicine, University of Hawaii

Background: Neonatal hypoglycemia is a common condition occurring in up to 10% of healthy newborns and usually associated with nonspecific signs and symptoms. Early uncorrected hypoglycemia could be associated with long term neurodevelopmental impairment. Active management frequently involves supplementing glucose either enterally with formula or intravenously with IV Dextrose. These interventions are associated with limitations such as disrupting establishment of breast feeding, mother-baby separation and increased costs if needing admission to the NICU for IV treatment. Dextrose gel is simple to administer by direct application into buccal mucosa, inexpensive (making it ideal for resource limited settings), allow for breastfeeding, keep baby and mother together and rapidly correct hypoglycemia avoiding further cerebral insult.

Methods: We performed a retrospective chart review of all infants born at Kapiolani Medical Center for Women and Children (KMCWC) over a one-month period (Aug 2019). We identified infants meeting hypoglycemia protocol per our hospital policy and analyzed their demographics including gestational age, birth weight, APGARS, risk factors, initial and post treatment glucoses, intervention for hypoglycemia treatment, need for NICU transfer. A multidisciplinary committee was convened to discuss and lay down guidelines, education, and implementation strategies.

Results: The review involved 508 newborns born at the KMCWC nursery within the 1-month period, 178 met inclusion criteria (35%) – SGA (19%), LGA (21%), IDM (42%), Twins (9%). Gestational age 35 –41 weeks (average 37.9 weeks). Of those infants who met inclusion criteria 37 (20.7%) were treated for hypoglycemia (glucose<40mg/dl) – 5 infants (13.6%) were initially offered breastfeeding, 32 (86.4%) were given formula. At discharge, of those treated, 14/37 (37.8%) infants were exclusively breastfeeding – 3/14 were treated with bestdeed for initial hypoglycemia. 40.5% infants were doing a combination of breastfeed and formula feeding while 22.7% were only formula feeding. 7 (3.9%) infants were transferred to the NICU of which 2 admissions were for hypoglycemia, both were infant of diabetic mothers.

Future directives: The retrospective chart review provides some background data to compare post intervention findings. Through the study, we aim to identify any impact of Dextrose gel introduction on hypoglycemia correction, breastfeeding rates, and NICU transfers. The eventual goal would be to identify breastfeeding rates at 2 weeks post discharge, neurodevelopment outcomes in children treated with and without the gel, impact on costs including hospital stay, formula, additional services. The study commenced on April 1, 2021.
Rachel Merrifield, MD

The University of Texas
Southwestern Medical Center, Dallas, TX
Doctor of Medicine, 2018

Wheaton College, Wheaton, IL
B. S. in Biology, 2014

**Language Fluency (Apart from English):** Mandarin

**Honors and Awards:**
- Beaver-Schmale Award for Exceptional Achievement in Conducting Research, 2014
- Honors in Biology, Wheaton College, 2014

**Hobbies & Interests:** Rachel takes long walks with her pups, sews, knits and likes being creative.

**Poster Presentations:**


**Research Experience:**
- Co-investigator on Standardizations of PDA Screening in the NICU: A Quality Improvement Project: with Lynn Iwamoto, MD. Kapiolani Medical Center for Women and Children, Honolulu, HI, 2020- Present.
- Co-investigator on the Unusual Presentations of Angiostrongylus Cantonensis with Marian Melish, MD. Kapiolani Medical Center for Women and Children, Honolulu, HI, 2020.
Abstract

Standardization of PDA Screening in the NICU at KMCWC:
A Quality Improvement Project

Kapiolani Medical Center for Women & Children

Rachel Merrifield MD, Min J. Hwang DO,
Jaikaran Man Singh MD and Lynn Iwamoto MD
Department of Pediatrics, John A. Burns School of Medicine, University of Hawaii

Background: Patent ductus arteriosus (PDA) is a common finding in preterm infants. A patent ductus has been associated with long term complications such as chronic lung disease or retinopathy of prematurity in this patient population, causality has not been established. Extremely preterm and extremely low birth weight (ELBW) are at the highest risk for long term complications that may or may not be affected by conditions associated with the ductus. There are no unifying screening protocols for PDAs in ELBW infants and clinical practice towards the approach, diagnosis and management of PDAs varies widely across different institutions and advanced providers. Decreasing variation in care is known to improve outcomes, so we aim to standardize the approach towards PDAs by developing a screening and management protocol in the NICU at KMCWC.

Objective and specific aims:

- The initial objective: to standardize screening and evaluation of the ductus in the ELBW infant population.
  - screen all ELBW infants by 1 month of life.
  - increase documentation of clinical criteria for symptomatic PDA when treating (when treating symptomatic PDA) from 0% to 100% over 12 months
- The secondary objective was to describe the natural history of the ductus in this population as well as the timing and outcomes of the treated ductuses.

Interventions:

- Established a NICU wide recommendation to screen all ELBW (BW <1000 gram) with ECHO’s prior to 1 month of life
- Created a smart phrase for documenting a “PDA evaluation” note in EPIC
- Periodic updates given to NICU staff regarding findings

Results:

- 315 ELBW patients reviewed from 2018-2020
- Echo compliance by 1 month of age in ELBW infants increased from 75% to 94% in 2020.
- PDA note compliance increased from 0% to 92% in 2020
- Chart review regarding morbidity and mortality is ongoing

Discussion: Standardization of the timing of ECHO’s in ELBW infants has facilitated early evaluation of this high-risk patient population. Implementing a PDA Evaluation note for patients receiving treatment for PDAs has given insight on the symptoms currently used to determine a clinically significant PDA. This will hopefully lead to more guidelines regarding which PDAs are/are not clinically significant. Further data collection and analysis is important to determine whether long term outcomes are different based PDA status.
Rachel Palting, DO
Edward Via College of Osteopathic Medicine
Blacksburg, VA
Doctor of Osteopathic Medicine, 2018
George Mason University, Fairfax, VA
B. A. in Biology and Chemistry, 2012

Honors and Awards:
- COSGP Translating Osteopathic Awareness into Community Health Award, 2016
- President’s Volunteer Service Award, Foodbank of Southeastern Virginia and the Eastern Shore, 2013
- Honors College, George Mason University, 2007-2011

Hobbies & Interests: Rachel enjoys cooking, exercising, hiking and exploring new places. She likes collecting stuffed animals and anything related to Star Wars.

Research Experience:
- Assisted with Data Collection and Demographic Analysis. Adopt a Community: A Community Health Assessment and Interventional Design, Cholesterol Interventional Plan with Julie Kidd, MD. Edward Via College of Osteopathic Medicine, Blacksburg, VA, USA, 2015-2016

Oral Presentations:


Teaching Experience:
- Resident Lectures: Panoptic Ophthalmoscopy teaching sessions directed toward junior and senior residents, 06/2019-02/2020.
- Medical Student Lectures: Thirty-minute sessions on Vomiting in Children and Pediatric Thyroid Disorders.
Abstract

The Health Impact of Pediatric Diabetes and Diabetic Ketoacidosis in Hawaii

Kapiolani Medical Center for Women & Children

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Department of Pediatrics, John A. Burns School of Medicine, University of Hawaii

Background: Diabetic ketoacidosis (DKA) is one of the severe complications of type 1 diabetes mellitus (DM), of which the incidence varies based on country and ethnicity. Hawaii has the 2nd highest prevalence of type 1 diabetes, per a study by the CDC. The criteria for diagnosis of DKA include hyperglycemia, metabolic acidosis, and ketonemia/ketonuria. Cerebral edema (CE) is a potentially fatal complication of DKA. Many factors including patient and treatment related variables have been postulated to affect the outcomes of pediatric DKA. However, the results of those studies have been inconsistent. More importantly, no such studies have been carried out in Hawaii despite this high prevalence. We conducted this research to identify the outcomes and the factors affecting outcomes of pediatric DM and DKA in Hawaii.

Methods: Retrospective chart review was conducted of patients admitted to the Pediatric Intensive Care Unit at Kapiolani Medical Center for Women and Children (KMCWC) for diabetic ketoacidosis over 10 years PICU from January 1, 2009 to December 31, 2019. Baseline patient variables including age, weight, new onset diabetes, their initial labs at presentation, including glucose, pH, CO2, HCO3, sodium, hemoglobin, BUN, anion gap, hemoglobin A1C/EAG were examined. Treatment factors, including pediatric versus non-pediatric ED, administration of an insulin/bicarbonate bolus, volume of initial bolus, number of boluses, and timing of long-acting insulin administration were analyzed. Mortality, development of CE and the other complications, length of PICU and hospital stay were the outcomes of interest.

Results: Our study identified 1429 patients with pediatric DM in the electronic health record of KMCWC. There was a total of 9113 encounters in last 10 years, 638 required PICU admission for DKA with 312 were repeat admission. Of these, 22 developed CE during their PICU course. PICU admission costed over $13M during our study period. Patient variables were more significantly associated with outcomes. Those who developed CE were older and heavier (p<0.05). The lower initial pH, HCO3, venous CO2 and higher BUN were associated with increased risk for the development of CE (p<0.05). Treatment factors, including treatment at pediatric or non-pediatric ED, treatment with insulin or bicarbonate bolus, were not significant (p>0.05). Neither the volume of fluid bolus in first 2 hours nor the total number of boluses were significantly associated with the development of CE (p>0.05). One patient developed central pontine myelinolysis and deep vein thrombosis. There were no other complications during this study period. There was no mortality despite this high incidence of DKA and CE.

Conclusions: Diabetic ketoacidosis is a considerable disease burden on the health of pediatric type 1 diabetics and has a major impact on hospital costs. Ongoing education of the risk factors of DKA and cerebral edema can improve healthcare for the children of Hawaii with type I diabetes. Improving patient compliance can significantly reduce the number of PICU admissions. Seriously ill patients should be continued to be monitored closely. Larger studies are required to assess the association between treatment factors and the patient outcomes.
Honors and Awards:
- Freeman Scholars: Resident Loan Repayment Program Award, John A. Burns School of Medicine, 2020.
- Dr. Venu Reddy & Dr. Vijaya Reddy Sponsored Chairman’s Book Award, Pediatric Residency Program, 2019.
- Resident Excellence in Teaching Award, John A. Burns School of Medicine Medical Students, Block 4, 2018.
- Dr. Hans and Clara Zimmerman Health Scholarship, 2017.
- ISS Achievement/Asian Pacific Focus Scholarship, John A. Burns School of Medicine, 2014.

Hobbies & Interests: Rachel likes doing arts and crafts (embroidery, weaving, painting, drawing), reading fiction novels, cooking and attempting to play sports (volleyball, basketball, spike ball).

Oral Presentations:


Santiago R. CRFQI conference: “Sepsis in Pediatric Oncology Patient.” Oral Presentation at Kapiolani Medical Center for Women and Children, Honolulu, HI, USA, December 5, 2018.

Abstract

Improving the Rate of Iron Prescribing for Breastfed Infants in a Community Pediatric Clinic in Honolulu

Kapiolani Medical Center for Women & Children

Rachel Santiago MD and Kristin Hallett MD
Department of Pediatrics, John A. Burns School of Medicine, University of Hawaii

Background: Iron deficiency remains a common cause of anemia in young children and may have long-lasting adverse effects on neurodevelopment. The American Academy of Pediatrics (AAP) published a clinical report guideline in 2010 recommending iron supplementation for term, exclusively breastfed infants at 4 months of age until iron-containing foods have been introduced.

Objective: The goal of this quality improvement project was to increase the rate of prescribing ferrous sulfate to 80% for term breastfed infants at the 4-month-old, well-child check, in accordance with AAP recommendations, over the course of one year.

Methods: A Plan-Do-Study-Act (PDSA) cycle was utilized. Interventions included updating clinic attendings, clinic staff, pediatric residents, and visiting residents of the AAP guidelines; revising 4-month-old well-child smart phrases in the electronic medical record (EMR); and adding visual reminders in clinic. Data was collected from February 2020 to January 2021 via EPIC chart review for 4-month, well-child checks.

Results: Prior to interventions, the rate of prescribing ferrous sulfate for qualifying well-child checks was 21% (9/42). Post-interventions, the rate improved to 69% (40/58). However, in 11 of the 18 cases where iron was not prescribed, the physician had recommended iron supplementation, but parents declined. Therefore, the rate of offering a prescription was 88%, (51/58).

Conclusion: Interventions including multidisciplinary education, EMR templates, and visual cues were successful in increasing the rate of iron prescribing for breastfed term infants in accordance with the 2010 AAP guidelines.
Amy Jenkins, MD

St. George’s University School of Medicine
Grenada, West Indies
Doctor of Medicine, 2018
University of Oregon, Eugene, OR
Post-baccalaureate Studies

Hobbies & Interests: Amy likes cycling, reading, backpacking, cooking and hanging out with her dog.

Research Experience:
- Estrogen and Progesterone Impact on Cardiovascular Health with Christopher Minson, PhD. University of Oregon, Eugene, OR, 2011-2012.
- Research Methods to introduce the pGlo Gene into Campylobacter Jejuni with John Berestecky, PhD, University of Hawaii, Honolulu, HI, 2009.

Oral Presentations:


Teaching Experience:
- Resident Lectures: Panoptic Ophthalmoscopy teaching sessions directed toward junior and senior residents, 06/2019-02/2020.
- Medical Student Lectures: Thirty-minute sessions on Vomiting in Children and Pediatric Thyroid Disorders.
Abstract

Hemophilia Diagnosis in an Older Patient
With Subgaleal Hemorrhage

Kapiolani Medical Center for Women & Children

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Introduction: Subgaleal hematoma is typically a result of birth injury and rarely occurs outside of the newborn period. There are reports of neonates diagnosed with hemophilia when presenting with life threatening subgaleal hemorrhage. This case highlights the new diagnosis of hemophilia B in a previously healthy older patient who presented with a worsening subgaleal hematoma following minor trauma.

Case: A 9-month-old male with no history of unusual bleeding and no family history of coagulopathies presented with worsening scalp swelling 4 days after falling and hitting his head on a toy. Initial evaluation showed a subgaleal hematoma on CT. He was hemodynamically stable and was discharged with anticipatory guidance. Two days later he returned with fever, vomiting and enlarging scalp swelling. He was placed on empiric antibiotics. MRI showed a significantly increased subgaleal collection. Hematological workup revealed mild factor IX deficiency. He underwent treatment with factor IX infusions and eventual evacuation of the hematoma, recovering well without evidence of further bleeding. His fevers resolved after evacuation of the hematoma. Gram stain and culture of the hematoma aspirate were negative. Factor IX infusions were continued on discharge, with ongoing follow up arranged with the hemophilia clinic.

Conclusion: Subgaleal hemorrhage rarely occurs outside of the newborn period. This case illustrates initial presentation of hemophilia B as a subgaleal hemorrhage in an older baby. A large subgaleal hematoma following minor trauma should raise suspicion for a coagulation disorder.