

Nursing Oral Abstract

"Just in Time" - A Novel Educational Tool for Anticipatory Management of Postoperative Patient's in the Infant Cardiac ICU

G Sehne

New York Presbyterian Morgan Stanley Children's Hospital

Background: Our unit utilizes a novel concept known as "Just in Time" to provide knowledge to front line providers which enables them to be equipped with the tools needed to deal with acute care postoperative situations including recognition and management of complications. "Just in Time" is a multidisciplinary discussion involving visual aids of infant specific cardiac anomalies and specific procedures. This forum identifies a variety of scenarios that one could anticipate in a post-operative patient

Methods: A survey questionnaire was sent to advance practice providers and nurses asking how frontline providers learn best during acute care situations. This questionnaire included multiple choice questions, preferred style of learning, number of years as a provider and the benefits of "Just in Time" discussions.

Results: The questionnaire was sent to a total of 94 participants including both advanced practice providers and registered nurses. 55 participants responded and out of those 24 were APPs and 31 RNs. When asked to rate the importance of our "Just in Time," 80% of the respondents felt that it was very beneficial.

Conclusions: In the current era, the optimal teaching method is unknown. Based on our data in our dedicated neonatal cardiac intensive care program, both APPs and RNs felt that our novel concept of "Just in Time" training was both empowering and beneficial when managing acute care postoperative situations.

Nursing Oral Abstract

Parents Post-Traumatic Stress Before and After Their Infant's Second Single Ventricle Surgery: A Correlational Longitudinal Study

M Elliott

Children's Mercy Hospital

Background: One percent of infants born have CHD making it the most common congenital anomaly. Of those infants born with CHD, 1% have a functionally single ventricle. This type of heart defect requires three palliative heart surgeries, the first within seven days of birth, the second at 4-6 months of age, and the third at 2-5 years of age. Parents endure emotional trauma from witnessing their child in life-sustaining care, experiencing reoccurring hospitalizations, and the evolving reality of having a child with a chronic illness. Parent trauma impacts normal experiences for the parent and the infant resulting in impaired coping, bonding, and confidence. The infant may have problems with feeding or neurodevelopment. Parents with unresolved trauma may be less engaged in medical care which is a predictor of later infant outcomes. The purpose of this study is to describe the levels of parent post-traumatic stress before and after their infant's second palliative surgery for SVCHD.

Methods: A descriptive correlational, longitudinal design was used. The post-traumatic stress disorder checklist revised for the DSM-5 (PCL-5) was administered via Research Electronic Data Capture (REDCap) to 22 parents before and after the second palliative heart surgery. Descriptive statistics were used to evaluate and describe the demographic data and the level of post-traumatic stress at the two-time points. The Wilcoxon signed-rank test was used to determine the relationship between the two PCL-5 scores

Results: There were positive PCL-5 scores present pre-surgery and post-surgery. Most of the scores (n=13, 59%) decreased between surgery one and surgery two, although we did not have statistical power to make definitive conclusions from the data. An inverse association between the PCL-5 scores and income and level of education were noted.

Conclusions: Previous qualitative research suggested that parents had a significant response to the end of their time with CHAMP. This study aimed to further explore that phenomenon quantitatively and found somewhat contradicting results. Failure to replicate findings of qualitative work may be due to the retrospective nature of the initial work. There were significant symptoms at both timepoints which highlights the need for further work. With all positive scores, there was a referral to the heart center psychologist for follow up. This provided an opportunity to counsel families and provide resources. The unexpected psychosocial follow up due to the study design highlights the continued need for comprehensive care for these patients and families after hospital discharge. Future research should seek to obtain scores at consistent timepoints not bound by surgery.

Nursing Oral Abstract

Nurse Navigation in Congenital Cardiology

Z Cowles

Levine Children's Hospital

Background: The role of the nurse navigators within congenital cardiology is not well documented; however, improvements in outcomes supported by the navigator role are evident for other patient populations, both pediatric and adult. Therefore, the purpose of this abstract is to describe growth within a single center and the best practices for the nurse navigator in congenital cardiology and to support the implementation of the role in programs throughout the field. The Nurse Navigator role was implemented at Levine Children's Congenital Heart Center (LCCHC) to streamline care and create a positive patient experience from referral throughout their continuum of care.

Methods: The congenital heart population is complex, with some patients requiring frequent interventions. The navigator role was established at LCCHC in 2013. Over a decade, the role evolved into six nurse navigators, each specialized to the unique needs of this patient population. Navigators are now established at this center for fetal, surgery, interventional cardiology, inpatient, electrophysiology, and adult congenital patients. Despite the subspecialties, the goals are identical: to assist and educate patients, trusted adults, and support persons, to identify and break down barriers while expediting care, and to be a compassionate and knowledgeable coordinator through the continuum of care.

Results: The fetal navigator role was developed in 2013 to better prepare and educate mothers who fetus received a complex congenital heart diagnosis. In 2013, there were 38 fetal referrals that were followed through delivery. This increased to 58 in 2014, demonstrating 34% increase. Growth remained consistent through 2021, which had 69 referrals through delivery. In 2017, surgical case volume was 258 patients, which increased to 292 in 2021, a 12% increase, average of 302 cases in between. Post-operative length of stay averaged 12.9 days in 2017, 12.5 days in 2021. Readmissions within 30 days in 2017 were 11.2% and in 2021 were 9.2%. The coordination of appropriate consultations prepares patients and support persons for the care and management of congenital heart disease. Surgical, interventional, and electrophysiology referrals activate a similar process; however, given the wide variety of interventions, individualized support is offered to each patient and family. For inpatients, navigator care is prompted within the hospital setting. Focused support is provided throughout hospitalization with continuous education to facilitate smooth transition to home and reduce the occurrence of readmission. The Adult Congenital Navigator is prompted within the referral process, according to the patients within this subspecialty that have complex needs.

Conclusions: Nurse navigators focus on the complex needs of patients throughout the continuum of care. The growth and evolution of the nurse navigator role mirrors that of the Congenital Heart Program at LCCHC. The addition of subspecialty nurse navigators, including fetal, surgical, electrophysiology, inpatient, pediatric, and adult provides a tailored and individualized approach to congenital cardiology care. As more patients age out of pediatric care and therapies advance, more specialized navigators were needed to match this growing and evolving patient population. While informal patient feedback has been positive, more research related to this role is needed within the field. There are multiple publications to support the utilization of this role among Oncology programs, yet the literature offers no information on the utilization of nurse navigators within Congenital Cardiology and needs to be further investigated.

Nursing Oral Abstract

Transforming the Future of Dialysis Therapies in Cardiac Intensive Care

M Murphy, T Mottes, M Keswani, S Hartman

Ann and Robert Lurie Children's Hospital of Chicago

Background: Prior to November 2022, Lurie Children's Hospital operated inpatient dialysis via a contracted third party. As the complexity of the Cardiac ICU has increased, so has the need for dialysis therapies. To meet the evolving needs of this patient population, we developed an in-house dialysis program with in-house, twenty-four seven care delivery model. The transition allows for improved collaborative model between Nephrology and Cardiac ICU, enabling patients to receive treatment in a timely manner and to receive the newest forms of dialysis. Over 1000 CRRT therapy days are conducted yearly at Lurie Children's Hospital. This volume calls for a comprehensive inpatient dialysis team.

Methods: The project design included the conclusion of the contracted third-party dialysis team and the creation of a comprehensive internal nursing dialysis team. The development of an internal team allows for quick mobilization of resources to meet dialysis needs in a timely fashion.

Results: The twenty- four seven inpatient dialysis team at Lurie Children's Hospital is changing the dynamics of dialysis treatment in the Cardiac ICU. The team is meeting the ever-changing demands of the Cardiac ICU population in a timely manner. Start times for dialysis initiations have decreased from four hours to one hour. Bedside teams are now supported. When problems arise the ICU teams are no longer left at the mercy of a hotline number or to contracted teams with limited pediatric training. To better treat kidney injuries, dialysis modalities have expanded. Aquapheresis and Carpedeium have been added to the dialysis repertoire and HD and CRRT machines have been updated. Presence and availability are key in the Cardiac ICU. As patients recover, physical therapies are no longer interrupted as dialysis treatments can be completed during nighttime hours. Often, the vasculature of the cardiac population leaves obtaining access to be a challenge. With this new model, dialysis can be completed through two access points instead of one.

Conclusions: The future is bright for kidney injury treatments on the Cardiac ICU at Lurie Children's. The new dialysis team eliminates previous restraints that faltered patient's success. Current state, the Cardiac ICU utilizes current technology led by a knowledgeable team to advance patient outcomes. The robust cardiac program at Lurie Children's cares for complex patients requiring a robust dialysis team. The dialysis program and cardiac program now have the support from Lurie Children's Hospital to provide quality improvement and publish data.

Nursing Oral Abstract

Reduction of Post Cardiac Catheterization Flat Time in Pediatric Population

L Gervasi, M Pretsch, J Fitzgerald, Amy Lisanti

Children's Hospital of Philadelphia

Background: Pediatric patients who undergo cardiac catheterization at Children's Hospital of Philadelphia are required to lay flat post-procedure for 6 hours for femoral arterial access. During the flat time, patients can report anxiety, pain, or generalized discomfort. Research suggests that flat times can be safely reduced without increased site bleeding and decrease discomfort. The purpose of this quality improvement project was to increase patient satisfaction and comfort by decreasing flat times without increasing rates of site bleeding. The population chosen was the cardiac transplant patients because they need yearly cardiac catheterizations and would be able to provide comparison data and feedback.

Methods: The project utilized a PDSA cycle methodology (Plan, Do, Study, Act). The first two PDSA cycles were targeted to all cardiac transplant patients undergoing cardiac catheterization and biopsy who were recovering in the Cardiac Preparation and Recovery Unit. The first cycle reduced the flat time by one hour from 6 to 5 hours. The second cycle reduced the flat time from 5 to 4 hours. After the reduced flat time was completed, patients/families completed a survey to provide feedback on their level of satisfaction and comfort and compare their experience to previous recoveries. Patients under 18 filled out the survey with their parents and patients who were over 18 filled out the survey themselves.

Results: Both PDSA Cycles showed no impact on incidence of site bleeding. Patient/parent survey results were varied with all patients reporting their experience as the same or improved.

Conclusions: Based on this project, the standard post catheterization flat time for transplant patients with femoral arterial access was safely reduced from 6 to 4 hours. Decreased flat time to 4 hours after Femoral arterial access is now the standard of care at this institution for all diagnostic catheterizations, annual transplant/biopsy, and Patent Ductus Arteriosus device closures.

Nursing Oral Abstract

Stop and Go Simulation: An Innovative Approach to Nurse Training

L Barwick, R Deonna, J Campbell, E Heun, H Anaya

Shands Children's Hospital

Background: The Pediatric Cardiac Intensive Care Unit (PCICU) is a complex setting comprised of high acuity patients with risks of rapid deterioration, requiring exquisite recognition and skill of the care team. Between 2021-2022, 83% of the new hires into the PCICU were graduate nurses, with minimal clinical experience that lack the knowledge to triage emergent situations. Stop & Go (S&G) Simulation is an innovative approach to mock-code type training, allowing new PCICU nurses to build knowledge, comfort, and critical thinking skills for navigating events involving patient deterioration.

Methods: S&G Simulations are high-fidelity training sessions, comprised of 4 patient scenarios. The simulation team is comprised of a multidisciplinary group led by highly skilled staff nurses. A group of 5-6 new nurses are briefed on the simulation process and are assigned a participation role. Each nurse will experience every role in each simulation. Throughout the active scenario, the simulation team pauses at intervals to review and ensure participant knowledge acquisition about the individual steps involved. A debriefing session is held at the conclusion of each situation.

Results: 98% of participants (n=41) surveyed felt the sessions were high quality, 100% reported a judgement-free environment, 37% expanded their knowledge of code roles, 24% learned management of pediatric code medications, 22% learned how to better recognize the patient deteriorating prior to a code, 20% learned various arrhythmia treatments, 17% learned how to use a defibrillator including cardioversion, 15% learned to perform better compressions, 15% learned proper bagging mechanics, and 10% stated they were more confident and less stressed about a code situation.

Conclusions: PCICU nurses practice in an environment where stakes are high for patients, and advancing nurses' knowledge and skill are essential for optimal outcomes. S&G Simulations allow for a tailoring of knowledge delivery to meet the unique needs of nurses beginning their career in a complex care environment. It will be imperative to expand training to include more scheduled opportunities and more tenured staff.

Nursing Oral Abstract

Collaboration Between Two Advanced Practice Nurse Teams Caring for Pulmonary Vein Stenosis Patients Awaiting Lung Transplant

C Ireland, D Freiburger, J Lund-Wilde

Background: This poster will focus on advanced practice register nurse (APRN)-led care coordination and collaboration between two medical specialty teams. The poster will describe approaches to improved care continuity for pediatric patients with PVS awaiting lung transplant with high medical complexity provided by both, cardiology, and pulmonary teams.

Methods: Poster highlights the APRN role within cardiology and pulmonary teams to demonstrate APRN collaboration to provide individualized care to PVS patients and their families. Patients with aggressive disease poorly responsive to medications, catheterizations and/or disproportionate pulmonary hypertension are encouraged to meet with the lung transplant coordinator to discuss lung transplant and evaluation. If family elects to proceed, and transplant is an option, the patient will undergo transplant evaluation. The evaluation process involves meetings with multidisciplinary transplant team members, diagnostic testing, and subspecialty involvement as needed that will help determine potential barriers to lung transplant candidacy.

Results: To ensure the patient remains a transplant candidate from both a medical and psychosocial standpoint communication between the APRNs is the main mode of communication between the two teams. Attempts are made for coordination of outpatient appointments, blood draws and consistent messaging between teams. Family meetings with both teams is common practice during patient hospitalization. Wait time, particularly for infants, can be many months and due to aggressiveness of disease these patients require cardiac catheterization every four weeks. Many younger patients medically decompensate prior to lung transplant and don't survive. Due to PVS being a lethal disease, some patients have been transferred to await lung transplant at the local acute medical rehabilitation hospital. The APRN team collaboration has provided seamless medical care transitioning from one setting to another, so the patient does not have interruption of or a setback in care.

Conclusions: Some PVS patients have aggressive disease that require consideration for transplant. Collaboration between the two APRN teams provide seamless continuity of care and provides incredible support for these families through the process of listing and while awaiting transplant. Collaboration between the two medical specialty teams improved care continuity for pediatric patients with PVS awaiting lung transplant with high medical complexity.

Nursing Oral Abstract

Decreasing Medication Overrides in the Pediatric Cardiac ICU

C Sterling, K Koo, M Joseph, A Thomas, M Jauregui

Advent Health for Children

Background: Preventing medication errors from reaching patients requires multiple layers of safety protocols. Because over half of all medication errors occur during administration, pharmacy order verification prior to administration is an important step for the prevention of errors. Emergent situations may require an override to access a medication prior to pharmacy verification. However, this practice introduces an increased level of risk for patients and should occur rarely. While the institutional goal for medication overrides is 2.4 percent, the Pediatric Cardiac ICU rate was at 12.4 percent. The aim of this performance improvement project is to reduce medication overrides by 6 percent.

Methods: The team used the PDSA method for process improvement. The first step included identifying the most common medications obtained from the medication cabinet by override. This informed the three-pronged approach which included educating nurses on the importance of avoiding medication overrides, utilizing medication kits when appropriate such as a rapid sequence intubation (RSI) kit, and collaborating with physicians to ensure timely order entry so as not to delay pharmacy verification. Finally, flyers summarizing the strategies to decrease medication overrides were posted in the unit.

Results: After implementing our multi-pronged approach, medication overrides decreased initially to 8.4 percent. Within 5 months, the override rate further declined to 3.5 percent demonstrating sustained improvement in performance. While increasing nurses' awareness and interprofessional collaboration were effective improvement strategies, utilization of medication kits was critical to successful reduction of overrides within the Pediatric Cardiac ICU. Due to the acuity and workflow of the ICU, nurses frequently need to obtain several medications simultaneously in response to a common emergent situation such as RSI. Medication kits allows the nurse to pull a standard set of medications at one time avoiding the risk of pulling incorrect medications. Because medication kit utilization is not only safer but quicker, nurses readily adopted this practice change.

Conclusions: As a result of our performance improvement activities, we significantly decreased the number of overrides from the medication cabinet but have not yet achieved the institutional goal of 2.4 percent. Future efforts will focus on improvements in the workflow for patients admitted directly from the surgery. We will also continue to collaborate with physicians to ensure non-emergent orders are entered timely. Finally, we must collaborate with pharmacy to decrease the length of time from order entry to order verification. Continuing these efforts and education will help solidify these practices into the unit culture and make this project a long-term success.