

# Nursing Research Day: Innovations in Clinical Inquiry

## October 23, 2019

### Poster Presentations

Poster	Title	Project Type
1	<i>IV Acetaminophen Stewardship for Children's Appendectomy Pain Management</i> Presenters: Renee Manworren, PhD	Research
2	<i>Utilization of Ketamine for Inpatient Pediatric Sickle Cell Disease Inpatients Admitted at Tertiary Care Facilities</i> Presenter(s): Renee Manworren, PhD	Research
3	<i>Pediatric Complex Regional Pain Syndrome at Tertiary Care Facilities</i> Presenter(s): Renee Manworren, PhD	Research
4	<i>Correlation of the Neonatal Pain, Agitation, and Sedation Scale (N-PASS) With Bedside Nurse Assessments</i> Presenter(s): Paige Ricca, DNP, MS, MBA, RN; Keri Benbrook, BSN, RNC-NIC	Research
5	<i>Development and Pilot Testing of a Smart Phone App for College Students with Asthma</i> Presenter(s): V. Ann Andreoni, DNP, APRN, CPNP-PC; Barbera Velsor-Friedrich, PhD, RN, FAAN	Research
6	<i>Timing of Pegfilgrastim- Association with F &amp; N Admits and Chemotherapy Delays in a Pediatric Solid/CNS Tumor Population</i> Presenter(s): Laura Shlenker BSN, RN, CPN	Research
7	<i>The Effect of Combination Phototherapy Compared with Phototherapy Blankets on Length of Phototherapy and Total Serum Bilirubin Levels</i> Presenter(s): Stephanie Wiegert, DNP, RN, CPNP-PC; Huong Mai BSN, RN, CPN	Research
8	<i>The Impact of Leadership Development for Front-Line Nurse Managers on Clinical Nurse Engagement</i> Presenter(s): Karen Richey DNP, MBA, RN, NEA-BC	Research
9	<i>Assessment of Baseline Developmental Care in IL NICUs (ABCD-NICU IL)</i> Presenter(s): Susan Horner, MS, APRN/CNS, RNC-NIC, CBC	Research
10	<i>A Descriptive Analysis of a NICU Nurse Driven IVH Prevention Initiative</i> Presenter(s): Susan Horner, MS, APRN/CNS, RNC-NIC, CBC	EBP
11	<i>Evidence- Based Approach to Bronchiolitis and a Standardized Scoring System</i> Presenter(s): Alexandra Sanchez, RN; Ace Navarette, RN	EBP
12	<i>Supporting Clinicians to Publish: The Writing Challenge</i> Presenter(s): Sarah A. Martin MS, CPNP-AC/PC; Kyleen Young MSN, CPNP-PC	EBP
13	<i>Initiation of Unit-Based 1:1 Education to Improve Peripheral Intravenous Catheter Management</i> Presenter(s): Sarah Carlquist, BSN, RN, CPN and Michelle High, MSN, RN, CNL, CPN	QI

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14	<i>Family Engagement in QI to Improve Patient Safety</i> Presenter(s): Michael Olsen, MS, RN, CPN	QI
15	<i>STEPP IN next STEPPS: Safe Transitions &amp; Euthermia in the Perioperative Period in Infants &amp; Neonates-Sustainability Phase</i> Presenter(s): Megan Ivey BSN, RN	QI
16	<i>Devising an Efficient Workflow to Support Operationalizing the Central Clinical Prior Authorization Department (CPAD)</i> Presenter(s): Jennifer Yoder MSN, RN, NE-BC, CPN; Sandra Cardone MSN, RN, CNL	QI
17	<i>Improving Maintenance Bundle Compliance to Decrease Central Line Associated Blood Stream Infections</i> Presenter(s): Rheannon Rzucidlo, MSN, RN; Maria Hugo, MSN, RN, CCRN	QI
18	<i>Improving Pain Management on Floor 21</i> Presenter(s): Neetu Perumpel, MSN, RN, CNL, CPN, CBC; Mia Kalisch, BSN, RN, CPN	QI
19	<i>Increasing Identification of Pediatric Cardiac Patients at Risk for Neurodevelopmental Deficits</i> Presenter(s): Kaitlyn Cowan DNP, APRN, CPNP-CP; Carrie Alden MSN, APRN, CPNP-AC/PC	QI
20	<i>Optimizing Discharge Times by Utilizing Discharge RN</i> Presenter(s): Jerusha Pedersen	QI
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# Nursing Research Day: Innovations in Clinical Inquiry

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### Abstracts

#### Research

1. *IV Acetaminophen Stewardship for Children's Appendectomy Pain Management*

Authors: R. Manworren, S. Mudahar, H. Quan, S. Park, L. Codaro, & T. Moran

2. *Utilization of Ketamine for Inpatient Pediatric Sickle Cell Disease Inpatients Admitted at Tertiary Care Facilities*

Authors: Christine E. Stake DHA, Sana Minhas MS, Hehui Quan MS, Natalie Seewald APN, Katherine A. Barsness MD, Patrick Birmingham MD

Use of ketamine has been proposed as an adjunct medication for pediatric patients with sickle cell disease (SCD) to help manage acute pain crises. There is a paucity of research on using ketamine to treat SCD pain. Our study objective was to describe the current utilization of ketamine in a national sample of pediatric patients with SCD. Although ketamine has been proposed as a potential treatment for pediatric patients with refractory SCD pain, it was used in < 1% of all SCD encounters. The data suggest that ketamine is rarely utilized in the treatment of SCD pain. As a non-opioid adjuvant to treating pain, ketamine may provide new avenues for the effective treatment of SCD pain in children.

3. *Pediatric Complex Regional Pain Syndrome at Tertiary Care Facilities*

Authors: Jennifer Fanelli, APRN, Sana Minhas MS, Katherine A. Barsness, MD, Fred Hebal, MD, Christine Stake, DHA, and Ravi Shah, MD.

Pediatric complex regional pain syndrome (CRPS) is a complex disorder which is not fully understood, with an unknown prevalence within the pediatric population. Although CRPS commonly follows a minor trauma, the specific causes are unknown. Psychological stressors may play a large role in the development, progression and severity of CRPS. The purpose of our study was to determine the nature of pediatric CRPS and the most commonly used analgesics to treat pediatric patients with CRPS in tertiary care children's hospitals across the United States. Acetaminophen, NSAIDs, anti-convulsants, anti-depressants and opioids are among the most commonly used medications to treat CRPS in pediatric patients in tertiary care children's hospitals. While these medications are used as standard practice to treat CRPS, further studies are needed to support their efficacy in treating CRPS in children. Rapid diagnosis is imperative when treating children with CRPS in order to improve treatment outcomes and decrease recurrence rates.

4. *Correlation of the Neonatal Pain, Agitation, and Sedation Scale (N-PASS) With Bedside Nurse Assessments*

Authors: Paige Ricca, DNP, MS, MBA, RN; Keri Benbrook, BSN, RNC-NIC, CBC, CPN; Ashley Entler, BSN, RN; Taylor Greene, BSN, RN; Catherine Myler, BSN, RN; Kim Riendeau, BSN, RN; Kaylee Sills, BSN, RN; Greta Wischmeyer, MSN, RN; Rebecca Zuravel, BSN, RN.

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Background: Multiple infant pain tools have been developed to better assess and manage pain in critically ill infants in an intensive care unit. However, the NPASS infant scale is the only scale that uses a sedation component to assess more than pain. Few studies to date have examined compared N-PASS with bedside NICU nurse assessments, particularly among chronically ventilated, medically fragile infants.

Specific Aims:

- Evaluate agreement of bedside nurse's perceived assessment of pain/agitation and sedation with N-PASS scores
- Evaluate correlation and variance of average N-PASS versus NIPS scores.
- Evaluate agreement with bedside nurse's N-PASS score with independent, simultaneous nurse investigator N-PASS score.
- Evaluate associations between N-PASS scores and various patient characteristics, such as corrected gestational age, bronchopulmonary dysplasia (BPD), or number of days on ventilator support.

Methods/Analysis: Infants in a 64-bed level III NICU were assessed for pain, sedation, and agitation using the NPASS and NIPS scales. Twelve NICU nurses were trained to use the N-PASS scale, and completed N-PASS and NIPs scores during routine care. A convenience sample of scores and assessments (n=201) with 88 infants were completed. A nurse investigator obtained N-PASS and NIP scores that were simultaneous and independent of the bedside nurse scores. Initial feedback from bedside nurses was that the NPASS scale is useful for scoring sedated patients. Statistical analysis is currently in progress.

#### 5. *Development and Pilot Testing of a Smart Phone App for College Students with Asthma*

Authors: V. Ann Andreoni, DNP, APRN, CPNP-PC; B. Velsor-Friedrich, PhD, RN, FAAN; E. Roberts, DNP, APRN, FNP-BC; J. Shore, PhD, RN; G. Baura, PhD

As individuals mature from adolescence to adulthood, they must learn to take responsibility for their health care. College students with asthma were less likely to have a usual source of care or a primary care visit ( $p = .001$ ); less likely to fill a short-acting beta-agonist prescription ( $p = .02$ ) and more likely to visit the emergency department within the past year ( $p = .003$ ) than adolescents (Kao-Ping, Schuster & McWilliams, 2013). A grounded theory study about the transition of asthma self-care in college students found that students would use a smart phone app to learn about asthma management and locate near-by health care facilities (Velsor-Friedrich & Hogan, 2016). The purpose of this study is to determine the utility of a new smart phone app for college students with asthma. The app was developed by nursing and engineering faculty and students and has four arms: a map of healthcare sites within a 5-mile radius of campus and three educational arms (understanding asthma and asthma triggers; asthma medications and self-care). Twenty-four students with moderate to severe asthma were enrolled in the study. Participants used the app for four weeks. At the end of each week, participants completed an online survey about the usefulness of one arm of the app and were

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reminded to use the next arm of the app the coming week. At the end of the study, participants completed a final survey and received a \$25 gift card. Data analysis is in process and will be reported at the conference.

### 6. *Timing of Pegfilgrastim- Association with F & N Admits and Chemotherapy Delays in a Pediatric Solid/CNS Tumor Population*

Authors: Laura Shlenker BSN, RN, CPN; Alfred Rademaker, PhD

Pegfilgrastim was approved and labeled by FDA to be administered 24 hours or more after chemotherapy. Logistical issues can arise in pediatric populations in trying to meet this administration target. No data exists in the pediatric solid tumor population regarding early administration as an alternative. Aims were to determine whether administration of Pegfilgrastim less than 24 hours after end of chemotherapy resulted in increased incidence of delays of one week or more to next cycle of chemotherapy due to neutropenia, or admissions for febrile neutropenia when compared with administration greater than 24 hours after chemotherapy. It was hypothesized that rates of delay and febrile neutropenia would be similar, no more than 10% difference between the rates in the two groups. Differences between the two groups were insignificant for the two outcomes, but there were a large number of administrations just prior to 24 hours. Distribution of data may have influenced outcome. Further analysis of data is in progress for the purposes of manuscript preparation

### 7. *The Effect of Combination Phototherapy Compared with Phototherapy Blankets on Length of Phototherapy and Total Serum Bilirubin Levels*

Authors: Stephanie Wiegert, DNP, RN, CPNP-PC; Huong Mai, BSN, RN, CPN

A free-standing, urban children's hospital recently saw a change in phototherapy practice among full-term infants admitted with neonatal hyperbilirubinemia. Since 2015, two phototherapy blankets have primarily replaced the use of one phototherapy blanket and one phototherapy light. Reducing TSB levels quickly is essential to avoid the risk of life-threatening health complications, including kernicterus. Decreasing phototherapy duration is also of interest due to emerging data suggesting the deleterious side effects of phototherapy, including seizures and damage to DNA (Ramy, et al., 2016 & Newman, Wu, Kuzniewicz, Grimes, & McCulloch, 2018). Despite the quantity of literature, only one study was identified that evaluated the efficacy of dual phototherapy blankets, but it did not use current phototherapy equipment (Tan, 1997). This study will compare the effect that combination phototherapy, compared with two phototherapy blankets has on phototherapy duration, decline in TSB, and length of stay. A retrospective chart review is being conducted, and will evaluate the charts of approximately 215 full-term infants admitted to the acute care floor with hyperbilirubinemia from 2012 through August 2019. The type and length of phototherapy, decline in TSB, and overall length of stay will be analyzed. Infants will be included if their gestational age is at least 37 weeks, but less than 10

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days old at the time of admission. Hyperbilirubinemia will be confirmed via laboratory values. Infants greater than 10 days of age, infants with sepsis, or an underlying medical condition will be excluded. Data analysis will consist of an independent two sample t-test or Wilcoxon rank-sum test to compare phototherapy duration between the two phototherapy treatment groups: combination phototherapy and phototherapy blankets only. Analysis of decline in TSB values over time will be conducted with control for the dependence between repeated measures.

### 8. *The Impact of Leadership Development for Front-Line Nurse Managers on Clinical Nurse Engagement*

Author: Karen Richey DNP, MBA, RN, NEA-BC

The purpose of this study was to measure the impact of frontline nurse managers (FLNMs) leadership development on clinical nurse engagement through a pre-assessment and post-assessment survey that measured nurse engagement. A quantitative descriptive study using historical data from an employee engagement survey for the pre-assessment data was utilized in this study with quantitative methods. Clinical nurse engagement was examined and analyzed before and after a leadership development pilot program for FLNMs from patient care units at a pediatric medical center in the Midwest. The results of this study did not demonstrate a statistically significant difference in clinical nurse engagement scores using aggregate scores for the included patient care units (PCUs). Although the results of this study did not show an effect, a unique strength is that FLNMs self-selected participation and qualitative results were positive. Quantitative results support the need for additional research and determining what types of leadership development programs have the biggest impact on FLNMs. Additional research should also focus on how leadership development programs impact clinical nurse engagement outcomes.

### 9. *Assessment of Baseline Developmental Care in IL NICUs (ABCD-NICU IL)*

Authors: Susan Horner, MS, APRN/CNS, RNC-NIC, CBC; Michelle Arrizola, MBA, RN, BSN, IBCLC

Background: Implementation of developmental care practices has been associated with positive medical and neurobehavioral outcomes for NICU infants, and five core measures for evidence-based developmental care are identified in the Universe of Developmental Care model. However, not all studies of developmental care report improved infant outcomes. Experts have suggested that variations in quality of developmental care practices between NICUs may account for these inconsistent infant outcomes, and emerging international data supports this assumption. The quality of developmental care practices between NICUs in the United States have not been examined.

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**Specific Aims:** The specific aim of this multisite study is to collect and compare baseline data related to the quality of developmental care practices in IL NICUs across five core measures. This baseline data will inform future research questions.

**Methods:** Our research strategy includes using multiple measures to assess quality of developmental care practices across the five core measures in collaboration with site PIs including members of the IL NICU Developmental Care Consortium, a professional organization of IL developmental care practitioners established and chaired by the PI. Data collection methods will include staff surveys and observations of selected patient experiences. All recorded data will be de-identified. Data will be entered by each study site into Redcap using their unique study ID. Descriptive data analysis is planned.

EBP

#### 10. *A Descriptive Analysis of a NICU Nurse Driven IVH Prevention Initiative*

**Authors:** Susan Horner, MS, APRN/CNS, RNC-NIC, CBC; Melissa Hoffman, BSN, RN, CBC; Beth Laubenstein, BSN, RN, CBC; Helen Ulaszek, BSN, RNC-NIC, CPN

Intraventricular hemorrhage (IVH) is the most common form of intracranial hemorrhage in neonates. Infants with IVH are at risk for adverse outcomes that may include developmental delays, cerebral palsy, and hearing or vision losses. Preterm infants' cerebral vasculature is fragile and their autoregulation is immature. Nursing IVH prevention interventions include best practices and potentially better practices that may decrease exposure to rapid changes in cerebral perfusion that may contribute to IVH. The purpose of this initiative was to reduce the rate of IVH in preterm infants born at <33 weeks gestation and admitted to Lurie Children's during the first week of life by implementing an evidence-based nursing care practice, neutral, elevated head positioning during the first 72 hours of life. While there are multiple antenatal, perinatal and postnatal risk factors and clinical strategies that may influence IVH rates, the NICU Developmental committee successfully implemented an evidence-based nursing care strategy, midline head positioning for the 1st 72 hours of life, that may have contributed to the reduced IVH rates observed in this population (from 17% to 12.5%).

#### 11. *Evidence- Based Approach to Bronchiolitis and a Standardized Scoring System*

**Authors:** Alexandra Sanchez, RN; Ace Navarette, RN; Sarah Bransen, RN; Ariana Dietrich, RN; Justin Molina, RN; Liz Vitalo, RN

Bronchiolitis is one of the most common causes of hospitalization for infants and represents a large burden on hospital and healthcare systems' finances and resources. This project explores whether the use of a standardized scoring system to determine suctioning frequency in infants with bronchiolitis reduces the length of hospital stay or IMCU/PICU transfers. The goal of this



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research is to decrease the severity and duration of symptoms for Lurie Children's patients with bronchiolitis as well as costs for both patients and the hospital. A review of the literature was conducted to examine the associations between suctioning frequency, the use of a bronchiolitis scoring system and pathway, and length of stay in the hospital/ICU transfers. Based on these findings, the use of a standardized bronchiolitis pathway that focuses on increasing suctioning frequency while decreasing the use of unnecessary treatments shortens hospital length of stay. Therefore, the adoption of a standardized scoring system and pathway for the treatment of bronchiolitis at Lurie Children's Hospital is recommended.

#### *12. Supporting Clinicians to Publish: The Writing Challenge*

Authors: Sarah A. Martin MS, CPNP-AC/PC; Diane Dudas Sheehan ND, FNP-BC; Sue Horner MS, APN/CNS, RNC-NIC, Judy Marshall MS, FNP-BC, Andrea Fawcett MLIS, Julie Shotwell MS, CPNP, Kylene Young MSN, CPNP-PC

The challenge of supporting clinicians with publishing and presenting activities is longstanding. In 2013, an Advanced Practice Providers (APP) publication committee (PC) was created to provide an environment to encourage publishing by nurses at the Ann & Robert H. Lurie Children's Hospital of Chicago. Educational offerings (seminars for continuing nursing education credit and bi-monthly meetings of the "Write Stuff Society" [an informal writing support group]) were among the writing supports offered by the committee. In the summer of 2018, "The Writing Challenge" was offered as part of the Write Stuff Society initiative. The resourceful multi-session offering was organized in a station format and allowed committee members to provide one on one mentoring to clinicians for their specific work in progress. Guidance included many aspects of the publishing process: finessing a topic, developing an outline or timeline, writing abstracts for oral and poster presentations, preparing submissions for scholarly publications, conducting literature searches, reference management and editorial assistance. In the summer of 2019, a survey monkey was developed by the APP Publication Committee and 44 APPs responded regarding their perceived barriers to publishing. Many of the identified barriers were stations offered in the Writing Challenge and the challenge was back on in 2019! This poster highlights the marketing strategies, participation, specific station scheme/offerings to guide other organizations in recreating a similar venue when attempting to increase nursing publications.

QI

#### *13. Initiation of Unit-Based 1:1 Education to Improve Peripheral Intravenous Catheter Management*

Authors: Sarah Carlquist, BSN, RN, CPN and Michelle High, MSN, RN, CNL, CPN

Purpose: To improve peripheral intravenous (PIV) catheter management, early detection of extravasation, and charting compliance in the Intermediate Cre Unit



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**Background:** Insertion of a PIV catheter is one of the most common invasive procedures performed in hospital settings. However, even in hospitals with dedicated vascular access teams, PIV failure rates can be high. Complications related to PIV failure, which include phlebitis, infection, and extravasation, can pose costs to the health care system and can be painful or distressing to the patient and family.

**Problem:** The new Intermediate Care Unit (IMCU) opened on February 22, 2019 staffed by new graduates, internal transfers, and experienced external hires. Within 50 days of opening, 15 extravasations were reported – 7 of which were categorized as moderate or severe. Additionally, 10 safety events were reported related to vascular management. In review of these events, the charting indicated poor compliance with hospital-wide policies such as hourly site assessments, touch-look-compare (TLC) education, and extravasation management.

**Intervention:** With input from the hospital-wide Vascular Access Team and unit leadership, a PIV Taskforce was formed with six bedside nurses. A plan was developed to implement 1:1 staff education to influence practice behaviors and improve charting compliance. Each individualized education session included a review of protocols and policies, hands-on education, and return demonstration of PIV site assessment, TLC education, and charting in EpicPlay. Initiation of education began on April 22, 2019 and 100% of IMCU nurses completed education by June 1, 2019.

**Outcomes:** Beginning on February 22, 2019 when the IMCU opened until April 13, 2019, there were 8 extravasations <30%, 4 moderate extravasations >30%, and 3 severe extravasations >60% reported. After interventions were initiated, the IMCU had 1 one extravasation 32% reported in June, 1 moderate and 1 severe extravasation reported in July, and no reported extravasations in August. Overall, charting compliance improved from 61% pre-intervention to 92.9% post-intervention. The number of reported safety events has also decreased.

**Conclusion:** The utilization of a PIV Taskforce in the IMCU increased nursing competence with PIV management, improved early detection of extravasation, and increased charting compliance. The PIV Taskforce continues to meet to discuss areas for quality improvement, contributes monthly audits, and provides ongoing education for IMCU nurses.

#### *14. Family Engagement in QI to Improve Patient Safety*

**Authors:** Michael Olsen, MS, RN, CPN; Kathy Ginder, RN, CPN; Cally Hutton, MSN, RN, CPN; Jillian Sisson, BSN, RN

Families are essential to care in pediatric healthcare settings. However, family partnership is an underused quality improvement tool for patient safety initiatives. As part of a multi-hospital collaborative, we evaluated the impact of family partnership in one quality improvement initiative, IV extravasation reduction, on one pilot unit. We completed a barrier assessment to mediate common pitfalls that prevent completion of family education. At project onset, our group engaged a family advisor to create a best practice model for family partnership at the bedside and staff education. With the support of this family advisor, current family-centered education was redesigned to be more interactive and speak in greater detail to the importance

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of partnership to improve safe care. A multi-disciplinary group met bi-weekly and used the PDSA quality improvement framework to evaluate effectiveness of changes. Outcome and process metrics were monitored through direct auditing of family partnership in Touch-Look-Compare. A successful audit of family partnership showed families were both educated and engaged in care by raising concerns about their child's IV. Process and outcomes data were displayed on run charts. Engaging with a family advisor impacted quality improvement design and implementation by ensuring a well-rounded approach to the project. Through use of family partnership at the bedside, quality care measures improved. In the case of our initiative, fewer patients experienced harm from IV extravasations. Actively engaging family advisors should be considered a standard in quality improvement design and implementation if meaningful and sustainable changes are to be made to patient safety.

#### 15. *STEPP IN next STEPPS: Safe Transitions & Euthermia in the Perioperative Period in Infants & Neonates-Sustainability Phase*

Authors: Megan Ivey BSN, RN; Keri Benbrook, BSN, RNC-NIC; Stephanie Jones

Over 30% of patients reported to the Children's Hospital Neonatal Consortium Database undergo a surgical procedure. Optimizing safety in this group of patients provides the opportunity to improve care for a large volume of patients. Patient safety, the prevention of errors and adverse events, is an international quality agenda. The peri-operative period is a high risk period in the setting of multiple care transfers and multiple providers across units caring for the individual patient.

The purpose: The purpose of this CIQI project is to implement a standardized communication process for exchange of key clinical information between caregivers for all infants in the neonatal intensive care unit (NICU) who will undergo transfer of care for surgery; ie: a successful handoff. A successful handoff is defined as follows:

Pre op handoff- Anesthesia obtained report from Neonatal LIP, bedside RN, and handoff tool was used.

Post op handoff – Neonatal LIP obtained report from Anesthesia, Surgery and handoff tool was used.

Description/method: A multidisciplinary team met to develop a notification system and standardized handoff tool to streamline the communication process for all NICU OR procedures. A pre and post op survey tool was designed to evaluate the success of the handoff process. A pre op survey is sent to the anesthesia provider and a post op survey is sent to the Neonatal provider to monitor if a handoff occurred, if the handoff tool was used and to measure the level of satisfaction of the handoff.

Evaluation: As of Sept 4th we have 481 cases recorded with a 90% completion rate for the pre op survey and a 94% completion rate for post op survey, which meets our smart aim of having and sustaining a successful pre op and post op handoff using the handoff tool 90% of the time.

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Other findings and Nursing interventions: Chart review revealed pre op temperatures before leaving the NICU documented 56% of the time prior to July 2019. Nursing education completed in July 2019 via educational email, town hall meetings, and individual follow up emails. After interventions the number of documented pre op temps rose to 93% by Oct 2019.

#### 16. *Devising an Efficient Workflow to Support Operationalizing the Central Clinical Prior Authorization Department (CPAD)*

Authors: Jennifer Yoder MSN, RN, NE-BC, CPN; Sandra Cardone MSN, RN, CNL, CPEN, Arnold Butiu MBA, BSN, RN-BC, Marcus Ingram, Jenny Elhadary PharmD, Brenda Laughlin PharmD, Michael Vogt, Colleen Murray PharmD, BCPS, Jenifer Crespo BSN, RN, Tina Desai BSN, RN

##### Problem Statement

Medication prior authorizations are a very time consuming process leading to a lot of duplicate work and administrative communication by clinicians in addition to potential delays in patient care. While working to operationalize the central clinical prior authorization department (CPAD), a need has been identified to develop a more efficient and streamlined med prior authorization workflow to help decrease the average time from when medication is ordered to when it is filled by pharmacy.

##### SMART Aim Statement

By December 2019, see a 25% decrease in the time from when medication is ordered to when it is filled by the pharmacy (baseline average is 90hrs or 3.7days with pilot divisions undergoing centralized process – Rheumatology & Genetics)

##### Project Scope

- Rheumatology & Genetics divisions with specific medications identified
- Time when med is ordered to when it is filled by pharmacy

#### 17. *Improving Maintenance Bundle Compliance to Decrease Central Line Associated Blood Stream Infections*

Authors: Maria Hugo, MSN, RN, CCRN; Rheannon Rzucidlo, MSN, RN, CMNL; Lauren Weisert, CAMP, LCSW, CCM; Sangeeta Schroeder, MD, FAAP, MS (PI)

Background: Central Line Associated Blood Stream Infections (CLABSIs) occur in our inpatient settings primarily due to maintenance bundle (MB) noncompliance.

Objectives: Identify targeted interventions to improve MB compliance.

Methods: A lead team of content experts was created and assembled a multidisciplinary group of 70 stakeholders from the inpatient, procedural, and emergency departments. A barrier

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assessment was completed and fishbone diagrams were used to tag barriers and identify eight key drivers for MB noncompliance. Targeted interventions, determined by a Key Driver diagram, were grouped into 11 improvement categories. Workgroups were established to focus on major areas of improvement addressing the following topics: 1) patient & family education 2) enhanced environmental cleaning 3) minimizing interruptions during sterile procedures 4) handoff improvements 5) protocol standardization 6) observations and real time feedback of bundle elements (Rounds for Influence) 7) patient and/or family refusals 8) supply enhancements 9) data collection and transparency 10) documentation improvements and 11) staff education. These improvements were implemented throughout a nine month period with ongoing work in certain improvement categories.

Results: Our 12-month Cumulative standardized infection ratio (SIR) in May 2018 was 0.85 and in May 2019 it was 0.59, demonstrating a 31% decrease in the 12 month SIR. The SIR showed the greatest decreases following implementation of several key improvements including rounds for influence and the preventable harm dashboard.

Conclusions/Implications: The MB is an evidence-based practice that is proven to decrease the risk of CLABSI. The use of QI science methodology led to increased partnership with multidisciplinary and interdepartmental stakeholders, identified barriers to complying with the MB and directed interventions, many of which have been successfully implemented and led to a decrease in SIR. Based on the sustained decrease in SIR thus far, the completion of the remaining improvement efforts should result in the achievement of a goal SIR of <0.5.

### *18. Improving Pain Management on Floor 21*

Authors: Neetu Perumpel, MSN, RN, CNL, CPN, CBC; Mia Kalisch, BSN, RN, CPN; Kelcy Bowers, BSN, RN, CPN; Samantha Swiderski BSN, RN, CPN; Clare Moeller, BSN, RN, CPN

Floor 21 measured below the Children's Hospital Association (CHA) average on the patient/family experience survey that asks, "Did the staff do everything they could to help your child with his/her discomfort." The unit had an opportunity to improve patient outcomes to impact the Vision 2025 goal of providing the best care and experience. Floor 21 clinical care team members aimed to improve pain management for patients and families as measured by CHA scores from baseline 72.7 to a benchmark of 76.7 by September 2019. Interventions included restocking pain scales and coping and comfort plans in all rooms, providing key phrases to staff to increase family awareness on comfort measures, and creating comfort carts with educational posters for the treatment rooms. Planned future interventions include the creation of a pain resource guide, J-tip utilization during labs, and the incorporation of pain into family centered rounds. Although the benchmark varied slightly each month, LC21 exceeded the CHA benchmark for five of the six months monitored following the project start date. This data will continue to be monitored in the coming months to determine true impact.

### *19. Increasing Identification of Pediatric Cardiac Patients at Risk for Neurodevelopmental Deficits*

Authors: Kaitlyn Cowan DNP, APRN, CPNP-CP; Carrie Alden MSN, APRN, CPNP-AC/PC

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Congenital heart disease (CHD) affects 9 of every 1000 births (Marino et al., 2012; Soto et al., 2011). Fortunately, medical and surgical advancements have made it possible for nearly 85% of children diagnosed with CHD to survive into adulthood. However, CHD survivors are at an increased risk for neurodevelopmental delays, with many requiring rehabilitation and therapy services and school supports (Marino et al., 2012). The early identification of developmental delays and the implementation of the necessary therapies and supports is of the utmost importance. The NICU-Cardiac Neurodevelopmental Program (NCNP) at Lurie Children's Hospital (LC) exists to monitor high-risk cardiac patients and recognize areas of concern in development, while then working to ensure that the necessary supports are in place to optimize daily functioning. Despite having a patient identification process within outpatient cardiology clinics, only 12% of eligible school-aged cardiac patients were screened for neurodevelopmental risk factors. By identifying barriers to implementing the current process and improving the knowledge and awareness of the nurses, this project seeks to improve the identification of high-risk cardiac patients and subsequently increase appropriate referrals to NCNP.

Beginning October 1, 2018, education methods targeted to the cardiology nurses were employed, team and individual screening performance feedback was provided, various reminder cues and informative resources were implemented, and clear expectations of the nurses in the screening process were communicated, all focused on achieving the ambitious goal of increasing the screening rate to 80%. As of July 1, 2019 not only had the screening rate at Chicago-based outpatient cardiology clinics increased from 12% to 71%, but so too did nursing knowledge and competence in regard to neurodevelopmental outcomes in CHD survivors. Though continued efforts are required to continue to push towards the goal of 80%, thus far this project has resulted in a tremendous improvement.

#### *20. Optimizing Discharge Times by Utilizing Discharge RN*

Authors: Anna Lund, MSN, RN, CNL, CPN; Jerusha Pedersen, Rachel Beckner, Jennifer Herbert

**Background & Clinical Significance:** In pediatric patients on Floor 20 North Side, patient length of stay is increased as discharges occur frequently after 2 pm. In alignment with organizational aims regarding discharge, RN clinical workflow was targeted as an area to investigate for ways that expected discharges could occur earlier in the day. By utilizing a Plan- Do- Study- Act quality improvement methodology, a 6 week pilot investigated the utilization of Discharge RNs focusing on barriers to timely discharges, how a dedicated role affects the discharge process, and targeted interventions to overcome those identified barriers.

**Aim:** We aim to increase the percentage of patients discharged by 2 pm on the North Side of LC20 from a baseline of 24% to a goal of 40% by July 2019.

**Scope:** Included in this quality improvement project were on-unit service (pediatric surgery, GI/Liver, Kidney, Urology, ENT, Plastics, and Trauma) patients admitted on Floor 20 north side from admission to discharge.

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Measures: Percentage of patients discharged by 2pm, time (in hours) from Discharge Order Placement to Discharge from Unit, percentage of Patient Family Experience satisfaction, percentage of RN satisfaction with Discharge RN role, patient length of stay.

Results: We increased the percentage of patients discharged by 2pm from 24% to 31%. Time from order placement to discharge remained unchanged (1 hour 8 minutes). Patient Family Experience satisfaction remained at benchmark. 93% of RNs were satisfied with the Discharge RN role. Average length of stay decreased by 1.3 days.

#### 21. *Caring for Patients with Challenging Behaviors*

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##### Problem Statement:

Throughout Lurie, there is a need for improved coordination and processes for identifying, caring for and communicating with patients who display challenging behaviors (CB).<sup>\*</sup> This has led to events that have resulted in harm to patients and staff, as well as staff feeling unsafe in the workplace and unsure of how to respond during challenging behavior events.

<sup>\*</sup>Definition: violent or aggressive behavior, aggressive language

##### SMART Aim:

Develop standardized processes for identifying, caring for and communicating with patients who display challenging behaviors, which will lead to an increase % in staff knowing what to do when working with patients with CB; decrease % staff reporting they feel anxious or nervous when working with patients with CB; and increase staff reporting of physical injuries and, eventually decrease staff injuries due to CB to 0.

##### Project Scope:

The scope of this project ranges from the pre-admission planning for known patients with CB or patients who display CB to post-discharge documentation and communication starting on the 21st floor and spreading to all acute care, inpatient units (floors 19 and 20).