

2022 National Teaching Institute Evidence-Based Solutions Abstracts

EB1: Bringing the Critical Care Nurse to the Post–Acute Care Bedside in Skilled Nursing Facilities

Theresa Harris; Maury Regional Medical Center, Columbia, Tennessee

Purpose: Our goal is to create a nursing team that bridges the continuum of care, delivering the best care when patients need it. Using virtual technology, the expertise of critical care nurses is brought to the bedside of the patient in a skilled nursing facility (SNF). Deploying a novel rapid response team (RRT) assists our SNF partners in assessing and managing potential patients' deterioration, improving patient outcomes, decreasing unnecessary transfers and hospital admissions from the SNF, and reducing the average length of stay (ALOS).

Summary: The RRT intervenes upstream, relying on bedside nurses to identify signs that a patient's condition is deteriorating and empowering them to call others into action. Evidence-based practice education on infection prevention, antibiotic stewardship, sepsis identification, and goal-directed therapy was provided for SNF licensed and unlicensed staff. Collaborating with the SNF physicians, the hospital's infectious disease pharmacist, and SNF administrators, a standard operating procedure (SOP) was developed for deployment of a Virtual Rapid Response Teleconsultation (VRRT). The SOP includes a focus on the expanded role of the nurse. Experienced critical care nurses received extensive training on the SOP algorithms and the telehealth platform. The SNF nurses receive ongoing education about early recognition of sepsis and patient decompensation, as well as how to activate the VRRT and use the telehealth equipment. The SNF activates the VRRT, prompting virtual assessment followed by protocol-driven therapy. Follow-up occurs within 1 to 4 hours to evaluate patient response to

treatment and again within 24 hours. The primary care physician or infectious diseases pharmacist must follow up within 24 hours of initiation of protocol (eg, review of management, antibiotic timeout). **Evaluation/Outcome:** During calendar year 2017, our center experienced 623 patient readmissions from our SNFs, with sepsis being the most frequent diagnosis. A quarter of these readmissions occurred within 4.5 days and 50% occurred in just over 7 days. A total of 32 VRRT calls were received from September 20, 2020, to August 10, 2021. Of these, 27 patients were treated at the SNF, avoiding transfer; 2 were treated and transferred for sepsis. The ALOS decreased from 8 to 4.6 days. Two patients did not respond to treatment and were transferred to the hospital, then transitioned to hospice; they had an ALOS of 1.2 days. One patient required emergent transfer. Our current success rate for "treat in place" is 84% with 90% avoidance of a 30-day readmission. On surveys, physicians and nurses responded "strongly agree" to "agree" about the benefit of the initiative.

EB2: Caregiver Communication During COVID-19

Katherine Hansen; University of Texas MD Anderson Cancer Center, Houston, Texas

Purpose: The purpose of this evidence-based project was to improve patients' experience with nursing communication on a thoracic surgery unit for patients with cancer. The goal was to increase top-box rank to 80% or better. After COVID-19 resulted in the need to impose visitor restrictions, the thoracic surgery unit noted a decrease in how patients ranked their experience for the top-box domain "Communication With Nurses." Nursing leaders began discussions with frontline staff to identify solutions to the problem and a nurse-led initiative was implemented. **Summary:** A frontline nurse took interest in making improvements to COVID-related problems on the unit. Caregivers serve as key informants and advocate

for quality care that positively affects self-management and patient outcomes. Nurses are key in promoting family involvement, which promotes information sharing, easing caregivers into the caring process, and symptomatic relief. Communication is key in understanding the clinical course, which is improved in patients who have caregiver involvement along with improved postoperative outcomes. To engage the health care team in contacting caregivers during rounds, visual cues were used to serve as reminders to change behavior. The evidence was discussed with the unit's inpatient medical director (IMD) and clinical nurse leader (CNL), and it was decided to develop and implement door signs. The evidence-based solution for this problem was to implement visual cues to remind interdisciplinary teams to connect with caregivers at least daily. Staff education was provided during unit-based quality committee meetings and unit staff meetings in preparation for project implementation. **Evaluation/Outcome:** The Communication With Nurses rank decreased from 99% before COVID-19 restrictions (February 2020) to 43% in March 2020, when visitor restrictions were imposed. In June 2020, unit leaders engaged unit staff in discussions about the sustained decrease in top-box rank for this domain, which prompted staff to focus on communication. However, top-box ranks again took a dip in July 2020, to 74%. In September 2020, the frontline nurse began educating unit staff and engaged with the IMD to educate providers on the issue and project. This education increased top-box ranks to 99% in September 2020. Door signs were implemented in October 2020, which kept top-box ranks above our goal (93%). Domain rank remained at 90% or greater in 2021.

EB3: CAUTI: Are We Testing Accurately?

Christopher Lecznar; Virginia Commonwealth University Health System Medical College of Virginia Campus, Richmond, Virginia

Purpose: The purpose of this project was to identify and implement evidence-based practice (EBP) to reduce catheter-associated urinary tract infections (CAUTIs). Our surgical trauma intensive care unit (ICU) incurred an increase in CAUTI rates in May and June of 2020. Drill down of events identified near-perfect compliance with nursing modifiable risk factors, but opportunities for testing stewardship were found. **Summary:** CAUTIs are deemed “never events” by the Centers for Medicaid and Medicare and are tied to financial reimbursements. The

Centers for Disease Control and Prevention states 17% to 69% of CAUTIs are preventable with recommended infection control measures. Urinary tract infections are the most common type of hospital-acquired infection, with an estimated occurrence of 9.5% reported by acute care hospitals. Every day a catheter is in place, the risk of a CAUTI developing increases by 3% to 7%. Current recommendations for reduction in CAUTI rates include educational strategies, catheter avoidance, policies for catheter insertion, daily review of catheter necessity, and urine-testing stewardship. A literature search was conducted to identify best practices for CAUTI reduction. An educational intervention was provided to the multidisciplinary team, including nurses, medical providers, and advanced practice providers. Education focused on the difference between catheter-associated asymptomatic bacteriuria and CAUTI, biofilm, the incidence of symptomatic CAUTI, and best practices. The surgical trauma ICU (STICU) Implemented 2 practice changes: leadership escalation with all urine cultures and replacing indwelling catheters with any urine-culture acquisition. **Evaluation/Outcome:** Daily prevalence studies were conducted for direct follow-up with the nurse and provider for data collection and adherence to education and practice change. We found a 73% decrease in urine cultures ordered postimplementation of EBPs. Patients in the STICU have had no CAUTIs since the implementation of education and practice change, and the unit has continued this success for more than 1 year. Translation of EBPs to the bedside is the most critical step in promoting positive patient outcomes. In this EBP project, an educational intervention, multidisciplinary accountability, and a practice change led to a significant reduction in urine testing and incidence of CAUTIs.

EB4: CLABSI Reduction Through Use of a Tissue Adhesive in a Cardiac Intensive Care Unit

Holly Rodriguez, Cristina Nuila; Houston Methodist Hospital, Houston, Texas

Purpose: Vascular access devices (VADs) contribute to nearly 90% of central catheter-associated bloodstream infections (CLABSIs) and can add thousands of dollars to the cost of an inpatient stay. Patients in an intensive care unit (ICU) are at increased risk for CLABSIs because of high VAD use rates. Patients affected by CLABSIs can experience increased morbidity, mortality risk, and hospital length of stay, which directly affect patient safety and quality of care. Nurses and providers in ICUs continuously

handle and manage VADs, thus maintenance and infection prevention are crucial. **Summary:** An ICU at an academic medical center had a high CLABSI incidence. Two key areas of improvement were identified: (1) overall reduction in CLABSI incidence and (2) minimization of dressing changes because of site complications. Optimization of VAD management practices was indicated. An interprofessional team was formed with strategic focus on the implementation of an improvement project aimed at decreasing CLABSI incidence. New evolutions in tissue adhesive (TA) technology have yielded benefits when integrated in VAD management, maintenance, and infection prevention practices. Benefits include (1) securement, (2) sealant, and (3) bacteria immobilization. The following population, intervention, control, and outcomes question was developed and tested: In critically ill patients with VAD(s), does the application of a TA to VAD insertion sites result in a reduced incidence of CLABSI when compared with routine CLABSI prevention bundle practices alone? A plan-do-study-act performance improvement framework was used. Before implementation, staff received 30 days of focused education. The improvement project timeline extended over a period of 6 months. **Evaluation/Outcome:** Tissue adhesive data were collected at 3 different phases of the project: before implementation, during the pilot period, and after implementation. Data variables were based on nursing documentation in the electronic medical record. Three key areas were analyzed to assess improvement and outcomes: (1) application of a TA at insertion, (2) CLABSI count and rate, and (3) frequency of dressing changes. Through the successful implementation of a TA in the cardiac ICU, an 89% CLABSI reduction was achieved. Furthermore, dressing-change frequency was reduced by more than 50% and no patients were reported as having skin-related reactions.

EB5: Cover Up, It's a Code Blue: Protecting Staff Without Compromising Patient Outcomes

Brigid Kiley, Jane Sederstrom; Mayo Clinic, Phoenix, Arizona

Purpose: The COVID-19 pandemic has challenged hospitals globally to follow the chain of survival Get With The Guidelines (GWTG) metrics of time to epinephrine, cardiopulmonary resuscitation (CPR), and early defibrillation, while ensuring staff are protected from exposure. Health care organizations needed to seek innovative

processes to don recommended personal protective equipment (PPE) during resuscitation events (codes) while maintaining a timely response. Use of PPE for airborne precautions during codes is achievable without compromising patient outcomes. **Summary:** In collaboration with the Infection Prevention and Control department, the Resuscitation Subcommittee at an academic medical center developed a modified airborne PPE workflow for both inpatient and outpatient resuscitation events. For staff safety, all patients are considered COVID-19 positive during a code response. Identifying timely donning and doffing techniques of PPE as paramount for maintaining GWTG metrics, we included a Safety Officer as an additional member of the code team. The role of the Safety Officer is to assist with the PPE process and to monitor code team compliance. Other measures implemented included attaching PPE supply bags to all code carts for easy access, adding viral filters on the bag-valve masks, conducting educational mock code events, and providing online resources for staff. To measure process outcomes, pre-COVID-19 pandemic GWTG metrics, and mortality and survival-to-discharge rates were compared with COVID-19 metrics, using the modified airborne PPE workflow. **Evaluation/Outcome:** Our goal was to remain compliant during the additional processes of donning in our GWTG metrics. Our overall compliance in 2019 was at 89.6%. In 2020, our overall compliance was 98.6%. Despite additional use of PPE, the hospital exceeded patient outcomes and adhered to the GWTG resuscitation measures of time to epinephrine, CPR, and defibrillation while ensuring the utmost safety of the code team during the COVID-19 pandemic. In addition, there were no documented employee exposures during code events.

EB6: Decreased CICU Cardiac Arrests After Implementation of a Resuscitation Improvement Program

Kimberly DiMaria; Children's Hospital Colorado, Aurora, Colorado

Purpose: The survival rate for a patient with congenital heart disease who experiences a cardiac arrest is 53%, compared with a 98% survival rate for patients who do not have a cardiac arrest. In 2019, the cardiac intensive care unit (CICU) at Children's Hospital Colorado had an increasing incidence of cardiac arrest that was higher than the national average. The primary aim of this quality improvement project was to reduce the cardiac arrest incidence by 25% within 1 year of implementation of a

resuscitation improvement program. **Summary:** This evidence-based project was developed to address the high rate of cardiac arrest in our CICU, which was felt to be a significant problem because of the high mortality rate associated with cardiac arrest and increasing evidence that many cardiac arrests are preventable. Analysis of 2019 cardiac arrest data revealed several gaps in practice that suggested multiple areas for improvement. These findings led to the development of a comprehensive resuscitation improvement program comprising 6 concomitant subgroups: in situ simulation, education, a cardiac arrest prevention bundle, debriefing, resiliency, and dissemination of information. Each subgroup provides resuscitation improvement interventions and is a stand-alone, evidence-based method of improving resuscitation practices and outcomes. For example, the structure of the debriefing subgroup is based on literature that suggests debriefing leads to improved patient outcomes. The debriefing subgroup conducts data-driven event reviews of every CICU cardiac arrest and uses the action items and knowledge gaps identified during a debriefing to create curriculum for education or simulation programs. Debriefing has also been proven to improve team-member resiliency and decrease burnout, which is an additional reason that debriefing was integrated into this project. **Evaluation/Outcome:** Implementation of an integrative resuscitation improvement program led to a decreased incidence of cardiac arrest. Preimplementation cardiac arrest incidence was 5.55 per 1000 patient days, whereas postimplementation cardiac arrest incidence was 4.7 per 1000 patient days—a 15% reduction in cardiac arrest. There has also been a trend toward increased survival of cardiac arrest: 87% before the intervention compared with 93% after the intervention. There has been widespread engagement and support of this improvement program across all disciplines in the CICU. Next steps will be focused on overall sustainability of the program and expansion to the cardiac progressive care unit.

EB7: Decreasing the Risk: Discontinuation of Urinary Catheters Through a Nurse-Led Removal Program

Valerie Tidwell, Melissa Gray, Victoria Washington, Katie Clark; Children's Medical Center, Tulsa, Oklahoma

Purpose: There was an increased rate of catheter-associated urinary tract infection (CAUTI) in the pediatric intensive care unit (PICU) between 2018 and 2019.

Though catheter necessity should be discussed daily, it was often not done in our PICU. Nurses did not feel empowered to ask for a catheter to be removed and did not have many alternatives to manage and measure urine output without the catheter in place. The purpose of this project was to decrease the number of patients with CAUTI in the PICU through an evidence-based practice approach.

Summary: A work group conducted a literature review to identify strategies to reduce CAUTI in the PICU. Evidence was found that a nurse-led urinary catheter (UC)–removal program could reduce catheter use and CAUTI. The work group, in conjunction with the PICU medical director, providers, and urology service, revised the current criteria for UC necessity and developed a removal algorithm on the basis of the literature and expert opinion. Group members conducted a pilot program to refine the process. Education was provided to staff through staff meetings and a video produced by the work group. The nurse-led UC removal program was implemented in September 2020. If patients did not meet criteria for a UC, nurses asked for an order to remove the catheter and discussed with the team how the patient could be cared for without a UC. The work group also trialed new external UCs to care for patients more effectively after UCs were removed. **Evaluation/Outcome:** Since the implementation of the nurse-driven UC removal program, the PICU unit with the most catheter days has seen a 21% reduction in catheter use (0.24 catheter days in 2020 to 0.19 catheter days in 2021). In 2020, there was an 80% decrease in the number of CAUTIs in the PICU compared with 2019 (n=5 events in 2019; n=1 in 2020). From September 2020 through August 2021, there have been no CAUTI events. Two different external UCs were adopted for male and female patients. These products provide nurses and providers UC alternatives. The nurses and providers have adopted these external catheters into their workflow and often will use these as a first-line therapy rather than a UC.

EB8: Effective Mobility in the Neuroscience ICU

Sarah Buckley; Brigham and Women's Hospital, Boston, Massachusetts

Purpose: Our quality improvement team aimed to increase effective mobility (once daily for patients in the intensive care unit [ICU] who are receiving mechanical ventilatory support; twice daily for patients in the ICU not receiving ventilatory support) from 63% to 85% by June 14, 2021. Given the complexity of the patient

population with neurological conditions, mobilizing patients can be difficult. As a quality improvement team, we realized there were multiple barriers to mobilizing these patients and established a quality improvement project to identify and address those barriers to mobilization. **Summary:** We obtained diagnostic data through nursing interviews and anonymous submissions regarding perceived barriers to patient mobility. We also obtained diagnostic data through chart audits. Our team identified 3 primary areas to improve effective mobility and focused efforts on education, documentation, communication between multidisciplinary teams, and obtaining adequate mobility equipment. Through a series of plan-do-study-act cycles, we conducted 3 tests of change. As a result of our education and documentation interventions, nurses knew how to correctly document their patient's mobility status as well as the John Hopkins Highest Level of Mobility (JHLM) score in the patient chart. As a result of our second intervention nurses, physical therapists, and occupational therapists had a standardized, quick guide to communicating proper mobility mechanics specific to each patient. As a result of our third test of change, our team obtained a sufficient baseline amount of mobility equipment that was readily available on the unit for nurses to use to mobilize their patients. **Evaluation/Outcome:** Through these tests of change, our team was able to determine that having a sufficient number of chairs, improving multidisciplinary communication, and educating nurses on required documentation of daily care and the JHLM led to an increase in effective mobilization. We were able to effectively mobilize patients 91% of the time. We were able to surpass our goal of effectively mobilizing 85% of patients in the neuroscience ICU by 6% by June 14, 2021.

EB9: Engaging Nurses in Providing Oral Care to Patients in Preventing Hospital-Acquired Pneumonia

Maria Cielo Borrinaga; VA Medical Center, Dallas, Texas

Purpose: The purpose of this evidence-based quality improvement project was to implement an oral-care protocol on 2 medical surgical units to evaluate its impact on the incidence of nonventilator hospital-acquired pneumonia (NVHAP). Within the last 2 years, there were 3 NVHAP cases noted on 2 medical-surgical telemetry units. Each incidence equates to a hospital cost of \$40 000 and additional patient length of stay of 6 days. **Summary:** Pneumonia is a leading hospital-associated infection.

However, more than two-thirds of the 157 500 cases of hospital-acquired pneumonias (HAPs) that occur in the United States annually occur in patients who are not receiving ventilatory support. There is not much information about measures for preventing NVHAP. There is strong, reasonable evidence that oral care has a positive impact on reducing incidence of NVHAP. Aspiration of oropharyngeal secretions is an important pathogenic event preceding HAP. Silent aspiration into the intrathoracic airway occurs in normal patients but is more pronounced in elderly and neurologically impaired patients. A small work group was formed that comprised unit managers, nurses, physicians, dental service staff, infection control staff, education service staff, and logistics personnel. A grant of \$7500 was used to purchase oral-care products approved by the American Dental Association. Educational tools were standardized and an oral-care campaign was implemented. A new oral-care template was created for required documentation and audit tools to check for compliance in providing oral care. The 3-month pilot study started in September 2019. Surveillance in providing oral care and its documentation was conducted. **Evaluation/Outcome:** Retrospective chart reviews with an ICD-10 code for pneumonia not present on admission were screened using the Centers for Disease Control and Prevention criteria for NVHAP to determine its incidence. Chart audits from September 2019 to November 2019 showed 1 case of NVHAP. However, surveillance continued from December 2020 to March 2021 and showed a steady improvement in provision of oral care and documentation. Retrospective chart reviews showed zero incidence of NVHAP. Compared with 2 years ago, the program yielded a total cost savings of at least \$160 000 and reduced length of stay for patients with NVHAP by 24 days.

EB10: Establishing a Nurse-Driven Mobility Protocol in the Medical Intensive Care Unit

Bethany Friday, Danielle Fraser, Jeremy Wooten; Wellstar Douglas Hospital, Douglasville, Georgia

Purpose: Early mobility in the intensive care unit (ICU) is an evidence-based strategy to improve outcomes for critically ill patients. However, a microsystem assessment of mobility practice within our 16-bed medical ICU revealed several barriers and opportunities for improvement. As a result, our team implemented a mobility program, including a nurse-driven ICU mobility tool that provides a pathway for mobilizing complex patients.

Summary: Implementation of the ICU Mobility Continuum included use of the plan-do-study-act method. We created a nurse-driven mobility task force and identified that our prior mobility tool focused on the patient's ability to stand. A new tool adopted from the literature offered a more comprehensive approach for our critically ill patient population. Safety criteria provided the nurse guidance for assessing a patient's readiness for mobility and subsequent placement into a mobility level that included corresponding mobility activities to perform each shift. Movement between levels depended on the patient's clinical status, providing flexibility as acuity changed. Implementation of the new tool focused on educational in-service sessions, proper body mechanics, equipment training, and use of visual aids as reminders. The script for multidisciplinary rounds was revised to ensure mobility was addressed each day, providing real-time guidance to staff on mobility goals and resolution of barriers. **Evaluation/Outcome:** The clinical nurse leader and educator analyzed mobility reports to monitor outcomes. The reports provided a summary of mobility documentation and whether goals were met. The average mobility compliance during the 3 months before implementation was 3% and improved to 70% in the 3 months after implementation. Staff turnover and the COVID-19 surge were identified as barriers. Although we met our initial goal, the team acknowledges there are still opportunities and is working to fill vacant positions and evaluate options for addition of a mobility technician position. Overall, we have improved the number of mobilized patients and continue to strategize how to provide optimal patient care.

EB11: Evaluation of Alternating Pressure Surface Overlays to Reduce HAPI in the CVICU and CVOR

Mara Fox; Froedtert Hospital, Milwaukee, Wisconsin

Purpose: Patients who develop hospital-acquired pressure injury (HAPI) experience pain, have prolonged lengths of stay, and need additional care to heal the wound. Analysis by our hospital staff indicated that patients who experience HAPI average more than \$30 000 in added cost for their care. Pressure injury trends revealed more than 50% were related to nonmedical devices on posterior surfaces. We implemented a quality improvement (QI) project to evaluate the effect of alternating pressure (AP) surface overlays on development of HAPIs in patients in the cardiovascular intensive care unit (CVICU) and

cardiovascular operating room (CVOR). **Summary:** We used the plan-do-study-act model and literature findings to develop a protocol for evaluating the effect of AP overlays for 90 days on all CVICU beds and 3 CVOR tables for 60 of those days compared with usual care. Institutional review board exemption as a QI project was obtained. CVICU registered nurses (RNs), CVOR RNs, and assisting staff were educated on use of the system and completed daily data collection for presence of patient high-acuity criteria, pressure-relieving tactics in use, and feedback comments by patients or staff on the overlay systems. Project members also coordinated with environmental services staff, radiology department staff, and transport staff to facilitate beds with overlays staying with the CVICU patients during transitions to and from the operating room (OR) or other tests/procedures. The total number of CVICU patients during the project was 264, with 104 of them having cardiothoracic surgery physicians as their primary attending service (39.4%). **Evaluation/Outcome:** Posterior-surface HAPIs developed in 4 patients in the CVICU (average, 1.3 patients/month over 3 months) with use of the AP overlays versus a baseline of 7 to 10 patients (average, 2.3-3.3 patients/month). No CVOR HAPIs occurred during the project. All patients in whom a posterior HAPI developed during both baseline time frames and the trial period had high-acuity risk factors (namely, mechanical ventilatory support, total OR time > 6 hours, combination of ≥ 2 vasopressors or inotropes, presence of mechanical circulatory support), indicating the same level of acuity. Cost analysis showed if continued reduction of 1 HAPI per month was achieved over a year, then a potential costs savings of \$208 600 could be realized.

EB12: How a New Social Assessment Tool Decreased Length of Stay and Improved Quality of Care

Angela Gore; Oklahoma City VA Medical Center, Oklahoma City, Oklahoma

Purpose: The purpose of this process improvement project was to create a tool that helps staff easily identify social barriers within our veteran population who are admitted to the hospital from the emergency department (ED). The early placement of a social work consultation in the ED facilitates discharge planning upon admission, with the intent to decrease length of stay (LOS) and improve quality of care. This new screening tool is called the "Social Assessment Tool" (SAT). **Summary:** The need

for a change of process arose when staff in the ED noticed recurrent readmissions in less than 24 hours and in less than 30 days of discharge. There were many veterans whose social needs were not being addressed appropriately or were not being identified during their inpatient hospital stay. Following project protocol, once it was determined a veteran was being admitted from the ED, the ED registered nurse screened the veteran on 8 categories: (1) no (non-VA) health insurance; (2) frequent unplanned readmissions less than 30 days after discharge; (3) recent discharge less than 24 hours prior; (4) family dynamics (eg, caregiver neglect, lives alone, family lives out of state, lack of family support, family feuding, referral to Adult Protective Services); (5) homelessness; (6) limited resources (eg, no electricity, no food, isolated, poor conditions of the home); (7) substance abuse (eg, alcohol, drugs); and (8) increased or complicated medical needs. If the veteran screened positive in 1 or more of the 8 categories, a social work consultation was triggered and automatically placed in the veteran's chart. **Evaluation/Outcome:** On January 23, 2019, the mean LOS at the Oklahoma City VA Medical Center was 4.53 days. Our aim for the project was to create a tool to identify social barriers early upon admission to facilitate discharge planning and to decrease the hospital LOS from 4.53 to 4.0 days by August 30, 2019. The outcomes were measured by monitoring the patient's admission and discharge dates. We used data from May 22, 2019, through August 30, 2019. The SAT was used for only 3 months and within that time, patients' mean LOS decreased from 4.532 to 4.0. A process change was created that actually affected the workflow of the hospital, which was an unexpected outcome.

EB13: How Do I Do This Again? Using Just-In-Time Resources for High-Risk, Low-Volume Procedures

Michael Pelyak, Amy Patterson; University Hospitals Cleveland Medical Center, Cleveland, Ohio

Purpose: Because of the strains of a pandemic, record nursing shortages, and increased patient acuity, our bedside critical care nursing staff is frequently put in uncomfortable situations with limited resources. Our aim for this process improvement project was to increase nurse confidence; mitigate errors when nurses performed high-risk, low-volume procedures; and improve nurses' skills by creating a novel, virtual nursing resource library that can be accessed at the bedside. **Summary:** With nursing professional development specialists unable to be omnipresent

at a geographically dispersed, 15-hospital health care system, an alternative modality of delivering just-in-time education was necessary to meet the needs of our critical care nursing staff. For most nursing education teams, generating and acquiring resources is not an issue; however, getting those resources to the right people at the right time has persistently been problematic. Research has shown that the use of QR codes can provide nursing staff a gateway to access pertinent information at the bedside when caring for patients. Therefore, by using QR codes, a novel, robust resource library including links to 1-page reference documents, podcasts, video snippets, and nursing practice guidelines related to procedures and skills deemed high risk and low volume was deployed for easy access by our bedside staff. **Evaluation/Outcome:** Through user feedback, we found that the implementation of the resource library resulted in increased nurse confidence when providing care to critically ill patients and also mitigated errors. Moving forward, resource libraries could be used for information delivery within a variety of clinical practice areas, including new device education, policy and procedure updates, self-care tips, employee engagement initiatives, and even patient education.

EB14: Implementing an Intensive Care Unit Diary in a Surgical Burn Trauma Intensive Care Unit

Stephanie Banaszynski, Donna Prentice; Barnes-Jewish Hospital, St Louis, Missouri

Purpose: The intensive care unit (ICU) is a complex, frightening place for patients and families, putting them at risk for post-ICU syndrome (PICS). A prevention strategy for PICS is the implementation of an ICU diary. The purpose of this quality improvement initiative was to implement the ICU diary across our facility. The ICU diary was piloted in a surgical burn trauma ICU. We evaluated staff education and the use of the ICU diary to provide guidance on implementation to the other ICUs. **Summary:** The ICU diary is a journal of daily events written by family, friends, and ICU staff for a patient during critical illness. The ICU diary helps family feel connected to staff. Unfortunately, implementation of the ICU diary occurred at a time when visitors were restricted because of the COVID-19 pandemic, so most entries were completed by ICU staff. By reading the diary, patients may be able to understand their perceptions of their dreams and make sense of their ICU experience. An ICU diary has been shown to decrease anxiety and depression in both

patients and families. Representatives from each ICU formed a team, did a literature search, and developed the ICU diary format, staff education, and survey. The presurvey was given to the staff before education. A voiceover, slide-based presentation program education module was developed for staff to watch. Live scenario practice for writing diary entries supplemented the education module. Access to the ICU diary was made convenient for the nurse to provide to patients and families. Volunteer unit champions along with the clinical nurse specialist and unit educator encouraged staff to use the ICU diary. The postsurvey was given to staff 5 months after implementation. **Evaluation/Outcome:** A total of 88 staff members completed the presurvey and 22 completed the postsurvey. The average nurse age was 30 years and the average time in their current position was 5 years; 80% of nurses had a BSN degree. The significant findings (before vs after project survey points) showed staff knowledge increased from a mean of 2.1 to 3.6 on the postsurvey ($P < .001$); resources were available (increased from 2.4 to 3.7; $P < .001$); nurses were comfortable writing a diary entry (increased from 2.3 to 3.0; $P = .01$); and education was effective (increased from 2.2 to 3.6; $P < .001$). Although not statistically significant, there were increases in the perceived burden to staff, legal concerns, understanding of the plan of care, and understanding of post-ICU care. The ICU diary education and implementation process was successful.

EB15: Implementing Swallow Screen

Process Change

Lauren Acosta, Michelle Dedeo; Overlake Medical Center, Bellevue, Washington

Purpose: The purpose of implementing a registered nurse (RN)-performed swallow screen is to provide a standard, evidence-based practice tool. Previously, variations in how and when a swallow screen was performed resulted in complications caused by aspiration. Providing a standardized RN-conducted swallow screen will reduce aspiration risk by increasing the number of RNs who can perform the screen, thereby increasing patient safety by identifying those at risk for aspiration and increasing accountability in the screening process. **Summary:** A standardized swallow screen process was designed on the basis of a literature review and consultation with specialists in the hospital. Originally, the RN swallow screen process was developed to support swallow

evaluation only of patients with stroke, but identifying aspiration pneumonia rates, reintubation rates, and the absence of swallow screen or evaluation of patients with any brain injury or cognitive impairment supported plan initiation for practice change. To disseminate the guidelines for the process, a virtual education module was created and assigned across the organization. Nurses in all departments, caring for all populations, including those for whom swallow screens were not traditionally performed or included in the plan of care, were incorporated into the education plan and skill validation. This project was identified as an opportunity for new graduate nurse residents to lead practice change, and a peer-to-peer validation process was developed to support dissemination of the practice change. Peer-to-peer training and evaluation also supported real-time patient care feedback and practice as the assessment became standard of care in the organization. **Evaluation/Outcome:** The updated RN swallow screen process was implemented in 2 months in an organization with more than 600 RNs. Nurses were trained through an online module, followed by a skill and peer-validation model. Nurses who had never performed an RN swallow screen reported that the change improved safety and ensured speech-language pathologist consultations were ordered for patients with aspiration risk or identified dysphagia. Nurses previously trained to perform swallow screens reported that the standardized screen simplified the process. Organizationally, RNs owned their responsibility and demonstrated self-driven practice to get validated in their knowledge and skill.

EB16: Improving Discharge Times on a Telemetry Unit

Yoon Song; St Joseph Hospital, Orange, California

Purpose: Delays in discharging patients can affect hospital throughput. The discharge process is complex and, at times, it is difficult to ensure that the patient is prepared for posthospital care regimens. The purpose of this project was to improve discharge times and flow to align with Institute for Healthcare Improvement standards of providing the right care, in the right place, at the right time. Baseline discharge times averaged more than 4 hours with less than 15% of patients discharged in less than 2 hours. **Summary:** The goal of this program was to institute a multidisciplinary patient flow team to improve discharge times and remove barriers to timely discharges. The team consisted of representation from executive

leadership, nursing managers, pharmacy, physician champions, case management, and frontline staff. The team met weekly to review barriers to timely discharges and rapidly instituted small tests of change to address the barriers. The Admission Discharge Team facilitated education and support. Discharge accountability teams were formed on the nightshift to assist with preparing the patient for discharge the next day. Case manager and charge nurse rounds were instituted to identify discharges and anticipated barriers. Electronic whiteboards were used for interdisciplinary communication. Discharge time was determined from the discharge order to the time the patient left the room. Discharge times were reported weekly in a public area on the unit. **Evaluation/Outcome:** The program revealed an increase in caregiver engagement in discharges and discharge times. Readmission rates decreased for patients with heart failure to below the national benchmark. Discharges completed in less than 2 hours improved to almost 50%. Average discharge times decreased from 4 hours to 2.5 hours. The clinical nurse's involvement in this evidence-based practice change led to improved discharge times. The project revealed that multidisciplinary teams can achieve success through shared governance and by addressing common barriers such as communication failures, testing delays, and discharge needs to improve discharge times.

EB17: Improving Extubation Times for Postoperative Cardiac Surgery Patients

Joni Minor, Jennifer Stivason; University of Pittsburgh Health System, Pittsburgh, Pennsylvania

Purpose: Review of Society of Thoracic Surgeons (STS) data showed that a persistent percentage of our postoperative cardiac patients required initial ventilatory support times over the expected time of 6 hours after anesthesia end time. Safely reducing ventilatory support times will have a 2-fold benefit: it may (1) increase patient comfort, thereby enhancing the patient experience; and 2) contribute to improvement in the STS Star rating metric and related process measures. **Summary:** Flynn et al showed that patients with a high preoperative STS morbidity and mortality risk can be extubated within 6 hours postoperatively when using a multidisciplinary protocol that incorporates careful monitoring of all aspects of the process. Nursing and physician stakeholders at our hospital developed a checklist to be completed for all postoperative cardiac surgery patients to detect any institutional

breakdowns for completion of milestones (eg, postoperative chest radiograph [CXR], laboratory results, and discontinuation of sedation) that could create a delay in the 6-hour extubation time frame. Education detailing project importance and the new checklist process was provided to nurses and unit-based respiratory therapists. A work group reviewed STS data monthly, documented checklists for any process breakdowns, and discussed possible resolutions for these breakdowns. **Evaluation/Outcome:** Delays in completion of CXR was a frequently unmet milestone. Improvement in portable CXR response times was accomplished after discussions with radiology department leadership. Within the first month of implementation, an overall improvement in the 6-hour extubation metric was achieved. Data collected for the 6 months before implementation revealed that extubation in less than 6 hours occurred in 49% of cases. Six-month postimplementation data for the same metric showed that extubation in less than 6 hours increased to 79% of cases. This improvement has been sustained to the present time with multidisciplinary support.

EB18: Improving Nursing Knowledge of the ABCDE ICU Liberation Bundle in a Cardiothoracic ICU

Jason Johnson, Zackary Thomas; New York Presbyterian Columbia University Medical Center, New York, New York

Purpose: The ICU Liberation Bundle is a collection of evidence-based elements promoted by the Society of Critical Care Medicine that is aimed to reduce intensive care unit (ICU) delirium, optimize pain management, decrease days of mechanical ventilatory support, and, ultimately, promote recovery and decrease ICU length of stay. The purpose of this study was to increase nursing knowledge of the ABCDE (Assess, Prevent, and Manage Pain; Both Spontaneous Awakening Trials and Spontaneous Breathing Trials; Choice of Analgesia and Sedation; Delirium: Assess, Prevent, and Manage; Early Mobility and Exercise) bundle to 75% by the target date, because anecdotal evidence pointed to lack of knowledge among the target population. **Summary:** The ABCDE ICU Liberation Bundle was not formally taught to cardiothoracic ICU nurses at this institution, resulting in varying understandings of these evidence-based elements of patient care among the target sample. The literature strongly supports the use of these elements to decrease ICU length of stay and improve patient outcomes, pointing to the benefit of including education of these elements for clinical nurses. In this

study, we used pre- and posttest survey methodology to assess nursing knowledge before and after an educational intervention on the bundle and relevant institutional assessment and documentation standards, as well as retrospective chart review to audit adherence to those standards. Surveys assessed general knowledge of the bundle and knowledge of each bundle element. The educational intervention included group education sessions, shift huddle reinforcement, a “mental model” flyer placed in bedside patient-care binders, and email. Nurses were surveyed at regular intervals for 3 months after the intervention to assess sustained knowledge. **Evaluation/Outcome:** Preintervention data showed 16.7% of reviewed charts demonstrated 100% compliance with institutional assessment and documentation standards related to the bundle, with element A (assess, prevent, manage pain) demonstrating the highest compliance (88.9%). Almost one-third of nurses (30%) were aware of the bundle, and nurses’ knowledge of individual bundle elements varied between 18% and 90%. In the final postintervention survey, 44.8% of reviewed charts demonstrated 100% compliance with documentation standards, with element A again showing the highest compliance (100%). All surveyed nurses (100%) were aware of the bundle, and individual bundle element knowledge ranged between 55% and 100%.

EB19: Improving Recognition and Response to Deterioration Through Redefined Visual Rapid Response Criteria

Sandra Waugaman, Teresita Lacara, Blair Denkin;
University of North Carolina Rex Healthcare, Raleigh,
North Carolina

Purpose: In this poster, we demonstrate how redefining rapid response and consultation criteria improved overall patient outcomes. Failure to adequately recognize and rescue patients was identified by the Mortality Review Committee as a root cause contributor to inpatient deaths. A focus group identified several areas of variation in the postrecognition response process, including early provider notification delays, escalation delays, nonstandard patient assessment, and unclear postintervention assessment. **Summary:** In response to the variation identified by a focus group and a goal to improve overall patient outcomes, a process improvement project was initiated to redefine the rapid response and consultation criteria. Focusing on delays and variation in early provider notification, rapid response escalation delays, nonstandard

patient information provided to the team, and unclear postintervention assessment, we designed a rapid response and consultation flowchart. Using this tool, along with a bedside reference badge card, staff nurses could easily identify criteria to appropriately activate the critical and rapid response team. The Code Blue/Rapid Response Policy was updated to reflect the revised rapid response and consultation criteria. Charting guidelines were redefined to properly identify rapid response versus consultation calls for data tracking. Improving patient outcomes by identifying and treating early clinical deterioration is supported by Goal 16 of The Joint Commission’s 2009 National Patient Safety Goals to improve the identification of and response to clinical deterioration in hospital-ward patients. **Evaluation/Outcome:** A pilot project was initiated on 2 acute care nursing units. Process outcome metrics were tracked over time. The expected goal was to increase rapid response events and decrease consult events. Preproject rapid response events for the 2 units were 5.9 and 6.5. The 90-day postproject rapid response events were 11 and 5. Preproject consultation events were 7.4 and 5.2, and 90-day postproject events were 5 and 2. An expected increase in rapid responses and decrease in consultations demonstrated appropriate use of criteria and escalation of concerns to rapid responses. The adult mortality index for inpatients with at least 1 consultation or rapid response decreased from 1.35 overall to 0.70 overall at 30 days. With expected initial results, process changes have been implemented hospital-wide with continued data collection for monitoring.

EB20: Improving Sleep Quality in Critically Ill Patients

Richard Fitzpatrick; Temple University Hospital,
Philadelphia, Pennsylvania

Purpose: Poor sleep quality can increase the risk of intensive care unit (ICU) delirium and length of stay. Complaints from critically ill patients include excessive light and ambient noise levels interfering with sleep. The purpose of this project was to improve overall perceived quality of sleep for critically ill patients by decreasing excessive light and ambient noise. Results of this initiative can inform institutional policy on sleep promotion in the caring environment, improving overall care and patient and family satisfaction. **Summary:** Excessive light and noise can affect sleep quality in critically ill patients. Eye masks and ear plugs are efficient, cost-effective measures

to lessen sensory stimulation. Patients were included in the project if they were extubated, admitted overnight, had intact mental status (Confusion Assessment Method for the ICU, negative; Richmond Agitation-Sedation Scale score, 0). Pre- and postintervention data were obtained by using the Richard-Campbell Sleep Questionnaire (RCSQ), a 6-item questionnaire used to assess sleep quality. The RCSQ evaluates perceived sleep depth, onset latency, number of awakenings, time awake, and overall sleep quality—an approach similar to that of Mahran et al for evaluating sleep quality after cardiac surgery. The RCSQ was administered by the night-shift nurse in the morning to document patient-perceived sleep quality. Baseline (preintervention) data were obtained from 40 patients. Postintervention data were obtained from another 40 patients, who used eye masks and ear plugs overnight. RCSQ scoring was compared between groups. **Evaluation/Outcome:** Questionnaires provided individualized scoring of sleep quality. The mean (SD) of pre- and postintervention scores (46.09 [20.01] and 67.45 [22.49], respectively) were compared between groups. A statistically significant ($P < .001$) improved sleep quality was identified when using the provided interventions. The results of the project showed that patients had increased quality of sleep following a simple, nurse-driven intervention. Improved sleep quality can help lower rates of ICU delirium, thus preventing additional complications stemming from lack of sleep. Furthermore, this simple intervention could shorten ICU length of stay, thus decreasing hospital costs, and improving patient and family satisfaction.

EB21: Increasing Lactated Ringer Solution Use for Fluid Resuscitation in a Pediatric Intensive Care Unit

Katelyn Howell; Akron Children's Hospital, Akron, Ohio

Purpose: Fluid resuscitation (FR) is vital for treating pediatric shock in the pediatric intensive care unit (PICU). However, there is much debate regarding which intravenous (IV) fluid is most effective. Recommended IV solutions are balanced crystalloids or saline. The interdisciplinary PICU Medication Safety committee led the charge to increase use of balanced salt solutions, specifically lactated Ringer solution (LR), because the perception was that saline use far exceeded LR use for FR in the PICU.

Summary: The Institute for Healthcare Improvement Roadmap to Improvement was used to structure the

project. The 3 roadmap questions are “What are we trying to accomplish?”; “How will we know we have made an improvement?”; and “What changes can we make that will result in improvement?” Following monthly journal club and subsequent evidence review, the need to increase use of balanced crystalloid solutions for FR was identified. An increasing amount of evidence supports the use of balanced crystalloid solutions to prevent hyperchloremic acidosis associated with saline solutions, resulting in increased mortality rates and a complicated course for the patient. The goal was to increase LR use by 30%. Electronic health record–derived medication data were used to measure the ratio of normal saline (NS) versus LR use for FR before and after project intervention. Key interventions that resulted in the desired change were order-set revision, staff education, supply-chain engagement, supply room reorganization, and frequent project updates using nursing huddles. **Evaluation/Outcome:** The baseline monthly average of LR use was 48%, compared with 52% for NS. After project implementation, the monthly average use of LR increased to 78%, with NS use decreasing to 22%, exceeding the 30% goal with a 56% increase in LR use. Elimination of NS for FR is not desired, because NS is indicated in specific clinical situations. Implementing evidence-based practice changes with the aim to increase use of balanced salt solutions as the preferential solution for FR is possible in a single PICU using quality improvement methodology.

EB22: Interventions to Improve Supply-Dispensing Experience in an MICU

Elenita Quindoza, Liezl Saylor; University of Florida Health Jacksonville, Jacksonville, Florida

Purpose: The purpose of this medical intensive care unit (MICU)–based quality improvement project was to improve the staff's supply-dispensing experience. An improved and organized supply dispenser will not only enhance staff satisfaction, it can also have a positive impact on patient safety. An organized supply dispenser can accelerate item identification: time is life. **Summary:** The Lean Six Sigma's (LSS) DMAIC (Define, Measure, Analyze, Improve, and Control) problem-solving approach guided this project. The problem statement was driven by the dispenser users' verbal proclamations of dissatisfaction while trying to find items. Identification of the stakeholders (ie, project champion, owner, and team lead) contributed to the project's smooth start and completion. The

timeline was identified, and considerations were given to members' schedules. The Pareto principle was used to zero in on the top issues that needed mitigation to boost the unsatisfactory dispensing experience. Thoughtful application of the various LSS methodologies were implemented to improve the process and experience of supply dispensing and control. Pre- and postproject completion surveys were conducted to identify the dispenser users' level of satisfaction or dissatisfaction related to supply identification, grouping, and labeling. The users were also asked for suggestions to improve their experience. Postproject surveys were completed at 2 weeks and 6 months after project completion. **Evaluation/Outcome:** Preproject survey findings revealed that 61% of the MICU's supply dispenser users (registered nurses, respiratory therapists, patient care associates, rehabilitation staff) were either dissatisfied or very dissatisfied with their dispensing experience. The top 3 reasons for the dissatisfaction included item grouping, item location, and hard-to-read labels. Postproject survey findings revealed 100% satisfaction with the revamped dispensers. Users identified satisfaction with the solutions to their identified issues. A surprising outcome was the amount of space that resulted after the dispensers were organized. Almost 1 year after project completion, we continue to reap the benefits of this project. This project easily can be replicated and scaled up or down.

EB23: Journey to Zero During the COVID-19 Pandemic: A Nurse-Driven CAUTI Prevention Protocol

Maureen Joy Sain; Houston Methodist Hospital Central, Houston, Texas

Purpose: Caring for patients with COVID-19 requires close monitoring and the support of diligent nurses well trained in infection control safety practices. The purpose of this evidence-based project was to determine the effectiveness of nurse-driven measures to prevent catheter-associated urinary tract infections (CAUTIs) in adults who tested positive for COVID-19 in the intermediate care unit (IMU). **Summary:** In 2019, the IMU had 3 patients with CAUTIs. Current literature indicates that prompt removal of an indwelling Foley catheter will decrease CAUTI rates. To eradicate CAUTIs in our unit in November 2019, we enhanced our care coordination rounds to include daily catheter-necessity days with the unit-based advanced practice registered nurses. The daily necessity documentation

addresses current active catheters and the necessity of such. If the patient does not meet the criteria for the Foley catheter, a nurse-driven Foley catheter removal protocol is initiated. Implementation of the Foley care bundles is reinforced during bedside audits completed by nursing leadership. The Foley care bundles are reinforced during unit-based competency and orientation of newly hired nurses. These practices continued during the pandemic when the unit converted on April 8, 2020, to care for patients with COVID-19 who needed IMU-level care. **Evaluation/Outcome:** CAUTIs can be reduced by implementing nurse-driven measures that include daily necessity rounds, Foley catheter removal protocol, and the use of Foley catheter bundles. Indwelling urinary catheter device days in the COVID-19 IMU setting have decreased to 11.2% within 22 months of implementation of the evidence-based, nurse-driven protocol. The IMU CAUTI rate declined from 3.43 (per 1000 device days) in 2019 to 0 in 2020 and is projected to maintain 0 incidence in 2021. The results highlight the importance of nurses accepting ownership of prompt removal of indwelling catheters to prevent CAUTI during the COVID-19 pandemic.

EB24: Knowledge Deficit With Continuous Svo₂ Calibration: A Multifaceted Educational Approach

Kristen Seeley; Stanford Health Care, Palo Alto, California

Purpose: A continuous cardiac output (CCO) monitor is a useful tool for gauging real-time cardiac function and mixed venous oxygen saturation (Svo₂). The monitor requires time-sensitive calibrations—a process requiring improvement in the selected patient care unit. Errors in calibration method lead to inaccurate Svo₂ readings and may prompt inappropriate patient care management. With this project, we aimed to improve Svo₂ calibration accuracy by 20% through a multifaceted educational intervention. **Summary:** Observation-based data collection was focused on the time between Svo₂ calibration on the CCO monitor and blood specimen collection from the pulmonary artery (PA) catheter, which should take place in less than 60 seconds. The population included the nurses caring for patients immediately after cardiac surgery, and the “secret shopper” method was used to avoid the Hawthorne effect. The intervention was selected on the basis of current evidence-based literature and supported a multifaceted educational approach to improve nursing knowledge and policy adherence. The

intervention included a CCO Tip Sheet affixed to each CCO machine and preshift huddle presentations conducted over 2 weeks, with topics including initial setup, calibration, placement, and troubleshooting of PA catheters. The CCO Tip Sheet provided an ongoing point-of-care reference for nurses and was an educational tool for future training. **Evaluation/Outcome:** A total of 60 Svo₂ calibration observations (30 before and 30 after intervention) took place in the cardiovascular intensive care unit setting. Postintervention Svo₂ calibration accuracy was 83%, compared with 43% before intervention. These results show a 93% increase in nursing knowledge and policy adherence for accurate Svo₂ calibration, allowing generation of accurate data to guide treatment decisions.

EB25: Leveraging Technology to Improve the Efficiency and Value of Auditing in the Inpatient Setting

Robert Stern, Adam Millard, Caleb Schaeffer; Duke Heart Center, Durham, North Carolina

Purpose: The purpose of this project was to implement the use of readily available technology to improve the overall process for hospital-acquired infection (HAI) audits, including the workload and usability of data. Leveraging technology allowed the HAI champions in a large intensive care unit (ICU) to access information faster, improve the value of data, and increase satisfaction with their role. Also, this process allowed champions and leaders to partner in targeting areas for improvement at a faster pace. **Summary:** Audits are used to evaluate the accuracy of nursing care in the inpatient setting and should focus on improving knowledge, delivery of evidence-based care, and process. Although often burdensome, audits are used to fulfill regulatory requirements and measure progress in delivering care bundles. A group of HAI champions in a large ICU identified the need to reevaluate the process of conducting audits. Most (92%) of the department's nurses are millennials, born in the 1980s or 1990s. This generation values the use of technology, so the champion group focused on integrating technology to replace the historical paper auditing process. In May 2021, 80% of HAI members completed an evaluation of the then-current audit process relative to time spent, workload, and effort. All expressed that performing audits are a distraction from patient care responsibilities. This distraction created hurdles for committee members to complete audits and transfer audit information into a spreadsheet for

collation. **Evaluation/Outcome:** The HAI group identified an opportunity to implement an electronic process using Qualtrics software as a web app to perform HAI audits. Using the app led to fewer distractions, decreased workload associated with auditing, and increased participation in audits. Using the software also led to improved efficiency in the collation and interpretation of audit data, which improved skilled communication and effective decision-making. This strategy allows for real-time reports and dashboards for champions and leaders to deliver education and adjust workflows quickly to enhance bundle compliance. The next step of this work is to expand use of this innovative process for other audits related to quality of care.

EB26: Lights, Camera, HAPI: Using Photography to Validate Suspected Pressure Injuries

Lindsay McGrath; Christiana Care, Newark, Delaware

Purpose: At a level 1 trauma health system in Delaware, the determination of present-on-admission status of pressure injuries was difficult to ascertain and relied heavily on the bedside nurse documentation. The wound-ostomy-continent (WOC) nurse was able to see and validate an average 38.2% of all documented pressure injuries; however, the percentage of injuries documented as hospital acquired averaged 51% of the total documented pressure injuries. **Summary:** We aimed to demonstrate how leveraging technology and WOC expertise for wound identification has resulted in the improved accuracy of hospital-acquired pressure injury validation in a 1227-bed, 2-hospital campus health care system. We determined that 51% of all documented pressure injuries were hospital acquired. In January 2020, nursing professional practice shifted to drive frontline providers in the inpatient setting to use the Camera Capture application to capture suspected pressure injuries with final validation of injury to be verified by the WOC team. This photograph validation process was achieved through interdisciplinary collaboration between the key stakeholders of senior leadership, the WOC team, systemwide quality and safety, risk management, nursing informatics, unit-based leadership teams, and frontline wound treatment associates. Using digital platforms allowed a small team of content experts (7.6 full-time equivalents) to identify pressure injuries in a timelier fashion while continuing to support the needs of the organizations through education and treatments outside the realm of pressure

injuries. **Evaluation/Outcome:** Before implementation, the WOC team was able to validate only an average of 38.2% of pressure injuries. After implementation, the WOC team was able to validate 100% of all cases. This increase was sustained through November 2020, when the initial data review was performed. The second data review at the 1-year mark showed sustained improvement and 100% validation rate. Before implementing the digital platform, an average 51% of documented pressure injuries were hospital acquired. After implementation, the rate dropped to between 7% and 15% of the overall pressure injuries documented in the health system (average, 8.8%).

EB27: Navigating Communication With Families During a Pandemic and Hourly Rounding

Kim Rossillo, Yoon Song; St Joseph Hospital, Orange, California

Purpose: The purpose of this project was 3-fold to address patient and caregiver satisfaction gaps. We aimed to (1) increase patient satisfaction responsiveness scores by introducing and auditing hourly rounding; (2) proactively address family and patient needs during the pandemic through regularly scheduled phone calls and updates; and (3) improve communication among physicians, nurses, and ancillary staff through photo identification placards posted outside patient rooms. **Summary:** Nursing responsiveness in the time the patient desires is a key driver in patient satisfaction scores that affect reimbursement. Hourly rounding has proven to be an effective strategy to improve patient care by proactively addressing the patients' needs. Communications failures between health care professionals has correlated with significant harm events in health care, and easing communication gaps is a key strategy for patient safety. During the pandemic, nurses learned to navigate a new frontier that included how to communicate with patients' families, moving from a patient-centered care model of visitation to a restricted visitation model that required new strategies to compensate. Staff were educated on hourly rounding and expectations to initial the whiteboard hourly. Mini dry-erase markers were given to each staff to attach to their badge, to ensure tools were available. Photo placards were placed outside of patient rooms with the registered nurse's name and phone extension at the beginning of each shift. Nurses called the patients' family contact at 2 PM (for day shift) and 6:45 AM (night shift) to give an update, answer questions, and relay the next time that they would receive an

update from nursing staff. **Evaluation/Outcome:** Hourly rounding improved from the 28th and was sustained at the 50th percentile as compared with national benchmarks. Responses to the patient satisfaction question regarding "Respecting feelings/needs of family" improved to the 95th percentile. Ninety percent of physicians and ancillary staff surveyed indicated that the photo placard and phone extension posted outside the patient's room improved communication and ability to identify the primary nurse. Hourly rounding can improve patient satisfaction. Visitor guidelines changed during the project, which altered standard work. Future projects should investigate if twice-per-shift family update calls should be continued even when visitor restrictions are not in place.

EB28: Nurse-Led Reduction of Central Catheter-Associated Bloodstream Infections in a Transplant Surgical Intensive Care Unit

Melanie Janson, Lorraine Duli, Susan Polka, Melanie Donovan, Trin Hong; Ronald Reagan UCLA Medical Center, Los Angeles, California

Purpose: Unit-based infection prevention (IP) champions developed evidence-based quality improvement initiatives to minimize central catheter-associated bloodstream infections (CLABSIs). The initiatives included standardization of blood culture collection technique, reduction of blood culture collections according to guidelines recommending analysis of culture necessity, and an emphasis on proper central venous catheter dressing management and active daily management auditing of dressing integrity and care. The goals were a 25% reduction in CLABSIs by June 30, 2021, improving patient outcomes, and decreasing health care costs. **Summary:** To address the increase in CLABSIs during fiscal year 2020, the team implemented a multifaceted approach focused on unit education, standardized care, and data analysis. Despite the unique complexity of patients with liver disease, often immunocompromised and burdened by comorbidities, coupled with strict Centers for Disease Control and Prevention criteria for CLABSI, the team set a goal of 25% reduction in CLABSIs by June 30, 2021. Using a plan-do-check-act methodology, an A3 tool, and literature review, IP champions collaborated with the Unit Practice Council to educate the unit on culture collection technique and established sterile, 2-nurse blood culture collection technique through educational videos and competencies. Responding to increasing blood culture volumes, guidelines to assess culture

necessity were created and disseminated to residents. Standards on appropriate central venous catheter management were maintained and reemphasized to staff, along with active daily management auditing performed by registered nurses at handoff to identify opportunities for improvement and education. Infection prevention champions built a detailed unit-based root cause analysis to assess CLABSI events and identify action items. Monthly infection rates and laboratory contamination data from blood cultures were used to identify the effectiveness of interventions. **Evaluation/Outcome:** Lower monthly infection rates along with laboratory data indicating reduced contamination rates correlated with the implementation of these interventions, suggesting their effectiveness. Quality improvement projects and multifaceted interdisciplinary interventions implemented in this transplant surgical intensive care unit were successful, as evidenced by a 38% decrease in CLABSIs (from 16 cases to 10). Contaminated blood cultures were reduced by 69% (from 13 to 4), and the average number of monthly blood cultures collected decreased by 20% (from 150 to 120). Our results highlight that incorporating multidisciplinary interventions and addressing common practices improve patient outcomes, enhance delivery of care, and reduce costs for this high-risk population.

EB29: Nurses Improving Patient Experience Through Bedrest Reduction

Kristin Tuozzo, Reena Morris, Nicole Moskowitz;
New York University Langone Medical Center, New York, New York

Purpose: Nurses identified that a large, urban hospital's recovery practice after transfemoral arterial sheath removal using a vascular closure device (VCD) was not evidence based. Prolonged bedrest contributed to pain, urinary retention, decreased throughput, and prolonged length of stay (LOS). Patients complained of inability to eat and urinary retention due to unnecessary bedrest. Nurses implemented a pilot project to evaluate bedrest reduction when using a VCD after any left-side heart catheterization (LHC). **Summary:** This pilot project reduced the bedrest period to 1 hour after LHCs using a VCD. According to published studies, bedrest ranged from immediate ambulation off the procedure table to 4 hours; however, there was not a statistically significant difference in groin complications after LHCs using a VCD. Intraprocedural anticoagulation did not correlate to a significant

risk for groin complications when ambulating 1 hour after hemostasis. Antiplatelet aggregate medications did not affect patients' risk of groin complications. Head-of-bed changes did not increase the risk of groin complications and did increase patient comfort. Authors of a previous study correlated early ambulation times with earlier discharges, which resulted in an opportunity cost benefit. Severe hypertension, actively taking oral anticoagulation medications, and platelet count of less than 100 000/mm³ were found to increase the risk of groin complications and were part of the exclusion criteria for this pilot project. **Evaluation/Outcome:** There was not a significant difference in groin complications when comparing the control and intervention groups ($P = .64$). No increase in complications supports that this practice change was safe. The diagnostic control group ($n = 112$; mean [SD], 220 [55.2]) had a significantly longer LOS than the diagnostic intervention group ($n = 86$, mean [SD], 182.1 [78.5]; $P < .001$). The percutaneous coronary intervention (PCI) control group ($n = 147$; mean [SD], 317 [85.6]) had a significantly longer LOS than the PCI intervention group ($n = 117$; mean [SD], 381.6 [54.7]; $P = .005$). Optimizing bed use created 45.25 virtual beds, which allows for the care of additional patients.

EB30: Nurses With Laser Vision for Skin Changes: Achieving Patient Outcomes

Teresa Aplin, Aaron Edwards; Health First Inc, Melbourne, Florida

Purpose: The medical intensive care unit (MICU) had the highest hospital-acquired pressure injury (HAPI) rates within the integrated delivery network (IDN) system. In 2018, the MICU had 24 HAPIs, even though pressure injury (PI) prevention protocols were used. As a quality improvement (QI) initiative, long-wave infrared thermography (LWIT) was brought in as a nursing QI project that involved the front-line nurses. **Summary:** LWIT was used to image visible and thermal changes of the skin upon patient admission simultaneously with the 4-eyes assessment (ie, assessment by 2 nurses). The nurses imaged the sacrum, heels, wounds, areas of visible skin discolorations, and any additional areas of concern. The LWIT images were taken within 4 hours of admission, and prevention measures were put in place if (1) any visible wounds or skin discolorations were found and (2) any thermal findings were found outside of the normal temperature range. The charge nurses were tasked with ensuring the images

were captured and documented. The unit also initiated scanning all patients returning to the unit if away from the unit for longer than 4 hours. The LWIT QI project started April 2019. The number of HAPIs dropped in 2019 to 12, from the 24 cases in 2018—a 57% decrease in the first 9 months of using LWIT. As of November 1, 2020, 10 months into the following year, the number of HAPIs has dropped to 4 in the MICU—a 66% decrease compared with 2019. Cost-effectiveness of the pilot has saved the IDN more than \$350 000. This QI project went from a pilot to policy. **Evaluation/Outcome:** The HAPI rate, from the start of LWIT use in the MICU to November 1, 2020 (ie, 19 months of use), decreased 85% compared with the 2018 numbers (the calendar year before implementation). This is the first IDN application in Florida of the use of the physiological imaging solution to decrease the clinical and financial liability associated with HAPIs. Our IDN has now implemented LWIT imaging across every nursing unit in the 4-IDN system with electronic medical record integration.

EB31: Optimizing Use of Silicone Foam Dressings and Alternating Pressure Overlays to Prevent HAPI in the Intensive Care Unit

Anne Putzer, Jennifer Popies, Jennifer DeAngelo, Katherine Rembalski; Froedtert Hospital, Milwaukee, Wisconsin

Purpose: Despite prevention tactics, hospital-acquired pressure injuries (HAPIs) develop in patients in intensive care units (ICUs) who have multiple high-acuity criteria (MHAC), such as hemodynamic instability, device use, or vasoactive medications. Our hospital's direct cost per HAPI was \$98 064 in fiscal year 2019. HAPIs also cause pain, infection risk, and longer hospital stays. The project purpose was to reduce posterior HAPIs in ICU patients who have MHAC by using preventive, sacral silicone foam dressings and alternating pressure (AP) overlays. **Summary:** In the ICU, HAPIs develop in patients on the coccyx/sacrum, buttocks, or heels, despite reliable use of a HAPI prevention bundle. For these patients, tactics that reduce pressure and concurrently enhance skin perfusion more effectively reduce HAPI occurrence. Evidence was moderately strong for using preventive sacral silicone foam dressings in ICU patients. Evidence was weak to moderate for using AP mattress overlays in ICUs. Dunzweiler et al reported that using static overlays for 3 months resulted in a decrease in HAPI incidence from 31% to 0%

in adult patients in the ICU. There is little published evidence regarding this newer technology, especially outside the operating room. Internal QI data showed decreased incidence of HAPIs when AP mattress overlays were used for in highly acute patients in the ICU, and these data were used as supporting evidence. Our population was adult patients in 5 ICUs at a level 1 Magnet-designated mid-western academic medical center. The ICU clinical nurse specialists and clinical nurse leader facilitated use of preventive sacral dressings and AP overlays on the basis of the presence of MHAC. Registered nurses and patient care technicians were coached to apply the interventions for patients with MHAC. Data on use of interventions and HAPI incidence were collected from patients admitted to and discharged from the ICU between January 1, 2021, and March 31, 2021, and were compared with baseline data. **Evaluation/Outcome:** During the initial evaluation period, there was a statistically significant ($P = .049$) decrease in the number of posterior HAPIs compared with baseline, and patients in whom HAPIs developed had less severe skin injuries. Over 6 months, there was a 48% reduction in occurrence of posterior HAPIs in patients in the ICU. The initial net cost savings was \$53 250 over 3 months and \$460 200 over 6 months. All ICUs own the AP system but must continue to purchase overlays. Work to improve optimization includes expanding use of interventions for specialty populations (eg, patients receiving continuous renal replacement therapy, after cardiac arrest, spinal cord injury, traction, high-risk patients in the operating room).

EB32: Pediatric Fever: An Evidence-Based Implementation Project

Jennifer Ramey; Sutter Medical Center, Sacramento, California

Purpose: Nurses are responsible for fever management. Pediatric intensive care unit (PICU) nurses are not following evidence-based practices (EBPs) when treating fever, but instead are relying on anecdotal experiences. The purpose of this EBP project was to increase nurses' knowledge of EBP fever management and to influence nurses to update their practice on the basis of this new knowledge. **Summary:** Guided by the Knowledge-to-Action (KTA) translational model, this EBP project was implemented in 2 PICUs in Northern California (at a community and a university hospital). Evidence-based practice fever management approaches were identified through a review of

the literature. The PICU nurses completed a preintervention survey assessing their knowledge of and practices in treating fever. Surveys were provided in paper and electronic (URL or QR code) formats. A gap analysis of the presurvey results revealed key educational opportunities: EBP febrile interventions, fever versus hyperthermia, metabolic demand, and febrile seizures. Educating during the COVID-19 pandemic proved to be very challenging and required adaptations on the fly. A 2-page educational flyer was created as the educational intervention in lieu of a class. The flyer was distributed to all nurses via email and nurses were trained at the bedside over 2 weeks. A postintervention survey assessed nurses' increase in knowledge and their willingness to update their practice after the educational intervention. **Evaluation/Outcome:** Compared with the preintervention survey findings, the postintervention survey showed an increase in nurses' knowledge by respondents correctly identifying the following (preintervention vs postintervention, respectively): comfort as the goal of fever management (17% vs 84%); febrile seizure as nonpreventable (14% vs 95%); and appropriate uses of physical cooling (10% vs 100%). The postintervention survey also revealed that nurses were willing to update their practice on the basis of their new knowledge. All nurses responded "strongly agree" or "agree" to the statement "I plan to update my practice based on the evidence presented in the educational flyer," and 85% of nurses responded "strongly agree" or "agree" to the statement "I feel comfortable teaching families about evidence-based fever management."

EB33: Pressure-Injury Prevention: A Bundled Approach

Heather Pena, Adam Millard, Angela Richardson, Mollie Kettle; Duke Health, Durham, North Carolina

Purpose: Each year, pressure injuries (PIs) develop in approximately 2.5 million people. Pressure injuries are associated with increased hospital cost and length of stay. Our unit leadership team, in consultation with our wound-ostomy-contenance nurse (WOCN) identified a 15.9% increase in PI development in the cardiothoracic intensive care unit (CTICU) over 1 year. The purpose of this project was to decrease the number of PIs in the CTICU. **Summary:** In the CTICU, a large portion of our patient population has many risk factors that increase the likelihood of PI development, such as older age and use of vasopressors. A root cause analysis of each PI was

conducted with the WOCN, unit leadership, and unit-based skin care champions (SCCs). Audit data collected by the SCCs and staff feedback also were analyzed for trends and patterns. The major theme identified was a lack of all preventive measures used consistently across all patients inclusive of specialty prevention needs (ie, patients with tracheostomy). Pressure injury prevention bundles are a strategy to decrease PIs and include elements such as assessments, turns, and supportive devices. A 1-page PI prevention bundle was created inclusive of all patients and specialty patient needs. Education was provided via multiple modalities and laminated copies of the bundle were placed in each patient's room. **Evaluation/Outcome:** After implementation of the PI prevention bundle, the CTICU went longer than 60 days with no PIs. A 28.3% decrease in PIs was seen 1 year after implantation. In addition, the number of sacral PIs decreased by 68%. The initial success of this PI prevention bundle was readily apparent and it was translated to our cardiac intensive care unit (CICU). Modifications were made on the basis of specialty populations, such as targeted temperature management, and education was rolled out similarly. The CICU saw a 67% decrease in PIs between fiscal-year quarter 1 (July 2020 through September 2020) and fiscal year quarter 4 (April 2021 through June 2021). Next steps will be to create the 1-page PI prevention bundle for the step-down units.

EB34: Pressure to Prone When Proning Causes Pressure

Jane Goetz, Cynthia Copeland, Rebecca Berent; Barnes-Jewish Hospital, St Louis, Missouri

Purpose: At the start of the COVID-19 pandemic, the cardiothoracic team was assigned to open an extracorporeal membrane oxygenation (ECMO) COVID-19 intensive care unit (ICU). As COVID-19 cases surged, so did the number of patients requiring prone positioning (ie, manually placing a patient on their stomach) to aid damaged lungs by increasing gas exchange. Because of the disease process and the extended time in the prone position, patients were at a high risk for development of pressure injuries (PIs). **Summary:** Being new to proning, our team saw an opportunity to develop a detailed proning guideline that also focuses on decreasing the number of PIs seen in this population. It was imperative to obtain a baseline skin assessment to determine if PIs were present on admission. In doing so, the team found 45 PIs on patient

arrival. Immediate action was taken to develop an in-servicing proning cart, complete with a short review video of how to safely prone a patient and all the necessary supplies. An educational poster also was displayed that highlighted how to properly use and safely place the protective tools (eg, fluidized positioners) in sync with ICU equipment (eg, ventilator, ECMO). Furthermore, it was vital to dissect the proper placement protocol for dressings and the fluidized positioner, which reduces PI occurrence by reducing pressure on the face. According to recent research, using colloid dressings can significantly decrease the number of facial PIs caused by noninvasive ventilatory support, so the same dressings were chosen in this patient population. **Evaluation/Outcome:** During the first 3 months of the COVID-19 pandemic, Barnes-Jewish Hospital reported 64 PIs. After 5 months of using the newly developed guidelines to prone patients, there was a 78.5% decrease in PIs. Between November 2020 and April 2021, only 3 PIs were identified on prone patients, and none were found on patients who were prone and receiving ECMO. With these encouraging results, the ICU staff will continue to apply the methods described to decrease the number of PIs seen in this patient population.

EB35: Providing Obstetrical Care in the Postanesthesia Critical Care Unit: A Collaborative Approach

Laura Ortiz Carter, Ayumi Fielden; Houston Methodist Hospital, Houston, Texas

Purpose: Staff of postanesthesia critical care units (PACCUs) in an academic medical center noted an increase in obstetrical (OB) patients requiring postanesthesia care for procedural interventions outside of the OB unit. Obstetrical patients are defined as patients with confirmed gravidity regardless of gestation through 6 weeks postpartum. Using a collaborative approach, the purpose of the project was to address challenges and increase knowledge related to special care considerations of the OB patient.

Summary: Professional organizations agree that OB patients must receive the same standard of care regardless of where care is provided. Collaborative needs assessments performed by the educators in the PACCU and OB unit showed that basic knowledge, skills, and adherence to professional organization recommendations regarding standards of care for OB patients in the PACCU were lackluster. A project was initiated to address knowledge gaps related to the care of OB patients in the PACCU by

adding “OB: Special Considerations”—specific didactic and high- and low-fidelity simulation activities to PACCU residency and charge-nurse enrichment courses from PACCU and OB experts. Obstetrical assessment, fetal monitoring, and OB emergency topics guided by professional practice guidelines were taught. Using the plan-do-study-act model for program evaluation, it was decided early on that an interdisciplinary approach would best serve the high-risk, low-frequency needs of OB patients in the PACCU going forward. To promote maternal health and safety in the PACCU, the OB department pledged to send additional staff to assist in delivering care to OB patients in the PACCU alongside PACCU nurses, allowing for collaborative care and learning reinforcement. **Evaluation/Outcome:** The OB: Special Considerations collaborative program received positive feedback from PACCU stakeholders who noted that the program helped decrease anxiety and confusion when pregnant or postpartum patients presented to the PACCU. Furthermore, interdisciplinary pre- and postplanning huddles improved communication between the PACCU and OB departments and solidified individualized patient plans of care. Assessments performed before and after the course offerings were used to measure changes in knowledge and program evaluation. After completion of the program by 8 cohorts, the average preassessment score of 28.7% increased to 87.7% after the assessment, indicating an increase in knowledge and program success.

EB36: Pulse Oximetry Improvement Project: A Systems Approach to Reduce Alarm Burden

Melissa Lee, Michelle Macal, Shannon Muramoto, Alexis Lum, Paula Williams, Hildy Schell-Chaple; University of California, San Francisco, Medical Center, San Francisco, California

Purpose: This improvement project was initiated in response to patient safety events related to continuous pulse oximetry (CPO) monitoring on the progressive care units (PCUs). The goal of the systems approach review was to identify the contributing factors to missed alarms and delayed alerts and to implement a practice change to address the review findings. A new sensor probe was piloted, and the technical alarm burden and time spent troubleshooting CPO equipment were evaluated. **Summary:** CPO monitoring for patients in the PCU occurs in a centralized observation room. This model requires frequent communication between the technicians and

the unit nurses regarding alarms, including lapses in monitoring. The clinical nurse specialist–led systems review included evaluation of monitor alarm configurations and capabilities, equipment inventory and assessment of condition, and assessment of the alarm types and burden. A dashboard with interactive alarm data visualization was developed with data analysts to assess the alarm data. The review identified opportunities for replacing outdated equipment, and the alarm review identified a high technical-alarm burden in the centralized observation room and a high volume of reports of increased time troubleshooting equipment by unit nurses. Many technical alarms were related to sensor function. The PCU staff piloted a reusable pulse oximetry sensor in place of the disposable sensor. The design of the pilot sensor reduced ambient light interference and eliminated the need for a connector cable, which was a potential source of failures leading to technical alarms. **Evaluation/Outcome:** One-month pre- and postpilot alarm data and PCU nurse and patient feedback indicated the following: 550 and 659 CPO patient days before and after the pilot, respectively; sensor-related alarm burden change: no sensor, –8764 alarms (83% reduction), no pulse, –10 488 alarms (38% reduction); and sensor interference, –5805 alarms (66% reduction). Nurses reported notably fewer pulse oximeter connection issues, alert notifications from monitor technicians, and poor pleth waveforms. Patients reported excessive moisture on their finger inside the pilot sensor probe but found it easy to independently move the sensor to another finger for comfort. Appreciable cost savings were estimated over time with the reusable sensor, based on historical use of disposable sensors. We plan to expand the pilot.

EB37: Quality Improvement During a Time of Crisis: You CAM Do It

Beth Cook; Baylor St Luke's Medical Center, Houston, Texas

Purpose: The aim of the quality improvement (QI) project in the cardiovascular critical care unit was to boost bedside clinicians' comfort level performing the Confusion Assessment Method for the Intensive Care Unit (CAM-ICU) by least a 20%. The documentation for each of "unable to assess" or "no" for ICU delirium assessment would be reduced by a minimum of 10% cumulatively for all nurses on any given shift by the end of November 2020. **Summary:** The use of the

validated CAM-ICU tool for measuring delirium is a crucial component in the ICU Liberation Bundle for early identification of delirium. The sample was nursing staff (N=66) in a 31-bed cardiovascular recovery room in a large academic hospital in southeast Texas during fall 2020. These nurses also covered the patients receiving extracorporeal membrane oxygenation in the COVID-19 units, who had a substantial increase in ventilatory support and ICU days. A bedside tool was launched that included delirium facts, a QR code to link to www.icudelirium.org/medical-professionals/videos for brief videos, and the CAM-ICU worksheet and algorithm. Microlearning sessions were held during huddles and at the bedside, coinciding with the registered nurses' (RNs') workflow to reduce stress and increase participation. The clinical educator assisted the nurses during their patient assessments when performing the CAM-ICU and answered any questions on day and night shifts. Data collection was conducted via brief pre- and postintervention surveys about the nurses' comfort level performing the CAM-ICU and knowledge of delirium consequences. A workbench report from Epic for delirium assessment documentation was used to track compliance and performance before and after the education intervention. The project took place over 36 days. **Evaluation/Outcome:** The results revealed a 23% increase in the clinicians' comfort level using the CAM-ICU, a 37% decrease in charting "unable to assess" and a 3% decrease in the reply "no" for delirium assessment. A plan-do-study-act cycle was used over a short time and had positive outcomes despite staffing challenges related to COVID-19. The bedside tool continues to be used as a reference and to assist preceptors when training new staff and contract nurses during the pandemic. Although the CAM-ICU has been in use since 2009, the RNs reported they did not receive education on the tool when training to become a nurse. Therefore, it is imperative that clinical educators ensure competency for delirium assessment for all critical care nurses.

EB38: Ready to Be in Charge: A Structured Pathway to Engage in the Charge Nurse Role

Adam Millard, Heather Pena; Duke University Health System, Durham, North Carolina

Purpose: The purpose of this project was to implement a new strategy to help leaders make effective decisions regarding charge nurse (CN) readiness. Specifically, our goal was to provide a clear pathway for individuals to grow

into CN roles while also providing leaders the tools and information to coach and effectively select those who were prepared for this role. A consistent approach using readily available self-assessment tools, peer-assessment tools, and coaching sessions was implemented. **Summary:** Providing structure for registered nurse (RN) engagement is a duty of nurse leaders. When RNs feel empowered, they are more likely to be engaged in their work. Our unit leadership recognized that RNs did not feel empowered to prepare for and progress to the CN role. Historically, the unit leadership lacked a standard method to help an RN progress to the CN role, and the selection of CNs was seen to lack collaboration between unit leadership and frontline RNs. In partnership with current CNs, the competencies for the CN role were evaluated. Using an assessment tool made available by the organization's clinical education and professional development team, we implemented a process to use peer feedback to foster effective decision-making and true collaboration. The unit leadership formalized methods to coach RNs interested in the CN role, including review of themes from peer feedback. Although resources are available to help existing CNs progress in their role, literature about CN selection is lacking. **Evaluation/Outcome:** In April 2021, RNs were surveyed to evaluate their understanding of the process to become a CN. Specifically, the unit leadership wanted to identify barriers to this professional growth opportunity. Staff communicated their perception that the process for becoming a CN was unclear and not everyone felt empowered to participate. The newly developed process was implemented in May 2021 and since then, 16 RNs have engaged in the process, with 13 progressing to the CN role. Of those who did not progress, professional development plans and coaching are in place to help them develop. A postimplementation survey will be sent at 6 months.

EB39: Reduce Those Annoying, Nuisance Monitor Alarms in the Intensive Care Unit

Mary Lindsay; Duke University Health System, Durham, North Carolina

Purpose: In critical care settings, the astounding volume of alarms creates a burden that results in desensitization, inattention, and missed or ignored alarms, compromising patient safety. Our purpose for this session is to describe strategies to analyze alarm data and processes to decrease nonactionable alarms by 31% in an intensive

care unit (ICU) at an academic medical center. **Summary:** Several agencies, including the American Association of Critical-Care Nurses and the ECRI Institute, emphasize the importance of addressing clinical alarms, because of the relationship between alarm fatigue and patient harm. These calls for action led The Joint Commission to deem reducing patient harm associated with clinical alarm systems as a 2020 National Patient Safety Goal. Interdisciplinary clinical teams are positioned to address this safety goal. Using the plan-do-study-act cycle, an interdisciplinary health system cardiac monitoring committee reviewed monitoring alarm data to prioritize opportunities for improvement. The data analysis identified that nonactionable (ie, "nuisance") alarms composed the majority of alarms across our 6 adult critical care units. Metrics of total alarms and alarms per bed per day were reviewed to determine priorities. After data review, 1 ICU was identified as a pilot unit to study the impact of alarm parameter adjustments on premature ventricular contraction (PVC) and oxygen saturation (SpO₂), which were the top 2 types of alarms to address. **Evaluation/Outcome:** The medical ICU was selected as the pilot unit, due to its monthly average of 2500 PVC alarms and 3500 SpO₂ alarms. Implementing simple, small changes to the low and high limits, based on the monitor alarm data review and expert engagement, led to a 31.3% reduction in PVC alarms, a 24.2% decrease in SpO₂ low alarms, and no safety events. Because of the success in the pilot unit, revisions were translated across the remaining 5 adult critical care units. To summarize, evaluation of internal alarm data and interdisciplinary engagement allowed clinical teams to prioritize opportunities to reduce nuisance alarms, improve response times, and decrease alarm fatigue.

EB40: Reducing and Preventing Compassion Fatigue in Nurses Through Mindful Self-Compassion Practices

Salome Loera, Pam Mulligan, Marie Cockerham, Deborah Busch; Inova Fairfax Hospital, Falls Church, Virginia

Purpose: Compassion fatigue and its impact on nurses and health care organizations are urgent problems, particularly within the context of the COVID-19 pandemic, as nurses encounter increased patient acuity and death. With this quality improvement (QI) project, we evaluated the impact of brief, unit-based, mindful self-compassion practices on measures of compassion fatigue and

self-compassion among nurses working in a medical-oncology intensive care unit (ICU) at the University of Washington Medical Center. **Summary:** Increased levels of self-compassion are associated with reduced levels of compassion fatigue among nurses. Mindful self-compassion (MSC) training supports resilience among nurses through the use of on-the-job MSC practices and decreased compassion fatigue. A unit-based QI initiative, aimed to reduce measures of compassion fatigue and increase levels of self-compassion among nurses, was developed and implemented. The intervention was 5-minute audio practices based on key concepts from Germer and Neff's MSC training and Neff's theory of self-compassion, with a focus on health care workers' experiences. The intervention was provided in person to medical-oncology ICU staff over 30 days, with nurses participating on 90 separate occasions. **Evaluation/Outcome:** A single-group, pre-post study design was used to evaluate changes in measurements of compassion fatigue and self-compassion among nurses through pre-, post-, and 30-day postintervention surveys containing validated instruments of measurement and open-ended questions about nurses' experiences of the intervention. Although not statistically significant, there was a sustained decrease in group mean compassion fatigue scores and an increase in group mean levels of self-compassion among 30-day postintervention survey respondents. The majority of respondents indicated that the intervention had a clinically significant impact on their ability to practice self-compassion and integrate self-care into their work.

EB41: Reducing Hospital-Acquired Pressure Injuries in the Cardiothoracic Intensive Care Unit

Mary Degges; University of Alabama at Birmingham Hospital Critical Care Transport, Birmingham, Alabama

Purpose: The cardiothoracic intensive care unit (CICU) at the University of Alabama at Birmingham Hospital had the highest incidence of hospital-acquired pressure injuries (HAPIs) within the organization. Unit leadership determined that the number of HAPIs in the CICU would be reduced. The purpose of this evidence-based process improvement project was to decrease the number of HAPIs in the CICU by at least 10% over 1 year. **Summary:** A unit-based HAPI quality improvement (QI) team was created in the CICU. This team comprised clinical nurses, unit leadership, wound-ostomy-contingence nurses

(WOCNs), and a QI facilitator from the Center for Nursing Excellence. A kick-off team meeting was held and, after brainstorming, an admission bundle, a daily care bundle, and a HAPI bundle were developed and ultimately implemented. Use of evidence-based bundles outlining nursing interventions is key to the prevention of HAPIs in critically ill patients. Prophylactic foam dressings (already being used on the sacrum) for the heels and elbows were instituted, as was a fluidized pillow. Use of foam dressings for prevention of sacral HAPIs has great utility in preventing HAPIs. The QI team believed that, based on this information, use of foam dressings on the heels and elbows would reduce HAPIs in these areas. Black advocated for the use of a root cause analysis (RCA) for each HAPI to ascertain any preventable etiologies. Unit leadership, in conjunction with the WOCNs, conducted an RCA for each new HAPI in the CICU, which enabled identification of commonalities. **Evaluation/Outcome:** All documented HAPIs were assessed and verified by the WOCN. Unit leadership tracked each HAPI, shared information with staff, and performed an RCA. In 1 year, efforts of CICU staff resulted in reducing HAPI incidence by 60% (n = 32 HAPIs). The average cost of treating a HAPI is estimated to be approximately \$10 000 in the United States. Thus, the cost savings in year 1 was approximately \$320 000. In addition, the CICU is on track to reduce HAPIs this year by another 40%, which amounts to another \$90 000 in cost savings (n = 9 HAPIs).

EB42: Reducing Pressure Ulcer Incidence in Critical Care Through Implementation of a Care Bundle

Kelly Kotzman, Rachel Creagan, Macy Mosher, Ferrell McAuley; Piedmont Atlanta Hospital, Atlanta, Georgia

Purpose: Patients in a critical care setting are at higher risk for development of pressure injuries (PIs) than is the general hospital population. Studies have demonstrated an average incidence range of 12% to 33% in this population. During a skin assessment study, the medical-surgical intensive care unit (MSICU) at Piedmont Atlanta Hospital (PAH) had a PI incidence between 13% and 30%. In response to upward trends in occurrence of acquired PIs in patients on the unit, a plan was developed to improve outcomes. **Summary:** On the basis of best practice guidelines, a multidisciplinary team implemented a care bundle to improve the incidence of PIs. This team consisted of clinical leadership from MSICU and wound care

specialists who met monthly to review patient data in conjunction with methods to prevent PIs. Data showed most PIs came from respiratory devices, heel injury, and poor off-loading. As a result, the following care bundle was implemented. Repositioning and off-loading of patients are commonly used methods to prevent PIs. The mitigation of PIs is done at PAH by turning the patient every 2 hours, removing pillows and using wedges, off-loading heels with cushioned boots, and using an advanced film barrier to mitigate moisture. Respiratory device-related PIs were also a common finding in the MSICU. To reduce device-related PIs, we implemented foam ear cushions, repositioning the endotracheal tube, and facial foam dressings. Nursing assessments were implemented for identification of skin breakdown. These assessments included a biweekly full skin assessment, documentation of findings, and consultation with wound care specialists. Last, a multidisciplinary skin assessment team performs monthly rounding. **Evaluation/Outcome:** Before implementation of the care bundle, the incidence of PIs ranged from 13% to 30%. Over the past 7 months, the incidence averaged 19.1%. After implementation of the care bundle, the monthly incidence dropped to 16%. These data suggest a positive outcome related to the interventions we implemented. Ongoing monthly assessments will continue to trend our overall performance and adherence to our care bundle.

EB43: Reducing Preventable Harm Through High-Risk Rounding in the CICU

Michelle Weltman; Children's Hospital, Denver, Colorado

Purpose: Central catheter-associated bloodstream infections (CLABSIs) and hospital-acquired pressure injuries (HAPIs) are preventable complications of hospitalization that increase mortality, cost, and length of stay. In 2020, the cardiac intensive care unit (CICU) at Children's Hospital Colorado experienced an acute increase in CLABSI and HAPI rates, despite high bundle compliance. The primary aim of this event-based surveillance project was a reduction in preventable harm rates in the CICU. Specifically, a 10% reduction in CLABSI rate and 25% reduction in HAPI rate. **Summary:** With the increased rates of preventable harm, multidisciplinary task forces for both CLABSIs and HAPIs developed a high-risk rounding process that was based on support in current literature on prevention strategies. Woods-Hill et al

surveyed nurses on barriers to completing bundle compliance and found nurses are highly motivated; however, because of the critical nature of the intensive care unit (ICU) environment, patient emergencies take priority over auditing or completing bundle compliance. High-risk rounding was developed to bring support to the bedside for the most medically fragile patients in the ICU. High-risk rounding was defined as a multidisciplinary, proactive educational session targeted for those caring for patients determined to be high risk for development of a CLABSI or HAPI. High-risk rounding teams include content experts, unit leaders, frontline clinicians, and process improvement specialists who assess barriers to prevention bundle compliance and assist in mitigation strategies. The high-risk rounding teams provide just-in-time coaching and hands-on assistance by role-modeling correct prevention strategies such as sterile dressing changes or application of a skin barrier. These multidisciplinary, weekly discussions are structured to identify barriers to bundle compliance in real time. **Evaluation/Outcome:** High-risk rounding in the CICU has led to an 18% reduction in CLABSIs and a 76% reduction in HAPI rates. The preintervention CLABSI rate was 2.52/1000 central catheter days; the postintervention CLABSI rate is 2.07/1000 central catheter days. The HAPI preintervention rate was 3.6/1000 patient days and has decreased to 0.86/1000 patient days after the intervention. The reduction of preventable harm associated with high-risk rounding has led to an estimated cost savings of \$500 000 for the year to date in the CICU. Frontline clinicians have expressed positive feedback on the use of high-risk rounding. The proactive nature of high-risk rounding is appreciated by staff, compared with the retrospective bundle-compliance audit, which can feel punitive.

EB44: Reduction of HAPI With Devoted Wound Ostomy Continence Nurse to Drive Practice in a Large Cancer ICU

Petra Grami; MD Anderson Cancer Center, Houston, Texas

Purpose: Hospital-acquired pressure injuries (HAPIs) are common in the intensive care unit (ICU). Critically ill patients with cancer have many of the known intrinsic factors for HAPIs. Despite a comprehensive program, a 52-bed cancer medical ICU struggled to improve its outcomes. The decision was made to add a devoted wound-ostomy-continence nurse (WOCN) to drive practice and

refine the program. The focus and new perspective gave unprecedented positive outcomes despite challenges. **Summary:** Critical care and organizational leadership took a bold move to add a devoted WOCN to support the ICU operations and improve outcomes. The unit and organizational structure were revised to add depth, regular reporting, and accountability. Day-to-day operational needs were identified with the fresh perspective of the WOCN in collaboration with nurse leaders. The team met weekly and implemented a multipronged approach involving many clinical departments. Emphasis was placed on education and enhancing the quality data review, providing the tools necessary to strengthen clinical practice, and creating a hospital-wide unified program. Interventions included but were not limited to (1) photographs on admission to the ICU; (2) addressing significant multidisciplinary educational needs; (3) developing standard practice for repositioning a patient when they are in the chair and endotracheal tube repositioning; (4) addition of new products; (5) revisions to the electronic medical record; (6) refinement to nutrition practices; (7) implementation of an evidence-based tool for root cause analysis; (8) development of proning and skin management protocol; (9) revisions to bilevel positive airway pressure mask selection; and (10) revision to the existing mobility algorithm. **Evaluation/Outcome:** Substantial improvement was noted in 2021 with an expanded focus throughout the organization. In fiscal year (FY) 2020, the ICU had 102 pressure injuries; in FY 2021, there were 44 pressure injuries—a 43% reduction. In 1 year of taking patient photographs on admission to the ICU, compliance was increased from 79% to 96%. Nurse leaders completed root cause analysis for 100% of HAPIs that occurred in the ICU and reviewed those with involved frontline staff. Numerous educational offerings with just-in-time training are provided. New products were trialed and adopted, with success in use compliance. Substantial positive movement in Vizient data appreciated with ranking as 93 of 103 in FY 2020 and 31 of 105 in FY 2021.

EB45: Reduction of Nosocomial Bloodstream Infections in Patients With Central Catheters in the CTICU

Catherine Mickey, Erica Pratt, Alyson Kelleher, John Karels; University of Colorado Hospital, Aurora, Colorado

Purpose: An uptick of nosocomial bloodstream infections (BSIs) in a cardiothoracic intensive care unit (CTICU)

at a quaternary academic hospital contributed to an increased length of stay, morbidity, and additional cost estimation of \$48 108 per BSI. Our multidisciplinary group focused on reducing nosocomial BSIs by 50% in the CTICU. **Summary:** A multidisciplinary team convened to engage in a structured process improvement of define, measure, analyze, improve, and control. Root causes were identified and targeted improvement efforts were developed as countermeasures. Interventions to support consistent BSI-prevention bundle application include standardizing job responsibilities, physical changes to the unit for hand hygiene and maintaining sterile field, and creating standard blood culture collection kits. Cleaning extracorporeal membrane oxygenation (ECMO) cannulas with chlorhexidine (CHG) wipes was an innovative approach to prevent infection. Focused multidisciplinary leadership rounds were launched to assess bundle compliance and provide real-time education. Barriers were escalated to unit and medical leadership. In the previous fiscal year, the CTICU observed 13 BSIs, including 7 central catheter-associated infections (CLABSI), as defined by the National Healthcare Safety Network (NHSN); and 6 BSIs in patients receiving ECMO (patients receiving ECMO are excluded from the NHSN definition of CLABSI). **Evaluation/Outcome:** After the improvement phase, the number of BSIs was reduced by 77%, from 13 events to 3 (1 CLABSI and 2 BSI in patients receiving ECMO). In fiscal year 2020, all the patients died who had been receiving ECMO and in whom BSI developed. However, by reducing BSIs in this population, 4 lives were saved (the number of BSIs in patients receiving ECMO was reduced from 6 to 2). The CTICU has achieved 9 consecutive months without any observed BSIs. This reduction translates to improved patient morbidity and experience, and an estimated \$481 080 in cost savings annually. This focus on BSI prevention has increased the culture of awareness of infection prevention in the unit and has strengthened collaboration of the leadership teams.

EB46: Rethinking Rapid Response and Code Blue: A Proactive and Data-Driven Approach to Improve Outcomes

Dustin Tart, Kelly Kester; Duke Health, Durham, North Carolina

Purpose: The goal of establishing a patient-response team (PRT) was to implement strategies to facilitate early

identification of patient deterioration in the intermediate/step-down setting. Using innovative technology and consistent workflows, this team proactively rounds and responds to emergencies, including rapid response, code blue, and stroke codes. Previous to creation of this team, our rapid response team (RRT) was underused and lacked any proactive approach for identifying patients whose condition was deteriorating. **Summary:** Existing evidence supports that hospitals with a dedicated RRT free of competing responsibilities experience better in-hospital cardiac arrest outcomes. In a review of unanticipated transfers to the intensive care unit (ICU) at our hospital, we identified that a proactive approach to identifying patients at risk for deterioration may reduce need for escalation to critical care. We determined that a proactive approach includes rounding, a consultation service, and technology, such as the early warning score and artificial intelligence. Given that 59% of our hospital's intermediate/step-down nurses have less than 3 years of experience, a 24/7 PRT was created to support teams in 39 non-ICU departments. We recognized the importance of ensuring positive encounters because these improve comfort with using PRT services and improve perception of adequacy of resources. Marrying the PRT critical care skills with the needs of intermediate/step-down teams to improve patient care and outcomes was the core purpose of this work. **Evaluation/Outcome:** The key indicators of this work included rapid-response volume, unanticipated transfers to the ICU, and staff satisfaction. Between fiscal years 2020 and 2021, our hospital had a 20.7% increase in rapid response events, with an average of 175 events per month in 2021. Next, implementation of the PRT and the proactive identification of deterioration led to a 29.3% decrease in unanticipated ICU transfers between March 2020 and March 2021. Last, a pre-post survey of nurses showed an 18.5% increase in support provided by the PRT and a 23.9% increase in nurses feeling empowered to call for help. Also, nurses' survey responses indicated a 25.4% improvement in proactive identification of deteriorating patients.

EB47: Sepsis Busters: A Collaboration Between the Medical Intensive Care Unit and Emergency Department

Ben Valente; Durham VA Medical Center, Durham, North Carolina

Purpose: To implement the Society of Critical Care

Medicine and the European Society of Intensive Care Medicine sepsis bundle with early detection and the rapid initiation of appropriate treatment in partnership with the emergency department (ED). **Summary:** Sepsis is a top admitting diagnosis in the medical intensive care unit (MICU) at the Durham VA Health Care System. Sepsis is a life-threatening organ dysfunction caused by a dysregulated host response to infection. Sepsis is a life-threatening emergency and is the leading cause of death in hospitalized patients. Sepsis occurred in at least 1.7 million American adults in 2014 and nearly 270 000 died as a result of sepsis. In 2018, as a nurse-driven initiative, a group of MICU nurses conducted chart review on use of the 3-hour sepsis bundle. Results of the study were shared with the clinical nurse leader of the ED. The following changes were made: (1) sepsis bundle use education for MICU and ED personnel; (2) the quick sequential organ failure assessment (qSOFA) tool was added to the ED triage note; (3) the sepsis bundle was added to the MICU hand-off communication tool; and (4) rapid response team notes were updated to include qSOFA. **Evaluation/Outcome:** The prestudy rate of initiation of antibiotics was 69%, which improved to 95% and 100% in 2019 and 2020, respectively. There was an improvement from 91% to 100% in obtaining lactate levels, blood cultures, and administering fluids. Initiation rates of vasopressors were 40% in 2018, 19% in 2019, and 17% in 2020. Although the mortality rate decreased significantly from 23% in 2018 to 14% in 2019, an increase in the mortality rate to 21% was noted in the following year. The use of the sepsis bundle improved patient outcomes and increased staff morale.

EB48: Skin Rounds Reduce Pressure Injuries in the Pediatric ICU

Kara Bame, Sophia Culbertson, Melissa Frevert; Children's Health of Orange County Children's Hospital, Orange, California

Purpose: The pediatric intensive care unit (PICU) at our freestanding children's hospital had an increase in reportable (ie, stage 3, 4, or unstageable) hospital-acquired pressure injuries (HAPIs) during fiscal year (FY) 2020. There was substantial variability in the assessment of immobility and device-related pressure injury risk between nursing shifts and between the bedside registered nurse (RN) and the skin, wound, ostomy team (SWOT). The purpose of this quality improvement project was to decrease the number of HAPIs to zero by

FY 2022. **Summary:** Accurate risk assessment and timely implementation of appropriate pressure injury prevention measures are essential to promoting patient safety and reducing HAPIs. In March 2020, the SWOT team partnered with the bedside nurse and respiratory therapist to implement weekly, high-risk skin rounds in the 18-bed PICU. These multidisciplinary discussions focused on the 4 to 6 patients at the highest risk, based on their Braden QD risk assessment scores. Case review identified that patients with respiratory devices, specifically tracheostomies, had a high incidence of injury. Therefore, in April 2020, rounds were expanded to include all newly placed tracheostomies. In addition, there was a spike in reportable HAPIs during the first quarter of FY 2021 in the organization's overflow PICU, which cares for chronically ill patients who are at high risk for skin breakdown. In this 12-bed unit, skin rounds were led by the night-shift charge nurse and included a full head-to-toe skin assessment and evaluation of preventive measures for all patients. **Evaluation/Outcome:** In FY 2020, there were 6 reportable HAPIs in the PICU, and there were an additional 6 during the first quarter of FY 2021. There have been no reportable HAPIs for the last 3 quarters of FY 2021 and year-to-date FY 2022. Weekly audits demonstrated that the reliability of Braden QD scoring improved (the difference between RN and SWOT scoring shifted from a range of 0-6.8 to 0-4.7 and the mean difference improved from 2 to 1.1) and that rounds continue to occur with 100% compliance. This evidence-based solution has improved communication with SWOT, enhanced the accuracy of HAPI risk assessment, and facilitated the timely implementation of preventive measures. Subsequently, the goal of decreasing reportable HAPIs from 6 to 0 by FY 2022 was met.

EB49: Staff Engagement: The Competitive Edge in Falls Prevention

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Purpose: Fall prevention has remained a consistent priority for the unit's postsurgical patient population; however, multiple quality improvement interventions did not positively affect fall rates. Upon determining that staff engagement was the most essential element needed for successful fall prevention efforts, the unit's Fall Committee implemented multiple evolving and innovative challenges to inspire team members to be active participants

in fall prevention. **Summary:** Authors of a recent meta-analysis found a statistically significant relationship between staff engagement and safety culture, errors, and events. Because of the complex nature of patient falls, the need for a fluid and innovative focus on fall prevention is paramount to patient safety. During the past 3 years, the Falls Team has implemented initiatives and competitions aimed at addressing evolving patient fall factors and leveraging known motivators to engage staff. In 2019, when data analysis revealed that nursing staff were not consistently communicating about falls risk, the team developed a "Keep It Simple, Silly" (K.I.S.S.) challenge that used a standard communication tool to guide and document K.I.S.S. conversations about falls risk. Other challenges implemented to enhance staff engagement included a "March Falls Madness" competition, based on the National Collegiate Athletic Association's college basketball tournament; a Thanksgiving "Turkey Trot to the Pot," and numerous cowboy-themed falls prevention activities. **Evaluation/Outcome:** Through continuous data analysis and initiatives that use known staff motivators, the Falls Team has demonstrated how staff engagement can positively affect patient falls. Although each initiative had a positive impact, including the K.I.S.S. communication tool, with an increase in overall compliance with falls risk communication from 18% to 83%, the overall outcome of this innovative approach has solidified sustained essential best-practice cornerstones. Data from fiscal years (FYs) 2018 through 2021 further demonstrate positive trends, with a 59% decrease in fall events from FYs 2018 to 2019 alone. The unit has also exceeded the National Database of Nursing Quality Indicators benchmark for falls in 6 of the 7 quarters of recently reported available data.

EB50: Strength in Numbers: Using Rapid Response Nurses and the Electronic Health Record to Identify Patients at Risk for Sepsis

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Purpose: A priority goal of the University of Texas Southwestern Medical Center (UTSW) is to reduce the inpatient sepsis mortality rate through early detection and treatment. The rapid response team (RRT) at UTSW uses the Modified Early Warning System (MEWS) to identify clinical deterioration. Research suggests the MEWS score alone is not an adequate tool for early identification

of sepsis. To improve early identification of sepsis, our facility is piloting the Epic Sepsis Predictive Model (ESPM). **Summary:** Prior sepsis alerting systems notified the bedside nurse. The RRT was often consulted before initiation of the standing orders. The RRT is a trusted “voice” for the bedside nurses whose clinical judgment is recognized by physicians. A pilot was initiated in May 2021 to evaluate a new process whereby the RRT uses the ESPM risk score to identify patients at risk for sepsis. During the 4-week pilot, patients with scores of 10 or higher were screened for infection, systemic inflammatory response syndrome, and organ dysfunction, as well as current treatment. ESPM reduces risk of sepsis-related death. At-risk patients, identified by ESPM and validated by RRT review, were seen and assessed for possible initiation of nursing standing medical orders for sepsis. This process was developed with the support of the quality department, informatics, and nursing staff. The pilot was an initial step measuring the RRTs’ ability to filter ESPM alerts for appropriate interventions. **Evaluation/Outcome:** Pre-pilot data, collected from February 19, 2021, to May 23, 2021, indicated 31.9% of patients on identified units received sepsis orders, with the RRT entering 7.7% of the data. Review of data from 324 patient charts during the pilot period May 24, 2021, to June 24, 2021, indicated there was an increase in sepsis orders to 34.4%, with a relative increase of 21% in RRT-initiated orders. According to background data on the ESPM, there was a positive predictive value of 0.318 at an ESPM risk score of 10. In 22 instances during the 4-week pilot, the MEWS score was not elevated and the ESPM risk score was at least 10. A post-pilot survey was sent to the RRT to evaluate feasibility, technical coordination, and risk score reliability. The next steps are to evaluate electronic health record tools to enhance RRT chart review and sepsis documentation tracking tools.

EB51: Sustaining the Gain: Reducing Device-Related Pressure Injuries in the Medical Step-down Unit

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Purpose: Medical devices such as masks and nasal cannulas used to support oxygenation and ventilation are common in medical step-down units. Ongoing pressure and changes in the microclimate of the skin from these devices may result in skin or mucosal injury. The purpose of this quality improvement project was to reduce the

number of pressure and mucosal injuries by developing an evidence-based, standardized care process for patients with noninvasive ventilation and oxygen delivery devices.

Summary: During the first 8 months of 2019, medical critical care step-down unit (MCCSD) staff identified 15 device-related injuries. An interdisciplinary team lead by an MCCSD nurse was created to reduce medical device-related pressure injuries. A review of literature that highlighted best practices was performed. A root cause analysis for each medical device-related injury identified opportunities to improve the care of patients receiving noninvasive positive pressure ventilation and high-flow nasal oxygen. A standardized process for care was developed on the basis of clinical practice recommendations identified in a systematic review by Haesler. The standardized care practice included selection of correctly fitted and sized masks, scheduled mask breaks, placement of a silicon foam dressing underneath the device, application of barrier film to the patient’s upper lip and saline moisturizer to the nares during high-flow nasal cannula use, and regular skin assessments under and around medical devices. **Evaluation/Outcome:** Pre- and postimplementation data were analyzed to evaluate effectiveness of the standardized care process. Prevalence data for acquired injuries have been collected each month since 2019. In 2020, there were no injuries for 12 months. To date for 2021, there have been 3 occurrences, all in patients with long-term COVID-19. The result of this process change has been a substantial reduction in injury and a standardized process that has sustained the gains in improvement.

EB52: Time for a Vacation: CAUTI Prevention

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Purpose: The purpose of this project was to use a multistep approach in catheter-associated urinary tract infection (CAUTI) prevention. A nurse-driven Foley catheter removal algorithm and “Time for a Foley Vacation” reminder stickers were implemented. Reeducation regarding proper Foley catheter bundle adherence, proper insertion techniques, and pericare education for all nurses and nursing assistants was implemented. **Summary:** CAUTI is the most common nosocomial infection worldwide. Numerous strategies have been developed to reduce the incidence of CAUTIs; however, CAUTI champions realized there was a need to go back to the basics. Staff had

several misunderstandings of the complicated standard work involved in Foley insertion and removal. Research has shown that nursing interventions reduce the risk of CAUTI through monitoring and care techniques. Caregivers were educated about a Foley catheter removal decision tree and appropriate indications for continued Foley catheter use. A “Foley vacation” was implemented with reinsertion guidelines. A Foley vacation tropical-scene sticker was applied to the urine collection bag upon catheter insertion and dated and timed as a visual clue for when the Foley vacation was to be implemented. Annual education for all nursing caregivers included appropriate insertion and pericare guidelines, including a “Foley buddy” for insertion. **Evaluation/Outcome:** In the third and fourth quarters of 2020, before project implementation, there were 4 CAUTIs. In January through August 2021, there have been no CAUTIs. Targeted education and a nurse-driven Foley catheter–removal decision tree or Foley vacation can improve the incidence of CAUTIs.

EB53: Using Lean Tools to Influence Nursing Reliability and Reduce CLABSIs in the Intensive Care Unit

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Purpose: Our pediatric intensive care unit (PICU) continued to see increased rates of central catheter–associated bloodstream infections (CLABSIs) and a lack of bundle reliability, despite numerous interventions. A dedicated team of bloodstream infection (BSI) specialists comprising more than 60 direct-care PICU nurses formed to focus on CLABSI prevention. The specialist role includes patient rounds, central catheter assessments, coaching, and catheter assistance during each shift. Lean tools standardized the process to ensure reliability. **Summary:** Lean systems, an idea first developed by Toyota, focus on ensuring high-quality and reliable processes. The multidisciplinary development team used many Lean tools to create the specialist role. The most important tool used was the Leader Standard Work (LSW) form, which standardized the role by outlining responsibilities such as daily tasks, patient findings, items for escalation, and a shift survey. The weekly form also facilitated communication between specialists during shift change and supported discussion of incomplete tasks, important patient findings, and follow-up items. The LSW provided step-by-step instructions for fulfilling tasks. Reviews of completed

forms and specialist feedback guided form revisions. The LSW tracks task completion and ensures consistency among all specialists when used in conjunction with the standard work documents. Additional Lean tools used by the team included Kamishibai cards, abnormality trackers, and quick hits. **Evaluation/Outcome:** Quarterly prevalence audits of bundle compliance increased to 100% in all categories for the first time in more than 10 years after just 6 months of the BSI specialist role. CLABSI events in the PICU decreased from an average of 10 CLABSIs during the months of November to May of 2019 to 1 CLABSI during November to May of 2020. The LSW form enabled more than 60 nurses to use a standardized approach to ensure exceptionally reliable catheter care throughout the ICU. Lean tools successfully guided specialist performance, leading to greater bundle reliability with significant CLABSI reduction.