

RESEARCH ORAL POSTER PRESENTATION AWARD WINNERS

RS2 Delirium Causing Havoc in Health Care: A Multidisciplinary Approach to Delirium Assessment and Management in the Intensive Care Unit

Cheryl Haseeb, Isela Prado, Genalin Moscoso-Stafford, Petra Grami; CHI Baylor St Luke's, Houston, TX

Purpose: To assess the effectiveness of a delirium management team (DMT) composed of a registered nurse delirium coordinator (RN-DC), physician, clinical pharmacist, and exercise physiologists in the treatment and management of critically ill patients with intensive care unit (ICU) delirium. The RN-DC functioned as the multidisciplinary team lead in coordinating management for the delirious patient. Implementation of the Grami-Smith delirium prevention bundle and the RN-DC's coordination of multidisciplinary roles significantly improved delirium outcomes. **Background:** Delirium is an acute neuropsychiatric syndrome characterized by disturbances of attention and other cognitive functions and has been reported in 30% to 80% of critically ill patients. ICU delirium is associated with long-term cognitive impairment, increased mortality, and length-of-stay issues. Poor patient outcomes including prolonged ICU and hospital stays, increased risk of long-term cognitive impairment, and increased mortality have all been associated with delirium. **Method:** A major component of the delirium management included the Grami-Smith delirium prevention bundle, which consisted of aggressive and progressive mobilization. The study aimed to determine the impact of the DMT on the duration of delirium and other indicators. Adult patients who fit criteria admitted to the large tertiary critical care medical/surgical ICU and screened positive for ICU delirium according to the Confusion Assessment Method for the ICU (CAM-ICU) were randomized in a 2 to 1 ratio to either treatment of delirium per admitting team ($n = 12$) or DMT ($n = 23$). **Results:** Patients managed by the DMT experienced a significant reduction in several key areas. Mean duration of ICU delirium for all patients was 6.34 (SD, 5.59) days. Patients managed by the DMT experienced a significant reduction in mean duration of delirium (4.96 [SD, 4.53] vs 9.00 [SD, 6.63] days, $P = .03$). Similarly, median (interquartile range [IQR]) duration of therapy for benzodiazepines was significantly shorter in the DMT-managed patients than in control patients (2.5 [IQR, 1.0-6.3] days vs 7 [IQR, 6.0-17.5]

days, $P = .007$) and median duration of therapy for opiates was shorter (3.5 [IQR 3.0-8.0] days vs 7.0 [IQR 6.0-13.0] days, $P = .008$). No difference was observed in atypical antipsychotic use. The percentage of patients who were mobilized improved significantly when compared with the prestudy physical therapy group. **Conclusion:** This study demonstrated that a multidisciplinary DMT effectively decreased duration of ICU delirium and length of ICU stay. The introduction of the RN-DC to coordinate a multidisciplinary care approach and the use of the Grami-Smith delirium prevention bundle significantly affected the number of days of delirium and decreased overall length of ICU stay. The RN-DC functioned as the lead role in the DMT management and demonstrated the feasibility and effectiveness of a registered nurse for that vital role. The RN-DC was able to bridge the gap for effective communication among the different disciplinary roles and provide the patient with the holistic care required from ICU admittance to discharge. The addition of exercise physiologists to the DMT in the ICU proved to be both financially and clinically feasible.

RS3 From Cold to Hot: An Investigation of Fever Following Therapeutic Hypothermia

Kristen Luttenberger, Lesley Andrew, Kristen DeGrandpre, Bonnie Forshner; Morristown Medical Center, Morristown, NJ

Purpose: Fever has been observed in patients following completion of therapeutic hypothermia (TH), but the impact of fever on patients' outcomes has not been extensively reported. The purpose of this study was to explore the phenomenon of fever in a population of adult patients treated with TH following cardiac arrest to examine the effects of fever on patients' outcomes and to identify potential predictors of this physiological event. **Background:** TH, which is the controlled reduction of core body temperature (32°C-34°C) for a period of 12 to 24 hours following the return of spontaneous circulation, improves neurological outcomes. Fever is a common complication following a cardiac arrest and has a negative effect on patients' outcomes. Identifying relationships between variables, outcomes, and fever may allow the prevention of fever, thus improving patients' outcomes and resource utilization. **Method:** This study was conducted at 2 medical centers in New Jersey between January 2008 and April 2012. The retrospective study comprised 79 adult cardiac arrest survivors treated with TH during the study period. The prevalence of fever, defined as a body temperature greater than 38.3°C,

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within the first 24 hours following TH, was calculated. Numerous demographic and clinical variables were measured to determine if they were predictive of fever. The outcomes that were measured included in-hospital mortality, hospital length of stay (LOS), and neurological functional status on discharge, which was defined as either "good" or "bad" based on cerebral performance category (CPC) scores.

Results: Fever occurred in 31/75 (41%) of the patients in this population. Fever did not have a significant effect on mortality (odds ratio, 0.55; 95% CI, 0.15-2.01; $P = .37$) or neurological outcome (odds ratio, 0.96; 95% CI, 0.26-3.49; $P = .95$), but it was significantly associated with increased LOS (point estimate, 3.21; 95% CI, 0.47-5.94; $P = .02$). Higher risk of death was significantly associated with being overweight or obese (body mass index [BMI] > 25) versus having normal BMI (odds ratio, 5.77; 95% CI, 1.17-28.37; $P = .03$). A significantly increased LOS was observed for Hispanic patients when compared with whites (point estimate, 5.40; 95% CI, 1.31-9.49; $P = .01$). None of the variables measured were predictive of fever. **Conclusion:** Fever was common in this population. Since fever was associated with an increased LOS, but not with mortality or neurological outcome, we need to analyze our management of fever after TH protocol. The relationship between obesity and mortality is expected. Obesity increases the risk for coronary heart disease and thereby the risk of cardiac arrest. The Hispanic relationship with LOS may exist because of socioeconomic status, access to health care (31% uninsured in 2010), or preexisting conditions.

RS16 Patient and Nurse Factors That Drain Nursing Time in Chest Tube Management

Myra Cook, Katrina Zell, Laura Schenck, Nancy Albert; Cleveland Clinic, Cleveland, OH

Purpose: To determine patient-related factors and nurse characteristics that affect nurses' time in managing chest tubes in the first 24 hours of postoperative care in the intensive care unit (ICU).

Background: Nurses are primarily responsible for the management of chest tubes during the early and delayed postoperative period. Chest tube management can be time consuming and laborious. Nursing time used to manage chest tubes has not been studied or described in the literature, and little is known about nursing actions, pain responses by patients, and patient characteristics associated with chest tube management. **Method:** Prospective, single-center, descriptive study ($N = 29$ nurses, 364 patients). Nonparametric methods and univariate mixed models were used to compare nursing management of chest tubes by nursing characteristics.

Nurses completed investigator-developed case report forms about themselves and comfort in managing chest tubes; patient's chest tube location, type and size; minutes maintaining patency, preventing clogging, talking to physicians and providing general care; chest tube dressing change and removal tasks; and dealing with patient pain, distress, and sedation during the time chest tubes were in place. Correlational and comparative statistics were used to analyze data. **Results:** Of 29 nurses, 86.2% were very comfortable managing patients with chest tubes and dealing with oozing/nonsecure dressings, but only 41.4% were very comfortable managing clogged chest tubes. Minutes of chest tube management were higher in patients with 3 chest tubes, chest tube size < 28F, and when both mediastinal and pleural tubes were present (all $P < .001$). Total time spent on chest tube care during the first 4 hours was higher for patients with a history of coronary artery bypass graft or valve surgery (both $P = .002$) and heart failure ($P < .001$), on preoperative anticoagulant medications ($P = .03$) and when reoperated for postoperative bleeding/tamponade ($P = .005$). **Conclusion:** Nursing time to manage chest tubes can be anticipated by patient characteristics. Nurses spend more time managing chest tubes for patients with specific medical histories or complications. When patients had cardiac tamponade, nurses spent > 50% of their time (> 2 hours of the first 4-hour postoperative period) managing chest tubes. Nurses can use these results to develop nurse education and clinical interventions that optimize chest tube management time and provide support, as needed.

RS19 Fatigue in Critical Care Nurses

Robin Krinsky; Case Western Reserve University, Cleveland, OH

Purpose: Registered nurses play an essential role in the quantity, quality, and safety of care that is provided in hospitals. Accordingly, performance of critical care nurses is closely related to patients' outcomes. Fatigue has been reported as a factor in overall well-being, performance quality, and safety. This study aims to measure the levels of chronic fatigue (CF), acute fatigue (AF), and intershift recovery (IR) in critical care nurses and the interrelationship among CF, AF, and IR. **Background:** Work-related fatigue is a source of concern in critical care. Nurses work in an environment that necessitates them to integrate and process a tremendous amount of information in a brief amount of time to affect outcomes. Fatigue related to shift work and long work hours is associated with the ability to deliver safe and optimum care, increased risk of error, and psychomotor and cognitive speed. Registered

nurses and employers share the responsibility for implementing strategies to reduce risk. **Method:** A descriptive correlation research study design was used, and a quantitative method was chosen because of the intended aim. A nonprobability convenience sample of critical care nurses who visited the exhibits at the 2014 National Teaching Institute and met inclusion completed the survey packet, which included a cover letter, background characteristics, and the Occupational Fatigue, Exhaustion, Recovery Scale (OFER 15). Additional instruments were completed for a future study on alarm fatigue and workload of responding to cardiac monitoring alarms, which are presently being analyzed. Descriptive statistics, means, standard deviation and Pearson correlation for the interrelationship between variables were determined. **Results:** A total of 196 critical care nurses completed the survey with a mean age of 42.6 years and 13 years of critical care experience. The mean (SD) of work-related fatigue scores was 49.35 (24.83) for CF, 63.86 (20.06) for AF, and 50.68 (19.55) for IR. A significant relationship was found between CF and AF (0.55, $P < .01$) and CF and IR (-0.53, $P < .01$). A factor associated with higher levels of all fatigue was rotation of shifts. Nurses who worked 3 or more consecutive shifts had a greater level of CF (3.45, $P < .01$). About 48% of critical care nurses work overtime, 23% have a second job, and 55% of nurses provide care for at least 1 person in their household; these nurses had a significant (0.17, 0.16, $P < .05$) increase in CF and AF. **Conclusion:** The results contribute to the growing body of literature on fatigue in critical care nurses. Evidence exists that CF and AF are related, all levels of fatigue increase when one rotates shifts or works 3 or more consecutive shifts. The results provide us with descriptive characteristics of critical care nurses. Fatigue is a potentially dangerous situation, and nurses' fatigue can affect job performance. More research is needed to examine successive shifts and rotation of shifts.

RESEARCH POSTERS

RS1 Living with Dying in the Pediatric Intensive Care Unit: A Nursing Perspective

Debbie Stayer; Bloomsburg University, Bloomsburg, PA

Purpose: To explore the experiences of pediatric intensive care unit (PICU) nurses who provide palliative care to children with life-threatening or life-limiting illnesses and their families and to obtain an increased understanding of the meaning and interpretation of their experience. Exploring these experiences may reveal the essence of the phenomenon as well as an in-depth understanding of the

contextual factors associated with the experience.

Background: Critically ill children facing a life-threatening or life-limiting illness desire palliative care. Nurses in the PICU spend considerable amounts of time attempting to identify, advocate for, and manage the palliative care needs of dying children and their families. A scant amount of research regarding this currently exists. Discovery of PICU nurses' experiences may contribute insight for the development of nursing strategies that could facilitate providing safe quality care for the children.

Method: This qualitative study used hermeneutic phenomenology to facilitate understanding the essence of PICU nurses' experiences within the context of providing palliative care to children with life-threatening or life-limiting illnesses. The study took place in a nonfreestanding children's hospital in the rural northeastern United States that provides tertiary level care for children from birth through adolescence. Semistructured interviews were conducted with 12 PICU nurses who had experience caring for children with life-threatening or life-limiting illnesses and their families. Interviews were audio taped and transcribed verbatim. **Results:** Five themes (journey to death, a life-long burden, challenges delivering care, maintaining self, and crossing boundaries) were identified, as were relevant subthemes describing the nurses' lived experiences of caring for these children and families. The experiences described by the nurses of providing palliative care were primarily focused on the dying process of children. The emotional impact of dying and death was inevitable and often triggered a grief response for the nurses. They also noted satisfaction from the personal relationships developed with children and families. This permitted the study's nurses to invest with meaning in their professional role. **Conclusion:** The death of a child is devastating. These themes offer insight into the complexity of caring for these children and their families. The experiences shared by the nurses provided an understanding of their journeys in delivering palliative care for children with life-threatening and life-limiting illnesses and their families through this difficult period.

RS4 Exploration of the Distress Caused by Being Blamed for a Negative Patient Outcome

Judy Davidson, Donna Agan, Shannon Chakedis; University of California Health System, San Diego, CA

Purpose: To develop and test a tool to explore the incidence, characteristics, and consequences of being blamed for a negative patient outcome. The survey also compared and contrasted blame-related

distress (B-RD) to moral distress (MD) and related concepts. A literature review formed the basis for the design of descriptive questions and 7 hypotheses to explore B-RD. This project aligns to AACN's value of ethical integrity in relationships. **Background:** Moral distress, burnout, compassion fatigue, lateral violence, civility, and second victim syndrome all result in workplace distress. Intensive care (ICU) and oncology nurses are at high risk. The effect of blame in the workplace has not been previously studied. We suspected that B-RD was similar to MD. No known tool had been previously developed to study blame. **Method:** After approval was granted by the institutional review board, multiple-choice questions were constructed to answer the hypotheses and describe B-RD. Questions were modified for use with audience-response clickers (ARCs) and iteratively subjected to construct and content validation by a panel of 3 content and tool-design experts. Fourteen nurses, including nurses for whom English is a second language, and 1 physician provided face validity. Three rounds yielded consensus. The tool was pilot tested by using ARCs during oncology and intensive care seminars. Data from 156 participants were analyzed by using descriptive statistics, Mann-Whitney U, Spearman rank correlation, or χ^2 tests as indicated. The survey took 50 minutes to execute in the live format using ARCs. **Results:** Blame-related distress was reported in 50%. Most (79.4%) felt a moral obligation to act and had a moral consequence (78.2%) and MD symptoms (85.8%). B-RD differs slightly from MD. No relationship was found between training, resource use, intent to leave, or career length and distress level or symptom duration. Intent to leave position was significantly greater ($P < .001$) with more symptoms. Test-retest reliability: No differences were seen between oncology and intensive care respondents. Most blame originated from managers (50.7%). Peer-to-peer blame suggested lateral violence in 34% of staff nurses. A conceptual model is proposed depicting the overlapping relationships between constructs. **Conclusion:** The majority of participants experienced B-RD with consequences on retention and/or employee health. Operationalizing a blame-free environment requires interprofessional collaboration to address blame that originates from multiple sources. Self-induced blame warrants further study. Replication with other disciplines and specialties would increase generalizability. The tool would benefit from conversion to e-survey to decrease survey time.

RS5 Exploring the Lived Experiences of Male Sexuality Following Traumatic Spinal Cord Injury

Derek Drake, Kimberly Baxter, Stephanie DeBoor; Renown Health, Reno, NV

Purpose: A phenomenological inquiry to explore, describe, and gain a deeper understanding of the lived experiences of sexual function and satisfaction in adult males following traumatic spinal cord injury (SCI). The results of this inquiry will benefit both clinicians and patients alike with detailed information of what individuals in this vulnerable population face as they struggle to redefine themselves so they can proceed with healthy physical, emotional, and sexual relationships. **Background:** Spinal cord injuries have significant impact on the individual's physical, emotional, and sexual well-being. Regaining sexual function has consistently been identified as the highest priority for individuals with SCI. Approximately 42% of men living with SCI are dissatisfied with their sexual lifestyle, and nearly 50% experience feelings of sexual inadequacy. More importantly, studies show that the vast majority of persons with SCI never discussed their sexual concerns with health providers. **Method:** Hermeneutic phenomenology provided the methodological approach for this study using Heidegger's 7 concepts of qualitative inquiry. Purposeful sampling was used to recruit willing participants experiencing the phenomena. Recruitment continued until data saturation occurred. A total of 8 participants were recruited for this study, 6 of whom completed the study. Face-to-face or telephone audio-taped interviews were conducted with each participant. Transcripts of each interview were produced and the data was analyzed by using Diekmann and colleagues' 7-stage process of hermeneutic data analysis, which operationalizes Heidegger's approach to hermeneutic phenomenology. **Results:** Seven themes and 2 subthemes reflecting the experiences of sexual function and satisfaction in adult males following traumatic SCI were identified. The themes include (1) accepting disability, (2) rejecting asexuality, (3) resetting expectations, (4) maintaining relationships, (5) cautious exploration, (6) whole-body experience, and (7) regaining masculinity through humanity. The theme whole-body experience was divided into 2 subthemes: (1) "penisless" sex and (2) mindful orgasm. The identified themes and subthemes contributed to the overall essence of male sexual function and satisfaction following traumatic SCI—The Journey to Holistic Pleasure: Mind, Heart, and Body. **Conclusion:** While each man's individual

story was unique to him, the experiences reveal common threads in attempts to regain preinjury sexual function and satisfaction. Understanding the meaning and significance of these experiences has significant implications for individuals with SCI and their families, along with nurses and other health care providers. The research produced supports and contributes to current literature regarding aspects of male sexuality following traumatic SCI.

RS6 Comparison of Temperatures: Pulmonary Artery Core vs Oral, Temporal Artery, Bladder, and Esophageal

Sue Sendelbach, Carol Skay; Abbott Northwestern Hospital, Minneapolis, MN

Purpose: To describe the accuracy and precision of alternative methods of measuring body temperature (ie, oral, temporal artery, bladder, and esophageal temperature measurements), compared with core temperatures (pulmonary artery catheter) with moderately cold temperatures ($<34^{\circ}\text{C}$) in adult patients undergoing therapeutic hypothermia (TH) after cardiac arrest. **Background:** Accurate temperature readings are critical in both achieving the target temperature and during the rewarming phase in patients undergoing TH after cardiac arrest as therapy is based on these temperatures. Core temperature as measured by a pulmonary artery (PA) catheter, is the gold standard. However, many patients treated with TH after cardiac arrest do not have a PA catheter, and the most accurate approximation of core temperature, especially with temperature extremes, has not been clearly identified.

Method: A repeated-measures design was used to determine the difference between core temperature as measured by a pulmonary artery temperature and oral, temporal artery, esophageal, and bladder temperatures (when available). Twenty-two adult patients undergoing TH after cardiac arrest with PA catheters had a series of 2 sets of temperature measurements when core temperatures were $<34^{\circ}\text{C}$.

Results: Tests for biases of oral, temporal, esophageal, or bladder temperatures versus pulmonary artery temperature used mixed linear models repeated-measures analysis of variance. Scatter plots and Bland-Altman style plots were examined. Temperature differences $>0.4^{\circ}\text{C}$ were defined as clinically significant. Oral (bias = .038, $P = .47$) and esophageal (bias = -.007, $P = .93$) were not statistically or clinically biased versus PA temperatures. Bladder temperature was statistically biased high but not clinically (bias = .217, $P < .004$). Temporal measures, while not showing a statistically significant level of bias (bias = .428, $P = .28$), were above clinical cutoff, and

plots revealed high variability and inaccuracy. **Conclusion:** In adult patients with moderately cold core temperatures, oral and esophageal thermometry provide accurate approximations of core temperature. Future research should examine clinical issues that resulted in high variability of temporal artery measurement.

RS7 Nurses' Perception on Moral Distress and Collaboration of Care Decisions

Adeluisa DeGuzman, Karen Magarelli, Lisa Falcon, Maryann Brookes, Sandia Royal, Jonathan McCoy, Kathleen Zavotsky; Robert Wood Johnson University Hospital, New Brunswick, NJ

Purpose: Reducing moral distress can promote a healthy work environment, which is one of the AACN nursing initiatives. Our goal was to examine the perception of critical care nurses' experience of moral distress at an urban academic medical center and to further determine if physicians' collaboration and satisfaction about care decisions (CSACD) has any impact on the nurses' professional practice environment and their experience of moral distress.

Background: Working in a highly charged ethical climate can pose many psychological and emotional challenges to nurses. When nurses do not have the ability to cope with day-to-day ethical dilemmas, the situation can predispose them to psychological distress, burnout, and abandoning the profession. Studies to examine the relationship between moral distress and collaboration of care can provide strategies to support nurses when experiencing moral distress as well as promote a healthy work environment. **Method:** This descriptive and correlational study was facilitated by an online survey.

Participants were recruited by convenience sampling and were limited to nurses who worked in designated critical care areas of the hospital. Validated instruments used for the study included the Corley Moral Distress Scale to measure moral distress and the CSACD Scale to measure collaboration and satisfaction of care decisions. Data were analyzed by using SPSS. Pearson product-moment correlation coefficients were used to examine the relationship between collaboration and the amount of moral distress experienced by these nurses. **Results:** There were 119 respondents to the moral distress scale and 117 respondents to the CSACD scale. No significant relationship was found between collaboration and the amount of disturbance: $r = -0.17$, $P = .06$, suggesting that the level of disturbance of morally distressing situations experienced by critical care nurses is not related to collaboration. However, in examining the relationship between collaboration

and moral distress, Pearson product-moment correlation coefficients indicated a significant, small, negative correlation: $r = -0.29$, $P = .002$. This suggests that nurses who experience more collaboration tend to experience less moral distress and vice versa. **Conclusion:** Care collaboration can reduce the amount of moral distress and can help promote a healthy work environment as well. In seeking strategies to support nurses in coping when experiencing moral distress, integrating care collaboration in the practice environment is an important consideration. One good example of care collaboration is the development and implementation of standardized nursing protocols that foster autonomy for nurses in their care decisions.

RS8 The Relationship Between Vasopressors and Pressure Ulcer Development in Adult Critical Care Patients

Jill Cox, Sharon Roche; Rutgers University/Englewood Hospital and Medical Center, Englewood, NJ, USA

Purpose: To examine the relationships between type, dose, and duration of 5 vasopressor agents (norepinephrine, vasopressin, epinephrine, phenylephrine, dopamine) and pressure ulcer development and to examine factors that are predictive of pressure ulcer development in adult critical care patients. **Background:** Vasopressors are potent vasoconstricting agents used as a life-saving modality to increase mean arterial pressure in shock states. The pharmacodynamic properties intrinsic to these medications suggest they may play a role in pressure ulcer development; however, this has been understudied in the literature, making it difficult to discern the agent(s) that may pose the greatest risk. **Method:** This study used a retrospective, correlational design. The sample consisted of 306 medical/surgical intensive care unit (ICU) and cardiovascular adult ICU patients who received vasopressor agents during their ICU admission. All data were abstracted from the electronic medical record. Data analysis consisted of descriptive statistics for all study variables, χ^2 and t tests to compare patients who had a pressure ulcer develop with patients who remained free of pressure ulcers. Logistic regression analysis was used to determine the significant predictors of pressure ulcer development. **Results:** Norepinephrine and vasopressin were significantly related to pressure ulcer development, with vasopressin the only agent to emerge as a significant predictor of pressure ulcer development in multivariate analysis. Patients with a pressure ulcer experienced longer infusion times of vasopressin at dosages greater

than 0.03 U/min. In addition, patients who had pressure ulcers develop had more hours of infusion of norepinephrine than did patients who remained free of pressure ulcers. Other factors that were predictive of pressure ulcer development included cardiac arrest during the ICU admission, more hours of mean arterial pressure less than 60 mm Hg while receiving a vasopressor agent, and mechanical ventilation for longer than 72 hours. **Conclusion:** The need to add vasopressin, concomitant with a first-line vasopressor to the treatment plan may represent a "tipping point" in which risk for pressure ulcers escalates. This may translate for nurses as an early warning to heighten strategies for preventing pressure ulcers. Conversely, because these agents cannot be terminated to avert pressure ulcer development, this finding may add to the body of knowledge regarding factors that contribute to the development of an unavoidable pressure ulcer.

RS9 Retrospective Review of the Effect of ABCDE Bundle Implementation on Intensive Care Unit Patients

Mandy Bounds, Karen Speroni, Kimberly Brice, Stacey Kram, Marlon Daniel, Mary Luschinski, Stephanie Harte, Ramona Taylor; University of Maryland Shore Regional Health, Cambridge, MD

Purpose: To evaluate the effect of the ABCDE bundle on the prevalence of delirium in intensive care unit (ICU) patients. The objective of this study was to quantify the prevalence of ICU patient delirium before and after implementation of the ABCDE bundle. The secondary objective was to quantify the duration of ICU patients' delirium. The central hypothesis was that the prevalence rate of ICU delirium will be lower after the ABCDE bundle is implemented. **Background:** Delirium in the ICU affects 20% to 80% of patients and results in adverse patient outcomes. The ABCDE bundle (awakening and breathing coordination, choice of sedation/analgesia, delirium prevention and management, and early mobility) incorporates interdisciplinary measures to improve patients' outcomes. The findings from this research can be used to determine if the ABCDE bundle improves patients' outcomes. **Method:** Retrospective data were collected before (December 2012-February 2013) and after (December 2013-February 2014) ABCDE bundle implementation. Patients were included in this study if they were 18 years of age or older and had stayed more than 24 hours in the ICU during the hospitalization. Patients were excluded for the following: more than 50% increased intracranial pressure

from first ICU measure for this hospitalization; quadriplegia; score <8 on the Glasgow Coma Scale without use of sedative; comfort measures only; and cardiopulmonary arrest resulting in death. This study was exempt per the institutional review board. **Results:** A total of 159 electronic medical records were reviewed (80 before and 79 after implementation of the ABCDE bundle). Most were of male, white patients with a mean age of 67.2 to 65.3 years. The primary ICU admitting diagnoses were respiratory, cardiovascular, neurological, and gastrointestinal. Length of stay in the ICU and hospital and numbers of days of mechanical ventilation did not differ significantly from before to after implementation of the ABCDE bundle. After bundle implementation, delirium prevalence decreased significantly (before, 37.5%; after, 22.8%; $P = .02$), as did mean days of delirium (before, 3.7 days; after, 1.7; $P < .001$). **Conclusion:** The ABCDE bundle implementation resulted in significant improvements in ICU patients' outcomes as demonstrated by decreased delirium prevalence and delirium days.

RS10 The Effects of Simulation on Performance and Anxiety of Novice Nurses in the Pediatric Intensive Care Unit

Randy Kelley; Fletcher Allen Healthcare/University of Vermont, Burlington, VT

Purpose: To evaluate the impact of simulation on performance and anxiety among novice nurses in the pediatric intensive care unit (PICU). **Background:** Novice nurses in the PICU experience performance anxiety and psychological stress owing to their inability to anticipate problems effectively, make clinical judgments, and identify changes, all of which contribute to feelings of inadequateness. Simulation fosters conceptual knowledge and improves performance. Costs associated with turnover/attrition and burnout accompanied by psychological stress and suboptimal performance can negatively affect health care outcomes. **Method:** A self-control study involving 2 high-fidelity PICU simulations. The State Trait Anxiety Inventory (STAI) was used to measure anxiety, objective structured clinical examination checklists and Lasater's Clinical Judgment Rubric (LCJR) were used to evaluate critical skills completed along with judgment during each of the 2 simulations. At the end of the final simulation, the National League of Nursing's (NLN) Simulation Design Scale (SDS) tool was administered to gather information pertaining to personal views, applicability, and transferability of simulation experiences to nursing practice. **Results:** In the self-control study, simulation

was a cost-effective teaching method, resulting in decreased anxiety and improved performance and clinical judgment. The STAI tool was used to measure anxiety. Results of the STAI indicated that anxiety differed significantly ($P < .007$) from before to after the simulation. Performance was measured by the LCJR and Objective Structured Content Exam (OSCE) checklists, which had mean score improvements of 14.45 and 2.11, respectively. The P value for simulations using LCJR was $< .001$, whereas the OSCE checklist yielded a P of .05. **Conclusion:** Embedding simulation into existing PICU orientations may result in decreased nurse anxiety, improved performance, and improved outcomes for patients. All participants viewed the high-fidelity simulations used in this project favorably. Based on results of the NLN SDS, these high-fidelity simulations were well-designed, educational, and beneficial to novice PICU nurses' practice.

RS11 Nurse-Driven Acute Stroke Care: Results from the Quality Care Improvement with Nursing-Driven Acute Stroke Care (QCI-NASCar) Trial

Sonja Stutzman, Amanda Dirickson, Julian Yang, DaiWai Olson; The University of Texas Southwestern Medical Center, Dallas, TX

Purpose: To examine the impact of empowering nursing teams to take the lead role in early stroke management. The QCI-NASCar study capitalized on parallel processing studies and used a pit-stop approach to develop a driver's sheet that nurses used for every stroke code arrival at our local emergency department (ED). **Background:** Tissue plasminogen activator (t-PA) is established as an effective treatment for patients with acute ischemic stroke, with a 4.5-hour treatment window for eligible patients. Early treatment is associated with better outcomes, which led to the development of national guidelines for target door-to-treatment (DTT) times set at 60 minutes. Unfortunately, recent analysis has shown that fewer than one-third of t-PA patients received treatment in the recommended 60-minute time window from hospital arrival. **Method:** This nonrandomized pseudo-experimental study was designed with a phase-in component to examine how establishing the nurse as a "driver" for acute stroke care affects quality measures associated with acute stroke care. Therefore, nurses and physicians in the ED were first educated on use of the driver sheet. The driver sheet was a time-stamped record of each step in the door-to-computed tomography (CT) process. Physicians agreed a priori that nurses would be driving the initial phase of stroke care.

ED nurses were certified in the use of National Institutes of Health Stroke Scale (NIHSS) before QCI-NASCar was started. During phase I, the driver sheet was continuously reviewed and revised on the basis of staff feedback. **Results:** A total of 153 possible stroke patients were treated with this protocol. The mean age was 59.9 (SD, 16.4) years. About 54% of the patients were male and 81% were white. The mean NIHSS score on arrival was 4.4 (SD, 5.74). The mean door-to-CT time was reduced from 38.0 to 27.9 min. This did not correspond to a change in the mean time it took for the ED physician to first see the patient (28.4 vs 27.6 min); however, the mean time it took for a neurologist to see the patient was significantly reduced (42.1 vs 27.0 min). Regression analyses (SAS v9.3) showed a significant association between nurse-driven stroke care and a reduction in door-to-CT time ($P < .001$). **Conclusion:** Nurses were able to successfully implement a nursing-driven acute stroke care program. Having nurses act as drivers of care did not negatively affect physicians' practice or increase the time it took for the ED physician or stroke neurologist to meet the patient's needs. These data demonstrate the efficacy of a nurse-driven acute stroke care protocol. The next phase of research should endeavor to expand the pit-stop model beyond a single hospital to explore the external validity of this concept.

RS12 Lack of Agreement of Subjective Pupil Assessments

Sonja Stutzman, DaiWai Olson, Ciji Saju, Margaret Wilson; The University of Texas Southwestern Medical Center, Dallas, TX

Purpose: Pupillary assessments are typically incorporated into the routine neurological examination performed by nurses and physicians caring for neurologically ill patients. The most common measures of pupil function are size, shape, and reactivity of each pupil independently. Interrater reliability among examiners has not been established. We examined the interrater reliability of pupillary assessments performed by practitioners in a clinical setting. **Background:** The pupil assessment provides key information about current neurological function. Cranial nerves II, III, IV, and VI innervate the brain stem. Adequate assessment of these cranial nerves requires the practitioner to assess pupillary function including the light reflex. Pupil size and reactivity to light are key in early identification of increased intracranial pressure or third cranial nerve palsy. The shape of the pupil may be distorted as a result of trauma, infection, surgery, or tumor. **Method:**

This was a prospective nonrandomized blinded observational trial. Subjects in the study were physicians and nurses working in critical care, stroke, or neurological step-down inpatient units. Patients with neurological injury were recruited as participants, but were not deemed as study subjects. Paired assessments were made by convenience sampling (2 nurses, 2 physicians, or 1 nurse and 1 physician). Subjects were instructed to perform independent examinations simultaneously or within 5 minutes and to record the size, shape, and reactivity of each pupil (right eye [OD], left eye [OS]) separately. Following this, a member of the study team performed an assessment using a pupillometer. **Results:** There were 2332 paired observations (1166 OD, 1166 OS) performed on 127 patients by 184 nurses and 32 physicians. Size was scored as equal if the difference was < 1 mm). Only 28.1% of paired assessments agreed on all 3 components (size, shape, and reactivity) of the examination. The Cohen kappa was calculated for size: OS = 0.54, OD = 0.54, both eyes (OU) = 0.54; for shape: OS = 0.68, OD = 0.06, OU = 0.62; and for reactivity: OS = 0.48, OD = 0.30, OU = 0.40. Of the 190 pupils that were assessed as fixed (nonreactive), there was agreement between assessors on 94 (49.5%). There were no statistically significant differences in agreement within or between nurse and physician assessors. **Conclusion:** The interrater reliability of subjective pupillary assessment is mostly poor. A new onset fixed pupil is a medical emergency, yet the agreement that a pupil is nonreactive was only 50%; this was similar for nurses and physicians. The study was adequately powered and included a sufficiently diverse group of practitioners to examine current practice. The agreement between individuals was inadequate to support the subjective use of hand-held penlights as the standard of care for pupillary examinations.

RS13 Satisfaction With New Graduate Nurses' Preparedness for Interprofessional Collaboration in Acute Care

Julie Hopkins; Case Western Reserve University, Cleveland, OH

Purpose: To determine nurse managers' and experienced staff nurses' satisfaction with new graduate nurses' clinical and nonclinical skills, specifically their preparedness to collaborate as a member of the interprofessional team. Effective teamwork contributes to improved outcomes for patients. This project aligns with AACN's core value of collaboration, and vision to ensure that new nurses optimize their clinical skills to contribute to quality patient care. **Background:** New graduates report

that their transition from education to practice settings is challenging, given the competing demands of complex patient conditions, changes in technology, and expectations to demonstrate clinical competence. New nurses also must develop nonclinical skills such as collaboration, prioritization, and delegation. These gaps in practice represent opportunities for new nurses to improve their competence and build confidence as they transition to the professional role. **Method:** In a cross-sectional survey design study conducted at a Midwest academic medical center, nurse leaders' and staff nurses' perceptions of new graduates were compared with national data from the 2007 landmark study by using the Nurse Executive Center's Nursing Practice Readiness Tool. One hundred forty-nine nurse leaders and staff nurses from the medical center participated in the study. Demographic data and satisfaction ratings on 36 competencies deemed necessary for practice were collected. Responses were grouped by years of experience, unit type, and job title. Satisfaction scores in each competency were calculated by using percentages and compared with the national study data. **Results:** Satisfaction ratings of new graduates' performance competencies varied from the national average, although each category rated higher than the national average. Specifically, 63% of nurse leaders in this study were satisfied with new graduates' ability to communicate with the interprofessional team, compared with the national average of only 38% satisfaction. They also ranked new graduates higher in their ability to work as part of a team (56% satisfied) compared with the national average of 37%. In addition, nurse leaders reported satisfaction ratings of new graduates' ability to recognize a change in patient status at 46%, compared with the national average of only 19%. **Conclusion:** Satisfaction ratings of new graduates' performance competencies at the Midwest academic medical center were somewhat higher than the national data. This may be attributed to the medical center's nurse residency program, which addresses teamwork and collaboration. However, limitations were still identified in competency ratings in clinical skills and team members' roles in interprofessional collaboration. As such, new graduates may benefit from further education in interprofessional teamwork.

**RS14 Focused on Feeding-Tube Retention:
A Nurse-Driven Trial of a Nasal Bridle System**
Joie Griffin; Sutter Roseville Medical Center, Roseville, CA
Purpose: Nasoenteric feeding tubes can easily

become dislodged because of a patient's mental status, position changes, and transfers. Despite the use of multiple alternative interventions, the rate of accidental removal and dislodgment of these tubes appeared to be increasing in our trauma/neurological intensive care unit (TNICU). The intent of this study was to see if the use of nasal bridles would provide a safe and cost-effective way to decrease that rate. **Background:** Aggressive enteral feeding in critically ill patients decreases the rate of complications and facilitates faster healing. It enhances gut motility and prevents bacterial translocation and overgrowth. Feeding tube dislodgment leads to delays in enteral nutrition and increased risk of aspiration due to malposition. There are added costs and risks for endoscopic and radiographic procedures used to replace tubes, including use of sedation and restraints to prevent tube removal. **Method:** A randomized control study design was used to test the efficacy of the nasal bridle in our patient population. All patients in our TNICU A had their nasal feeding tubes secured in the traditional manner using tape (n = 35). All patients in our TNICU B had their feeding tubes secured with a nasal bridle using a magnet retrieval system (n = 35). Criteria included patients with 8F feeding tubes, without medical contraindication for nasal placement. Using a train-the-trainer model, nurses were taught how to place nasal bridles. Bridles were placed immediately after feeding tube insertion. All patients were tracked until time of tube removal or discharge. **Results:** In a 13-month period, 93 patients received feeding tubes in our 2 units; 70 patients were included in the study, 35 in each group. The removal rate was 22.8% in the tape group (8 tubes), compared with a 2.8% removal rate in our bridled group (1 tube). Because of a procedural error in securing the clip, a patient in the bridle group was able to pull the tube proximal to the nares, while the bridle remained in place. There were 2 incidences of mild epistaxis during bridle insertion, both self-limiting. We had 1 incidence of a stage I pressure sore to the nasal septum, owing to the umbilical tape being overly tight. There was no incidence of sinusitis. **Conclusion:** The use of nasal bridles significantly reduces the proportion and rate of accidental tube removals. They provide optimal nutrition by minimizing interruptions of tube feedings; reduce patient costs for additional tubes, radiographs, and endoscopic procedures; reduce the need for sedation and restraints; and are easily placed by a nurse instead of a physician. Providing safe and cost-effective patient care with the use of nasal bridles has become a focused passion of the nurses in our unit.

RS15 Collaborate to Extubate: A Needs Assessment and Educational Program on the ABCDEF Bundle

Erica Edwards, Norine O'Malley-Simmler; Massachusetts General Hospital, Boston, MA

Purpose: To assess intensive care nurses' knowledge of the ABCDEF bundle and provide education to address gaps in knowledge. Through the understanding of the bundle and use of protocols that address spontaneous awakening/ breathing trials, delirium prevention, assessment and treatment, early mobility, and family involvement, there will be fewer ventilator days, decreased length of stay (LOS), and subsequent cost savings. **Background:** In 2005, 790 257 hospitalizations in the United States involved mechanical ventilation. The estimated national costs were \$27 billion, or 12% of all hospital costs. Mortality for patients receiving mechanical ventilation is high. Quality improvement and cost-reduction strategies are warranted when caring for these patients.

Method: A presurvey that used a Qualtrics format was distributed to a convenience sample of nurses caring for ventilator patients in 9 units at Massachusetts General Hospital. The survey design was adapted from the AACN's ABCDE Pearl's unit gap analysis to assess 5 areas: communication and collaboration, sedation awakening/spontaneous breathing trial/coordination and choice of sedation, delirium, early exercise, and family involvement. After completing the survey, an educational intervention of 20 live sessions was conducted on each of the 9 units. During the sessions, current practice was evaluated and education was provided to address gaps. A Healthstream PowerPoint presentation was assigned to all nurses on the targeted units.

Results: Survey results revealed a lack of protocols to assess for the presence of delirium and early mobility for ventilator patients. Analysis of the survey revealed that a validated tool was used for delirium assessment (46.9% of respondents), nurses routinely perform both a pain and sedation assessment using a validated tool (91%), and essentially all (99%) support visitation through a family-centered philosophy of care. After the educational intervention, a reduction in ventilator days was noted of 1.21% (50 days/quarter) with a projected annual cost savings of \$304 400. **Conclusion:** A targeted educational program addressing gaps in knowledge of the ABCDEF bundle resulted in an increased use of protocols and reduced ventilator days. No reduction of LOS was found, perhaps because of confounding factors. Implications for further studies include assessing the impact of family involvement on the bundle and collaboration with other AACN Boston

Clinical Scene Investigator Academy participants on initiatives addressing parts of the bundle.

RS17 Exploring the Experiences and Needs of Children Visiting in the Adult Intensive Care Unit

Myra Cook, Cathy Gajewski, Sandra Siedlecki, Shannon Sonnhalter; Cleveland Clinic, Cleveland, OH

Purpose: To examine caregivers' perceptions of child visitation experiences while visiting critically ill patients in the adult cardiovascular intensive care units (CVICU). **Background:** Little is known about the experiences of children and their families visiting critically ill patients in the adult ICU. Of particular concern are those visiting a high-acuity cardiac surgical ICU, where invasive equipment, tubes, and drains are numerous. The children visiting these units may observe such devices as intra-aortic balloon pump therapy, extracorporeal membrane oxygenation, and ventricular assist devices. **Method:** This qualitative study used an interpretative phenomenological approach to investigate the experiences of families with children visiting the CVICU; 12 families with children (< 18 years old) were interviewed after visiting patients in the adult CVICU. The interviewer assessed the patient's condition before approaching the patient's family to ensure absence of exclusion criteria. Participants were escorted to a private office or conference room to complete the interview. The interview was audio recorded with a digital recorder. Interviews consisted of open-ended questions selected by the research team. **Results:** Five themes emerged: (1) prepare child for visit, (2) help parents to educate/prepare child for visit, (3) provide activities/distractions, (4) prepare environment for visit, (5) caregiver response to visit. Several families noted the need to prepare children for the visit by using age-appropriate methods. Parents suggested providing visual aids to assist them in preparing children. Others suggested that the hospital provide one-on-one or classroom instruction. Participants noted that providing activities (eg, coloring books, toys, electronic devices) in the family lounge to "distract" children could improve the overall experience. **Conclusion:** The study revealed a recurrent need for age-appropriate resources and preparation before visitation for children and adult caregivers. Overall, caregivers were glad that the children were able to visit in the ICU and thought that the experience was beneficial for children and patients. Exploring the needs of families with children visiting adult patients in the ICU could direct nursing interventions to improve the experience for patients and their families.

RS18 Using Music Therapy As an Intervention to Decrease Anxiety in Respiratory Compromised Patients

Jenifer Bantle-Felt, Catherine Mielke, Jessica Weitgenant, Leanne Garner, Ma Abcejo, Beth Bakel, Nicole Rassier; Mayo Clinic, Rochester, MN

Purpose: Many patients in the respiratory care unit (RCU) have respiratory failure and as a result require mechanical ventilation, bilevel positive airway pressure, or other oxygen delivery devices. These life-saving interventions are commonly associated with high levels of anxiety. This anxiety may interfere with ventilator liberation, sleep, and participation in therapy. The purpose of this study is to examine the effectiveness of music therapy as an intervention to decrease anxiety in RCU patients. **Background:** Because uncontrolled anxiety can have devastating results, health care providers depend on the use of sedative medications to alleviate the symptoms of anxiety. However, these medications have potential risks and adverse effects that may further complicate and lengthen patients' recovery. In light of the potentially damaging effects of sedative medications, nurses are exploring effective and alternative interventions, such as music to decrease anxiety and promote patient healing. **Method:** A quasi-experimental pretest-posttest design was used in this study involving 29 adult RCU patients selected by convenience sampling. The participants received the music therapy session with preferred music selection via headphones for 30 minutes. State anxiety levels were obtained by using a 100-mm visual analog scale and physiological indicators of anxiety such as blood pressure (BP), heart rate, respiratory rate, and oxygen saturations immediately before and after the music therapy intervention. Patient satisfaction was measured with a yes/no survey regarding enjoyment of the music session. Data was analyzed for statistical significance by using a 2-tailed paired *t* test. **Results:** Patients ($n = 29$) who listened to a 30-minute music session showed a statistically significant decrease in physiological indicators of anxiety such as systolic BP ($P < .001$), mean BP ($P = .04$), heart rate ($P < .001$), and respiratory rate ($P < .001$). Diastolic BP ($P = .17$) and oxygen saturation ($P = .53$) did not differ significantly between the pretest and the posttest assessment. The study concluded a mean 27-point reduction in patients' state anxiety levels on a 0-100 visual scale and a 96.6% patient satisfaction rate. The study results indicate a benefit of implementing music therapy into the daily patient care plan with continued evaluation. **Conclusion:** The statistically significant values that were measured (systolic and mean BP,

respiratory rate, and heart rate) after music therapy were indicative of a decrease in the physiological responses to anxiety. As a subjective measurement, a decrease in patients' perception of anxiety as well as satisfaction with the intervention was evident with music therapy. Music therapy was an effective tool to assist in the reduction of anxiety in patients in the RCU.

RS20 Want to Graduate Nurses Who Care? A Caring Behavior Scale for Critical Care Nursing Students

Mary Gergis; School of Nursing, University of Maryland, Baltimore, Baltimore, MD

Purpose: The development and the psychometric evaluation of an instrument to measure caring behaviors of critical care nursing students. **Background:** Caring is the core and essence of quality humanized care. However, caring and other affective objectives receive little to no attention in nursing education compared with the current emphasis on the acquisition of technical skills. A valid and reliable tool to measure caring behaviors of nursing students could help cultivate and motivate their caring behaviors. However, no instrument for measuring caring behaviors that is designed from an educational perspective is currently available. **Method:** The study consisted of 2 phases and 5 steps. The first phase was concerned with the development of content domains and items, whereas the second phase focused on the initial psychometric evaluation and item analysis of the scale. In phase I, content domains were defined on the basis of a qualitative study conducted by the researcher to examine the meaning of caring for critically ill patients in Egypt ($n = 22$). Scale items were generated, the instrument's content validity was evaluated, and the instrument was pretested. In phase II, the instrument was used to measure caring behaviors of 112 critical care nursing students. The derived data were used in factor analysis to determine the construct validity. **Results:** The resulting scale consists of 28 items in 3 subscales. The scale was proved to be valid with a content validity index of 0.97. Factor analysis showed 3 subscales in 5 iterations confirming construct validity. Item analysis for the overall scale and each of its 3 subscales showed a Cronbach α of 0.93, indicating high internal consistency reliability. Subscale I: Having relationship as a human being/presencing had a Cronbach α of 0.97, subscale II: preserving patients' dignity had a Cronbach α of 0.93, subscale III: comforting had a Cronbach α of 0.89, confirming that the 3 subscales are reliable as independent factors. **Conclusion:** The caring behaviors scale developed in this study

addressed the 3-dimensional construct of caring from the perspective of critically ill patients and was proved to be a valid and reliable instrument for measuring caring behaviors of nursing students. The scale provides critical care nursing educators with a practical means to motivate and encourage caring behaviors of their students through its use in evaluating clinical caring performance during the student-patient encounter.

RS21 Using APACHE Scores to Improve Intensive Care Length of Stay in a County Hospital

Jovie De Leon-Luck, Linne Almer; Alameda Health System, Highland Hospital, Oakland, CA, USA

Purpose: This hospital routinely uses the Acute Physiology and Chronic Health Evaluation (APACHE) scoring system to evaluate patients' outcomes in the intensive care unit (ICU). The purpose of this study was to use APACHE to identify opportunities to improve resource utilization across all services (medicine, surgery, trauma, and neurosurgery) admitting critical care patients. Although the APACHE project provides many outcome measures, this study focused primarily on ICU length of stay (LOS). **Background:** APACHE incorporates physiological measurements, age, prior illness, admitting diagnosis, and source of admission to predict ICU and hospital LOS and mortality. APACHE II was the tool used from 1995 to 2009. It was upgraded to APACHE IV in 2009 and is the version being used up to the present time. Of the many ICU scoring systems, APACHE has the best predictive performance in determining which aspects of critical care are most in need of improvement. **Method:** This retrospective study occurred at a single center, level II trauma, and public teaching hospital. APACHE IV data were used to compare predicted to actual ICU LOS for the 4 ICU admitting services (medicine, surgery, trauma, and neurosurgery) from 2012 to present. Data were collected from medical records during patients' first 24 hours in the ICU by 5 APACHE-certified critical care nurses. Interrater reliability was verified through random audits. Outliers needing improvement were identified and presented to the respective physician directors and multidisciplinary teams, who implemented modifiable changes in practice. Results of these efforts were evaluated by using the same method. **Results:** APACHE identified a significant increase in LOS among neurosurgical patients, from a mean of 4.06 days in 2012 to 7.37 days in 2013 (actual/predicted LOS ratio of 1.29 in 2012 to 1.61 in 2013) compared with other services (goal is a ratio < 1). After this problem was identified and educational

efforts were undertaken, the LOS decreased to 4.3 days (ratio 1.2) in the first quarter of 2014. The improvement in LOS from 7.37 to 4.3 days (down 3.07) by the neurosurgery department is significant when viewed in terms of dollars saved by the hospital: \$12 062.72 per patient or a total of \$103 168 (n=26) in the first quarter of 2014 (calculations based on a 2002 National Institutes of Health study). **Conclusion:** ICU care accounts for 24% to 35% of hospital costs, and monitoring length of stay can translate into sizable savings for the hospital. Use of a superior scoring system such as the APACHE was a valuable tool for identifying which ICU service offered the greatest opportunity for improvement in LOS. Surveillance continues in this area.

RS22 Collegiality, the Nursing Practice Environment, and Missed Nursing Care

Katherine Menard; Northern Michigan University, Marquette, MI

Purpose: To describe (1) nurses' perceptions of collegiality in their practice environment; (2) whether differences exist among nurse's perceptions of collegiality and personal/workplace characteristics; (3) relationships between collegiality and the nursing practice environment; (4) influence of working environment factors on missed nursing care; and (5) collegiality's influence as a mediator to the effect of the nursing practice environment on missed nursing care. **Background:** The practice environment of nurses has received attention in recent time related to a heightened awareness of the need for improved patient safety and an anticipated return of a nursing shortage. Existing literature has identified the presence and negative outcomes of unhealthy peer relationships among nurses (lateral/horizontal violence, bullying, and incivility), however; positive peer relationships (collegial) have received little attention in nursing research. **Method:** A nationwide convenience sample of registered nurses working at the bedside in the hospital setting participated in this study using online survey methods. Nurses were invited to participate via electronic mail from their employer, a state nursing organization, or a national specialty nursing organization. Of note, 46% of the sample in this study reported working in the adult intensive care setting. Data were collected via 4 instruments: The Survey of Collegial Communication (SCC), The MISSCARE Survey (MISSCARE), The Practice Environment Scale (PES), and a demographic instrument. Data were analyzed by using descriptive correlational methods. **Results:** The mean SCC score was 3.2 and component scores ranged from 2.79 (freedom from threat) to 3.59

(teamwork and mutual help). Collegiality and the nursing practice environment were correlated ($r=0.59$, $n=525$, $P<.01$). The regression model explained 35% of the variance in missed nursing care and included the following predictors: (1) nursing foundations of quality care, (2) staffing and resource adequacy, (3) collegiality, (4) nurse manager ability, leadership, and support, (5) nurse participation in hospital affairs. Path analysis presented the nursing practice environment as a predictor of missed nursing care with the collegiality partially mediating that relationship. **Conclusion:** Collegiality is present among nurses and does not differ on the basis of workplace/personal characteristics. Collegiality is positively correlated with the nursing practice environment. Practice environment factors influential to missed nursing care include nursing foundations of quality care, staffing/resource adequacy, collegiality, nurse manager ability, leadership, and support, and nurse participation in hospital affairs. Collegiality and outcomes of a collegial environment warrant further study.

RS23 Early Recognition of Delirium in Trauma Patients

Kari Johnson, Jodi Todd, Shelley Diana, Amanda McFarren; John C Lincoln North Mountain Hospital, Phoenix, AZ

Purpose: A lack of a validated assessment tool for delirium among patients in a trauma intensive care unit (TICU) was identified. The goal of this study was to evaluate the effect of the application of the Confusion Assessment Method for ICU (CAM-ICU) for early identification of delirium in patients in a TICU and evaluate change in knowledge regarding delirium management among nursing staff working in a TICU. **Background:** The highest rate of delirium occurs in hospitalized adults, and delirium is common in intensive care units, with a reportable 87% to 89% of cases linked to an increase in mortality, longer hospital stays, mechanical ventilation, long-term neuropsychological impairment, and a cost of \$4 billion to \$20.4 billion annually in the United States. Without use of a validated assessment tool, delirium goes undetected in more than 65% of ICU patients. Delirium can be a preventable adverse event if detected early. **Method:** Descriptive pre-post design in a TICU. Preintervention questionnaire measured nurses' knowledge regarding delirium. Education on application of the CAM-ICU and causes of and strategies for delirium. Patients were assessed for delirium with the CAM-ICU every shift for 1 month with data collection, followed by a postintervention questionnaire. Descriptive

statistics for nursing demographics, with continuous variables reported by using means and standard deviations and categorical variables reported as percentages. A McNemar test was used to measure differences from the presurvey to the postsurvey, comparing the proportions of staff who changed responses. Level of significance was set at $P<.05$. **Results:** A McNemar test was used to measure differences from preintervention to postintervention survey, comparing participants' responses from one direction to the opposite direction. Participants' responses to, "Delirium is largely preventable," differed significantly ($P=.04$) from before to after the intervention. The statement "We oversedate most of our patients in ICU" was marginally significant ($P=.06$). No significant risk factors were identified in delirium development in the ICU. Haldol was the medication of choice for treating delirium, with an increase in use ($P=.06$) after the intervention. The 2 most common responses to "List most serious medical complications associated with delirium" on the preintervention and postintervention surveys were oversedation and falls. **Conclusion:** This study represents a health care team's change in knowledge regarding delirium in the TICU. The health care team believed that delirium in patients admitted to a TICU is common, can result in serious medical complications, and can be prevented through early screening. Results identified the effectiveness of using the CAM-ICU to help nurses identify delirium in patients. Early identification of delirium and risk factors associated with delirium can be the first step in preventing delirium.

RS24 Neonatal Intensive Care Unit Nurses' Perceptions of Obstacles and Supportive Behaviors in End-of-Life Care

Ann Rogerson, Janelle Macintosh, Karlen Luthy, Renea Beckstrand; Brigham Young University, Provo, UT

Purpose: To determine the most highly rated obstacles and supportive behaviors in end-of-life (EOL) care as rated by nurses in neonatal intensive care units (NICUs) across the United States. Research questions were, What are the sizes of listed obstacles in providing EOL care to neonates as perceived by a national sample of NICU nurses? What are the sizes of listed supportive behaviors in providing EOL care to neonates as perceived by a national sample of NICU nurses? **Background:** Losing an infant is one of the most difficult challenges a parent may face. To improve EOL care for dying neonates and their families, NICU nurses need to overcome highly ranked obstacles and implement highly ranked supportive behaviors. Research addressing both

common obstacles and supportive behaviors in the NICU is limited. Understanding the size of obstacles and supportive behaviors is the next step to better enabling NICU nurses nationally to provide quality care. **Method:** This was a descriptive quantitative study of a geographically diverse, random national sample of 1058 NICU nurses who were members of the National Association of Neonatal Nurses (NANN). Mailing information was purchased from NANN. The National Survey of NICU Nurses' Perceptions of End-of-Life Care questionnaire was adapted from 4 similar surveys with input from experts in the field and a pretest group of experienced NICU nurses. Two mailings of the questionnaire with a cover letter and return envelope yielded a response rate of 26%. SPSS software was used for data analysis. Obstacle and supportive behavior items were ranked from highest to lowest on the basis of mean scores. **Results:** Three themes emerged among the highest rated obstacles including obstacles relating to families, communication, and ethical dilemmas. The highest rated obstacle was families not being ready to acknowledge that their infant had an incurable condition. The lowest rated obstacle was unit visiting hours being too liberal. Top-rated supportive behaviors were related to families and physicians. Those associated with nurses were ranked lowest. The highest rated supportive behavior was allowing family members adequate time to be alone with the infant after he/she died. The lowest rated supportive behavior was the nurse having had their own previous experience with the death of a family member. **Conclusion:** NICU nurses need to recognize as bereaved family members experience grief and employ highly ranked supportive behaviors to aid in coping. Both nurses and physicians should assess the communication needs of the families and implement behaviors that promote trust and understanding. Efforts should be made to more quickly align the plan of care with the projected outcome to limit both infants' suffering and nurses' distress from inappropriate use of life-extending measures.

RS25 Patients' Sleep Satisfaction, Noise, and Sleep Barriers in a Cardiothoracic Intensive Care Unit

Myra Ellis, Heather Pena, Tracy Herman, Megan McCormick, Mary Lindsay; Duke University Hospital, Durham, NC

Purpose: To assess (1) patients' reported satisfaction with sleep quality, (2) patients' perception of noise levels in the cardiothoracic intensive care unit (CTICU), and (3) patients' perceived barriers to sleep in the CTICU. Patient reported sleep barriers

will be used to develop and implement a comprehensive initiative to improve patients' sleep quality. **Background:** Patient-reported sleep quality in the hospital is poor. Patients' reports of sleep summarized in a review of ICU patients included little or no sleep, poor quality, frequent awakenings, and daytime sleepiness. Patients attributed sleep disruption to noise, treatments, pain, thirst, and anxiety. Persistent episodes of sleeplessness lead to many physiological disorders. In addition, our hospital quietness satisfaction is low in the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey. **Method:** In this pre-post implementation study, a convenience sample of 146 adult CTICU patients were asked to rate the quality of their sleep the previous night as adequate, fair, or poor. Patients were also asked about the noise levels in the CTICU and any perceived barriers to their ability to sleep. The sleep satisfaction questionnaire was developed on the basis of the Richards-Campbell Sleep Questionnaire. Data were collected during the morning. Patients' responses to goals 1 to 3 were analyzed by using frequencies, proportions (questionnaire items), and content analysis (field text for "other"). The same data will be collected 3 months after implementation of sleep guidelines. **Results:** Fifty-eight patients (39.7%) described their sleep as adequate. The remaining patients described their sleep as fair (n = 30, 20.5%) or poor (n = 58, 39.7%). When asked to give their perception of noise levels in the ICU at night, most patients reported a quiet sleep environment (n = 107, 73.3%). The remainder of patients reported a somewhat noisy (n = 32, 21.9%) or noisy (n = 7, 4.8%) sleep environment. The most commonly reported barriers to sleep were pain (n = 23, 15.8%), anxiety (n = 12, 8.2%), and nurse disturbances (n = 14, 9.6%). Other barriers to sleep were procedures, machines, alarms, staff noise, thirst, "just couldn't sleep," and history of problems with sleep in general. **Conclusion:** The majority of CTICU patients in our study report fair or poor sleep quality. A majority reported reasons that are modifiable, environmental factors. Patient-reported sleep barriers will be used to develop and implement a comprehensive initiative to improve patients' sleep quality.

RS26 A Nonpharmacological Approach to Decrease Restraint Use

Kari Johnson, Valerie Curry; John C Lincoln North Mountain Hospital, Phoenix, AZ

Purpose: To evaluate an alternative intervention in decreasing use of restraints in patients admitted to a trauma intensive care unit (TICU) who have

delirium according to the Confusion Assessment Method for the ICU (CAM-ICU positive) and evaluate nurses' perceptions regarding restraints. Restraints are still used for patient safety despite evidence of increased fall injuries. Reasons for continued use of restraints by nurses include lack of alternative devices, education, and nurses' attitudes. Availability of alternative interventions may decrease barriers to reducing use of restraints. **Background:** Patient restraints are used more frequently in an acute care setting because of the increased use of invasive devices such as arterial catheters, endotracheal tubes, and intravenous catheters. Reasons for restraint use include patients' altered mental status, fall prevention, and preventing removal of medical devices. Restraints can increase functional and cognitive decline and duration of delirium. Therapeutic interventions represent a change and are considered primary in preventing delirium. **Method:** Observational design, patients admitted to a 22-bed TICU who were CAM-ICU positive. The Perceptions of Restraint Use Questionnaire (PRUQ) was used to measure nurses' reasons for using restraints and fall risk. Restraints were measured by using National Database of Nursing Quality Indicators. Development of pain, agitation, delirium (PAD) protocol and Awake Breathing Coordination Delirium and Exercise Tool for Ventilated Patients. Nurses were educated on nonpharmacological interventions of the PAD protocol. Patients who were CAM-ICU positive were provided an alternative device. Descriptive statistics for nursing demographics, frequencies to evaluate relationship among variables, and mean and standard deviations to report use of restraints. **Results:** Analyzed 56 completed questionnaires. Mean PRUQ score overall was 3.57 (possible range, 1-5), indicating that nurses had a positive attitude toward use of restraints in certain circumstances. The highest ranked reason for using restraints was to protect patients from falling out of bed (37 or 72.5%) and to protect patients from falling out of a chair (34 or 66.7%). Mean (SD) for use of restraints per 1000 patient days before the intervention was 314.1 (35.4); after the intervention, restraint use decreased to 237.8 (56.4; $P = .008$). From December 2013 through April 2014, out of 219 nurse-initiated nonpharmacological interventions with CAM-ICU positive patients, 197 patients scored CAM-ICU negative after the intervention. **Conclusion:** The ICU setting has historically focused on acute care treatments for optimal outcomes; however, delirium may occur as a consequence of acute care treatments. Nonpharmacological interventions are aimed at preventing or reversing factors that contribute to

delirium. This study demonstrates an innovative intervention that is low risk, noninvasive, has no adverse effects, and can be implemented at the bedside by nurses. Nurses' perceptions can enhance optimal outcomes.

RS27 Comparison of Hospital Noise Levels in 2 Cardiothoracic Intensive Care Units

Myra Ellis, Lynn McGugan, Heather Pena, Debra Farrell, Catherine Shuford, Megan McCormick, Tracy Herman, Mary Lindsay; Duke University Hospital, Durham, NC

Purpose: To (1) establish a baseline measurement of the noise levels within the existing intensive care unit as compared with the World Health Organization (WHO) recommendations for acute care environments, and (2) determine if noise levels improved after transitioning to a newly designed patient-centered care environment. **Background:** Hospital environments expose patients to high levels of noise that existing evidence suggests is detrimental to their healing and recovery. The WHO identifies an acceptable noise level as 30 to 35 dB. In our cardiothoracic care unit, patients reported dissatisfaction with environmental noise contributing to sleeplessness, anxiety, and general disruption of needed rest following surgery. **Method:** We used a prospective, pre-post implementation design to evaluate the difference in noise level and patient satisfaction with environmental sound. We monitored parameters before and after moving to a new patient-centered care environment. We measured noise levels (in decibels [dB]) in both environments (existing ICU [A] and newly designed ICU [B]) by using a Quest sound monitoring device. Parametric and nonparametric statistics were used to describe the samples. Differences in noise levels were analyzed by using a Student t test for independent groups. Alpha was established at $P = .05$. Baseline scores on the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey were used to determine patients' satisfaction with quietness (June 2013 and August 2013). **Results:** No significant difference was found between the 2 ICU environments. The mean overall unit noise levels were well above the WHO recommendations of 30 to 35 dB; unit A (3200) = 55.6-69.9 dB and unit B (7W) = 56.1-62.8 dB. Sound levels in empty rooms (with no equipment running) also exceed the WHO recommendation (44-54 dB). Peak sound levels as high as 85 to 90 dB were recorded, far above the recommended 45-dB limit for noise events. Analysis of sound graphs show many sound peaks above the shift mean of 56.4 dB during the early morning hours. HCAHPS scores reported 43%, 49%, and

63% satisfaction with quietness for the 3 units discharge units. **Conclusion:** Even though the new patient-centered environment is quieter overall, the noise levels remain high because of direct patient care activities. Periods of increased noise levels are attributed to nursing care functions (eg, bathing, walking, tests) and represent an opportunity for future improvement. A patient-centered sleep intervention and staff education is planned as the second phase of this study.

RS28 What Do Critical Care Nurses Say to Their Patients?: A Study of Nurse-Patient Communication in Egypt

Mary Gergis; School of Nursing, Maryland University, Baltimore, MD

Purpose: To explore the state of nurse-patient communication in the intensive care units in Egypt through direct observation of nurse-patient interactions. **Background:** Nurse-patient communication that is therapeutic is essential for the expression of caring in nursing. Studies presented evidence of the benefits of effective nurses' communication with critically ill patients. However, little is known about the state of nurse-patient communication in the intensive care units in Egypt. **Method:** This nonparticipant observation study was conducted at 2 critical care units in a university hospital in Alexandria, Egypt. Participants included 66 critical care nurses who were involved in direct patient care. A communication observation chart was used to monitor nurse-patient communication. Each nurse was observed 3 times including 1 morning and 2 evening shifts. Data were collected in a total of 198 observations for 6 months. During observation, nurse-patient communication was transcribed and timed. Transcripts along with observation charts were analyzed to identify content, duration, and characteristics of nurse-patient interactions. **Results:** Study results showed that one-third of observations were characterized by absence of nurse-patient communication. Most interactions were initiated by the nurse (62.3%) and occurred during physical care (70.1%). Nurses' verbal communication content was dominated by "requests or commands" (29.5%) and "procedural/task intentions" (27.9%), whereas "reassurance/sharing/inspiring hope" constituted only 7.1% of interactions. Negative nurses' communication was observed in 4.9% of interactions. In addition, nonverbal communication in the form of eye contact and expressive touch was absent in the majority of interactions (60.8%). **Conclusion:** The study showed that the most

nurse-patient interactions were brief task-related interactions while more in-depth social interactions were lacking. The findings highlight the need for formal support systems and continued education for critical care nurses about the important effects of nurse-patient communication on the outcome of critical illness and how to overcome various communication barriers imposed by the nature of critical illness.

RS29 Catheter-Associated Urinary Tract Infection–Stroke Connection

Tammy Richardson, Julia Retelski; Carolinas Medical Center, Charlotte, NC

Purpose: To determine if the relative risk of development of catheter-associated urinary tract infection (CAUTI) is higher in patients with a diagnosis of stroke than in patients without a diagnosis of stroke. **Background:** CAUTIs occur in approximately 28 million patients a year. Increases in incidence of CAUTIs with stroke are related to stroke-induced immunosuppression, bladder dysfunction, and increased likelihood of placement of an indwelling urinary catheter (IUC). Approximately 40% of stroke patients have significant bacteriuria. Data relating to incidence of UTI in stroke patients are dated; current analysis of CAUTI incidence in stroke patients is needed. **Method:** Retrospective chart review of 590 patients admitted to a tertiary teaching facility in a urban area between January 1, 2011 and December 31, 2012. Inclusion criteria: any sex, ages 18-95 years old, white and African American only. Participants were matched for sex, race, age within 3 years, and admission dates within 95 days. The study data were analyzed via descriptive statistics including mean/standard deviation. The primary analysis was a χ^2 test (SAS, version 9.1) to compare the percentages of patients who had infection develop in each of the 2 groups. Baseline demographic variables were compared between the 2 groups. A 2-tailed *P* value less than .05 was deemed statistically significant. **Results:** A total of 590 patients were analyzed: 295 patients with a stroke and IUC placement were compared with 295 nonstroke patients with an IUC placement. CAUTI was diagnosed in 22 patients as follows: stroke-only patients (17), nonstroke patients (4), and paired patients (1). Characteristics of both stroke and nonstroke reveal the following means: age, 61.1-69.8 years; hospital stay, 18-20.3 days; intensive care unit stay, 13.0-13.5 days; IUC days, 10.7-15.5; days to infection, 8.6-10.8. A CAUTI was diagnosed in 17 (5.8%) of 295 stroke patients and 4 (1.4%) of 295 nonstroke patients ($\chi^2 = 6.9$, *df* = 1, 2-tailed *P* value = .009).

Conclusion: Analyzing patients with CAUTI and stroke diagnosed reveals a patient who is approximately 8.7 years younger, has a hospital stay 2.3 days longer, and an intensive care unit stay 0.5 days longer than nonstroke patients. In addition, indwelling urinary catheters are in place 4.8 days less and the mean number of days from insertion to CAUTI development is 2.2 days less than in patients without stroke. Stroke patients are approximately 3 times more likely than nonstroke patients to have a CAUTI develop.

RS30 Proactive Versus Reactive Management of Clinical Deterioration: The Benefits of Critical Care Outreach

Meredith Borak, Iliana Staneva, Trevor Yuen, Dana Peres Edelson; University of Chicago Medicine, Chicago, IL

Purpose: To determine whether the addition of proactive rounding on patients at risk for clinical deterioration outside of intensive care units (ICUs) would increase use of the rapid response team (RRT) and decrease cardiac arrest rates in general care areas. **Background:** A critical care outreach team (CCOT) pilot program was introduced in February 2013 with proactive rounding on high-risk patients outside of the ICU, identified by recent transfers out of the ICU and query of the charge nurses on medical-surgical inpatient units. Previously, RRT activation was dependent on clinicians' recognition of a change in a patient's condition. Such changes can be subtle and often go unnoticed, which results in a failure or delay in calling for help. **Method:** The pre-CCOT time period was from January 2012 to January 2013, and the post-CCOT period was from March 2013 to March 2014. February 2013 was excluded as it was the roll-out period. The pilot program had capacity to round in only 1 of 2 adult hospitals, accounting for 46% of medical-surgical beds, thereby setting up a natural before-and-after experiment. The before-and-after effects on the number of RRT activations and the number of in-hospital cardiac arrests (IHCA) in general care areas were compared in the pre and post control and pilot inpatient units using difference-in-differences tests and χ^2 tests where appropriate. All rates are reported in per 10 000 patient-days. A *P* value of .05 denotes significance. **Results:** There were 17 531 admissions in the pre-CCOT time period and 15 630 admissions in the post-CCOT period. Pre-CCOT there were 183 RRTs and 20 IHCA in the control group and 202 RRTs and 28 IHCA in the pilot group, compared with 270 RRTs and 21 IHCA in the control group and 355 RRTs and

18 IHCA in the pilot group in the post-CCOT period. The RRT rate increased 33% (from 27.0 to 40.1) in the control group (*P* < .001) and increased 53% (59.4 to 125.9) in the pilot group (*P* < .001). The IHCA rate increased 6% (from 2.95 to 3.12) in the control group (not significant), while the IHCA rate decreased 23% (from 8.24 to 6.38) in the pilot group (not significant). The difference-in-differences test represented a change of 53 RRTs and -2.03 IHCA per 10 000 patient-days. **Conclusion:** The implementation of a CCOT with proactive rounding increased use of the RRT and reduced IHCA rates in general care areas. Units that had proactive rounding by the CCOT saw a larger increase in RRT activations than did units without. Because of the rarity of cardiac arrests in general care areas, the study was underpowered to detect a difference in cardiac arrest rates in general care areas.

RS31 Patient-Controlled Sedation in Patients Receiving Mechanical Ventilation: Is This Feasible?

Mary Fran Tracy, Linda Chlan, Craig Weinert, Deb Skaar, Kay Savik, Breanna Hetland; University of Minnesota Medical Center, Minneapolis, MN

Purpose: The overall aim of this randomized study was to evaluate the feasibility of the use of dexmedetomidine (DEX) patient-controlled sedation (PCS) in patients receiving mechanical ventilation (MV) for 5 days as compared with usual nurse-administered sedation (UC). General overall findings are reported with particular emphasis on the feasibility of this intervention from a nursing care perspective. **Background:** Prolonged MV can lead to significant complications (eg, ventilator-acquired conditions and ICU-acquired weakness). Practice guidelines suggest that the optimal goal for MV patients is light sedation, which may improve the likelihood of decreased time on the ventilator, shorter stay in the intensive care unit (ICU), and increased early participation in care. Patients receiving MV require and may desire various levels of sedation. It would be ideal if they could direct their own sedation needs if deemed physiologically appropriate. **Method:** Thirty-seven patients receiving MV in medical and surgical ICUs met inclusion criteria, and they (or their proxies) consented to participate with random assignment to either DEX PCS (*n* = 17) or usual nurse-administered sedative therapy (*n* = 20) administered for up to 5 days. For DEX PCS patients, ICU nurses followed a sedation algorithm protocol of basal DEX infusion titrated up and down depending on the number of patient-administered DEX bolus doses per 2 hour period. The protocol allowed

supplemental sedative doses to be administered by the ICU nurse. **Results:** The sample was 60% male; 89% white, 5% black, 3% Asian; median age 52 (range, 18-78) years. Respiratory failure was the main reason for ventilator support (46%). Scores on the Acute Physiology and Chronic Health Evaluation (APACHE) III were not significantly different between groups (55 UC vs 65 DEX PCS). No DEX PCS patients became CAM-ICU positive (delirium present); 6 UC patients became CAM-ICU positive on protocol. Nurses followed the algorithm on 78% of days, 75% of evenings, and 65% of nights, which may be related to the protocol's complexity. Twelve patients (71%) received at most 1 supplemental sedative dose, while only 2 patient (12%) received more than 10 supplemental sedative doses in 5 days. DEX PCS patients were satisfied/very satisfied with their ability to self-administer medication (92%). **Conclusion:** PCS is a feasible intervention in patients receiving MV. Nurses demonstrated the ability to use this complex protocol successfully with few supplemental sedative medications needed, and patients reported high satisfaction with PCS. Further research is needed to clarify MV populations that would most benefit from PCS and to simplify the protocol for nurses. Research data to optimize sedative administration on the basis of a patient's alertness and desired involvement in self-managing anxiety is desirable. Supported by R21 NR012795-01A1 NINR, NIH & Hospira.

RS32 Femoral Versus Percutaneously Inserted Axillary-Subclavian Intra-aortic Balloon Pump

Frederick Macapagal, Lisa Green; Houston Methodist Hospital, Houston, TX

Purpose: To compare the complication rates between femoral insertion of an intra-aortic balloon pump (IABP), which is the standard practice, and a new procedure developed and implemented in our institution: percutaneous insertion of axillary-subclavian intra-aortic balloon pump (PAIABP). To determine the advantages/disadvantages of the PAIABP procedure compared with the traditional femoral insertion of the IABP. **Background:** Patients awaiting a heart transplant who are nonresponsive to medical therapy have limited treatment options. One is having an IABP inserted while waiting for a donor heart. Numerous studies have addressed complications of femoral IABP (the standard practice). We compared the complication rates with PAIABP vs femoral IABP to determine the safety and efficacy of this new procedure. **Method:** This is a retrospective study of pretransplant PAIABP patients in the coronary care

unit from 2007 to 2013. We did a literature review of femoral IABP complications and a chart review of PAIABP patients. Mean, standard deviation, and percentage were used to calculate gathered data. Sample size, 45 patients: 35 males (77.8%), 10 females (22.2%); age 56.1 (SD, 10.2) years; pre-transplant IABP days, 24.98 (SD, 25.03), range, 2-147 days. Limitations of the study: small sample size, single institution results compared with large amounts of data on femorally inserted IABPs.

Results: This study yielded the following results: site infection, PAIABP 1 (2%) vs femoral IABP (30%); limb ischemia, PAIABP 3 (7%) vs femoral IABP (30%); mobility, PAIABP 45 (100%) vs femoral IABP (0%) due to mandatory bedrest requirement; bleeding related complications, PAIABP 2 (4%) vs femoral (4.6%). The incidence of catheter malposition/bedside catheter adjustment is high: PAIABP 20 (44%), malposition requiring IABP catheter exchange in the catheterization laboratory, PAIABP 7 (16%). No data for femoral IABP available in this category. **Conclusion:** PAIABP for patients awaiting a heart transplant is a practical treatment alternative to femoral IABP, with 100% patient mobility and lower incidence of site infection and limb ischemia. Bleeding complications are comparable to those with femoral IABP. High incidence of catheter malposition requiring bedside adjustment or catheter exchange in the catheterization laboratory can be attributed to increased mobility of patients resulting in increased PAIABP catheter movement.

RS33 Setting the Platform: Exploring the Contributions of Hospital-Based Organ Donation Memorials

Charles Reed, Elma Fonseca, Sara Gill, Regina Reed, Stacy Foremski; University Hospital, San Antonio, TX

Purpose: To explore the experience of family participation at a hospital-based memorial service for family members whose loved one became an organ donor. Additionally, to provide an understanding of the meaning and effect of attending or not attending a hospital-based memorial service for family members whose loved one became an organ donor. **Background:** Very little is known about the meaning and impact of organ donor memorials, and even less is known about hospital-based memorial services. Memorial events for organ donor families are believed to provide a means of recognition for those who became organ donors. Organ procurement organizations representing 941 hospitals reported that of the 476 that were considered donor hospitals, only 42 hospitals organize annual organ donation

memorial events. No research exists on hospital-based memorials. **Method:** Using a qualitative design, families who were invited to attend a hospital-based organ donation memorial at a level I trauma center were invited to participate in this study. Donor family participants were interviewed in person and over the telephone. All interviews were recorded and transcribed verbatim. Qualitative content analysis using QDA Miner was used to analyze the data. Five themes were identified: "Being able to connect," "Into public domain," "New tradition," "Not forgotten," and "Makes the hole in your heart smaller." **Results:** "Being able to connect" represented a connection to the loved one and meeting others who share a similar experience. The theme, "Into public domain" represented the belief that memorial events open the door for conversations that may not have occurred. "New tradition" conveyed a remembrance of the loved one while establishing a new means to maintain a relationship with their loved one. "Not forgotten" represented donor families' pursuit of activities to keep their loved one's memory alive while acknowledging loved ones' decisions to donate. "Makes the hole in your heart smaller" expressed by most, represented feelings of healing and coming to terms with the passing of their loved one. **Conclusion:** Participants viewed hospital-based donor memorials solely as beneficial. It provided a platform for growth, healing, recognition, and awareness. It was a mechanism of connection to the one lost and to others for support. It was a means of establishing new traditions of remembrance. It provided an opportunity to increase awareness of organ donation and its impact. The memorial itself has value and benefit even to those who do not attend by providing a mechanism of connection.

RS34 Continuous Lateral Rotation Therapy: Good for the Lungs, Safe for the Skin? A Feasibility Study

*Robert Anderson, Lynn Comried, Joseph Greiner;
University of Iowa Hospitals and Clinics, Iowa City, IA*

Purpose: To evaluate the effect of continuous lateral rotation therapy (CLRT) on posterior skin integrity by asking the following questions: Are there differences in skin pressure readings, skin integrity, or perceived discomfort among 3 positioning scenarios: CLRT only, CLRT with static wedge (30°), and

static wedge (30°)? **Background:** CLRT is a treatment used in intensive care units for early mobilization of patients receiving mechanical ventilation by mechanically rotating them laterally left-center-right in bed. Research supports its use for the treatment of pulmonary diseases and for the prevention of ventilator-associated pneumonia by mobilizing secretions in the lungs. Some in health care believe that CLRT is not sufficient to allow capillary reperfusion, which may lead to tissue damage. This study will add to this topic's limited literature/research. **Method:** Ten healthy participants provided consented via procedures approved by the institutional review board. A Hill-Rom Total Care Sport bed was equipped with a pressure-mapping device, covering the entire mattress surface. Participants were asked to lie motionless in each positioning scenario for 30 minutes. The scenarios included (1) CLRT at 100%, no pause; (2) CLRT at 100%, no pause, static wedge (30°); and (3) static wedge (30°). A research assistant examined posterior skin for erythema after each scenario; self-reported pain scores were reported by study participants and recorded after each positioning scenario. **Results:** A linear mixed-model analysis for repeated measures was used to compare mean and maximum interface pressure. Maximum pressures were recorded to quantify the amount of pressure on capillary beds while mean pressures were recorded to illustrate a pressure-over-time effect. CLRT alone demonstrated significantly lower interface pressures on ischial tuberosities ($P < .05$) as compared with any use of a static wedge. Significantly higher pressures were noted on the heels in CLRT alone ($P < .05$). No difference noted between static wedge alone and CLRT with wedge. Pain noted in wedge positioning: 7/10 patients; CLRT with wedge: 6/10 patients; CLRT alone: 1/10 patients. No erythema or breakdown noted. **Conclusion:** The results of this feasibility study support the use of CLRT not only to decrease pressure on capillary beds but also to decrease patients' pain. This study serves as a starting point for future research to further evaluate the effect of CLRT on posterior skin integrity in the clinical setting. Despite the fact that future research is necessary to confirm these findings, CLRT should be used more readily and for longer uninterrupted periods of time in immobile ICU patients receiving mechanical ventilation.