Long Beach Memorial and Miller Children’s & Women’s Hospital Long Beach

7th Annual Nursing Research Conference

Abstract Submissions

May 7, 2015
<table>
<thead>
<tr>
<th>Poster #</th>
<th>Author</th>
<th>Additional Authors</th>
<th>Organization</th>
<th>Title</th>
<th>Selection Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mary Beiermann, RN, BSN, CCRN-CSC</td>
<td>Amanda Brubaker, RN, BSN, CCRN; Peggy Kalowes, RN, PhD, CNS, FAHA</td>
<td>LBM/MCWHLB</td>
<td>ECG Memento-An Innovative Approach to Adult Bereavement Care: a Pilot Study</td>
<td>Research Study</td>
</tr>
<tr>
<td>2</td>
<td>Shannon Castrejon, RN</td>
<td>Sadeeka Al-Majid, RN, PhD</td>
<td>OCM</td>
<td>Exercise as an Adjunct Treatment in the Management of Clinical Depression</td>
<td>Research Study</td>
</tr>
<tr>
<td>3</td>
<td>Paulina Chhay, MSN, RN, CNIII</td>
<td></td>
<td>LBM/MCWHLB</td>
<td>The Feasibility of Decreasing Falls on a Medical/Surgical Unit through Surveillance</td>
<td>Performance Improvement Project</td>
</tr>
<tr>
<td>4</td>
<td>Lucile Dinh, MSN, MPH, RN, CNS</td>
<td>Peggy Kalowes, RN, PhD, CNS, FAHA; Melissa Dyo, RN, PhD, NP-C; Martha Gadberry, RN, BSN, CCRN</td>
<td>SBM</td>
<td>A Healthy Way to Vent: Capnography Monitoring in the PACU</td>
<td>Performance Improvement Project</td>
</tr>
<tr>
<td>5</td>
<td>Jessica DeVries, RN, MSN, CCRN</td>
<td>Peggy Kalowes, RN, PhD, CNS, FAHA; Melissa Dyo, RN, PhD, NP-C; Martha Gadberry, RN, BSN, CCRN</td>
<td>LBM/MCWHLB</td>
<td>Exploring the Prevalence and Determinants of Moral Distress in Adult, Pediatric, and Neonatal Intensive Care Unit Nurses, Compared to Medical/Surgical Nurses: A Comparative Descriptive Study</td>
<td>Research Study</td>
</tr>
<tr>
<td>6</td>
<td>Maryam Fathy, DNP, MSN, RN, NP-C</td>
<td></td>
<td>SBM</td>
<td>Walk this Way!: An Evidence Based Practice Project Guiding Early Ambulation in Post-Cardiac Catheterization Patients Receiving a Vascular Closure Device</td>
<td>Research Study</td>
</tr>
<tr>
<td>7</td>
<td>Maria Gutierrez, BSN, RN, CPAN</td>
<td>Lucile Dinh, MSN, CNS; Gina Hernandez, BSN, RN, CCRN; Eluna Amor, BSN, RN, CCRN; Iidy Vitez, BSN, RN, CCRN; Tracy Semrow, BSN, RN, CPAN</td>
<td>SBM</td>
<td>Calm or Crisis? Implementation of Crisis Checklists for Emergencies in the Care of the Post Cardiac Surgery Patients in a PACU Setting</td>
<td>Performance Improvement Project</td>
</tr>
<tr>
<td>Poster #</td>
<td>Author</td>
<td>Additional Authors</td>
<td>Organization</td>
<td>Title</td>
<td>Selection Criteria</td>
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<td>--------------------</td>
</tr>
<tr>
<td>8</td>
<td>Sharyn Flavin, DNP, CPNP, ACNP</td>
<td>Tricia Morpew, MSc; George Smith, DNP, NP; Peggy Kalowes, RN, PhD, CNS, FAHA; Inderpal Randhawa, MD</td>
<td>LBM/MCWHLB</td>
<td>Adult Cystic Fibrosis PHQ-9 Depression Screening as a Routine Intervention Strategy in Evaluation of Quality of Life &amp; Self-Care Agency</td>
<td>Research Study</td>
</tr>
<tr>
<td>9</td>
<td>Cindy Gotz, CHsc, MPH, C.H.E.S</td>
<td>Joan Leafman, PhD</td>
<td>LBM/MCWHLB</td>
<td>How is Quality of Life Affected by Life Stressors in Post-Treatment Cancer Survivors?</td>
<td>Research Study</td>
</tr>
<tr>
<td>10</td>
<td>Suzanne Graf, RN, MSN, BSN, PHN</td>
<td>Raquel Paige, RN, MSN, CPN, CRRN; Valerie Messina, RN, BSN, CWCN</td>
<td>Mount Saint Mary’s University</td>
<td>The Impact of End-of-Life Care Training on Medical-Surgical Nurses</td>
<td>Research Study</td>
</tr>
<tr>
<td>11</td>
<td>Peggy Kalowes, RN, PhD, CNS, FAHA</td>
<td>Patricia Long, RN, MSN</td>
<td>LBM/MCWHLB</td>
<td>Reducing Medical Device Related Pressure Ulcers: An Interprofessional Approach Using Data &amp; Innovation to Improve Adult &amp; Pediatric Outcomes</td>
<td>Performance Improvement Project</td>
</tr>
<tr>
<td>12</td>
<td>Cindy Peters, RN, MSN, ACNP-BC</td>
<td>Raquel Paige, MSN, RN, CNS, CPN, CRRN; Anna Jacob, BSN, RN, CPN</td>
<td>LBM/MCWHLB</td>
<td>NP-Led Initiative to Improve the Heart Failure Education Process: A Novel Method to Enhance Patient Education/RN Documentation Using a Toolkit and Unique EMR Scripting</td>
<td>Performance Improvement Project</td>
</tr>
<tr>
<td>13</td>
<td>Arlene Taves, MSN, RN, CNS</td>
<td>Raquel Paige, MSN, RN, CNS, CPN, CRRN; Anna Jacob, BSN, RN, CPN</td>
<td>LBM/MCWHLB</td>
<td>Effect of ICU Transitional Level Care Communication Bundle to Reduce Relocation Anxiety and Improve Satisfaction: A Quasi-Experimental Study</td>
<td>Research Study</td>
</tr>
<tr>
<td>14</td>
<td>Connie von Kohler, MSN</td>
<td>Diane Beck, BSN; Cathy Villarreal, BSN</td>
<td>LBM/MCWHLB</td>
<td>Interprofessional Participation in a Statewide Collaborative to Recognize and Treat Hypertension in Pregnancy</td>
<td>Performance Improvement Project</td>
</tr>
<tr>
<td>15</td>
<td>Barbara Vuncanon, RN, BSN, CNOR</td>
<td>Nika Carlson, RN, MSN; Sadeeka Al-Majid, RN, PhD; Linda Maurice, RN, CNOR; Janet Moran, RN, BSN, MBA, CNOR</td>
<td>OCM</td>
<td>Effect of Offloading Heels on Sacral Pressure</td>
<td>Research Study</td>
</tr>
</tbody>
</table>
Background: Value of bereavement care is understood, yet a gap exists in standards in intensive care units (ICUs) for interventions. Object Linking is used in pediatrics. Little data exists to validate this in adults.

Objective: Evaluate impact of electrocardiogram (ECG) Memento©, (laminated 3" ECG tracing) as a transitional object for families moving to bereaved status, and evaluate nursing practice/satisfaction about bereavement care using the ECG Memento©.

Methods: Prospective, post-test survey design was used to observe and describe the effect of the ECG Memento© on the anticipated bereavement process among families who have lost a loved one in the Intensive / Intermediate Cardiac Care Units. Sample of 50 patient/family (dyads) actively dying with Do Not Resuscitate (DNR)/Comfort Care/Hospice/Palliative Care order; or recently deceased.

Instruments: Families - Satisfaction with Bereavement Experience Questionnaire (SBEQ). Nurses - Quality of Dying and Death questionnaire (QODD).

Data: Preliminary: 12/50 patients; 66% male; mean age 73; mean ICU stay 7.3 days; 58% > 3 days. Family member -91.7% female; age (66.6%); SBEQ: Completed-(41%) spouse; (58%) children; Scores (1=very satisfied, 4=very dissatisfied); Hospital Experiences 1.6 (1.1SD); Personal Responses 1.8 (0.9SD); Ritual Experiences 1.4 (0.8SD), Post Hospital Experiences 2.1 (1.2SD). Families found ECG Memento© (16.7%) extremely helpful; (50%) viewed ECG daily; (50%) found very helpful/viewed 2-3 days/week :25% rarely viewed it. 22 nurses completed QODD; 11.8 years ICU experience; >57.5% Baccalaureate; Nurses rated patient dying experience-14% pain controlled; 19% breathing comfortably; 50% dignity/self-respect; 68% time with loved ones; 87.5% spiritual support. RN QODD (0-10 scale); mean 8.6 (1.8SD).

Conclusion: Impact of this novel, pilot study, shows the ‘ECG Memento©’ provides a tangible link to aid grieving families, yet, larger studies are needed. 100% nurses described ECG Memento© as well received, however, only 40% felt patient symptoms were controlled.
EXERCISE AS AN ADJUNCT TREATMENT IN THE MANAGEMENT OF CLINICAL DEPRESSION
Shannon Castrejon, RN
Sadeeka Al-Majid, RN, PhD
Orange Coast Memorial

**Background:** Clinical depression affects more than 120 million adults worldwide, and is rated one of the leading causes of disability in the United States. Depression is associated with substantial disability, mortality, morbidity, and suffering for patients and their families. It can significantly reduce the quality of life of individuals affected. Traditional management of depression includes pharmacotherapy, which can carry social stigma, elicit undesirable side effects, and result in poor compliance. Exercise is increasingly being considered as an adjunct treatment for depression since it has no side effects and provides additional health benefits. In fact, evidence suggests that exercise may be as effective as medication for achieving remission of depression (Blumenthal et al., 2007). Research studies have demonstrated that regular participation in exercise can decrease depressive symptoms such as insomnia, feelings of guilt, sadness, hopelessness, and suicidal thoughts (Blumenthal et al., 2007; Cooney et al., 2013; Perraton et al., 2010; Rethorst, Wipfli, & Landers, 2009; Stanton & Happell, 2013).

**Purpose:** The purpose of this project was to develop an evidence-based pamphlet on the effectiveness of exercise as a complementary treatment for clinical depression. This tool can be used by nurses to educate patients on benefits of exercise for the management of depressive symptoms.

**Methods:** The databases of CINAHL, PubMed, and The Cochrane Library were used to explore the current literature on exercise for the treatment of depression. The following search terms were used in various combinations: depression, exercise, physical activity, physiological, clinical depression and major depressive disorder. A total of 29 articles were reviewed and utilized for the development of the pamphlet.

**Description of Evidence Based Pamphlet:** The evidence-based pamphlet presents benefits of exercise for reducing depressive symptoms, current recommended exercise parameters for patients with clinical depression, and effective modes of exercise. This pamphlet can be used to educate patients with clinical depression.

**Implications to Nursing:** Nurses are likely to encounter individuals who have clinical depression in nearly every specialty area of work. Therefore, nurses are well positioned to promote and educate on exercise as a complementary treatment. Nurses will need to understand the benefits of exercise for reducing depressive symptoms so that they can properly educate patients.

**Recommendations:** Compelling evidence suggests that exercise is beneficial to reduce depressive symptoms. However, there are no specific exercise standards for this population in the United States. Evidence based standards of exercise for this population is needed in the United States. Also, more high quality studies are needed to identify the ideal frequency, duration, and intensity of exercise that may be prescribed for patients with depressive symptoms. In addition, further research that examines the sustainability of the effects of exercise after it is stopped is recommended.
Background: Falls on the Orthopedic/Neuroscience Unit at LBM remains a tremendous challenge, with patient falls ranging from 4.79 FY’11 to 1.19 FY’13. While this shows a downward trend, we have not reached our target zone of zero. Thus, we are challenged as clinicians to identify innovative ways to reduce falls.

Aim: To test the feasibility of decreasing patient falls on the Ortho/Neuro Unit through implementation of the pilot use of video surveillance on patients identified as High Fall Risk.

Method: A descriptive observational design was conducted on a convenience sample of 20 high fall risk patients. Project nurse provided video monitors, education was given to staff, patients and families, camera equipment was set up in patient’s rooms and an area was allocated near the nurses’ station to facilitate prompt communication. Project nurse initiated a 12-hour observation and served as the monitor tech examining, communicating and recording data.

Outcome/Results: An estimated 120 hours of video monitoring was collected from November 1-25, 2013. Frequency of patients’ attempts, results of interventions, and how many falls both with/without injuries were captured. The Neuro Unit 4West had 6 times the highest amount of high fall risk patients, 13 out of 20 participants were observed attempting to get out of bed without calling, and fall intervention found most effective were bed alarms and camera pilot. The use of video monitoring was successful in achieving ZERO falls during the data collection period.

Implication for Practice: The model for healthcare delivery at LBM is one that emphasizes excellence and innovation. Inpatient falls are a serious patient safety and quality issue. Implementing a video monitoring system as an adjunct to our fall prevention plan can improve outcomes of hospitalized patients by preventing fall related injuries.
Purpose: The purpose of this project was to investigate the usefulness of capnography monitoring on post anesthesia care unit (PACU) patients at high risk for ventilation problems.

Description: CO2 capnography is gaining recognition as a useful monitoring tool for patient ventilation and could be very valuable in the post-operative phase when patients are at high risk for ventilation problems. Research has demonstrated that capnography can measure apneic events, changes in respiratory rates, and detect hypoxia up to 2-3 minutes earlier than pulse oximetry.

Design: In order to implement capnography monitoring in the PACU, RNs received training and education on CO2 monitoring. An inclusion criteria list was established based on patients with predicted high-risk ventilation problems post-operatively. A “CO2 Capnography Monitoring Tool” was created for RNs to fill out with each monitored patient. This tool tracked indications for capnography monitoring, interventions needed, and if there was a change in plan of care. Anesthesiologists and respiratory therapists were a part of this project as a collaborative effort.

Evaluation and Outcomes: Data was collected on 50 patients over a course of 7 months. The highest indications for CO2 monitoring were intubated patients (25%), patients with a history of obstructive sleep apnea (OSA) (18%), and status-post open heart surgery patients (15%). The most common interventions done were to stimulate the patient (30%), increase oxygen delivery (14%), and decrease further pain medications (12%). Approximately 10% had a change in plan of care; among this group of patients, 4/5 had a history of OSA which required intervention to be placed on bipap, or increase level of care. Capnography serves as an extra non-invasive monitoring tool that can catch early signs of ventilation problems and is beneficial to the patient. There is a strong implication for pre-operative OSA screening since these patients had higher incidence of change in plan of care post-operatively.
EXPLORING THE PREVALENCE AND DETERMINANTS OF MORAL DISTRESS IN ADULT, PEDIATRIC AND NEONATAL INTENSIVE CARE UNIT NURSES, COMPARED TO MEDICAL/SURGICAL NURSES: A COMPARATIVE DESCRIPTIVE STUDY

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Background: Moral distress (MD) from ethical conflicts in the work environment among nurses, results in physical, emotional and psychological sequelae, poor quality of care, linked to burnout and job turnovers in nurses.

Purpose: Assess level of moral distress in adult/pediatric nurses in intensive care units (ICUs) vs medical surgical (MS) nurses; and explore relationships between MD and avoidance thoughts and behaviors.

Methods: Descriptive cross-sectional correlational study conducted across a hospital system. Convenience sample (n=426) of ICU and MS nurses completed the Moral Distress Scale online (SurveyMonkey), to measure study variables and demographic info.

Results: Mean age 43.6 (range 23-69) years; 98.8% females; mean (years) employment 1-10 years -ICU (15.8%); MS (33.7%); 11-30> years-ICU (36.%); MS (19.5%). Education Level - associate degree (24%); bachelor’s degree (55.9%), master’s degree/doctorate (16.5%). Intensity of MD was high to situations related to physician practice, nursing practice, institutional factors, futile care and deception. Average MD intensity in ICU adult nurses was significantly higher vs average effect across all care units (average of 0.7 points higher, p=.001). Increased age increased odds of avoidance only in Non-ICU area (2.6% increased odds with each one year increase in age, p=.064 (borderline significance) (no age effect found in ICU area, p=.302). Nurses also reported that MD adversely affected job satisfaction, retention, psychological and physical well-being.

Conclusion: This study increased knowledge of moral distress and avoidance behavior in ICU nurse’s vs medical surgical nurses. Strategies aimed to minimize exposure to situations of moral distress and augment mechanisms mitigating its effect on nurses are necessary to enhance job satisfaction, retention and impact on patient care.
Clinical Issue: Best practice recommendations for time to ambulation post-cardiac catheterization ranges between 2 to 3 hours after hemostasis of the access site. Despite the compelling evidence, physicians have been found to prescribe 4 to 6 hour bed rest for low-risk patients that have received a Vascular Closure Device (VCD).

A lack of consistency was also found in the method of post-procedure ambulation. Nurses were ambulating their patients based on what they personally regarded as “best” for their patient.

Literature Review: VCDs used to close the arteriotomy have become increasingly popular as they are known to decrease time to hemostasis, facilitate earlier ambulation, improve patient comfort and satisfaction, improve overall cardiac catheterization lab throughput, and can result in great cost savings for the hospital.

Interventions: Hospital policies were modified to reflect best practices for early ambulation. A standardized ambulation procedure was created for nurses in order to safely ambulate their patients. A retrospective, 40 patient chart review was conducted to compare outcomes to benchmark data.

Results: There were no documented vascular complications and readmissions within 30 days post-procedure. Bed rest prescription improved by nearly one hour compared to benchmark data (3 hours 31 minutes versus 2 hours 37 minutes). Nurses did not consistently ambulate patients promptly after the prescribed bed rest, causing, on average, a 49-minute delay to ambulation. Cost-savings was shown to be greater the earlier the patient was discharged since fewer resources were being used.

Conclusions: Implementing an early ambulation program is a cost-effective strategy that presents favorable patient outcomes and does not jeopardize patient safety. It is vital to follow a structured evaluation plan to sustain the desired outcomes.
CALM OR CRISIS?
IMPLEMENTATION OF CRISIS CHECKLISTS FOR EMERGENCIES IN THE CARE OF POST CARDIAC SURGERY PATIENTS IN A PACU SETTING
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Iidy Vitez, BSN, RN, CCRN
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Research Question/Purpose: Does the use of evidence-based Cardiac Crisis Checklists enhance knowledge, confidence, and performance of PACU nurses in managing the postoperative cardiac surgery patient?

Background/Significance: Complications in the immediate post-operative period following cardiac surgery require quick and effective interventions to ensure successful treatment. Evidence-based crisis checklists in the operating room and other settings have demonstrated effectiveness in improving safety and management of patients.

Methods: A group of PACU nurses had collaborated to create an evidence-based “Cardiac Crisis Checklists” booklet based on a literature review. The “Cardiac Crisis” situations were narrowed down to 9 topics: Bleeding, Left Ventricular Failure, Right Ventricular Failure, Hypertension with Low Cardiac Index, Hypertension with Normal to High Cardiac Index, Bradycardia, Atrioventricular Block, Perioperative Myocardial Ischemia, and Air Embolism. Each Crisis was broken down into sections that included: Clinical picture, To Do, Drugs, Possible Causes, and Considerations/Teaching Points.

The Checklists were piloted by designing 2 mock case scenarios to be used in a simulation lab. These 2 mock scenarios were tested on 6 PACU nurses. The initial scenario was done without using the Checklists, then after a break of a few hours, the nurse was given the same scenario but used the Checklists as a reference tool. Based on pre- and post- surveys and direct observation of key points, the following things were measured: Knowledge, Confidence, and Usefulness of the Checklists.

Data Findings/Results: PACU nurses’ perceived knowledge, confidence level, and performance were improved after implementation of the crisis checklists. Overall, PACU nurses stated they “strongly agreed” with statements that the checklists helped them feel better prepared during the emergency scenarios, were easy to use, and would use them if presented with these emergency scenarios in real life.

Implications: It is recommended to further explore the usefulness of crisis checklists during other post-operative emergencies and investigate the performance of PACU nurses to improve patient safety and outcomes.
Purpose: Depression in adults with CF has been reported at significant levels between 29-46%. It has been reported to reduce adherence to prescribed medications, which affect exacerbations of pulmonary illness. The impact of depression may influence all facets of life as well as functional ability. Quality of life (QOL) is impaired with undiagnosed depression and anxiety in patients with CF.

The hypothesis is that early identification and treatment may make an impact on health by improving self-care and QOL for adults with CF and gain insight on this cohort. The use of the tools for this study are the PHQ-9, ARA-R and the global single item quality of life; all have been found to be reliable and validated.

Design: This was a prospective, descriptive study design using survey methodology.

A convenience sample of adult CF patients at LBBMC hospital or CF clinic were screened for eligibility. They were in a stable health state, with a forced expiratory volume (FEV1) result which should not a >10% drop in the preceding 14 days, to rule out effects of an exacerbation. The most significant factors impacting QOL were found to be depression and poor lung function. There is a breadth of studies on depression in pediatric CF patients. With the increased life span and percentage of adults with an intensification of disease burden there is a need for more studies on adults.

Outcomes: Findings were that elevated PHQ-9 (higher affinity for depression) corresponded with low QOL self-reported values and poor self-management tendencies. Also comorbid conditions influenced mental health state, low FEV1 values correlated with higher PHQ-9 scores. Those who had a recent IV antibiotic episode demonstrated higher PHQ-9 values.

This is a sustainable intervention; ~5 minutes to complete and is applicable to any chronic illness or any clinic with minimal staffing pattern can accomplish.
HOW IS QUALITY OF LIFE AFFECTED BY LIFE STRESSORS IN POST-
TREATMENT CANCER SURVIVORS?

Cindy Gotz, CHsc, MPH, C.H.E.S.

Joan Leafman, PhD

Long Beach Memorial and Miller Children’s & Women’s Hospital Long Beach

**Purpose:** The purpose of this study was to assess the effect stress has on cancer survivors post-treatment and how this may influence coping and overall quality of life.

**Background:** Adult cancer survivors are living longer post-treatment. How stress influences coping post-treatment, cancer survivors may determine the effect common life stressors have on overall quality of life (QoL). There is a growing need to understand what stressors cancer survivors report post-treatment and how these may affect transition from active treatment to survivorship.

**Methods:** National Health Interview Survey 2010, Cancer Control Supplement (CCS) public data were downloaded. For this study, participants meeting the inclusion criteria, adults answering no to the question “Are you still in active treatment?” in the CCS Survivorship section of the survey (n = 224), were analyzed. Twelve cases were eliminated due to incomplete responses (n = 212).

**Findings:** Cancer survivors post-treatment generally reported good to better, quality of life, physical health status, and mental health status. Statistically significant relationships with QoL included; physical health status ($r=.67$), mental health status ($r=.62$), and satisfaction with social activities and relationships ($r=.63$). Moderate correlation between worry and finances also held significance, mental health status and degree cancer caused financial problems ($r=-.21$).

**Implications for practice:** (a) infuse survivorship into communication during active treatment and post-treatment to support physical and mental health as well as social relationships, (b) address the expected cost of cancer treatment with patients and collaborate with social workers or oncology nurse navigators to connect patients to appropriate resources, (c) provide a survivorship care plan at the end of active treatment to communicate on-going surveillance needs post-treatment.
THE IMPACT OF END-OF-LIFE CARE TRAINING ON MEDICAL/SURGICAL NURSES
Suzanne Graf, RN, MSN, BSN, PHN
Mount Saint Mary’s University

Background/Significance: With the increasing age of the population coupled with the rise in the number of people living with multiple chronic diseases, more people over the age of 65 are dying in acute care hospitals. However, the majority of beds are in the medical-surgical areas where the focus of care is curative. Medical-surgical nurses are not required to undergo training specific to end-of-life (EOL) care. However, people die in medical-surgical units of hospitals with or without properly focused care.

Purpose/Aim: The aim of this study was to investigate the lived experience of medical-surgical nurses who have cared for the dying and explore the impact of EOL care training and other environmental variables on the provision of care.

Methods: A qualitative, phenomenological study was conducted utilizing a purposive sampling of registered nurses who have cared for a dying patient while working in a medical-surgical unit, excluding oncology, in the United States. A total of 31 nurses completed a one-time survey of up to 20 closed and open-ended questions via an online third party data collection service.

Findings: The first incident of caring for a dying patient was reported to be between pre-licensure and two years of practice by 87%. The vast majority also reported having experienced losing a patient to death while on duty. Only 55% stated they had some sort of basic training in EOL in pre-licensure school or from an employer. All participants who had training indicated that it was valued and made some difference in their provision of care.

Implications: More consistent and required EOL training needs to take place both pre-licensure and in continuing education. A vast majority of participants (91%) desired EOL care training primarily in the area of communication with the family. Time management and support, both emotional and institutional, were additional issues of concern.
Purpose: The goal of this advanced practice registered nurse (APRN) led performance improvement (PI) project was to examine our on-going rate of medical device related (MDR) pressure ulcers (PUs) in pediatric/adult patients; and to institute a MDR PU prevention model and plan.

Background: PUs are acquired among high-risk patients in hospitals, and are key indicators of nursing care. The National Pressure Ulcer Advisory Panel (NPUAP) recognizes that PUs can occur on any tissue under pressure, including under MDRs used for diagnostic/therapeutics. Our work on PU prevention (sacral, bony prominences) using an SKIN Bundle plus a 5-Layered Border Sacrum Dressing, has reduced our incidence to ‘zero to 0.7%. Thus, MDR PU incidence became transparent. In 2012, we had a surge of MDR PUs > benchmark among peds/adult units, (2-Noninvasive Ventilation Masks (NIVM); 5-Tracheostomy; 1-IV Hub).

Description: Adult / Pediatric APRNs convened an interprofessional team to design an intervention model using a rapid-cycle, Plan-Do-Study-Act (PDSA) framework. An analysis of all 8 MDR PUs was done reviewing stage, location, device involved, and compliance with our standard SKIN Bundle. There was an urgency to reduce NIVM and tracheostomy-related MDR PUs, thus, we rapidly (3rd Q, 2012), deployed the use of Safetac® dressings (Mepilex Lite® Mepilex Transfer®, Bordered Sacrum Dressing), under all tracheostomy neck plates and NIVM. The MDR Prevention Model (FY13) included an EB Bundle with frequent skin/device assessments, and moisture/pressure reducing device interface, using the Safetac® foam dressings.

Results: Since launching the MDR Prevention Model (3rd Q, 2013), we’ve tracked our incidence/compliance with the MDR Bundle for the past 4 Quarters. We had an absolute reduction of MDR PUs from 0.06% incidence of stage 3+ MDR HAPU's per 1,000 patient days to zero in pediatrics (benchmark 0.0 – 0.04%); and among adults from 0.28% incidence to zero (benchmark 0.05-0.09 %). We have recently added more evidence and modified our PU Prevention Model©, which has helped us sustain a ‘zero’ zone among adults and pediatric patients.

Conclusion: Thru an APRN led interprofessional collaborative, a robust PU prevention program was launched—which yielded a MDR PU Bundle; skin care rounds, increased frequency of assessment of skin integrity and device–skin interface, and the prophylactic use of Mepilex foam dressings. Integrating these practices into daily workflow, can result in sustained effect on nursing care, teamwork and improved patient outcomes.
NP-LED INITIATIVE TO IMPROVE THE HEART FAILURE EDUCATION PROCESS: A NOVEL METHOD TO ENHANCE PATIENT EDUCATION / RN DOCUMENTATION USING A TOOLKIT AND UNIQUE EMR SCRIPTING
Cindy Peters, RN, MSN, ACNP-BC
Patricia Long, RN, MSN
Long Beach Memorial and Miller Children’s & Women’s Hospital Long Beach

**Purpose:** Provide an innovative Tool Kit (TK) to enhance RN’s HF patient education and improve documentation by using electronic medical record (EMR) and unique scripting.

**Problem:** HF patients often lack knowledge about their disease process and self-care regimen. Thus, they are non-compliant resulting in frequent emergency department visits and hospitalizations. Baas et al., reported key barriers to RN’s educating patients/families were lack of time, inconsistent documentation of teaching in EMR and low literacy of the patient.1

**Description:** In 2011, a HF Toolkit of evidence-based education was developed; using the 6 components of the Joint Commission process of care performance measures.2 Post implementation of HF Toolkit, documentation was lacking. Koelling et al., noted a 60-minute teaching session delivered by RN’s at hospital discharge resulted in improved clinical outcomes, increased self-care, and reduced costs.3 A gap analysis revealed education occurred but lacked documentation of element taught/minutes. A novel strategy was developed by HF nurse practitioners (NPs), by creating a “smart text” (ST) in EMR to simplify charting of what was taught/number of teaching minutes. Each ST phrase had educational elements of the TK with the capability of modification to add minutes or family members involved in the education.

**Evaluation/Outcomes:** To evaluate the goal of 60 minutes of HF education we audited the GWTG database 2012-2014. Initially the “average” number of minutes per/pt per month was 21.15. After extensive teaching/use of the “smart text”, our HF education minutes in 2014, were increased to an average of 51.07, where national average was 31.8 minutes.

This novel strategy demonstrated improvement in quality patient education. Next steps include correlation of increased patient education with reducing readmissions and improving self-care.
EFFECT OF AN ICU TRANSITIONAL LEVEL CARE COMMUNICATION BUNDLE TO REDUCE RELOCATION ANXIETY AND IMPROVE SATISFACTION: A QUASI-EXPERIMENTAL STUDY

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Background: Adult and pediatric intensive care units (ICUs) share deficiencies of comprehensive transitional patient care strategies, which illustrate disparities in bridging the transition process for patient/families from admission to discharge. Care transitions are associated with adverse health outcomes, high costs, patient/family dissatisfaction and transfer anxiety. This, discontent occurs among patients, families, and nursing staff.

Study Aim(s): Determine the effectiveness of implementation of the ICU Transitional Level Care (TLC) Communication Bundle, in preparing patient / family for discharge readiness, and a different level of care. A secondary aim is to examine the impact of this change in nursing practice, by measuring their perception and proficiency for providing patient/family education and discharge preparedness.

Study Design: A prospective, quasi-experimental study, using a two-group, design with post-survey methodology. This study will examine the impact of a structured TLC Communication Bundle (intervention) versus a control group (standard discharge teaching), to evaluate the patient impact of a systematic and safe discharge process from ICU units to the medical-surgical settings. Sample is Patients/Surrogate >18 yrs old, English or Spanish speaking. Sample size includes 328, (N=164-adult/ N=164-pediatric patients/families. Control Group (N=82); intervention group (N=82) standard care plus additional education/discharge readiness preparation.

Outcome Measures: Discharge Knowledge using University of Iowa Transfer Process Questionnaire to Measure Patient/Family Knowledge and Discharge Readiness; Anxiety-using the Hospital Anxiety and Depression Scale (HADS) (anxiety sub-scale); Patient/Family Satisfaction using the Critical Care Family Satisfaction Survey (CCFSS); Nurses Perceptions / Proficiency Family Education – Pediatric Nurses’ Opinions on Patient/Family Education Survey (PNOPES).

Results: This quasi experimental study has completed the control group phase (N=164), while the intervention arm is on-going, thus data is pending. We will use descriptive/inferential statistics to describe the sample and significance between the groups. We hope our findings will validate the use of a standardized transition guideline
to improve communication, care transitions, and discharge readiness, thus improving the overall patient and family experience.
INTERPROFESSIONAL PARTICIPATION IN A STATEWIDE COLLABORATIVE TO RECOGNIZE AND TREAT HYPERTENSION IN PREGNANCY

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Objective: Hypertensive disorders of pregnancy are a leading cause of maternal mortality occurring in 12-22% of pregnancies. The California Pregnancy Associated Mortality Review (CA-PAMR) found the overall rate for preeclampsia deaths between 2002 and 2004 is 1.6/100,000. These disorders are also one of the leading contributors to premature birth leading to significant neonatal morbidity and mortality. The California Maternal Quality Care Collaborative (CMQCC) developed an evidence base toolkit for managing hypertensive disorders. The goal was to standardize identification and treatment of pregnant/post-partum women presenting with blood pressures ≥ 160 & / or over ≥ 105 within 30 minutes.

Design: The BirthCare Center was one of 25 birthing hospitals in California to actively participate in the statewide CMQCC Preeclampsia Collaborative from February 2013 through December 2014. The interprofessional team of physician, nurses & pharmacist were educated to the toolkit guidelines and “Acute Hypertensive” order set developed by the Memorial Care Women’s Best Practice Team. The team utilized PDSA cycles to implement the evidence-based guidelines from the CMQCC Preeclampsia Toolkit. Sample: All pregnant/post-partum women presenting to perinatal care areas and/or the emergency department with elevated blood pressures.

Methods: Initial elevated blood pressures (≥ 160 & / or over ≥ 105 ) were reevaluated within 15 minutes using a manual sphygmomanometer and appropriate size cuff. Physicians are contacted, “Acute Hypertensive” order-set initiated, medication immediately administered. Blood pressures are reassessed every 15-20 minutes and medication treatment continued until below threshold values.

Implementation Strategies: Perinatal nursing staff were educated including; use of manual sphygmomanometer and choice of appropriate cuff. Self-learning module with competency evaluation was required. Post-partum nurses were educated to give IV hydralazine. Physicians were provided written communication of the new protocol and order set. The pharmacist assured necessary level of drug stock. Rolling manual blood pressure “kits” with assorted cuffs and guidelines were distributed. Electronic message boards continually educated staff. Debrief forms provided feedback to the implementation team to complete PDSA cycles. Results: The baseline data from 4th Quarter 2012 40% of women with blood pressures meeting the criteria were treated. December 2014, 81.8% of women with blood pressures meeting criteria were treated within 30 minutes and 90.9% within 60 minutes.

Conclusion/Implications for nursing practice: Understanding the potential morbidity and mortality has increased the care providers recognition and treatment of acute hypertension. Methodology and implementation strategies were effective in achieving the standardized,
identification and treatment of pregnant/post-partum women presenting with hypertension. Unanticipated challenges included providing training in the basic fundamentals of blood pressure measurement. Additionally, institutional approval for IV push hydralazine to become standard practice for postpartum nurses. Next steps in nursing practice include; evaluation of hypertensive patient within one week of hospital discharge & implementation in emergency department.
**EFFECT OF OFFLOADING HEELS ON SACRAL PRESSURE**

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**Background**: The supine position is the most common position for surgical procedures. Because of the heel’s unique anatomy and microcirculatory system, complete relief of heel pressure during supine surgery is necessary to prevent heel pressure ulcers. The National Pressure Ulcer Advisory Panel recommends that heels be completely elevated off the OR bed to redistribute weight to the calf. Literature supports “floating the heels” as the most effective way in which to prevent heel pressure ulcers. However, floating the heels may result in increased pressure in the sacral area from weight redistribution, jeopardizing sacral skin integrity. Because the sacrum is the most vulnerable area when patients are positioned supine, a possible increased sacral pressure when floating the heels is of particular concern.

**Purpose**: The purpose of this study was to examine the effect of floating the heels while in supine position on sacral pressure in adult healthy volunteers at OCMMC. The specific aims were to: a) determine amount of pressure exerted on the sacrum as a result of heel floating using the XSensor pressure mapping device; and b) explore if body mass index (BMI) and presence of silicone foam dressing affect sacral pressure.

**Methods**: This cross sectional descriptive study took place at OCMMC in a designated, private conference room equipped with an operating room bed and XSENSOR equipment. Its design was to determine whether floating versus not floating the heels of adult volunteers while in supine position on the operating room table increased sacral pressure.

**Sample**: A convenience sample of 50 volunteers were invited to participate in the study. Eligible participants met the following eligibility criteria:

- Be male and female adults
- 18 years or older
- Read and understand written and spoken English
- Work at OCMMC

**Instruments**: Pressure exerted on the sacral area (interface pressure) was measured using the XSENSOR X3 Version 6 (Xsensor Technology Corporation; Calgary, Canada) (Figure 2). The Xsensor consists of a 18” x 18” thin, pliable pad equipped with independent pressure sensors. This 18” x 18” pressure mapping pad reflects interface pressure in a color-coded images. Each color reflects a range of pressure in mm Hg. Blue colors in image reflect areas of lowest pressure while red color reflects highest pressures. The pressure mapping pad was placed on the operating room bed at the volunteer’s sacral area and covered by linen (sheet).
Statistical Plan: Upon completion of data entry and cleaning, data was analyzed using the Statistical Package for Social Science (SPSS) (SPSS Inc, Chicago, IL and USA), version 22. Descriptive statistics, such as frequency distribution, measure of central tendency (mean, median), measures of dispersion (range, standard deviation), were used to describe the sample. Multiple linear regression was used to assess statistical significance and effect sizes between the dependent variable (sacral pressure) and the independent variables (BMI, presence/absence of sacral foam dressing, and number and configuration of pillows).

Results: Elevating heels off the bed were statistically significant in increased pressure on the sacral area. BMI was not statistically significant as a variable in increasing sacral pressure. Application of sacral foam dressing was not statistically significant in reducing sacral area pressure.

Implications: Results from this study will help evaluate current patient positioning in the OR and provide baseline data to support necessary evidence based modifications in existing positioning policies and protocols.