Northeastern University
Bouvé College *of* Health Sciences
School *of* Nursing

Doctor of Nursing Practice (DNP)
Scholarly Project Abstracts
Cohort 7

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for the Doctor of Nursing Practice Degree

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Student Speakers:
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1. Jillian Belmont, MSN, FNP-BC, SCRN
   DNP Scholarly Project Title: ***A retrospective chart review to evaluate current patient-care processes of adult inpatient stroke alerts to determine adherence against national guidelines at a major academic tertiary-care center***
   DNP Scholarly Project Advisor: Elizabeth B. McGrath, DNP, APRN, AGACNP-BC, AOCNP®, ACHPN, Affiliate Associate Professor, Northeastern University, Boston, MA; Nurse Practitioner, Medical Oncology-Gastrointestinal Program; Instructor in Medicine, Geisel School of Medicine, Dartmouth Hitchcock Medical Center, Lebanon, NH
   Expert Mentor: Timothy G. Lukovits, MD, Medical Director, Cerebrovascular Disease and Stroke Program, Associate Professor of Neurology, Geisel School of Medicine, Dartmouth Hitchcock Medical Center, Lebanon, NH

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   DNP Scholarly Project Title: ***Assessment of Critical Care Nurses' Geriatric Knowledge***
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   Expert Mentor: Joanne Alderman, MSN, RN-BC, APRN-CNS, FNGNA, President, National Gerontological Nurses Association

3. Jennifer Clair, MS, RN, CNS-BC
   DNP Scholarly Project Title: ***Exploring staff nurses' perceptions of specialty certification at Massachusetts General Hospital using the Perceived Value of Certification Tool***
   DNP Scholarly Project Advisor: Kelly McCue, DNP, RN, AOCNS, Affiliate Associate Professor, Northeastern University, Boston, MA; Operations Manager Oncology and Breast Advanced Oncology Clinical Nurse Specialist Administrator Center for Wound Healing, Brattleboro Memorial Hospital, Brattleboro, VT
   Expert Mentor: Kevin Whitney, DNP, RN, NEA-BC, Associate Chief Nurse Surgical, Orthopedics & Neurosciences, Massachusetts General Hospital, Boston, MA

4. Mary R. Cushing, MS, CRNA
   DNP Scholarly Project Title: ***A National Survey to Evaluate the Demand for a Nurse Anesthesia Postgraduate Cardiothoracic Fellowship***
   DNP Scholarly Project Advisor: Janet A. Dewan, PhD, CRNA, Associate Nurse Anesthesia Program Director & Assistant Clinical Professor, Northeastern University, Boston, MA
   Expert Mentor: Margaret A. Contrera, MSN, CRNA, Academic and Clinical Faculty, Staff Nurse Anesthetist, School of Nurse Anesthesia, Cleveland Clinic/Case Western Reserve University, Cleveland Clinic, Department of Cardiothoracic Anesthesia, Cleveland, OH

5. Justin DiLibero, MSN, RN, CCRN, CCNS, ACCNS-AG
   DNP Scholarly Project Title: ***Effectiveness of a Multifaceted Nurse-Led Delirium Assessment Improvement Intervention Using the CAM-ICU in Neuroscience Patients***
   DNP Scholarly Project Advisor: Julie Cronin, DNP, RN, OCN, Affiliate Associate Professor, Northeastern University, Boston, MA; Nursing Practice Specialist, Massachusetts General Hospital, Boston, MA
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6. Robyn M. Gagnon, MSN, RN, NNP-BC
   DNP Scholarly Project Title: ***Practice Patterns in Adherence to Neonatal Abstinence Guidelines: A Retrospective Chart Review***
   DNP Scholarly Project Advisor: Dorothy Mullaney, DNP, APRN, Affiliate Clinical Associate Professor, Northeastern University, Boston, MA; Director of Associate Providers, Dartmouth Hitchcock, Lebanon, NH
   Expert Mentor: Mara Coyle, MD, Professor of Pediatrics, Clinical, The Warren Alpert Medical School of Brown University, Staff Neonatologist, Women and Infants Hospital, Providence, RI

7. Jennifer Katarivas, MSN, RN-BC, ACNS-BC
   DNP Scholarly Project Title: ***Evaluation of a Diabetes Management Protocol and Escalation Algorithm: A Quality Improvement Project to Increase Compliance by Understanding the Roadblocks the Nurses Face When patients Have Elevated Blood Sugars***
   DNP Scholarly Project Advisor: Karen Pawelek, DNP, APRN-BC, Part-Time Lecturer, Northeastern University, Boston, MA; Nurse Practitioner, Northeast Medical Group Family Practice, Guilford, CT
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   DNP Scholarly Project Title: ***Development of an Education Intervention to Decrease Sedentary Behaviors in an Adult Family Practice Population***
   DNP Scholarly Project Advisor: Nancy Dirubbo, DNP, RN, FNP-BC, FAANP, Affiliate Assistant Professor, Northeastern University, Boston, MA; Owner, Travel Health New Hampshire, Travel Health of New Hampshire, PLLC, Laconia, NH
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9. Kristen Mathieu Gonzalez, MSN/Ed, RN
   DNP Scholarly Project Title: ***Analysis of LGTBQ-related Content in Selected Undergraduate Nursing Textbooks***
   DNP Scholarly Project Advisor: Fidelindo Lim, DNP, MA, RN, Affiliate Associate Professor, Northeastern University, Boston, MA; Clinical Assistant Professor, New York University, New York, NY
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    DNP Scholarly Project Title: ***Quality Improvement Project to Evaluate the Use of Telemetry in a Small Community Hospital***
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11. Jamie McLennan, MSN, RN
    DNP Scholarly Project Title: ***Association between prerequisite science courses, nursing courses and the initial NCLEX-RN pass rate in a single associate degree nursing program***
    DNP Scholarly Project Advisor: Sharon Kuhrt, DNP, RN, Affiliate Associate Clinical Professor, Northeastern University, Boston, MA; Chief Nursing Officer, New England Rehabilitation Hospital, Portland, ME
    Expert Mentor: Jill Becker, DNP, RN, CNE, Nursing Professor, Northern Essex Community College, Lawrence, MA

12. Meghan F. McManama, MSN, WHNP-BC, ANP-BC
    DNP Scholarly Project Title: ***Analyzing Engagement Scores in Health Centers Led by Registered Nurses, Advanced Practice Registered Nurses, and Non-Clinicians***
    DNP Scholarly Project Advisor: Debra Burke, DNP, MBA, RN, NEA-BC, Affiliate Associate Professor, Northeastern University, Boston, MA; Associate Chief Nurse, Massachusetts General Hospital, Boston, MA
    Expert Mentor: Dale Wallace, PhD, Vice President, Talent Management, Premise Health, Brentwood, TN

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    DNP Scholarly Project Title: ***Incidence and Risk Factors Associated with Hyperactive, Hypoactive and Mixed Delirium in two Adult Medical Intensive Care Units***
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References for DNP Scholarly Project Abstracts are available upon request.

All projects were approved as quality improvement/performance improvement by all IRBs.

A Retrospective Chart Review to Evaluate Current Patient-Care Processes of Adult Inpatient Stroke Alerts to Determine Adherence against National Guidelines at a Major Academic Tertiary-Care Center

Jillian Belmont

Background and Significance: Effective and timely stroke care of the adult patient admitted to a tertiary care center is essential to limit patient associated morbidity and mortality and requires collaboration from multidisciplinary team members and adherence to clearly stated guidelines and protocols. 4% to 17% of all strokes have onset of symptoms while hospitalized (Saltman et al., 2015). Current evidence-based guidelines by the American Heart Association/ American Stroke Association (AHA/ASA) (Jauch et al., 2013) exist which affirm the overarching concept of stroke systems of care from recognition, medical activation, and triage, through the initial hours in the acute care setting. Previous studies suggest that in-hospital strokes have greater severity, experienced higher rates of mortality and subsequent disability, are less comprehensive, take more time with time goals rarely being met, than strokes that occur in the community (Cumbler et al., 2013). This project measures adherence to the current national guidelines provided by the American Heart Association/American Stroke Association and achievement of performance and quality measures defined by GTWG-Stroke and the adherence to Dartmouth-Hitchcock's organizational "stroke-alert" protocol.

Purpose and Goal: The purpose of this project is to evaluate the current stroke alert patient-care process of admitted adults and to identify patterns of care and gaps in practice, leading to recommendations for future improvement of inpatient stroke alerts both institutionally and nationally.

Methodology: This quality improvement project will utilize a retrospective chart review (RCR) to evaluate pre-recorded, patient-centered data to describe the current process of adult inpatient stroke alerts at a major tertiary-care academic medical center and the adherence to current national guidelines provided by the AHA/ASA (Jauch et al., 2013). Chart review and data abstraction will include all adult patients with a "stroke alert" called between January 1, 2016-November 30, 2016 at Dartmouth-Hitchcock Medical Center. Numerous pre-identified variables (see attached data abstraction tool) will be collected surrounding the stroke alert process of each patient via chart review.

This project follows a quantitative descriptive design. Inclusion criteria: all adult (age ≥18 years old) inpatient stroke alerts activated system wide at Dartmouth-Hitchcock Medical Center (DHMC) from January 1, 2016 – November 30, 2016. There were no exclusion criteria. Personnel (the student investigator, project site data abstractor and nursing student) performing chart abstraction used standardized definitions and codes for data entry into the data abstraction tool. Methods of prospective identification included surveillance of stroke alert logs, neurological consultation service census, and radiology studies surrounding the stroke alert time period. Variables tracked included: socio-demographics, admitting diagnosis, primary team, stroke alert protocol criteria, tPA eligibility criteria, acute interventions provided, outcome of stroke alert, NIHSS, code status, use of antiplatelet or anticoagulants and time measures including; last seen normal, time to CT scan, CT results, time to CTA. An electronic logical abstraction form designed for this project was used, to help ensure a measure of consistency, reduce error and limit coder interpretation.

Results (in progress): Descriptive and comparative statistics will be used to describe findings and compare results against the institutional-based protocols and national guidelines.

Implications for Future: A hospital-wide analysis allows for: 1) increased knowledge regarding the current clinical practices, 2) identification of practice gaps, and 3) opportunity for process improvement. While this project is significant for practice, it is even more significant in optimizing the clinical outcomes by decreasing mortality and morbidity of acute stroke patients at Dartmouth-Hitchcock Medical Center.

Key Words: stroke AND in-hospital, guideline adherence, stroke alert

Assessment of Critical Care Nurses' Geriatric Knowledge

Marie Berry

Background and Significance: The U. S. Census Bureau reports, "every 8 seconds, an American turns 65; the equivalent of 10,000 people each day." By the end of 2030, one fifth of our nation, more than 80 million people will be 65 and older, thus representing the most rapidly growing segment of our population. In particular, those 85 and older, the 'oldest old', are projected to quadruple in number over the next four decades. The Institute of Medicine 2008 report predicted a health care crisis among older Americans and their findings indicate that the number of older Americans with more complex health care needs will increasingly outnumber health care providers with adequate knowledge and skills necessary to care for them. Specifically, as Americans 65 and older represent 40 percent of hospitalized patients, they're also likely to be the most clinically complex patients receiving nursing care in critical care settings. The American Geriatric Society estimates many of the nations' registered nurses (RNs) lack expertise in geriatric care, with less than one percent holding certification. Therefore, RNs may lack knowledge regarding the special needs of elders including delirium, falls, syncope and urinary incontinence. A literature review found no studies addressing critical care nurses' geriatric knowledge. Understanding critical care geriatric nursing knowledge can be used to guide future professional educational requirements and opportunities.

Purpose and Goal: The goal of this project is to determine the educational geriatric knowledge needs of critical care nurses in the intensive care unit (ICU). Accordingly, this project's purpose is to assess critical care nurses' understanding of geriatric age related pathophysiologic changes, their effects on illness presentation, and responses to treatment.

Methodology: Through a web-based survey using Likert scale measurement, this project will assess the current level of critical care nurses' geriatric knowledge utilizing the Marie Boltz geriatric nursing knowledge (GNK) self-assessment tool. The six subscales of Boltz' GNK tool demonstrated internal consistency with Cronbach's alpha >0.85 for nutrition/hydration, pressure ulcers, medications/sleep/pain, restraints/falls, functional decline/incontinence and dementia/delirium. In a sample of 66 RNs, the GNK also demonstrated inter-rater reliability with 90% of items showing statistically significant test/retest reliability. Pending American Association of Critical Care (AACN) Research Departmental approval, the goal sample of 100 critical care nurse participants will be recruited from approximately 100,000 AACN members across the nation on the eNewsline online forum. Participation is completely voluntary and there are no identified risks for partaking in this project. After reading an unsigned web-based consent document, a password protected Qualtrics software survey link will be available to participants for one month. Estimated survey completion time is 10 - 15 minutes. Participants are informed that their identities are protected by the 'anonymous survey' hyperlink and that the primary investigator will destroy survey data following two years of project completion.

Results (in progress): This project is in progress and is expected to be submitted for IRB approval in early Dec 2016. Subsequent implementation is anticipated for Jan-Feb 2017.

Implications for Future: Preventing complications and promoting recovery of elders is based on RNs knowledge of clinical presentations, clinical functionality and responses to treatment. By assessing ICU critical care nurses' geriatric knowledge, the identification of possible gaps in this knowledge can guide future professional education opportunities.

Key Words: critical care nurses, Geriatric Nursing Knowledge, GNK

Exploring Staff Nurses' Perceptions of Specialty Certification at Massachusetts General Hospital using the Perceived Value of Certification Tool

Jennifer Clair

Background and Significance: While Registered Nurse (RN) licensure provides entry-level competence, specialty certification provides a platform to consistently validate specialty experience, knowledge, and skills. The Perceived Value of Certification Tool© (PVCT) is an existing valid and reliable survey tool that assesses nurses' perceived value of certification. The PVCT has been used in seventeen studies since 2003, totaling over 25,000 respondents. Sechrist, Valentine, & Carter (2006) performed factor analysis of the tool and found a two factor analysis, labeled intrinsic and extrinsic value, that explained 59.2% of the total variance; Cronbach's alpha was .94 for the measure as a whole, suggesting high inter-correlation between the subscales (Sechrist et al., 2006).

Purpose and Goal: The purpose of this scholarly project was to assess a large urban hospital's staff nurses' perceived value of certification; with a goal to better educate nursing leadership on potential facilitators and barriers that could in turn affect the number of nurses that obtain specialty certification.

Methodology: A quantitative descriptive project design was used. A convenience sample of approximately 4,000 staff nurses was invited to participate in a web-based survey. Inclusion criteria included English-speaking staff nurses with access to hospital email that are able to read and complete an online survey. Exclusion criteria included advanced practice nurses and nurse administrators. The survey tool was modified to include basic demographic questions and contained eighteen questions that used a five-point Likert rating scale. The survey was placed in the Research Electronic Data Capture (REDCap), a secure web application, for distribution. Participants had six weeks to complete the survey.

Results: There were 535 survey respondents for a response rate of 13.4%. Of these 349 completed the survey for a completion rate of 8.7% Intrinsic and extrinsic subscales showed good reliability with Cronbach's Alpha of .935 and .814 respectively. Results show that nurses have a positive perception of certification that is motivated by intrinsic values more than extrinsic. Examples of intrinsic value indicators included: enhances professional autonomy, feelings of personal accomplishment, and personal confidence in clinical abilities. While extrinsic value indicators included: promotes recognition by peers or employers, increases marketability, and increases consumer confidence.

Implications for Future: Staff nurses' perception of certification will help guide interventions to increase the number of certified nurses. With higher intrinsic values hospital leaders can focus on strategies that reflect values of personal accomplishment, satisfaction, and growth, as opposed to financial incentives or recognition.

Key Words: certification, perceived value, staff nurse

A National Survey of Certified Registered Nurse Anesthetists to Evaluate the Demand for a Nurse Anesthesia Postgraduate Cardiothoracic Fellowship

Mary R. Cushing

Background and Significance: The Institute of Medicine (IOM) issued three significant reports between 1999-2003 that critiqued the quality of our nation's existing health care system and identified the need for a major restructuring in order to improve patient safety, efficiency, and outcomes. The third report, "Health Professional Education a Bridge to Quality," compelled the country's health care providers to reevaluate and improve provider quality through creating changes in their education and training. In response to the IOM's call to action the National Board of Certified Registered Nurse Anesthetists (NBCRNA) and the American Association of Nurse Anesthetist (AANA) have approved the implementation of a clinical doctorate degree as entry into practice and have increased recredentialing criteria with implementation of a Continued Professional Competency (CPC) Program that includes exam evaluation. However, there has been "no call to action" in providing increased clinical training through postgraduate nurse anesthesia fellowships for complex subspecialties in anesthesia. Cardiothoracic anesthesia is a subspecialty practice of anesthesia that cares for medically complex and high acuity patients. The Council on Accreditation of Nurse Anesthesia Educational Programs (COA) requires a student nurse anesthetist (SRNA) to participate in 15 intrathoracic cases, only 5 of which need to be cardiac cases before graduation (COA, 2015). A nurse anesthesia postgraduate cardiothoracic fellowship would offer extended training that would better prepare nurse anesthetists with the competencies and skills necessary to enter into a cardiothoracic anesthesia practice.

Purpose and Goal: The purpose of this project is to measure the demand (perceived need, value, and interest) by certified registered nurse anesthetists for a nurse anesthesia postgraduate cardiothoracic fellowship. The goal is to obtain information that will serve to provide nurse anesthesia educational programs with data to determine if changes need to occur in nurse anesthesia cardiothoracic clinical training.

Methodology: This exploratory, descriptive study utilized a national electronic web based investigator developed survey (Survey Monkey) to measure the demand by certified registered nurse anesthetists for a cardiothoracic nurse anesthesia postgraduate fellowship. A random sample of 1500 participants out of 5,200 was selected from the AANA membership list and the national survey was deployed through the AANA survey service to the 1,500 randomly select certified registered nurse anesthetists. The survey l includes a combination of 25 demographic, multiple choice, and open-ended questions.

Results (in progress): Data analysis will be completed with descriptive statistics to describe survey results. Content analysis will be used to identify themes for open-ended survey questions.

Implications for Future: The data analyzed from this study will identify if there is a need and interest for extended clinical training through a nurse anesthesia postgraduate cardiothoracic fellowship by certified registered nurse anesthetists in cardiothoracic anesthesia. The results will serve to help make future recommendations to improve nurse anesthesia clinical training in cardiothoracic anesthesia to nurse anesthesia educational programs, the Council for Accreditation of Nurse Anesthesia Educational Programs, and the American Association of Nurse Anesthetists.

Key Words: Nurse Anesthesia, Cardiothoracic, Fellowship

Effectiveness of a Multifaceted Nurse-Led Delirium Assessment Improvement Intervention Using the Confusion Assessment Method-Intensive Care Unit* (*CAM-ICU) in Neuroscience Patients

Justin DiLibero

Background and Significance: Delirium affects up to 80% of critically-ill patients and is an important predictor of morbidity, mortality, and the development of long-term cognitive and functional deficits. The first step to improving outcomes requires that clinicians are able to accurately identify delirium so that interventions can be implemented early (Barr, et al., 2013). The Confusion Assessment Method in the Intensive Care Unit (CAM-ICU) has been well validated for routine delirium assessments (Barr, et al., 2013; Brummell Girard, et al., 2013); however, problems with the accuracy of clinician performed assessments are widespread (Hagar, et al, 2013; Mistarz, et al., 2011). There is an emerging body of evidence suggesting the effectiveness of interventions to improve the accuracy of delirium assessments (Brummell, Girard, 2013; Devlin, et al., 2008). Previous projects based on application of this evidence have resulted in a sustained improvement in assessment accuracy from < 50% to > 90% in medical and surgical ICU patients at the author's institution; however, delirium assessments among neuroscience patients are uniquely complicated due to structural neurologic changes that have occurred in this population (Gordon, et al., 2013; Mitasova, et al., 2012; Soja, et al., 2008; Ely, 2016). Although the CAM-ICU has been validated for use in neuroscience patients, data describing the effectiveness of interventions to achieve assessment accuracy in neuroscience patients is limited and new evidence is needed to support best practice. In preparation for the opening of a new 14-bed neuroscience intermediate unit, an opportunity to adapt the model to the unit and to evaluate the effectiveness of the model among neuroscience patients was recognized.

Purpose and Goal: The purpose of this project was to achieve > 80% accuracy in neuroscience patients and to determine the comparative effectiveness of the intervention between medical and neuroscience patients stratified by level of sedation (RASS Score) and level of care (neuro ICU vs. Neuro Intermediate unit).

Methodology: This project explored the effectiveness of a multifaceted educational program on delirium assessment accuracy among neuroscience patients and involved the retrospective analysis of data collected from medical ICU patients, neuroscience ICU patients, and neuroscience intermediate. Assessment accuracy was reported as a percentage and was stratified by RASS score, population, and level of care. Differences in assessment accuracy were evaluated using the Fisher's exact test.

Results: The project resulted in significant improvement in assessment accuracy in neuroscience patients from < 60% to > 95% in all patients and from <30% to > 90% in patient with an altered RASS score. There was no significant difference in the post-intervention assessment accuracy between medical ICU and Neuroscience patients. No significant differences were found in post-intervention assessment accuracy between neuro ICU and Neuro intermediate unit patients.

Implications for Future: This project demonstrated effectiveness of the model among neuroscience patients within a single center and focused on improvement in processes at the nursing level. Future research is needed to explore the effectiveness of the model across other institutions, and to evaluate the effectiveness of interventions focused on improvement at the patient and organizational levels.

Key Words: Delirium, CAM-ICU, Neuroscience

Practice Patterns in Adherence to Neonatal Abstinence Guidelines: A Retrospective Chart Review

Robyn Gagnon

Background and Significance: Newborn narcotic exposure occurs through two routes; maternal drug use during gestation or from iatrogenic causes. Narcotic exposure predisposes the infant to the withdrawal, known as Neonatal Abstinence Syndrome (NAS). NAS is evidenced by central and autonomic nervous system regulatory dysfunction, which frequently results in significant morbidity and prolonged hospital stays (Jansson, Velez & Harrow, 2009, p. 47). There has been a surge in the number of infants born chemically dependent to opioids, resulting in increased numbers of infants born with NAS. Medical advances have led to a number of infants suffering from NAS because of the need for opioid analgesia as part of their medical management. NAS can significantly impact the length of hospital stay as well as the cost of hospitalization. The average length of hospital stays from 2000-2009 for a newborn with NAS was 16.4 days, compared to 3.3 for newborns without NAS. The average cost of hospital stays was $53,400 for infants with NAS, compared to $9,500 for infants without NAS (Patrick et al., 2012). To date there is no accepted standard of care for the treatment of NAS. This is partly due to the complex nature of withdrawal, and as such a specific medical or pharmacological intervention to manage or control symptoms has not been uniformly accepted (Kocherlakota, 2014).

Purpose and Goal: The purpose of this quality improvement project is to measure the number of deviations from the institutional unit guideline, with regards to the pharmacological management of infants with NAS, from a single NICU. The goal is to inform practice and to provide an opportunity for improvement through education or guideline modification.

Methodology: A retrospective chart review (RCR) will be used for this quality improvement project. The sample will include infants 34 weeks gestation and greater with an ICD 9/10 code for Neonatal Abstinence Syndrome (NAS) from a single neonatal intensive care unit in the northeast US. The sample will consist of 50 infants with the diagnosis of NAS admitted to the NICU starting on July 1, 2014 and ending on August 31, 2016. Using the last 50 patients treated for NAS will allow the evaluation of current practice. Neonates with NAS are generally managed in our newborn nursery, so the sample being collected is NICU babies admitted for an additional diagnosis requiring intensive care.

Results (in progress): To measure adherence to the NAS guideline, the number of deviations from the guideline per subject will be collected via chart query. Specifically, the type and dose of medication(s) ordered for treatment (Morphine versus Morphine and Phenobarbital) and appropriateness of dose adjustments (i.e. if they were made in accordance with the Finnegan tool scores) will be recorded. Data analysis will be completed with descriptive statistics to describe our study sample and to measure the number guideline of deviations per subject, and in aggregate (using mean, median, mode, and frequencies).

Implications for Future: Findings from this project will be used to determine the consistency of NAS management, gaps in prescriber education, and may lead to the implementation of, and/or potential revision of the current guidelines.

Key Words: NAS, Finnegan, guidelines, withdrawal, narcotic

Evaluation of the Adherence by Staff Nurses to the Diabetes Management Protocol and Escalation Algorithm: A Quality Improvement Project to Increase Adherence by Understanding the Roadblocks the Nurses Face When Patients Have Elevated Blood Sugars

Jennifer Katarivas

Background and Significance: For patients with diabetes undergoing surgery, maintaining blood sugar control during the post - operative phase is important for optimum wound healing and prevention of infection at the operative site (Rizvi, Chillag, & Chillag, 2010). In July of 2015 a new protocol was implemented at a New York City Hospital based on current national guidelines, indicating how to manage patients diagnosed with diabetes who are in the post-operative phase (American Diabetes Association 2014). An escalation algorithm was included in the protocol in order for nurses to have clear guidelines on optimizing blood glucose management during this post-operative phase. One hundred percent of the nursing staff throughout the hospital was provided an orientation to the new protocol/algorithm prior to implementation. However, the Diabetes Advanced Practice Registered Nurse (APRN) conducted a preliminary chart review in fall 2015 which indicated inconsistency in adherence to the agreed upon protocol/algorithm, raising concerns about its usability.

Purpose and Goal: The purpose of this quality improvement project is twofold: 1) to identify adherence to an institutional based diabetes management protocol/algorithm through a retrospective chart review (RCR) of surgical patients diagnosed with diabetes at a New York hospital and 2) to determine the usability of the protocol/algorithm as perceived by nursing staff. The goals are to promote optimal management of patients with diabetes during the post - surgical period through consistent use of standardized evidence based protocol/algorithm and prevent negative consequences of elevated blood sugars, which include poor wound healing, infections and increased length of stay.

Methodology: This quality improvement project utilizes a two part descriptive design. **Part 1:** A retrospective chart review (RCR) will evaluate adherence by the nursing staff to the institutional diabetes management protocol and escalation algorithm (PROTOCOL/ALGORITHM). An investigator developed electronic abstraction tool is used to collect data on the process of managing elevated blood sugars as delineated in the agreed upon PROTOCOL/ALGORITHM and to help ensure a measure of consistency, reduce error and limit coder interpretation.
All charts of adult patients (age > 18 years) admitted to surgical units at the Hospital for Special Surgery who had a diagnosis of diabetes from July 1, 2015 –September 30, 2016 will be included. Variables tracked include date of admission, age, onset diabetes, prescribed insulin dosages, other medications, blood sugars > 250, action taken, length of stay, wound healing, and infections.
Part 2: A web based modified ten item System Usability Scale (SUS) survey (Brooke, 1986) is used to query all inpatient staff registered nurses (R.N.s) (n=approximately 381) on the usability of the PROTOCOL/ALGORITHM. SUS has been found to be highly reliable (Cronbach's alpha = 0.91) and with concurrent validity 0.806. No follow-up is planned.

Results (in progress): Descriptive statistics will be used to evaluate adherence to guidelines and to summarize survey results. Content analysis will be used for open-ended survey questions.

Implications for Future: It is important to have tight glucose control for patients diagnosed with diabetes in the post-operative period to prevent infection and poor wound healing. Adherence to evidence-based protocols and escalation algorithms will facilitate optimal patient care.

Key Words: Escalation algorithm, Adherence, Diabetes

Development of an Education Intervention to Decrease Sedentary Behaviors in an Adult Family Practice Population

Lauryn LeGacy

Background and Significance: Prevention of chronic diseases in the primary care setting requires further understanding. There is a paucity of literature regarding the adult population's knowledge of the negative effects of sedentary behaviors; a lack of effective interventions to reduce sedentary time. A need to further explore this gap in understanding and to develop a tool primary care providers may use to integrate knowledge and aide in the reduction of sedentary time; thus preventing chronic diseases.

Purpose and Goal: The purpose of this pilot project is twofold: to measure baseline knowledge of primary care adult patients regarding sedentary behaviors and to develop an educational tool for primary care providers to utilize in the office when discussing sedentary behaviors.

Methodology: This quality improvement (QI) project utilizes an educational program design intended to generate evidence using a baseline needs assessment survey and development of an educational tool to integrate knowledge in the adult family practice patient population for the prevention of chronic diseases through sedentary behaviors. A convenience sample of approximately 20-24 participants will be included in the study. Inclusion criteria: York Family Practice patients, adults of either gender between the ages of 19 and 64 years old. English speaking, able to read English, comprehend content written for an eighth grade level, or if not have the services of an interpreter available, and consider themselves to be of good health. A baseline needs assessment survey will identify gaps in patients' knowledge regarding sedentary behaviors and preferred method of learning prior to developing educational material. The definition of health is the World Health Organization's definition: "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 2017). An educational tool will be developed based on the results of the needs assessment and the preferred method of learning. The educational tool will then be assessed for content validity and usability through a modified Systems Usability Scale (SUS) completed by a team of experts consisting of a Fitness Professional, Physical Therapist, and Nurse Educator. This project was determined QI by both York Hospital and Northeastern University.

Results (in Progress): Descriptive and inferential statistics will be used to analyze data from the questionnaires and survey evaluations. Content analysis will analyze open-ended questions

Implications for Future: Chronic diseases are a national concern threatening health and quality of life as well as incurring considerable expense to the individual. There is a paucity of data regarding the negative health effects of sedentary behaviors and effective interventions. An educational tool presented in a patient preferred method of learning will assist providers decrease sedentary behaviors while contributing to the prevention of chronic disease.

Key Words: Sedentary Behaviors, Family Practice, Education Promotion

Quality Improvement Project to Evaluate Use of Telemetry in a Small Community Hospital

Jennifer Matney

Background and Significance: It has been reported that cardiac monitoring in the hospital setting is widely overused compared to established guidelines by the American Heart Association (AHA) (Funk, et al., 2010). This has led to an overabundance of distracting alarms, unnecessary testing and decreased urgency of response (alarm fatigue) leading to potential negative consequences for patients (Sendelbach & Funk, 2013; Knight, Pelosi, Michaud, Strickberger, & Morady, 1999). The Society of Hospital Medicine has recommended implementation of a protocol that will govern the use of telemetry outside of the hospital setting but despite these recommendations, telemetry continues to be over-utilized in many hospitals across the country (The Joint Commission, 2013).

Purpose and Goal: The purpose is to perform a retrospective chart review to evaluate current ordering practices by hospitalist providers for non-critically ill patients compared to AHA practice standards. If a gap in practice is identified, the goal is to institute an evidence-based educational intervention on appropriate telemetry utilization and to modify existing computerized telemetry orders.

Methodology: A retrospective chart review will be used to assess the daily indication for telemetry based on documentation provided in the narrative notes of providers and nurses which will then be compared to AHA guidelines. This review will first identify a baseline rate of adherence to guidelines during a 3-month period from 100 adult (18+ yrs.) patients on telemetry, on medical-surgical units, that were managed by the hospitalist service of a small community hospital. Variables to be examined include: age, gender, diagnosis, telemetry rhythm, and ectopy, indication for telemetry, occurrence of code blue or rapid response and length of stay. If a gap is identified between provider ordering practices and approved AHA guidelines, the intervention will include an educational session combined with work flow changes consisting initially of revising the computer-based telemetry order. A second retrospective chart review will be performed after the intervention period on 100 patients retrieved during a 3-month period, with identical inclusion/exclusion criteria and data collected will be identical to that collected from initial chart review.

Results (in progress): This project is under review for external IRB approval with submission to Northeastern University IRB anticipated by early Jan 2017. Subsequent implementation is anticipated for the 3 month period early 2017 immediately following IRB approvals.
Data will be entered into and analyzed by SPSS (Statistical Package for the Social Science). SPSS will first generate descriptive statistics of the sample for the pre-intervention period and the post-intervention period respectively. Then, in bivariate analysis, the proportion of appropriately-ordered telemetry days will be compared between the two periods using a chi-square test for significance and a threshold for significance of $p=0.05$. Data contemporaneously collected by nursing supervisors will also be analyzed to calculate overall telemetry utilization rates during the same timeframes as the chart reviews listed above.

Implications for Future: If this project successfully demonstrates improved institutional adherence to established guidelines, it is anticipated that there will be resultant improvements in patient safety by reducing alarm fatigue as well as cost savings. Sustaining and augmenting these changes will require ongoing surveillance and further improvements in work flow.

Key Words: Telemetry, resource utilization, alarm fatigue, patient safety, outcomes.

Analysis of Lesbian, Gay, Transgendered, Bisexual and Queer or Questioning (LGTBQ) related Content in Selected Undergraduate Nursing Textbooks

Kristen Mathieu Gonzalez

Background and Significance: Current research shows a need to improve the healthcare of LGBTQ clients. Practice, education, research and public health policy stakeholders have called for action to address the unique health differences and disparities affecting vulnerable LGBTQ populations. Beginning exposure and education early during pre-licensure nursing education will help prepare new graduate nurses in delivering appropriate, individualized care for LGBTQ clients.

Purpose and Goal(s): The purpose of this project is to analyze currently used undergraduate nursing textbooks in seven basic core nursing courses for inclusion of appropriate care recommendations based on current national consensus guidelines. The goals of this project are to gain a better understanding of the quantity and quality of LGBTQ-related content in selected undergraduate nursing textbooks, increase awareness of best practices in LGBTQ health and offer recommendations addressing content gaps and inclusion of evidence-based content in core nursing textbooks.

Methodology: A systematic appraisal of nursing textbooks will be performed by completing an internet search of the top nationally purchased nursing textbooks. All textbooks to be appraised must have been published within the past five years or the most current edition. A search within the contents, chapter titles, index for key words will be conducted first and the chapters will be scanned for content based on investigator developed criteria. Descriptive statistics will be used to quantify/summarize quantitative data and content analysis will be used to analyze/summarize qualitative data.

Results: Results, in progress, show that textbook content inclusion varies drastically. Most textbooks list the keywords in the index; however the chapters may not include specific information to this population. Some textbooks include definitions of key terms and mention the need to include this information in healthcare education or the need to improve care for this population. Other textbooks are very thorough, providing specific care guidelines supported by the Gay and Lesbian Medical Association (GLMA), the Joint Commission (TJC) and the Institute of Medicine (IOM).

Implications for the Future: Finding from this scholarly project will assist educational stakeholders in aligning LGBTQ-related content in key nursing textbooks with evidence-based recommendations for population based specific care guidelines.

Key Words: lesbian, gay, bisexual, transgendered, queer, and questioning, gender or gender identity, nursing, education

Association between Prerequisite Science Courses, Nursing Courses and the Initial NCLEX-RN Pass Rate in a Single Associate Degree Nursing Program

Jaime McLennan

Background and Significance: There is a shortage of students entering into the nursing field. It is predicted that the United States will need more than one million additional nurses by 2022 to fill the new nursing positions and replace retiring nurses. Due to this shortage, nursing schools are pressured to enroll, graduate and have their students pass the National Council Licensure Examination (NCLEX-RN). The NCLEX-RN is a standardized exam that each state board of nursing uses to determine whether a candidate is prepared to begin practice as an entry-level nurse. Nursing schools must meet the national benchmark set for the NCLEX-RN or jeopardize their nursing program accreditation status. Nursing programs that do not meet the benchmark are placed on probation or lose accreditation.

Purpose and Goal: The purpose of this quality improvement project was to examine the association between prerequisite science courses, nursing courses, and student success with passing their initial NCLEX-RN examination in a single Associate Degree Nursing (ADN) program located in the Northeast United States. The goal was to determine if nursing program requirements need to be increased or if modifications to the nursing curriculum are needed.

Methodology: A non-experimental retrospective descriptive study design was used to collect data from 150 nursing students that graduated from a single ADN program in the last five years (beginning in 2010). All students who transferred their science course from another college were excluded. Student level data included prerequisite science grades prior to entering the nursing program along with the grades earned in the four semesters of the nursing program.

NCLEX-RN examination results were obtained from the National Council of State Boards of Nursing report sent to each school of nursing. The list of names that wrote the NCLEX-RN examination was then searched for evidence of licensure on the Office of Health and Human Services website and the Nursys website. If the student was scheduled to take the exam, and evidence licensure was not verified, it was assumed the student did not pass the NCLEX-RN examination. All data was entered into a password protected excel spreadsheet for data analysis. Every fifth entry was double checked for accuracy.

Results (in progress): Data analysis procedures for this project are currently underway.

To ensure anonymity, the nursing school will be referred to only as a community college in Massachusetts and a separate log aligning the student name and the study identification number will be maintained and used only for data checking procedures. Reporting of study results will be done in aggregate to further protect the anonymity and confidentiality of subjects.

Implications for Future: Assessing the need for changes to the program entry requirements or curriculum modification has important implications for the successful completion of nursing licensure procedures of students and the sustainability of this ADN program.

Key Words: NCLEX-RN, Pass rate, Registered Nurse, Nursing

Analyzing Engagement Scores in Health Centers Led by Registered Nurses, Advanced Practice Registered Nurses, and Non-Clinicians

Meghan F. McManama

Background and Significance: Employee engagement plays a critical role in job satisfaction, staff turnover rates, work related injuries, patient outcomes, and patient satisfaction scores of healthcare organizations (Sherwood, 2013). Engagement is defined as a "positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (DiNapoli, 2016). Studies have shown that engaged employees are profitable and productive, whereas disengaged employees are apathetic, unmotivated, and withdrawn (Decker, 2016). Even with this known connection to positive outcomes, employee engagement is a metric that is often overlooked as an indicator of overall job satisfaction and organizational health. Additionally, the role of the manager is important when looking at staff engagement. Research has shown that managers account for as much as 70% of variance in employee engagement scores (Harter, 2015).

Purpose and Goal: The purpose of this quality improvement project is to conduct a secondary analysis of the data collected by Gallup Inc. to assess for differences in engagement scores amongst health centers with different leadership models. The goal is to help guide new clients of the organization in making decisions about the appropriate choice of leadership models for their health centers in order to ensure increased staff engagement and ultimately ensure excellence in patient care delivery.

Methodology: A quantitative secondary analysis of data collected via the Gallup Survey results will be conducted. In the original Gallup Survey, participants were asked 12 Likert scale questions with results were calculated to give each individual a total "engagement score." Scores of each team member were combined and averaged to give each health center "mean engagement scores". The Gallup Survey (2006) has a Cronbach's alpha of 0.91 for employee engagement.

Participation in the online survey was voluntary and confidential. Ninety-six percent of the organization's team members at all levels of employment within the organization partook in the online survey, resulting in a sample size of over 2,800 people, representing 565 clinical sites. Only clinical sites with three or more employees were included in the sample, bringing the sample size down to 1660 employees from 191 clinical sites. The data of from these 1660 employees will be analyzed; no additional surveys will be performed.

Inclusion criteria for the secondary analysis of the Gallup Inc. data: worksites with three or more employees who completed the Gallup Survey in April, 2016, in sites with a health center manager who is an RN, APRN, or non-clinician. Exclusion criteria: sites with fewer than three team members, sites where the health center manager is a physician or physical therapist, and sites where no team members participated in the online survey.

Results (in progress): Data analysis procedures for this project are currently underway.

Implications for Future: Leadership model choices should be made on the basis of improving patient and staff outcomes. If employee engagement is affected by the profession of the manager of a health center, then new centers should utilize the most effective leader. The organization's operations team members should inform clients if there are differences found between leadership models to help influence client choices.

Key Words: Engagement, leadership, staffing models

Incidence and Risk Factors Associated with Hyperactive, Hypoactive and Mixed Delirium in Two Adult Medical Intensive Care Units

Sharon C. O'Donoghue

Background and Significance: Delirium is defined as an altered level of consciousness accompanied by inattention and disorganized thinking (American Psychiatric Association, 2013). Time spent in delirium has been attributed to long-term cognitive and functional deficits as well as a significantly reduced quality of life for patients who survive an intensive care unit (ICU) stay (Pandharipande et al. 2013). In addition, delirium is an independent predictor of increased hospital length of stay, ICU days, ventilator days, and mortality (Barr et al., 2013; Ely et al., 2004; Pun & Ely, 2007). While the incidence of delirium is high, it is often under recognized by ICU clinicians. The challenge is that delirium can present in three ways: hyperactive, hypoactive and mixed. These different presentations, complicated by a fluctuating course, often make it difficult for clinicians to accurately identify delirium.

Purpose and Goals: The purpose of this secondary analysis is to distinguish the incidence and risk factors associated with the three types of delirium: hyperactive, hypoactive, and mixed delirium. Data will be extracted from a database that contains the documentation of all patients admitted to two adult medical intensive care units (MICUs) in a tertiary academic medical center in the Northeast region of the United States (US). The goals of this project are to:

1. Assist organizations to better identify patients at risk for delirium
2. Utilize this data in future projects to develop interventions to decrease time spent in the different types of delirium.

Methodology: Data stored in the *Medical Information Mart for Intensive* Care (MIMIC) and originally collected between July 2013 and July 2016 was used for this retrospective secondary analysis. The study population consists of patients who were admitted to two medical ICUs at a single tertiary academic medical center, who screened positive for delirium utilizing the *Confusion Assessment Method in the ICU* (CAM-ICU) and stratified by level of sedation using the *Richmond Agitation Sedation Scale* (RASS). The CAM-ICU is a valid and reliable screening tool for delirium, which has been shown to have a sensitivity of 93% and a specificity of 98% (Ely et al., 2001). The RASS has excellent interrater reliability ($r = 0.922\text{-}0.983$) ($k = 0.64\text{-}0.82$) and validity with other like scales ($r = 0.93$) (Sessler et al., 2002). Risk factors were extracted from the database utilizing *PostgreSQL*, a reliable and secure management system by one clinician and two data analysts (PostgreSQL, 2016). The *R* statistical software package is being utilized for data analysis (*R* Core Team, 2013).

Results (in progress): Data analysis is currently being conducted.

Implications for Future: The incidence of delirium has been studied but not stratified to the three types of delirium. The identification of risk factors which may vary from one type of delirium to another may facilitate the early assessment of delirium. The proper identification of delirium is the first step to improving outcomes in critical care. The information obtained from this project will provide a foundation to develop interventions that are effective in improving outcomes for a specific type of delirium.

Key Words: Delirium, ICU, risk factors, incidence, secondary analysis

Pediatric Nurses' Perceptions of Preparedness for Global Health Fieldwork

Alexis Schmid

Background and Significance: Increasing numbers of pediatric nurses are traveling abroad to do global health (GH) fieldwork. Undergoing high quality, competency based pre-departure preparation for GH experiences has been established as best practice. However, optimal teaching methods for pre-departure training have not yet been established. Necessary content, duration and methods of preparing pediatric nurses for fieldwork need to be determined. Without adequate training, nurses may be ill prepared to work in environments where diseases and resources are vastly different from what is encountered at home potentially becoming a liability to themselves and the communities they are trying to serve. Wide variability in the nature, duration, and learning modalities for preparing GH nurses is observed. Preparation generally includes education about indigenous diseases, health and safety, site-specific logistics and strategies to address cultural and ethical differences. Educational resources may include informational manuals, internet searches, online education, and in-person, structured sessions targeted to meet the clinician's needs. It is not known if these educational opportunities adequately prepare GH nurses for their fieldwork experience.

Purpose and Goal: The purpose of this qualitative research study will be to inform stakeholders about the pre-departure preparation needs of pediatric GH nurses. The specific aim of this study will be to explore the perception of pediatric GH nurses about their preparedness to perform GH fieldwork.

Methodology: The study design is qualitative content analysis of focus groups consisting of a purpose sample of pediatric GH nurses who have completed fieldwork abroad. After focus group data is transcribed, the principle investigator and her team will read the transcriptions multiple times to identify themes that explain the subject of interest. Members of the study team will analyze data using conventional content analysis.

Results (in progress): The proposal has received nursing scientific review approval and is currently being submitted to Boston Children's Hospital Committee for Clinical Investigation.

Implications for Future: Inadequate or partial preparation of GH nurses leaves the provider and their patients at risk for harm. Adequate preparation allows the nurse to develop knowledge about adapting to changing conditions, awareness of resources, ethics, humility, and acknowledgement of limitations. Thus, pre-departure preparation is integral to the success of a GH nurse by providing a foundation of knowledge to keep the nurse and the local population safe and healthy. Furthermore, information gained from this study will be used to inform stakeholders interested in adequately preparing pediatric nurses for GH fieldwork.

Key Words: global health, fieldwork, pediatric, nurse, preparedness

Evaluation of a Novel Evidence-Based Practice Mentorship Program in a Pediatric Quaternary Care Setting

Paul Ethan Schuler

Background and Significance: Evidence-based practice has been shown to improve patient outcomes, increase practitioner skills, decrease practice variation and lessen the cost of care. Despite these known benefits, a Boston Children's Hospital institution-wide survey in 2012, using the Quick-EBP-VIK, revealed opportunities for improvement in the areas of knowledge and implementation of EBP. In response to these findings, the Evidence-Based Practice Subcommittee was charged with addressing this institutional need. The result was the development of a novel evidence-based practice mentorship program, or EBPMP.

Members of the Evidence-Based Practice Subcommittee designed EBPMP as a seven-step self-directed program intended to guide nurses through essential EBP content via supplementary readings and online educational modules. Throughout the yearlong curriculum, EBPMP participants work closely with an EBP mentor to experience the full EBP process as they move through the seven steps. Participants carry out an evidence-based practice project that addresses an important clinical question.

Purpose and Goals: This project evaluates the effect of the EBPMP on nurse participants' value, implementation and knowledge of EBP, as well as their mentorship experience, using a mixed methods design. The specific aims of this project are: 1. To describe demographic and nursing characteristics for the first cohort of EBPMP participants; 2. To describe the change in nurse participants' value, knowledge, and EBP implementation pre- post EBPMP using Quick-EBP-VIK; 3. To understand the participant's experience with EBPMP through qualitative content analysis of focus groups conducted at 6-month and 1-year intervals, and; 4. To understand the participants experience with EBPMP and rationale for withdrawal from the program through a single one-on-one interview.

Methodology: This study uses a mixed methods design including: Quantitative analysis of pre and post EBPMP, using Quick-EBP-VIK survey results; Qualitative content analysis of EBPMP focus groups at 6 months and 1 year, and interviews for participants who elect to withdraw from the program.

Results (in progress): This study is in the data collection phase, as the focus groups are currently being conducted. Pre EBPMP interview data has been collected and will be compared to participant results upon their completion of the yearlong program.

Implications for Future: Nurse participation in EBP has been directly associated with improved patient care. Outcomes from this study, including changes in value, implementation and knowledge of EBP, and findings from focus groups and interviews will be used to inform stakeholders about the benefits of EBPMP and the potential need for program modifications.

Key Words: Evidence based practice, mentorship, nursing, value, implementation, knowledge

Exploring the Reasons Nurse Practitioners in Massachusetts Choose Whether or Not to Precept Students

Scott Weissman

Background and Significance: A review of literature cites many barriers in finding appropriate preceptorship opportunities, including lack of compensation for the preceptor's time, fear of decreased NP productivity, use of technology limiting a student's ability to electronically chart, limited clinical space, and competition between nursing schools for sites (Webb, Lopez, & Guarino, 2015). While there are many theories to support this educational dilemma, few studies focus on the positive and negative aspects of precepting from the point-of-view of practicing NPs.

Purpose and Goal: The purpose of this study is to identify facilitators and barriers to NPs serving as preceptors in order to discover ways NP programs can attain greater preceptorship opportunities for their students. The goal of this project is to identify perceptions of NPs practicing in the greater Boston area, with regards to precepting students. This geographic area is unique as there is an abundance of nursing programs, thus the schools are competing for the same preceptorship opportunities.

Methodology: A survey study of practicing NPs from the Massachusetts Coalition of Nurse Practitioners (MCNP) has been conducted. Eligible participants include masters or doctoral prepared nurse practitioners practicing for at least two years in Massachusetts, with mixed backgrounds and areas of expertise. The survey consists of the Dibert & Goldenberg (1995) validated four-part questionnaire including the Preceptor's Perceptions of Benefits and Rewards Scale (PPBR), the Preceptor's Perceptions of Support Scale (PPS), the Commitment to the Preceptor Role Scale (CPR) and a demographic section.

Results (in progress): Data collection and analysis is underway. Data will be analyzed using the Qualtrics software package. Descriptive statistics will be used to examine the social demographic data and open-ended questions, while inferential statistics will be used to analyze data from the questionnaires.

Implications for Future: Findings from this study will likely reveal positive and negative aspects of precepting student NPs. This study differs from other NP precepting studies as the focus is on practicing NP's perceptions of precepting students. These NPs are likely in high demand to serve as preceptors given the academically dense area in which they are practicing. The research will provide a better understanding of this phenomenon and may provide suggestions for nursing schools and practice sites to increase preceptorship participation by practicing NPs.

Key Words: nurse practitioner, nurse practitioner student, precepting