



NorthShore University HealthSystem School of Nurse Anesthesia

&

DePaul University School of Nursing 2018 DNP Projects



1. THOMAS NIGRO MS, RN

	A Comprehensive Reentry Policy for Student Registered Nurse Anesthetists with Substance Use Disorder.
	Committee: Pamela Schwartz CRNA, DNP, CRNA-Chair & Bernadette Roche, EdD, CRNA
2.	ANDREW CHRIST BSN, RN
	A Malignant Hyperthermia Competency Training for Nurse Anesthesia Trainees: Development,
	Implementation, and Evaluation.
	Committee: Karen Kapanke DNP, CRNA-Chair & Anne Sauri DNP, CRNA5
3.	MATTHEW LIPINSKI BSN, RN
	Analysis of Policies Regarding Personal Electronic Device Use in the Operating Room
	Committee: Shannon Simonovich PhD, RN –Chair & Joseph Tariman PhD, ANP, BC6
4.	ASHLEY STEWART BSN, RN
	A Peer Mentorship Program for Student Registered Nurse Anesthetists: Development, Implementation and Evaluation
	Committee: Susan Krawczyk DNP, CRNA – Chair; Julia Feczko DNP, CRNA7
5.	JASPRIT DULAT BSN, RN & MARJORIE REEVES MS, RN
	Attitudes and Beliefs among Anesthesia Providers Regarding Smart Phone use for Intraoperative Anesthetic Management
	Committee: Karen Kapanke DNP, CRNA –Chair & Shannon Simonovich PhD, RN
6.	TAYLOR HULL MS, RN
	Current Anesthesia Education Practices Regarding Music as an Adjunct for Analgesia and Anxiolysis
	Committee: Karen Kapanke DNP, CRNA-Chair & Pamela Schwartz DNP, CRNA9
7.	MICHAEL SIT BSN, RN
	Does a Teamwork Seminar Increase Nurse Anesthesia Student Awareness of High Performance Teamwork Behaviors?
	Committee: Julia Feczko DNP, CRNA -Chair & Pamela Schwartz DNP, CRNA10
8.	SUZANNE ANDERSON BSN, RN & MOLLY WENZEL BSN, RN
	Efficacy and Usefulness of an Educational Video on Safe Medication Handling
	Committee: Julia Feczko DNP, CRNA -Chair & Anne Sauri DNP, CRNA

9.	MICHELLE PAVLIK BSN, RN	
	Implementation and Compliance with a Goal-Directed Fluid Therapy Protocol for Hip Arthroplasties: A Two)-
	Year Review	
	Committee: Karen Kapanke DNP, CRNA –Chair & Randal Dull MD	12
10.	DEBRA FARIDA MS, RN & MEGAN CALLOW BSN, RN	
	Infection Control of the Anesthesia Workspace - Double Glove Technique	
	Committee: Pamela Schwartz CRNA, DNP, CRNA-Chair & Shannon Simonovich PhD, RN	13
11.	ANDREA HOLYSZKO BSN, RN & LAUREN LEVIN BSN, RN	
	Methods of Endotracheal Tube Cuff Inflation	
	Committee: Julia Feczko DNP, CRNA – Chair, Susan Krawczyk DNP, CRNA & Joseph Szokol, MD	14
12.	DAVID VELASCO BSN, RN	
	Opioid Alternative Medications: CRNA Beliefs, Opinions, and Practices	
	Committee: Bernadette Roche EdD. CRNA–Chair, Susan Krawczyk DNP, CRNA & Shannon Simonovich	
	PhD, RN	15
13.	LAURIE MCLAUGHLIN BSN, RN & KATHRYN WALUS BSN, RN	
	Use of Non-Technical Skills Trainina & Video Simulation to Improve Knowledge among Nurse Anesthesia	
	Trainees	
	Committee: Karen Kananke DNP CRNA-Chair & Julia Feczko DNP CRNA	16
	committeer water wapanice birry enant of an a valid receive birry enant in a valid r	



THOMAS NIGRO MS, RN

A COMPREHENSIVE REENTRY POLICY FOR STUDENT REGISTERED NURSE ANESTHETISTS WITH SUBSTANCE USE DISORDER.

BACKGROUND

Substance use disorder (SUD) is a common problem in anesthesia. While there are policies in place for practicing anesthetists, there are no known studies to date discussing reentry policies specific to the student registered nurse anesthesia (SRNA) population.

OBJECTIVE

The purpose of this research study was to describe key stakeholders' knowledge and perspectives surrounding policies for reentry into academic programs for SRNAs in Illinois with SUD.

METHOD

During November 2017-January 2018, qualitative interviews were conducted using a semi-structured interview guide with chief anesthesiologists, chief certified registered nurse anesthetists (CRNAs), and directors of academic anesthesia programs from throughout Illinois. All interviews were audio recorded, transcribed, and analyzed using thematic analysis.

RESULT

Eleven major themes were identified: existent and non-existent SUD policies, inconsistent methods on how to access a policy, variability in the components of SUD policies, difficulty in determining SUD among SRNAs, difficulty in confronting an individual, effectiveness of components of SUD policies are equivocal, ineffective components of a policy, knowing a person with SUD is not uncommon, variable amount of time needed for SUD treatment, differing opinions for the need for a student specific SUD policy, and reasons for need.

CONCLUSION

The immediate goal of this research was to create a comprehensive reentry policy for SRNAs in Illinois with SUD to provide a structured reentry into an academic program. The long-term goal was to provide a tool that could be utilized in all academic anesthesia programs to assist all students suffering from SUD. All institutions that educate and utilize SRNAs should have a comprehensive reentry policy in place for SRNAs with SUD, which includes SRNA reentry to their educational program.



A MALIGNANT HYPERTHERMIA COMPETENCY TRAINING FOR NURSE ANESTHESIA TRAINEES: DEVELOPMENT, IMPLEMENTATION, AND EVALUATION.

ANDREW CHRIST BSN, RN

BACKGROUND

Video simulation is an alternative method of teaching that can play an important role in nurse anesthesia education. Using video simulation for uncommon crisis could prove beneficial.

OBJECTIVE

The purpose of this study is to analyze the effects of an educational video simulation regarding malignant hyperthermia (MH) recognition and management on knowledge of nurse anesthesia trainees (NATs).

METHOD

A single group pretest-posttest design was used to compare knowledge on recognition and management of malignant hyperthermia. Pretest scores were attained and followed by a viewing of pre-recorded video simulation on proper recognition and management of malignant hyperthermia. Posttest scores were obtained immediately after viewing the complete pre-recorded video simulation.

RESULT

Twenty nurse anesthesia trainees (NA) participated in the single group pretest-posttest design. The comparison of mean scores between the pretest and posttest showed a strong statistical significance. The video on MH recognition and treatment significantly improved NAT scores on the posttest when compared to the pretest.

CONCLUSIONS

Viewing a video simulation on the recognition and management of malignant hyperthermia increased knowledge of both junior and senior NATs. This pilot study offers preliminary evidence that there is a role for video simulation education in the curriculum of nurse anesthesia programs. There is a need for larger, more rigorous research in order to provide further evidence on the effectiveness of this video educational strategy.



ANALYSIS OF POLICIES REGARDING PERSONAL ELECTRONIC DEVICE UES IN THE OPERATING ROOM

MATTHEW LIPINSKI BSN, RN

BACKGROUND

Despite benefits of personal electronic devises (PED) use in healthcare, there are negative aspects to their use. Most concerns center on distraction of the provider and an interruption of the delivery of care that may cause harm to the patient. This has led to PED use in the operating room (OR) being a controversial subject within the healthcare community. With strong arguments for and against PED use in the OR, many hospitals have formulated policies to address the issue. Up until now, there has been no significant inquiry into the nature of these policies.

OBJECTIVES

The purpose of this study was to examine the policies of healthcare institutions with regards to PED use in the OR.

METHODS

To accomplish this, healthcare facilities from the Top 20 Honor Roll Hospitals as ranked by US News and World Reports were recruited, as well as hospitals from the greater Chicago area. The policies submitted by the participating hospitals were coded and run through NVivo software for thematic qualitative analysis.

RESULTS

The analysis demonstrated there is a wide variety in permissiveness and restrictions on PED use by healthcare institutions.

CONCLUSIONS

The study also discovered there is little consensus as to the definition of PEDs themselves, nor of the language regarding their use.



ASHLEY STEWART BSN, RN

A PEER MENTORSHIP PROGRAM FOR STUDENT REGISTERED NURSE ANESTHETISTS: DEVELOPMENT, IMPLEMENTATION AND EVALUATION

BACKGROUND

Mentorship programs provide an encouraging environment that can help support a student during a stressful period.

OBJECTIVES

To develop and implement an evidence-based peer mentorship program for the Student Registered Nurse Anesthetists (SRNAs) at NorthShore University HealthSystem School of Nurse Anesthesia and to evaluate its perceived effects on the second-year SRNA's level of stress and anxiety, support, communication, preparation, and satisfaction.

METHOD

The peer mentorship program paired eight second-year SRNA mentee volunteers with 10 third-year SRNA mentor volunteers. The program consisted of guided opportunities (in person, online discussion, and extracurricular communication) for the matched peers to interact with the intent of facilitating the second-year SRNAs' transition into nurse anesthesia clinical rotations.

RESULTS

Stress and anxiety, support, and preparation had Cronbach alpha scores that proved reliability and consistency existed between the four questions in those subscales. Of the three valid subscales, support had the highest mean score of 17, preparation had a mean score of 15.62, and the stress and anxiety had the lowest mean score of 14.75.

CONCLUSIONS

Perceived level of support was most positively impacted by the peer mentorship program. The stress and anxiety subscale was positively impacted, however requires future improvements in order to have a satisfactory mean score. The peer mentorship program had a positive effect on participating secondyear students as they transitioned into clinical rotations.



JASPRIT DULAT BSN, RN



MARJORIE REEVES MS, RN

ATTITUDES AND BELIEFS AMONG ANESTHESIA PROVIDERS REGARDING SMART PHONE USE FOR INTRAOPERATIVE ANESTHETIC MANAGEMENT

BACKGROUND

Smartphone technology has evolved at the same accelerated pace as healthcare technological innovation. Critics of these advancements are leery about Smartphone use in the operating room (OR) because it may be a source of distraction for anesthesia providers; however, supporters argue that their use is also recognized as a potential aid in learning.

OBJECTIVES

This study was conducted to assess workplace attitudes and beliefs regarding the use of Smartphones in the operating room in order to establish policies that promote patient safety in conjunction with accessibility to valuable technology.

METHOD

An investigator-developed questionnaire on Smartphone uses in the OR was sent to the anesthesiology staff of a large, academic medical center in Illinois.

RESULTS

The findings revealed that over 95% of study participants believe that Smartphones in the OR are very useful for accessing medical information during anesthesia care. The majority of participants (92.9%) indicated that they never use Smartphones during critical times of anesthesia and 57.1% of participants do not believe that Smartphone use should be restricted in the OR. A large discrepancy was noted between the Employee Handbook policy on Smartphone use and the beliefs, attitudes, and actions of anesthesia providers.

CONCLUSION

There is a need for a policy review on Smartphone use in the OR in order to correct inconsistencies, remove obsolete rules, update outdated policies, and build consensus on ways in which anesthesia providers may use Smartphones effectively and safely in the OR.

Keywords: Smartphones, Anesthesia, Medical Apps, Patient Safety



CURRENT ANESTHESIA EDUCATION PRACTICES REGARDING MUSIC AS AN ADJUNCT FOR ANALGESIA AND ANXIOLYSIS

TAYLOR HULL MS, RN

BACKGROUND

Music has been proven as an effective complementary and alternative medicine and can be an important tool for nurse anesthetists.

OBJECTIVES

The purpose of this project was to assess if nurse anesthesia programs are including music as a part of the complementary and alternative medicine (CAM) curriculum for anxiety and pain in the perioperative setting.

METHOD

A descriptive survey was sent to program directors of nurse anesthesia programs in the United States to assess the current level of awareness and education regarding music as an alternative medicine as well as barriers to the addition of music into curriculum.

RESULTS

Twenty-eight participants responded to the survey. A Chi squared test revealed that a statistically significant link (p = 0.003) between program Doctoral degree level and the program director or director's proxies' likelihood to know the benefits of music as a CAM. Additionally, the most common response to barriers for music as a CAM addition to curriculum was lack of time and lack of CAM on boards.

CONCLUSION

The study found that there are CRNA programs that know the benefits of and teach music as a CAM as a part of their curriculum. The study also showed there is a need to expand music as a CAM education to increase both student and current provider awareness of benefits as well as utilization.



MICHAEL SIT BSN, RN

DOES A TEAMWORK SEMINAR INCREASE NURSE ANEST HESIA STUDENT AWARENESS OF HIGH PERFORMANCE TEAMWORK BEHAVIORS?

BACKGROUND

While teamwork is receiving increased attention as an essential component of high quality health care and patient safety, the explicit identification and training of high performance teamwork behaviors is often absent from formal anesthesia training.

OBJECTIVES

The goal of this project was to improve student nurse anesthetists' awareness of high performance teamwork behaviors through implementation of a teamwork seminar and to utilize the validated and reliable Mayo High Performance Teamwork Scale (MHPTS) to assess and debrief on simulated, video-recorded teamwork behaviors.

METHOD

A non-experimental, post-test only design was employed with a convenience sample of second and third year nurse anesthesia students. Participant characteristics were assessed via demographic survey. Implementation of the teamwork seminar was evaluated by usefulness survey.

RESULTS

Thirty second and third year nurse anesthesia students participated in the teamwork seminar. The overall mean score for perceived usefulness of the teamwork seminar was 3.7 out of 4.0. The standard deviation was calculated to be 0.407 and Cronbach's alpha coefficient was 0.920, representing strong internal consistency and a reliable survey. No significant relationships were found between any of the demographic responses and usefulness survey responses.

CONCLUSION

The teamwork seminar was perceived as useful in a variety of fields. Nurse anesthesia students are an ideal population for future teamwork training endeavors. The MHPTS was easily incorporated into a student learning activity and utilized as a tool to guide reflection and facilitate debriefing on teamwork. Use of the

CLASS OF 2018 DNP PROJECTS



SUZANNE ANDERSON BSN, RN



MOLLY WENZEL BSN, RN

EFFICACY AND USEFULNESS OF AN EDUCATIONAL VIDEO ON SAFE MEDICATION HANDLING

BACKGROUND

Medication errors are a significant and detrimental issue in anesthesia practice and have the potential to have drastic effects for patients, providers, and hospitals; therefore, it is important to determine if an educational video on safe medication handling technique can improve knowledge on safe medication handling.

OBJECTIVES

The purpose of this study was to evaluate the efficacy and perceived usefulness of an investigatordeveloped educational video on nurse anesthesia trainees' (NATs) knowledge of Safe medication handling.

METHODS

A single group pretest-posttest design was used to evaluate actual knowledge and perceived usefulness of safe medication handling video. A convenience sample included 19 voluntary second year NATs at NorthShore University HealthSystem School of Anesthesia.

RESULTS

Using a paired sample t-test, a statistically significant difference was found between the pre-knowledge assessment tool mean score of M = 3.6842 with SD = 1.97 and the post-knowledge assessment tool mean score of M = 7.6842 with SD = 2.26 (t = 6.643; df = 18; p = 0.00*). The overall mean score of the Perceived Usefulness Scale was M = 4.28; SD=.36, indicating moderately high perceived usefulness of the safe handling video. Eighty nine and a half percent (n=17) of the participants rated each question in the Perceived Usefulness Questionnaire greater than the neutral score of 3.

CONCLUSION

The educational video increased the knowledge on NAT-2's on safe medication handling and was perceived as a useful tool. The video can be used for future NAT-2s to increase their knowledge on safe medication handling prior to their clinical experience.

Keywords: medication safety, medication errors, anesthesia, student, video, education



MICHELLE PAVLIK BSN, RN

IMPLEMENTATION AND COMPLIANCE WITH A GOAL-DIRECTED FLUID THERAPY PROTOCOL FOR HIP ARTHROPLASTIES: A TWO-YEAR REVIEW

BACKGROUND

Historically, goal-directed fluid therapy (GDFT) has been shown to improve patient outcomes when used in the perioperative setting for specific cases (colorectal, etc). When anesthesia providers use GDFT protocols, intraoperative fluid therapy is" patient specific" via the use of dynamic patient-specific physiologic parameters.

OBJECTIVES

The aim of the study is to assess whether GDFT improved patient-specific fluid administration. A secondary aim was to assess adherence to the instated GDFT protocol.

METHOD

A retrospective chart review was conducted on 201 patients undergoing total hip arthroplasty (THA) procedures following implementation of a GDFT protocol at the University of Illinois at Chicago Hospital.

RESULTS

The compliant group consisted of older, heavier, sicker (higher ASA score) patients whom had more EBL during surgery. The compliant group showed a moderate-strong positive correlation between fluid output and fluid administration (r=0.664), while the group that did not utilize the EV-1000[™] monitor and GDFT protocol had a weaker linear relationship (r=0.373). When the protocol was used, practitioners were compliant in over 50 percent of cases for over 70 percent of the surgical time.

CONCLUSION

Trends suggest improved patient-specific precision of fluid administration when a GDFT protocol is used. Further evaluations of a GDFT for THA procedures should be conducted for increased protocol validity.



MEGAN CALLOW BSN, RN



DEBRA FARIDA MS, RN

CONTROL OF ANESTHESIA WORKSPACE-DOUBLE GLOVE TECHNIQUE

BACKGROUND

Current infection control practice has proven to be inadequate and pathogen transfer from anesthesia provider to patient is well established, especially pertaining to contamination during direct laryngoscopy (DL), which exposes both surface and patient to disease, viruses, and bacteria.

OBJECTIVES

The purpose of this study is to evaluate the acquisition of confidence and perceived knowledge of proper handling of potential contaminants during induction and DL utilizing video simulation among junior level Student Registered Nurse Anesthetist's (SRNA's) enrolled at NorthShore University HealthSystem.

METHOD

A single intervention group was evaluated on confidence and perceived knowledge, using pre-and posttest, both before and immediately after video simulation, on the steps of induction and endotracheal intubation using double glove technique.

RESULTS

Eighteen junior level nurse anesthesia trainees (NATs) comprised the single group, pretest-posttest design. A paired-samples t-test was conducted to compare pre- and post-tests for confidence and perceived knowledge. The results demonstrated a profound increase in both measurements. There was a statistically significant difference in the scores for pre-confidence (M=3.1, SD=0.75) and post-confidence (M=4.4, SD=0.41); t (17) =-7.41, p<0.001. Additionally, there was a statistically significant difference in the scores for pre-perceived knowledge (M=0.0, SD=0.00) and post-perceived knowledge (M=0.6, SD=0.50); t (17) =-5.17, p<0.001. Demographic variables had no significant effect on the scores of confidence or perceived knowledge.

CONCLUSION

Video simulation on the sequence of induction and DL using double glove technique increased both confidence and perceived knowledge among junior level NATs.

Keywords: SRNA, simulation, infection control, anesthesia



ANDREA HOLYSZKO BSN, RN



LAUREN LEVIN BSN, RN

METHODS OF ENDOTRACHEAL CUFF INFLATION

BACKGROUND

Current research identifies adverse effects associated with elevated endotracheal tube (ETT) cuff pressures above 25 cmH2O and demonstrates anesthesia providers' current methods of cuff pressure estimation lead to cuff overinflation, postoperative throat pain, and tissue ischemia.

OBJECTIVES

To educate anesthesia providers about proper ETT cuff inflation methods and negative consequences of overinflation, and to make providers aware of the incidence of cuff overinflation while suggesting a new method for cuff inflation.

METHOD

This was a quantitative, quasi-experimental study evaluating anesthesia providers' choice of syringe size (5ml vs 10ml) for ETT cuff inflation and the resultant ETT cuff pressures before and after an educational intervention. Cuff pressures were measured using a digital syringe manometer.

RESULTS

The total number of cuff pressures measured was 56. The mean ETT cuff pressure pre-education = 46.8 cmH2O and post-education = 27.1 cmH2O with a p value of 0.001. The post-education average cuff pressure using a 10 ml syringe was 36.8 cmH2O, and using a 5 ml syringes was 21.1 cmH2O (p = 0.039). The relationship between the type of inflation syringe used and cuff pressure was statistically significant (p = 0.000) with a positive Pearson correlation of 0.471.

CONCLUSION

There was a significant reduction in ETT cuff pressures post-educational intervention. The use of a 5 ml syringe in place of a 10ml syringe was even more effective at maintaining cuff pressures within goal range. It is recommended that 5 ml syringes be the new standard of practice for inflation of ETT cuffs.



OPIOID ALTERNATIVE MEDICATIONS: CRNA BELIEFS, OPINIONS, AND PRACTICES

DAVID VELASCO BSN, RN

BACKGROUND

Opioids are powerful pain medications that have significant side effects. Opioid alternative administration can treat analgesia and limit opioid administration.

OBJECTIVES

The purpose of this study was to examine and describe CRNAs' beliefs, opinions, and practices on administering opioid medications versus opioid alternative strategies to treat intraoperative pain.

METHOD

A qualitative, survey study design using semi-structured interviews was conducted. Twelve CRNAs were interviewed and audio recorded discussing their perspectives and opinions on administering opioid alternatives.

RESULTS

Two themes were established: barriers and promoting factors with each theme containing sub themes. The subthemes under barriers included: opioid superiority (83%), inconsistent analgesia effects of opioid alternatives (83%), limited experience with opioid alternatives (58%), limited opioid alternative resources (42%), negative experiences with alternative administration (66%), and patient comorbidities (100%). Subthemes under promoting factors included: avoiding adverse effects of opioids (92%), institutional policies (50%), positive experiences with alternative administration (100%), and regional superiority (100%).

CONCLUSION

Understanding the barriers and promoting factors to opioid alternative administration can be useful to enhance its usage. Larger studies and/or surveys are needed to assess greater sample sizes to further validate the current data.

Keywords: anesthesia, opioids, perceptions, barriers, multimodal strategies, nurse anesthetist, providers



LAURIE MCLAUGHLIN BSN, RN



KATHRYN WALUS BSN, RN

USE OF NON-TECHNICAL SKILLS TRAINING & AMP; VIDEO SIMULATION TO IMPROVE KNOWLEDGE AMONG NURSE ANESTHESIA TRAINEES

BACKGROUND

The transition from didactic component to clinical practice is challenging for nurse anesthesia trainees. When faced with an airway crisis, successful management involves non-technical skills, which include recognition, decision-making, and prioritization. Limited data is available on the efficacy of instructional video on enhancing non-technical skills during airway crisis management among nurse anesthesia trainees.

PURPOSE

The purpose of this study was to examine the efficacy of instructional video simulation on enhancing the nurse anesthesia trainee's knowledge of recognition, decision-making, and prioritization during bronchospasm and laryngospasm airway crises.

METHODS

A quasi-experimental pre-test and post-test design was used to investigate the effect of an instructional video simulating the proper non-technical skills of recognition, decision-making, and prioritization.

RESULTS

A convenience sample of 27 second and third year nurse anesthesia trainees were recruited. A Wilcoxon Signed Ranks Test demonstrated that the median post-test scores were statistically higher that the median pre-test scores between pre and post- instructional video [Z= -4.473; p=0.000 (2-tailed)] with adequate pre and post-test Kuder- Richardson-20 (KR-20) scores (0.533, 0.686). Specifically, post-test median prioritization scores for bronchospasm and laryngospasm were statistically higher than median pre-test scores [t=-5.366; p=0.000 (2-tailed)]; [t=-8.588; p=0.000 (2-tailed)].

CONCLUSION

The findings demonstrate the effectiveness of instructional video simulation on non-technical skills, specifically prioritization, during airway crises such as bronchospasm and laryngospasm for nurse anesthesia trainees. According to the results, utilizing a pre-test/post-test design and instructional video simulation improved non-technical skills knowledge among nurse anesthesia trainees.