



NorthShore University HealthSystem
School of Nurse Anesthesia

&

DePaul University School of Nursing
Class of 2017
DNP Poster Presentations

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Evaluation of Entry-Level Nurse Anesthesia Educational Programs

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Background

- By January 1, 2022, all students matriculated into schools of nurse anesthesia must graduate with a practice doctorate.
- Only 51 of the nation's 116 nurse anesthesia schools offer an entry-level practice doctorate.
- The remaining schools may face numerous barriers to transitioning to a doctorate.

Objectives

The research questions that were addressed in this study included:

- What do program administrators of nurse anesthesia educational programs perceive to be the most significant barriers to transitioning their entry-level program from offering a master's degree to offering a practice doctorate?
- 2. How did the transition from offering a master's degree to a practice doctorate affect various program functions and outcomes?
- Will the requirement for all NAEPs to offer a practice doctorate by January 1, 2022 result in a change in the number of graduates from nurse anesthesia programs by 2025?

Methods

Design

Descriptive, investigator-developed, online survey using Qualtrics was designed based on common themes emerging from extensive review of the literature.

Participants

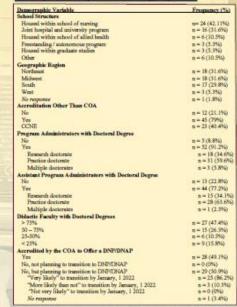
Program administrators of all 116 of the nation's nurse anesthesia programs were invited to participate in the anonymous online survey.

Data Collection & Analysis

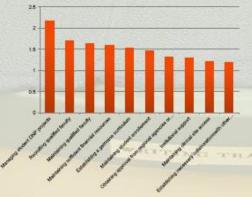
Online survey was kept open for 4 weeks after initial recruitment email was sent; a follow-up reminder email was sent halfway through data collection timeframe. SPSS version 24 was used for data analysis. Descriptive statistics, Chi-square test of independence, independent samples t test, and one-way ANOVA were utilized for data analysis.

Results

Study Participant Demographics



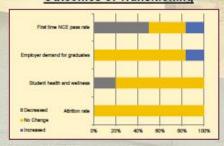
Barriers to Transitioning



Effects of Transitioning



Outcomes of Transitioning



Data Analysis

- No statistically significant association between current DNP accreditation and various demographic variables were found.
- "Managing student DNP projects" was ranked as the largest barrier to transitioning to a doctoral program.
- Programs that had not yet transitioned to offering a doctorate were found to be significantly more likely to cite "establishing necessary collaborations with other academic institutions in order to offer a doctorate" as a barrier to transition than those that had already transitioned (t = -1.962, df = 55, p = 0.007).
- One-way ANOVA showed significant differences in how groups rated "maintaining student enrollment" as a barrier to transition (*F* = 4.591, *df* = 3, *p* = 0.006) and "maintaining sufficient financial resources" as a barrier to transition (*F* = 3.239, *df* = 3, *p* = 0.029).

Additional Findings

- 40% of programs reported changing admission requirements after transitioning to a practice doctorate program.
- Only 6 programs reported to have graduated any cohorts with a practice doctorate.
- No programs reported to that transitioning to a practice doctorate by January 1, 2022 would be unlikely.

Conclusion

Managing Student DNP Projects

Professional groups such as the AANA and the COA could greatly assist NAEPs in the transition to offering practice doctorates by providing greater support for managing student DNP projects. Such measures could include developing a position statement on nurse anesthesia DNP projects, providing a central bank of completed DNP projects, establishing a means for collaboration of DNP projects across the country, and supplying strategies for project development and dissemination.

Late Adopters

Professional groups such as the AANA and the COA could help ensure that all programs are prepared to transition to offering a practice doctorate by 2022 by identifying those programs that, by virtue of their school structure, cannot offer a doctorate and offer early assistance in establishing the necessary collaborations to make the transition.

NCE First-Time Pass Rates

Programs that transition to offering practice doctorates should be made aware of the potential for a decline in first-time pass rates of the NCE resulting from the transition and develop strategies to prevent this.

Admission Requirements

Following the January 1, 2022 deadline for all programs to offer practice doctorates, professional groups such as the AANA and the COA could review all individual program admission requirements to determine if any new requirements are commonly seen for practice doctorate programs. If new trends are noted, considerations could be made as to whether changing minimum admission requirements at the national level would have any benefit.



Evaluation of a Video-Based Left Ventricular Assist Device Education Program for Certified Registered Nurse Anesthetists and Student Registered Nurse Anesthetists

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Karen Kapanke, DNP, CRNA Committee Chair and Julia Feczko, DNP, CRNA Committee Member DePaul University

Background

Educational Needs

·Educational need identified

 NorthShore University HealthSystem, Evanston Hospital (NSUHS, EH) lacked a left ventricular assist device (LVAD) education program for Certified Registered Nurse Anesthetists (CRNA) and Student Registered Nurse Anesthetists (SRNA)

Why the LVAD?

•Heart failure (HF) is leading cause of morbidity and mortality in United States

- 5 million diagnosed with HF annually in United States
- ~\$32 billion per year spent on HF treatments

HF is multifaceted disease process

- For those refractory to traditional HF therapies, left ventricular assist devices (LVAD) and heart transplant are primary treatment options
- · LVADs are becoming

·Why Video-Based Education?

Video-Based Education

- · Several benefits over traditional education
- · Enhance teaching effectiveness
- · Improved knowledge transfer
- · Developed knowledge and skill retention

Purpose

Purpose Statement

- To produce an educational video for CRNAs and SRNAs based on the most pertinent LVAD components and parameters
- To pilot a newly developed educational video intervention to evaluate the difference in CRNAs' and SRNAs' pre-test and post-test knowledge related to the LVAD and the LVAD patient population

Clinical Questions

- What components of the LVAD and what LVAD related anesthetic considerations were identified through the multi-disciplinary expert panel feedback as the most relevant to the care of the LVAD patient?
- Did a video-based educational program improve the NSUHS CRNAs' and SRNAs' knowledge regarding the anesthetic care of the LVAD patient?

Methods

Quality Improvement Project Design

· Pre-test and post-test design

Instruments

The CRNAs and SRNAs were e-mailed a link to the following instruments:

- Demographics survey
- Pre-test and post-test
- Link to video-based LVAD education module

Methods Cont'd

Sample

- A convenience sample of NSUHS, EH CRNAs and second/third year NSUHS School of Nurse Anesthesia SRNAs
- Inclusion Criteria:
- All NSUHS, EH CRNAs and SRNAs were eligible to participate
- · Exclusion criteria:
- Any CRNA or SRNA not currently employed or rotating through NSUHS, EH

Data Analysis

- Survey data were summarized using descriptive statistics
- A paired t test, Kuder-Richardson 20, and one-way ANOVA tests were used to analyze data using SPSS version 24

Results

Demographic Data

3 CRNAs and 10 SRNAs participated,100% were female, 61.5% were 3rd year SRNAs, 61.5% had 1-3 years providing anesthesia, 76.9% provided anesthesia in a CV setting, and 76.9% did not work in a CVICU prior to anesthesia school

	Comograpino		
		Frequency	Percentage (%)
Gender	Male	0	0.0
	Female	13	100.0
	26 - 30 years old	7	53.8
Age	31 - 35 years old	2	15.4
~40	36 - 40 years old	3	23.1
	41 - 45 years old	1	7.7
	CRNA	3	23.1
Current Position	SRNA - second year	2	15.4
	SRNA - third year	8	61.5
Years of	< 1 year	2	15.4
Experience Providing	1 – 3 years	8	61.5
Anesthesia	4 - 6 years	2	15.4
	> 10 years	1	7.7
Provided Anecthesia in the	No	3	23.1
Cardiovasoular Setting	Yes	10	76.9
Worked in a CVICU Prior to	No	10	76.9
Anesthesia School	Yes	3	23.1

Results Cont'd

Paired t-Test

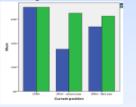
- · Used to determine difference in mean values of pre-test scores to post-test scores
- Demonstrated that post-test scores (M=6.46, SD=1.90) improved compared to pre-test scores (M=5.46, SD=1.71), but the
 improvement was not statistically significant (M=1.00, SD=1.87, CI 95% -0.13 to 2.13, p=0.078)
- Statistical significance may have been demonstrated with a larger, more diverse sample

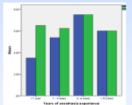
Kuder-Richardson 20

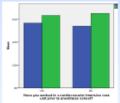
- · Calculated to determine internal consistency
- Pre-test (0.344)
- · Demonstrated that the pre-test was relatively difficult, most likely due to specialized nature of content
- Post tost (0.510)
- Demonstrated that the test became easier after viewing the video education module and that the CRNA's and SRNA's knowledge related to the anesthetic care of the LVAD patient improved

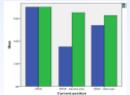
One-Way ANOVA

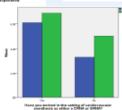
- . Compared the mean pre-test and post-test scores based on demographic data with three or more groups
- · None of the ANOVA test results demonstrated statistical significance
- · May have been associated to relatively small sample size
- Differences in pre-test and post-test scores based on demographic data were appreciated
- Pre-test and post-test scores were relatively similar for participants who previously worked in a CVICU prior to anesthesia school
- · Mean pre-test and post-test scores were higher for those who provided anesthesia in a CV setting
- Mean pre-test scores improved with a more advanced position (e.g., 2nd year SRNA < 3nd year SRNA < CRNAs)
- Mean pre-test scores increased with the number of years of anesthesia experience, peaking at 4-6 years of experience and gradually declining thereafter
- Mean pre-test scores improved with the age of the participant, peaking at 31-35 years old and subsequently decreasing











Limitations

- · Small sample size
- Education content too specialized and difficult for non-cardiac anesthesia providers
- · Lack of gender diversity
- CRNA "survey burnout" at NSUHS. EH

Conclusion

- · Recommendations for future research
- · Duplicate project with a larger, more diverse sample
- Avoid implementation at NSUHS, EH for a period of time
- Potentially implement LVAD video-based education tool into annual computer-based training curriculum for CRNAs

Current Use of Muscle Relaxants and Laryngeal Mask Airways: A Survey of Anesthesia Providers' Knowledge and Beliefs for Best Practice

Amber Muhlhan, RN, DNP and Claritess Sarangay, RN, DNP

Julia Feczko, CRNA, DNP Committee Chair and Pamela Schwartz, CRNA, DNP Committee Member DePaul University

Abstract

Background: Current clinical studies have shown that muscle relaxant use has beneficial effects with larvngeal mask airways; however, knowledge and beliefs differ regarding this practice amongst anesthesia providers.

Objectives: The purpose of this study was to evaluate the knowledge and beliefs of anesthesia providers about muscle relaxant use with larvingeal mask airways before and after reviewing an evidence-based educational

Method: A descriptive online survey research design was utilized to determine Illinois Association of Nurse Anesthetist members' knowledge and beliefs regarding muscle relaxant use with laryngeal mask airways.

Results: At pre-test, the study participants had deficient knowledge and negative beliefs regarding the use of muscle relaxants with laryngeal mask airways. After reviewing an evidence-based educational module, the paired t test showed that the study participants demonstrated a statistically significant increase in knowledge and a positive belief towards incorporating muscle relaxants with laryngeal mask airways into their practice (n=72; t=-3.856; df=71; p < 0.001). The evidencebased educational module had a medium size effect towards the change in the mean scores for knowledge and beliefs (Cohen's d=0.45).

Conclusion: This study found that study participants have a lack of knowledge and negative beliefs towards muscle relaxant use with laryngeal mask airways prior to an educational intervention. An evidence-based educational module proved to be an effective way to educate providers and alter their negative beliefs related to best practice. There is a need for additional studies that would support a position statement for a standard of practice and policy making for muscle relaxant use with laryngeal mask airways in contemporary anesthesia practice.

Introduction

Objectives

- 1. Conduct a descriptive research study on MR with LMAs
- 2. Assess Illinois Association of Nurse Anesthetists (IANA) 3. members' current knowledge and beliefs of MR use
- 4. Educate anesthesia providers with an evidence-based module on MR effects on LMAs
- 5. Assess anesthesia providers' knowledge and beliefs on MR use with LMAs after reviewing education module

Clinical Questions

- 1. What are anesthesia providers' knowledge and beliefs of MR use with LMAs?
- 2. What are anesthesia providers' knowledge and beliefs toward incorporating the use of MRs with LMAs into their practice after reviewing the educational module?

Materials & Methods

Research Design

· A descriptive pre and post-test online survey design was used

- The sampling frame included 1.495 IANA members
- Inclusion criteria for study participation included the following: English-speaking (educational module was only available in English), member of the IANA, legally permitted to provide anesthesia in Illinois independently or under direct supervision of an anesthesia provider, and currently practicing anesthesia.
- Exclusion criteria included the following: anesthesia providers who are non-English-speaking, non-members of the IANA, not legally permitted to provide anesthesia in Illinois, or not currently in practice.

- The recruitment e-mail contained a pre-survey that assessed participants' current knowledge and beliefs on MR use with LMAs
- A short educational module presented the most current evidence-based research on MR use with
- Participants completed a post-survey that assessed their knowledge and beliefs toward incorporating MRs with LMAs into their practice

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Educational Module

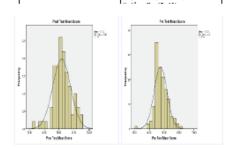
- Increases sealing pressures
- Decreases leaks
- Decreases leaks
- Faster and better insertion success rates
- Reduces and relieves laryngospasm
- Decreased sore throat

Data Analysis

- Survey data were summarized using descriptive
- Descriptive, paired t test, and Cohen's d were used to analyze data using SPSS version 22

Results

Study Participants	Results
Years of Experience	Non-doctoral: 70% Doctoral: 28.6%
Gender	Female: 62.9% Male: 37.1%
Age	50: 47.9%, 30-40: 46.5% 20-29: 5.7%
Practice environment	Non-profit: 49.3% For-profit: 17.1% Critical access hospital: 7.1%
Educational resources	CEUs: 43.6% Colleagues, primary exposure, media, and



Pre- and Post-Test Mean Scores on Knowledge and Beliefs

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Mean Score of Knowledge and Beliefs Pre-Survey	48.4306	72	4.58050	.53982
	Mean Score of Knowledge and Beliefs Post-Survey	51.7639	72	6.10586	.71958



Conclusion

- · Study participants had deficiencies in their knowledge and negative beliefs regarding MR use with LMAs prior to reviewing the evidence-based educational module
- Study participants demonstrated a positive level of beliefs towards incorporating MRs with LMAs into their practice after reviewing the educational module
- The educational module displayed the beneficial use and safety of MRs with LMAs through multiple evidence-based studies, likely resulting in a change from negative to positive beliefs towards this practice educational level

Limitations

- · Participants included only anesthesia providers in the IANA; therefore, study results cannot be generalized to additional anesthesia providers, such as anesthesiologists and anesthesia residents
- Results cannot be generalized to the anesthesia providers in Illinois.

Acknowledgements

 Special thanks to Dr. Julia Feczko, Dr. Pamela Schwartz, and the IANA

References

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NON-TECHNICAL SKILLS TRAINING FOR STUDENT REGISTERED NURSE ANESTHETISTS DURING AIRWAY OBSTRUCTION IN MAC ANESTHESIA

By: Pauline Tselonis, DNP and Laura Majewski, DNP
Committee: Dr. Julia Feczko. CRNA. DNP and Dr. Susan Krawsvek. CRNA. DNP

BACKGROUND

- Non-technical skills, defined as the cognitive, social and personal resource skills that complement technical skills and contributes to safe and efficient task performance
- Non-technical skills-key determinant of successful anesthesia during crisis management.
- Task-related non-technical skills, such as recognition, prioritization, and decision-making are essential for safe anesthesia.



LITERARATURE REVIEW:

 Conducted using Pubmed, ProQuest, and CINAHL. 18 journal articles were selected (between 2002 to 2016)



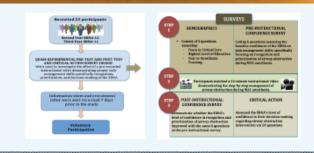
PURPOSE

To improve three non-technical skills (recognition, prioritization, and decision-making) in SRNAs new to the clinical setting with the use of an instructional video demonstrating the appropriate management of an airway obstruction during monitored anesthesia care (MAC).

RESEARCH QUESTION:

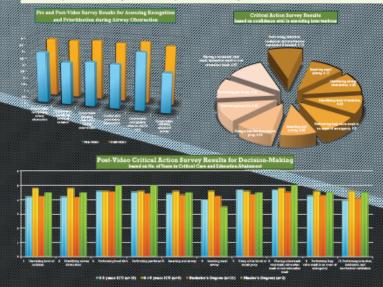
- Does an instructional video demonstrating the appropriate management of an airway obstruction during MAC anesthesia improve the taskmanagement skill, recognition, among SRNAs?
- Does an instructional video demonstrating the appropriate management of an airway obstruction during MAC anesthesia improve the taskmanagement skill, prioritization, among SRNAs?
- Does an instructional video demonstrating the appropriate management of an airway obstruction during MAC anesthesia improve the taskmanagement skill, decision-making, among SRNAs?

METHODS AND MATERIALS



RESULTS

- The pre-instructional video survey-highest variable score in comfort recognizing when to call
 for help (4.29) and least comfortable variable in initiating advanced airway (2.9). Postinstructional video survey-highest variable in recognizing when to call for help (4.67) and
 least comfortable in initiating advanced airway (4.43).
- The highest mean score was achieved for the variable, placing a facemask: venti mask, rebreather and non-rebreather at a mean of 4.57 and the lowest mean score for the variable, performing induction, intubation, and mechanical ventilation if needed at a mean of 4.13.
- SRNAs 6-8 years of ICU higher comfort level with a mean of 3.93 in pre-video survey and 4.70 mean in post-video survey. SRNAs with 3-5 years of ICU- comfort level mean score of 3.18 in pre-video survey, and 4.23 in post-video survey.



RESULTS (con't)

Wilcoxon Signed Ranks Test demonstrated statistically significant differences in the participants' level of comfort in recognition and prioritization, pre and post-instructional video [Z= -3.507; p = .000 (2-tailed).]

	N	Mean Bank	France Ranks	Z
Negative Ranks	1=	8.00	9.00	-3.8624
Punktive Runks	165	10.33	182.00	P=,880 c) tailed
Ties	41			
Total	2.5			
et Video < Comfort?	Mean Nove	re For-Video		a Hourd on argains Banks
	Positive Runks Ties Total ni Video < Comfort	Negative Ranks 18 Positive Funks 185 Ties 45 Total 25 ti Video * Comfort Mean Room	Negative Ranks 15 8.00 Peritive Ranks 165 10.11 Ties 40	Negative Ranks

A positive correlation was demonstrated between comfort and confidence by using Spearman's r. pre-test mean (r=0.843)and post-test (r=0.931); characterized by significant correlation at the 0.01 level

	etween the Mean Scores fidence Using the Critics		re-video Scale	and the Moun
			Mean Scores for Comfort	Mean Scarce for Confidence
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		76	23	2
	Mean Scores for Confidence	Cwyslation Coefficient	.843**	1,080
		Sig. (2-miled)	.010	
		74	23	21

	etween the Mean Score lidence Using the Critica		nt-video Scale :	and the Mean
			Mean Scores for Conflictors	Mean Scarce for Comfort
Spearman's rhe	Mean Scores for Confidence	Currelation Coefficient	1.060	.900*
		Na. (2-16845)		.000
		N	23	2
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		Sig. (2-tailed)	.000	
		N	23	2
	**. Condution is sig	different at the 0.01 level (2	-micd).	

CONCLUSIONS

- There was a statistically significant results in improved comfort and confidence of SRNAs regarding taskmanagement skills training: recognition, prioritization and decision-making during airway obstruction in MAC anesthesia with improved mean scores in all variables.
- Pre-and-post instructional video surveys and critical action survey results demonstrated a favorable response from the participants, providing preliminary evidence on the benefits of instructional video on taskmanagement education to SRNAs.
- Further research should involve teaching SRNAs when to initiate an advanced airway.
- Further research should involve teaching SRNAs on performing induction, intubation and mechanical ventilation if needed.

REFERENCES

Available upon request



Video Simulation as an Educational Strategy to Increase Knowledge and Perceived Knowledge in Novice Nurse Anesthesia Trainees

Rachel Kozlowski and Jennifer Kudirka

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Abstract

BACKGROUND: Video simulation is gaining popularity as an alternative method of teaching and can play an important role In nurse anesthesia education.

OBJECTIVES: The purpose of this study is to analyze the effects of an educational video simulation on acquisition of knowledge and perceived knowledge of anesthesia induction In novice nurse anesthesia trainees (NATs).

METHOD: A single group pre-test post-test design was used to compare knowledge and perceived knowledge on standard and rapid sequencing induction of anesthesia. Pre test soores on knowledge and perceived knowledge were obtained and followed by a viewing of pre-recorded video simulation on standard and rapid sequence of anesthesia Induction. Post test scores were obtained immediately after viewing the complete pre-recorded video simulation. The convenience sample included volunteers who were second year NATs at NorthShore University HealthSystem School of Nurse Anesthesia.

RESULTS: Twelve NATs participated in the single group pre test-post test design. The Willoxon signed ranks test revealed all statistically significant score differences in all five ordinal outcomes for perceived knowledge standard Induction (all p values = or < 0.06) and perceived knowledge rapid sequence induction (all p values = or < 0.06). The Willooxon signed ranks test and paired samples t test revealed statistically significantly difference mean scores on NATe' knowledge for both standard industion (Z = -2.844; p =0.003) and rapid sequence induction of anesthesia (t = 4.711; $\rho = 0.001$), respectively.

CONCLUSION: Viewing a video simulation on the sequence of standard and rapid sequence anesthesia induction Increased both knowledge and perceived knowledge among novice NATs. This plict study provides preliminary evidence that there is a role for video simulation education in the ourrioulum of nurse anesthesia programs.

Background

· Achieving clinical competence is a top priority for NATs

experience clinical procedures are not available

- . Technical anesthesia skills traditionally taught in lecture format . Clinical skill acquisition can be challenging if opportunities to
- · Procedural skills, such as anesthesia induction sequence, are often difficult to learn when presented in a list format
- . Technology-based learning can supplement conventional teaching methods and offer an additional resource for novice NATe to utilize
- . Video simulation uses interactive videos to mimio the reality of a clinical environment or situation
- . Technology-based learning can enhance the traditional strategies of learning already implemented
- . Audio/visual educational strategies create greater potential for reaching various student learning styles and therefore improve educational outcomes
- . Recearch supports the use of video simulation in education. however, evidence is lacking in its' use in anesthesia education
- · Use of video simulation in anesthesia education may increase NAT knowledge of induction sequences prior to performing the skill in a olinical setting

Procedure

. A single group pretest postfest design was used to evaluate the effectiveness of video simulation on enhancing knowledge and perceived knowledge in novice NATs

Sample

 A convenience sample of 2nd year NATs at NSUHS SNA were utilized for the study

Regruttment Procedure

- · An explanation of research objectives and an invitation to participate in the study was emailed to 2nd year NATs by NSUHS 8NA Program Director, Pamela Schwartz, DNP, CRNA
- Participation was voluntary; no formal consent required Video Recording of Simulated Anesthesia Induction
- . Literature review for development of evidence-based steps to be
- listed for standard industion sequence and RSI Expert CRNA panel reviewed for content validity
- Filming conducted in Grainger Center for Simulation and Innovation

Evaluation Instruments

- · Demographic Survey
- . Adaptation of the validated Okere-Reiner Survey to assess for perceived knowledge
- Development of Knowledge Assessment Tool
- **Human Rights Protection** · IRB approval from DePaul University & NorthShore HealthSystem
- Data Analysis IBS SPSS Version 24

Results

Demographic Survey Results

Variable		Frequency	Percent	Cumulative Percent
Gode*	Male	4	33.3	464
	Female	5	-0.7	100.0
App	20-25	1	8.0	8.5
	36-90	*	50.0	58.3
	30-95	3	25.0	83.3
	36 and older	2	16.7	100.0
Stericity	Castanian		75.0	756
	Asias	2	16.7	913
1	Other (not specified)	1 4	8.3	1002
Education Larest	Redelor's Degree in Naming	9	25.0	791
	Mater's Degree in Norting	1 1	25.0	1002
ICO Experience Price to Start of Asserthment School	9-2 years		N.	83
	3-5 years	.10	80.3	91.1
	6-9 jams	t t	9.3	100.0

Perceived Knowledge Standard Induction of Anesthesia

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Perceived Knowledge Rapid Sequence Induction of Anesthesia

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Knowledge on Standard Industion Sequence of Anesthesia

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Knowledge on Rapid Sequence Industion of Anesthesia

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Discussion

The recearch evaluated novice NATs' knowledge and perceived knowledge on the seguence of anesthesia induction before and after viewing a video simulation.

The following questions were proposed: Does viewing a video simulation of the induction sequence of anecthecia increase knowledge in novice NATs? Do novice NATs report a greater perception of knowledge after viewing a video simulation?

The results of this study adequately answered both of these questions. Knowledge on the sequence of Industion was shown to have a statistically significant increase from the pre-test KAT to the post test KAT using the Wilcoxon signed ranks test for standard Induction and the paired camples I test for RSI. Nurse anesthesia trainees reported higher soores of perceived knowledge on the post test PKS compared to the pre test. Results of the Wilcoxon signed ranks test analyzing the PKS were also statistically significant. The video simulation increased both knowledge and perceived knowledge of the sequence of anesthesia induction in the novice NAT population. Due to the positive impact of the video, it can be inferred that adjunctive video cimulation can enhance knowledge to a greater extent when compared to traditional teaching strategies alone.

Conclusion

The use of technology can supplement traditional learning methods. The findings of this study demonstrate that viewing a video simulation on the sequence of anesthesia industion Increased knowledge and perceived knowledge in novice NATs. The regults of this anesthesia-specific study were consistent with the body of literature showing the positive effects of video simulation in education. The strong results of this pilot study lead to the conclusion that there is a role for video simulation in the ourriculum of nurse anesthesia programs and more research is needed to explore this educational strategy.

Ongoing Research

Future research should be performed on a larger scale. The positive findings of this research can be reinforced if results are replicated by a study with a higher level of evidence, such as a RCTI. It would also be beneficial to study associations of demographic groups with KAT and PKS scores to understand if there are differences in the learning process of various groups in relation to video simulation education.

Acknowledgments

Committee Chairperson: Pamela Sohwartz, DNP, CRNA Committee Members: Karen Kapanke, DNP, CRNA; Julia Feokzo, DNP, CRNA

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CRNA's KNOWLEDGE AND ATTITUDES REGARDING ACUPRESSURE AS AN ADJUNCT TO PONV PREVENTION

Kim Homa, RN, DNP, CCRN & Jackie Kuhn, RN, DNP, CCRN

DePaul University & NorthShore University HealthSystem School of Nurse Anesthesia

Abstract

Background: Pentoperative names and vomiting (PCNV) continues to be a problem for patients despite multimodal pharmacologic treatments available. Although acaptonesses has demonstrated discolar studients, it is still not widely used in mainterent manufacturing practice. Objectives: The purpose of this descriptive survey design was to messe current knowledge and attitudes manneg CRNAs and SSNAs regarding acaptonesses for PCNN treatment. A secondary objective was to develop as educational inactive designed to increase the use of acaptometers as an adjunct to postoperative susues and vomiting provention using the findings from this current

Methods: A descriptive, cross sectional survey design was utilized to suscen the current tourwisdes and stitution among CRNAs appearing the use of expressions for PCNV treatment. Resolute. A total of 190 out of 1200 sensitors of the Illinois Association of Power Association accordance of Power Association completed the survey (PS survey response rais). Overall, participants had adequate horovidege and engine substance regarding superpossers for PCNN' surgeons. Out of the 14 horovidege and sixtude questions on the survey, the intens who revent means according in the survey of the power of the power for PCNN' treatment (M = 2.81; SD = 5.18), in impact on surgical endocates (M = 2.71; SD = 6.28), and the enhancement of confort for patients postoparatively (M = 2.97; SD = 5.11). Among motiodenergaptive variables examined, females second higher in overall knowledge and stitutes for use of scupressors for PCNV (m = 0.10).

Conclusions: Overall, CRNAs have adequate knowledge and positive stitudes regarding use of auspressure for PON management, but lack knowledge on anapressure of feroir on princicenter, efficacy of PCNV wild and post-erupical colorones. Areas of identified deficities were used to create an obsessional bandont for CRNAs to further increases their knowledge and continua stitudes increases are proposed.

positiva attitudes towards use of acaprenum for PONN. Relevance to Clinical Practice: The development of an educational handout, designed to increase the CRNAV has reliable and positive attitudes regarding use of acaprenum for PONN, can potentially lead to attached and implementation of acaprenum in anothering sensition, and a decreased incidence of PONN in angular glastices.

Keywords: postoparative rauses and vomiting, PCNV, acapressum, adjunct, alternative treatment, anotherist, complementary alternative medicine, CAM, CRNA, knowledge, attitude, matificated, portoparative, PK, provention, and treatment

Introduction

Problem: Postopensive nauses and vomiting (PONV) continues to be a problem for patients despite multimodal pharmacologic treatments available. There is no cannot research on the knowledge and attitudes of CRNAs regarding the use of P6 acopressure for PONV.

PS Maidis: The PS meridian is located two inches proximal to the distal wint cross between the palameis longues and flexor caspi redistin tenders. Asspersance is a similar technique to acquarature, occupi acapements uses mechanical or physical pressure instead of pandice over the same meridians of the body. Scientifically, acquarater is foreight to simulate sensory nerves that trans to the brain, apendically the chemoscopior beigger room.

Most Compelling Current Evidence from Literature Review:

- 2015 systematic review concluded effect of P6 acapoint stimulation comparable to antisenction in preventing PONY.
- 2013 study comparing acuprossure and metodopramide found them the have comparable offects on PONV.
- 2012 study comparing "shum" acupremuse device and acupremuse weisthand placed prior to assetted is infucion. Results showed that vomiding from 0-72 hours postoperatedy decreased from 20% to 12% in the acupremuse group.

"Using the search terms listed above, there did not appear to be any current data on CRNA. knowledge and attitudes regarding the P6 meridies as an adjusci to management of PONV.

Research Counties

- What is the current level of knowledge regarding the use of acupressure for PONV treatment awares CRNAs?
- among CRNAs?

 What are the current attitudes regarding the use of acaptusture for PCNV trestment among CRNAs.

Methods

Design

A descriptive survey design was used to assess the current knowledge and attitudes among.
 CRNAs regarding the use of acupressure for PONV toraknest.

- Sample

 This study used occoverience sampling as a method to recruit subjects. Participants were
 recruised to meet the following inclusion criteria: 1) able to send linguish, 20 sembers of
 Hissis Association of Name Association (LANA), and 3) association providers liceased to
 deliver association of Name Association (LANA), and 3) associates providers liceased to
 deliver association area in Hissis, either independently, under clinic ort supervision of an
 assorbest clegist, or as SENA. Subjects who must the eligibility criteria of this study were
 recruised used the desired sample size of 100 participates was filled.
- Following approved from DeParl University's institutional review board (IRB), a survey
 was used set to IANA, members via small. CRNAs and Student Registered ManuAmendaristic (ISNAs) were recruited as the target imagin. IANA, members received as
 enrollment entail and an attached letter which informed potential participants of the
 velocitizer and antergenous clearacteristics of the article.
- Participants voluntarily opened the informative letter and proseeded on to the survey. A blind sampling of IAFA members was accomplished via the small distribution. In addition to the informative letter, a copy of DaPard University's IEE approved form was stacked to the ensalt. Participants were omailed via an IAFA administrator, thus primary investigators were blinded to potential study participants.
- The multiple-choice online survey designed for this study included two sections: (1) demographic questionsitie (six items, C. 2) current knowledge and stillades agarding acqueues an adjust for instances of FONV (Si items). The Quantismater on barbel supplement knowledge and beliefs developed was modified for this project. This modified eating survey was used in nearwest knowledge and adjusteder regarding the use of acqueues for the states of PONV. We added two questions to assess participant approach in the properties of the welf-circle superpasses in a same adjusted to PONV intention. A Libert under was stillated to record participant responses. We included five demographic quantities under the contraction of the demographic quantities, performed to our servey. The questions included years practicing and CDON, highest level of effective completely, goods, called on the one of the contraction of the participant outposts. And work practices setting.
- Prior to data collection, the institutional review board from DePaul University reviewed the survey. These were no psychological or physical risks associated with this research and participates were informed that a stipend for participation will not be provided.
 Data Austylin.
- Data was dewelceded from Quelvier to 1898 wasten 23. Descriptive statistics were utilized to describe the sociodemographic characteristics of stady participants. Detailed description of means and statedard deviations for each item in the knowledge and situation questionnaire were also gassenated using descriptive statistics. Non-parametric Kruskal-Willis Host was vere also gassenated training descriptive statistics. Non-parametric Kruskal-Willis Host was used to censuis antifectually significant differences in the mean socces on PONV knowledge and attitudes between dichotomose groups with different sample sizes (non-wastes women; partnered vs. non-partnered) and among these geospase or more, respectively.

Discussion

- The knowledge and stitude scores across all items were found to be positive with an average mean score of 3.22 out of 4. There were no other stadies on this topic found in the
- literature to which to compare our results.

 The results of our survey indicated that women have a higher knowledge level and positive attitude to ward acaptessore are for PONV when compared to seen (seram soons of 45.82 vs. 43.21). Gender was the only resindonesquaphic variable of statistical nigelflowner. Since this data did not have a cernal distribution, we did not force soon exhaustion on the othersion.
- of supposeurs for saids CRDAs.

 Bases on the survey with the lowest mean scores for knowledge and attitudes toward
 augmenter for PCRV infected deficits regarding the enhancement of conflor for policies
 portoperatively and that accuprement in an offentive treatment for PCRV. Results also
 selected a lower areas across on knowledge and stitudes toward conpensates are having an
- An educational handout was created and incorporated the knowledge and attitude deficits could above. The development of this handout full into the knowledge phase of our conceptual framework based on the diffusion of all encourations theory. Planter phases of the conceptual framework include: persuasion, decision, implementation and confirmation. These phases will occur responsatisfly occur the handout in distributed to CRNAs. Positive responses from CRNAs could utismately lead to use of augmentate and improve patient experiences insuling increased occurrent. Without names and vestigate them in also the posturated to improve august of the posturated to improve august of extensive and the posturated to be a posture and the posturated to the framework provided a foundation for the handout while leaving the end got all footness.

Results

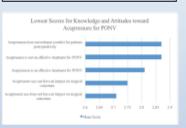
Analysis of Sociodemographic Variables Using Dichetomous Groupings

Verlebles	Countylies	Frequency (n)	Percent (N)
Years practicing	O years	23	19.3
	1:8 years	35	13.8
	2:0 years	84	31.2
Education level	Backelor	22	20.2
	Marter	16	81.4
	Coctovate	25	22.9
Gender	Male	55	32.1
	Remale	74	67.9
Establish	White	56	87.2
Age	20-39	82	29.3
	40-49	22	20.2
	33-59	27	24.8
Precion setting	CONS. and Averifieshing his	10	45.9
	CONS. SENA, and Averifieshing his	49	44.9

There was statistically significant difference in scores between male and female (p=0.012), with female having higher mean scores than male.

Descriptive Statistics for Knowledge and Attitudes Regarding Acopressure Use for PONV Scale* (N=109)

Feels Dean	Minimum	Harlesen	Hen	Standard Erristion
Andrew Street, and the street	,		844	.440
APOSTOR AND ADDRESS OF THE PARTY OF	,		1.00	.490
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I recommend a supreserve for meatment of POSPV to parients			147	ART
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Acoptomore is a rade brainness for POSTY	,		836	.800
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Arapressors can can unknow countries for patients podesparatively	'		5,04	.477
Acuprations do as not achieves conduct for patients prosperatively	,		147	
Arapressors is not an effective treatment for POSFF			147	.86
Arrestment is an effective breatment for POST!	,		144	.,,,,
Anapressors one can have an impact on surgical extense.	,		1/4	.80
Angreson on Amenditure as input or orginal outsides	,		1/4	.400
Legaci 1—Brough diagra, 2—Diag Pate Borers coding tra-performed Higher second in Beats higher humals 2000.	ter Better Best mer	wanted we		ere en fer



"Items with lowest mean scores indicated deficits regarding:

- Enhancement of consfort for patents postoper
 Efficacy of acuprensus treatment for PONV
- . Impact of acupressure use on surgical outcomes

An educational handout was developed based on the knowledge and stitude deficits noted above.

Educational Handout

Based off knowledge deficits noted from our survey results, we created an educational handout for distribution to survey participants.

- Postoperative nauses and vomiting continues to be a problem for patients despite
- medimedal pharmscologic treatments available.

 A systematic review from the Cachame Library including 50 trials and 7667 participants, undoors concluded that the effect of P6 acapoint attandation is comparable to autientation in the prevention of PCNV.
- Although complementary and alternative medicine (CAM) therapies such as asspranted have descentrated district undutesm, they have not yet transcended into mainstream assembles practice.
- Acupressure is throught to reduce names and vomiting by releasing endogenous betsendorphies in the spinal cord which modify signals to the characteopter trigger zone.
- endorphine in the spinal cord which modify signals to the chemoreospior trigger zone.
 The P6 acapressure point is located 2 inches proximal to the distal wrist crease between
- the palmaris longue and floror caspi radialis landom.

 To be effective, authors raggest that acupromers should be administered before the emoils attendom.

PS Acupressure Point and Position of Acupressure Band





Conclusion

This study found that all study participants including IANA CRNAs and SRNAs have an overall adequate harmfulge and positive sitindus on anyonamer for FORV transgeresset. However, they need more information on the effects of experiences in tumos of patient conflort, efficacy, and impact post-suggery. We identified that further obscalled should focus on the effectiveness of experiences and its presents to improve patient consoline at most of experiences. Distribution of our educational handout has the potential to increase knowledge and attitudes in the deficit sense identified in this power totally and in the first step in bringing this therapy into acceleration provides prefiningly evidence for female guideer as a faster for a higher eventil knowledge and stitudes on augmentment among CRNAs and SRNAs.

Limitations

One limitation of our study is that it only surveyed participants from Illinois; therefore, our results may not apply to other geographic locations. Also, we did not survey other asseltation providers near an assestanticipation or nearthericipati maintants. A major limitation of our study was that \$7.25 of compositants idualled their otheric origin as whits, so we were not able to ament the offect of othericity on knowledge and stitudes. However, we found gender as a significant fautor in the overall mose soon for knowledge and attitudes. However, we found gender as a significant fautor in the overall mose soon for knowledge and attitudes on asseptement of the provider of the p

Acknowledgements

We would like to thank Dr. Pamela Schwartz CRNA, DNP, committee chair, and Dr. Young-Me Lee RN, PhD, committee member for their termendous contribution to this project. We would also like to thank Dr. Joseph Tariessa RN, PhD, ANP-BC, HAAN for his assistance with data analysis and odding support.

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A Needs Assessment for Development of an Interpreter Services Educational Tool for CRNAs Rachel Ferral, RN, DNP and Angela Meyer, RN, DNP Young M. Lee, PhD, RN Committee Chair and Bernadette Roche, CRNA, EdD Committee Member DePaul University

Background

· U.S. population is more diversified

- Decline in Caucasian population
- · Rise in Hispanic, Asian, and African American populations

-291 million people in the U.S.

- 60.5 million speak a language other than English within their home
- 15.4% do not speak English well and 7% do not speak English at all

-322 languages spoken in the U.S.

- · Spanish is the second most common language spoken in the U.S.
- · Despite evidence of provider misuse of interpreter services and the resultant adverse outcomes that can and have occurred, few studies have assessed or addressed the gaps in knowledge and attitudes of certified registered nurse anesthetists (CRNAs) towards interpreter service usage when providing care for and consenting limited English proficient (LEP) patients

Purpose

Purpose Statement

- · Identify CRNA knowledge and attitudes toward interpreter service usage for limited English proficient
- Development of a competency educational tool to increase CRNA knowledge and consistency with appropriate interpreter service usage for improved safety and quality of care of LEP patients

Clinical Questions

- In what areas does a lack of knowledge by CRNAs exist for how and when to access interpreter services?
- What are CRNA attitudes towards use of interpreter services for limited English proficient patients?

Conceptual Framework

Competence











Communication Model

Diverse Fogulations - catcal - catcal	Aller III general e Chindus A Muller III general e Religiose e Research e Religiose e Proposition de Communication e Proposition e Religiose e Proposition e Religiose e Religios e Religiose e Religi	*	Appropriate Services for Minosity Group Mambers - process - proces		Improved Outsames for Binedly Shapp Bonders - Sett state - Indiano - satisfactor		Reduction of Booth Steparties
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Methods

Research Design

· A descriptive, online survey research design

- A purposive sample of 100 English-speaking CRNAs from the Illinois Association of Nurse Anesthetists (IANA)
- Inclusion Criteria:
- . English-speaking CRNAs licensed in the state of Illinois with current active practice.
- Exclusion criteria:
- · Student registered nurse anesthetists (SRNAs), non-English speaking and non-practicing CRNAs

Instruments

A survey contained the following four parts:

- Demographics
- CRNA knowledge of appropriate interpreter use
- · Attitudes toward utilization of interpreter services
- · Continuing education needs for interpreter service usage

- Survey data were summarized using descriptive statistics
- · Descriptive, t test and correlational statistics were used to analyze data using SPSS version 23

Results

Description of Sample

92 IANA members (7.9%) participated, 66.3% female, 89.1% White/Caucasian, 35.9% 21+ years of experience, 39.1% Urban practice setting

Variables	Frequency (N)	Values
Gender Male Female	61 31	30.4% 63.5%
Age 20-39 yrs old 40-49 yrs old 50 yrs or older	25 25 41	27.5% 27.5% 45.0%
Ethnicity White/Caucasian Black, African American Asian or Pacific Islander Hispanic, Letino or Spanish	82 5 3 2	80.1% 5.4% 3.3% 2.2%
Years Practicing as CRNA Less than 2 years 3-10 years 11-20 years 21+ years	17 22 20 33	18.5% 23.9% 21.7% 35.9%
Practice Setting Urban Foural Academic/Teaching hospital Non-Academic/Non-Teaching Hospital	36 15 21 10	39.1% 16.3% 22.8% 10.9%

Results (continued)

Knowledge Assessment

- . Participants had a significant lack of knowledge in ALL areas
- . Type of interpreter: Professional vs. non-professional
- · A significant linear relationship
- Females have greater knowledge regarding interpreter service use vs. males (p = 0.001)

Knowledge Quections	Correct	Incorrect
Which of the following guarantees limited English proficient (LEP) patients' legal rights to interpreter services?	32.6% (n=30)	67.4% (n=62)
When is it appropriate to use a friend or family member as an interpreter for an LEP patient?	38% (n=35)	62% (n=57)
Who can be used as an interpreter for an LEP patient if he/she declines a professional interpreter and requests an alternative individual?	7.6% (n=7)	92.4% (n=85)
All of the following situations require an interpreter for an LEP patient EXCEPT	61% (n=55)	39% (n=37)
All of the following statements are true regarding LEP patients compared to English proficient patients EXCEPT	42% (n=39)	58% (n=53)

Attitudes Assessment

- .5 out of 7 questions answered positively
- Open to learning more about appropriate interpreter service usage
- ·2 questions suggesting more education needed
- Insufficient cultural competency training
- Reliance on personal foreign language skills

Overall: Increased knowledge may improve compliance with interpreter use

Attitudes Guestions	Disagreed/strongly disagreed	Agreed/strongly agreed
I do NOT receive sufficient cultural competency training that includes information about interpreter service usage at my primary place of practice	33% (n=30)	67% (n=62)
I prefer to use family members or medical personnel to interpret for LEP patients because it is more convenient	65% (n=60)	35% (n=32)
It is appropriate to rely on my own foreign language skills to interpret for an LEP patient if I feel I am competent	43% (n=39)	57% (n=53)
There is no difference between using a professionally trained interpreter and a fluent speaking family member or fluent hospital staff member to interpreter for and LEP patient	61% (n=56)	39%(n=36)
I do NOT know how to access a professional interpreter when necessary	57% (n=52)	43% (n=40)
If time constraints exist, it is appropriate for me to rely on my own limited foreign language skills to interpret for an LEP patient	60% (n=55)	40% (n=45)
I prefer to use family members or medical personnel to interpret for LEP patients because I am dissatisfied with interpreter service availability at my primary place of practice	67% (n=62)	33% (n=30)

Limitations

- Kuder Richardson 20 score of 0.051 for the knowledge section
- SRNAs & anesthesiologists not included
- · Generalization of findings to CRNAs

Conclusion

- · The results of this study found that CRNAs are significantly lacking in knowledge in all the areas that were assessed.
- · Assessment of the attitudes of CRNAs toward interpreter services demonstrated positive responses suggesting that CRNAs are opened to increased learning.
- . The results of the survey indicate that many respondents do not receive continuing education and support a need for continuing education on interpreter service use for CRNAs.
- 5 components should be included in a cultural competency: Laws, who can be used as interpreters, patient situations for use, adverse events for LEP patients & how to access interpreter services.

Intra-operative Awareness with Recall

Kelly Lannert RN, BSN, NAT & Dulcie Schippa RN, BSN, NAT NorthShore University HealthSystems

Abstract

Intra-operative awareness with recall (AWR) is a well studied risk of general anesthesia (GA) accepted by anesthesia practitioners. A gap was identified between the perceived knowledge and practice related to AWR. The purpose of this quality improvement project (QIP) was to attempt to improve perceived knowledge and comfort related to assessment, evaluation and treatment of patients with AWR. To accomplish this, we disseminated an educational voice over power point (VOPP) to anesthesia practitioners at NorthShore University HealthSystem, including the following content: 1) a tool to assess for AWF 2) establish an appropriate timeline for assessment and 3) present resources available to assist in treatment of AWR sequelae. The efficact of the educational VOPP was measured by comparing results from Likert-type pre and posteducation surveys. Recommendations and conclusions are based on the results of the study

Background

The Joint Commission (JC) defined AWR as "an unintended intra-operative awareness" occurring unde GA (2004). "The patient becomes cognizant of some or all events during surgery or a procedure, and has direct neuromuscular blocking agents... the patient is often occurs." (JC, 2004). In 2004, the JC issued a sentinel

Multiple studies have shown AWR incidence to be between 1:1,000 and 1:20,000, dependent on patients and procedures (Cook et al. 2014, p. 2; AANA, 2012). disorder (PTSD) and avoidance of future surgical intervention. Given the potentially catastrophic, reating PTSD, there is a strong motivation to prevent AWR from ever occurring," (Avidan & Mashour, 2013, p

The purpose of this quality improvement project (QIP) was to attempt to improve perceived knowledge and comfort related to assessment, evaluation, and eatment of patients with AWR.

Methods

The QIP utilized an online, quasi-experimental pre-and post-test Results from the pre-and post-survey revealed that design. Anesthesia practitioners were surveyed prior to the VOPP intervention in order to gather baseline perceived knowledge regarding AWR. Second, those surveyed received an perceived knowledge and comfort, closing the gap interventional online educational VOPP. Following the educational VOPP, a post-survey was given in order to assess reports of improved perceived knowledge and comfort related

Our target population included nurse anesthesia trainees (NAT) in at least their first clinical rotation at a NorthShore University hSystem (NUHS) site, anesthesia residents, certified registered nurse anesthetists and attending anesthesiologists between 25 and 70 years old, practicing GA in the NUHS. NUHS anesthesia practitioners meeting these inclusion criteria account for 120 potential participants and 30 are comprised of NATs and anesthesia residents being hosted by a NUHS site, yielding an absolute maximum expected entered number of 150.

A recruitment e-mail and information sheet including secure links to the validated surveys and the VOPP, was given to Dr. Kapanke to disseminate amongst anesthesia practitioners that met inclusion criteria, followed by 2 reminders at 2 weeks and one month. The survey results were securely downloaded into Qualtrics. Participation was voluntary and confidential.

Results N=24

Pre-survey of perceived knowledge, comfort and attitudes on AWR resulted a M = 2.59; SD = 0.45.

Post-survey of perceived knowledge, comfort and attitudes on AWR resulted a M = 3.41; SD = .29.

Subset Analyses:

Perceived knowledge

M=3.71 SD=2.61 Cohen d=1.466 Cronbach alpha=0.72

Perceived comfort

M=3.71 SD=1.86 Cohen d=1.17 Cronbach's alpha=0.85

Attitude

Inadequate Cronbach's alpha; no analysis

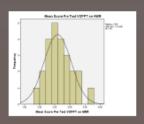
There was no statistically significant difference in perceived knowledge of AWR in subsets

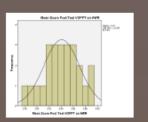
Age (t = -0.090; df = 23; p = 0.090)Experience (t= -7.185; df =23; p =0.975)

Discussion

viewed the AWR VOPP. This supports an increase in between knowledge and practice concerning AWR. The QIP did not evaluate if the increased knowledge and comfort resulted in changes in practice; this is possible area future research.

Table 1. Seciode	mographic (haracteristi	cs of Study					
Participants								
Demographic	N	Valid %	N					
Age in yours								
Less than 40	16	57.1						
Over 40	11	42.9	27					
Gender								
Fernale	21	75						
Male	7	25	28					
Years of								
experience								
Less than 5	15	53.6						
Over 5	12	46.4	27					
Did you								
receive AWR								
education in								
icheel and/or								
residency?								
Yes.	20	71.4						
No	8	28.6	28					
Have you had								
a patient who								
han								
experienced								
AWRT								
Yes	2	7.1						
No	26	92.9	28					





Conclusions

This QIP showed that the VOPP on AWR was affective in improving the perceived knowledge and comfort of NUSH anesthesia practitioners regarding assessment, evaluation and treatment of AWR. The results are useful indicator for communication and training needs. Although an AWR brochure exists, our VOPP is an enhanced and updated educational module; its electronic nature, improves accessibility by additional and future NUHS anesthesia practitioners. Additional research in alternate settings is needed to provide a broader representation of anesthesia practitioners in the United States. Furthermore, a future analysis would provide insight into experiences of patients and anesthesia practitioners and their communication regarding AWR after initiation of our VOPP educational program as a standard protocol in a local practice setting.

Limitations

Low response rate n=24, 16% of target population Limited to NUHS Relied on self-reporting

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Acknowledgements

Committee Chair: Bernadette Roche CRNA, EdD Committee member: Karen Kapanke DNP, CRNA Committee member: Joseph Tariman PhD, RN, ANP-BC, FAAN



A Standardized Electronic Handover Report for Anesthesia Providers Amber Lindsay, RN, DNP and Elisa Rue, RN, DNP Julia Feczko, CRNA, DNP Committee Chair and Mark Deshur, MD, MBA Committee Member **DePaul University**

Background

2001: Crossing the Quality Chasm published by the institute of Medicine stated the first breakdown in patient safety is handovers

2006: Joint Commission published recommendations for patient safety, including standardized handover of care

2012: Joint Commission cited breakdown in communication as responsible for 80% of hospital sentinel events and 91% of anesthesia-

2014: Joint Commission Identified the root causes for breakdown in communication as ineffective communication methods and incomplete Information provided

Despite numerous studies and agencies recommending the standardization of handovers to improve the quality and safety of patient care, intraoperative anesthesia handovers have remained unstandardized at many institutions.

Purpose

Purpose Statement

- To develop the preliminary Anesthesia Handover Report (AHR) and evaluate its accessibility, layout, and content using feedback from an Expert Sampling Group
- Create the finalized AHR and evaluate the impact it had on the perceived quality of handover among anesthesia providers
- To assess the uptake of the finalized AHR

Clinical Questions

- What is the usability and acceptability rate of the AHR during transfer of care in the intraoperative period among anesthesia providers?
- Does a standardized AHR in the electronic health record improve anesthesia provider perceptions of conduct, teamwork, and quality of



Figure 1. Anesthesia Handover Report

Conceptual Framework **Donabedian Quality Framework**

The Structure	
NSUHS in Evenston, Clerview, and Highland Park, Illinois	

Implement standardized AHR to be intraoperativ enesthesia

perception of quality of intraoperative

Methods

Study location

 NorthShore University Health System (NSUHS) Evanston, Highland Park, and Glenbrook locations

- Phase 1: Purposive, Expert Sampling Group of five anesthesiologists and five Certified Registered Nurse Anesthetists (CRNAs) practicing at NSUHS and covered the three study locations
- Phase 2: 140 anesthesia providers at the three study locations
 - . Inclusion criteria: English-speaking, legally licensed to provide anesthesia in Illinois, currently practicing anesthesia at NSUHS, Evanston, Highland Park or Glenbrook locations, and had utilized
 - Exclusion criteria: non-English speaking, not licensed to practice anesthesia in Illinois, not currently practicing anesthesia at NSUHS Evanston, Highland Park or Glenbrook locations, or had not utilized the AHR

 The Expert Sampling Group evaluated the preliminary AHR for its accessibility, layout and content using the Expert Sampling Group Questionnaire

- . Using feedback from the questionnaire, the finalized AHR was created
- Anesthesia providers at the three study locations were invited to utilize and evaluate the AHR during intraoperative anesthesia handovers
- Paper Anesthesia Handover Surveys consisted of demographic questions and 14 Likert statements regarding the handover conduct, teamwork and overall quality of the anesthesia handover (Table 1)

. Use of the AHR was queried every two weeks for the duration of Phase 2 to assess uptake of the AHR

				_			
Handover Characteristics	Disagree	Partially Disagree	Partially Agree	Agree			
Conduct of Handover							
Handover followed a logical structure	- 1	2	3	4			
The AHR sidebar was used to structure the handover when either giving or receiving report on the patient	1	2	3	4			
Not enough time was allowed for the handover	1	2	3	4			
In case of interruptions during handover, attempts were made to minimize them	1	2	3	4			
All relevant information was selected and communicated	1	2	3	4			
Priorities for further treatment were addressed	1	2	3	4			
The person providing the handover clearly communicated her/his assessment of the patient	1	2	3	4			
Possible risks and complications were discussed	- 1	2	3	4			
Teamwork							
Questions and ambiguities were resolved (active enquiry by the person taking on responsibility for the patient)	1	2	3	4			
The team jointly ensured that the handover was complete	1	2	3	4			
Handower Quality							
Documentation was complete	1	2	3	4			
There was too much information in the AHR sidebar	- 1	2	3	4			
Too much information was asked for	1	2	3	4			
Overall, the quality of handover was very high when using the electronic AHIR	1	2	3	4			
Table 4. Ohnor 2 Aposthopia Unaderra 5							

Table 1. Phase 2 Anesthesia Handover Survey

Results

- 5 anesthesia providers completed the Expert Sampling Group
- . Changes made to the preliminary AHR in response to feedback from the Expert Sampling Group Questionnaire included:
 - . Removal of redundant information
 - . More appropriate layout of information in sidebar
 - Addition of total drug dose given in medications panel
 - Additional hyperlink to anesthesia nerve block reports
 - Ensured correct information nulled into AHR.

- 21 anesthesia providers completed the Anesthesia Handover Survey
- . Table 2 summarizes the results of the demographic variables of
- Overall mean Likert score for handover conduct was 3.72 with 8D of .475 (minimum 2, maximum 4), indicating the majority of the respondents perceived that the AHR improved the conduct component of handover
- Overall mean Likert score for teamwork was 3.76 with 8D of .432 (minimum 3, maximum 4), indicating the majority of respondents felt the AHR Improved teamwork during handover
- Mean Likert score for handover quality was 3.64 with SD of .611 (minimum 1, maximum 4), this indicated respondents felt the AHR Improved overall handover quality

- . Uptake did not increase as expected over the six-week monitoring window, but rather peaked during week four and guickly dropped
- Mean number of times the "Anesthesia Handoff" event button was clicked each week was 3.17

Variables	Frequency	Number (N)	Percent (%)
Role	Resident/Anesthesiologist	5	23.8
	CRNA/SRNA	16	76.2
	Total	21	100
Years Providing Anesthesia	<1 year >1 year Total	8 13 21	38.1 61.9 100
Hours/Week Providing Anesthesis	<12 hours >12 hours Total	2 19 21	9.5 90.5 100
Gender	Male	6	28.6
	Female	15	71.4
	Total	21	100
Ethnicity	White	19	90.5
	Asian, pecific islander	2	9.5
	Total	21	100

Table 2. Demographic Variables of Study Participants

Limitations

Phase 1: Multiple functional limitations in design of AHR

Phase 2: Lack of participation

- · 3 contributing factors:
 - Paper surveys more time consuming than electronic surveys
 - · Study location participant burnout
- · Lack of educational component

Phase 3: Inability to accurately track use of AHR

	Score .	Score S	Likert Score	Deviatio n				
Handover Conduct (Me	Mandover Conduct (Mean 3.72, SD .475)							
Handover followed a logical structure	2	4	3.67	.730	Partially disagree (N = 3, 14.3%) Partially agree (N = 1, 4.5%) Agree (N = 17, 51%)			
 The AHR sidebar was used to structure the handover when either giving or receiving report on the patient 	3	4	3.86	.359	Partially agree (N = 3, 14.3%) Agree (N = 10, 85.7%)			
3. Not enough time was allowed	3	4	3.57	.507	Agree (N = 12, 57.1%) Partially Agree (N = 9, 42.9%)			
 In case of interruptions during handover, attempts were made to minimize them 	3	4	3.62	.498	Partially agree (N = 8, 38.1%) Agree (N = 13, 51.9%)			
5. All relevant information was selected and communicated	3	4	3.71	.463	Partially agree (N = 5, 20.5%) Agree (N = 15, 71.4%)			
 Priorities for further treatment were addressed 	3	4	3.67	.483	Partially agree (N = 7, 33.3%) Agree (N = 14, 65.7%)			
 The person providing the handover clearly communicated her/his assessment of the patient 	3	4	3.98	.218	Partially Agree (N = 1, 4.0%) Agree (N = 20, 95.2%)			
8. Possible risks and complications were discussed	2	4	3.76	.539	Partially disagree (N = 1, 4.8%) Partially agree (N = 3, 14.3%) Agree (N = 17, 51%)			
Teamwork (Meen 3.75,	SD .432)							
Questions and ambiguities were resolved (active enquity by the person taking on)	3	4	3.71	.463	Partially agree (N = 6, 20.5%) Agree (N = 15, 71.4%)			
10. Team jointly ensured that the handover was complete	3	4	3.81	.402	Partially agree (N = 4, 19%) Agree (N = 17, 81%)			
Handover Quality (Mea	m 3.64, SD.611)						
11. Documentation was complete	3	4	3.86	.359	Partially agree (N = 3, 14.3%) Agree (N = 16, 85.7%)			
12. There was too much information in the electronic AHR sidebar	1	4	3.43	.926	Agree (N = 14, 65.7%) Partially agree (N = 3, 14.3%) Partially disagree (N = 3, 14.3%) Disagree (N = 1, 4.6%)			
13. Too much Information was asked for	2	4	3.43	.680	Agree (N = 13, 51.9%) Partially agree (N = 5, 25.5%) Partially disagree (N = 2, 9.5%)			
14. Overall, the AHR resulted in high quality of handover	2	4	3.86	.476	Partially disagree (N = 1, 4.5%) Partially agree (N = 1, 4.5%) Agree (N = 19, 90.5%)			
Table 3. Descriptive Ane	sthesis Handove	er Survey R	etula					

Conclusion

- . Phase 2 concluded the AHR did result in improved provider perception of conduct, teamwork, and quality of handover communication
- . 95% agreed or partially agreed the AHR improved handover conduct, teamwork and resulted in high quality handover
- Phase 3 concluded the rate of uptake for the AHR did not improve, however rate of uptake may have been higher than indicated due to the event button having to be clicked in order to track its use
- Directly addressed root causes of ineffective communication identified by the
- Findings indicated the perceived quality of handover at NSUHS improved as a result of using the AHR

Recommendations

- · Anesthesia departments should consider adopting this AHR as a standard of practice to promote safe, quality anesthesia care
- EPIC, the electronic health record software this report was built in, should consider disseminating this AHR to anesthesia departments

- · This electronic AHR should be implemented and evaluated at a different study location with a larger participation size to allow for further statistical analysis and greater generalizability
- · Studies should be done to determine if this AHR standardized anesthesia handover



Intraoperative Blood Pressure and Effect of Volatile **Anesthetic in Brain Dead Organ Donors**

Alison L. Karmanian, BSN, RN

Abstract

Background: There is a large disparity between the number of people waiting for organ transplants and the number of organs available. Optimal hemodynamic management can influence transplant outcomes, therefore evidence-based hemodynamic management should be practiced to maximize scarce donor organs. Purpose: The purpose of this study was to examine intraoperative blood pressures and administration of volatile anesthetics during brain dead organ donor procurements. Use of volatile anesthetics was examined to determine how use and dose affected the ability to maintain mean arterial pressure (MAP) between 60 to 90 mmHq.

Design: This study was a retrospective chart review. Results: Twenty-eight cases were analyzed using the mean MAP calculated for each donor. Mean scores ranged from 61.04 to 99.34 mmHg with a mean of M= 84.51 mmHg. Twenty-two donors (78.6%) received volatile anesthetic gas, and six donors (21.4%) received no volatile anesthetic gas. Mean end-tidal concentrations of volatile anesthetic gas in the 22 donors who received volatile anesthetic gas ranged from 0 to 1.25% with a mean end-tidal concentration of M= 0.39%. Mean MAP in donors that did not receive volatile anesthetic gas was M= 78.49 mmHg (SD= 9.78 mmHq). Mean MAP in donors that received volatile anesthetic gas was M= 86.16 mmHg (SD= 7.02 mmHg). An independent samples t test performed between these two groups demonstrated that the difference between mean MAPs of the two groups was statistically significant (t= 2.182, p= 0.038), but no statistically significant correlation was found between mean MAP and mean end-tidal volatile anesthetic gas $(r_s = -0.184, p = 0.414).$

Conclusions: This study demonstrated that intraoperative hypertension is more prevalent than intraoperative hypotension, and volatile anesthetic gas is often used at this medical center during organ procurements at relatively low concentrations.

Background

- •US organ transplant waiting list ~120,000 people
- ·Hemodynamic instability can lead to severe ischemic damage of donor organs -> worsened quality and function of transplant
- Significant variations in practice exist among anesthesia providers in regards to management of BP intraoperatively for brain dead organ donors, and there is a lack of consensus and evidence in the available literature

Data collected:

- MAPs collected every minute
- . Volatile anesthetic gas (Y/N), type, and end-tidal concentrations every minute

Procedure

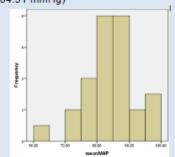
Retrospective chart review

Inclusion criteria:

- Brain dead organ donors
- Age 15 and older
- ACMC
- •5/1/15 4/30/16

Results

•Mean MAPs: 61.04 - 99.34 mmHg (M= 84.51 mmHg)



- 22 donors (78.6%) received volatile anesthetic
- 6 donors (21.4%) received no volatile anesthetic gas
- Mean end-tidal concentrations: 0 -1.25% (M= 0.39%)

	Mean MAP (mmHg)	Standard Deviation (mmHg)
No VA	78.49	9.78
VA	86.16	7.02

Discussion

- ·BP of donors was managed in a way that the majority of average MAPs fell within optimal range (60-90 mmHg)
 - No donor in this study demonstrated an average MAP below 60 mmHg
 - •5 donors had an average MAP greater than 90 mmHg
- Intraoperative hypertension is a more prevalent problem than intraoperative hypotension in this study
- Highest mean end-tidal concentration of volatile anesthetic gas for any donor in this study was 1.25% which falls well below MAC-BAR for either volatile anesthetic gas used in this study:

	MAC	MAC-BAR
Sevoflurane	1.8%	2.7%
Isoflurane	1.17%	1.76%

·Mean MAP was higher in donors who received volatile anesthetic gas than in donors who did not receive it

Conclusion

- This retrospective review of records among brain dead organ donors aged 15 and older demonstrated that intraoperative HTN is more prevalent than intraoperative hypotension
- ·Volatile anesthetic gas is often being used at this medical center during organ procurements at relatively low concentrations.
- There was a statistically significant difference (p= 0.038) between mean MAPs in donors who received volatile anesthetic gas versus those who did not
- There was no significant relationship found between mean MAP and end-tidal concentration of volatile anesthetic gas

Acknowledgments

Thank you to my DNP committee members: Dr. Pamela Schwartz (chair), Jeff Matson, and Michael Harmon; also thanks to Dr. Jessica Bishop-Royse, Dr. Joseph Tariman, and Dr. Young-Me Lee.

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PEDIATRIC EMERGENCE DELIRIUM ASSESSMENT: CURRENT PRACTICE AND PERCEIVED BARRIERS

Alyse Voronov BSN, RN & Nicole Zeppo BSN, RN DePaul University

ABSTRACT

Background: Current literature addresses the complexity of identifying pediatric emergence delirium (PED), but does not address barriers to PED assessment and documentation. By identifying these barriers, further research can be conducted regarding prevention and treatment of PED.

Objectives: This study aimed to: 1) describe the current PED assessment and documentation practices among post anesthesia care unit (PACU) registered nurses and anesthesia providers at UIHH88; 2) describe the perceived barriers to PED assessment and documentation; and 3) develop an evidence based educational program to aid in the implementation of a validated PED

Method: A descriptive, cross-sectional online survey design was used to survey a convenience sample of 133 perioperative care providers consisting of anesthesia providers (anesthesiology attendings, anesthesiology residents. and certified registered nurse anesthetists) and PACU registered nurses at UIHHSS. Questions associated with perceived barriers to PED assessment and documentation practice were answered using a 5-point Likert-type response scale, with 1= strongly disagree; 2=disagree; 3=neutral; 4= agree;

Results: The study received 40 responses during the data collection period for a response rate of 30.0%. Study results revealed current PED assessment and documentation practices at UIHHSS to be inconsistent and varied. Of statistical significance (p= 0.036), was the perceived barrier of "limited time" in the distribution of mean scores based on "how often do you care for pediatric patients." Preferred learning methods varied, however a majority of participants (n=10) preferred a multimodal approach.

Conclusion: The results of this study revealed the barriers to PED assessment and documentation at UIHH88, as well as the preferred learning methods of the participants. These results will help facilitate the creation of an evidence based, three-phase educational approach to change of practice at UIHHSS.

BACKGROUND

- . Pediatric emergence delirium: "A disturbance in a child's awareness of and attention to his or her environment with disorientation and perceptual alterations including hypersensitivity to stimuli and hyperactive motor behavior in the immediate postoperative period* (Dierdorf, lohom, O'Connor, & Hogue, 2009, p. 210).
- Preschool aged children
- Use of inhalation anesthetic sevoflurane
- · Preoperative anxiety and/or behavior problems
- Head and neck procedures
- Incidence: 20-80%
- Consequences
 - Increased postoperative complications
 - Increased risk of injury to self
 - Parental dissatisfaction
 - Increased postoperative nursing requirements
- Nursing dissatisfaction
- Longer recovery times in the PACU
- Longer hospital stays.
- Pediatric Anesthesia Emergence Delirium Scale (PAED), developed by Sikich and Lerman, is the only validated scale for use in pediatrics

	TABLE	1			_
Pediatric Anesthesia Emergence Scale	Not at All		One Numl		Extremely
The child makes eye contact with the caregiver	- 4	1	2	1	
The child's actions are purposeful	4	3	2	1	
The child is aware of his/her surroundings	4	1	2	1	
The child is restless	0	1	2	3	4
The shilld is importsolable	a	1	2		4

PROCEDURE

- . Design: descriptive, cross-sectional online survey
- Setting: University of Illinois Hospital and Health Science System (UIHHSS)
- Participants (n=133): PACU registered nurses (n=26), anesthesiology attending (n=42), anesthesiology residents (n=58), certified registered nurse anesthetists (CRNA) (n=7)
- · Survey: developed based on department needs and pilot tested
- Four sections: demographic information, current assessment and documentation practice, perceived barriers, future PED assessment and documentation practice

RESULTS

- Data imported into integrated Business Solutions (IBM) SPSS Statistics version 23.0 and analyzed using descriptive and non parametric statistics
- · 40 responses of the 130 available participants

Demographics

- Role: 40.0% PACU registered nurses (n=16), 27.5% anesthesiology attendings (n=11), 22.5% anesthesiology residents (n=9), and 10 0% CRNAs (n=4)
- Years practiced in current role: 52.5% of participants practiced 0-5 years (n=21), 22.5% of participants practiced 6-10 years (n=9), 12.5% of participants practiced 11-20 years (n=5), and 12.5% of participants practiced greater than 20 years (n=5)
- Experience caring for pediatric patients: 40.0% reported rarely caring for pediatric patients (n=16), 35.0% reported regularly caring for pediatric patients (n=14), and 25.0% reported occasionally caring for pediatric patients (n=10)

Current PED Assessment and Documentation Practice

- 21 participants stated they report PED while 19 did not
- Majority (n=36) report PED with a subjective scale.
- · Mixed responses when asked their reporting and documentation practice of PED

Perceived Barriers

- . Non parametric t-test results not used because data highly skewed to the left
- . Therefore, median was the best method of analysis for data
- . Shown in the table below, limited knowledge and lack of an available assessment tool were perceived as barriers to PED assessment and documentation

		Perceived Barrie d Documentation	
Perceived Barriers	Mean	Median	Mode
Limited time	3.0	3.0	4.0
imited knowledge.	3.2	4.0	4.0
ack of an available	3.45	4.0	4.0

Future PED Assessment and Documentation Practice

- Majority of participants (n=31) thought that PED should be documented by the PACU RN and anesthesia provider together
- 45.0% of study participants report PED should be documented in the PACU record (n=18), 25.0% in the anesthesia record (n=10) and the remaining participants chose other methods
- · Results from the educational preference (shown below) helped facilitate in creation of an educational plan to implement the

	Descriptive Statistics for Educational Preferences				
How would you like to be educated on a pediatric emergence delirium assessment scale?	Frequency	Percent			
Handout, online learning module and in-service	10	25.0			
Handout	8	20.0			
In-service	7	17.5			
Online learning module	5	12.5			
Online learning module and in-service	4	10.0			
Online learning module and handout	2	5.0			

DISCUSSION

Lewin's Phases of Change

- · Findings were used to introduce, implement, and evaluate change in practice, guided by Lewin's phases of change:
- . Unfreeze: Identifying current PED assessment and documentation practices
- Move: practice change guided by Dreyfus & Dreyfus' developmental stages of skill acquisition
- Freeze: completion of three phase educational approach

PAED Scale Three Phase Educational Approach

- Phase 1: Educational handout (below)
- Phase 2: Online learning module
- Phase 3: In-service training

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CONCLUSION

- Perioperative care providers found lack of an available assessment scale, limited knowledge, and limited time to be barriers to PED assessment and
- Results support the need for implementation and standardized use of a validated PED assessment scale at UIHHSS

ONGOING RESEARCH

- Evaluate compliance using PAED scale
- Incorporate the PAED scale into the EMR
- Chart auditing to facilitate future research projects looking at the use of Dexmedetomidine in the prevention of PED

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