

**EDUCATION – CLINICAL**

**OUR FUTURE**



# SRNA Sedation Sequels



**Fall 2022  
Issue 20**

The Semesterly Newsletter Produced by Florida International  
University's Student Registered Nurse Anesthetists



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Each year, our Nurse Anesthetist students are charged with completing a DNP project as part of their degree. These projects are very successful and give students the important experiences to produce research and scholarship during their academic career. Many of our students receive opportunities to travel to conferences to present their projects and publish articles in scholarly publications. In addition, these initiatives help increase excellence and rankings of our Nurse Anesthetist Program throughout the country. Currently, the Nurse Anesthetist Program is ranked #88 in the country by U.S. News & World Report. The College seeks philanthropic support to provide these experiences for our students as the university does not cover these costs. Please consider supporting our students with a tax deductible gift to support the Nurse Anesthetist Program.

You can make your tax deductible gift in one of two ways:

**ONLINE:** Click [DONATE](#) and choose "Anesthesiology"

**BY CHECK:** Please make your check payable to: **FIU Foundation, Inc.**

On the memo line note: **NWCNHS Nurse Anesthetist Program.**

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## Message From the Department of Nurse Anesthesiology's Chair



The Department of Nurse Anesthesiology (DNA) faculty and I are very proud of our students and their commitment to the FIU Doctor of Nursing Practice, Anesthesiology Nursing Program. I am happy to share the department's accomplishments.

- The FIU Department of Nurse Anesthesiology was well represented at the AANA Annual Meeting in Chicago, held in August 2022, as 27 SRNA students traveled to participate in the meeting and compete in the college bowl. The FIU Nurse Anesthesiology students also competed in the 6th annual FANA college bowl in October during the FANA's Annual meeting.
- The Class of 2024 held their White Coat Ceremony in September prior to the commencement of their clinical experiences, as they began their third semester.
- In October, the Department had a successful reaccreditation visit from the Council on Accreditation of Nurse Anesthesia Educational Programs (COA). Results from the visit will be available after the COA board meeting in May 2023.
- Faculty accomplishments include Dr. Campbell, Dr. Diaz, and Dr. Alfonso being selected to serve on National committees for the American Association of Nurse Anesthesiology (AANA) and the National Board of Certification and Recertification for Nurse Anesthetists (NBCRNA). Dr. Miller and I received a tech grant from FIU to enhance students' experience

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in ultrasound, POCUS, TEE, and regional anesthesia. Dr. Miller & Dr. Campbell will co-chair FANA's research committee, and I was elected to serve as FANA's secretary/treasurer. I was also inducted as a Fellow of the American Association of Nurse Anesthesiology.

- The Class of 2022 successfully presented their DNP Scholarly Projects in the DNP Virtual Symposium. The graduating class held their hooding ceremony and were hooded by faculty as they graduated in December. The department wishes them the best as they sit for their boards and begin their careers as Doctorally prepared Nurse Anesthesiologists.
- Mairelys DeLaGuardia, MBA, our Program Coordinator, won the Nicole Wertheim College of Nursing & Health Sciences Administrative staff of the year award. Ms. DeLaGuardia's efforts are an integral part of our department's accomplishments.
- The Department of Nurse Anesthesiology will welcome 43 students from the Class of 2025 in the Spring semester. Students were selected from a very competitive applicant pool. I am grateful for the department's success.

I want to thank all the faculty, staff, and students for their hard work in making the FIU Anesthesiology Nursing Program a success.

**Jorge A. Valdes, DNP, CRNA, APRN, FAANA**  
**Chair, Department of Nurse Anesthesiology**

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### Faculty & Staff Awards

- The American Association of Nurse Anesthesiology (AANA) has awarded Certified Registered Nurse Anesthetist (CRNA) Dr. Jorge Valdes the designation of Fellow of the AANA (FAANA) – a recognized hallmark of leadership and outstanding achievements in the profession and science of Nurse Anesthesiology.
- Congratulations to the faculty in the NWCNHS for receiving two FIU Tech Fee grants and bringing state-of-the-art technology to the NWCNHS college and simulation center.
- Dr. Ann Miller and Dr. Jorge Valdes were awarded the FIU Tech Fee grant in the amount of \$98,035.00 for "Smartphone Butterfly iQ+ Ultrasound: A Single Probe, Whole-Body Ultrasound Solution."

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# Congratulations

## \$98,035 Tech Fee Grant Secured!



**Dr. Ann Miller**  
Interim Assistant Chair & Clinical Associate Professor



**Dr. Jorge Valdes**  
Interim Chair & Clinical Associate Professor

- Dr. Ann Miller and Dr. Michelle Odai were awarded the FIU Tech Fee grant in the amount of \$94,890.00 for “Ultra-Realistic Patient Simulator to Facilitate Training in Point of Care Ultrasound in the Health Sciences.”

**FIU**  
FLORIDA  
INTERNATIONAL  
UNIVERSITY

# Congratulations

## \$94,890 Tech Fee Grant Secured!



**Dr. Ann Miller**  
Interim Assistant Chair & Clinical Associate Professor



**Dr. Michelle Odai**  
Chair, Clinical Associate Professor, & Director of MSAT Program

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- Mairelys DeLaGuardia, MBA, our Program Coordinator, won the Nicole Wertheim College of Nursing & Health Sciences Administrative staff of the year award.

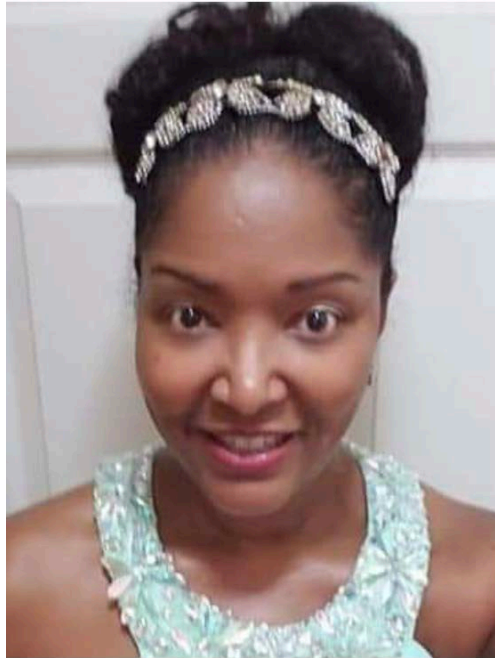


- Congratulations to Dr. Ann B. Miller who was awarded the 2022 FIU Top Scholar awardee in recognition of teaching in the category of "Dedicated Mentoring".
- Congratulations to Dr. Yasmine Campbell for completing her Post-Graduate Certificate in Nursing Education and her Certified Nurse Educator Certification
  - "After experiencing changes in educational modalities during the pandemic, I started my quest to perfect alternative academic teaching strategies for adult learners. My passion is gamification and increasing active learning strategies. Completing this degree has allowed me to learn testing and evaluation strategies, curriculum building, and teaching strategies. My commitment to lifelong learning and nurse anesthesiology students is endless, and I plan to continue growing my knowledge in various educational spectrums."



- Since Dr. Valerie Diaz, Assistant Professor for the Department of Nurse Anesthesiology, was last featured in the Sedation Sequel, she has been quite busy. Dr. Diaz has recently been awarded two Post-Master's Certificates from Florida International University in Nursing Education and Psychiatric Mental Health Nurse Practitioner. As a newly Certified Nurse Educator, she utilizes evidence-based teaching strategies to deliver the most current curriculum content. Dr. Diaz adds the coveted 'CNE' to her credential profile and joins an elite cadre of six faculty in the Nicole Wertheim College of Nursing and Health Sciences. When asked about the significance of these achievements, Dr. Diaz replied, "certification in any field is a mark of professionalism, but as a nurse educator, it creates a means for faculty to demonstrate their expertise, and it communicates to the healthcare community, particularly the students, that the highest standards of excellence are being met."

Additionally, Dr. Diaz intends to combine her clinical practice as a CRNA and Psychiatric Mental Health NP to address the growing incidence of addiction in the Nurse Anesthesiology and military communities, addressing the global opioid crisis. SRNAs are undoubtedly fortunate to have Dr. Diaz as a faculty member and role model in the Department of Nurse Anesthesiology at FIU. Congratulations, Dr. Diaz, job well done!



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### **AANA Annual Congress: Student Perspectives**

**By: Joseph Benson, C/O 2022 and Yanet Milanés, C/O 2022**

Joseph Benson:

"Several students from FIU's Nurse Anesthesiology program attended the American Association of Nurse Anesthesiology (AANA) Annual Congress meeting in Chicago, Illinois in August. The annual conference is a large educational event attended by CRNAs and students from all over the United States. As trusted experts in the field of anesthesia and patient care, it is vital to attend conferences like this to learn the latest evidence-based clinical information and bring what is learned into practice. The AANA Annual Congress provides lectures, exposure to innovative technology, and allows for social networking as well. Attending the conference not only improves education among the CRNA profession, but also gives a sense of teamwork, community, and makes the profession strong. "CRNA strong" was the theme this year, denoting the strength and influence CRNAs have on the care of patients and improving anesthesia care.

Perhaps the most noteworthy part of the week was that Dr. Valdes earned the designation, Fellow of the AANA (FAANA), a significant achievement for CRNAs as practitioners, educators, and advocates for the profession of Nurse Anesthesia. The FAANA title recognizes a dedicated professional who is committed to the growth and advancement of CRNAs. This further demonstrates his ability to lead FIU in the improvement of the Department of Nurse



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## Anesthesiology.

As a student, I thought the conference was a great experience. I was able to meet other SRNAs throughout the country and discuss our experiences and network with other CRNAs. I attended several lectures varying from mental health issues among providers to a hands-on ultrasound workshop. Additionally, I participated in the Anesthesia College Bowl, a game-show-style event where students compete with other students to face a team of CRNAs in the final round. Overall, it was an inspirational and enjoyable event that I will continue to attend throughout my career as a CRNA. Next year's Annual Congress will be held in Seattle, WA- See you there!"



Yanet Milanes:

"Attending the AANA conference was an amazing experience. From attending scenarios for difficult airway management to practicing hands-on skills with point-of care-ultrasound, the conference offers a variety of workshops that enhances and solidifies student learning. The AANA conference was a great opportunity for professional networking while exploring the beautiful city of Chicago with classmates. Seeing all the Nurse Anesthetists come together at the conference was incredible. Looking forward to participating next year!"



### AANA Annual Congress FIU Posters

Presented by:

Alexander Fukes, C/O 2022

Lindsay Schafer, C/O 2022

Xenia Del Pozo, C/O 2022

# An Educational Module Explaining The Use Of Quadratus Lumborum Blockade To Decrease Opioid Usage During Colorectal Surgery: A Quality Improvement Project

Alexander Fukes BSN, RN, CCRN; Dr. Valerie Diaz DNP, CRNA, APRN, CAPT, USN, NC

Nicole Wertheim College of Nursing & Health Sciences  
FLORIDA INTERNATIONAL UNIVERSITY

### Introduction

The perioperative period has been identified as a source of access to opioids. Regional Anesthesia offers patients another method for pain management during the perioperative period while addressing many negative issues associated with opioids. Continued research into Regional Anesthesia is discovering new nerve blocks for specific procedures. This investigation aims to identify the quadratus lumborum block as a superior method to decrease opioid usage in patients undergoing colorectal surgery and present the information to CRNAs and SRNAs as an adjunct to their practice to reduce opioid usage and improve patient outcomes.

### Purpose

The purpose of this evidence-based practice research is to provide information to CRNAs to make an educated decision to utilize the Quadratus Lumborum block in place of existing methods of regional anesthesia to decrease opioid administration during the perioperative period for patients undergoing colorectal surgery.

### Clinical Significance

The opioid epidemic has brought attention to opioid administration in the perioperative period. Beyond specifically the addictive potential, opioids have specific side effects that impact patients undergoing colorectal surgery. Regional Anesthesia specifically addresses this issue. Regional Anesthesia is gaining popularity.

#### Opioids:

- Superior Analgesia
- Opioid Epidemic
- Gastrointestinal Motility
- Regional Anesthesia
- Increasing Popularity
- Innovative Research
- QL Block vs TAP block

The Quadratus Lumborum Block reduces opioid administration during the perioperative period.

### Methodology

Research articles were obtained by searching the following databases: CINAHL, PROQUEST & Medline.

Keywords: Regional anesthesia, pain, opioids, colorectal surgery, Quadratus Lumborum & Transverse Abdominus Process.

#### Inclusion criteria:

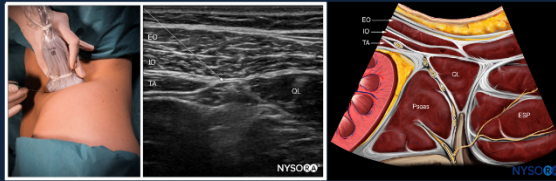
- Studies that addressed preceptor training, nurse anesthesia, preceptor training and nursing student outcomes

#### Exclusion criteria:

- Research older than 2007
- Not available in English
- Did not address primary research

#### Study Designs:

- RCTs
- Quasi-experimental designs
- Descriptive studies
- Mixed methods
- Qualitative studies
- N=10
- IRB exempt



### PICO Question

(P) Patients undergoing surgery (I) The use of Regional Anesthesia (C) Quadratus Lumborum versus Transverse Abdominus Process blocks (O) Decreased utilization of postoperative opioids

### Literature Review

Author	Objectives	Conclusion
Deng, W., Long, X., Li, M., Lu, C., Guo, L., Xu, G., & Yu, S. (2019)	The study compared the quadratus lumborum block (QLB) method with the transverse abdominis plane block (TAPB) for postoperative pain management in patients undergoing laparoscopic colorectal surgery.	Patients in the QL block group used significantly fewer opioids than the TAP block group at 24 hours, but not at 6 hours after laparoscopic colorectal surgery. There were no significant differences in pain scale rating results between the two groups at rest or during movement. In addition, the incidence of dizziness in the QL block group was lower than in the TAP block group.
Eisharkawy, H., EL-Boghdady, K., & Barrington, M. (n.d.)	The purpose of the study is to review the relevant anatomy, potential mechanisms, approaches, and techniques and summarize the clinical evidence for quadratus lumborum block.	Current indications are based on a few existing randomized controlled clinical trials and case reports. Although the evidence base is weak and still growing, the data thus far suggest that quadratus lumborum block potentially results in extensive sensory blockade (T7-L2). In addition, Quadratus lumborum block may lead to dermatomal coverage required for abdominal surgery and hip surgery, representing future research avenues.
Jan van Dam, C., Algera, M., Olofsson, E., Aarås, L., Smith, T., Van Velzen, M., Saiton, E., Niestens, M., & Dahen, A. (2020)	The study looks at opioids, the utility functions impacted by opioids, and how to achieve the most wanted effect while limiting unwanted effects.	Opioids will continue to play a role in postoperative care. Therefore, it is essential to understand the potential side effects. Also critical is staying up to date with current research and new opioids created for use.
Argoff (2020)	To provide an overview of opioid-induced constipation and its influence on disease burden and quality of life.	The most common opioid-related side effect is OIC. Patients with OIC often experience substantial overall burden (i.e., increases in anxiety and depression, impairments in activities of daily living, low self-esteem, feelings of embarrassment) and economic burden (i.e., higher health care costs, more frequent doctor visits, increased out-of-pocket medication costs), which often causes patients to modify or discontinue opioid treatment despite the analgesic benefits.
Shanthanna, H., Ladda, K., Kehlet, H., & Jeehi, G. (2021)	This article critically reviews perioperative opioid use, especially opioid-sparing versus opioid-free strategies.	Adequate perioperative analgesia is not only a humane necessity but is important to prevent short- and long-term complications. The focus should remain on minimizing opioid use with known, safe, feasible options adapted to individual patient needs. A framework that involves patient education, preoperative opioid minimization, use of multimodal analgesia strategies, and postoperative analgesia titrated to transitional pain needs can decrease the risk of persistent opioid use and persistent postsurgical pain.

### Quadratus Lumborum Blockade

- Adults, children, and parturients
- Obstetric, gynecological, abdominal, and gastric surgeries
- Excellent analgesia, including while both moving or at rest
- Analgesic impact is as effective as using opioids
- Efficacy without nausea or vomiting
- Reduced incidence of thromboembolic events due to rapid and early pain relief promoting early ambulation
- A popular focus of continued research
- Research remains focused on finding a consensus on the volume, type, and concentration of local anesthetic required

### Results

- TAP blocks remain the anesthetic of choice for these procedures
- QL block would be more efficacious for this patient population and would decrease opioid administration
- TAP blocks are more common in current practice is related to a learning curve associated with performing the QL block
- Complacency of anesthesia providers remains an issue
- Time taken to complete procedure is also identified as a potential limitation
- Efficacy and impact on early recovery indicates QL block will increase in popularity

### Conclusion

- A multitude of modalities to reduce opioid administration
- Anesthesia providers are at the forefront of this issue
- Regional anesthesia identified as a primary method to improve patient outcomes while decreasing opioid administration.
- Research continues to find new methods of regional anesthesia to provide better patient outcomes
- Specific examples include QL blocks instead of TAP blocks
- Preliminary findings anticipate successful outcomes and demonstrate the strengths of QL blockade over existing pain management methods.
- Overall, regional anesthesia requires enthusiastic anesthesia providers open to implementing new methods into practice.
- Future research should aim to set a standard of practice utilizing regional anesthesia, with a greater degree of cost savings, as well as higher quality evidence and patient response

### References

References available upon request

### Contact Information

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Valerie Diaz, [vdiaz26@fiu.edu](mailto:vdiaz26@fiu.edu)



# An Educational Module for a Formalized CRNA Preceptorship Workshop to

## Enhance Teaching and Communication Skills

Lindsay Schafer BSN, RN; Ann B. Miller, DNP, CRNA, APRN, Jampierre Mato, DNP, CRNA, APRN



Nicole Wertheim College of Nursing & Health Sciences  
FLORIDA INTERNATIONAL UNIVERSITY



### Introduction

A preceptor is an experienced practitioner who teaches, supervises and acts as a role model for students during clinical practice.<sup>3</sup> The role of the preceptor is to support the student during the transition from the classroom into clinical practice by facilitating the development of knowledge and clinical skills and the enhancement of critical thinking and problem-solving skills.<sup>1</sup>

### Purpose

Analyze literature on the efficacy of preceptorship workshops and training to improve providers knowledge, perception and attitude towards the use of effective teaching, learning, communication strategies, for a positive preceptor-preceptee relationship.

### Clinical Significance

- Students feel that their learning outcomes and progression in the clinical setting is highly dependant on their relationship and interaction with their preceptor.<sup>7</sup>
- Most CRNA preceptors have minimal exposure to adult learning principles and educational theory.<sup>1</sup>
- **Disatisfying preceptor factors observed by SRNAs:**<sup>1</sup>
  - Inconsistent feedback and evaluation
  - Poor teaching skills
  - Unprofessional communication including intimidation and harassment
- **Responsibilities of preceptors:**<sup>7</sup>
  - Apply classroom knowledge to actual clinical situations
  - Develop clinical skills, critical thinking and confidence

A formalized preceptor workshop can lead to enhanced teaching and learning opportunities, personal and professional development and a positive preceptor-preceptee relationship.<sup>3</sup>

### Methodology

Research articles were obtained by searching the following databases: CINAHL, Pubmed and ProQuest.

Keywords: preceptor, preceptee, preceptorship, nursing, nurse anesthesia, student registered nurse anesthesia, education

Inclusion criteria:  
• Studies related to a preceptorship within nursing or nurse anesthesia  
• Articles published in English and within 20 years

Exclusion criteria:  
• Research greater than 20 years old  
• Not available in English  
• Did not address primary research

Study Designs:  
• Descriptive studies, mixed methods and qualitative studies  
• N=13  
• IRB exempt



### PICO Question

**(P) In anesthesia providers (I) does an educational module on preceptorship training (C) compared to no preceptor training from a formalized preceptor workshop (O) increase the knowledge, perception and attitude on effective teaching, learning, communication strategies, and a positive preceptor-preceptee relationship?**

### Literature Review

Author	Design and Objectives	Conclusion
Bangston & Carlson 2015	The aim of this qualitative study was to investigate preceptors' requests and educational needs when developing a preceptor professional development course. 64 Preceptors in the healthcare field and were asked to answer "what further knowledge and skills do you need to develop as a preceptor?"	The two main themes requested by the preceptors included: tools for effective precepting of students and in depth knowledge and understanding of preceptorship in an academic setting. A course was developed that included teaching and learning strategies, communication skills, reflective and critical thinking and the role of the preceptor.
Forners and Pedern-MoAjene 2009	A qualitative instrumental case study to determine the impact of the preceptor coaching component of a reflective contextual learning intervention on new nurses critical thinking skills during their first 6 months of practice.	Attributes of critical thinking: reflection, context, dialogue and time. Preceptors acknowledged a change in their precepting style by creating a more intentional and reflective form of thinking. Teaching critical thinking as intentional, reflective thinking to preceptors will influence critical thinking in the preceptee
Easton et al. 2017	A qualitative study that created and evaluated an online, evidence based CRNA preceptor training tutorial. Established a baseline of precepting behaviors to identify areas needing improvement. The participants included twenty-four CRNAs and twenty SRNAs.	It was found that both CRNAs and SRNAs highly value debriefing, communication, introductory discussion at the beginning of each clinical day, and providing structure to the preceptorship. 62% of CRNAs reported formal precepting training would be helpful. It is suggested that equipping CRNA preceptors with tools to improve their communication with SRNAs is important.
Elisha et al. 2008	This study used questionnaires, cognitive interviews, trigger film analysis and assessment by an independent observer during instruction to collect data. It aimed to determine if providing an 8-hour educational course would modify the perceived behaviors and the perceived knowledge of CRNA clinical educators.	The 8-hour course positively modified the participants behavior and knowledge toward clinical education. The most significant impact included adult learning principles, establishing positive teacher-learner relationships and providing positive feedback.
Elisha et al. 2011	Descriptive study using cross-sectional survey methods to describe the experiences and attitudes of SRNAs related to clinical instruction.	This study showed that 69% of SRNAs reported verbal abuse in the clinical setting. Satisfaction of SRNAs can be enhanced by either a perceived increase in learning or a reduction in perceived mistreatment. SRNAs ranked behaviors of preceptors in terms of importance: calmness, nonretaliating and clear communication, and allows independent decision making

### Effective Precepting Skills

- Teaching Strategies:**
- Critical thinking: intentional, reflective thinking<sup>15</sup>
  - Ask "how," "why" or "what if" questions<sup>15</sup>
  - "Pimping" or series questioning is not an effective teaching method and can increase the student's stress<sup>9</sup>
- Learning Strategies:**
- Active learning is a principle of adult learning & takes place when learners are encouraging to participate<sup>12</sup>
  - Recognition of different psychological types can result in an increased effectiveness of orientation<sup>18</sup>
- Communication Strategies:**
- Briefing and debriefing in close proximity to the case improves the student's sense of mastery<sup>7</sup>
  - Student's self confidence is dependent on feedback from the preceptor<sup>7</sup>
  - Friendliness & being approachable leads to a successful preceptorship<sup>20</sup>

### Benefits of a Preceptorship Workshop

- Identifies the roles of a preceptor<sup>3</sup>
- Decreases turnover rate<sup>3</sup>
- Enhances professional growth<sup>3</sup>
- Enhances existing precepting skill<sup>9</sup>
- Positively changes preceptor's behavior and knowledge towards education<sup>11</sup>
- Provides concrete tools and teaching strategies to aid in the difficulties of precepting<sup>14</sup>
- Increases quality of care<sup>9</sup>
- Increases student's learning outcomes<sup>3</sup>
- Enhances critical thinking skills in the students<sup>15</sup>

### Conclusion

- The role of the preceptor is to support the student during the transition from the classroom into clinical practice through enhancement of critical thinking and problem-solving skills.<sup>1</sup>
- An effective preceptor should possess the skills to provide constructive feedback, have knowledge about various teaching and learning principles and be able to evaluate student outcomes.<sup>2</sup>
- A formalized preceptor training program would enhance the existing precepting skills of experienced providers by providing practical advice on the use of theory and evidence-based teaching principles.<sup>9</sup>

### References

References available upon request

### Contact Information

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Ann B. Miller, amille@fiu.edu

# An Educational Module on the Utilization of Haloperidol as a Pharmacological Compliment for Postoperative Nausea and Vomiting Prophylaxis In Adult Surgical Patients



Xenia Del Pozo, BSN, RN; Ann B. Miller, DNP, CRNA, APRN  
 Nicole Wertheim College of Nursing & Health Sciences  
 FLORIDA INTERNATIONAL UNIVERSITY



### Introduction

Postoperative nausea and vomiting (PONV) influences the perioperative experience of general anesthesia patients. Although current guidelines suggest the use of combination therapy for PONV prophylaxis, there is diminished application in practice. A potentially efficacious and under-utilized medication currently being studied in combination with anti-emetics is haloperidol.

### Purpose

Analyze literature featuring haloperidol's PONV prophylactic potential in efforts to improve anesthesia provider knowledge and attitude on the efficacy to enhance anesthesia practice by diminishing PONV using haloperidol.

### Clinical Significance

In the perioperative setting, PONV is a potential risk factor for all patients who opt for general surgery that involves utilization of anesthesia. PONV affects over 25 – 30% of surgical patients and the incidence of PONV has been found to be as high as 80% throughout the years, a multitude of literature has pointed to promising PONV treatments that are still implemented today. Although many treatments have shown to be efficacious in treating PONV, research has fallen short of identifying a definitive gold standard for PONV management and prophylaxis that includes haloperidol. With the persistent problem of PONV, healthcare systems and patients have had to face increased costs, decreased patient satisfaction, adverse surgery outcomes, prolonged hospital stays, and delayed post anesthesia care until discharge.

### Methodology

An expansive analysis was conducted as facilitated by MEDLINE (Proquest), the Cumulative Index to Nursing and Allied Health Literature (CINAHL), the Directory of Open Access Journals (DOAJ) – Not for CCI Discovery, and the official journal of the International Anesthesia Research Society, Anesthesia & Analgesia.  
 Keywords: Haloperidol, Postoperative Nausea and Vomiting, Prophylaxis, and Combination Therapy.  
 Inclusion criteria:  
 • Literature published within the past fourteen years  
 • Full text articles  
 • Studies following a randomized clinical trial design  
 • Research that focused on the role of haloperidol in PONV prophylaxis when used in combination with other anti-emetics and as a sole agent  
 • Literature studied featured haloperidol, droperidol, dexmethasone, and ondansetron for PONV prophylaxis.  
 Exclusion criteria:  
 • Meta-analyses and literature reviews  
 • Literature reviews  
 • N = 6



**PICO Question**  
 (P) In adult surgical patients (I) does an educational module on the utilization of haloperidol as a pharmacological compliment for postoperative nausea and vomiting (PONV) prophylaxis (C) versus no educational module (C) increase anesthesia provider knowledge and attitude in implementing haloperidol as an adjunct treatment?

Author	Design and Objectives	Conclusion
Dağ et al. 2019	A randomized controlled trial experimental study was used to evaluate the most efficacious dose of haloperidol for PONV prophylaxis with the least amount of side effects. The trial compared PONV efficacy of haloperidol doses of 0.25 mg, 0.5 mg, 1 mg, and 2 mg to a saline placebo. A sample of 250 female patients between the ages of 19 and 70 years with an ASA classification of I – II undergoing general anesthesia for laparoscopic abdominal hysterectomy were studied.	There was a statistically significant difference among treatment groups; the placebo group experienced the highest anti-emetic need at 40% while the subjects treated with haloperidol required fewer rescue anti-emetics. The optimal and efficacious dosages of parenteral haloperidol for PONV range from 0.5 mg to 2 mg. Participants in group II who received the highest dose of haloperidol of 2 mg experienced the highest level of patient satisfaction that was also statistically significant at P < 0.05.
Benevides et al. 2013	A randomized double-blinded quasi-experimental study was used to investigate and compare the PONV prophylaxis efficacy of anti-emetic used in combination and as sole agents. The study conducted evaluated PONV prophylaxis using the combination of haloperidol, ondansetron, and dexmethasone compared to the sole use of ondansetron or dexmethasone with ondansetron. A sample of 90 male and female patients at least 18 years old undergoing general anesthesia for laparoscopic sleeve gastrectomy with an ASA classification of I – III and BMI > 35 kg/m <sup>2</sup> were studied.	Lower PONV incidence and the use of rescue anti-emetics was reduced in groups that utilized a combined PONV treatment approach including haloperidol, ondansetron, and dexmethasone.
Joo et al. 2015	A randomized double-blinded dose response and placebo-controlled experimental study was used to investigate haloperidol's efficacy in PONV prophylaxis as an agent in combination therapy and identify haloperidol's most efficacious dose. The study conducted evaluated PONV prophylaxis using the combination of haloperidol and dexmethasone compared to a placebo (saline). A sample of 150 female patients between ages of 20 – 65 years old with ASA classification I – II, non-smoking status, and use of PCA undergoing general anesthesia for gynecological laparoscopic surgery were studied.	The 1 mg and 2 mg haloperidol doses were equally effective in preventing PONV when given in conjunction with dexmethasone and the combination of dexmethasone with haloperidol was more effective in PONV prevention than dexmethasone as a sole agent.
Wang et al. 2012	A randomized clinical trial with quasi-experimental study design was used to investigate dexmethasone's efficacy in PONV prophylaxis as an agent in combination therapy. The study compared PONV prophylaxis of dexmethasone plus haloperidol with ondansetron plus dexmethasone. A sample of 135 female patients between 18 – 65 years old with an ASA classification of I – II undergoing general anesthesia for gynecologic, abdominal, and orthopedic surgeries expected to receive morphine PCA were studied.	Both treatment groups that received haloperidol or ondansetron in combination with dexmethasone experienced diminished PONV incidence and there was less need for rescue anti-emetics over the course of 24 hours. The sole treatment of PONV with dexmethasone was not as efficacious as combination therapy with haloperidol or ondansetron.
Feng et al. 2009	A randomized, double-blinded quasi-experimental study was used to investigate haloperidol's efficacy in PONV prophylaxis as an agent in combination therapy. The study compared the PONV efficacy of haloperidol in combination with ondansetron compared to the sole use of each agent. A sample of 210 male and female patients with an ASA classification of I – II undergoing general anesthesia for laparoscopic cholecystectomy were studied.	The combination treatment of haloperidol and ondansetron yielded a greater PONV prevention response and an increase in patient satisfaction. Subjects who received both haloperidol and ondansetron suffered the lowest incidence of PONV and required less rescue analgesics or anti-emetics.

### Results

- All studies showed a decreased incidence of PONV when haloperidol was administered with dexmethasone and ondansetron, and when used alone.
- More than 85% of literature highlighted that haloperidol provided a protective effect against postoperative nausea when used in combination treatment and as a sole agent.
- All subjects receiving haloperidol did not exhibit significant adverse effects, increased sedation level, or a greater pain medication requirement.
- The most efficacious parenteral dose range of haloperidol for PONV prophylaxis according to most recent literature is 0.5 – 2 mg and additional literature showed no difference in the anti-emetic efficacy of haloperidol when administered at different times during the perioperative period.

### Clinical Recommendations

- Efficacious parenteral haloperidol dose for PONV prophylaxis is 0.5 – 2 mg
- PONV prophylactic potency begins within 30 minutes of administration
- Duration of action for PONV prophylaxis is 4 hours
- Elimination half-life is 12 – 36 hours
- Rarely causes extrapyramidal symptoms
- Side effects when given at high doses in psychiatric practice, such as 35 mg or more within a 24-hour period:
  - QT prolongation
  - Torsades de pointes
  - Sedation
  - Neuroleptic malignant syndrome
  - Nightmares
  - Visual disturbance
- At low doses used for PONV, the risk of adverse effects is minimal

### Combination therapy incorporating haloperidol for PONV prophylaxis may contribute to a profound and positive transformation in the perioperative arena. Guidance on haloperidol may better equip anesthesia providers to combat the negative outcomes prompted by PONV and diminish the occurrence of PONV.

### Conclusion

- Research demonstrates that PONV still negatively affects surgical patients despite the use of available anti-emetic treatments.
- Current guidelines and algorithms demonstrate that combination PONV prophylaxis is modeled as a goal of perioperative care, but diminished adherence to recommendations, especially with haloperidol, has been noted as an issue in current practice.
- The EBP project brings to light the promising potential of haloperidol in different surgical settings and treatment combinations, which can be appealing for anesthesia providers who share the goal of optimal PONV prophylaxis.
- Future research should aim to study the efficacy of haloperidol in PONV prophylaxis when utilizing a multimodal analgesia plan of care.

### References

References available upon request.

### Contact Information

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**Clinical Spotlight:**  
**Dr. Heidi Ortega**  
**Broward Health Medical Center**  
**By: Ryan Covey, C/O 2023**

Dr. Heidi Ortega is the chief CRNA at Healthcare Performance Anesco and practices at Broward Health Medical Center.

### Why did you become a CRNA?

I started working in the ICU during a nursing shortage, so I was hired directly into the ICU with

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critical care nurse internship program. It was perfect, combining classroom training and clinical preceptorship. The nurses in the ICU were all in their mid-forties and encouraged me to go back to school earlier than I probably would have done on my own. Every nurse I spoke to guided me in the direction of anesthesia.

**What do you like to do in your free time?**

I love to garden. I love the ocean, fishing, snorkeling, and scuba diving. I love to travel. I enjoy cooking and spending time with my family.

**What is the most rewarding part of your job?**

Being there for my patients to help ease their fear of anesthesia. Providing an excellent anesthetic so my patients do well, not only during but after surgery.

**What is the most challenging part of being a CRNA?**

The stress of dealing with very sick patients, making crucial decisions, being able to stay focused while also interacting as a team member during surgery, and production pressure. Be able to say stop, slow down, let's re-evaluate.

**Is there any case that interests you the most?**

Thoracotomies, vascular, and abdominal cases.

**Do you have any advice for aspiring CRNAs?**

Be the best that you can be at everything. Continue to learn daily and continue to push yourself not only at work but in life. Be kind. Be confident but humble.

**How has becoming a CRNA changed your life?**

Becoming a CRNA has given me a great appreciation for life. Treat everyday as if it may be your last day. Enjoy every moment whether at work or home. Be present in the moment.

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**Lions, Tigers, and Clinical, Oh My!**  
**By: Alejandra Morato, C/O 2024**

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My name is Alejandra Morato, and I'm a first-year CRNA student. I had been in nursing for five years before starting CRNA school. At the peak of my nursing career, I was undoubtedly confident in my skills and competence to manage the care of the sickest patient in the intensive care unit.

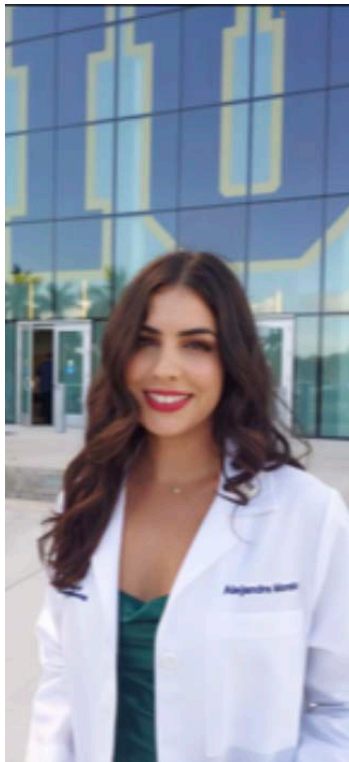
Then suddenly, as I entered clinical as a SRNA, my confidence was on the floor. I forgot how to introduce myself, how to communicate fluidly with my patients like I had been doing for years, and getting nervous as I connected my patient to the monitor in the OR! Ouch, this was no longer my arena. But I knew I was not alone and it would get better soon.

Starting my clinical experience as an SRNA was an incredible, intimidating, and humbling experience. I felt like I was starting from scratch again.

On the first day of clinical, I was there first thing in the morning, even before they had restocked the scrubs in the locker room. Why? Because who could sleep on their first day of clinical?! With that extra time in the morning, I made sure to familiarize myself with the new environment (as this would be my new home for the next couple of months), equipment, medications and dosages, and all the different tools I had never seen before. I introduced myself to everyone and offered help to make myself useful. I am grateful that the staff immediately made me feel comfortable and welcomed even though I felt out of place. As my clinical experience has progressed, the days feel much smoother, and I'm slowly feeling like part of the team!

The transition within the first couple of semesters, including incorporating clinical hours into the week and time away from studying, was a bit overwhelming and a difficult adjustment for me. My study habits and time management had to be modified a few times to get in that "flow."

For new students, my best advice would be to learn to let things roll off your back. Remind yourself that 90% of the battle is just showing up the next day. I know it may feel like you can't do it, but you can succeed. Stay focused and with your end goal in mind! Even the best students will have bad days. So, take a deep breath and take it one day at a time. Ask questions and don't be scared to say when you don't know something. Your preceptor will appreciate that. Finally, learn to be receptive to constructive criticism. This is a learning experience; every opportunity is meant to help us evolve into the amazing CRNAs we will be one day!



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## **There is a Light at the End of the Tunnel**

**By: Eduardo Subero, C/O 2022**

Before we were immersed in the world of understanding G-Protein coupled receptors, deciphering the blood:gas solubility coefficients, and learning that suRAL is lateRAL, many of us were warned about the endeavor we were taking on, i.e. CRNA school. The advice we were given, painstaking to hear at times, rang in our heads over and over:

“It’s the best decision I’ve made, but I wouldn’t do it twice.”

“It’s the hardest thing you will do.”

“It’s a marathon, not a sprint.”

“No one makes it through alone.”

As we quickly found out, CRNA school pushes you to your limits. Between the exhaustion of waking up at 4:30 a.m. for most clinical days, the high-stakes exams, and the pressure to perform in clinical residency while juggling our personal obligations, we found ourselves questioning why we chose to pursue this level of insanity as a profession. However, as I navigated these thoughts, I

found solace in the aforementioned advice.

My advice for future cohorts:

1. Find a small solid group of friends you can rely on. No one makes it through alone. We all need support throughout this process and the best people to rely on are the ones who can truly sympathize with the pressures of this program. Look for the people who keep a positive attitude, are quick to tell you the stupid mistakes they made in clinical, are slow to brag, and keep you accountable.
2. Talk about your struggles. It's one of the hardest things you will do but can be the most vital. Make yourself vulnerable and available to your peers about your struggles. Ignore the feeling that other people may be ahead of you or are grasping concepts or skills easier than you are.
3. Reach out to the professors. It's a marathon, not a sprint, so who can best prepare you for this long race? Your professors. Although it may seem like they're the source of your hardships, the professors are there to help. They care about our success.
4. Remember that you are your harshest critic and don't take things personally. No one makes it through alone so don't become your own anti-hero. It's a process of learning and sometimes re-learning everything we've been taught. If one thing doesn't click right away, take a breath. It will come to you.

The class of 2022 has defined resiliency between starting off during the height of the COVID pandemic, learning the basics on Zoom, and adjusting to program changes. I am incredibly proud and honored to be a part of this cohort.

To the incoming cohorts: we are here for you, use your mentors, and pay it forward when it's your turn.





## **Recipe: Easy Pumpkin Bread Loaf Recipe**

**Courtesy of Samantha Hermida, C/O 2023**

Although it does not feel like fall here in South Florida, it is still fun to enjoy the fall traditions such as pumpkin-flavored anything and decorating around the house. This pumpkin loaf recipe is a crowd favorite, easy to make, and will be difficult to stop eating once you start. The recipe makes two loaves so feel free to halve the ingredients for one loaf (although it will be devoured so quickly you will probably need the two). Supplies: 9x5 loaf pan(s), two medium to large bowls for mixing, and a hand mixer or whisk.

### Ingredients:

- 2 cups all-purpose flour
- ½ tsp salt
- 1 tsp baking soda
- ½ tsp baking powder
- 1 tsp ground cloves
- 1 tsp ground cinnamon
- 1 tsp ground nutmeg
- 1 ½ (3/4 cup) unsalted butter, softened
- 2 cups sugar (I prefer 1 cup white sugar, 1 cup brown sugar)
- 2 large eggs
- 1 15-oz can pumpkin puree

Step 1: Preheat oven to 350°F and grease/butter/spray the loaf pan(s).

Step 2: In a bowl, combine the flour, salt, baking soda, baking powder, cloves, cinnamon, and nutmeg until well combined.

Step 3: In a separate bowl, beat the butter and sugar until just blended. Add the eggs and beat until very light and fluffy. Beat in the pumpkin puree.

Step 4: Add the flour mixture to the wet ingredients and mix until combined.

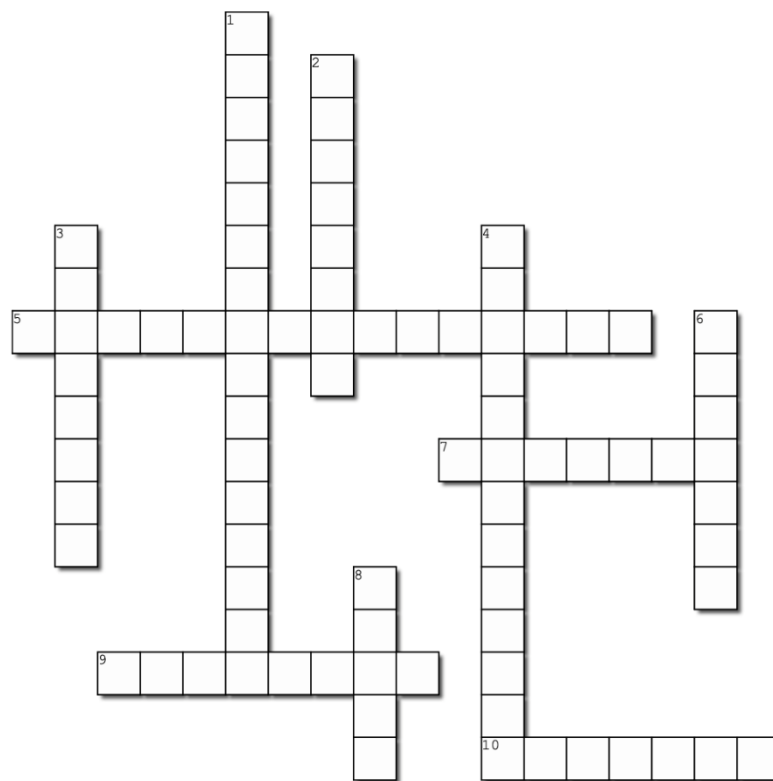
Step 5: Pour the batter evenly into two loaf pans (or bake one at a time if you only have one pan). Bake for 65-75 minutes, or until toothpick inserted into the center comes out clean. Let cool and enjoy!

**A Crossword Puzzle That  
Will Put You to Sleep**

Created by: Gianfranco Ratto, C/O 2023

**Anesthesia Crossword**

Complete the crossword puzzle below



**Across**

- 5. OSA gold standard diagnosis
- 7. Factor 4- clotting cascade
- 9. Strongest bond in chemistry
- 10. Longest nerve in human body

**Down**

- 1. hormone secreting tumor of adrenal medulla
- 2. Dissociative anesthetic
- 3. Michael Jackson
- 4. Founder of the AANA
- 6. pH and temperature dependent process
- 8. Claw Hand



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