

Introduction to Becoming a Certified Registered Nurse Anesthetist for the Undergraduate Nurse

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Abstract

With a growing number of undergraduate nursing students seeking out a higher education the Certified Registered Nurse Anesthetist has become a popular career. With this needed for more highly educated nursing professionals it was determined that 2025 all CRNA programs will have transitioned to a doctoral degree. With several different degrees available, confusion among undergraduate nursing students has increased. A short 30-minute presentation surrounding the role of the CRNA, the differences between the different degrees available and the Adventist University of Health Sciences application process was developed and presented to a class of 30 senior undergraduate nursing students. Results from the pre/post test administered to the class showed a significant increase in the students' knowledge following the presentation. Thus the researchers concluded that the education of the undergraduate nursing student is a key aspect for furthering the CRNA profession by generating awareness and inspiring intrigue about the career and the need to gain a higher education.

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Introduction to Becoming a Certified Registered Nurse Anesthetist for the Undergraduate Nurse

The Nurse Anesthetist profession has been around since the late 1800's but has become increasingly popular over the past several decades as the career of choice for aspiring nurses. Today, there are over 44,000 Certified Registered Nurse Anesthetist (CRNA) throughout the United States (U.S.) administering anesthesia on a daily basis. With the current reform in health care and the requirement of a doctoral education for entry into nurse anesthesia practice by 2025, the nursing profession will evolve to continue providing the highest quality of care possible (Wilson, 2012).

Problem

The current effort to convert many nurse anesthesia programs from awarding a masters degree to a doctoral degree clearly gives rise to uncertainties toward undergraduate nursing students desiring to advance their education in nurse anesthesia. This is a potential problem at Adventist University of Health Sciences (ADU's) due to their large population of undergraduate nursing students. Through a 30-minute power point presentation, these points will be discussed with the hope to increase the knowledge base of the issue among senior undergraduate nursing students.

Continuing education and obtaining an advanced practice degree in nursing is a goal numerous undergraduate nursing students desire to achieve. Many nurse anesthesia programs, including ADU, are currently in transition into doctoral degree programs. It has been determined by the Council on Accreditation (COA), that by 2025, all accredited nurse anesthesia programs will be mandated to offer a doctoral degree including DNP (Doctorate of Nursing Practice) or DNAP (Doctorate of Nurse Anesthesia Practice) (Gould, 2013). This nation-wide change for the anesthesia programs has met with opposition throughout its process since there are numerous

considerations to address. Furthermore, various uncertainties and inquiries have been raised, such as, why the change from masters to doctoral level education? What is the difference between masters and doctoral degrees? And what will future requirements for practice be?

The nurse anesthesia program at ADU currently offers a masters degree. According to the COA, there is currently a total of 16 accredited nurse anesthesia programs in the United States and nine of those programs are located in Florida. Each program has explicit requirements that must be met before admission. The admission requirements for each of the masters and doctorate level programs here in the state of Florida as well as Middle Tennessee School of Anesthesia and Loma Linda University in California will be gathered from the Council on Accreditation (COA) of Nurse Anesthesia Educational Programs website.

Review of Literature

The choice to move from awarding a masters degree to doctoral degree has been an ongoing dispute over the past several years. A literature review was conducted to investigate the current information on the subject to identify current gaps in that knowledge base.

History

Despite being over a century old, many are unfamiliar with the history of the CRNA profession and its development/introduction into the healthcare system (Ray & Desai, 2016). The first recorded nurse anesthetist was Sister Mary Bernard, a nun in Pennsylvania, in 1877. Until this time, the role of the anesthetist had been somewhat of a mystery. Volunteers or students often administered anesthetic drugs such as chloroform and narcotics, complications were not uncommon, and fatalities due to wrongful administration soon grew in number (Wilson, 2012). Need for a designated anesthesia provider was apparent and many nurses began seeking out this role.

As the number of nurse anesthetists grew throughout the Midwest, its popularity with physicians started to become apparent as well. William W. Mayo (founder of the famous Mayo Clinic) and his two sons became strong advocates for the nurse anesthetist profession allowing them to teach and practice during their surgeries (Ray & Desai, 2016). The profession continued to grow, with nurse anesthetists playing vital roles during WWI and eventually WWII. Despite opposition from numerous parties, in 1935, the American Association of Nurse Anesthetists (AANA) was established to oversee the credentialing and education of CRNAs (Ray & Desai, 2016). Today, there are 116 nurse anesthetist programs accredited by the COA throughout the United States, and as healthcare continues to evolve, by 2025 the profession will require a doctoral level education for entry into practice.

The CRNA's Role

The role of the CRNA is one of prestige and respect. CRNAs perform all forms of anesthetic techniques including: General Anesthesia (GA), Neuraxial Anesthesia, Regional Anesthesia and Total Intravenous Anesthesia (TIVA). In every setting where anesthesia is administered, the CRNA is a vital part of the health care team. Practicing in outpatient surgical offices, obstetrical delivery suites and main operating rooms, the CRNA functions in collaboration with surgeons and anesthesiologists as well as other medical staff (Wilson, 2012). While CRNAs are often the sole means for anesthesia administration in rural settings, CRNAs also have the ability to practice independently with no anesthesiologist association in 17 states (Wilson, 2012).

Earning an annual average of \$160,000 in the U.S., the CRNA is a cost effective addition to any healthcare team. Several different care models exist concerning patient care and the ratio

between anesthesiologist and CRNAs. Research has shown that CRNAs practicing independently are the most cost effective care model. This model often saves the hospital or anesthesia group as much as 25% annually. However, despite this, most hospitals necessitate the presence of an anesthesiologist. Thus, the 4 to 1 model (4 CRNAs: 1 anesthesiologist), which is the second most cost effective model, is often the model of choice among facilities (Wilson, 2012).

A Move for a Higher Education

There has always been a desire among nursing professionals to seek out higher education. A study completed in 2015 analyzing the nursing workforce in Kansas, showed that many of the nurses there were on the path of completing some form of higher education such as a bachelors or masters degree. These nurses were often paid more and were more likely to gain higher job positions in leadership or management (Shen, Peltzer, Teel & Pierce, 2015). In 2004, Columbia University became the first school to establish a Doctor of Nurse Practice (DNP) program (Enlow, Honig & Cook, 2014). Since then, over 200 other DNP programs have been established throughout the U.S. (Dunbar-Jacob, Nativio & Khalil, 2013). As doctoral programs continued to grow, the AANA saw a need to establish doctoral programs with a more detailed focus for CRNAs. In 2012, after much deliberation, the AANA released the Standards for Accreditation of Nurse Anesthesia Programs: Practice Doctorate—Draft I for a Doctoral for Nurse Anesthesia Practice (DNAP) program (Enlow, Honig & Cook, 2014). It is the belief of the AANA that, “DNP graduates with expertise in anesthesia will be uniquely prepared to assume broader more flexible roles and...will have an expanded fund of knowledge and skill” (Enlow, Honig & Cook, 2014, p. 17). This belief was what helped the AANA determine that by 2025, all accredited CRNA programs would be doctoral level.

Masters vs. Doctorate

With so many different program options available, undergraduate nursing students are left asking many questions. Which program should I choose, DNP or DNAP? Or should I even apply to a nursing doctoral program? In 2015, a qualitative research study was conducted to assess nursing schools decisions for transitioning to DNP programs. Using online surveys and interviews, the researchers assessed several different categories such as student demand, employer demand and future health care needs (Martsolf, Auerbach, Spetz, Pearson & Muchow, 2015). Results of the study showed mixed ideas. Two hundred and ninety two out of the 345 participants of the online study thought that a move to a DNP program was important for the future of healthcare (Martsolf, Auerbach, Spetz, Pearson & Muchow, 2015, p.222). Furthermore, neither students nor employers thought it was necessary, stating, “their areas did not appear to demand DNP-prepared ARNPs” (Martsolf, Auerbach, Spetz, Pearson & Muchow, 2015, p.222). As with every health care change, time is the determining factor.

Faut-Callahan (1992) revealed that the debate over a master vs. doctoral nurse anesthetist program has existed for many years. She states that there is often much “confusion within nursing about its doctoral degrees...with little, if any differences in the curricula of most doctor of philosophy and doctor of nursing science degrees” (p.100). Since then, many programs have become much more organized and specialized, but confusion among nursing professionals remains.

While some still have apprehensions about the move to doctoral nursing programs, there are many who understand its overall importance. Dunbar-Jacob, Nativio and Khalil described both the short-term and long-term impacts of DNP programs. Immediate results would help nurses to enhance their understanding of the healthcare system and allow the students to practice

evidence-based research. This, in return, would result in these students having the ability to teach their own programs. Individuals with DNP degrees would have an in-depth clinical understanding, as well as be able to address many of the challenges arising in today's healthcare fields (2013).

Key to Success: Admission Requirements

As nursing students begin planning their future to become CRNAs, it is best to know the general admission requirements that have been established by the COA and are standard for every program. As Wilson (2012) states, every program requires applicants to have a bachelor of science, a current nursing license and have at least one year of experience in an acute care setting such as an ICU. While different colleges or universities have small differences in curriculum, for example, Adventist University of Health Sciences (ADU) incorporates religious classes into their current coursework, most masters programs are on average 24 months with doctoral programs averaging 36 months (Council on Accreditation of Nurse Anesthesia Educational Programs, 2012). Most individuals are required to take research classes and have a certain number of clinical hours (Faut-Callahan, 1992).

Additionally, Ortega, Burns, Hussey Schmidt and Austin completed a literature review in which they assessed the success of nurse anesthetist programs based on certain criteria. They discovered that on average, most students participated in 2000 clinical hours and had tuition prices ranging anywhere from \$20,000 to above \$70,000 (2013). The study also showed that students had a 99% probability of success when their average nursing GPA was above 3.25 and their overall GPA was above 3.00. The study had conflicting views on students' GRE scores. Results showed that in a majority of cases, GRE scores did not correlate with the students' overall GPAs. Also, the study showed that while younger graduates achieved higher scores,

individuals who had more clinical experience scored better than those who have less (Ortega, Burns, Hussey, Schmidt, & Austin, 2013).

Project Description

A hypothesis was formulated, that stated there was a lack of education and understanding of the role a nurse anesthetist, as well as the differences between the masters and doctoral nurse anesthesia programs and their admission requirements. Therefore, an educational 30-minute power point presentation (see Appendix D), regarding the history of the anesthesia profession, CRNA role, various educational tracks, and admission requirements, was developed and presented to ADU's undergraduate nursing students as the implementation phase of this project. Collected admission requirement information from COA was also translated into a simple Microsoft Excel spreadsheet and was made available to the undergraduate nursing students; however, the emphasis was towards the nurse anesthesia program at ADU.

The researchers met with the Vice-Chair of ADU's nursing program Janice Lowden-Stokely, MSN, RN, and Carolyn Fore PhD, RN and discussed the details of the presentation. The PowerPoint was delivered on October 18 of ADU's Fall 2016 trimester to the senior undergraduate nursing students enrolled in the Professional Issues in Nursing class (NUR 445). The decision to introduce our project to the undergraduate nursing classes at ADU was determined, as some of them are likely to peruse an advanced practice degree in nursing. Information collected from other school programs was translated into a simple Microsoft Excel spreadsheet (see Appendix C) and was made available to the undergraduate nursing students; however, the emphasis was towards the nurse anesthesia program at ADU.

Before the presentation, informed consent (see Appendix A) was obtained from the undergraduate nursing students in attendance. The undergraduate nursing students also

completed a pretest (see Appendix B) that consisted of multiple-choice questions regarding the role of a CRNA, educational tracks, and admission requirements. A 30-minute power point presentation was then utilized to deliver the information. The presentation was delivered in the classroom setting. A follow-up post-test was then administered and collected without personal identifiers. Pre and posttest were then graded and the data collection was provided to Dr. Lukman (statistics professor at ADU) for analysis.

The power point presentation clearly addressed anesthesia profession history, various roles of a CRNA and the settings in which they work, different educational tracks available, and the common admission requirements for the masters and doctoral nurse anesthesia programs.

Evaluation Plan

The target population of the study consisted of the fall cohort senior undergraduate nursing students anticipated to graduate in the 2016 school year. The aim of the study was to deliver the information through a power point presentation. A quantitative study was performed from the convenience sample. A quantitative approach was selected to measure the goal of the study, which was to increase the understanding among the senior undergraduate nursing students at ADU regarding the CRNA roles, educational tracks one can take, and the various admission requirements for nurse anesthesia programs. The goal was measured by analyzing the posttest (see Appendix B). Inclusion and exclusion criteria was also made evident. The inclusion criteria for this study was that the participants be undergraduate nursing students in their senior year (fall cohort class of 2016). The exclusion criteria for this study was the senior undergraduate nursing students not in attendance at ADU's nursing program.

The sample size consisted of 30 senior undergraduate nursing students. The statistical analysis was gathered from the pre and posttests results. A Paired-Sample t-test was utilized with

a conventional significance level of $p < 0.05$, with guidance from Dr. Lukman, a statistician at ADU.

Results

The paired samples t-test was used to investigate for any significant difference between pre-test and post-test average scores. The pre-test average score was 44%. The post-test average score was 81.33%. The obtained t value of -12.642 is associated with a p value of <0.05 level of confidence. See appendix C.

Conclusion

In conclusion, the presentation was successful in educating the undergraduate nursing students in the role of the CRNA and the differences between the masters and doctorate programs. The average scores increased significantly between pre-test and post-test administrations. The students were very perceptive and engaged with the topic. The statistical analysis shows that the significance level is below the cut off p value of .05. Therefore, we reject the null hypothesis and accept the alternative hypothesis. Undergraduate nursing students had a general lack of knowledge surrounding the presentation topic and that once further education had been provided their understanding greatly increased. As evidence by post test results, the objectives that had been clearly defined at the beginning of the presentation were met (see Appendix C).

While the study was an overall success, there were limitations to the project. The sample size of 30 students was relatively small which impaired statistical data analysis. This however, could have been adjusted if multiple undergraduate senior nursing classes had been selected for presentation by the researchers but due to time constraints this was not possible. The presentation was also limited to a specific time period during a regularly scheduled class which forced the

researchers to deliver their information over a short period of time. This limitation however, had been anticipated by the researchers and topic information had been arranged in a concessive manner.

Like all projects, there were many interesting findings and lessons that the researchers discovered. One such lessons, was that of communication. Due to the scale of this project, there were a lot of moving pieces that had to be put into play in order for it to be successful. The researchers not only had to have good communication among themselves but also between the project chair and mentor as well as the faculty in charge of the undergraduate nursing students' class. Communication is something that all of us need to work hard on perfecting. It is not only useful in everyday life activities but also a skill that any CRNA must develop in order to have a successful career. Communication between the CRNA and the anesthesiologist, surgeon and operating room staff must be carried out to ensure patient safety.

Another lesson learned from this project was that of the importance of seeking out a higher education. The ability to have access to a higher education is a gift that not all students have. It is thus our responsibility to society to seek it out when the opportunity arises. DNAP and DNP programs were designed to make CRNAs a better practitioner and allow them the opportunity to one-day pass on their knowledge of the profession to other individuals. While some believe it an unnecessary endeavor the future of the CRNA profession lies with those individuals who have gained their doctoral degrees.

A fascinating finding from this project was that there was a true attentiveness displayed by the undergraduate nursing students about becoming a CRNA and differences between the different doctoral degrees. The students remained engaged throughout the entire presentation and continued their involvement with a lengthy follow-up discussion. This allowed the researchers to

not only share personal views about the presentation topic but also about their experiences throughout the application process, clinical and CRNA program.

A major implication this research can have on the nurse anesthesia practice. Nurse anesthesia programs are constantly evolving to provide quality education to their students. Implementing doctoral education into nurse anesthesia programs will augment the anesthesia profession academically. With the growing complexity in healthcare, nurse anesthetists who obtain attend a doctoral program will potentially have a deeper understanding behind the research that is utilized for current and future evidenced based practice. The ultimate goal for every anesthesia program is to make each nurse anesthesia graduate/ doctoral student a safe, competent, and skillful entry-level practitioner. With the countless fluctuations the healthcare industry is confronting, it is vital that healthcare providers, more specifically nurse anesthetist be equipped to face such change.

References

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Appendix A

ADU NAP CAPSTONE PROJECT – INFORMED CONSENT

Our names are Danny Jjion and Ernest Johnson, and we are MSNA students in the Nurse Anesthesia Program (NAP) at Adventist University of Health Sciences (ADU). We are doing a Capstone Project called Introduction to Becoming a Certified Registered Nurse Anesthetist for the Undergraduate Nurse. Alescia DeVasher Bethea PhD, CRNA and Sara Snell, MSNA, CRNA are supervising this project. We would like to invite you to participate in this project. The main purpose of this form is to provide information about the project so you can make a decision about whether you want to participate.

WHAT IS THE PROJECT ABOUT?

The purpose of this project is to bring awareness and educate the 2016-2017 Senior Class of Undergraduate Nursing Students of ADU regarding becoming a Certified Registered Nurse Anesthetist.

WHAT DOES PARTICIPATION IN THIS PROJECT INVOLVE?

If you decide to participate in this project, you will be asked to complete an anonymous pre-assessment, attend a classroom presentation, and then complete an anonymous post-assessment. The assessment will address the role of the CRNA, as well as the differences between the masters and doctoral nurse anesthesia programs and their admission requirements. Your participation by attendance at the presentation and completion of the survey is anticipated to take approximately 30 minutes.

WHY ARE YOU BEING ASKED TO PARTICIPATE?

You have been invited to participate as part of a convenience sample of 2016-2017 students currently enrolled in the ADU Undergraduate Nursing Program. Participation in this project is voluntary. If you choose not to participate or to withdraw from the project, you may do so at any time.

WHAT ARE THE RISKS INVOLVED IN THIS PROJECT?

Although no project is completely risk-free, we don't anticipate that you will be harmed or distressed by participating in this project.

ARE THERE ANY BENEFITS TO PARTICIPATION?

We don't expect any direct benefits to you from participation in this project. The possible indirect benefit of participation in the project is the opportunity to gain additional knowledge about role of the CRNA, as well as the differences between the masters and doctoral nurse anesthesia programs and their admission requirements.

HOW WILL THE INVESTIGATORS PROTECT PARTICIPANTS' CONFIDENTIALITY?

The results of the project will be published, but your name or identity will not be revealed. To maintain confidentiality of assessments, the investigators will conduct this project in such a way to ensure that information is submitted without participants' identification. This will be achieved by using a numbering/coding system. Thus, the investigators will not have access to any participants' identities.

WILL IT COST ANYTHING OR WILL I GET PAID TO PARTICIPATE IN THE PROJECT?

Your participation will cost approximately 30 minutes of your time, but will require no monetary cost on your part. You will not be paid to participate.

VOLUNTARY CONSENT

By signing this form, you are saying that you have read this form, you understand the risks and benefits of this project, and you know what you are being asked to do. The investigators will be happy to answer any questions you have about the project. If you have any questions, please feel free to contact Danny Jijon (danny.jijon@my.adu.edu) and Ernest A. Johnson (ernest.a.johnson@my.adu.edu). If you have concerns about the project process or the investigators, please contact the Nurse Anesthesia Program at (407) 303-9331.

Signature Date

LEGIBLY) Participant Name (PRINTED

Appendix B**Pre-Test/Post-Test**

1. As of what year will all Nurse Anesthetist programs be required to offer a doctoral degree for entry into practice?
 - a. 2018
 - b. 2019
 - c. 2022
 - d. 2025

2. What is the role of the Nurse Anesthetist?
 - a. Performing General Anesthesia
 - b. Collaborating patient plan with the surgeon and the anesthesiologist
 - c. Assessing the patient prior to surgical procedure
 - d. Education of the risk of anesthesia
 - e. None of the above
 - f. All of the above

3. Are CRNAs able to practice independently?
 - a. In 17 different states
 - b. Only in Florida
 - c. They are never able to practice independently
 - d. None of the above

4. What are the admission requirements into ADUs Nurse Anesthetist Program?
 - a. GRE score
 - b. 1 year minimum critical care experience (ICU experience)
 - c. At least (1) CRNA recommendations
 - d. Admission essay
 - e. All of the above

5. What is the average overall GPA that showed a 99% probability of success in the program?
 - a. 2.5
 - b. 3.5
 - c. 3.0
 - d. 4.0

6. What does CRNA stand for?
 - a. Certified Registered Nurse Anesthetist
 - b. Certified Regional Nurse Assistant
 - c. Certified Radiology New Assistant
 - d. Certified Receptionist Nurse Assistant
7. How many students does the Nurse Anesthetist Program (NAP) at ADU accept each year?
 - a. 20
 - b. 23
 - c. 26
 - d. 21
8. What is the total program cost for the Nurse Anesthetist Program at ADU?
 - a. \$76,092
 - b. \$80,000
 - c. \$90,000
 - d. \$100,000
9. What are the average annual earnings for a CRNA in the U.S. as of today?
 - a. \$130,000
 - b. \$140,000
 - c. \$150,000
 - d. \$160,000
10. Who is responsible for the accreditation of the Nurse Anesthetist Program at ADU?
 - a. AANA (American Association of Nurse Anesthetist)
 - b. NBCRNA (National Board of Certified Registered Nurse Anesthetist)
 - c. FANA (Florida Association of Nurse Anesthetist)
 - d. COA (Council on Accreditation of Nurse Anesthetist Programs)

Appendix C

Paired Samples Statistics

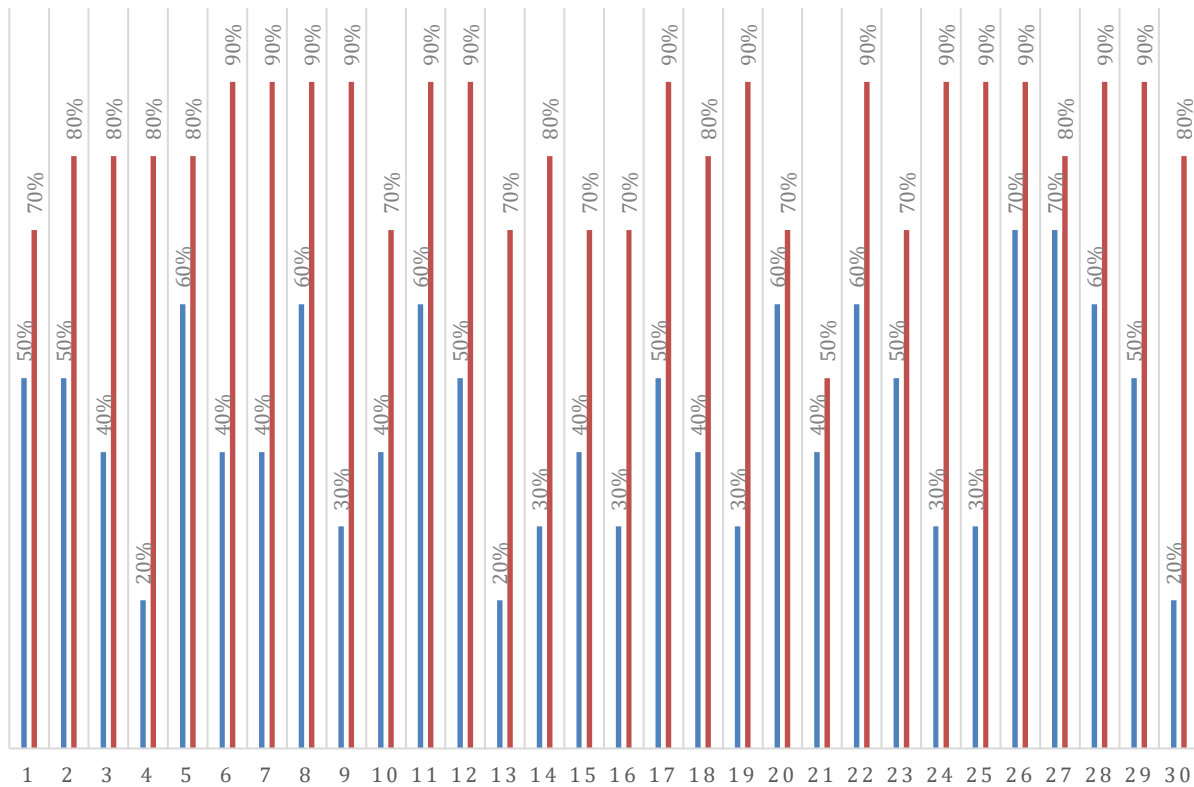
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-Test	.4400	30	.14527	.02652
	Post-Test	.8133	30	.10080	.01840

Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-Test - Post-Test	-.37333	.16174	.02953	-.43373	-.31294	-12.642	29	.000

UNDERGRADUTE NURSING STUDENT'S TEST SCORES

■ Pre-Test Score ■ Post-Test Score



Appendix D

School Name	Adventist University of Health Sciences Nurse Anesthesia Program
Address	671 Winyah Drive Orlando, FL 32803-1226
Telephone	(407) 303-9331
Web	http://www.adu.edu/academics/ms-nurse-anesthesia
Email	info.msna@adu.edu
Program Administrator	Alescia DeVasher Bethea, CRNA, MS, APN, PhD
Date of Last Review	May-13
Date of Next Review	May-19
Accreditation Status	Continued Accreditation
Degree Information	
Degree Awarded	Master of Science in Nurse Anesthesia
Full Time/Part Time	Full Time
Degree Type	Master's
Degree Major	Nurse Anesthesia
Degree Structure	Entry Level
Program Design	Integrated Didactic Clinical
Duration in months	28
Start Month	January
End Month	April
Credit Hours for Degree	80
Admission Requirements	
Degree Required For Admission	BSN or BS in an appropriate related field
Suggested GPA	3.5
Suggested GRE	300
Prerequisite Course(s) Requirement	No
Years of Critical Care Experience Required	1
Other Certifications Required	ACLS, BLS; PALS also required after acceptance and prior to clinical rotations
Standardized Tests	GRE taken within the last 5 years
Application Deadline to Program	March
Average Number of Qualified Applicants	75
Average Class Size	75
Tuition and Fees	
Tuition-in State	\$63, 440.00
Tuition-Out of State	\$63,440.00
Application Fee	\$100
AANA Associate Member Fee (if paid by student)	\$200

SEE Exam Fee (if required)	\$320.00
Graduation Fee	\$100.00
Other Fees	\$4,130.00
Additional Information	
Attrition	19%
Cert Pass Rate (Last Graduating Class) 1st Time Takers	90%
Cert Pass Rate (Last Graduating Class) 1st and 2nd Time Takers	100%
Employment Rate (Last Graduating Class)	100%
Total Number of Clinical Sites	9
Average Number of Cases For Last Graduating Class	917
Average Anesthesia Hours for Last Graduating Class	1550

School Name	Barry University Master of Science Program in Anesthesiology
Address	421 N. 21st Avenue Hollywood, FL 33020
Telephone	(305) 899-3230
Web	http://www.barry.edu/ane
Email	ane@mail.barry.edu
Program Administrator	Rebecca Lee, CRNA, DNP
Date of Last Review	Oct-10
Date of Next Review	Oct-20
Accreditation Status	Continued Accreditation
Degree Information	
Degree Awarded	Master of Science/Doctor of Nursing Practice
Full Time/Part Time	Full Time/ Part Time
Degree Type	Master's/ Doctoral
Degree Major	Nurse Anesthesia
Degree Structure	Entry Level/ Completion
Program Design	Integrated Didactic Clinical/ Integrated Didactic Clinical
Duration in months	28/ 24
Start Month	January/ August
End Month	May/ July
Credit Hours for Degree	54/ 36
Admission Requirements	
Degree Required For Admission	Baccalaureate or graduate degree in nursing or an appropriate science/ Master's degree or higher
Suggested GPA	3.0/3.0
Suggested GRE	301/ 0

Prerequisite Course(s) Requirement	Yes-Successful completion (grade B or better) of one college chemistry course with a laboratory component. The course (not the laboratory component) must have been taken within five years of beginning the program/ No
Years of Critical Care Experience Required	Minimum 1 year, full-time clinical experience as a Registered Nurse in a critical care setting within the last 3 years/ N/A
Other Certifications Required	ACLS, BLS, PALS. CCRN credential is highly recommended. CV; Personal Essay & Interview, 2 Letters of Recommendation, Documentation of understanding and observation of the role of the CRNA/ CRNA and CV; Personal Essay & Interview; 2 Letters of Recommendation; RN/APRN License
Standardized Tests	GRE/ None for Doctorate
Application Deadline to Program	May/ August
Average Number of Qualified Applicants	160/ 15
Average Class Size	70/ 15
Tuition and Fees	
Tuition-in State	\$53,460.00/ \$32,400.00
Tuition-Out of State	\$53,460.00/ \$32,400.00
Application Fee	\$30.00/30.00
AANA Associate Member Fee (if paid by student)	N/A
SEE Exam Fee (if required)	N/A
Graduation Fee	\$150.00/\$150.00
Other Fees	\$2000.00/ None for Doctorate
Additional Information	
Attrition	12%/ 1%
Cert Pass Rate (Last Graduating Class) 1st Time Takers	90%/ None for Doctorate
Cert Pass Rate (Last Graduating Class) 1st and 2nd Time Takers	100%/ None for Doctorate
Employment Rate(Last Graduating Class)	100%/ None for Doctorate
Total Number of Clinical Sites	27/ None for Doctorate
Average Number of Cases For Last Graduating Class	1225/ None for Doctorate
Average Anesthesia Hours for Last Graduating Class	3138/ None for Doctorate

School Name	Florida International University College of Nursing and Health Sciences Anesthesiology Nursing Program
Address	11200 Southwest 8th Street Department of Nurse Anesthetist Practice Suite ACH3-342 Miami, FL 33199
Telephone	(305) 348-7747
Web	http://cnhs.fiu.edu/anesthesiology
Email	CRNA@fiu.edu
Program Administrator	Jeffrey Groom, CRNA, PhD
Date of Last Review	May-10
Date of Next Review	May-18
Accreditation Status	Continued Accreditation
Degree Information	
Degree Awarded	Master of Science in Nursing/ Doctor of Nursing Practice
Full Time/Part Time	Full Time/ Full Time
Degree Type	Master's/ Doctoral
Degree Major	Nursing-Specialization Nurse Anesthetist/ Nursing-Anesthesiology Nursing
Degree Structure	Entry Level/ Entry Level
Program Design	Integrated Didactic Clinical/ Integrated Didactic Clinical
Duration in months	28/ 36
Start Month	August/ January
End Month	December/December
Credit Hours for Degree	71/ 36
Admission Requirements	
Degree Required For Admission	BSN or BS in other science field in addition to RN license/ BSN
Suggested GPA	3.0/ 0
Suggested GRE	150/ 0
Prerequisite Course(s) Requirement	No/ No
Years of Critical Care Experience Required	2/ 1 year
Other Certifications Required	ACLS, PALS and CCRN preferred but not required/ PALS, ACLS, CCRN and minimum of 2 years of critical care experience preferred
Standardized Tests	GRE/ GRE
Application Deadline to Program	May/ May
Average Number of Qualified Applicants	90/ No information for Doctorate
Average Class Size	40/ No information for Doctorate
Tuition and Fees	
Tuition-in State	\$54675/ \$81,681.00
Tuition-Out of State	\$94,250.00/ \$136, 832.00

Application Fee	N/A
AANA Associate Member Fee (if paid by student)	N/A
SEE Exam Fee (if required)	N/A
Graduation Fee	N/A
Other Fees	N/A
Additional Information	
Attrition	8%/ 0%
Cert Pass Rate (Last Graduating Class) 1st Time Takers	90%/ No information for Doctorate
Cert Pass Rate (Last Graduating Class) 1st and 2nd Time Takers	100%/ No information for Doctorate
Employment Rate (Last Graduating Class)	100%/ No information for Doctorate
Total Number of Clinical Sites	7/ No information for Doctorate
Average Number of Cases For Last Graduating Class	950/ No information for Doctorate
Average Anesthesia Hours for Last Graduating Class	3240/ No information for Doctorate

School Name	University of North Florida Nurse Anesthetist Program
Address	1 UNF Drive Jacksonville, FL 32224-2673
Telephone	(904) 620-2628
Web	http://www.unf.edu/brooks/nurse-anesthesia/
Email	napadmissions@unf.edu
Program Administrator	John McDonough, CRNA, EdD, ARNP
Date of Last Review	Oct-09
Date of Next Review	Oct-19
Accreditation Status	Continued Accreditation
Degree Information	
Degree Awarded	Master of Science in Nursing/ Doctor of Nursing Practice
Full Time/Part Time	Full Time/ Full Time
Degree Type	Master's/ Doctoral
Degree Major	Nursing-Academic Unit: Anesthesia School/ Nursing-Academic Unit: Anesthesia School
Degree Structure	Entry Level/ Entry Level
Program Design	Integrated Didactic Clinical/ Integrated Didactic Clinical
Duration in months	28/ 36
Start Month	August/ January
End Month	December/ December
Credit Hours for Degree	95/ 111

Admission Requirements	
Degree Required For Admission	BSN/BSN
Suggested GPA	3.0/ 3.0
Suggested GRE	1000/ 0
Prerequisite Course(s) Requirement	No/ No
Years of Critical Care Experience Required	2 for both Master's and Doctorate
Other Certifications Required	N/A
Standardized Tests	N/A
Application Deadline to Program	November/ March
Average Number of Qualified Applicants	80/ 80
Average Class Size	28/ 28
Tuition and Fees	
Tuition-in State	\$48,500.00/ \$58,000.00
Tuition-Out of State	\$107,500.00/ \$125,000.00
Application Fee	\$30.00/\$30.00
AANA Associate Member Fee (if paid by student)	N/A
SEE Exam Fee (if required)	N/A
Graduation Fee	N/A
Other Fees	\$ 14,000.00/ \$14,000.00
Additional Information	
Attrition	4%/ 0%
Cert Pass Rate (Last Graduating Class) 1st Time Takers	88%/ No information for Doctorate
Cert Pass Rate (Last Graduating Class) 1st and 2nd Time Takers	100%/ No information for Doctorate
Employment Rate(Last Graduating Class)	100%/ No information for Doctorate
Total Number of Clinical Sites	8/ No information for Doctorate
Average Number of Cases For Last Graduating Class	960/ No information for Doctorate
Average Anesthesia Hours for Last Graduating Class	1950/ No information for Doctorate

School Name	University of South Florida College of Nursing Nurse Anesthesia Program
Address	12901 Bruce B. Downs Blvd. MDC 22 Tampa, FL 33612-4766
Telephone	(813) 224-7808
Web	http://www.health.usf.edu/nursing/academics/crna/index.htm
Email	susanmperry@health.usf.edu
Program Administrator	Susan Perry, PhD, CRNA, ARNP
Date of Last Review	Oct-11
Date of Next Review	Oct-21
Accreditation Status	Continued Accreditation

Degree Information	
Degree Awarded	Master of Science in Nurse Anesthesia
Full Time/Part Time	Full Time
Degree Type	Master's
Degree Major	Nursing with concentration in Nurse Anesthesia
Degree Structure	Entry Level
Program Design	Initial Didactic/ Later Clinical
Duration in months	28
Start Month	August
End Month	December
Credit Hours for Degree	72
Admission Requirements	
Degree Required For Admission	BSN
Suggested GPA	3
Suggested GRE	297
Prerequisite Course(s) Requirement	Yes-Undergraduate coursework: Pathophysiology (3), Pharmacology (3), Anatomy & Physiology (6), Health Assessment (3), Chemistry (3), and Statistics (3 credits)
Years of Critical Care Experience Required	2
Other Certifications Required	ACLS, BLS, PALS; CCRN highly recommended. Three favorable evaluations/recommendations, goal statement, and successful personal interview with CRNA Program Panel may be required.
Standardized Tests	GRE. TOEFL required for international students whose native language is not English.
Application Deadline to Program	February
Average Number of Qualified Applicants	100
Average Class Size	30
Tuition and Fees	
Tuition-in State	\$57,600.00
Tuition-Out of State	\$57,600.00
Application Fee	\$30.00
AANA Associate Member Fee (if paid by student)	N/A
SEE Exam Fee (if required)	130.00%
Graduation Fee	N/A
Other Fees	N/A
Additional Information	
Attrition	2%

Cert Pass Rate (Last Graduating Class) 1st Time Takers	68%
Cert Pass Rate (Last Graduating Class) 1st and 2nd Time Takers	93%
Employment Rate (Last Graduating Class)	100%
Total Number of Clinical Sites	32
Average Number of Cases For Last Graduating Class	761
Average Anesthesia Hours for Last Graduating Class	1829

School Name	Loma Linda University School of Nursing Nurse Anesthesia
Address	11262 Campus Street Loma Linda, CA 92350
Telephone	(909) 558-4923
Web	http://nursing.llu.edu/graduate-programs/certified-registered-nurse-anesthetist-crna
Email	graduatenursing@llu.edu
Program Administrator	Kurt Cao, DNAP, MSNA, CRNA
Date of Last Review	Jan-11
Date of Next Review	May-17
Accreditation Status	Initial Accreditation
Degree Information	
Degree Awarded	Master of Science in Nursing
Full Time/Part Time	Full Time
Degree Type	Master's
Degree Major	Nursing
Degree Structure	Entry Level
Program Design	Initial Didactic / Later Clinical
Duration in months	30 Months
Start Month	September
End Month	March
Credit Hours for Degree	87
Admission Requirements	
Degree Required For Admission	BSN
Suggested GPA	3
Suggested GRE	No
Prerequisite Course(s) Requirement	No
Years of Critical Care Experience Required	1
Other Certifications Required	BLS, ACLS, PALS, California State Nursing License by start of program
Standardized Tests	Health Science Reasoning Test (Applicants invited for interview only)

Application Deadline to Program	December
Average Number of Qualified Applicants	90
Average Class Size	90
Tuition and Fees	
Tuition-in State	\$92,655.00
Tuition-Out of State	\$92,655.00
Application Fee	\$120.00
AANA Associate Member Fee (if paid by student)	To be paid by student once accepted
SEE Exam Fee (if required)	To be paid by student once accepted
Graduation Fee	Included in Other Fees
Other Fees	\$788.00
Additional Information	
Attrition	14%
Cert Pass Rate (Last Graduating Class) 1st Time Takers	86%
Cert Pass Rate (Last Graduating Class) 1st and 2nd Time Takers	93%
Employment Rate (Last Graduating Class)	93%
Total Number of Clinical Sites	7
Average Number of Cases For Last Graduating Class	652
Average Anesthesia Hours for Last Graduating Class	1425

School Name	Middle Tennessee School of Anesthesia
Address	315 Hospital Drive Madison, TN 37115
Telephone	(615) 868-6503
Web	http://www.mtsa.edu
Email	info@mtsa.edu
Program Administrator	Rachel Brown, CRNA, DNP, MSN, MS, APN
Date of Last Review	Oct-08
Date of Next Review	Oct-18
Accreditation Status	Continued Accreditation
Degree Information	
Degree Awarded	Masters of Science and/or Doctor of Nurse Anesthesia Practice
Full Time/Part Time	Full time or Part time for Doctoral degree, Full time for Masters Degree
Degree Type	Master's and Doctor's
Degree Major	Nursing/Nurse Anesthesia
Degree Structure	Entry Level for Master's/Continuation for Doctorate

Program Design	Didactic and Clinical for Master's/Completion Degree for working CRNA, no clinical requirement for Doctorate
Duration in months	28 months for Master's/ 12 months for Doctorate
Start Month	July for Master's/ September for Doctorate
End Month	November for Master's/ August for Doctorate
Credit Hours for Degree	143/ 46
Admission Requirements	
Degree Required For Admission	BSN for Master's/ Master of Science in Nursing /or/ Master of Science with a Nurse Anesthesia focus for Doctorate
Suggested GPA	3
Suggested GRE	No
Prerequisite Course(s) Requirement	No
Years of Critical Care Experience Required	1/ not required for admission to DNAP
Other Certifications Required	BLS, ACLS, PALS, Current Nursing License by start of program for Master's/ current rectification as a CRNA, active member of AANA, current license as RN for Doctorate
Standardized Tests	No
Application Deadline to Program	October for Master's/ April for Doctorate
Average Number of Qualified Applicants	210 for Master's/ 12 for Doctorate
Average Class Size	72 for Master's/ 12 for Doctorate
Tuition and Fees	
Tuition-in State	\$59,788 for Master's/ \$30,000 for Doctorate
Tuition-Out of State	\$59,788 for Master's/ \$30,000 for Doctorate
Application Fee	\$60.00 for Master's/ \$60.00 for Doctorate
AANA Associate Member Fee (if paid by student)	To be paid by student once accepted
SEE Exam Fee (if required)	None
Graduation Fee	\$250.00 for Master's/ None for Doctorate
Other Fees	\$14,719 for Master's/ None for Doctorate
Additional Information	
Attrition	4%
Cert Pass Rate (Last Graduating Class) 1st Time Takers	86%
Cert Pass Rate (Last Graduating Class) 1st and 2nd Time Takers	94%
Employment Rate (Last Graduating Class)	100%

Total Number of Clinical Sites	16
Average Number of Cases For Last Graduating Class	1078
Average Anesthesia Hours for Last Graduating Class	3151

School Name	Florida Gulf Coast University MSN Nurse Anesthesia Program
Address	10501 FGCU Boulevard South Fort Myers, FL 33965-6565
Telephone	(239) 590-7505
Web	http://www.fgcu.edu/CHPSW/Nursing/Anesthesia/index.asp
Email	rspiegel@fgcu.edu
Program Administrator	Rosann Spiegel, CRNA, DNAP, JD, ARNP
Date of Last Review	Oct-12
Date of Next Review	Oct-22
Accreditation Status	Continued Accreditation
Degree Information	
Degree Awarded	Master of Science in Nursing
Full Time/Part Time	Full Time
Degree Type	Master's
Degree Major	Nursing
Degree Structure	Entry Level
Program Design	Integrated Didactic Clinical
Duration in months	28 Months
Start Month	January
End Month	May
Credit Hours for Degree	81
Admission Requirements	
Degree Required For Admission	BSN
Suggested GPA	3
Suggested GRE	1000
Prerequisite Course(s) Requirement	Yes (Two chemistry courses and one with lab component, one statistics course, and one health assessment course with lab component)
Years of Critical Care Experience Required	1
Other Certifications Required	BLS, ACLS, PALS, Current Nursing License by start of program for Master's, up-to-date nursing license
Standardized Tests	GRE
Application Deadline to Program	June
Average Number of Qualified Applicants	38
Average Class Size	38

Tuition and Fees	
Tuition-in State	\$30,244.00
Tuition-Out of State	\$105,353.00
Application Fee	\$30.00
AANA Associate Member Fee (if paid by student)	To be paid by student once accepted
SEE Exam Fee (if required)	To be paid by student once accepted
Graduation Fee	Included on other fees
Other Fees	\$45.00
Additional Information	
Attrition	9%
Cert Pass Rate (Last Graduating Class) 1st Time Takers	87%
Cert Pass Rate (Last Graduating Class) 1st and 2nd Time Takers	93%
Employment Rate (Last Graduating Class)	93%
Total Number of Clinical Sites	9
Average Number of Cases For Last Graduating Class	1006
Average Anesthesia Hours for Last Graduating Class	1588

School Name	Florida State University Nurse Anesthesia Program
Address	4750 Collegiate Drive Panama City, FL 32405-1099
Telephone	N/A
Web	N/A
Email	rshores@fsu.edu
Program Administrator	Ryan Shores, DNP, CRNA
Date of Last Review	Jan-15
Date of Next Review	Oct-20
Accreditation Status	Initial Accreditation
Degree Information	
Degree Awarded	Master of Science in Nurse Anesthesia
Full Time/Part Time	Full Time
Degree Type	Master's
Degree Major	Nurse Anesthesia
Degree Structure	Entry Level
Program Design	Integrated Didactic Clinical
Duration in months	28 Months
Start Month	August
End Month	December
Credit Hours for Degree	95
Admission Requirements	

Degree Required For Admission	BSN
Suggested GPA	3
Suggested GRE	Yes no required score
Prerequisite Course(s) Requirement	No
Years of Critical Care Experience Required	1
Other Certifications Required	BLS, ACLS, PALS, Current Nursing License by start of program for Master's, up-to-date nursing license
Standardized Tests	GRE
Application Deadline to Program	December
Average Number of Qualified Applicants	200
Average Class Size	24
Tuition and Fees	
Tuition-in State	\$9,500.00
Tuition-Out of State	\$9,500.00
Application Fee	\$30.00
AANA Associate Member Fee (if paid by student)	\$200.00
SEE Exam Fee (if required)	\$145.00
Graduation Fee	N/A
Other Fees	N/A
Additional Information	
Attrition	0%
Cert Pass Rate (Last Graduating Class) 1st Time Takers	N/A
Cert Pass Rate (Last Graduating Class) 1st and 2nd Time Takers	N/A
Employment Rate (Last Graduating Class)	N/A
Total Number of Clinical Sites	8
Average Number of Cases For Last Graduating Class	N/A
Average Anesthesia Hours for Last Graduating Class	N/A

School Name	University of Miami School of Nursing and Health Studies Nurse Anesthesia Program
Address	PO BOX 248153 Coral Gables, FL 33124-3850
Telephone	(305) 284-2645
Web	http://www.miami.edu/sonhs/
Email	mpino@miami.edu
Program Administrator	Rossana Bizzio, CRNA, MS, PhD
Date of Last Review	Oct-08

Date of Next Review	Oct-18
Accreditation Status	Continued Accreditation
Degree Information	
Degree Awarded	Doctor of Nursing Practice (DNP)
Full Time/Part Time	Full Time
Degree Type	Doctoral
Degree Major	Nursing
Degree Structure	Entry Level
Program Design	Integrated Didactic Clinical
Duration in months	36 Months
Start Month	January
End Month	December
Credit Hours for Degree	120
Admission Requirements	
Degree Required For Admission	BSN or BS
Suggested GPA	3
Suggested GRE	No
Prerequisite Course(s) Requirement	Yes (Statistics within 5 years)
Years of Critical Care Experience Required	Minimum of 2 years
Other Certifications Required	BLS, ACLS and PALS, Unrestricted Florida RN license or the state or territory of current practice license, employment verification form, resume, goals statement, official transcripts, three letters of recommendation
Standardized Tests	TOEFL for foreign students/ GRE not required
Application Deadline to Program	September
Average Number of Qualified Applicants	21
Average Class Size	15
Tuition and Fees	
Tuition-in State	\$110,600.00
Tuition-Out of State	\$110,600.00
Application Fee	\$65.00
AANA Associate Member Fee (if paid by student)	\$200.00
SEE Exam Fee (if required)	To be paid by student once accepted
Graduation Fee	Included in other fees
Other Fees	\$2,217.00
Additional Information	
Attrition	14%
Cert Pass Rate (Last Graduating Class) 1st Time Takers	91%
Cert Pass Rate (Last Graduating Class) 1st and 2nd Time Takers	96%

Employment Rate(Last Graduating Class)	96%
Total Number of Clinical Sites	10
Average Number of Cases For Last Graduating Class	N/A
Average Anesthesia Hours for Last Graduating Class	N/A

School Name	Wolford College Nurse Anesthesia Program
Address	1336 Creekside Blvd Suite 2 Naples, FL 34108
Telephone	(239) 513-1135
Web	http://www.wolford.edu
Email	lellison@wolford.edu
Program Administrator	Lauren Corder, EdD, CRNA
Date of Last Review	May-08
Date of Next Review	Oct-16
Accreditation Status	Continued Accreditation
Degree Information	
Degree Awarded	Master of Science in Nurse Anesthesia/ Doctor of Nurse Anesthesia Practice
Full Time/Part Time	Full Time for both
Degree Type	Master's/ Doctoral
Degree Major	Nurse Anesthetist (non-nursing)
Degree Structure	Entry Level/ Completion for Doctorate
Program Design	Initial Didactic / Later Clinical/ Didactic only for Doctorate
Duration in months	28 Months for Master's/ 24 months for Doctorate
Start Month	February for Master's/ October for Doctorate
End Month	June for Master's/ October for Doctorate
Credit Hours for Degree	72 for Master's/ 36 for Doctorate
Admission Requirements	
Degree Required For Admission	Any bachelor's degree with required prerequisite courses for Master's/ Masters degree for Doctorate
Suggested GPA	3 for both
Suggested GRE	297 Minimum score/ No GRE for Doctorate
Prerequisite Course(s) Requirement	Yes (Health Assessment, Statistics, 2 Chemistry (one with lab), 2 A & P)/ No pre-req required for Doctorate
Years of Critical Care Experience Required	1 year for Master's/ No requirement for Doctorate

Other Certifications Required	<i>For Master's degree:</i> ACLS, BLS, PALS during orientation; CCRN required for re-application, 3 recommendations, current resume, statement of purpose essay, licensure, if previously certified in ACLS, BLS, and PALS copies are required. <i>For Doctorate Degree:</i> CRNA with a master's degree, 3 references, personal purpose statement, CV
Standardized Tests	GRE/ No test required for Doctorate
Application Deadline to Program	Rolling for Master's/ September for Doctorate
Average Number of Qualified Applicants	120 for Master's/ 5 for Doctorate
Average Class Size	120 for Master's/ 5 for Doctorate
Tuition and Fees	
Tuition-in State	\$61,718.00 for Master's/ \$30,000.00 for Doctorate
Tuition-Out of State	\$61,718.00 for Master's/ \$30,000.00 for Doctorate
Application Fee	\$50.00 for Master's and Doctorate
AANA Associate Member Fee (if paid by student)	\$200.00 for Master's
SEE Exam Fee (if required)	\$160.00 for Master's
Graduation Fee	\$350.00 for Master's and Doctorate
Other Fees	\$3,700.00 for Master's
Additional Information	
Attrition	3% for Master's/ 0% for Doctorate
Cert Pass Rate (Last Graduating Class) 1st Time Takers	62% for Master's
Cert Pass Rate (Last Graduating Class) 1st and 2nd Time Takers	83% for Master's
Employment Rate (Last Graduating Class)	94% for Master's/ 100% for Doctorate
Total Number of Clinical Sites	21 for Master's
Average Number of Cases For Last Graduating Class	845 for Master's
Average Anesthesia Hours for Last Graduating Class	1396 for Master's

Appendix E

Introduction to Becoming a Certified Registered Nurse Anesthetist for the Undergraduate Nurse

Danny Jijon RN, BSN, SRNA

Ernest Johnson RN, BSN, SRNA

Project Mentor: Sara Dycus, MSNA, CRNA JLR Medical Group

*Project Chair: Sarah Snell MSNA, CRNA
Nurse Anesthesia Program, Adventist University of Health Sciences*

Objectives

- Understand the role of the CRNA
 - History
 - Work setting
 - Types of anesthesia
- Understand the differences between the masters and doctoral anesthesia programs
- Be familiar with the admission requirements
 - Specifically ADU's

CRNA?

- **Certified Registered Nurse Anesthetist**

Problem

Nurse anesthesia programs converting from awarding a masters degree to a doctoral degree may give rise to uncertainties. Furthermore, there is a lack of education and understanding among undergraduate senior nursing students regarding the role a nurse anesthetist, as well as the differences between the masters and doctoral nurse anesthesia programs and their admission requirements.

History

- First recorded nurse anesthetist
 - Sister Mary Bernard, a nun in Pennsylvania, in 1877
- Volunteers or students often administered anesthetic drugs
 - Chloroform
 - Narcotics
 - Complications and fatalities grew in number due to wrongful administration
- Need for a designated anesthesia provider was apparent
- Many nurses began seeking out this role



History cont'd

- William W. Mayo (founder of the famous Mayo Clinic) and his two sons became strong advocates
 - Allowed nurse anesthetists to teach and practice during their surgeries
- WWI and WWII
- The American Association of Nurse Anesthetists (AANA) was established to oversee the credentialing and education of CRNAs
 - In 1935



The CRNA's Role



- The role of the CRNA is one of prestige and respect
- CRNAs perform all forms of anesthetic techniques including:
 - General Anesthesia (GA)
 - Neuraxial Anesthesia
 - Regional Anesthesia
 - Total Intravenous Anesthesia (TIVA)
- Performs duties in multiple settings
 - Main OR
 - OB
 - Outpatient
 - Dentist
 - Etc...

The CRNA Role cont'd



- CRNA functions in **collaboration** with surgeons and anesthesiologists as well as other medical staff
- **Assesses** patient prior to surgery
- **Education**
- Development and implementation of anesthetic plan
- Airway management
- Perioperative anesthesia care
- Insertion and monitoring of noninvasive and invasive modalities
- Documentation
- Etc...



The CRNA Role cont'd



- Are often the sole means for anesthesia administration in rural settings
- Have the ability to practice independently with no anesthesiologist association in **17 states**
- Cost effective addition to any healthcare team
 - Care models:
 - 4 to 1 model (4 CRNAs: 1 anesthesiologist)
 - Second most cost effective model
 - Is often the model of choice among facilities
- Average annually earning of **\$160,000** in the U.S.

States that Allow Independent CRNAs

- | | |
|---|-----------------|
| • Alaska | • Nebraska |
| • California | • New Hampshire |
| • Colorado | • New Mexico |
| <small>(for Critical Access Hospitals (CAHs) and specified rural hospitals)</small> | • North Dakota |
| • Idaho | • Oregon |
| • Iowa | • South Dakota |
| • Kansas | • Washington |
| • Montana | • Wisconsin |
| • Minnesota | |

Main Tools of a CRNA

- Laryngoscope
- LMA (Laryngeal Mask Airway)
- Endotracheal Tubes
- Glidescope (video assist device)
- Oral airway/Nasal Trumpets



Primary Drugs for Induction

- Versed (Benzodiazepine)
- Lidocaine (Local Anesthetic/ Na + channel blocker)
- Propofol (GABA_A receptor agonist)
- Fentanyl (Narcotic)
- Rocuronium or Succinylcholine (Paralyzing Agents)
- Inhalational Agent
 - Sevoflurane
 - Desflurane
 - Isoflurane
 - Nitrous Oxide



Triad of Anesthesia



A Move for a Higher Education

- Many nurses seeking higher education
 - Bachelors
 - Masters
 - Doctorate
- Higher pay
- Obtained leadership or management positions
- Columbia University in 2004
 - First school to establish Doctor of Nurse Practice (DNP)
- Over 200 DNP programs established throughout U.S.



A Move for a Higher Education cont'd



- AANA saw a need to establish doctoral programs with a more detailed focus for CRNAs
- In 2012, the AANA released the Standards for Accreditation of Nurse Anesthesia Programs:
 - Practice Doctorate—Draft I for a Doctoral for Nurse Anesthesia Practice (DNAP) program
- AANA: "DNP graduates with expertise in anesthesia will be uniquely prepared to assume broader more flexible roles and...will have an expanded fund of knowledge and skill
- This belief helped the AANA determine that by 2025, all accredited CRNA programs would be doctoral level

Masters vs. Doctorate

- Many different programs are available to the undergraduate nurse
 - MSNA (Master of Science in Nurse Anesthesia)
 - DNP (Doctor of Nursing Practice)
 - DNAP (Doctor of Nurse Anesthesia Practice)

MSNA

- As of today all CRNAs have at least a masters degree in advanced nursing practice.
- While some programs only offer a Masters of Science Degree (MS) with a focus on anesthesia, a MSNA degree was designed specifically for nurses focusing on anesthesia practice.
- Those who obtain MSNA will have the ability to perform the roles of a CRNA in the clinical setting.

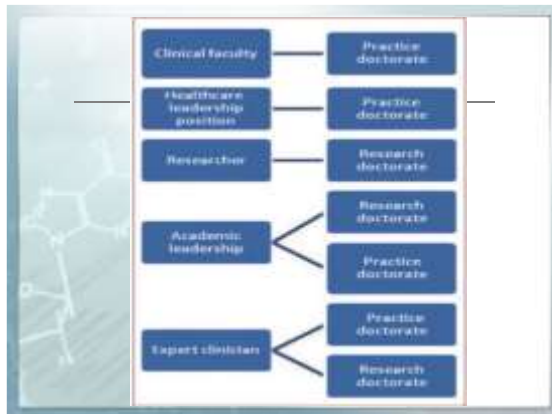
DNP

- Ideal for those who desire an increased clinical knowledge, clinical leadership or those who desire to become faculty.
1. Scientific underpinnings for practice
 2. Organizational and systems leadership for quality improvement and systems thinking
 3. **Clinical scholarships and analytical methods for evidence-based practice**
 4. Information systems/technology for the improvement and transformation of healthcare
 5. Healthcare policy for advocacy in healthcare
 6. **Inter-professional collaboration** for improving patient and population health outcomes
 7. Clinical prevention and population health for improving the nation's health

DNAP

- Doctorate specifically designed for CRNAs with a MSNA or nurses seeking advanced anesthesia practice
1. **Apply** physiological, safety, and organizational theories to promote patient safety.
 2. Analyze relevant scientific literature and **apply results to improve** nurse anesthesia practice
 3. Communicate effectively with patients, families, the public, and other health professionals.
 4. **Demonstrate leadership skills** to meet the challenges of increasingly complex health care
 5. Develop effective strategies for managing ethical dilemmas
 6. **Employ teaching and learning principles** for the nurse anesthetist in educating and counseling individuals, families, students in training, and groups.
 7. Demonstrate nurse anesthesia scholarship through presentations, publications, leadership activities, and collaboration with other disciplines.
 8. **Utilize technology** and information systems to analyze, manage, and present data.

Degree	Type	Description of degree focus
PhD – doctor of philosophy	Research	Discipline specific research
DNSc – doctor of nursing science	Research	Nursing science research
DNS – doctor of nursing science	Research	Nursing science research
EdD – doctor of education	Research	Research in education
DNP – doctor of nursing practice	Practice	Nursing practice focus covering 8 Essentials
DrNP – doctor of nursing practice	Hybrid–practice and research	Clinical research and practice
DNAP – doctor of nurse anesthesia practice	Practice	Nurse anesthesia practice
DMPNA – doctor of management practice in nurse anesthesia	Practice	Entry to practice degree, focus is nurse anesthesia and leadership/management



Decision Making Process

- The first step is to understand the goals and focus of each degree
- The CRNA must then match the focus of the degree to personal and career goals
- The considerations of program length and availability, cost, financing, and method of delivery are important in the decision process, as well.



Martolf, G. R., Auerbach, D. I., Spetz, J., Pearson, M. L., & Muchow, A. N. (2015). Doctor of nursing practice by 2015: An examination of nursing schools' decisions to offer a doctor of nursing practice degree. *Nursing Outlook*, 63(2), 219-226. doi:10.1016/j.outlook.2015.01.002

- 2015 Qualitative Study
- Online surveys and Interviews
 - Assessed several different categories such as student demand, employer demand and future health care needs
- Results showed mixed ideas
- 292 out of the 345 participants thought a move to a DNP was important for the future of health care.
- Neither students nor employers thought it was necessary

Faut-Callahan, M. (1992, February). Graduate education for nurse anesthetists: Master's versus a clinical doctorate. *Journal of American Association of Nurse Anesthetist*, 60(1), 98-103.

- Confirmed that the debate over a Master vs. Doctoral degree has existed for some time
- Often much confusion within nursing and community over doctor of nursing degrees
- Since this time many programs have become much more organized and specialized but confusion still remains

Dunbar-Jacob, J., Nativio, D., & Khalil, H. (2013). Impact of doctor of nursing practice education in shaping health care systems for the future. *Journal of Nursing Education, 52*(8), 423-427. doi:10.3928/01484834-20130719-03

- Overall importance of moving to doctoral nursing programs
- Both short-term and long term effects
 - Enhance understanding of the healthcare system
 - Practice evidence-based research
 - Long-term this would allow graduates to teach their own programs
 - In-depth clinical understanding

Keys to Success: Admission Requirements

- Every program requires:
 - Bachelor of science/BSN
 - Current nursing license
 - At least one year ICU experience
 - Certification: ACLS, BLS, PALS
 - GRE
 - GPA
- Colleges or universities have small differences in curriculum
 - Adventist University of Health Sciences (ADU) incorporates religious classes into their current coursework
- Duration in months
 - Masters: 28
 - Doctorate: 36



Ortega, K. H., Burns, S. M., Hussey, L. C., Schmidt, J., & Austin, P. N. (2013). Predicting success in nurse anesthesia programs: an evidence-based review of admission criteria. *American Association of Nurse Anesthetist, 81*(3), 183-189. Retrieved from www.aana.com/aanajournalonline.

- Literature review
 - Assessed the success of nurse anesthetist programs based on certain criteria
- Students often participated in up to 2,000 clinical hours
- Tuition prices ranging from \$20,000-\$70,000
- 99% probability of success if average nurse GPA of 3.25 and **overall GPA of 3.0**
- GRE scores often did not correlate with a students success
- In class those who were younger had higher scores but those who had more clinical experience often did better.

Accreditation?

- A peer process whereby a private, nongovernmental agency grants public recognition to an institution or specialized program that meets or exceeds nationally established standards of acceptable educational quality
- There are two fundamental reasons for accreditation:
 - To ensure quality assessment
 - To assist in quality improvement
- Students receive:
 - Assurance that the educational activities of an accredited program have been found to be satisfactory and meet the needs of students
 - Assistance in transferring credits among programs and institutions
 - A uniform prerequisite for entering the profession
- Programs receive:
 - The stimulus needed for self-directed improvement
 - Peer review and counsel provided by the accrediting agency
 - Enhancement of their reputation
 - Eligibility for selected governmental funding programs and private foundation grants

ADU Admission Requirements

- **Degree Level:** Master's Degree
- **Application deadline:** March 1
- **Admits per intake:** Up to 26
- **Average admitted GPA:** 3.48 (2016 intake)
 - Minimum 3.0 cumulative undergraduate and graduate required to apply
- **Program start:** Spring Trimester
- **Application fee:** \$100-apply online
- Current, unrestricted nursing license
- Bachelors degree in science or in another appropriate related major (accredited institution)
- Official transcripts



ADU Admission Requirements

- **GRE:** satisfactory score within last 5 years
- Minimum 1 year of critical care experience (within last 3 years)
 - Adult population preferred
 - 2 or more years preferred
- BLS and ACLS
- Mental and physical requirements
- Resume
- NAP practice survey
- NAP MSNA graduate questionnaire
- Essay
- Recommendations (**at least 1 CRNA**)
- Interview
- Program cost: **\$76,092**



Summary

- CRNA functions in collaboration with surgeons and anesthesiologists as well as other medical staff
- Work in numerous healthcare settings
- Transitions to Doctorate level program by 2025
 - ADU currently in transition-first class in 2018?
- General admission requirements
 - ADU admission requirements will change once doctorate program approved by the COA

Questions



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