Medical University of South Carolina
College of Health Professions
Department of Health Professions

Proposed New Program:

Doctor of Nurse Anesthesia Practice (DNAP)

Post-Baccalaureate, Entry to Practice

Submitted: September 15, 2013

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Mark Sothmann Ph.D.   Date
Interim President
Vice President and Provost
Medical University of South Carolina

Program Contact Name and Contact Information
Angela Mund CRNA DNP
Division Director, Anesthesia for Nurses Program
College of Health Professions
151 Rutledge Avenue, Suite B424
Charleston SC 29425
843-792-4067
mund@musc.edu

New Program Proposal: Doctor of Nurse Anesthesia Practice (DNAP)

Program title: Doctor of Nurse Anesthesia Practice
Concentrations, options, and tracks: Post-Baccalaureate
Academic Unit: College of Health Professions
Designation, type, and level of degree: Entry-level clinical doctoral degree
Proposed date of implementation: Summer 2018
CIP code: 51.3804
Site: Medical University of South Carolina
Qualifies for Palmetto Fellows or Life
   Scholarship awards: No
Delivery mode: Blended instruction, traditional and distance

INSTITUTIONAL APPROVAL

This proposal has been reviewed and approved by the following internal review bodies at MUSC:

College of Health Professions (CHP) Leadership Council – August 30th, 2013
MUSC Dean's Council – To be presented September 16th, 2013
MUSC Board of Trustees – To be presented October 10th, 2013

PURPOSE

Institutions have been awarding the practice doctorate to prepare Nurse Anesthetists for over 20 years, initially as the Nursing Doctorate (ND) and more recently as the Doctor in Nursing Practice (DNP) and the Doctor in Nurse Anesthesia Practice (DNAP). According to the American Association of Colleges of Nursing (AACN), the purpose of clinical doctoral programs is to "prepare experts in specialized nursing practice. The clinical doctorate graduates focus heavily on practice that is innovative and evidence-based"[1]. Furthermore, the AACN and its stakeholder organizations developed a framework for the clinical practice doctoral degree that includes essentials for evidence-based practice, quality improvement, informatics, healthcare policy, inter-professional collaboration, population-based health, and clinical practice. The implementation of a degree program that fulfills these requirements will require a transformational change in nurse anesthesia education.

Certified Registered Nurse Anesthetists (CRNA) are advanced practice nurses who have been providing care for over 150 years. They administer all types of anesthesia in all clinical settings and to all types of patients. CRNAs provide anesthesia in collaboration with surgeons, anesthesiologists, dentists, podiatrists, and other qualified healthcare professionals.

The purpose of the proposed program is first to prepare registered nurses to become CRNAs and thereby meet the growing demands for healthcare professionals. Second, the proposed program will provide registered nurses with the skills necessary to meet the complex needs of a changing healthcare system. As a result, graduates of the DNAP program will not only

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[1] American Association of Colleges of Nursing (2006). The Essentials of Doctoral Education for Advanced Nursing Practice.

assume roles as clinicians but will also have the educational background to become healthcare leaders.

The objectives of the program are to:

1. Expand the clinical education of CRNAs with the addition of increased clinical education hours, instruction in advanced technology, and high-fidelity crisis simulation.
   a. With additional demands placed on all practitioners to use the latest techniques; to experience an increasing variety and number of surgical cases; and to have simulated exposure to rare but life-threatening events, it is necessary to expand time spent in the clinical arena and in clinical simulation.
2. Prepare CRNAs to provide a clinical practice that is founded on the basis of evidence, research, and outcomes.
   a. Evidence-based practice is recognized as an effective approach in improving patient outcomes by incorporating knowledge gained from best research into bedside clinical practice. Additional coursework in evaluating research evidence and then applying that research to actual practice will produce CRNAs who can immediately apply these tools upon graduation.
3. Produce CRNAs who have the education and skills to assume leadership roles in healthcare.
   a. The incorporation of doctor in health administration coursework into nurse anesthesia educational programs will prepare CRNAs to become partners with other healthcare providers in transforming health care delivery systems.

JUSTIFICATION OF NEED FOR THE PROPOSED PROGRAM

The accrediting organization for nurse anesthesia programs, the Council on Accreditation of Nurse Anesthesia Educational Programs (COA), has mandated that "all students accepted into an accredited program on January 1st, 2022, thereafter will be required to graduate with doctoral degrees."[2] Therefore, all nurse anesthesia programs must have developed curricula and achieved accreditation of their doctoral programs prior to this date. MUSC currently offers an Anesthesia for Nurses (AFN) Program that awards a master's degree: the Master of Science in Nurse Anesthesia. In order to stay competitive with other nurse anesthesia programs and to maintain leadership in innovative educational programs, the MUSC plans to move forward with implementing a doctoral program prior to the final transition date provided by COA. If MUSC does not transition to a doctoral degree in Nurse Anesthesia by 2022, the program will lose accreditation and be forced to close.

The primary reason for the transition from masters to doctoral nurse anesthesia education is to elevate the quality of care delivered by nurse anesthetists in a variety of current and emerging healthcare delivery systems and to develop and strengthen the leadership skills necessary for innovative clinical practice. In 2011, the Institute of Medicine (IOM) released its report on the Future of Nursing. This report recognized the need to educate nurses and advanced practice registered nurses (APRN) at higher levels to meet today's healthcare challenges. Certified Registered Nurse Anesthetists (CRNAs) are one of the four categories of

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[2]Council on Accreditation of Nurse Anesthesia Programs. (2012) Policies and Procedures Manual.

APRNs that also includes nurse practitioners, clinical nurse specialists, and certified nurse midwives. According to the IOM report, as the clinical needs of our patient population and the clinical environment itself become more complex, CRNAs will need higher-level competencies to provide a foundation for care across all practice settings and for all populations. These competencies will include increased development of clinical care as well as in evidence-based practice, informatics, health policy and leadership.[3] Furthermore, the report recommends "doubling the number of nurses with a doctorate by 2020."[3] CRNAs will be able to meet the ongoing and future challenges in healthcare in South Carolina by obtaining clinical doctoral degrees that focus on managing patients based on clinical evidence; by becoming partners in improving healthcare through leadership and financial management; and by improving the flow of patient information through education in healthcare informatics.

MUSC currently offers a Master of Science degree in Nurse Anesthesia (MSNA). This program is scheduled for reaccreditation in 2019. The proposed post-baccalaureate DNAP will be implemented prior to the 2019 reaccreditation date for the MSNA. However, the MSNA degree program will continue to admit students until the program transitions to the doctoral degree to ensure that no gap in admissions will occur. With an anticipated matriculation date for the inaugural class of DNAP students of summer 2018, the final MSNA class will be admitted in fall 2017.

It is important for MUSC to transition from the MSNA to a doctoral program because if the MUSC program does not transition to an entry-level doctoral degree, prospective nurse anesthesia students might apply to out-of-state doctoral programs and many would not return to South Carolina upon graduation. If so, the impact on the CRNA workforce in South Carolina would be considerable, not only in metropolitan settings but particularly in those rural hospitals where CRNAs are often the primary anesthesia providers.   At the MUSC hospital, nurse anesthetists in collaboration with anesthesiologists provide approximately 60% of the anesthetics delivered. Also, 60% of the CRNAs at MUSC are graduates of the MUSC Program. Therefore, should the program fail to transition to a doctoral program and suffer loss of accreditation as a result, the state of South Carolina could be left with a critical shortage of anesthesia providers that could then lead to the delay or cancellation of scheduled surgical procedures.

As a requirement for continued accreditation by the COA, MUSC tracks, documents, and publishes its graduate employment rates.[4] Over the last five years, 100% of graduates from MUSC's Anesthesia for Nurses Program have found nurse anesthesia positions within three months of graduation. The large majority of students have been offered and accepted positions prior to graduation.

The most recent data on CRNA vacancies classified South Carolina as one of the states with the highest vacancies per 1,000 surgeries (0.322).[5] Although statistics are not available on the need for doctoral prepared clinical CRNAs, vacancies continue to exist for CRNAs. Although the Bureau of Labor Statistics does not delineate a projected need for CRNAs, in the Statistics' 2012-13 Occupational Outlook Handbook [6], registered nursing professions can expect a 26

[3] Institute of Medicine. (2011) Report on the Future of Nursing: Leading Change, Advancing Health. Washington DC: The National Academies Press.

[4] http://academicdepartments.musc.edu/chp/afn/faqs.htm

[5] Merwin, E., Stern, S., Jordan, LM., & Bucci, M. (2009). New Estimates for CRNA Vacancies. *AANA Journal*, 77(2), 121-129.

[6] Bureau of Labor Statistics. Accessed at http://www.bls.gov/ooh/Healthcare/Registered-nurses.htm

percent increase in employment through 2020, much faster than average. In anticipation of the expected rise in healthcare consumers due to the aging baby boomer generation, the increase in chronic disease, and the implementation of the Affordable Care Act (ACA), the Title V of ACA[7] includes provisions for addressing the projected shortage of nurses by investing in increasing healthcare workforce supply, funding, and training

Centrality of the Program to the Institutional Mission

The proposed DNAP program is congruent with the mission of MUSC by (a) focusing on interprofessional education due to the location of the proposed program within the College of Health Professions; (b) by providing leadership; and (c) by developing practitioners who provide excellent, evidence-based care for the citizens of South Carolina and beyond. The DNAP program will also provide the opportunity for the College of Health Professions (CHP) to support its strategic goal of attaining national recognition for innovative activities in education by developing and implementing the first DNAP in South Carolina.

Recognized leaders in healthcare have promoted the concept of interprofessional collaboration and coordination as playing a critical role in improving the US healthcare system. [8] Housed in the CHP, the MUSC Anesthesia for Nurses program enjoys opportunities for interprofessional collaboration with other healthcare practitioners, health sciences researchers, and healthcare administrators. These professional collaboration efforts combined with diverse clinical sites have allowed the MUSC Anesthesia for Nurses program to develop a strong reputation for producing excellent clinicians and future leaders.

Relationship of the Proposed Program to Other Related Programs within the Institution

The proposed DNAP will share faculty with the Department of Healthcare Leadership and Management (DHLM). The Department of Healthcare Leadership and Management awards a Doctor in Health Administration (DHA) degree with options that focus on interprofessional collaboration and healthcare information systems. The faculty in the DHLM department have experience and expertise in economics, organizational change, healthcare policy, leadership, and interprofessional collaboration. The DNAP students will have access to faculty with experience and expertise in specific areas that are recommended by the AACN and the IOM report. This collaboration between the DHLM and the DNAP program will provide students with content experts for both the nurse anesthesia courses and the leadership/policy/economics courses.

The MUSC College of Nursing (CON) currently offers an advanced degree, the Doctor of Nursing Practice (DNP) degree in adult, pediatric, or family nurse practitioner; however, MUSC seeks to offer the DNAP because the nurse anesthesia program does not fit into any of the DNP categories. The basic coursework required to become a nurse anesthetist is very prescriptive, notable for the intensity of education required for pharmacology, anatomy and physiology, technology, and basic and advanced principles of anesthesia care. In order to meet the accreditation requirements and to maintain the current clinical content of the nurse anesthesia

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[7]http://www.aucd.org/docs/policy/health_care/Section%20by%20Section%20Summary%20of%20Health%20Care%20Workforce.pdf

[8] Institute of Medicine. (2011) Report on the Future of Nursing: Leading Change, Advancing Health. Washington DC: The National Academies Press.

program, the DNP curriculum (75 semester hours) would have to be lengthened by a semester; accommodate an additional 500 practicum hours; and include content on the basic sciences noted above. Therefore, merely transitioning the entry-level MSNA students into the current DNP program in the College of Nursing at MUSC is not a feasible option.

Comparisons and Relationships with other Programs in the State, Region, and Nation

The MUSC Nurse Anesthesia program is one of only two nurse anesthesia programs in the state of South Carolina. The other program is at the University of South Carolina (USC), which confers a Masters in Nurse Anesthesia degree, but not a doctoral degree. The current USC assistant program administrator has a doctoral degree but the program administrator does not. As required by the accrediting body, by 2018, both the nurse anesthesia program administrator and the assistant program administrator must have doctoral degrees. While USC also plans to transition to a doctoral program, the timeline for doing so is unknown at this time.

There are no DNAP programs currently in the state. Both the nursing programs at MUSC and at the University of South Carolina (USC) offer a post-baccalaureate doctor in nursing practice (DNP) degree. However, neither of these programs offers the core nurse anesthesia content that would be required for this entry-level doctoral program nor do these programs contain faculty who have the nurse anesthesia degree, which is a requirement for accreditation.

As of July 2013, nationally, there are eighteen nurse anesthesia programs that have been accredited for the entry into practice at the doctoral level. Seventeen of the programs offer a DNP, and one offers a Doctor in Management Practice of Nurse Anesthesia (DMPNA). None of the current entry-level programs offer a DNAP. All but one of the DNP programs are housed in colleges or schools of nursing and include the fundamentals of nursing theory along with the basics of nurse anesthesia. Prior to transitioning to the DNP degree, these nurse anesthesia programs were already housed in Colleges of Nursing or, in one situation, the program was entirely new to the University. Because the MUSC College of Nursing already offers a DNP degree and the AFN program is housed in a College of Health Professions, the proposed doctoral entry-level program will be a DNAP rather than the DNP degree. This option will avoid confusion between the clinical doctoral degree for nursing practitioners (DNP) and the degree for nurse anesthetists (DNAP).

The DMPNA is jointly managed by a hospital system and a university based graduate school with content on innovative business management and entrepreneurial skills as an adjunct to the nurse anesthesia curriculum. Of the eighteen programs, only two are located in the southeast United States (West Virginia and Mississippi). The remaining programs are distributed throughout the United States.

ADMISSIONS CRITERIA

Prerequisites for admission into the proposed DNAP program:
1. Evidence of graduation from an accredited baccalaureate or higher nursing program, or possession of a bachelor of science degree in a basic or appropriate health sciences field
2. Evidence of active, unencumbered licensure as a registered nurse
3. A minimum of one-year full time experience as a registered nurse in a critical care setting is required prior to application to the program
4. A minimum cumulative GPA of 3.0 is required
5. Submission of prerequisite course requirements: general chemistry, anatomy, physiology, pharmacology and statistics. Organic chemistry and microbiology are optional but recommended.
6. Submission of the results of the Graduate Record Exam (GRE). The exam must have been taken in the last five years. In order to be competitive, the applicant must have a total score of 300 or above. The GRE will be waived for applicants with a cumulative GPA above 3.6 or if the applicant has an earned graduate degree from an accredited institution.
7. Submission of a curriculum vitae and three professional references
8. Submission of required essays. One essay will focus on the applicant's desire to become a nurse anesthetist. The second essay should discuss the applicant's research area of interest and proposed doctoral capstone project.

The Anesthesia For Nurses Admissions and Progressions Committee reviews all applicant files for merit. When determining which applicants to interview and then accept to the program, the committee will focus on academic achievement, clinical experience, recommendations, and the quality of the essays. The sixty most qualified applicants will be invited to an in-person panel interview and the top twenty-five applicants will be offered admission.

ENROLLMENT

According to the Council on Accreditation 2012 Annual Report of nurse anesthesia programs, there were 739 applicants to 12 doctoral degree programs. Of the 739 applicants, 277 students were accepted. MUSC's existing entry-level nurse anesthesia program has a strong application pool of 120-140 applicants per year with an average class size of 28 students. The anticipated enrollment will continue to average 28 students per year. However, a smaller cohort will be admitted into the initial classes as the current students complete the existing master's degree program. As required by the COA, this post-baccalaureate DNAP program will follow the minimum program length of 36 months.

In the fourth year of the DNAP post-baccalaureate program, one class will have graduated and three additional classes will be moving through the curriculum. The first cohort will contain 25 students with a projected increase to a total of 26 students by the fourth cohort. Therefore, the program will have graduated 50 students at the conclusion of the fourth year.

The program will start in the summer semester of 2018. This program is a new entry-level program and all students are classified as new students. Historically, the attrition rate of the MSNA program has been one student per class typically occurring during the first or second semester. These data have been used to project total enrollment in the proposed DNAP program. Because this program will be transitioning from granting a final master's degree to

granting a doctoral degree, MSNA students currently enrolled will be in the clinical phase of the program while the new doctoral students will be in the didactic portion of the program.

Based on historical data, prospective DNAP students will be from South Carolina and other parts of the United States. As a requirement of the accrediting body, all admitted students will possess a bachelor's degree and be licensed as a registered nurse. The percentage of in-state students has varied from 50% to 68% over the last three years. We do not anticipate transfers from other programs in the institution due to the requirements for interim clinical practice. The current MSNA program has a policy for the admission of transfer students from other nurse anesthesia programs although this policy has not been used for at least five years. Therefore, transfer students were not included in the projected total enrollment. The DNAP program will maintain the same transfer policy that is currently used in the MSNA program.

Table A – Total Enrollment

PROJECTED TOTAL ENROLLMENT						
YEAR	**FALL**		**SPRING**		**SUMMER**	
	Headcount	Credit Hours	Headcount	Credit Hours	Headcount	Credit Hours
2017-2018					25	275
2018-2019	24	360	24	384	49	552
2019-2020	48	672	48	696	73	851
2020-2021	72	960	72	960	74	862
2021-2022	73	975	73	975	74	862

CURRICULUM

The post-baccalaureate degree DNAP curriculum will consist of 113 credit hours and, as required by the accrediting body, will be delivered over the minimum 36 months. All students will be full-time. The majority of the courses in the Master of Science program will be transitioned to doctoral level courses through increased content and academic rigor, while the course titles will remain the same or similar to reflect the course content accurately.

Because the accrediting body is in the process of finalizing and implementing the Standards for Doctoral Education, the exact content areas have not been fully established. However, the final draft has been vetted among stakeholders and will require additional nurse anesthesia

didactic content on genetics, radiology, the use of ultrasound, and pain management. The draft Doctoral Standards also includes increased requirements for clinical experiences as well as additional curricula devoted to healthcare policy, informatics, and management principles. The additional content will be delivered within the courses that transition from masters to doctoral levels and within the newly proposed courses.

Increased rigor will be demonstrated by expanding the expectations for student performance through examination and simulation; by requiring an evidence-based quality improvement capstone project; and by requiring students to demonstrate acquisition of knowledge not only through examination but through scholarly projects in the form of written and oral presentation, academic writing, discussion, and teaching experiences.

Year	Summer	Fall	Spring
One	Managing Health Care Information Resources (3s.h.) Chemistry and Physics of Anesthesia (2s.h.) Adv. Health and Physical Assessment (2s.h.) Research Methods for Nurse Anesthesia (3s.h.) Professional Aspects of Nurse Anesthesia (1s.h.) *Total Credits 11*	Foundations in Leadership (3s.h.) Clinical Pharmacotherapuetics (3s.h.) Human Anatomy (5s.h.) Principles of Evidence-based Practice (3s.h.) DNAP Seminar I (1s.h.) *Total Credits 15*	Foundations in Health Policy (3s.h.) Strategic Management of Change (3s.h.) Basic Principles of Anesthesia Practice (3s.h.) Simulation Lab I (2s.h.) Adv. Physiology and Pathophysiology (5s.h.) *Total Credits 16*
Two	Management Principles for Nurse Anesthesia (2s.h.) Simulation Lab II (3s.h.) Advanced Pharmacology: Anesthetic Drugs (4s.h.) Advanced Principles of Anesthesia Practice (3s.h.) *Total Credits 12*	Introduction to Clinical Anesthesia (3s.h.) Anesthesia Practicum (5s.h.) Principles of Pain Management (2s.h.) Clinical Simulation for Crisis Management (1s.h.) DNAP Seminar II (2s.h.) *Total Credits 13*	Anesthesia Practicum (11s.h.) Introduction to Teaching and Learning (2 s.h) *Total Credits 13*
Three	Anesthesia Practicum (10s.h.) DNAP Seminar III (2s.h.) *Total Credits 12*	Anesthesia Practicum (10s.h.) DNAP Seminar IV (2s.h.) *Total Credits 12*	Anesthesia Practicum (10s.h.) DNAP Seminar V (1s.h.) *Total Credits 11*

The courses noted below will be entirely new courses that do not currently exist in the MSNA program. The new courses will be offered in a blended format that includes asynchronous distance education and traditional classroom experiences. Theses blended courses will be interwoven with the anesthesia principles courses that will all be delivered in the traditional classroom setting.

AFN-8xx   **Principles of Evidence-based Practice (3 s.h.)**

An analysis of evidence-based practice with a focus on types/levels of evidence and application of the best evidence to clinical practice. Includes the use of evidence-based clinical guidelines.

AFN-8xx **Management Principles for Nurse Anesthesia (2 s.h.)**
A survey of management principles relevant to leaders in nurse anesthesia. Includes content on financial management; billing/payment strategies; efficient deployment of resources.

AFN-8xx **Principles of Pain Management (2 s.h.)**
Foundational pain management course that focuses on all aspects of chronic and acute pain management. Interventional pain management, ultrasound, pharmacotherapuetics, and complementary medicine techniques.

AFN-8xx **Clinical Simulation for Crisis Management (1 s.h.)**
High-fidelity simulation lab course that applies theories of learning through simulation to clinical management of low occurrence, high-risk anesthetic crises.

AFN-8xx **Introduction to Teaching and Learning (2 s.h.)**
Components of effective teaching/learning. Emphasis on application of learning theories; designing effective models of teaching/learning; and developing innovative educational experiences that facilitate achievement of desired learner outcomes.

AFN- 8xx **DNAP Seminar I (1 s.h.)**
Analysis and discussion of the role of doctoral prepared nurse anesthetists in the healthcare arena. Introduction to the capstone project.

AFN-8xx **DNAP Seminar II (2 s.h.)**
Integration of organizational change concepts, leadership, ethics, and economics into the capstone project.

AFN-8xx **DNAP Seminar III (2 s.h.)**
Application of concepts of quality assurance/quality improvement to clinical situations. Continued development of the capstone project. Includes coverage of professional wellness and chemical dependency.

AFN8Xx **DNAP Seminar IV (2 s.h.)**
Continued synthesis of the components of the capstone project into the final project.

AFN-8xx **DNAP Seminar V (1 s.h.)**
Conclusion and dissemination of the final capstone project

The courses noted below existed within the current MSNA curriculum but will receive new course numbers and course descriptions that reflect the increased rigor and doctoral content.

AFN-8xx　　**Chemistry and Physics of Anesthesia (2 s.h.)**
Applied concepts of chemistry and physics as they relate to the use of the anesthesia gas machine, patient monitors, and safety. Includes principles of the behaviors of gases, solids, and liquids and the concept of electricity in the operating room. Present basic concepts of ultrasonography.

AFN-8xx　　**Advanced Health and Physical Assessment (2 s.h.)**
Synthesizes a full review of systems and physical assessment into an evidenced based pre-anesthetic plan. Includes rational use of resources and evaluation of risk.

AFN-8xx　　**Research Methods for Nurse Anesthesia (3 s.h.)**
Introduction to the research process. Includes basic statistical analysis, research design, research evaluation, ethical considerations, and the institutional review board process.

AFN-8xx　　**Professional Aspects of Nurse Anesthesia (1 s.h.)**
Introduction to the role of nurse anesthetists. Covers the historical aspects of nurse anesthesia and the role of the professional healthcare provider.

AFN-8xx　　**Clinical Pharmacotherapuetics (3 s.h.)**
Emphasis on pharmacodynamics/kinetics and indications for a diverse set of medications. Includes medicolegal aspects and the role of genetics in pharmacology.

AFN-8xx　　**Human Anatomy (5 s.h.)**
Detailed study of the human body. Emphasis on the circulatory, respiratory, and nervous system. Includes cadaveric dissection in the lab component.

AFN-8xx　　**Basic Principles of Nurse Anesthesia Practice (3 s.h.)**
Focus on the fundamentals of nurse anesthesia practice and includes a wide variety of topics including positioning safety, monitoring techniques, fluid management. Includes the anesthetic management of the pediatric and geriatric populations.

AFN-8xx　　**Advanced Principles of Nurse Anesthesia Practice (3 s.h.)**
Focus on the assessment and management of complex populations including the cardiac, obstetric, and trauma patient. Emphasis on evidence-based risk reduction and critical decision-making.

AFN-8xx　　**Advanced Pharmacology: Anesthesia (4 s.h.)**
Builds on the basic concepts of pharmacology and focuses on medications of concern for anesthesia practice. Additional focus on patient safety and decision-making for select high-risk populations.

AFN-8xx　　**Introduction to Clinical Anesthesia (3 s.h.)**
An introduction to the types of surgical procedures that students will encounter in clinical practice. Focus on the anesthetic management of particular procedures and specific locations outside of the operating room.

AFN-8XX   **Advanced Physiology and Pathophysiology (5 s.h.)**
            In-depth study of normal and abnormal physiological processes. Content will
            include a wide range of topics from cellular physiology to an integrated
            systematic review of systems.

AFN-8xx   **Simulation Lab I (2 s.h.)**
            Emphasis on acquisition of nurse anesthesia technical skills and clinical decision
            making utilizing low and high fidelity simulation. May include basic and
            advanced airway management, positioning, and preoperative patient preparation.

AFN-8xx   **Simulation Lab II (3 s.h.)**
            Utilize high fidelity simulation to manage typical simulated scenarios. Includes
            simulation through the perioperative period. Advanced techniques, e.g. regional
            blockade and central venous access will also be covered.

AFN-8xx   **Anesthesia Practicum I (5 s.h.)**
            Emphasis on the basic skills necessary for the novice practitioner under the
            supervision of a certified registered nurse anesthetist.

AFN-8xx   **Anesthesia Practicum II (11 s.h.)**
            Continuation of AFN-8xx, focus on anesthetic management of diverse patient
            populations. Increased responsibilities for drug administration and technical
            skills.

AFN-8xx   **Anesthesia Practicum III (10 s.h.)**
            Continuation of AFN-8xx. Increased emphasis on independent decision-making
            and critical thinking while collaborating as member of the perioperative team.
            Focus on assuming greater responsibility in anesthetic management.

AFN-8xx   **Anesthesia Practicum IV (10 s.h.)**
            Continuation of AFN-8xx. Emphasis on the management of complex anesthetic
            management. Focus on assuming greater independence in anesthetic
            management.

AFN-8xx   **Anesthesia Practicum V (10 s.h.)**
            Continuation of AFN-8xx. Focus on fine-tuning skills to provide for independent
            practice under minimal supervision of a certified registered nurse anesthetist
            Focus on assuming greater independence in anesthetic management.

ASSESSMENT

The current MSNA program has a robust evaluation plan that was approved by the COA
during the last accreditation cycle in 2009. This same evaluation plan will be used in the
proposed DNAP program but will also include the evaluation of the roles that graduates may
assume in other areas of healthcare and education.

Student Competencies

       In addition to exams administered as part of normal coursework, student competency will be evaluated in the clinical arena and in the simulation lab. Students will be evaluated in the areas of critical thinking, technical skills, knowledge of pharmacology and physiology, and anesthetic management. Achievement of these competencies will be assessed using the following methods:

1. Daily clinical evaluations to be completed by the supervising CRNA or anesthesiologist.
2. Final clinical site evaluations to be completed by the clinical site coordinator at the end of each clinical rotation. The evaluation will focus on overall success and clinical progression during the rotation.
3. Student self-evaluation at the end of each semester highlighting the students perceived successes and goals for the subsequent semester.
4. High fidelity simulation will be used to evaluate students at the end of each semester and prior to their entering the clinical arena. High fidelity simulation will include ability to master technical skills and use critical thinking during crisis management. A rubric is used to measure achievement of each technical skill.
5. Satisfactory achievement of clinical experiences, i.e. number of clinical cases, hours of anesthesia time.
6. Successful achievement of researching, planning, executing and evaluating the DNAP capstone project.

       The Anesthesia For Nurses Admissions and Progressions Committee reviews student evaluations annually and at other times as needed. The committee will make recommendations for changes to the reporting form and for changes in the student competency metrics. The curriculum committee will evaluate the clinical simulation curriculum and simulation rubrics for effectiveness and measurement of student achievement.

Program Effectiveness

       Program effectiveness will be evaluated by students and by the success of the graduates. The following metrics will be monitored.

1. Evaluation of didactic and clinical instruction. Students will evaluate each didactic course and course instructor and a cross-section of clinical instructors and the clinical site.
2. Evaluation of overall program effectiveness. Prior to graduation, students will participate in an anonymous survey as well as an exit interview with the Associate Dean.
3. Employer survey. One year following graduation, the graduates and their employers will be surveyed concerning the academic and clinical preparation for practice.
4. Alumni survey. Between three to five years post-graduation, alumni will be surveyed regarding their career trajectory and their engagement in education and leadership.
5. National Certification Exam pass rates. The AFN DNAP pass rates will be benchmarked against the national pass rates. The AFN program has an average first time pass rate of 95% (2006-2012) and an overall pass rate of 99% during the same time period.
6. Employment rates. Over the last three years, 100% of graduates have obtained employment within three months of graduation.

7. Program attrition. Program attrition will be benchmarked against national nurse anesthesia program data.

Evaluations of student outcomes and program effectiveness will be used to make changes in course sequencing within the curriculum; the instruction delivery method; course content; the overall effectiveness of the faculty; and the quality of clinical site experiences. The faculty reviews the results of the National Certification Exam each year. Areas of weakness are discussed, analyzed, and changes are made if deemed necessary. The MUSC Office of Institutional Effectiveness tracks and assists in setting benchmarks for academic programs as part of the Southern Colleges and Schools reporting mechanism on evaluating the effectiveness of the AFN program.

FACULTY

Current faculty will continue to provide the course direction (didactic and clinical) and instruction. When compared with the current MSNA student enrollment, a similar number of students will be admitted into the proposed DNAP program so the program will require the similar number of faculty. Also, because the proposed program will be delivered at the doctoral level and will include five new courses throughout the curriculum, an additional doctoral prepared CRNA faculty member will be hired to provide didactic instruction and advising for the capstone project. Doctoral prepared CRNAs who are employed at our clinical sites may be used to augment the advising portion of the capstone project. Additional content experts at either the Assistant Professor or Instructor level will provide lectures as needed but will not be full-time faculty members. At least one doctoral prepared faculty member from the MUSC Department of Healthcare Leadership and Management will direct the health administration courses. These courses will be delivered jointly to the post-master's DNAP and the post-baccalaureate DNAP students. In order to maximize faculty effort, the nurse anesthesia students may also be enrolled in the DHLM courses with the students in the Doctorate in Health Administration courses. Faculty and instructors with master's degrees and specific clinical expertise will be used to supplement course instructor but will not be course directors. All adjunct faculty clinical coordinators will be required to hold a master's degree or higher, in accordance with the requirements of the COA Standards for Accreditation.

Table B- Faculty List

List Staff by Rank (e.g. Professor #1, Professor #2, Associate Professor #1, etc.)	Highest Degree Earned	Field of Study	Teaching in Field (Yes/No)
Professor #1	PhD	Adult & Occupational	Yes
Assistant Professor #1	DNP	Nursing	Yes
Assistant Professor #2	MHS/MSNA/DNAP	Nurse Anesthesia	Yes
Assistant Professor #3	DNP	Nursing	Yes
Professor #2	EdD	Anatomy	Yes
Associate Professor #1	PhD	Research	Yes
Professor #3	PhD	Physiology	Yes
Assistant Professor #4	DHA or PhD	Health Administration	Yes
Instructor #1	MHS/MSNA/DNAP	Nurse Anesthesia	Yes
Assistant Professor #5	DHA or PhD	Health Administration	Yes
Instructor #2	MHS/MSNA/DNAP	Nurse Anesthesia	Yes
Instructor #3	MHS/MSNA/DNAP	Nurse Anesthesia	Yes

The MUSC CHP's strategic plan includes goals on national recognition in research, interprofessional education and practice, and service. In support of these goals, MUSC provides educational sessions for faculty on diverse topics such as effective use classroom technology, educational instruction, and curriculum design. The Research Administration supports research efforts through the staff in the grants office. The grants staff assists with the submission of nurse anesthesia traineeship grants and with providing overall support. MUSC supports the professional development of its faculty by providing release time and funding to enable faculty to attend national educator meetings. In acknowledgement of the importance of national recognition of its faculty, the College of Health Professions has endorsed the actions of current faculty presenting at the state and national level by including these efforts in the yearly performance evaluation. A new initiative that will impact new doctoral faculty is the Faculty

Mentoring and Career Development Program. Any new faculty in the DNAP program will be required to participate in this program that supports the mentoring process through the academic system and in the creation of overall career goals and objectives.

The Program Administrator serves a dual role, instructing students as well as directing the program. The Program Administrator is expected to direct both the post-master's DNAP and the post-baccalaureate DNAP. In Table C, the Program Administrator is included in the Administration head count and FTE and in the Faculty headcount due to the understanding that this faculty member will also teach full time. Support staff from the current MSNA program will staff the initial year of the DNAP program then transition fully to the DNAP.

One FTE represents a full-time faculty member who has been appointed to the MUSC faculty by the Vice President for Academic Affairs and Provost and who receives 100% of compensation through MUSC or though MUSC authorized activities. The faculty member engages in clinical practice, instruction, research, and/or administrative activities on the MUSC Campus or any of its affiliated locations. The faculty position may be tenured, tenure eligible, or non-tenured.

Table C - Unit Administration, Faculty and Staff

UNIT ADMINISTRATION, FACULTY, AND STAFF SUPPORT						
YEAR	NEW		EXISTING		TOTAL	
	Headcount	FTE	Headcount	FTE	Headcount	FTE
Administration •						
2017 – 18	0	0	2	0.23	2	0.23
2018-2019	0	0	2	0.48	2	0.48
2019-2020	0	0	2	0.70	2	0.70
2020-2021	0	0	2	0.98	2	0.98
2021-2022	0	0	2	0.98	2	0.98
Faculty						
2017 – 18	2	0.4	6	1.2	8	1.6
2018-2019	3	1.6	8	1.6	11	3.2
2019-2020	1	0.5	11	3.2	12	3.7
2020-2021	0	0	12	4.9	12	4.9
2021-2022	0	0	12	4.9	12	4.9
Staff**						
2017 – 18	0	0	0	0	0	0
2018-2019	1	0	2	.15	2	.15
2019-2020	1	0	3	.19	3	.19
2020-2021	0	0	3	1.34	3	1.34
2021-2022	0	0	3	1.34	3	1.34

PHYSICAL PLANT

Since this program will not increase the numbers of students taught in the Anesthesia For Nurses program, the current physical plant will be adequate to meet the education needs of the students. At present, the MSNA program has a dedicated classroom that includes an area for full high-fidelity simulation. Because the MSNA students will primarily be in the clinical sites away from campus, the current dedicated classroom will be available for any on-campus class sessions. The classroom is equipped with SmartBoard technology, high-definition cameras, and all other necessary audiovisual equipment. Online interaction with students will continue to be delivered using the internet-based learning management system: Moodle. All current faculty are proficient with Moodle system. New faculty will be oriented to the program upon academic appointment.

EQUIPMENT

It is not anticipated that additional equipment will be necessary. The crisis simulation course will be taught using the program's current high-fidelity human simulator. The current equipment will be updated and replaced using the normal acquisition process. The College of Health Professions has the necessary technology to deliver hybrid, online courses and has a track record of successful distance education through the Department of Healthcare Leadership and Management.

LIBRARY RESOURCES

Students will continue to have full access to the resources of the MUSC library, which includes an extensive selection of electronic journals and electronic databases (PubMed, MedLine, CINAHL). The MUSC Library's primary purpose is to meet the information needs of faculty, staff and students, and to support the curriculum, research, and patient care goals of the Colleges of Health Professions, Medicine, Pharmacy, Nursing, Dental Medicine, and Graduate Studies and the Medical Center. The Library serves as a database and knowledge center, an academic support unit, an electronic educational center, and a leader in information planning. The modern library consists of electronic resources and services including the education of students and faculty in the most effective use of these resources. The MUSC Library has over 220 databases and over 19,000 electronic journals.

Recognizing that users expect to access information where they are, the library has concentrated on making resources available online. The DNAP faculty, students and staff would be able access all resources via the Internet wherever they are physically located by using their MUSC NetID login and password. The MUSC Library's Webpage (http://www.library.musc.edu/) provides access to those electronic resources.

Resources not owned by the library can be requested at no charge through the Interlibrary Loan document delivery service. Every effort is made to get an electronic copy of a journal article, which on average takes 1.3 business days to obtain.   Books can also be borrowed from other libraries. Through PASCAL, faculty and students are able to borrow books held by

South Carolina Colleges and Universities within two to three business days (if the book is not checked out). Faculty and students may request that books and journals be added to the collection.

ACCREDITATION, APPROVAL, LICENSURE, OR CERTIFICATION

The Medical University of South Carolina, where the program will be delivered, has been continuously accredited by its regional accreditation agency, the Southern Association of Colleges and Schools Commission on Colleges (SACS) since 1971. The next re-affirmation date is 2017.

The Council on Accreditation of Nurse Anesthesia Educational Programs (COA) is recognized by the Council for Higher Education Accreditation (CHEA) and currently accredits the MSNA program. The COA is the national agency responsible for establishing the educational standards for nurse anesthesia programs through rigorous evaluation of programmatic content, effectiveness, and continuous quality improvement. An application for approval of a practice-oriented doctoral degree for entry into practice will be submitted to the COA. The process for approval of the DNAP program includes the submission of proof of program and institutional accreditation and submission of narrative and supporting documentation of resources, program effectiveness, accountability, and governance. The COA will evaluate the program of study for the scope and content of doctoral work, evaluation of competence of scholarly work, and the inclusion of the required content in biologic systems, professional role, ethics, healthcare improvement, informatics, social policy, health systems management, and ethics. The application for approval for this program will be submitted to the COA in March 2014 for review in May 2014.

Current MSNA graduates of the program are subject to national certification administered by the National Board of Certification and Recertification of Nurse Anesthetists (NBCRNA) and graduates of this proposed DNAP will also be required to be certified by the NBCRNA. The NBCRNA develops and administers the certification exam. All graduates from nurse anesthesia programs must pass the certification exam to use the credential CRNA. Past graduates from the current program have a first-time pass rate that is consistently higher than the national average, so the faculty does not anticipate any changes to this statistic.

ARTICULATION

The MUSC transfer credit policy and articulation policy is located on the MUSC website: http://academicdepartments.musc.edu/esl/bulletin/acad_policies/transfer_policy/. The MUSC MSNA program currently accepts prerequisite courses as described in the articulation agreements. However, nurse anesthesia specific content is interwoven in the DNAP curriculum, so transfer courses do not contain information specific to the program. Therefore, most courses from other programs will not meet the content requirements to allow non-MUSC courses to transfer into the curriculum. The DNAP is considered a terminal nurse anesthesia degree.

ESTIMATED COST OF THE PROGRAM AND SOURCES OF FINANCING

The implementation of this program will not incur any unique costs or special state appropriations. Tuition will be the primary source of funding along with the anticipated typical funding from state appropriations. It is anticipated that this proposal will result in an additional $50,000 of expenses for the additional course instruction and staff support. Because this program will replace the current MSNA degree option, the year one estimated cost of the program is reflective of only the additional expense of new faculty. The initially lower cost of the program is reflective of the distribution of administrative cost between the MSNA, post-Masters DNAP, and the post-baccalaureate DNAP. As the program transitions fully to the DNAP, the costs and sources of financing are noted in the end of year two and then completely in years four and five. The faculty in the Doctor in Health Administration Program will teach the leadership and management courses. Both the post-master's and the post-baccalaureate DNAP students will share these courses. Tuition gained from the increased length of the program (two semesters) will offset the additional faculty cost.

The percentage of instate students has varied from 50% to 68% over the last three years. It is anticipated that the cohort of students matriculated into the DNAP will follow a similar profile. However, if the number of national post-baccalaureate DNAP programs is still limited at the time of implementation of this proposed program, the percent of out-state applicants may be higher.

Table D – Estimated Costs and Sources of Financing by Year

ESTIMATED COSTS BY YEAR						
CATEGORY	1st	2nd	3rd	4th	5th	TOTALS
Program Administration	59,153	120,534	178,241	257,106	262,248	877,282
Faculty Salaries	49,076	210,124	302,186	403,331	408,385	1,373,102
Graduate Assistants	0	0	0	0	0	0
Clerical/Support Personnel	0	9,354	12,154	89,717	91,512	202,737
Supplies and Materials	7,690	31,323	57,148	63,306	69,046	228,513
Library Resources	0	0	0	0	0	0
Equipment	0	0	0	0	0	0
Facilities	0	0	0	0	0	0
Other: Faculty development, Recruitment, Traineeship	3,205	13,059	23,825	28,477	28,786	97,352
TOTALS	119,124	384,394	573,554	841,937	859,977	2,778,986
SOURCES OF FINANCING BY YEAR						
Tuition Funding	251,831	979,883	1,711,243	2,202,450	2,211,597	7,357,004
Program-Specific Fees	0	0	0	0	0	0
State Funding*	0	0	0	235.003	235,003	470,006
Reallocation of Existing Funds**	0	0	0	0	0	0
Federal Funding	0	0	0	0	0	0
Other Funding	0	0	0	0	0	0
TOTALS	251,831	979,883	1711,243	2437,453	2,446,600	7,827,010