Removing Barriers to Practice: Achieving CRNA Autonomy through Education, Engagement, and Policy Change

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Abstract

Developing change in health care at the legislative level requires support, education, and evidence. Currently, Certified Registered Nurse Anesthetists (CRNAs) in Pennsylvania are required to practice under the supervision of a physician. The literature supports that CRNAs provide safe, cost-effective care, but legislation in Pennsylvania prevents these healthcare professionals from practicing independently. To help increase active engagement for legislative change, a health policy toolkit consisting of an online webinar, a website, and a pamphlet was developed to educate CRNAs, Student Registered Nurse Anesthetists (SRNAs), health care administrators, and Pennsylvania state legislators on CRNA safety, cost, and current legislation. The participants were surveyed before and after the implementation of the health policy toolkit. The data analysis revealed that the implementation of a health policy toolkit significantly improved the participants understanding of the CRNA profession and a willingness to engage in future legislative activities supporting independent practice for CRNAs in Pennsylvania.

Keywords: CRNA, autonomy, legislation, anesthesia, "opt-out', policy, toolkit

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Engagement, and Policy Change

Chapter I: Introduction and Overview of the Problem of Interest

Certified Registered Nurse Anesthetists (CRNAs) are advanced practice nurses that specialize in the administration of anesthesia care. This includes the development of an anesthetic plan tailored to patients' needs based on a comprehensive assessment, the delivery of this plan while monitoring a patient and adjusting the plan of care based on individualized needs of the patient and procedure, and performing a postoperative assessment with proper management of the patient following the administration of an anesthetic. According to the American Association of Nurse Anesthesiology (AANA), CRNAs administer more than 50 million anesthetics every year (AANA, 2022). Nurse anesthetists have been providing safe, high-quality care for more than 150 years. CRNAs provide care in every state in the United States, all branches of the military, and in many foreign countries. They practice in every type of clinical setting in which anesthesia is delivered and are the primary providers of anesthesia care in the rural United States and the military (AANA, 2022). Despite extensive training and a long-standing record of providing excellent patient care, these advanced practice registered nurses (APRNs) are restricted in their ability to practice in many American states.

Background and Significance

Current legislation states that CRNAs must practice under the guidance of an attending Anesthesiologist, a surgeon, a Doctor of Dental Surgery (DDS), or a Doctor of Dental Medicine (DMD) (AANA, 2022). In 2001, the Centers for Medicare and Medicaid Services (CMS) altered their ruling for physician supervision which allowed governors to opt-out of traditional facility reimbursement obligations (AANA, 2022). While 22 of these states, the District of Columbia,

and Guam have full practice authority, the remaining states face regulatory restrictions which only allow CRNAs to practice under this physician supervision. This physician oversight is often misrepresented and misinterpreted to believe that the CRNA is being directly supervised by a physician, however this is not the case. The CRNA delivers much of the anesthetic to the patient independently, but has cooperation and collaboration with a physician according to the documentation record. Due to the regulatory restrictions, many rural and underserved areas across the United States do not have access to enough licensed anesthesia providers. Removal of this supervision would allow for a greater number of surgical patients to receive care at a lower cost to the patient and healthcare institution without significant changes in how practice is currently performed.

According to the American Association of Nurse Anesthesiology (2022) there are currently 22 states, as well as the District of Columbia and Guam, that allow CRNAs to practice independently without physician supervision. These states are listed as opt-out states from the federal physician supervision requirement. This supervision requirement was most recently waived by the Centers for Medicare and Medicaid Services (CMS) as a result of the COVID-19 pandemic (CMS, 2020). The COVID-19 pandemic created a unique situation for healthcare in the United States where measures were taken to increase the ability for patients to receive care. As stated, these measures included allowing "CRNAs to function to the fullest extent allowed by the state, and free up physicians from the supervisory requirement and expand the capacity of both CRNAs and physicians" (CMS, 2020, para. 20). With this temporary ban on the federal physician supervision requirement, it seems to be the perfect opportunity to prove that CRNAs have the knowledge, training, and skills to independently care for the needs of patients and make

this temporary waiver permanent to provide access to care for patients not just during a

pandemic, but always.

System and Population Impact

Pennsylvania is the third largest rural state in America with 21 percent of the state's

population being rural (Healthsystem Association of Pennsylvania [HAP], 2022). This means

that a large portion of the state has limited access to healthcare, however there are 16 critical

access hospitals within the commonwealth that help to serve the needs of these rural areas.

According to the American Association of Nurse Anesthesiology, "many rural hospitals are

critical access hospitals, which often rely on independently practicing CRNAs for anesthesia

care" (2022, para. 3).

The problem is that Pennsylvania still requires CRNAs to have physician supervision to

provide anesthesia, which limits patients' ability to receive this care. With the removal of

physician supervision, CRNAs would be able to increase access to care, especially in rural areas

of the state, prevent delays in surgical treatment, and decrease costs for healthcare institutions

and patients. With the current national debt over 30 trillion dollars, it is critical to discover ways

to decrease national spending. In the United States, healthcare spending is significantly higher

than other developed countries and is projected to continue to rise (Napoletano, 2022). Allowing

CRNAs to practice independently is one way to significantly lower healthcare costs. The

following data provides numbers to prove this fact.

The average cost per CRNA in 2014 was $170,000 while the average cost per

anesthesiologist was $540,314 (AANA, 2020). When restrictions are placed on full practice

authority for CRNAs, health care costs begin to climb. According to the AANA (2020), if a

hospital employed 12 CRNAs, the average cost per year would roughly be two million dollars;

whereas an anesthesiologist only run hospital would cost roughly 5.04 million dollars. Moreover, a 3:1 CRNA to anesthesiologist care team ratio would cost 3.68 million dollars if 12 CRNAs and 4 anesthesiologists were employed (AANA, 2020). Simply put, hospitals can save millions by granting independent practice for CRNAs in Pennsylvania.

Formulating the PICO Question

To look further into this problem and attempt to change practice laws in Pennsylvania, this DNP project highlighted the safety, efficacy, cost, and importance of CRNAs in the U.S. healthcare system. In an attempt to change practice laws in the state of Pennsylvania, a PICO question was developed to look into this topic. The PICO questions reads: "In the state of Pennsylvania, does the implementation of a health policy toolkit discussing the evidence behind CRNA independent practice increase legislative support and active engagement for policy change?" To answer this question a review of current literature on the safety and cost effectiveness of CRNAs was performed.

Purpose & Objectives

The goals, objectives, and expected outcomes for this project were aimed to inform healthcare professionals and legislators in Pennsylvania the positive impact CRNA autonomy can have on the healthcare system and to support legislative change. The overall expected outcome that was evaluated was that with the application of a health policy toolkit, there was an increase in knowledge of CRNA practice, patient outcomes, and cost effectiveness. The health policy toolkit involved three parts which was disseminated to the stakeholders. The toolkit consisted of a comprehensive webinar presentation, a pamphlet containing key data about CRNA practice in the state of PA, and a website providing tangible evidence-based information that fellow practitioners may use to advocate for the profession. Once this information was relayed to

the stakeholders, the expected outcome was that there would be an increased knowledge about the profession to advocate for change in current legislation.

The goals for this project are listed as follows, 50% of participants will agree or strongly agree in the post presentation survey that they have an increased understanding of patient outcomes as it relates to CRNA care delivery and practice in PA. Fifty percent of participants will agree or strongly agree in the post presentation survey that they have an increased understanding of the practice role CRNAs play within the healthcare delivery system in the state of PA. Fifty percent of participants will agree or strongly agree in the post presentation survey that they have a better understanding of the cost-effective measures that CRNA expanded practice and autonomy will provide in the state of PA. Fifty percent of participants will agree or strongly agree in the post presentation survey that CRNA autonomy and expanded practice will help to increase access to care and fulfill shortages in anesthesia services. Fifty percent of participants will agree or strongly agree in the post presentation survey that the health policy toolkit will increase their active engagement in helping to support legislation that will advance the role of CRNAs and allow full practice autonomy.

Chapter II: Literature Review

Search Methodology

Three databases were searched for research pertaining to CRNA independent practice. Google Scholar, PubMed, and CINAHL were searched using the key words "CRNA, CRNA autonomy, nurse anesthetist AND cost-effectiveness, anesthesia care model, CRNA AND patient safety, CRNA AND patient care outcomes, as well as surgery AND anesthesia." Results were limited to only include research pertaining to the cost comparison of CRNA independent practice with that of an anesthesia team model approach with an anesthesiologist and CRNA, and an

anesthesiologist only care model. Research was also limited to that which compared patient outcomes from surgery when the anesthetic was delivered by a CRNA only, an anesthetic was delivered by an anesthesia care model with a CRNA and anesthesiologist, and that delivered solely by an anesthesiologist.

Findings

In a systematic review of level I evidence and quality B of three studies, Hoyem et al. (2019) found that patient outcomes were not statistically different regardless of the anesthesia care model utilized. It was also found that independent CRNA practices are more cost effective as compared to an anesthesia care team model or anesthesiologist only approach. Hogan et al. (2010) published a retrospective cohort study with a sample size of over 50,000 anesthetics delivered looking at labor costs of anesthesia practice models. This study provided level 1 evidence with a quality A rating and looked at anesthesia delivery models in both inpatient and outpatient surgical settings. The research concluded that independent CRNA provided care is more cost effective than the traditional anesthesiologist only model or directed supervision model based on lower salaries for CRNAs and similar quality outcome metrics. Hogan et al. (2010) also stated that some medically directed models, such as 1:1 supervision is not financially sustainable.

The financial implications of healthcare are extremely important to ensure Americans have access to quality care, but another important aspect, which is tied to financial implications, is safety. Yin et al. (2021) identified through an uninterrupted time series observational study of level I, quality A evidence that there was no harmful impact of introducing nurse anesthetists with expanded scope of practice to anesthetic care on patients' safety and the quality of

anesthesia delivered. Moreover, the involvement of nurse anesthetists in anesthetic care was associated with reduced incidence of prolonged stay in the PACU, which is tied to lower costs.

Limitations

Several limitations exist with the research found. The biggest limitation of this research is a lack of sample size and diversity to assess all anesthesia practices in the United States. There are thousands of hospitals and outpatient settings in which anesthesia care is performed, which does not allow for assessment of each institution and how the care model is utilized for these anesthesia providers. The research by Yin et al. (2021) was limited because the data collected regarding adverse events was voluntarily reported, which may mean this data may be falsely low. Also, there is a possibility that anesthesia providers could have changed during the study period and not be reported, which could affect outcomes. The last limitation of this study was that minor postoperative complications were not reported and therefore, excluded from the research data.

Conclusions

Research provides evidence to support CRNA independent practice. This is further supported by the fact that 22 states in America already allow CRNAs to practice free from supervision by a physician and there have been no reported cases of patient harm in these states as a direct result of independent CRNA practice. Compiling this evidence and developing a health policy toolkit that lays the foundation for support of CRNA independent practice in Pennsylvania in a clear and concise manner that is easy to understand supported the goal of this project which was to push policy for legislation guiding CRNA practice in the state.

Chapter III: Organizational Framework of Theory

In this project, the Diffusion of Innovation Theory was utilized to target a wide variety of stakeholders with an effort to suggest change. The Diffusion of Innovation theory developed by

E. M. Rogers in 1962, is a theoretical framework that explains how a new idea becomes adopted

by a targeted social system through diffusion over time (LaMorte, 2019). The result of this

diffusion is that people, as part of a social system, adopt a new idea, behavior, or product. The

key to adoption is that the person must perceive the idea, behavior, or product as new or

innovative. Everett Rogers' Diffusion of Innovation Theory was chosen to assist in

implementing this scholarly project because his theory highlights the use of incorporating and

encouraging early adopters, which mirrors the process of transitioning from antiquated

supervised practice to independent CRNA practice in the state of Pennsylvania.

Conceptual Definitions of Theory

According to Rogers' theory, there are five different types of adopter categories. These

include innovators, early adopters, early majority, late majority, and laggards (LaMorte, 2019).

Innovators are quick to try new ideas and eager to adopt a change. They often are the ones to

develop new ideas, take risks, and need no convincing to try new concepts. Early adopters are

similar in their thinking and often follow the ideas of the innovators, which leads them to accept

change very easily (LaMorte, 2019). LaMorte (2019) explains that those in the later three

categories are less quickly to accept change and need a bit more information prior to adopting

new ideas. The early and late majority make up most of the population and as the title would

suggest, the early majority will successfully adopt an innovation slightly ahead of the average

person, while those in the late majority category are slightly more skeptical and need more

evidence to convince them to change. Laggards are conservative and hesitant to change which

makes it necessary to implement many strategies to appeal to this group of people in order to

show them the evidence supporting the innovation (LaMorte, 2019). The diversity among people

when it comes to the adoption of a new idea, behavior, or product makes it challenging for these innovations to become a reality.

According to Walitzer (2015), there are also five stages in which people adopt a new idea. These five categories include knowledge, persuasion, decision, implementation, and confirmation. The knowledge stage involves acquiring knowledge and awareness about the proposed idea (Walitzer, 2015). Persuasion involves developing positive attitudes toward the idea based on their knowledge gained (Walitzer, 2015). In this stage, people will begin to formulate whether the proposed innovation is better than what has been used prior, how easy, or difficult the innovation is to adopt, whether the innovation can be tested before the adoption is made, and if the innovation can provide positive results (LaMorte, 2019). The decision stage involves the progress of behavioral intentions to implement the idea (Walitzer, 2015). The implementation stage involves putting the idea into practice, and the confirmation stage seeks reinforcement of the implementation and acknowledges the benefits of the innovation (Walitzer, 2015).

Relationship of Theory to Scholarly Project

Our project held multiple stakeholders in each category; SRNAs and CRNAs likely fall into the innovator or early adopter category due to their training, experience in anesthetic management of patients, and desire to practice to their full abilities. Legislators and hospital administrators are likely in the early majority, late majority, or laggard category of adopters. Many of these people are unfamiliar with the education, job responsibilities, and scope of practice of the CRNA. With proper education it is likely that these stakeholders will adopt the proposed change and innovation in the way anesthetic care is delivered. Understanding which participants fall into each category made it easier to appeal to the target audience. For example,

the creation of a pamphlet was beneficial to provide to politicians who may not be familiar with

who CRNAs are or what they do. Also, the presentation of key information through a webinar

with a PowerPoint presentation targeted hospital administrators who want to see how changes

will financially impact their institutions and the combination of all this information helps

CRNAs and SRNAs to feel more confident and able to speak on the facts of their profession and

advocate for independent practice.

Providing key stakeholders with information regarding CRNA practice and how removal

of the federal physician supervision requirement will benefit Pennsylvanians, the

commonwealth, and the health systems within the state is the basis of this project. The

implementation of a health policy toolkit to educate people on CRNA led patient outcomes, cost,

and safety allowed for this project to influence all key stakeholders, regardless of their current

adopter category. This provided the knowledge that will hopefully lead to the decision to support

legislation that leads to the adoption of changes over time for independent CRNA practice in the

state of Pennsylvania.

Chapter IV: Project Design

This project was designed to create health policy change through educational

intervention. This was accomplished with three key pieces, and three members of the Cedar

Crest College DNP Class of 2023 working on this project. Peter Caruso, Quinn Luckenbill, and I

collaborated on this project to identify the legislation guiding CRNA practice, increase

knowledge of the CRNA profession, collect facts about the safety and efficacy of CRNA

practice, and to show that full practice authority for CRNAs can be financially beneficial for

today's healthcare delivery. Mr. Caruso focused on the policy aspect of this project and Mr.

Luckenbill worked on establishing the safety of independent CRNA practice. I focused on the

financial implications of allowing CRNAs to practice without physician supervision. The data

obtained was compiled into a health policy toolkit consisting of a pamphlet, a website, and a

webinar presentation that was exhibited to key stakeholders via Microsoft Teams. This project

was designed to correlate with the five phases of Rogers' Diffusion of Innovation Theory in the

form of a health policy change.

Health policy, in the form of laws, regulations, and scope of practice designations is

important to health promotion and public health in two ways. First, the development of public

health policy has been recognized as a cornerstone in health trends and the direction of public

health (Kickbusch, 2003). Secondly, public health policy is developed to reflect the needs of the

U.S. healthcare system and aims of political action organizations and groups. Despite this stark

recognition, remarkably little work has gone into how different forms of knowledge shape the

development and formation of policy in these areas (Bryant, 2002). Policy change refers to new

direction in terms of existing legislation.

There is a considerable gap between what research shows to be effective practice

standards and the policies that are written by government officials to be enacted and enforced.

The definition of policy is an often broad, all-encompassing term that is used as an umbrella to

cover laws, regulations, and judicial decrees, as well as oversight agency guidelines. For the

purpose of this project, policy will be defined as Pennsylvania Code Title 49 Chapter 21.17

Anesthesia (Commonwealth of Pennsylvania, 1983). The current state of the rule is that:

> "The certified nurse anesthetist is authorized to administer anesthesia in cooperation with
>
> a surgeon or dentist. The nurse anesthetist's performance shall be under the overall
>
> direction of the chief or director of anesthesia services. In situations or health care
>
> delivery facilities where these services are not mandatory, the nurse anesthetist's

performance shall be under the overall direction of the surgeon or dentist responsible for

the patient's care (Commonwealth of Pennsylvania, 1983)."

Two patterns of policy change were identified for use in this project (Garcea, 2009). The

first was normal or routine policy change. In the context of this definition, normal policy change

refers to the simple continuation of existing legislative statutes that contain only slight variations

from the original legislation. Such changes can be classified as incremental changes to meet new

social context or technology. Most policy changes and practice adaptions tend to be a

continuation of prior accepted norms and trends. The second policy change can be classified as

paradigmatic shift. Paradigmatic shift is a more substantial change that represents a

fundamentally new direction in state policy. As the name signifies, this type of policy change

represents a new paradigm or way of thinking regarding a policy issue.

Institutional Review Board (IRB) Approval

To complete this project, IRB approval was needed to be obtained through Cedar Crest

College Institutional Review Board. Formal application was submitted on September 3, 2022.

This project received approval in the form of an exempt review from the Cedar Crest College

IRB on September 9, 2022. According to definition by the Cedar Crest College IRB, exempt

studies have minimal risks for the research subjects. This DNP project posed no physical,

emotional, or mental risks to participants and was not designed to specifically include any

subjects that may be considered high risk. After IRB approval, finalization of the pamphlet,

website, and webinar were able to be completed prior to implementation.

Implementation Plan

Through the creation and dissemination of a health policy toolkit by means of publication

and outreach activities, it was expected that the health policy toolkit would help form the

foundational aspects for a paradigmatic shift in policy in the future. The health policy toolkit

consisted of a 3 distinctive platform approach that was comprised of a pamphlet, an interactive

webinar presentation, and a website to provide Pennsylvania SRNAs, CRNAs, health

administrators, and PA state legislators with information about CRNAs. The educational material

included information outlining:

- Who CRNAs are and their job duties

- Their educational background and their training

- The number, distribution, and utilization of CRNAs in the state of
  Pennsylvania

- Their economic importance to healthcare in Pennsylvania

- Their safety and care outcomes nationally and in states with opt out status.

The health policy toolkit was disseminated in the form of online presentations utilizing

Microsoft Teams. Prior to the presentation a pre-survey was completed by participants.

Following the commencement of the meeting and presentation of the health policy toolkit, a post

evaluation survey was provided to all participants via survey monkey to capture their willingness

and attitudes towards supporting legislation that supports CRNA independent practice and

Pennsylvania becoming an opt out state for supervision requirements.

The measures assessed in this project were CRNA practice in the state of Pennsylvania as

it relates to Pennsylvania Code Title 49 Chapter 21.17 Anesthesia. The desired state was to

amend the law to allow CRNA full practice authority to the full extent of their education and

training. The measure to amend the rule was selected because 22 states, the District of Columbia,

and Guam have full practice authority and the Centers for Medicare and Medicaid Services

(CMS) temporarily lifted the physician supervision requirements for CRNAs during the COVID-

19 pandemic with no adverse outcomes. Encouraging healthcare systems to enable CRNAs to practice to the fullest extent of their education and training increases access to care (CMS, 2020).

The current state of practice for CRNAs in Pennsylvania requires medical direction or medical supervision by a physician colleague with this model of anesthesia care being utilized throughout various Pennsylvania care facilities. The desired state is to enable CRNAs to practice alone, without physician supervision or medical direction and to provide information to help encourage this model of anesthesia care. The care quality outcomes and mortality of CRNA only practice was selected as evidence because it is the most cost-effective model of anesthesia delivery (Cintina et al., 2018). CRNA practice without supervision was also chosen as a quality metric guide because there is no evidence of a difference in patient morbidity and mortality from anesthesia complications between CRNAs and anesthesiologist physicians (Anger, 2015).

The process assessed was anesthesia care only performed by CRNAs compared to that of their physician anesthesiologist colleagues and anesthesia care models that use the existing supervision model. The current state of healthcare delays and increased wait times for anesthesia care related services was also presented as a metric in which CRNA only practice would improve upon. The desired state is to increase anesthesia providers while limiting CRNA cost structure in an effort to eliminate delays and decrease wait times for anesthesia services by granting CRNAs full practice authority in the state of Pennsylvania (Daugherty et al., 2015). The measure to increase anesthesia providers was selected due to the limited access to anesthesia providers in rural Pennsylvania and the healthcare provider shortages being experienced throughout the state (Feyereisen et al., 2020). Once CRNAs are granted full practice authority, the sustainability of the practice will be maintained via the amendment of Pennsylvania Code Title 49 Chapter 21.17 Anesthesia (Commonwealth of Pennsylvania, 1983).

Data Collection

Data collection was done through the completion of a survey by participants of the webinar presentations which was distributed electronically via SurveyMonkey prior to and at the end of every presentation. The health policy toolkit evaluation survey contained six questions in the pre-survey and ten items in the post-survey that assessed audience support of CRNA independent practice and CRNA full scope of practice in Pennsylvania utilizing a 5-point Likert scale with scores ranging from strongly disagree (1) to strongly agree (5). See Appendix A to view the 10 survey questions and the goals of the project that they correspond with.

Various kinds of rating scales have been developed to measure attitudes directly, even when the audience knows their perceptions and attitudes are being studied. The most widely used is the Likert Scale that was developed in 1932. In its most widely used format, the Likert scale is a series of questions that attempt to capture how much an individual agrees or disagrees with a particular sentiment using a five-to-seven-point scale. The range on the scale allows the respondent to indicate their positive to negative strength of agreement or feelings regarding the proposed statements or questions. The Likert scale assumes that under normal circumstances the strength or intensity of an emotion or attitude towards a specific topic is linear and can be captured on a continuum from strongly agree to strongly disagree. Based on this assumption, the Likert scale presents the argument that attitudes can be measured (Barua, 2013).

Each survey was scored and data items from participants responses were transferred to an Excel spreadsheet. The responses captured by the categories in the Likert Scale were able to be compiled from the survey which allowed for the creation of displays of distribution of observations in bar charts with median and mode identification. Likert scales have the advantage that they allow for variation outside of the normal yes or no answer from respondents. Therefore,

quantitative data can be obtained and with a large enough sample size, data can be analyzed with

relative ease to find patterns in responses. Offering anonymity on the survey reduced social

pressure, and thus reduced social desirability pressure so that trends were able to be seen for

identification of future target areas of reinforcement needed in presentations in the future.

Resources Needed

For completion of this project the resources needed included the key stakeholders, the

health policy toolkit which was comprised of the pamphlet, the website, and the webinar, and the

online platforms to deliver the webinar and pre/post survey. This was be done through Microsoft

Teams and SurveyMonkey. Microsoft PowerPoint and Excel Spreadsheet was also used by the

author and team members.

Budget Justification

This DNP project had minimal cost with the potential for benefit for CRNAs, surgical

patients, healthcare systems, and governmental funding. The costs associated with the project

were less than one hundred dollars. There were no costs to participants as the dissemination of

the project occurred through free online platforms. The only requirement was the access to and

use of a device that was capable of accessing the internet to allow the participant to view the

webinar and complete the pre and post survey.

Chapter V: Implementation Procedures and Processes

CRNAs, SRNAs, legislators, and hospital administrators were asked to join DNP students

in the implementation of their scholarly project for an online webinar presentation via Microsoft

Teams. CRNAs and SRNAs were contacted via social media outreach, flyers hung in the CRNA

breakrooms of various hospitals in Pennsylvania, and emails were sent to SRNAs of accredited

CRNA programs in Pennsylvania, excluding SRNAs from Cedar Crest College. Legislators and

their aides, along with hospital administrators were contacted via email. If interested in

participating, the prospective applicants were to email the attached Gmail account. The Gmail

account was created to organize direct communication between the authors and the interested

participants. Inclusion criteria for CRNA and SRNA participants were that they must be

currently practicing or training in the state of Pennsylvania. Legislators must work, currently

live, or actively engage in legislative or regulatory processes in PA, and hospital administrators

must be currently working in a hospital system in Pennsylvania.

After the recruitment method commenced, the participants were emailed a confirmation

to the project which included the implementation dates of the live webinars. The email also

contained a confidential consent for participation in social and behavioral projects to be signed

and emailed back to the authors prior to engaging in the webinar. Multiple webinar dates and

times were offered to accommodate varied schedules. At the start of a webinar presentation, the

participants were asked to complete a six-question anonymous pre survey on SurveyMonkey

which was linked on the Microsoft Teams platform.

Once the pre survey was completed, a thirty-minute webinar presentation was conducted

by the authors. The webinar contained key information relating to the CRNA profession such as

current healthcare legislation in Pennsylvania, healthcare disparities in rural America, CRNA

educational standards, comparison of anesthetics models, CRNA cost effectiveness, and the

safety and efficacy of CRNAs administering anesthesia. There was an opportunity for a question-

and-answer period at the end of the presentation. Additionally, once the presentation was

completed a direct link to the website that was created by the authors was provided to the

participants. This website highlights the information presented and has links specific to CRNAs,

SRNAs, hospital administrators, and legislators. The purpose of this website is for participants to

have direct access to this information on any electronic device, along with references and links to the evidence surrounding this topic. The website will also serve as a modality for continued access to the information regarding CRNA independent practice for future generations to utilize in their discussions and progress towards professional autonomy. Finally, there is a QR code on the website directing the participants to a tangible pamphlet that may be printed at the discretion of the participants. The pamphlet will further address the pertinent information related to CRNAs in Pennsylvania.

Once the webinars were completed, the participants were provided a ten-question post survey via SurveyMonkey in the Microsoft Teams platform. Multiple methods of dissemination were chosen to allow for participants to refer to any of the material as tools to advocate for the CRNA profession. Reminder emails were sent to all participants to offer an additional opportunity for those who may not have completed the survey to do so at this time. The data received from the pre and post surveys were stored on a password protected computer where the password is known only to the authors. All copies of the raw electronic data was encrypted with a similar password. The raw data is only accessible to the authors. Once the pre and post surveys were completed, the data was analyzed against each other via statistical analysis using Microsoft Excel to assess if the goals of the project were met.

Chapter VI: Evaluation and Outcomes

Evaluation

The effectiveness of the health policy toolkit was measured utilizing a pre and post survey that was created via SurveyMonkey. The survey used a Likert scale to score respondents attitude towards the questions asked which can be seen in Appendix A. The survey questions asked the participants to answer from one (strongly disagree) through five (strongly agree) to

assess the efficacy of the toolkit along with the likelihood to support independent CRNA practice in the state of Pennsylvania. In total, 25 participants attended the two-day dissemination period. After compiling the data, 21 of the 25 participants responded to the pre and post survey questionnaire. The results of the survey were then examined for statistical significance using a p-value < 0.05. A paired t-test was used to assess the difference between the pre and post survey scores for each question since the data was collected from two dependent groups (Lambert, 2020).

The pre-survey consisted of 6 questions that were also listed on the post-survey. The p-values of these six questions when analyzed were 0.01, 0.02, 0.001, 0.02, 0.03, and 0.02 respectively. This data shows statistical significance for all measurements assessed when looking at these first six questions of our survey. I have included the average scores of each of these six questions for both the pre and post survey as shown in Figure 1.

Figure 1

Mean Likert Scale Scores
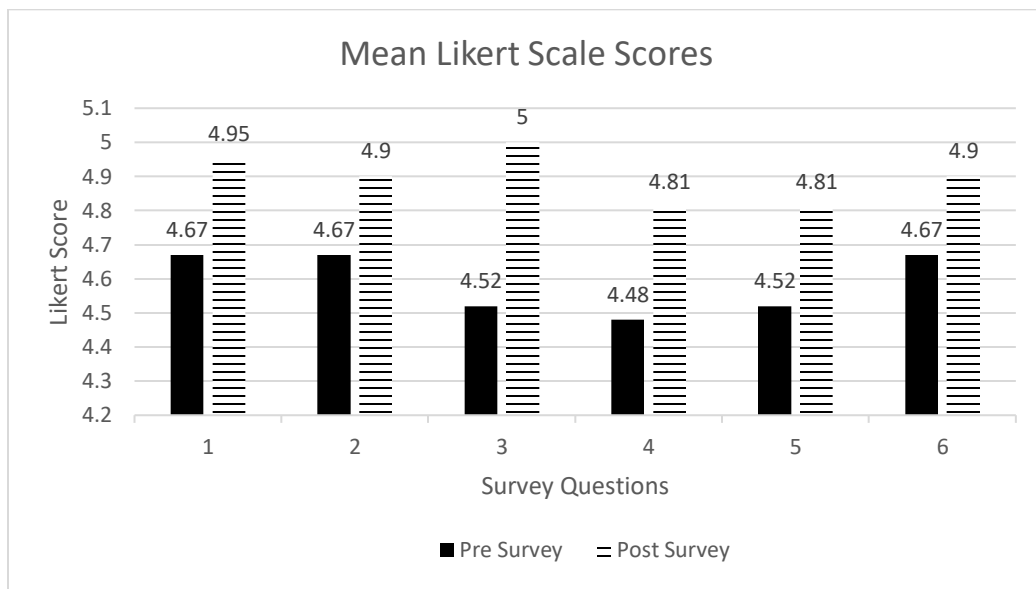
The post survey consisted of 4 questions not listed on the pre-survey to assess the health

policy toolkit and its use for engagement in healthcare policy changes. As shown in Figure 2, all

the participants answered "agree" or "strongly agree" to each of the questions asked. This

provides data to show that the implementation of our health policy toolkit is effective in

educating persons on the role of CRNAs in healthcare, their ability to practice independently,

and the strength of our material in being able to serve as tangible evidence to reference when

advocating for the profession.

Figure 2

Likert Scale Scores of Additional Post Survey Questions
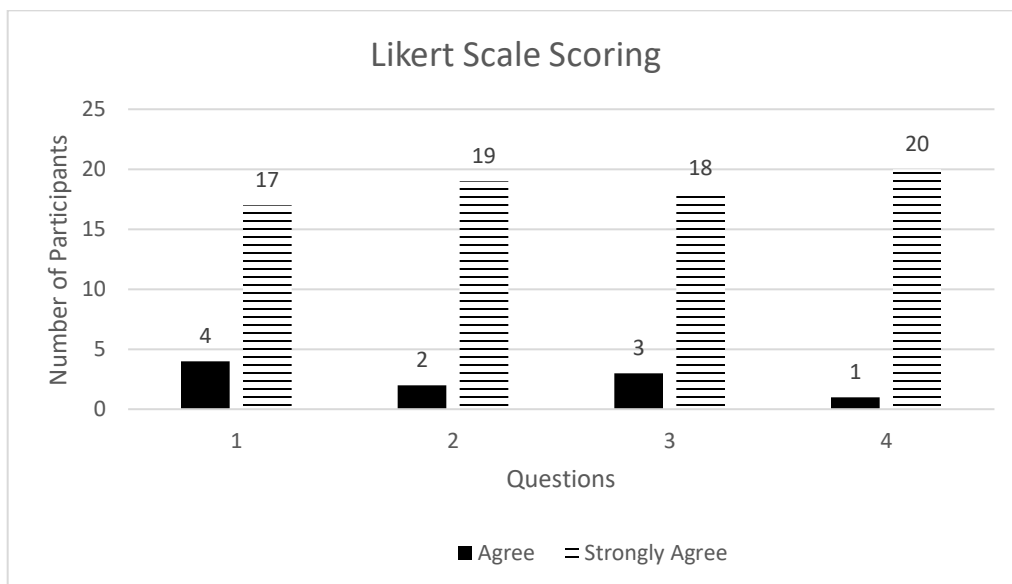
As mentioned above, six of the pre and post survey questions were tested by running a

paired t-test to test for statistical significance to identify if the health policy toolkit increased the

understanding of the role CRNAs play in their profession, cost efficiency of CRNAs, the safety

of CRNA practice, CRNA educational requirements, and current gaps in healthcare coverage in

the state of Pennsylvania. With a set p-value of < 0.05, it was identified that there was a

statistically significant difference between the pre and post survey once the health policy toolkit

was introduced to the participants.

Outcomes

With the evidence to support statistical significance of the implementation of our health

policy toolkit, we can now look at the overall outcomes and potential implications of our project.

First, let's take another look at our PICO question, which reads, "In the state of Pennsylvania,

does the implementation of a health policy toolkit discussing the evidence behind CRNA

independent practice increase legislative support and active engagement for policy change?". To

better answer the PICO question, five SMART (Specific, Measurable, Achievable, Relevant, and

Time-bound) goals were identified. Within each SMART goal were the questions used for the

pre and post survey (see Appendix A). For each SMART goal, 100% of participants agreed or

strongly agreed with each post-survey question. This determined that the utilization of a health

policy toolkit increased the participants knowledge of CRNAs and will encourage active

engagement for health policy change. We were able to find through statistical analysis that a

health policy toolkit does increase support for independent CRNA practice in the state of

Pennsylvania. However, our project extends beyond just statistical significance and has the

potential for important clinical significance. Clinical significance as compared to statistical

significance, is the real-world impact and outreach that this project can have on healthcare

practice, policies, procedures, and patient care. Our goal of this project is to create policy change

that will allow Pennsylvania to become one of the "opt-out" states in America that allows

CRNAs to practice without physician supervision. This will create significant positive changes in

our clinical practice, which starts with the utilization of our health policy toolkit for professional

advocacy.

Discussion

According to the American Association of Nurse Anesthesiology (2022), certified

registered nurse anesthetists have been delivering anesthesia for over 150 years. Of the

anesthesia services provided in rural parts of America, the majority is provided by CRNAs,

largely independently (AANA, 2022). Pennsylvania's policy regarding CRNA practice does not

allow for healthcare facilities to utilize CRNAs to operate under full practice authority, which

limits the access to anesthesia services for many medically underserved communities. There are

many barriers to achieving the goal of full practice authority for CRNAs in the state of PA, but

education may be the most important piece to decreasing the disparity in care that is provided.

A health policy toolkit was created to help educate CRNAs, SRNAs, legislators, and

hospital administrators about CRNAs and current policies in Pennsylvania. The studies and

material used within the health policy toolkit demonstrated multiple examples on the safety of

the care CRNAs provide, the cost-efficiency of utilizing a CRNA only model for anesthesia

delivery, current disparities in anesthesia coverage in underserved areas, and the current

legislation of CRNA practice. If this project were to be completed a second time, it would be

beneficial to shift the focus from education of CRNAs and SRNAs to legislators and hospital

administrators. Including CRNAs was crucial for this DNP project as one of the goals was to

increase CRNA engagement in policy change, however targeting those who directly influence

policy in hospitals and the laws developed in congress and state legislatures could help to create

the needed push to create a real change in the policies governing CRNA practice in

Pennsylvania.

Chapter VII: Implications for Nursing Practice

Implications for Practice

This project was designed to increase knowledge of certified registered nurse anesthetists and their role in healthcare, to provide evidence to show the safety, cost-effectiveness, and efficacy of CRNAs, and to increase advocacy for independent CRNA practice in the state of Pennsylvania. Legislative changes that allow CRNAs to practice without physician supervision will allow more patients to receive anesthesia services at a lower cost and in a timely manner. However, legislative changes take time, knowledge, advocacy, and support. A health policy toolkit was created to educate participants while also providing tangible materials to refer to while engaging in advocacy for policy change. The website and pamphlet can be used to provide evidence and as a reference to enhance legislative support. Data from this DNP project utilizing the health policy toolkit showed that participants would increase engagement in legislative activities and engagement for policy change for CRNA practice. The support can ultimately lead to changes in CRNA practice in Pennsylvania.

Strengths of the Project

As previously stated, the stakeholders of this project were CRNAs, SRNAs, hospital administrators, and legislators. CRNAs were represented well in the implementation portion of the project via a webinar presentation. One strength of this project was the use of Microsoft Teams for the webinar presentation. This platform provided a virtual meeting space that is convenient for allowing participants to join from anywhere that was accessible for them.

One of the greatest strengths of this project was the creation of the website and pamphlet. The authors designed and published a website that houses all the information gathered and presented during the implementation phase of this project. This website served as a source of

information on the policies and legislation guiding CRNA practice that is easily accessible by

anyone and can serve as a tool to support legislative changes for the profession. The pamphlet

also provides a piece of tangible evidence to support CRNA independent practice that is filled

with evidence-based facts regarding the safety and efficacy of CRNAs that can be used to

advocate for the profession to key stakeholders and provide a short summary of the profession to

utilize when looking at possible legislative changes.

Limitations of the Project

Despite the strengths of the project, there were some limitations. The biggest limitation

was the lack of representation of legislators and hospital administrators in the implementation

portion of the project. Ultimately, legislators and members of the state general assembly will

control the laws that govern CRNA practice within the state and these are the persons who have

the ability to pass or deny legislation regarding opt-out status of physician supervision for

CRNAs in Pennsylvania. Hospital administrators then decide the anesthesia model that is

employed within their institution. A few other limitations include a small sample size and sample

bias. Many of the participants in our webinar implementation were CRNAs, who are generally

more pro-CRNA and likely to advocate for independent CRNA practice. However, providing

this information to these persons can have a much larger overall impact by creating and

spreading more awareness regarding the CRNA profession and legislation governing the scope

of practice of these professionals.

Linkage to DNP Essentials

There are eight DNP Essentials as outlined by the American Association of Colleges of

Nursing (AACN, 2006). These eight DNP essentials must be represented in the curriculum of

any Doctor of Nursing Practice (DNP) program as well as in the DNP project to meet

accreditation requirements. These eight essentials guided this project and will be discussed in further detail to follow.

DNP Essential I: Scientific Underpinnings for Practice, was achieved by performing a full literature review to gather evidence-based research relating to CRNA safety and efficacy, which was the beginning and foundation of this project. This literature review highlighted years of safe CRNA practice from a variety of different studies.

DNP Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking was fulfilled by instituting a health policy toolkit to help educate and advocate for policy change. Creating a toolkit that is easy to use and reference when advocating for a change in CRNA practice can be easily transferable in practice and beneficial for all key stakeholders including CRNAs, SRNA, hospital administrators, and legislators.

DNP Essential III: Clinical Scholarship and Analytical Methods for Evidence-based Practice, was met by designing the health policy toolkit and implementing the findings. The data collection was performed using the paired t-test and descriptive statistics. The final dissemination was a poster presentation at Cedar Crest College and a presentation at the Villanova University CRNA/SRNA Virtual Presentation Lecture.

DNP Essential IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care, was met by instituting numerous technological mediums to distribute and implement the findings. An online webinar was conducted as a part of the health policy toolkit on Microsoft Teams. A QR code was placed on the flyers to link the webinar presentation dates. Second, a website was created as part of the toolkit to provide information relating to CRNA practice and important information relating to health care

administrators and legislators. Finally, online software was used to analyze the data from the surveys that were given to each participant.

DNP Essential V: Healthcare Policy for Advocacy in Healthcare, the basis of this DNP project was advocacy for independent CRNA practice and legislative changes to allow this model of care. Two of the four key stakeholders for this DNP project included healthcare administrators and legislators due to their ability to affect policy change within the state and healthcare institutions. The information included in the webinar, website, and pamphlet refer to the current policies and standards of practice that are instituted in Pennsylvania and evidence to show the safety of CRNA practice as well as a cost benefit to utilizing CRNAs in practice.

This project provided information on the positive impact CRNAs have on hospital costs, patient outcomes, and relieving disparities in healthcare access to underserved communities in Pennsylvania, which fulfills DNP Essential VI: Interprofessional Collaboration for Improving Patient and Population Health Outcomes. Employing CRNAs to work autonomously can help provide equitable anesthetic services, while also promoting safe and cost-effective care, which can lead to positive population health outcomes, especially in rural parts of Pennsylvania as highlighted above.

DNP Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health will be fulfilled through dissemination of this DNP project and its results. The AACN (2006) defines this essential as improving the health status of the population in the United States regardless of age, gender, culture, occupation, or socioeconomic status. Providing the tools to help implement change in healthcare policy for CRNA practice provides the opportunity to increase patient access to anesthesia services. The information and data amassed during this DNP project along with the evidence supporting legislative change in CRNA practice

served as a guide to improving healthcare disparities and advancing the CRNA profession. The

health policy toolkit served as a gateway for change to the CRNA profession in Pennsylvania.

Lastly, DNP Essential VIII: Advanced Nursing Practice, was met through clinical

practice requirements, as well as simulation-based education and training. The author functioned

as a member of the anesthesia care team at different healthcare facilities in Pennsylvania. The

author worked with this team to provide evidence-based care to patients requiring anesthesia

services. Along with completing the required clinical hours, simulation-based education training

was completed at Cedar Crest College campus in the operating room-based simulation center.

Chapter VIII: Summary of Project

Summary and Conclusions

In conclusion, there are currently 22 states, the District of Columbia, and Guam that have

enacted legislation to opt-out of the physician supervision requirement for CRNAs. Lack of

knowledge regarding policy and legislation governing CRNA practice, decreased engagement in

professional advocacy, and complacency in the workplace are all factors that contribute to the

inability to pass legislation allowing for independent CRNA practice in Pennsylvania.

The creation of the health policy toolkit provides the necessary information to advocate

for "opt-out" status in PA. This toolkit compiles all the necessary data in an easy-to-find and

easy-to-use platform, which will make advocacy easier and less intimidating for both new and

experienced members of the profession.

Dissemination Plans

This project was first disseminated virtually for a Pennsylvania Association of Nurse

Anesthetists event hosted by Drexel University Nurse Anesthesia Program on March 9, 2023.

The subsequent dissemination of this DNP project took place at Cedar Crest College on April 20,

2023. This date was the Doctor of Nursing Practice Scholarly Project Presentations event with the faculty and students of Cedar Crest College, along with CRNA clinical coordinators from various clinical sites.

Future Ideas

The goal of this project is to provide lasting changes to the legislation governing CRNA practice in Pennsylvania to benefit practitioners, healthcare systems, and patients. The authors understand that this is a process; therefore, the health policy toolkit, including the website and pamphlet, can be utilized for years to come while working towards achieving "opt-out" status for CRNAs in Pennsylvania. The toolkit will be shared by the authors with future colleagues in the workplace, SRNAs in clinical rotations, at CRNA conferences with PANA board members, and in meetings with legislators while advocating for the profession. The authors may not see a direct effect of this DNP project, but the goal is that it will make a longstanding positive change for the CRNA profession.

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Appendix A

DNP Project SMART Goals

SMART Goal #1:

50% of participants will agree or strongly agree in the post presentation survey that they have an

increased understanding of patient outcomes as it relates to CRNA care delivery and practice in

PA.

Survey Questions:

1. I have a good understanding of the role that CRNAs play in the delivery of anesthesia

   services to patients.

2. The provision of anesthesia care as it relates to patient outcomes is equally as safe and

   effective under CRNA delivery as other anesthesia providers.

SMART Goal #2

50% of participants will agree or strongly agree in the post presentation survey that they have an

increased understanding of the practice role CRNA play within the healthcare delivery system in

the state of PA.

Survey Questions:

3. Evidence shows that CRNA training and education requirements are effective to support

   independent practice.

4. After being presented with the health policy toolkit, I have an increased understanding of

   the role that CRNAs play within the healthcare delivery system in the state of PA.

SMART Goal #3

50% of participants will agree or strongly agree in the post presentation survey that they have a better understanding of the cost-effective measures that CRNA expanded practice and autonomy will provide in the state of PA.

5. Research has shown that CRNAs having full practice authority would decrease costs associated with anesthesia care in the state of PA.

6. Cost effectiveness was made apparent throughout this presentation, the reduction in healthcare associated costs plays a major role in the consideration for policy change.

SMART Goal #4

50% of participants will agree or strongly agree in the post presentation survey that CRNA autonomy and expanded practice will help to increase access to care and fulfill shortages in anesthesia services.

Survey Questions:

7. There is an increased need for anesthesia providers in my area.

8. CRNAs having full practice authority would help fulfill anesthesia provider shortages throughout PA.

SMART Goal #5

50% of participants will agree or strongly agree in the post presentation survey that the health policy toolkit will increase their active engagement in helping to support legislation that will advance the role of CRNAs and allow full practice autonomy.

Survey Questions:

9. I will reference the health policy toolkit to promote active engagement by a vast majority of stakeholders to support and encourage legislation for CRNA full practice autonomy in PA.

10. After viewing this presentation, I am more likely to support or engage in activities that support full practice authority for CRNAs in Pennsylvania.

**Questions 4, 6, 9, and 10 will only be answered after completion of the webinar presentation.

Appendix B

Likert Scale

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Appendix C

Recruitment Flyer for DNP Project Implementation

Removing Barriers to Practice: Achieving autonomy for Certified

Registered Nurse Anesthetists through Education, Engagement,

and Policy Change

An Educational Session hosted by:

Mitchell Dent, Peter Caruso, & Quinn Luckenbill

Join us for a webinar presentation to learn more about the role of CRNAs in healthcare, anesthesia practice models with a focus on CRNA independent practice, and legislation that governs the practice of CRNAs in the state of Pennsylvania.

Dates: Thursday, February 2, 2023   6:00 pm – 6:30 pm

                   Saturday, February 4, 2023   10:00 am – 10:30 am

Location: Microsoft Teams

SCAN ME

Please email ccc.dnp2023@gmail.com to register for this event or scan the QR code above. Be sure to include the date you are signing up for in the email.

Doctorate Project Implementation by SRNAs from Cedar Crest College

This DNP project was approved by Cedar Crest College IRB no. 434 on September 9, 2022.

Appendix D

Educational Pamphlet

CRNAs: Educated Care

Patients, caregivers and administrators must have confidence in the professionals providing healthcare. As highly educated, advanced practice registered nurses, CRNAs deliver anesthesia to patients using the same procedures as physician anesthesiologists. With an average of three and a half years of critical care experience before entering a nurse anesthesia program, CRNAs are well prepared to respond appropriately in emergencies. They are the only anesthesia professionals with this level of critical care experience prior to beginning formal anesthesia education.

Additionally, nurse anesthetists attain seven to eight years of education, training and work experience. Today's CRNAs enter the workforce with a master's or doctoral degree. CRNAs must receive their master's or doctoral degree from a program accredited by the Council on Accreditation of Nurse Anesthesia Educational Programs (COA). By 2025, all CRNAs will receive a doctoral degree from a program accredited by the COA.

Get In Touch

Contact Information

✉ **E-mail Address**
ccc.dnp2023@gmail.com

📍 **Our Website**
www.cccdnp2023-pacrnapractice.com

When anesthesia is administered by a nurse anesthetist, it is recognized as the practice of nursing; when administered by an anesthesiologist, it is recognized as the practice of medicine. While all anesthesia professionals deliver the same anesthetics, anesthesia care delivered by a CRNA is especially well-suited to meet the needs of today's changing and challenging healthcare environment. Key benefits of CRNA-delivered anesthesia care include:
- Most cost-effective anesthesia care model
- Ensures access to anesthesia in medically underserved communities where surgical, obstetric, and trauma services otherwise would not be available
- Consistently provides a safe anesthesia experience and quality outcome for each patient
- Extensive preparation for handling emergency situations
- Healthcare team members count on CRNAs to provide services beyond anesthesia care

Advocating for CRNA Independent Practice in Pennsylvania

WE ARE CRNAs

Certified Registered Nurse Anesthetists (CRNAs) have been providing anesthesia care to patients in the United States for more than 150 years. CRNAs collaborate with surgeons, anesthesiologists, dentists, podiatrists, and other qualified healthcare professionals to deliver safe, high-quality, and cost effective patient care in virtually every healthcare setting.

Why Choose CRNAs

As U.S. healthcare providers brace to handle providing care to millions of new customers, managing costs is of paramount concern. The challenge – find ways to improve patient access to safe, quality care without over-burdening the system.

Enter the CRNA. These trained professionals deliver the same safe, high-quality care as other anesthesia professionals but at a lower cost. In fact, a landmark study published in 2010 by Hogan et al. in *Nursing Economics* found that the most cost-effective anesthesia delivery model is a CRNA working as the sole anesthesia provider. Because Medicare pays the same fee for anesthesia services provided by a CRNA, an anesthesiologist, or both working together, the higher compensation of the anesthesiologist is borne by the hospital, healthcare facility or patients. Legislation passed as part of the Affordable Care Act promotes coverage of CRNA services within their scope of practice, so health plans support a competitive, high-quality healthcare marketplace. And most managed care plans recognize CRNAs for providing high-quality anesthesia care with reduced expenses to patients and insurance companies.

- CRNAs are responsible for patient safety before, during and after anesthesia.
- CRNAs sustain a patient's critical life functions throughout surgical, obstetrical and other procedures.
- CRNAs are uniquely prepared to assess, identify and manage the care of patients suffering from acute and/or chronic pain.
- CRNAs select and administer other types of drugs to preserve life functions.
- CRNAs analyze situations and respond quickly and appropriately in emergencies.
- And CRNAs provide that special spirit of caring that is unique to all nurses.

Service & Provide

What We Can Do

Affordable healthcare available to everyone remains a primary goal of today's healthcare system, even with the influx of more and more customers. CRNA-managed anesthesia care allows healthcare providers to prevent gaps in access and continue to deliver much-needed services in thousands of communities. When access is the problem, CRNA-administered anesthesia care is often the first, best solution:

✓ CRNAs are the primary providers of anesthesia care in rural America, with 22 states recognizing CRNAs ability to practice independently.

✓ In some states, CRNAs are the sole anesthesia professionals in nearly 100 percent of rural hospitals

✓ CRNAs provide tens of millions of rural Americans access to surgical, obstetrical, trauma and pain management services. This means individuals don't have to travel long distances to receive needed care. Without those services, local hospitals in rural communities could not exist. And without local rural hospitals, the viability of rural communities would be very much at risk.

CRNA Safe Care

Like all healthcare professionals, a quality outcome for each patient is the main mission of the CRNA. Like all professionals, nurse anesthetists take steps every day to consistently deliver on this mission. In the U.S., deaths attributed to anesthesia during surgery are extremely rare. These rare events only occur approximately once in every 250,000-300,000 anesthetic cases, regardless of the type of provider.

Several landmark studies confirm that CRNAs achieve the same level of safety and quality as their physician counterparts. Most recently, the study by Sun et al. (2018) entitled *Anesthesia Care Team Composition and Surgical Outcomes* confirmed that researchers consistently find anesthesia care is equally safe whether provided by a CRNA working alone, an anesthesiologist working alone or a CRNA working with an anesthesiologist.

Not surprising, laws, rules or regulations in well over half of all states do not require physician supervision of CRNAs. And 22 states have opted out of the federal Medicare requirement that calls for physician supervision of CRNAs. In the operating room, surgeons quite properly defer to nurse anesthetists as the experts in anesthesia care, regardless of whether their state requires physician supervision.