

BARRIERS TO PRACTICE: UNDERSTANDING PHYSICIAN AND HOSPITAL
ADMINISTRATOR KNOWLEDGE, BELIEFS, AND ATTITUDES OF THE ROLE
AND SCOPE OF PRACTICE OF ACUTE CARE NURSE PRACTITIONERS IN THE
ACUTE CARE SETTING IN RURAL MONTANA

by

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ABSTRACT

Purpose: to describe the knowledge, beliefs, and attitudes of physicians and hospital administrators regarding the role and scope of practice of acute care nurse practitioners in rural Montana.

Background: Nurse practitioners have been increasingly called upon to provide high quality and cost-effective healthcare in variety of settings and have consistently shown to provide a high-level of patient care in both the primary and acute care settings. The acute care nurse practitioner specialty is relatively new, and with very few licensed acute care nurse practitioners in the state of Montana, the role and scope of practice is not well understood by physicians and hospital administrators who are often tasked with hiring and recruiting providers in the hospital setting. The Consensus Model, which served as the conceptual framework for this project, advocates that nurses provide care for the population that is specific to their licensure, accreditation, certification, and education.

Method: Some 28 physicians and hospital administrators completed a survey that included 21 Likert scale statements that were divided into the subscales of Knowledge, Belief, and Attitude.

Results included: 1) An existing gap in knowledge regarding the role and scope of practice of acute care nurse practitioners, 2) acute care nurse practitioners should always have some form of physician oversight, and 3) there is disparity in patient outcomes when patient care is provided by nurse practitioners.

Conclusion: Attitudes of survey respondents were overwhelmingly positive for the future of acute care nurse practitioners filling various provider roles in the hospital setting. These results can provide a foundation for future inquiry and can assist in the development of education and

collaborative efforts to further advance the utilization of acute care nurse practitioners in Montana.

INTRODUCTION

Nurse practitioners (NPs) currently represent a significant and growing segment of healthcare professionals who have been called upon to provide high quality and cost-effective health care in a variety of settings. As a result, there has been a significant increase in advanced practice nursing specializations. The acute care nurse practitioner (ACNP) specialty is in its relative infancy. Beginning in the late 1980s there was an increased need for nurse practitioners to fulfill a need in the hospital setting. As primary care NPs began accepting positions in the hospital setting, the need for educationally and clinically prepared ACNPs became apparent due to an increased need in hospital-based providers and the first graduate programs specific to the acute care population began (Schroeder, 2008). The vast majority of the roughly 234,000 NPs in the United States are licensed and certified to practice in the area of primary care. A small fraction of all licensed NPs are licensed and certified to work in the acute care setting, with an even smaller percentage licensed and certified to work with the adult population in the acute care setting (American Association of Nurse Practitioners [AANP], 2017).

ACNPs are prepared to care for acutely or critically ill and/or potentially unstable patients who require frequent monitoring and/or intervention, while family nurse practitioners (FNPs) are prepared to care for medically stable patients, as well as to provide episodic treatment for acute illnesses and minor acute injuries (Mundinger et al., 2006). However, the role of the ACNP is relatively new and when practices or institutions employ nurse practitioners to care for acutely or critically ill patients in the acute care setting in rural Montana, the clear majority are educated as FNPs, not ACNPs. This is in the context of existing research that has examined the benefit of the ACNPs ability to provide competent and safe patient care to the acutely or

critically ill patient in the acute care setting (Hoffman, Tasota, Zullo, Scharfenberg, & Donahoe, 2005; Morris et al., 2012).

The Problem Statement

Physicians and hospital administrators in rural Montana are often unfamiliar with the role and scope of practice of ACNPs and how the educational and clinical preparation differs from other nurse practitioner specialties. This has contributed to an underutilization of ACNPs in the acute care setting in rural Montana. This has also contributed to some hospital systems refusing to allow any NPs to work in the acute care setting. The study question posed in this project is, “What is the knowledge, beliefs, and attitudes of physician and hospital administrators regarding the role and scope of practice of acute care nurse practitioners in rural Montana?”

Project Purpose

The purpose of this project was to describe these knowledge, beliefs, and attitudes, and identify gaps in current knowledge and potential unsubstantiated beliefs and negative attitudes. Results from this project may then be used to educate acute care based physicians and hospital administrators and ultimately to improve the utilization of ACNPs in the hospital setting of Montana. The knowledge gained from this project will service as a starting point for large studies in the future and provide a framework for future physician and hospital education about the role and scope of ACNPs, improve the utilization of this role in the hospital setting, and make progress towards NPs in Montana working to the full extent of their education and training.

Conceptual Framework

In an effort to standardize education and licensure regulations for advanced practice registered nurses (APRN's) and ensure consistent high-quality health care across all 50 states,

the Advanced Practice Nursing Consensus Work Group and the National Council of State Boards of Nursing APRN Committee joined forces to create the Consensus Model for APRN Regulation: Licensure, Accreditation, Certification & Education (2008), which served as the conceptual framework for this project. This new consensus model, which has been endorsed by 48 organizations representing many different nursing professional and regulatory groups, successfully developed a single regulatory model for the four APRN roles, which includes registered nurse anesthetists, certified nurse-midwives, clinical nurse specialists, and certified nurse practitioners (APRN Joint Dialogue Group Report, 2008).

The Consensus Model

The *Consensus Model* (APRN Joint Dialogue Group Report, 2008) provides a clear definition of the APRN based on the individual's graduate level preparation, and successfully passing a national certification exam. The standards for the APRN were further developed based upon licensure, accreditation, certification, and education. The National Consensus Model for APRN Regulation advocates that nurse practitioners will provide care for a patient population that is specific to their educational didactic and clinical training, and based upon their certification. In this model, six distinct population foci were identified for entry level certification for nurse practitioners: psychiatric-mental health NPs (MHNPs), neonatal NPs (NNPs), adult NPs (including acute care NPs [ACNPs]), family NPs (FNPs), and gender related NPs (i.e., women's health NPs).

The essential components of the *Consensus Model* include the following:

Accreditation

Accreditation is the formal review and approval of an educational program by a recognized authority or agency. This plays an important role in ensuring that each educational program meets national standards. For accreditation to occur, APRN graduates must be competent in the population for which they will be certified and licensed (APRN Joint Dialogue Group Report, 2008).

Certification

Certification is the credentialing mechanism that assures practice consistent with established standards. Certification examinations should be legally defensible and psychometrically sound, evaluate national competencies in the APRN core and population focus of practice, enforce congruence between education and the selected certification examination, assure ongoing competence of certified individuals, and be accredited by a national certification accrediting organization (APRN Joint Dialogue Group Report, 2008).

Education

Education is essential in assuring eligibility for certification and licensure of NP graduates and subsequent ability to practice professionally. In order to meet the expectations of the *Consensus Model*, educational programs need to follow established standards for education and use recognized competencies and population foci as a basis for their content. Accreditation must be attained before students are allowed to enroll in a program. It is the responsibility of the educational institution to ensure that graduates are eligible for both licensure and certification in a specific population focus (APRN Joint Dialogue Group Report, 2008).

Licensure

Licensure is the final requirement before an NP enters practice. State Boards of Nursing should provide the final verification that an accredited educational program prepared the NP to practice in one of the six population foci and that the NP has demonstrated entry-level competence by obtaining the national certification that is congruent with their education. This step provides the final review prior to entry into practice (APRN Joint Dialogue Group Report, 2008).

Background

Despite the call for nurse practitioners to practice in the settings and with the patients that they were trained and certified to work with, the healthcare needs of the U.S. population and the settings in which they seek care do not always correlate with these well-defined categories (Keough, Stevenson, Martinovich, Young, & Tanabe, 2011). In addition, even though the *Consensus Model* has received widespread endorsement, it is not legally binding and the ultimate onus of NP regulation lays in the individual State Boards of Nursing and in states, such as Montana, where the NP practice act is extremely broad – the decision of where an NP works is often made by the hiring institution or to the proclivity of the individual nurse practitioner. Montana is one of the 15 states that has fully implemented the *Consensus Model* and requires licensed APRNs to practice only in the role and population focus in which they have current national certification (Buppert, 2018). However, this tends to be loosely enforced and broadly interpreted.

In a rural state like Montana, the number of FNPs far outweigh the number of ACNPs. While FNPs work mainly in the primary care setting in which they were educated and certified

for, there are many FNPs working in the acute care setting, including emergency departments, on hospitalist services providing the general medical management of acutely ill patients, and in the intensive care unit. Although little current evidence exists, anecdotal evidence reveals that physicians and hospital administrators in rural Montana who are often the necessary driving force behind hiring NPs in the acute care setting often lack a clear understanding of the difference in preparation and certification of ACNPs vs FNPs (Lindeke, Jukkala, & Tanner, 2005). Studies conducted in other states have found that a common barrier to nurse practitioner practice is lack of knowledge and confusion of NP scope of practice by physicians and other healthcare providers (Hain & Fleck, 2014). At a time when collaboration between NPs, physicians, and hospital administrators is of vital importance to achieve best practices, this lack of understanding inhibits the common goal of improving patient outcomes. Many healthcare organizations in Montana still follow the traditional medical structure, where physicians are often seen as the leaders of the healthcare team.

The lack of physician and hospital administrator understanding of the ACNP role may also contribute to certain hospital systems in Montana being reluctant to allow any NPs into the acute care setting. An important message from the Institute of Medicine's 2010 report on the future of nursing indicates that nurses should be working to the fullest extent of their individual education and training and be full partners with physicians and other healthcare professionals (Institute of Medicine, 2010). If the individuals tasked with hiring NPs in the acute setting were aware of the ACNPs scope of practice, didactic and clinical education, and certification, it could prove invaluable in attaining the Institute of Medicine's goals for the future of nursing practice.

The reasons FNPs in Montana choose to work outside their scope of practice are not clearly understood and are likely multifactorial in nature. Nurse practitioners will often rely on bedside nursing experience from their time as registered nurses and upon their clinical areas of interest when applying for an NP position without fully understanding the implications of working outside their scope of practice (Haut & Madden, 2015). The previous experience of the registered nurse can be inappropriately perceived as providing an NP that does not have an ACNP certification with the necessary qualifications to manage an acutely ill deteriorating patient in the intensive care unit setting (Kleinpell, Hudspeth, Scordo, & Magdic, 2012). The individuals charged with hiring ACNPs, including physicians and hospital administrators, might not understand the difference in clinical preparation, regulations, and certifications of ACNPs vs. FNPs.

ACNP and Primary Care NP Scope of Practice and Core Competencies

The National Organization of Nurse Practitioner Faculties (2011) has defined scope of practice as the “procedures, actions, and processes permitted for a licensed individual in a specific profession. Scope of practice is limited to areas of practice for which the individual has received education and gained experience, and in which he or she has demonstrated competency.” The American Nurses Association (2010) defines scope of practice as the “who, what, where, when, why and how,” of nursing practice. Population specific scopes of practice are developed by national organizations, based upon the nurse practitioner specialty role. Although there is some overlap between the scope of practice of FNPs and adult ACNPs, many elements are specific to each specialty. The American Association of Colleges of Nursing and The National Organization of Nurse Practitioner Faculties (2012) developed competencies that are

specific to the adult ACNP that are not part of the scope of practice of a FNP. For example, the adult ACNP should be able to manage care, perform interventions, and sustain or restore the physiological and psychological function of a patient with a rapidly deteriorating physiologic condition. Another core competency of the adult ACNP is to implement interventions and support the patient based on fundamentals of critical care support. The adult ACNP should also be able to manage complex, acute, critical, and chronic physical problems (American Association of Colleges of Nursing [AACN], 2012). Likewise, many core competencies are specific to FNPs that are not included in the core competencies of adult ACNPs. For example, FNPs should be able to identify health and psychosocial risk factors of patients of all ages and families in all stages of the family life cycle. FNPs are also called upon to assess the impact of an acute and/or chronic illness or common injuries on the family as a whole and to properly perform primary care procedures (AACN, 2013).

The National Organization of Nurse Practitioner Faculties states that an NPs formal preparation from their graduate education, and its connected certification, should be the determining factor in an NPs scope of practice (National Organization of Nurse Practitioner Faculties [NONPF], 2011). The NONPF Statement on Acute Care and Primary Care Nurse Practitioner Practice outlines the obligation that NPs must adhere to their own scope of practice regardless of how an institution defines their roles and responsibilities. (2011). An appropriate avenue for a primary care NP to work in the acute care population would include pursuing post-graduate preparation in that field. This would also be true for ACNPs who desire the ability to work in the primary care setting. The report further highlights the need for NP educational programs to narrow the population focus for formal APRN education to support the scope or

practice rather than place value on pre-APRN education or on-the-job training. Ultimately, patient safety is jeopardized when NPs practice outside their scope of practice (The National Organization of Nurse Practitioner Faculties, 2011).

Project Aims and Concept Definitions

This project aimed to describe the knowledge, attitudes, and beliefs of physicians and hospital administrators regarding the role and scope of practice of ACNPs in the state of Montana to fill an existing gap in knowledge among individuals so often charged with responsibility of hiring and recruiting hospital providers. The increased awareness may fuel education about the unique skill set, training, and expertise of ACNPs, therefore expanding the current role of ACNPs in Montana.

Aim #1

Examine the knowledge, beliefs, and attitudes of physicians and hospital administrators concerning acute care nurse practitioners working in the acute care/hospital setting.

Aim #2

Examine hospital administrators' and physicians' practicing in a rural Montana hospital knowledge of the role and scope of practice for the ACNP.

Concept Definitions

For this study, the “acute care setting” is defined as hospital based and includes the emergency department as well as other specialty areas within the hospital. The concept of *Knowledge* is defined as the “accumulated external and explicit information belonging to the community, being leveraged by tacit intrinsic insights which originate within individuals who then may act alone or cooperatively in order to control or integrate with their environment.”

Belief is defined as the “assent to a proposition or affirmation, or the acceptance of a fact, opinion, or assertion as real or true, without immediate personal knowledge.” The concept of *Attitude* is defined as “a disposition or tendency to respond positively or negatively towards a certain thing (idea, object, person, and situation). They encompass, or are closely related to, our opinions and beliefs and are based upon our experiences” (Jiwa, McManus, Dadich, & Hewitt, 2012, p. 4).

Assumptions

The scarcity of licensed ACNPs in the state of Montana and the relative newness of this APRN specialty have contributed to physicians and hospital administrators in the acute care setting having a limited knowledge of the ACNP role and scope of practice. This knowledge deficit has contributed to unsubstantiated beliefs and sometimes negative attitudes regarding ACNPs and other nurse practitioner specialties in the acute care setting of Montana.

LITERATURE REVIEW

Design of Literature Review

A comprehensive review of the existing literature relevant to this project was performed using several scholarly academic databases. Both PubMed and CINAHL were the primary databases utilized in the literature review, with Cochrane Library and Google Scholar also accessed. Search terms include “barriers to practice” and “acute care nurse practitioner,” “barriers to practice” and “acute care nurse practitioner and rural setting,” “barriers to practice” and “nurse practitioner,” “role and scope” and “acute care nurse practitioner,” “role and scope and “family nurse practitioner,” “family nurse practitioner” and “acute care setting,” “patient outcomes” and “acute care nurse practitioner,” “patient outcomes” and “family nurse

practitioner.” In PubMed, MeSH database search terms included “nurse practitioner” and “attitude” and “physician,” “nurse practitioner” and “perception” and “physician,” and “nurse practitioner” and “hospitalization” and “outcome assessment.” Efforts were made to utilize the most current available research, though this was often difficult related to a dearth of available evidence concerning this topic, especially studies that were specific to the acute care setting and studies conducted in a rural setting. Because of the limited availability of relevant literature pertinent to the topic, studies in the setting of primary care were utilized despite a desire to utilize research occurring in the acute care setting.

Barriers to Practice

Knowledge, Beliefs and Attitudes

Several barriers to NP practice were identified during the literature review. In general, these barriers were divided into three separate categories, which include state and federal practice and licensure issues, insurance payer issues, and inter-professional barriers, which includes physician and hospital administrator perceptions and beliefs. The literature review for this project concentrated more specifically on the inter-professional barriers to practice. At the heart of these inter inter-professional professional barriers is the unsubstantiated belief that nurse practitioners are unable to provide high quality health care and lead clinical practices without the direct supervision and oversight of a physician (Dillon & Gary, 2017). The American Academy of Family Physicians issued a report where they cautioned the public and leaders in healthcare against the creation of a two-class system of healthcare. The report described these two classes as the first being led by qualified and well-trained physicians and the other class by “less qualified health professionals” (Goertz, 2012). This report goes on to say that, NPs are not qualified or

adequately trained to fulfill the duties of a physician. Unfortunately, several inaccuracies and assertions are presented in the article. The author argues that NPs should not be allowed to practice with full autonomous authority because of their likelihood to misdiagnose, miss obvious and potentially life-threatening problems, and make prescriptive errors (Goertz, 2012). These statements are in direct contradiction to over forty years of evidence in the primary care setting, and more recently in the acute care setting, and are contrary to the recommendations of the Institute of Medicine, which states “advanced practice registered nurses should be able to practice to the full extent of their education and training” (Institute of Medicine, 2010, p. S-8).

Many physician-led professional organizations have fought vigorously to prevent NPs from achieving full practice authority. The American Medical Association (AMA) asserts that because physicians have a longer and more rigorous training than NPs, that NPs are therefore incapable of providing quality and safe healthcare at the same level as their physician colleagues (American Medical Association, 2010). In Florida, NPs have been struggling for years to attain full practice authority and have been met with significant resistance from various medical groups. A “fact sheet” that was created by the Florida Medical Association (FMA) and sent to all its members’ strongly opposed independent practice of NPs in their state. The document included concerns related to major differences in educational preparation, an NPs ability to safely prescribe controlled substances, shortages of physicians should be met with an increase in physician providers not NP providers, and that lesser qualified NPs should always have physician oversight (Hain & Fleck, 2014).

One important study that evaluated the attitudes and perspectives of primary care NPs vs. primary care physicians regarding scope of practice found that respondents’ attitudes differed

significantly on every measure of scope of practice evaluated in the study. The study surveyed 505 primary care physicians and 467 primary care nurse practitioners. Study participants were asked to rate their level of agreement or disagreement with a number of pertinent statements. A large number (95.6%) of nurse practitioners and physicians (76.3%) agreed with the statement that nurse practitioners should be able to practice to the full extent of their education and training. When asked if NPs should be allowed to lead medical homes, 17.2% of physicians surveyed agreed with the statement compared to 82.2% of NPs (Donelan, DesRoches, Dittus, & Buerhaus, 2013). When asked if NPs should receive the same monetary compensation for providing equivalent services only 3.8% of physicians agreed vs. 64.3% of NPs. When asked if physicians provide a higher quality of examination and consultation than NPs, 66.1% of physicians agreed and approximately 75.3% of nurse practitioners disagreed. Interestingly, in statements that focused on actual services provided, both NPs and physicians agreed that most services were performed by both types of providers. The only exception was when respondents agreed with the statement that NPs could provide adequate care for complex chronic conditions that are complicated by co-occurring conditions, with 67.7% of NPs agreeing with that statement compared to 28.3% of physicians (Donelan et al., 2013).

Nurse Practitioner Patient Outcomes

In an effort to confirm or disprove the assertions, perceptions, and beliefs physicians have about NP practice and their ability to perform competent and safe patient care, it was important to comprehensively examine current literature on patient outcomes when care is provided by ACNPs vs. their physician counterparts in the acute care setting and examine patient outcomes when care is provided by family NPs vs. their physician counterparts in the primary care setting.

Nearly all the evidence that examines patient outcomes when care is provided by either FNPs or ACNPs is setting specific. The majority of these studies examine NP practice in the primary care setting with a much more anemic evidence base in the acute care setting.

Patient outcomes of care provided by FNPs working autonomously in the primary care setting has been widely studied for over forty years. In the 1970s, rigorous randomized trials were conducted that showed NP care comparable to that provided by a physician. The landmark Burlington Randomized Trial of the Nurse Practitioner found definitively that NPs could provide “primary clinical care as safely and effectively, with as much satisfaction to patients, as a family physician” (Spitzer et al., 1974, p. 255). More recently, the Department of Veteran Affairs issued an evidence brief on the quality of care provided by independent advanced practice nurses in the primary care setting. In their exhaustive review of the literature they included relevant articles from 2008-2013 and evaluated the following outcomes; health status, quality of life, mortality, and incidences of hospitalization. Although the strength of the evidence was usually low to medium, due to small sample sizes, not following patients long enough to detect possible differences, and few repeated studies, no difference was ascertained when care was provided by an independent NP vs. a physician (McCleery, Christensen, Peterson, Humphrey, & Helfand, 2014). Munding and colleagues (2000) conducted a randomized controlled trial that showed no statistically significant differences between physicians and NPs in patient health outcomes in the management of chronic diseases such as diabetes, asthma, and hypertension in settings where “nurse practitioners had the same authority, responsibilities, productivity and administrative requirements and patient population as primary care physicians” (Munding et al., 2000, p. 66).

The hospital, or acute care setting, was also examined to determine if specific hospital and patient outcomes were improved, equivalent, or suffered when care is provided by ACNPs either exclusively or in collaboration with physicians vs. physician care alone. Isolating the effect nurse practitioners have on hospital outcomes vs. their physician counterparts in the acute care setting is much more difficult than analyzing patient outcomes in the primary care setting. Patients in the acute care setting rarely receive care solely by an ACNP and almost always receive care by a physician at some point in their hospital stay. Most patient care in the acute care setting is provided by physicians exclusively and when ACNPs provide care, it is usually in collaboration with physician colleagues. This has resulted in virtually no studies that directly compare patient and hospital outcomes when care is rendered by a physician vs. an ACNP. Despite these limitations, the existing evidence suggests care provided by ACNPs in conjunction with some form of physician oversight is equivalent, and often exceeds, the care provided by physicians alone in the hospital setting.

In a study that examined the role and effectiveness of a nurse practitioner led critical care outreach service, the author found that ICU readmissions dropped drastically from 28 individuals in a 12-month period readmitted pre-implementation to nine individuals readmitted in a 12-month period post-implementation (Pirret, 2008). Two studies specifically examined hospital length of stay; comparing ACNP led teams to physician only care. Both studies found no statistically significant difference in length of stay when care was led by an ACNP (Hoffman, Tasota, Zullo, Scharfenberg, & Donahoe, 2005; Morris et al., 2012).

The literature review provides a wealth of evidence that the patient care and outcomes of NPs is equivalent and sometimes exceeds that of their physician colleagues. However, none of

these studies specifically examines patient satisfaction, patient outcomes, or hospital-based outcomes when an FNP is working in the acute care setting or when an ACNP is working in the primary care setting.

Nurse Practitioner Role and Scope of Practice

Another significant barrier to NP practice includes a lack of understanding of the NP role. One study looked at the perceived barriers to practice from the NP perspective, specifically in a rural setting. This study replicated an earlier study in order to examine trends. The first study was completed in 1996 and the second study was completed in 2005. The results of both studies reported a lack of physician understanding of the NP role as well as confusion of the NP role in the public as a significant and persistent barrier to practice (Lindeke, Jukkala, & Tanner, 2005). In a separate study, a survey of patients in a rural setting that received care from NPs found general confusion about the role, scope, and education of NPs. The patients in the study reported overall high satisfaction with the care they received from NPs, but like the NPs' physician colleagues, a familiarity and understanding of the role, scope, training, and education of the NP was lacking (Ryan & Rahman, 2012).

Confusion about the role and scope of NP practice also exists with hospital administrators, who are often responsible for hiring NPs and for ACNP role implementation in the acute care setting. In Montana, where NPs have full legal autonomy to practice independently, 54% of facilities require physician supervision of NP practice. The authors of this study report that this may be the result of a "knowledge deficit among hospital administrators about the differences in state scope of practice" (Larson & Zullkowski, 2002, p. 189). For those individuals who hire and recruit NPs, it is imperative that they understand the preparation,

training, role, and scope of both FNPs and ACNPs so that they can recruit the appropriate provider for the appropriate setting. In the acute care setting, this responsibility often lands in the hands of the physician leaders and hospital administrators. There is currently no study that has examined physician and hospital administrator knowledge, beliefs, and attitudes of the role and scope of the ACNP. Despite clear evidence of the benefit of both FNPs in the primary care setting and ACNPs in the acute care setting, a great deal of confusion and misinformation persists, which ultimately limits the ability of the NP to practice to the full extent of their education and training.

METHODS

The purpose of this project was to describe the knowledge, beliefs, and attitudes of physicians and hospital administrators regarding the role and scope of practice of ACNPs in the hospital setting. This project may provide insight and information where very little evidence existed and could be built upon to further our understanding of the ACNP role.

Study Design

A non-experimental cross-sectional descriptive design was used to describe the knowledge, beliefs, and attitudes of physicians and hospital administrators regarding the role and scope of practice of ACNPs. Because there was currently very little research or evidence regarding this topic, especially in a rural setting like Montana, a descriptive survey was an appropriate first step in understanding the study groups perspective, which can serve as a starting point for further and more targeted research in the future.

Setting

The setting for this project was in the hospital/acute care setting of north-central Montana. Both sites included in the project were located in cities with a total population of less than 60,000 residents. Additionally, both hospitals provided care to an underserved population. Participants recruited for this study were physicians and hospital administrators at a small 21-bed physician owned hospital in north-central Montana, and an emergency department physician group contracted to provide emergency department services at a moderately sized separate hospital in north-central Montana. Two study sites were included in the study to increase the number of participants.

Sample

A convenience sample of practicing physicians and hospital administrators was used for this project. Inclusion criteria for this study included English speaking physicians who work in the acute care setting in rural Montana and English-speaking hospital administrators who work in the acute care setting of rural Montana. Study participant recruitment occurred after successfully receiving a determination from the University of Arizona Office of Research and Discovery that human subjects review was not required (Appendix C) as well as a written agreement obtained from the participating hospital and emergency department physician group. An individual at the participating hospital and physician group was identified who sent the survey link along with a descriptive letter of intent and implied consent (Appendix B) via email to all the hospital group physicians, to the individual administrators at the hospital, and to the emergency department physician group. The project population included 99 physicians and hospital administrators. The actual study sample size depended on the survey response rate, with a goal of 25% response rate.

The survey distribution and period of data collection was three weeks in total, from November 16th to December 7th. Seven days after the initial email was sent out, a reminder email was sent to all prospective project participants, with an additional, final reminder sent out at 14 days.

Data Collection and Instrument

Data collection for this project came in the form of an online survey that prospective project participants were invited to complete. This survey was developed by the principal investigator and then uploaded into Qualtrics online survey management system. Survey research was advantageous for this project due to the ability to obtain information about the prevalence and interrelationship of the phenomena being studied and its ability for an initial extensive analysis (Polit & Beck, 2017).

Efforts were made to evaluate and incorporate content from related validated survey instruments, including the Collaborative Practice Scale (CPS) tool, which employs a six-point Likert scale and was originally developed to measure nurse and physician collaboration (Weiss & Davis, 1985). Maylone and colleagues (2009) made minor wording changes to reflect NP practice. This new iteration of the CPS tool was used to measure the extent of NPs perception of autonomous behaviors of practice (Maylone, Ranieri, Quinn Griffin, McNutty, & Fitzpatrick, 2011). Another survey tool that was analyzed for this project was Donnelan and colleagues' (2013) study of the perspectives of physicians and nurse practitioners on primary care practice. The survey utilized in this study specifically examined physician attitudes about the scope of practice of nurse practitioners in the primary care setting. In a study by Street and Cossman (2009), the authors surveyed physician's attitudes toward nurse practitioners in the medically

underserved state of Mississippi. In this study, the authors incorporated a previously validated survey that examined physician attitudes toward NPs.

Though these previous surveys provided context and insight for this project, it was necessary to develop a new survey based on the content and recommendations of the *Consensus Model* and with the goal of answering the study question; what are the knowledge, beliefs, and attitudes of physicians and hospital administrators regarding the role and scope of practice of acute care nurse practitioners in rural Montana? Face and content validity were assured via the creation of an expert panel that reviewed the survey and provided feedback. This panel was comprised of five individuals that included; master's prepared, DNP prepared, and PhD prepared nurse professionals. The survey went through multiple iterations based on the feedback from the expert panel as well as expert feedback from committee members.

The survey (Appendix A) consisted of 21 five-point Likert scale statements that aim to describe the attitudes, beliefs, and knowledge of both physicians in the acute care setting and hospital administrators regarding scope of practice of ACNPs. The statements included in the survey were divided into domains of knowledge, belief and attitude.

Demographic data included age, gender, area of specialty, professional background of hospital administrators, and years in either medical practice or in hospital administration. Based on expert review of the survey instrument, completion required approximately 15 minutes

Data Analysis

Frequency distribution was obtained using the demographic data with descriptive statistics completed to describe the study sample. Further statistical analysis was completed to examine participants' responses to the Likert scale questions and investigate any potential

relationship between demographic data, such as years in practice and attitudes, beliefs, and knowledge of NP scope of practice. Correlation statistics was also performed by linking various Likert scale questions to uncover any additional relationship in survey responses.

Ethical Considerations and Protection of Study Participants

The standards for ethical conduct in research as presented in the *Belmont Report* (1978) include beneficence, respect for human dignity, and justice, and were maintained always during this project. A risk-benefit assessment was carried out to evaluate the major benefits and any potential harms that could occur to the study participants as a result of study participation. The benefits of study participation was the acquisition of new knowledge that has the potential to assist in the development of an appropriate educational program for physicians and hospital administrators with the ultimate goal of improving inter-professional collaboration and patient outcomes. There existed minimal potential risks to study participants, which included; physical harm, physical discomfort, psychological or emotional distress, social risks, loss of privacy, or monetary costs (Polit & Beck, 2017). The time invested by study participants for successful participation as minimal.

Participants recruited for this study were physicians and hospital administrators at a physician owned hospital and an emergency department physician group contracted to provide emergency department services at a separate hospital facility. None of the study participants were in the classification of vulnerable populations. Participation in the study was voluntary and study participants were provided with full disclosure regarding the purpose of the study and how their survey responses were to be used. The study participants were also informed that they could

withdraw from study participation at any time without penalty and could skip any question from the survey that they were not comfortable answering (Appendix B).

Anonymity, which is the most secure means of protecting study participants confidentiality (Polit & Beck, 2017) was maintained during the study, with all results anonymized through the Qualtrics platform. The study was carried out in the form of a survey, which included four questions structured to acquire pertinent demographic information, but no personally identifying information was included in the survey, which aided in ensuring there was no breach of confidentiality.

RESULTS

Outcomes

Data Collection

Data collection for this project was in the form of an online survey that prospective project participants were invited to complete. This survey was developed by the DNP student principal investigator after review by the expert panel and an acute care nurse practitioner expert and then uploaded into Qualtrics online survey management system. The survey was sent to 99 individuals with a total survey response rate of 28.3% (n=28).

The survey (Appendix A) consisted of 21 five-point Likert scale statements that aimed to uncover the attitudes, beliefs, and knowledge of both physicians in the acute care setting and hospital administrators regarding the role and scope of practice of ACNPs. The statements included in the survey were divided into domains of knowledge, belief, and attitude.

Demographic data included age, gender, area of specialty, professional background of hospital administrators, and years in either medical practice or in hospital administration. The survey completion required approximately 15 minutes.

Sample Demographics

As seen in Table 1, there were a total of 28 participants with 16 (57.1%) that identified as male, 11 (39.3%) that identified as female and 1 (3.6%) that identified as other. When asked about area of specialty, many ($n = 9$, 39.1%) reported emergency medicine while the rest reported out over nine categories such as ($n = 3$, 13.0%) internal medicine/hospitalist. Of the 28 survey participants, 7 (25%) identified as hospital administrators. Their professional backgrounds were identified as Nursing ($n = 4$, 51.7%), Medicine ($n = 2$, 28.6%) and Hospital Administration ($n = 1$, 14.3%). Years practicing as a physician or hospital administrator ranged from 0-5 years ($n = 6$, 22.2%) to greater than 36 years ($n = 2$, 7.4%).

TABLE 1. *Descriptive Statistics for Project Participant Demographics*

	Question	Frequency	Percent
<i>Gender?</i>	Male	16	57.1
	Female	11	39.3
	Other	1	3.6
	Total	28	100.0
<i>If you are a physician, what is your area of specialty?</i>	Anesthesiology	1	4.3
	Cardiology	2	8.7
	Emergency Medicine	9	39.1
	Endocrinology	2	8.7
	Internal Medicine/Hospitalist	3	13.0
	Radiology/Interventional	2	4.3
	Orthopedics	1	4.3
	Family Practice	1	4.3
	Other	3	13.0
	Total	23	100.0
	Missing	5	
	Grand Total	28	

TABLE 1. – *Continued*

Question	Frequency	Percent
<i>If you identify as a hospital administrator, what is your professional background in?</i>		
Nursing	4	57.1
Medicine	2	28.6
Hospital Administration	1	14.3
Total	7	100.0
Missing	21	
Grand Total	28	
<i>How many years have you been practicing as a physician or hospital administrator?</i>		
0-5 years	6	22.2
6-10 years	8	29.6
11-15 years	5	18.5
16-20 years	1	3.7
21-25 years	1	3.7
26-30 years	2	7.4
31-35 years	2	7.4
Greater than 36 years	2	7.4
Total	27	100.0
Missing	1	
Grand Total	28	

Data Analysis

Statistical analysis was completed to examine participants' responses to the Likert scale statements on the three domains of Knowledge, Beliefs and Attitudes. Then, any potential relationships were explored between demographic data, such as years in practice with knowledge, attitudes, beliefs. Spearman correlations were also performed using the subscales of *Knowledge, Beliefs* and *Attitudes* to uncover any additional relationships.

Physician/Hospital Administrator Knowledge

The *Knowledge* subscale consisted of eight statements (21, 20, 1, 2, 3, 4, 5, 6) which were answered on a 5-point Likert scale of level of agreement or disagreement with each statement as "1 = strongly disagree," "2 = disagree," "3 = neutral," "4 = agree," and "5 = strongly agree." As seen in Figure 1, the statements where the majority (> 50.0%) of participants endorsed "agree" or "strongly agree" were statements 1, 3, 6, 20 and 21. The statements where

the majority (> 50.0%) of participants endorsed “disagree” or “strongly disagree” was question

2. Finally, the statement where there was no clear majority were statements 4 and 5.

The following are the statements answered in Figure 1:

21. Acute care nurse practitioners are able to implement interventions and support the patient based on fundamentals of critical care support.

20. Acute care nurse practitioners are able to manage care, perform interventions, and sustain or restore the physiological and psychological function of a patient with a rapidly deteriorating physiologic condition in the hospital setting.

6. I have experience working with nurse practitioners in the hospital setting.

5. I have experience working with acute care nurse practitioners in the hospital setting.

4. I feel confused about the role and scope of the different nurse practitioner specialties.

3. I am familiar with the scope of practice for nurse practitioners in the state of Montana.

2. The scope of practice of all nurse practitioners is similar.

1. I have a solid understanding of the role and scope of practice of acute care nurse practitioners.

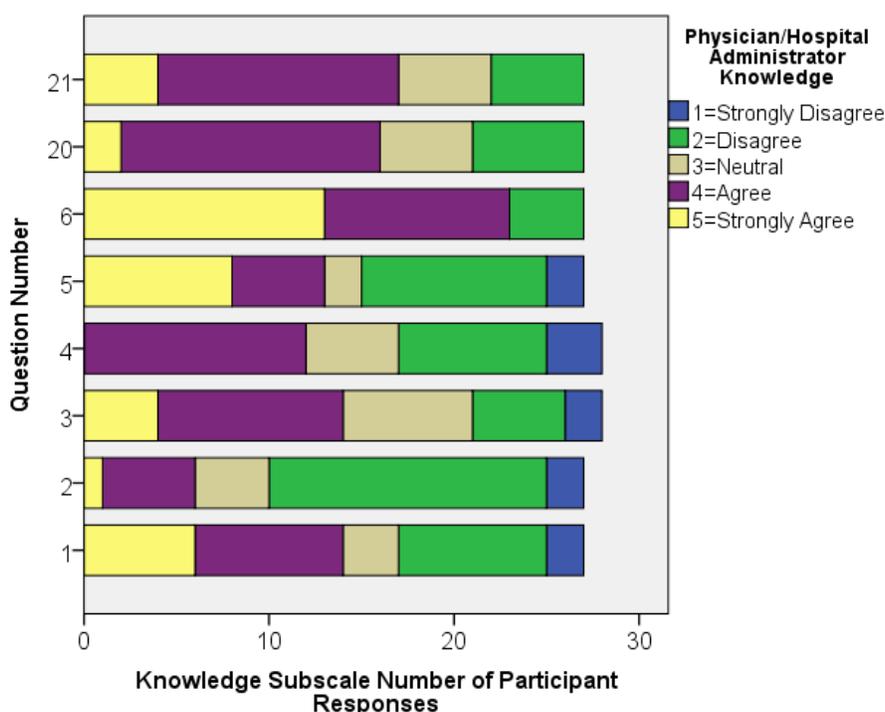


FIGURE 1. Knowledge Subscale Items. (The figure illustrates the responses to the eight statements (21, 20, 1, 2, 3, 4, 5, 6) that comprised the knowledge subscale.)

The survey responses to the knowledge subscale statements are represented in their entirety in the table below.

TABLE 2. Knowledge Subscale Individual Items (1, 2, 3, 4, 5, 6, 20, 21)

Question	Frequency	Percent
<i>1. I have a solid understanding of the role and scope of practice of acute care nurse practitioners.</i>		
Strongly disagree	2	7.4
Tend to disagree	8	29.6
Neutral	3	11.1
Tend to agree	8	29.6
Strongly agree	6	22.2
Total	27	100.0
Missing	1	
Grand Total	28	
<i>2. The scope of practice of all nurse practitioners is similar.</i>		
Strongly disagree	2	7.4
Tend to disagree	15	55.6
Neutral	4	14.8
Tend to agree	5	18.5
Strongly agree	1	3.7
Total	27	100.0
Missing	1	
Grand Total	28	
<i>3. I am familiar with the scope of practice for nurse practitioners in the state of Montana.</i>		
Strongly disagree	2	7.1
Tend to disagree	5	17.9
Neutral	7	25.0
Tend to agree	10	35.7
Strongly agree	4	14.3
Total	28	100.0
<i>4. I feel confused about the role and scope of the different nurse practitioner specialties.</i>		
Strongly disagree	3	10.7
Tend to disagree	8	28.6
Neutral	5	17.9
Tend to agree	12	42.9
Total	28	100.0
<i>5. I have experience working with acute care nurse practitioners in the hospital setting.</i>		
Strongly disagree	2	7.4
Tend to disagree	10	37.0
Neutral	2	7.4
Tend to agree	5	18.5
Strongly agree	8	29.6
Total	27	100.0
Missing	1	
Grand Total	28	
<i>6. I have experience working with nurse practitioners in the hospital setting.</i>		
Tend to disagree	4	14.8
Tend to agree	10	37.0
Strongly agree	13	48.1
Total	27	100.0
Missing	1	
Grand Total	28	

TABLE 2. – *Continued*

Question	Frequency	Percent
<i>20. Acute care nurse practitioners are able to manage care, perform interventions, and sustain or restore the physiological and psychological function of a patient with a rapidly deteriorating physiologic condition in the hospital setting.</i>		
Tend to disagree	6	22.2
Neutral	5	18.5
Tend to agree	14	51.9
Strongly agree	2	7.4
Total	27	100.0
Missing	1	
Grand Total	28	
<i>21. Acute care nurse practitioners are able to implement interventions and support the patient based on fundamentals of critical care support.</i>		
Tend to disagree	5	18.5
Neutral	5	18.5
Tend to agree	13	48.1
Strongly agree	4	14.8
Total	27	100.0
Missing	1	
Grand Total	28	

Physician/Hospital Administrator Beliefs

The *Beliefs* subscale consisted of six statements (7, 8, 9, 10, 11, 12) which were answered on a similar five-point Likert scale of level of agreement or disagreement. As seen in Figure 2, the statements where the majority (> 50.0%) of participants endorsed “agree” or “strongly agree” were questions 7, 8, 9, 10. Finally, the statement where there was no clear majority were statements number 11 and 12.

The following are the statements answered in Figure 2:

12. When working in collaborative teams, acute care nurse practitioners have equivalent patient outcomes when compared to their physician colleagues.
11. Nurse practitioners have equivalent patient outcomes when compared to their physician colleagues.
10. Nurse practitioners should practice to the full extent of their education and training in the hospital setting.
9. Nurse practitioners are necessary to improve patient access to acute care services in rural Montana.
8. Acute care nurse practitioners are able to provide highly competent patient care in the hospital setting.
7. Nurse practitioners should always have physician oversight when working in the hospital setting.

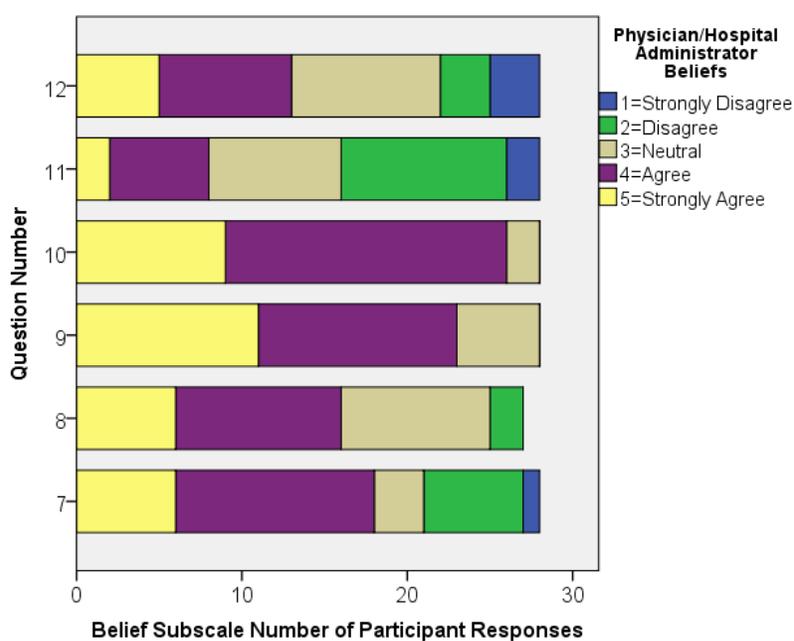


FIGURE 2. Belief Subscale Items. (The figure illustrates the responses to the six statements (7, 8, 9, 10, 11, 12) that comprised the belief subscale.)

The survey responses to the belief subscale statements are represented in their entirety in the table below.

TABLE 3. *Belief Subscale Individual Items (7, 8, 9, 10, 11, 12)*

Question	Frequency	Percent
<i>7. Nurse practitioners should always have physician oversight when working in the hospital setting.</i>		
Strongly disagree	1	3.6
Tend to disagree	6	21.4
Neutral	3	10.7
Tend to agree	12	42.9
Strongly agree	6	21.4
Total	28	100.0
<i>8. Acute care nurse practitioners are able to provide highly competent patient care in the hospital setting.</i>		
Tend to disagree	2	7.4
Neutral	9	33.3
Tend to agree	10	37.0
Strongly agree	6	22.2
Total	27	100.0
Missing	1	
Grand Total	28	
<i>9. Nurse practitioners are necessary to improve patient access to acute care services in rural Montana</i>		
Neutral	5	17.9
Tend to agree	12	42.9
Strongly agree	11	39.3
Total	28	100.0
<i>10. Nurse practitioners should practice to the full extent of their education and training in the hospital setting.</i>		
Neutral	2	7.1
Tend to agree	17	60.7
Strongly agree	9	32.1
Total	28	100.0
<i>11. Nurse practitioners have equivalent patient outcomes when compared to their physician colleagues</i>		
Strongly disagree	2	7.1
Tend to disagree	10	35.7
Neutral	8	28.6
Tend to agree	6	21.4
Strongly agree	2	7.1
Total	28	100.0
<i>12. When working in collaborative teams, acute care nurse practitioners have equivalent patient outcomes when compared to their physician colleagues.</i>		
Strongly disagree	3	10.7
Tend to disagree	3	10.7
Neutral	9	32.1
Tend to agree	8	28.6
Strongly agree	5	17.9
Total	28	100.0

Physician/Hospital Administrator Attitude

The *Attitude* subscale consisted of seven statements (13, 14, 15, 16, 17, 18, 19) which were answered on a similar five-point Likert scale of level of agreement or disagreement. As

seen in Figure 3, all of the statements received a majority (> 50.0%) of participants endorsed “agree” or “strongly agree”.

The following are the statements answered in Figure 3:

19. I have a positive view of allowing acute care nurse practitioners to work in the hospital setting.
18. I have a positive view of allowing nurse practitioners to work in the hospital setting.
17. Nurse practitioners would be a beneficial addition to a hospitalist service at my hospital.
16. Acute care nurse practitioners would be a beneficial addition to a hospitalist service at my hospital.
15. I would support the hiring of an acute care nurse practitioner to work in the emergency department setting.
14. I would support the hiring of an acute care nurse practitioner to work collaboratively in the intensive care unit.
13. I would be more likely to hire and/or work alongside a nurse practitioner in the hospital setting if I knew they had received specialized clinical and didactic preparation specific to the hospital setting.

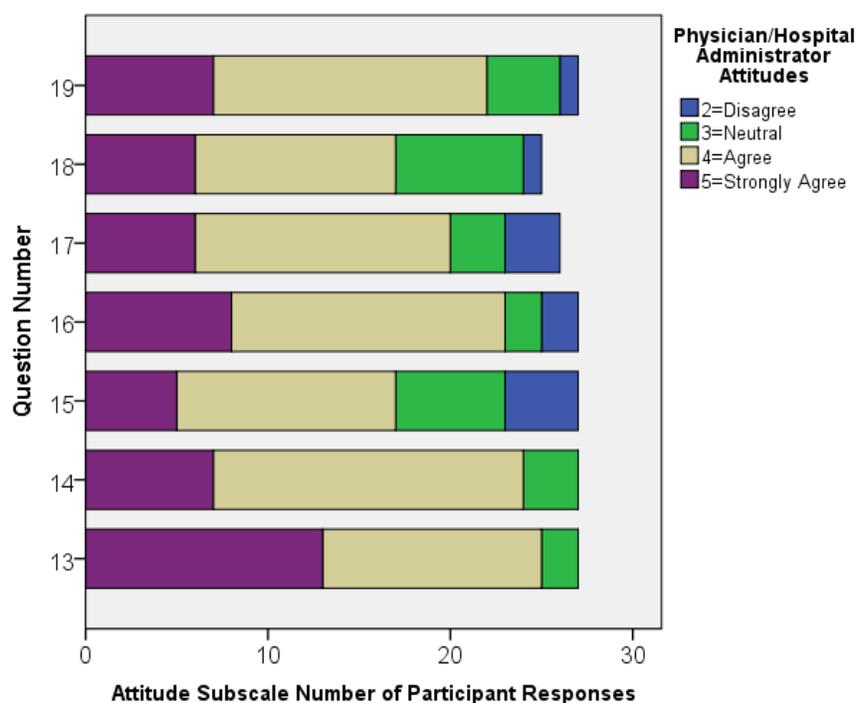


FIGURE 3. Attitude Subscale Items. (The figure illustrates the responses to the seven questions (13, 14, 15, 16, 18, 19) that comprised the attitude subscale. The 28 respondents were asked to rate their level of disagreement to agreement with each statement as “strongly disagree,” “disagree,” “neutral,” “agree,” “strongly agree.”)

The survey responses to the attitude subscale statements are represented in their entirety in the table below.

TABLE 4. Attitude Subscale Individual Items (13, 14, 15, 16, 17, 18, 19)

Question	Frequency	Percent
<i>13. I would be more likely to hire and/or work alongside a nurse practitioner in the hospital setting if I knew they had received specialized clinical and didactic preparation specific to the hospital setting.</i>		
Neutral	2	7.4
Tend to agree	12	44.4
Strongly agree	13	48.1
Total	27	100.0
Missing	1	
Grand Total	28	
<i>14. I would support the hiring of an acute care nurse practitioner to work collaboratively in the intensive care unit.</i>		
Tend to disagree	4	14.8
Neutral	6	22.2
Tend to agree	12	44.4
Strongly agree	5	18.5
Total	27	100.0
Missing	1	
Grand Total	28	
<i>15. I would support the hiring of an acute care nurse practitioner to work in the emergency department setting.</i>		
Neutral	3	11.1
Tend to agree	17	63.0
Strongly agree	7	25.9
Total	27	100.0
Missing	1	
Grand Total	28	
<i>16. Acute care nurse practitioners would be a beneficial addition to a hospitalist service at my hospital.</i>		
Tend to disagree	2	7.4
Neutral	2	7.4
Tend to agree	15	55.6
Strongly agree	8	29.6
Total	27	100.0
Missing	1	
Grand Total	28	
<i>17. Nurse practitioners would be a beneficial addition to a hospitalist service at my hospital.</i>		
Tend to disagree	3	11.5
Neutral	3	11.5
Tend to agree	14	53.8
Strongly agree	6	23.1
Total	26	100.0
Missing	2	
Grand Total	28	
<i>18. I have a positive view of allowing nurse practitioners to work in the hospital setting.</i>		
Tend to disagree	1	4.0
Neutral	7	28.0
Tend to agree	11	44.0
Strongly agree	6	24.0
Total	25	100.0
Missing	3	
Grand Total	28	

TABLE 4. – *Continued*

Question	Frequency	Percent
<i>19. I have a positive view of allowing acute care nurse practitioners to work in the hospital setting.</i>		
Tend to disagree	1	3.7
Neutral	4	14.8
Tend to agree	15	55.6
Strongly agree	7	25.9
Total	27	100.0
Missing	1	
Grand Total	28	

Comparisons and Correlations

Three comparisons were done using years in practice as the independent variable (1 = 0-5 years, 2 = 6-10 years, 3 = 11-15 years, 4 = > 15 years) and the subscales of *Knowledge*, *Beliefs* and *Attitudes* as ordinal dependent variables using three Kruskal Wallis H tests. Kruskal Wallis H tests were used instead of one-way ANOVAs because the three dependent variables were ordinal (Sheskin, 2011). As seen in Table 5, there were no significant differences found amongst the comparisons. Additional comparisons were performed on gender, those that identified as hospital administrators, and physician area of specialty - with no statistically significant differences found when compared to the statement subscales of Knowledge, Beliefs and Attitudes.

TABLE 5. *Kruskal Wallis H Tests*^{a,b}

	Knowledge	Beliefs	Attitudes
Chi-square	7.763	3.915	3.983
<i>df</i>	3	3	3
<i>p</i>	.051	.271	.263

Notes. a. Kruskal Wallis Test, b. Grouping Variable: Years in Practice

The Spearman correlation was used since the survey subscales were ordinal and years in practice was ordinal (1 = 0-5 years, 2 = 6-10 years, 3 = 11-15 years, 4 = > 15 years). As seen in

Table 6, there were no statistically significant correlations between years in practice and Knowledge, Beliefs and Attitudes.

TABLE 6. *Correlation Matrix with Years in Practice, Knowledge, Beliefs and Attitudes*

		Years Practicing	Knowledge	Beliefs	Attitudes
Years Practicing	<i>rho</i>	1.000			
	<i>p</i> (2-tailed)				
	N	27			
Knowledge	<i>rho</i>	.207	1.000		
	<i>p</i> (2-tailed)	.343			
	N	23	24		
Beliefs	<i>rho</i>	.180	.709**	1.000	
	<i>p</i> (2-tailed)	.378	.000		
	N	26	24	27	
Attitudes	<i>rho</i>	.104	.777**	.765**	1.000
	<i>p</i> (2-tailed)	.630	.000	.000	
	N	24	24	25	25

Note. **. Correlation is significant at the 0.01 level (2-tailed).

DISCUSSION

Discussion of Findings

First, the *Knowledge* subscale consisted of eight questions which were answered on a 5-point Likert scale of level of agreement or disagreement. The questions where the majority (> 50.0%) of participants endorsed “agree” or “strongly agree” were questions 1, 3, 6, 20 and 21. The majority (> 50.0%) of participants endorsed “disagree” or “strongly disagree” to question 2, indicating disagreement that the scope of all nurse practitioner specialties was similar, Statement 5 provided no clear majority reflecting a mixture of experience working with *acute* care nurse practitioners in the hospital setting; 46.5% of respondents were in some level of agreement and 42.8% of respondents were in some form of disagreement with the statement. Based on this response, less than half of the respondents agree that they have experience working with acute care nurse practitioners in the hospital setting. However, 82.4% of respondents were in some

form of agreement on statement #6 that they “have experience working with nurse practitioners in the hospital setting.” This disparity is likely due to the widespread use of nurse practitioners in the hospital setting of Montana, but relatively few nurse practitioners that are specifically licensed as ACNPs. It is also important to note that in both settings where the survey was conducted, there were no licensed ACNPs currently employed. In statement 3 a total of 50% of respondents agreed that they were “familiar with the scope of practice for nurse practitioner in the state of Montana, however the responses to the very next statement (4) indicates 42.9% of respondents “feel confused about the role and scope of the different nurse practitioner specialties.” These responses correlate with previous studies that have found confusion regarding the role and scope of practice of nurse practitioners as a persistent barrier to full nurse practitioner practice authority (Lindeke, Jukkala, & Tanner, 2005; Ryan & Rahman, 2012).

The *Beliefs* subscale consisted of six statements which were answered on a five-point Likert scale of level of agreement or disagreement had these statements, 7, 8, 9, 10, where the majority (> 50.0%) of participants endorsed “agree” or “strongly agree.” The statements where there was no clear majority were statements number 11 and 12. A total of 42.8% of respondents were in some form of disagreement and only 28.5% in some form of agreement that “nurse practitioners have equivalent patient outcomes when compared to their physician colleagues.” Although this belief is consistent with previous studies (Donnelan et al., 2013; Dillon & Gary, 2017), it is also inconsistent with a large body of evidence that demonstrates nurse practitioners in both the primary and acute care setting have equivalent patient outcomes when compared to their physician colleagues (McCleery, Christensen, Peterson, Humphrey, & Helfand, 2014; Munding et al., 2000; Pirret, 2008; Morris et al., 2012). In statement 12 when the words

“working in collaborative teams” and “acute care nurse practitioners” were added to the previous statement, respondents were in some form of agreement 46.5% of the time and in some form of disagreement 21.4% of the time. These data suggest respondents to the survey have a more favorable view of nurse practitioner patient outcomes when compared to their physician colleagues when the patient care from nurse practitioners comes in the form of a “collaborative team”.

Finally, the *Attitude* subscale consisted of seven statements which were answered on a five-point Likert scale of level of agreement or disagreement with all seven statements, where the majority (> 50.0 %) of participants endorsed “agree” or “strongly agree.” It is important to note that respondents had a majority favorable attitude to nurse practitioners in general and to ACNPs working in the emergency department, in collaborative teams in the ICU, for the hospitalist service, and in the hospital setting in general. In statements 16 and 17, and 18 and 19, the principal investigator was looking to see if there would be a significant difference in responses when the only wording change in the statements was “acute care nurse practitioners” versus “nurse practitioners.” In statements 16 and 17, respondents were asked to rate their level of agreement or disagreement to the statement that asked if ACNPs versus NPs “would be a beneficial addition to a hospitalist service.” When the term “acute care nurse practitioners” was included in the statement, 85.2% of respondents were in some form of agreement. When the term “nurse practitioners” was include in the statement, 76.9% of respondents were in some form of agreement. In statements 17 and 18, respondents were asked to rate their level of agreement or disagreement to the statement that asked if respondents had a positive view of ACNPs versus NPs “to work in the hospital setting.” When the term “acute care nurse practitioners” was

included in the statement, 81.5% of respondents were in some form of agreement. When the term “nurse practitioners was included in the statement, 68% of respondents were in some form of agreement. These data suggest a slightly more favorable attitude of ACNPs working in the hospital setting, but an overall positive view of all NPs working in the hospital setting and specifically for a hospitalist service. In statement 13, the respondents were in some form of agreement (89.3%) that they “would be more likely to hire and/or work alongside a nurse practitioner in the hospital setting if I knew they had received specialized clinical and didactic preparation specific to the hospital setting” with 0% responding is disagreement to this statement. The response to this statement supports the Consensus Model, which calls upon advanced practice nurses to work with the populations in which they were trained, certified, and licensed to provide care (APRN Joint Dialogue Group Report, 2008) as well as working to the full extent of their education and training.

Three comparisons were done using years in practice as the independent variable and the subscales of Knowledge, Beliefs and Attitudes as ordinal dependent variables using the Kruskal Wallis H test. Kruskal Wallis H tests were used instead of one-way ANOVAs because the three dependent variables were ordinal (Sheskin, 2011). There were no significant differences found amongst these comparisons. There were also no statistically significant differences found when gender, professional background of hospital administrators and area of specialty were compared to the subscales of Knowledge, Beliefs and Attitudes.

The Spearman correlation was used since the survey subscales (Knowledge, Beliefs and Attitudes) were ordinal and years in practice was also ordinal. There were no statistically significant correlations between years in practice and the subscales of Knowledge, Beliefs and

Attitudes. To better uncover correlations and comparisons it will likely be necessary that a larger sample size be used in the future. With the current sample (n=28) of this project, statistical significance was difficult to ascertain and is non-generalizable.

Impact of Results on Practice

This project was framed by the *Consensus Model for APRN Regulation*. This model was created in large part to ensure that advanced practice nurses are competent and able to provide safe and effective patient care for the population in which they work. Within the *Consensus Model* there exists a tremendous level of consistency and standardization, which over time is intended to provide clarity regarding the role and scope of practice of the different APRN specialties to both the public and to other healthcare professionals (Rounds, Zych, & Mallory, 2013). The results of this project, as well as prior evidence, illustrates a continued lack of clarity and persistent role and scope confusion among physicians and hospital administrators. This knowledge deficit is likely more present in a rural state like Montana, where there is a great deal of geographical isolation, very few licensed and practicing ACNPs, and an absence of educational programs preparing ACNPs for practice. However, the results of this study also reflect a sound foundation of physician and hospital administrators' knowledge regarding the role and scope of ACNPs, as well as many positive beliefs and attitudes regarding the contribution ACNPs are poised to make in the acute care setting of Montana.

Achievable progress can be made to expand physician and hospital administrator knowledge and improve the beliefs and attitudes regarding ACNP role and scope of practice. The DNP prepared ACNP has the foundational knowledge and the organizational and systems leadership necessary to bring about functional change. For this change to occur, clinical

scholarship and further, more targeted research will be necessary. It will also be necessary to take an active leadership role as a member of interprofessional teams in the implementation of the *Consensus Model* both at the state and national level and advocating within the acute care hospitals of Montana to improve institutional decision-making and promote the ACNP role.

Limitations

One substantial methodological limitation to this project was the small sample size (n=28). This small sample was the result of several factors. Initially, the goal was to include an additional hospital that would have increased the study population by 115 individuals. However, due to an inability to acquire permission to survey the institution's physicians and hospital administrators, this was not possible. This small sample size also resulted in difficulty comparing the survey responses of physicians and hospital administrators and to uncover any statistically significant differences in their knowledge, attitudes, and beliefs regarding the role and scope of practice of ACNPs. There are several approaches that can be taken in the future to increase the response rate and sample size. Traditionally, online surveys have a lower response rate when compared to mailed surveys. It is not uncommon to see a 50 - 60% response rate when surveys are personally mailed to the potential respondents (Young, Johnson, & VanGeest, 2013). Another common method for improving survey response rate is providing some form of incentive, often in the form of money or a gift card, which was not done for this project.

This survey was sent out via email and respondents were encouraged to read the recruitment email and disclosure form. In this email, the potential respondents received a brief overview of the purpose of the survey as well as the inclusion criteria and were then invited to click a hyperlink that would allow them to complete the survey via the Qualtrics platform.

Although this method was relatively simple and straightforward, there was nothing in place to ensure only physicians working in the acute care setting and hospital administrators completed the survey. There was also no protection in place from preventing a recipient of the email from completing the survey multiple times. Because of the relatively low response rate and small sample, this was likely not a significant issue.

Prior to the survey, the principal investigator expected that respondents would have a relatively limited understanding of the role and scope of ACNPs based on anecdotal evidence and assumptions. The responses, especially in the attitude subscale, were overwhelmingly positive. However, it is important to note that the recruitment email and disclosure form failed to include specific definitions concerning the concepts that were included in the survey. Much of the survey focused on knowledge, attitudes, and beliefs regarding various aspects of ACNP role and practice. However, at no time did the participants receive a definition of an ACNP. It is feasible that respondents viewed an ACNP as a nurse practitioner who works in the acute care/hospital setting and not necessarily a licensed ACNP with distinct clinical and didactic training that differs from other nurse practitioner specialties. There were also limited statements geared towards truly assessing the knowledge of specific aspects of the role and scope of ACNPs. This resulted in the potential assumption that respondents have a solid understanding of the role and scope of ACNPs simply because they answered affirmatively to that particular statement.

Additionally, survey research is more likely to lack details and depth regarding the topic being investigated (Kelley, Clark, Brown, & Sitzia, 2003). In the future, a qualitative approach

may add additional nuance and depth regarding the knowledge, attitudes, and beliefs of physicians and hospital administrators.

Implications for Future Practice

The body of this work and the findings of the survey are significant to advanced practice nurses. This project serves as a starting point for understanding the knowledge, beliefs, and attitudes of physician and hospital administrators regarding the role and scope of practice of ACNPs and provides greater impetus towards implementing the *Consensus Model*. However, further and more comprehensive research is necessary to uncover more precisely the actual knowledge gap. A larger study with a more significant sample size, larger geographical variation, and ethnic diversity will provide greater statistical significance with potentially generalizable results, and better insight into physician and hospital administrator knowledge and perception of ACNP practice.

Summary

APRNs are vital members of our healthcare community in both the primary and the acute care setting. In order to expand the positive impact of ACNPs, it is imperative that those individuals tasked with hiring and recruiting providers in the acute care setting have an accurate understanding of the NPs licensure, accreditation, certification, and education along with a favorable attitude and belief of their contribution in the acute care setting. Thankfully, knowledge is not static and new knowledge can change existing beliefs, which ultimately has the potential to influence attitude. The DNP prepared Acute Care Nurse Practitioner is perfectly positioned to provide organizational and system leadership and create educational programs directed at physicians and hospital administrators that will explain the didactic and clinical

preparation of ACNPs and present existing models where other hospitals have successfully incorporated individual ACNPs and ACNP teams into the care of their hospitalized patients. In a state like Montana, there is fertile ground for doctoral prepared ACNPs to work with healthcare organizations to design ACNP role implementation and to disseminate the research findings that show positive patient outcomes when ACNPs are involved as providers of acutely and critically ill patients in the hospital setting.

During this process of education and research dissemination, advocacy for effective teamwork and collaboration will be critical. The DNP prepared ACNP working in the hospital setting is rarely isolated in private practice, but more often works inter-professionally with a diverse group of healthcare professionals that usually includes physicians. Collaborative practice between ACNPs, physicians, and hospital administrators will be vital during this period of healthcare redesign in order to provide evidence-based and effective patient care in the hospital setting. While effective collaboration is essential moving forward, it is important that this relationship is built upon a sound understanding of the contribution of each specialty, that individuals truly see themselves as equal team members contributing to a shared common goal.

APPENDIX A:
SURVEY

SURVEY

Demographic Data

For the following items, please select one response that is most descriptive you.

1. Gender: Female Male Other

2. If you are a physician, what is your area of specialty?

- a. Anesthesiology
- b. Cardiology
- c. Emergency Medicine
- d. Endocrinology
- e. Gastroenterology
- f. Internal Medicine/Hospitalist
- g. Obstetrics/Gynecology
- h. Infectious Disease
- i. Radiology/Interventional Radiology
- j. Neurology/Neurosurgery
- k. Oncology
- l. General Surgery
- m. Urology
- n. Family Practice
- o. Other

3. If you identify as a hospital administrator, what is your professional background in:

- a. Nursing
- b. Medicine
- c. Hospital Administration
- d. Other

4. How many years have you been practicing as a physician or hospital administrator

- 0-5 years
- 6-10 years
- 11-15 years
- 16-20 years
- 21-25 years
- 26-30 years
- 31-35 years
- >36 years

Survey

Instructions: Please indicate the extent of your agreement or disagreement with the following statements by checking the appropriate number.

1=Strongly Disagree

2=Tend to disagree

3=Neutral

4=Tend to agree

5=Strongly agree

1. I have a solid understanding of the role and scope of practice of acute care nurse practitioners

1=Strongly Disagree

2=Tend to disagree

3=Neutral

4=Tend to agree

5=Strongly agree

2. The scope of practice of all nurse practitioners is similar.

1=Strongly Disagree

2=Tend to disagree

3=Neutral

4=Tend to agree

5=Strongly agree

3. I am familiar with the scope of practice for nurse practitioners in the state of Montana.

1=Strongly Disagree

2=Tend to disagree

3=Neutral

4=Tend to agree

5=Strongly agree

4. I feel confused about the role and scope of the different nurse practitioner specialties.

1=Strongly Disagree

2=Tend to disagree

3=Neutral

4=Tend to agree

5=Strongly agree

5. I have experience working with acute care nurse practitioners in the hospital setting.

- 1=Strongly Disagree
- 2=Tend to disagree
- 3=Neutral
- 4=Tend to agree
- 5=Strongly agree

6. I have experience working with nurse practitioners in the hospital setting.

- 1=Strongly Disagree
- 2=Tend to disagree
- 3=Neutral
- 4=Tend to agree
- 5=Strongly agree

7. Nurse practitioners should always have physician oversight when working in the hospital setting.

- 1=Strongly Disagree
- 2=Tend to disagree
- 3=Neutral
- 4=Tend to agree
- 5=Strongly agree

8. Acute care nurse practitioners are able to provide highly competent patient care in the hospital setting.

- 1=Strongly Disagree
- 2=Tend to disagree
- 3=Neutral
- 4=Tend to agree
- 5=Strongly agree

9. Nurse practitioners are necessary to improve patient access to acute care services in rural Montana.

- 1=Strongly Disagree
- 2=Tend to disagree
- 3=Neutral
- 4=Tend to agree
- 5=Strongly agree

10. Nurse practitioners should practice to the full extent of their education and training in the hospital setting.

- 1=Strongly Disagree
- 2=Tend to disagree
- 3=Neutral
- 4=Tend to agree
- 5=Strongly agree

11. Nurse practitioners have equivalent patient outcomes when compared to their physician colleagues.

- 1=Strongly Disagree
- 2=Tend to disagree
- 3=Neutral
- 4=Tend to agree
- 5=Strongly agree

12. When working in collaborative teams, acute care nurse practitioners have equivalent patient outcomes when compared to their physician colleagues.

- 1=Strongly Disagree
- 2=Tend to disagree
- 3=Neutral
- 4=Tend to agree
- 5=Strongly agree

13. I would be more likely to hire and/or work alongside a nurse practitioner in the hospital setting if I knew they had received specialized clinical and didactic preparation specific to the hospital setting.

- 1=Strongly Disagree
- 2=Tend to disagree
- 3=Neutral
- 4=Tend to agree
- 5=Strongly agree

14. I would support the hiring of an acute care nurse practitioner to work collaboratively in the intensive care unit.

- 1=Strongly Disagree
- 2=Tend to disagree

- 3=Neutral
- 4=Tend to agree
- 5=Strongly agree

15. I would support the hiring of an acute care nurse practitioner to work in the emergency department setting.

- 1=Strongly Disagree
- 2=Tend to disagree
- 3=Neutral
- 4=Tend to agree
- 5=Strongly agree

16. Acute care nurse practitioners would be a beneficial addition to a hospitalist service at my hospital.

- 1=Strongly Disagree
- 2=Tend to disagree
- 3=Neutral
- 4=Tend to agree
- 5=Strongly agree

17. Nurse practitioners would be a beneficial addition to a hospitalist service at my hospital.

- 1=Strongly Disagree
- 2=Tend to disagree
- 3=Neutral
- 4=Tend to agree
- 5=Strongly agree

18. I have a positive view of allowing nurse practitioners to work in the hospital setting.

- 1=Strongly Disagree
- 2=Tend to disagree
- 3=Neutral
- 4=Tend to agree
- 5=Strongly agree

19. I have a positive view of allowing acute care nurse practitioners to work in the hospital setting.

- 1=Strongly Disagree
- 2=Tend to disagree

- 3=Neutral
- 4=Tend to agree
- 5=Strongly agree

20. Acute care nurse practitioners are able to manage care, perform interventions, and sustain or restore the physiological and psychological function of a patient with a rapidly deteriorating physiologic condition in the hospital setting.

- 1=Strongly Disagree
- 2=Tend to disagree
- 3=Neutral
- 4=Tend to agree
- 5=Strongly agree

21. Acute care nurse practitioners are able to implement interventions and support the patient based on fundamentals of critical care support.

- 1=Strongly Disagree
- 2=Tend to disagree
- 3=Neutral
- 4=Tend to agree
- 5=Strongly agree

APPENDIX B:
RECRUITMENT EMAIL/DISCLOSURE FORM

RECRUITMENT EMAIL/DISCLOSURE FORM

The purpose of this survey is to uncover and explore the knowledge, beliefs and attitudes of physicians and hospital administrators concerning Acute Care Nurse Practitioners working in the acute care setting at the Great Falls Clinic Hospital in Great Falls, Montana and with the Lewis and Clark Emergency Physician Group in Helena, Montana Your input and feedback is valued and greatly appreciated.

The survey will take approximately 15 minutes to complete. Demographic data and survey responses will remain anonymous. The results and staff feedback obtained from this survey will help to identify gaps in knowledge about the scope of practice of Acute Care Nurse Practitioners working at the Great Falls Clinic Hospital and with the Lewis and Clark Emergency Physician Group. Additionally, this information can be used to improve the use of nurse practitioners in these settings.

If you choose to participate, you may discontinue the survey at any time without penalty. You may skip any question that you do not wish to answer. There are no anticipated risks associated with participating in this survey.

By taking this survey, you agree to have your responses used for quality improvement purposes. For questions or concerns about this study or project, you may contact the principal investigator, Paul Krogue, at:

pkrogue@email.arizona.edu

(406) 590-7285

If you are either a physician who works in the hospital setting or a member of hospital administration, please click on the following link for the anonymous survey:

https://uarizona.co1.qualtrics.com/jfe/form/SV_ewwrbiaki9avZzL

APPENDIX C:
DETERMINATION OF HUMAN SUBJECTS RESEARCH



Research
Office for Research & Discovery

Human Subjects
Protection Program

1618 E. Helen St.
P.O.Box 245137
Tucson, AZ 85724-5137
Tel: (520) 626-6721
<http://rgw.arizona.edu/compliance/home>

Date: November 15, 2017
Principal Investigator: Paul Anthony Krogue

Protocol Number: 1711019418
Protocol Title: Barriers to Practice: Understanding Physician & Hospital Administrator Knowledge, Beliefs, & Attitudes of the Role & Scope of Acute Care Nurse Practitioners in the Acute Care Setting in Rural Montana

Determination: Human Subjects Review not Required

The project listed above does not require oversight by the University of Arizona because the project does not meet the definition of 'research' and/or 'human subject'.

- **Not Research as defined by 45 CFR 46.102(d):** As presented, the activities described above do not meet the definition of research as cited in the regulations issued by the U.S. Department of Health and Human Services which state that "research means a systematic investigation, including research development, testing and evaluation, designed to contribute to generalizable knowledge".
- **Not Human Subjects Research as defined by 45 CFR 46.102(f):** As presented, the activities described above do not meet the definition of research involving human subjects as cited in the regulations issued by the U.S. Department of Health and Human Services which state that "human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains data through intervention *or* interaction with the individual, or identifiable private information".

Note: Modifications to projects not requiring human subjects review that change the nature of the project should be submitted to the Human Subjects Protection Program (HSPP) for a new determination (e.g. addition of research with children, specimen collection, participant observation, prospective collection of data when the study was previously retrospective in nature, and broadening the scope or nature of the research question). Please contact the HSPP to consult on whether the proposed changes need further review.

The University of Arizona maintains a Federal-wide Assurance with the Office for Human Research Protections (FWA #00004218).

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