

EMERGENCY CARE SKILLS PREPAREDNESS OF RURAL NURSE PRACTITIONERS

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ABSTRACT

In the rural setting, emergencies present as high stress situations and can have significant consequences for the patient, family, provider, and hospital staff involved. Many rural hospitals rely heavily on nurse practitioners (NPs) to provide care for the community as well as covering the emergency department. Thorough education in emergency training and skill competencies are essential when taking on the role of a provider in rural facilities and critical access hospitals. When a critically ill patient presents to a rural emergency department, an NP may be the only provider available, therefore, having increased education and continued sustainment of emergency care skills is critical for patient safety and outcomes. The purpose of the practice improvement project was to evaluate the educational needs of rural NPs covering emergency departments within the Midwest region and develop an education seminar to increase the perceived knowledge and preparedness of NPs' emergency care skills. Secondary analysis of the Rural Nurse Practitioner Skill Needs Assessment data survey results were utilized to evaluate the perceived level of preparedness among rural novice NPs in the Midwest region in performing emergency care skills. Findings from the needs assessment were analyzed to facilitate the development of a one day education seminar, Emergency Care Skills Seminar. The education seminar covered three emergency care skills: procedural sedation, emergency airway management, and arthrocentesis. Participants were rural NPs and third year Doctor of Nursing Practice (DNP) students. Pre- and post-seminar surveys were provided to participants via Qualtrics to evaluate their perceived level of preparedness on the three educational topics covered in the education seminar. Comparison of the pre- and post-seminar survey showed an increase in the participants' perceived level of preparedness in performing the three emergency care skills covered in the Emergency Care Skills Seminar. The project can serve as a framework

for an annual education seminar offered to practicing NPs for emergency care skill preparedness and sustainment. The project could also be a guide for an emergency care curriculum for NP students to take as an elective course to better prepare them for rural practice.

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CHAPTER 1. INTRODUCTION

Background and Significance

Medical emergencies are high stress situations requiring specialized education and training. In rural communities, many challenges arise in providing safe and high-quality emergency care needed for emergently ill patients. Rural America comprises 97% of the country's landmass and is home to approximately 60 million people, which accounts for 19.3% of the population (United States Census Bureau, 2017). In the United States (U.S.), there is a primary care provider workforce shortage which makes accessing healthcare more of a challenge, especially in rural America (Nelson & Hooker, 2016). Major contributing factors leading to the increased demand for healthcare include expanded insurance coverage after the implementation of the Affordable Care Act (ACA), overall growth in the U.S. population, and an increase in the aging population with more complex chronic diseases (Owens, 2019). Providing care in rural communities comes with many challenges and barriers especially during times of medical emergencies.

Compared to urban hospitals, rural hospitals have fewer resources, less technology, increased financial burden, and increased staff shortage, but often treat patients with a higher prevalence of chronic disease (Baernholdt et al., 2014). The rural populations have multiple health disparities, decreased access to healthcare, lower rates of having health insurance, and poorer health outcomes overall when compared to urban counterparts (Centers for Disease Control and Prevention (CDC), 2017). Critical Access Hospitals (CAHs) pose a vital aspect of the healthcare system to provide both regular and emergency care to the population living in rural settings. Without these CAHs, many Americans would go without regular healthcare

services, and during emergent situations, would not have the necessary access to emergency care.

According to Baernholdt et al. (2014), because of the impact rural hospitals play for the overall community, the U.S. Congress passed the Balanced Budget Act of 1997. Under the Balanced Budget Act of 1997, U.S. Congress created the Medicare Rural Hospital Flexibility Program, which gave rural hospitals cost-based reimbursement if they agreed to be designated as CAHs. Criteria to be considered a designated CAH includes: access to 24 hour emergency care services using either on-site or on-call staff; provision of no more than 25 hospital beds used for either inpatient or swing-bed services; average length of stay of 96 hours or less; and located more than 35 miles from the nearest hospital, or more than 15 miles away with mountainous terrain or only secondary roads, and/or were state certified as a necessary provider prior to January 1, 2006 (Marsh et al., 2012). In much of rural America, CAH emergency departments are staffed by nurse practitioners (NPs).

The NP role emerged in 1965 to help combat the pediatric primary care provider workforce shortage. Currently, NPs make up the fastest-growing proportion of providers who work in rural communities and at many CAHs (Stock, 2015). In many CAH settings, NPs are not only primary care providers, but also act as hospitalists and emergency department providers. Within the emergency and possible sole provider roles in a rural setting, NPs need to be able to practice with a high degree of autonomy, have a wide knowledge base of care across the lifespan, and maintain competencies in a variety of skills (Stock, 2015). Even though CAHs use telehealth and referral of the patient to larger urban facilities, the NPs at the CAHs still have the responsibility to stabilize emergency patients before transferring to a higher level of care (Nelson & Hooker, 2016).

NPs entering the primary care workforce face many challenges, especially in the rural setting where the scope of practice and role requirements are very demanding, which may lead to increased job dissatisfaction (Faraz, 2016). Unfortunately, many novice NPs who take on the role of an emergency care provider in the rural setting often do not have thorough emergency care education, thus the demanding expectations and responsibilities that are required to provide emergency care can be overwhelming (Stock, 2015). NPs practicing at CAHs who cover the emergency department require a vast body of knowledge to care for patients with both acute and chronic illness and injury as well as demonstrate competency in emergency care skills (Wolf et al., 2017). By providing education and continued training in emergency competencies, the NPs' self-confidence can increase when transitioning into the role of a rural provider, leading to increased retention and higher quality of care for patients. Having educational opportunities that provide both hands-on skills and didactic components allow providers to increase their knowledge and skills for emergency care (Sand, 2019).

Problem Statement

Many NPs are practicing in rural America where resources and nearby healthcare facilities are limited, health care disparities are more common among the population, and access to specialty care is non-existent (Owens, 2019). As a result, an NP's responsibilities go beyond primary care as many are the sole provider covering emergency departments at CAHs. In the rural setting, emergencies present as high stress situations and can have significant consequences for the patient, family, provider, and hospital staff involved. The challenge the practice improvement project (PIP) addressed is if further education and training in common emergency care skills would increase an NPs' level of perceived preparedness in providing emergency care during an emergent situation at a rural health care facility.

Purpose

NPs make up the fastest-growing majority of primary care providers in the U.S. According to Zwilling & Owens (2017), the U.S., has approximately 205,000 licensed NPs; over 90% of U.S. NPs are certified in primary care with an estimated 18% of those NPs practicing in rural areas. NP preparation and training in emergency care can be quite limited, due to many NP programs not having emergency care content built into the curriculum, leaving a gap in the education needed to take on the role required in many of the rural facilities (Wolf et al., 2017). By not having preparation and training for these situation, many NPs working in CAHs have decreased comfort levels and do not feel confident to provide quality emergency care to patients. As a result, there is increased dissatisfaction among NPs in an emergency care role at CAHs (Owens, 2019).

The purpose of the PIP was to evaluate the educational needs of rural NPs covering emergency departments within the region and develop an educational seminar that increases the knowledge and perceived preparedness of NPs emergency care skills during emergencies. Providing education to increase knowledge of proper emergency management of patients will not only increase the confidence of the NPs but also can help improve patient outcomes (Hoyt et al., 2010). Giving an NP a chance to practice hands-on emergency care skills is another way to prepare them better and develop familiarity with the equipment, so during emergent situations, they will have increased confidence and competency. The ultimate goal for providing NPs with an opportunity for emergency care continuing education and skills sustainment, was to increase confidence levels in performing emergency care skills and decrease job dissatisfaction among rural NPs, while improving patient care and outcomes.

Objectives

Objective One

Evaluate the perceived level of preparedness among rural nurse practitioners in performing emergency skills at a rural healthcare facility.

Objective Two

Evaluate the educational training developed and implemented based on the perceived emergency skills needs of rural nurse practitioners.

Objective Three

After attending the education seminar, the perceived level of preparedness of performing emergency skills by rural nurse practitioners will increase.

CHAPTER 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Literature Review and Synthesis

A literature review was conducted to identify articles containing information on emergency preparedness and skill competency among rural primary care providers. Databases searched to obtain information on the topic included Cumulative Index to Nursing and Allied Health Literature (CINAHL), EBSCO, Cochrane Library, PubMed, and Ovid - Lippincott Williams & Wilkins- Full-Text Nursing Journals.

Over sixty resources were reviewed during the process. In the literature search, keywords included: “nurse practitioner,” “family nurse practitioner,” “emergency preparedness,” “rural,” “North Dakota,” “competencies,” “primary care,” and “critical access hospitals.” To search for articles, the inclusion criteria included peer-reviewed studies, full text, and English. Initially only articles within the last five years were part of the inclusion criteria, but due to the limited search results the years of inclusion was expanded to the last ten years. After a review of the current literature, there was limited information about the topic, which identified a need for more research.

Introduction

NPs working in rural primary care have many roles. NPs practice as primary care providers in the clinic setting, but also many are required to cover the emergency department. Emergency care requires additional knowledge and skills to properly manage and stabilize critically ill patients. Entry-level competencies required for NPs do not include many of the needed skills to effectively care for patients in the emergency setting. Providing additional emergency care education and competencies can help create more confidence and autonomy in

NP practice when they are put in these emergent situations with limited resources (Hoyt et al., 2010; Hoyt et al., 2015).

Rural Health

In the U.S., approximately 60 million people live in rural areas (United States Census Bureau, 2017). To classify what is rural, several different criteria are taken into account, such as population, density, distance, and land use. Rural is defined by the U.S. Census Bureau (2017) as “all population, housing, and territory not included within an urban area.” In the U.S., approximately 19.3% of the American population lives in a rural area accounting for 97% of the country’s landmass. Urban areas are occupied by 80% of the American population but only accounts for 3% of the landmass (United States Census Bureau, 2017). According to the CDC (2017), there is a gap in overall health between rural and urban Americans. Americans living in a rural setting have multiple health disparities that they encounter concerning the health care system. Rural Americans are more at risk for unintentional injury, heart disease, stroke, cancer, and chronic lower respiratory disease. They also have decreased access to healthcare due to factors such as longer distances to travel to seek healthcare, fewer healthcare facilities within their region, and limited access to specialty care. Additionally rural Americans have higher poverty rates, lower rates of having health insurance, and overall worse health outcomes (CDC, 2017). With all of the above identified healthcare needs among rural Americans, the need for primary care providers in the rural setting is vital to the overall health of the population. By increasing rural health care providers, there can be an implementation of primary prevention strategies, better disease management, and increased access to health care.

Social Determinants of Rural Healthcare in North Dakota

The state of North Dakota is the 19th largest state in the U.S. but is ranked 47th in population (North Dakota Department of Health, 2016). Of the 53 counties in the state, 36 are estimated to have less than six people per square mile. In 2018 the estimated population of North Dakota was 760,077, and, of those individuals, 375,113 (49.3%) were living in a rural setting (North Dakota States Office of Rural Health, 2018). Given a large proportion of the North Dakota population lives in rural areas, health disparities pose a major concern for the wellbeing of residents in these remote locations. Access to health care due to geographic and financial barriers is an issue for many North Dakota residents (North Dakota Department of Health, 2016). Of the 53 counties in North Dakota 19 counties do not have a primary or acute care hospital limiting people's ability to seek needed healthcare readily. Health disparities including decreased access to health care among the population around the state are a significant concern and intensify the need and responsibility of rural primary care providers at CAHs (North Dakota Department of Health, 2016).

Improving health outcomes for an entire population is the focus of public health. In North Dakota, the leading causes of death and chronic illness are heart disease, cancer, cerebrovascular disease, Alzheimer's disease, chronic lung disease, intentional/unintentional accidents, diabetes, influenza and pneumonia, hypertension, and atherosclerosis (North Dakota Department of Health, 2016). A population's health status is dependent on the social determinants of health (Gibbens, 2017). Social determinants of health are defined as the conditions in which people are born, grow, live, work, and age. Factors such as income, poverty, housing, education, physical environment, family/genetic history, and the healthcare system are social determinants of health which influence the health outcomes of the population. Among the population in North Dakota,

12% of people live below the poverty line, 8% do not have health insurance coverage, and 11% have a reported disability (North Dakota Department of Health, 2016). The poverty line is defined as an income threshold set based on government standards by calculating the cost needed to buy essential resources for an average adult over a one-year period, and also varies based on family size and composition. In rural North Dakota, the population who live below the poverty line is higher when compared to urban areas of the state. The social determinant of health for North Dakota residents are important to understand to address health outcome issues and community needs of the population.

Center for Rural Health

A community health needs assessment was conducted by the Center for Rural Health, from 2014-2016, to assess the perceived needs of community members regarding primary care topics in North Dakota (Gibbens, 2017). Addressing the social determinates of health and identifying the community needs to help improve the overall health of the North Dakota population was the purpose of the needs assessment. Based on the results of the needs assessment, behavioral health, mental health, and health workforce were ranked as the top three community needs (Gibbens, 2017). Behavioral and mental health encompassed alcohol use and abuse, addiction treatment, substance abuse, depression, and lack of services. Health workforce was ranked third as a statewide need and can be defined as a constant need since, in past community needs assessments, health workforce has been identified as a recurring need among rural community members. The health workforce topic assessed physician and provider recruitment and retention, the need for primary care providers, and specialty care access. With a large proportion of the North Dakota population living in rural areas having CAHs to increase access to primary and emergency care is one of the common ways to address the community

needs in North Dakota (Gibbens, 2017). Additionally, with increasing access to health care addressing the primary provider shortage is also a key element in improving the health outcomes of the population.

Primary Care Provider Shortage

By 2020 the U.S. will have an estimated shortage of nearly 45,000 primary care providers (U.S. Department of Health and Human Services, 2016). According to Owens (2019), several factors have contributed to the healthcare provider shortage including millions of Americans now having expanded insurance coverage after the implementation of the Affordable Care Act, the total population in the U.S. is growing, and there is an increase in the aging population with more complex chronic diseases that need to be managed. According to Stock (2015), most of the physicians coming into practice are choosing specialty areas resulting in only about 10% of them practicing as primary care providers in rural settings. As a result, NPs have become a vital asset in combating the workforce shortage among the nation and are more likely to practice in underserved areas with populations having increased chronic diseases (Bae, 2016).

In comparison to the primary care provider shortage in the U.S., North Dakota is also suffering from a shortage of primary care providers in rural areas (Figure 1) (Zwilling & Owens, 2017). In North Dakota, compared to other medical clinicians, NPs have been identified as being more likely to practice in rural settings. Since 2009 the number of licensed NPs in North Dakota has increased by 129% and the number of NPs per 10,000 has gone from 6 in 2010 to 8.7 in 2015 (Zwilling & Owens, 2017). According to the North Dakota Board of Nursing (2020), there are currently 1,845 advanced practice registered nurses (APRN). Among the APRNs 1,347 are NPs and of those 1,045 are family nurse practitioners (FNPs). According to the North Dakota Nurse Practitioner Association (NDNPA) (2016), of the NPs practicing in North Dakota, 31.3%

practice in rural settings, and 69.7% practice in urban settings. Sixty-seven percent of NPs in North Dakota are licensed as FNPs which allows for care of patients across the lifespan, making them ideal for providing holistic care in rural settings (UND School of Medicine and Health Sciences Advisory Council, 2019).

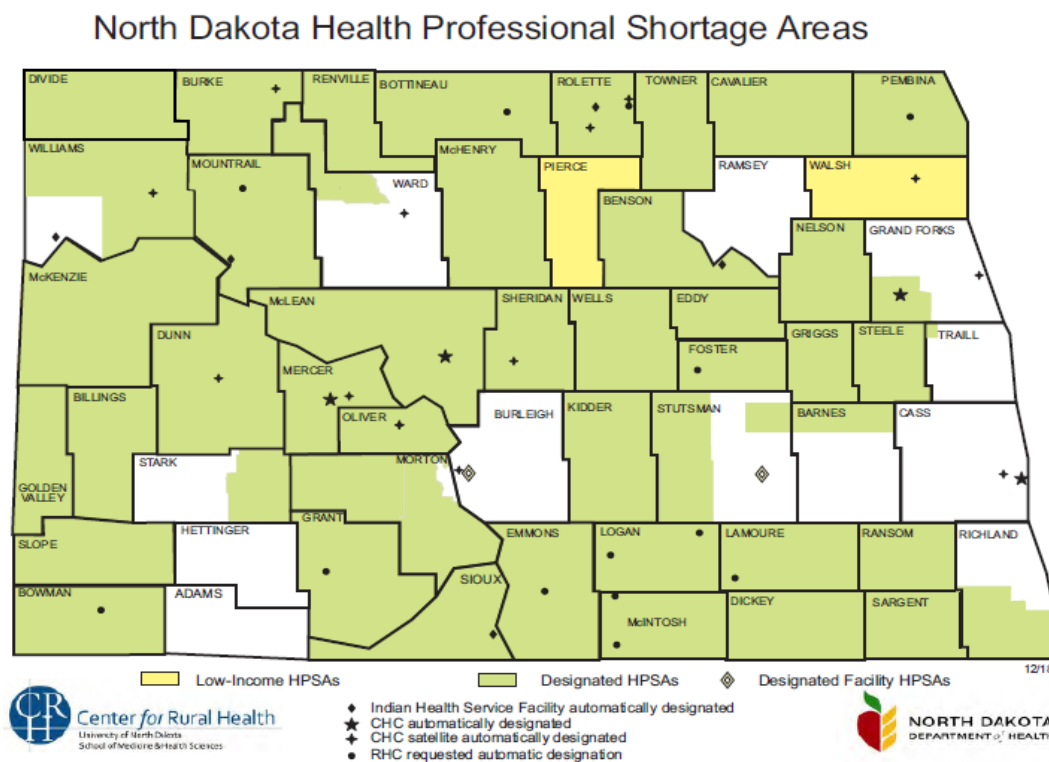


Figure 1. Health Professional Shortage Areas within the State of North Dakota (Center for Rural Health, 2018)

Critical Access Hospitals

Throughout the U.S., there are approximately 2,100 rural hospitals, and of those 1,300 are considered CAH (Baernholdt et al., 2014). Rural hospitals play a vital role for the population they serve but also experience increased financial burden. Under the Balanced Budget Act of 1997, U.S. Congress created the Medicare Rural Hospital Flexibility Program (Flex Program), which developed criteria for rural hospitals to be designated as CAHs and receive federal aid (Baernholdt et al., 2014, Marsh et al., 2012). To be considered a CAH, certain criteria must be

met to qualify for federal cost-based reimbursement, which includes 25 hospital beds or less, 24-hour emergency care services, the average length of stay of 96 hours or less, and located more than 35 miles from another hospital or more than 15 miles away with mountainous terrain or only secondary roads. According to Seright & Winters (2015), CAHs differ from an urban hospital in many ways. Based on geographical location, CAHs may be the only source of healthcare for long distances, may have limited resources, have a low volume of staff, and lack specialty services. Providers at these sites need to maintain a full scope of practice to care for the population they serve which is dependent on training and continuing education to keep them competent in their skills to provide quality care for patients (Seright & Winters, 2015)

Throughout the state of North Dakota, there are 47 hospitals, of which 36 are designated as CAHs (Center for Rural Health, 2019). CAHs in North Dakota have a considerable impact on the rural population in providing increased access to healthcare services. Similarly, as throughout the U.S., CAHs in North Dakota are affected by the workforce shortage and financial burden of the healthcare system. NPs bridge the healthcare gap by providing cost-effective care and bringing a broad scope of practice, making them suitable to provide primary and emergency care at CAHs in rural areas.

Nurse Practitioner's Role in Rural Health

In the U.S., the NP role emerged in 1965 as a result of the primary care provider shortage, and since then, both the roles and scope of practice for NPs has evolved (Goodhue, Harris, & Goodhue, 2019). According to the American Association of Nurse Practitioners (AANP) (2019), NPs can provide care to patients across the lifespan and in a variety of settings such as primary, acute, and specialty care. NPs are a critical member of the interprofessional healthcare team who can assess, order diagnostic tests, diagnose, initiate, coordinate, and

evaluate treatment plans, and prescribe medications. Even though there have been significant advances in the scope of practice for NPs, regulations still vary from state to state (Ortiz et al., 2018). In North Dakota, NPs have full practice authority which allows them to assess, diagnose, interpret diagnostic tests, and prescribe medications independently through the North Dakota Board of Nursing. Permitting NPs to practice to their full extent can especially benefit those living in rural and underserved areas. Continued research has supported patient satisfaction and outcomes with NP delivered health care which is equal or superior when compared with other healthcare providers (Bae, 2016; Hart & Bowen, 2016). Recruiting NPs in rural areas, including North Dakota, has been the main focus of the healthcare shortage and allows for healthcare facilities to decrease cost and improve overall health care outcomes among the population (UND School of Medicine and Health Sciences Advisory Council, 2019). Incorporating NPs in rural facilities such as CAHs allows increased access to primary and emergency care for the underserved population (Bae, 2016). Based on an NP's education, the needs of the rural population can be met by incorporating health promotion, disease prevention, and both acute and chronic disease management (Stock, 2015). NPs have contributed significantly to the rural workforce need and benefited the overall health of the rural population. Recruitment, retention, and maintaining job satisfaction for NPs in rural areas is essential since NPs play such a vital role in rural health (Bae, 2016).

Role Dissatisfaction

Despite the surmountable benefit NPs bring to increasing access to healthcare in a rural setting, there is still a great deal of job dissatisfaction among the profession when working in CAHs. According to Owens (2019), clinical practice in a rural setting does vary from urban settings. Unique knowledge and set of skills are required to provide quality care to the rural

population. As a rural NP, a broad scope of practice must be maintained with limited resources to provide care to a wide variety of patients with various medical conditions and health care needs (Owens, 2019).

With the shortage of physicians in the rural setting, physician assistants (PAs) and NPs are taking on a primary role at CAHs as the sole provider covering the ED (Nelson & Hooker, 2016). As sole providers in many CAHs, there is often a lack of support when caring for critically ill patients. Currently, for NP practice, there is limited information on actual practice, training, and validation of necessary skills and competencies in the emergency care setting (Wolf et al., 2017). Having adequate support, mentoring, and educational preparation to confidently care for the rural population was extremely important to increase job satisfaction and NP retention in rural facilities (Owens, 2019). In the absence of emergency skills confidence and preparedness, caring for a critically or emergently ill patient's results in high stress, and depending on an NP's comfort level and previous education, patient outcomes can be extremely varied. Many NPs who practice at CAHs are prepared as FNPs and have limited education on emergency care. The culmination of the aforementioned variables leads to job dissatisfaction among NPs who practice in CAHs (Owens, 2019).

Emergency Training

Most emergency department (ED) visits fall within the scope of practice of NPs (Marsh et al., 2012). In the rural setting, many of the solo providers in the emergency department are NPs at CAHs. NPs practicing in emergency care require an extensive body of knowledge for both acute and chronic illness and injury as well as competence in both simple and complex skills (Wolf et al., 2017). Through their initial education, there is variation among FNP programs' curriculum regarding emergency care, and no research-based recommendations to

validate emergency care skills and competencies. As a result of the workforce shortage, many states do not require FNPs to take additional acute care education to practice in hospitals that require this special set of skills (Goodhue et al., 2019). To provide quality care and maintain relevant emergency care skills, initial training and continued education need to be provided, so providers working in CAHs feel more confident when covering the ED (Carter, Cassidy, & Bhimani, 2012).

According to Wolf et al. (2017), “little information has been published regarding actual practice training and validation of basic skills and competencies needed by the NP in the emergency care setting” (p. 426). Currently, FNPs programs, have no standardization in the education provided regarding emergency care. Of the NPs practicing in an emergency care setting in the U.S., 78% were certified as FNPs, and only 10% had certification in acute care; either emergency nurse practitioner board certified (ENP-BC) or acute care nurse practitioner board certified (ACNP-BS) (Hoyt & Proehl, 2015). In the Delphi studies completed by the Emergency Nurses Association (ENA) in 2008, entry-level skills and competencies were established for NPs practicing in emergency departments (Hoyt et al., 2010). During the Delphi studies, a group of NPs working in emergency departments were interviewed and asked a variety of questions regarding barriers, education, training, and evaluation of emergency skills and procedures (Wolf et al., 2017). Based on the NPs’ responses, many NPs reported their emergency care education and training was conducted via brief seminars, continuing education, training with preceptors or colleges, or through independent learning. The overall consensus of the Delphi study surveyed NP group was the emergency care education and skill preparation during their formal education program was insufficient, and many were left learning the necessary emergency care skills on the job (Wolf et al., 2017). Based on the results of the Delphi

study, the ENA Board of Directors approved 60 entry-level competencies that cover the essential knowledge, behavior, and skills needed by an NP practicing in emergency care (Appendix A) (ENA, 2008).

However, the competencies are to be used as a supplemental to the core competencies already established in the FNP curriculum and are intended to support NPs looking to practice in emergency care settings (Hoyt et al., 2010). Even with the approval of the entry-level competencies in emergency care, there is still a need for additional research regarding definitions of NP emergency training and competencies, as well as how validating those competencies should be determined (Wolf et al., 2017). Ultimately, in the best interest of safety and quality patient care, NPs practicing in emergency settings should demonstrate competencies in emergency care defined by the ENA. (Hoyt & Proehl, 2015).

Many NPs who take on the role of a primary care provider in a rural setting, will also have the responsibility of covering the clinic, hospital, and emergency department (Stock, 2015). Although with an increase in technology, many CAHs have the ability to use telehealth to increase access to specialty care and the provider will ultimately refer the patient to larger urban facilities for definitive care. However the care of acutely ill patients in the emergency department is still the responsibility of the provider at the CAH to stabilize the patient before they are transferred (Nelson & Hooker, 2016). Having the ability to use telemedicine as a resource is a great option, but the NP will still need training in emergency care and competence in the ability to perform hands-on emergency care skills proficiently.

The Golden Hour

The “golden hour” is a term used by emergency and trauma disciplines, which suggests the first 60 minutes after the initial injury is a crucial time for patients (Rogers et al., 2015). The

care patients receive in the first 60 minutes has an impact on determining the outcome of a critically injured patient, and after that first 60 minutes, morbidity and mortality significantly increase. The golden hour emphasizes the importance of increasing emergency care competency among providers who will be caring for critically injured patients at CAHs and having additional education to better prepare NPs for the role responsibilities they will take on working in rural settings. Even though the overall goal for CAH emergency departments is to quickly stabilize and transfer the patient to a higher level of care facility, several factors such as distance, weather, and resources may delay the transport. During the time while awaiting transport, the responsibility of the provider at the CAH is to initiate care for emergently injured patients during the “golden hour”. Providing continuing education to maintain emergency care skills preparedness and competence on stabilization and management of critically ill patients among CAH providers can make a significant difference in the outcomes of patients.

Emergency Care Certifications

To care for patients across the lifespan, rural providers, who are practicing at CAH emergency departments, often have additional certification requirements since they are typically the only provider on-site when critical patients arrive (Nelson & Hooker, 2016). These requirements include basic life support (BLS), advanced cardiovascular life support (ACLS), pediatric advanced life support (PALS), and advanced trauma life support (ATLS), or comprehensive, advanced life support (CALS). To maintain certifications, these classes need to be completed every two to four years, and ultimately based on the state board of nursing regulations, these classes are the only additional emergency care training that is required for rural providers. The American Heart Association (AHA) develops guidelines for BLS, ACLS and PALS to provide standardized care and training in emergent cardiopulmonary situations for

adults, children, and infants. The AHA's BLS course provides basic knowledge for recognition of life-threatening emergencies and skills to provide interventions during cardiac arrest (AHA, 2019). ACLS builds on the foundation of BLS skills and is considered a course for experienced providers. ACLS trains providers in the management and recognition of cardiopulmonary arrest, cardiovascular emergencies, stroke, airway management, and related pharmacology (AHA, 2019). PALS is a course of healthcare providers who respond to children and infants who are seriously ill or injured. PALS trains providers on cardiopulmonary arrest, respiratory distress and failure, and shock specific to the pediatric population (AHA, 2019). ATLS was developed by the American College of Surgeons (ACS) to teach providers a systematic and concise approach to caring for and stabilizing trauma patients (ACS, 2019). CALS was developed for rural emergency medical education in response to the inadequate resources and a wide range of clinical problems rural providers must face in the emergency care setting (CALS, 2019). The above courses provide an excellent knowledge base for providers when dealing with emergent situations but are not comprehensive in all the emergent situations rural providers may face working in emergency departments.

Providing care in the emergency department has been recognized as a specialty practice that required specialized education and training (Wolf et al., 2017). However, excluding ENPs, NPs practicing in the emergency setting have no standardization in emergency care education and training. There are also no research-based recommendations on validating competencies for NPs in emergency care. The entry-level competencies developed by the ENA for NPs in the emergency care setting can help develop a standardized process for education to ensure safe and quality care for patients (ENA, 2008).

Family Nurse Practitioner Education

Advancement in curriculum development is needed to ensure that new rural NPs can provide safe and competent care as they take on the role of primary care providers in rural settings (Owens, 2019). Many rural hospitals rely heavily on NPs to provide care to the community, and in the rural setting, this means covering the emergency department (Olson, 2015). As a result, the majority of the NPs taking on the ER role are educated as FNPs, and much of their curriculum is focused on primary care conditions. For FNPs practicing in emergency departments, the domains of care include critical care, urgent care, primary care, behavioral medicine, public health, and social medicine (Evans et al., 2015). Although FNPs are well prepared in many of these domains receiving additional educational preparation in emergency care, acute stabilization, and resuscitation of medically unstable patients across the lifespan will better prepare them to provide safe, high-quality care in emergency care settings (Evans et al., 2015).

Educational programs and competencies for FNPs differ from emergency nurse practitioners (ENP). According to Evans et al. (2015), “Although FNPs are prepared to care for primary care conditions, their education does not include management of complex medically unstable conditions.” ENPs are specialized licensed practitioners and are trained to care for patients in urgent and emergent settings (Campo et al., 2016). The ENP’s additional training includes an emphasis on resuscitative stabilization and treatment of medical and traumatic clinical presentations across the lifespan. With an increased number of FNPs practicing in the rural setting and covering the emergency department, these educational gaps have led to a revision in FNP curriculum to incorporate didactic and clinical content in emergent and urgent care (Hoyt & Proehl, 2015). Some of the changes to FNP curriculum included providing

additional continuing education on emergency care and offering emergency care fellowships programs.

To obtain an emergency nurse practitioner board certification (ENP-BC), the American Nurses Credentialing Center (ANCC) developed criteria for an NP to obtain the ENP certification (Evans et al., 2015). To be eligible to take the certification examination applicants must meet the criteria for one of the three options:

- Option one: a minimum of 2,000 direct emergency care clinical practice hours as a certified NP within the past five years, evidence of 100 hours of emergency-related continuing education credits, and a minimum of 30 continuing education credits in emergency-related procedural skills within five years.
- Option two: completion of an approved academic emergency care graduate or post-graduate NP program.
- Option three: completion of an approved emergency fellowship program (American Academy of Nurse Practitioners, 2018).

Obtaining certification as an ENP not only better prepared the NP for practice in an emergency department, but is also in the best interest of ensuring patient safety (Evans et al., 2015).

However, for rural NPs working at CAHs obtaining an ENP certification may not be feasible as an entry level standard. Rural healthcare facilities and CAHs face challenges such as difficulty recruiting and retaining staff and low funds to put towards continuing education which can make requiring NPs to obtain an ENP certification prior to working at a CAH an unrealistic expectation.

Past Educational Studies

Concerning emergency care, limited research has been conducted to look at NPs' competency and skills to provide care in the emergency department setting. The research on the transition of NPs into rural practice is limited. Further research is recommended to help better identify opportunities for enhanced learning for NPs, so they feel competent to provide quality care to rural populations (Owens, 2019). In a study by Keough et al. (2011), they attempted to assess NP certification type in comparison to the NPs' actual site of practice. They found that 5% of the NPs were practicing in a nontraditional setting, and of those NPs, 65% were working in an emergency department with high-acuity patients. Keough et al. (2011), concluded in their study that the assessment of the proficiency of NPs practicing in a nontraditional setting was very important, and NPs would benefit from having additional continuing education based on specialty core competencies (Keough et al., 2011).

In a study by Ro et al. (2018), they created a self-directed intraprofessional web-based curriculum and for APRN students during their rotations in the emergency department. APRN students in the study were both NPs and clinical nurse specialists. The purpose of the curriculum was to enhance the APRN student's knowledge and emergency skill competencies to better prepare them to care for the high-acuity population during their emergency department rotations. During a nine-week preceptorship through direct clinical observation in the emergency department the web-based ED curriculum offered supplemental teaching modules that included self-directed lectures and case studies on topics essential to emergency medicine, skills curriculum focusing on common procedural skills, and additional practice with radiograph interpretation and airway management. To evaluate the didactic content a pre-test and post-test was completed by the participating APRN students. The results showed an overall improvement

in knowledge among the APRN students with a mean pre-test score of 49.5% and post-test score of 75%. To evaluate the skills competency throughout the nine-week preceptorship, assessment evaluations with feedback by the preceptors were provided to the students on skill acquisition and medical decision making. At the end of the study students completed a survey to evaluate their experience, they reported an increased comfort level in procedural skills and had positive reviews on the structured clinical rotation. Based on the results of the study, having emergency care education that provides a consistent and structured curriculum can increase perceived levels of competency among NPs when practicing in emergency setting to provider care for complex and critical patients (Ro et al., 2018).

A PIP completed by Olson (2015), assessed the skills preparedness and competency of NPs practicing in emergency care in rural settings. An implication for practice identified through the project was a recognition of the gaps in education and experiences before taking on the role of emergency care in the rural setting (Olson, 2015). As part of the project, a needs assessment was conducted to assess NPs' emergency care education needs, and based on the needs assessment, a self-directed learning module with a focus on adult and pediatric trauma was created. The overall evaluation of the learning module had positive feedback and participants agreed having the opportunity to receive additional education was beneficial while practicing in a rural setting (Olson, 2015).

NP residency programs are another concept used to increase emergency care competency and preparedness for NPs working in rural settings. Emergency care residencies are postgraduate programs lasting anywhere from 12 to 18 months that focus on mentoring, didactic teaching, and skills training (Olson, 2015). There are several emergency care residency programs across the nation that accept NPs, one being Mayo School of Health Science located in Rochester,

Minnesota. Incorporating postgraduate residency could help increase the confidence of NPs transitioning into practice, improve quality of care, and support the NPs' satisfaction in their practice (Wiltse Nicely & Fairman, 2015). According to Stock (2015), residency programs have had much success in helping NPs transition into their new role in the rural setting, and also reduce stress and increase overall retention.

Conclusion

A review of the literature has shown evidence supporting the vital role of NPs in rural communities across the U.S. NP's working in rural settings help combat the provider workforce shortage and increase access to healthcare for many American's living in rural areas. Rural providers at CAH's need to have a broad base of knowledge as well as additional emergency care continuing education and competencies to care for the patient populations in these rural areas. The role of a rural provider not only includes caring for patients in the clinic setting but also covering the hospital and emergency department. Currently in most FNP curriculums, there is not enough thorough education in emergency training and competencies, which is required when taking on the role of a provider at rural facilities and CAHs (Stock, 2015). In reviewing the literature, a gap was identified in the data published regarding NPs' competency level in emergency care. There is minimal data published about rural emergency care, including data regarding rural North Dakota NPs' level of competency and preparedness in emergency care. Based on the literature gap, there is a need for additional research to evaluate emergency care competency levels for rural NPs practicing in North Dakota.

Theoretical Framework

Benner's From Novice to Expert

The theoretical framework chosen for the PIP was Patricia Benner's From Novice to Expert Model. Patricia Benner introduced the model in 1982, which describes how nurses develop skills and increase their overall knowledge of patient care throughout their careers (Benner, 1984). Benner utilized the Dreyfus Model of Skill Acquisition as a foundation to describe the five stages of clinical competence nurses go through during their professional careers. The five stages of clinical competence include novice, advanced beginner, competent, proficient, and expert. To obtain the expert level of clinical competency, the nursing model proposes that nurses need proper background education before practice, as well as continued educational opportunities and experience during their clinical practice (Benner, 1984). By using Benner's model based on the NPs previous experience and perceived confidence in their emergency care skills they can be classified into one of the five stages of clinical competence. In relation to the PIP, Benner's theoretical framework can help show how NPs in the rural setting can gain confidence in emergency care preparedness by providing additional education and skill development on emergency care topics. According to Titzer et al. (2014), Benner's theory provides a theoretical framework that supports the development of education and learning experiences for advanced nursing practice skill acquisition. Making the transition from novice to expert is nonlinear depending on prior roles and experiences. Benner's model also proposes knowledge and skill acquisition exists on a continuum and over time NPs may transition between the five stages of clinical competence throughout their careers.

The Rural Nurse Practitioner Skills Needs Assessment was developed by two assistant professors at North Dakota State University's (NDSU) School of Nursing (SON) as a part of a

HRSA ANEW grant (Barnacle & Gross, 2020) (Appendix B). The needs assessment assessed 59 clinical skill areas, which reflected competencies defined by the ENA for NP's practicing in emergency care for which novice rural NP's within the Midwest region rated their perceived level of skills preparedness on a scale of "unprepared", "somewhat prepared", "generally well prepared", or "very well prepared". The level of preparedness scale used by the Rural Nurse Practitioner Skills Needs Assessment can be applied to the Benner's novice to expert model using the five stages of clinical competence. Comparing the level of preparedness scale and the five stages of clinical competence provided a more objective way to assist in the development of an educational seminar to increase emergency care skills acquisition among participants in the PIP. According to Benner, the five stages of clinical competency are described as the following:

Stage 1: Novice

Novices are beginners who, in a situation where they are expected to perform, have not yet had any experience. During stage one, the novice is taught simple objective attributes about certain situations so they can develop the necessary skills to gain experience. Novice NPs are taught context-free rules in which they can apply to different attributes to better guide actions, but the behavior in which they carry out the rules is very limited and inflexible. Since novices have had no previous experience, they cannot use context-dependent judgments and skills in real clinical situations. For the PIP based on the level of preparedness self-rating scale from the Rural Nurse Practitioner Skills Needs Assessment NPs who rated themselves as "unprepared" were associated with the novice stage of Benner's model. Although the cohort for the needs assessment was novice NPs, generalization cannot be made that all of the novice NPs fall into stage one of Benner's Model. Prior nursing and clinical experiences need to be considered which

may affect an NPs perceived level of preparedness for implementing emergency care skills once they enter into practice.

Stage 2: Advanced Beginner

Advanced beginners are individuals who have experienced enough real-life situations that they can identify recurrent meaningful situational components and demonstrate marginally acceptable performance. Advanced beginners still focus on guidelines and rule even though they have gained some clinical knowledge. During stage two, they need guidance and support from mentors in clinical situations to ensure patient's needs do not go unattended and are prioritized effectively. In relation to the project, based on the level of preparedness self-rating scale from the Rural Nurse Practitioner Skills Needs Assessment NPs who rated themselves as "somewhat prepared" in the needs assessment were associated with the advanced beginner stage of Benner's model. The cohort for the needs assessment was novice NPs so with exceptions on previous clinical or nursing experience most of the NPs in the cohort fell into either stage one or two of Benner's model.

Stage 3: Competent

Competence usually develops over two to three years when the individual is exposed to the same or similar situations. The competent individual can prioritize tasks and sees their actions in terms of plans or goals. The competent individual has a feeling of mastery but lacks the speed and flexibility of proficient individuals. Competent individuals use deliberate planning so that they can be organized and efficient in clinical situations. NPs who rated themselves as "generally well prepared" on the level of preparedness self-rating scale from the Rural Nurse Practitioner Skills Needs Assessment were associated with the competent stage of Benner's model.

Stage 4: Proficient

Once individuals reach the proficient stage, they can see situations as a whole, and maxims guide their performance. Maxims are pieces of evidence that guide an individual to what is essential in a situation but can evolve. The proficient individual uses a holistic approach when dealing with situations to improve the decision-making process. Compared to experts, proficient individuals consider fewer options and are unable to pinpoint the exact problem. Based on the level of preparedness self-rating scale from the Rural Nurse Practitioner Skills Needs Assessment NPs who rated themselves as “very well prepared” were associated with the proficient stage of Benner’s Model.

Stage 5: Expert

Experts have an enormous background of knowledge and experience, which allows them to have an intuitive grasp of complex patient situations. Experts no longer rely on rules, guidelines, and maxims to understand what needs to be accomplished in clinical situations. Fully describing the performance of an expert is difficult. Experts have a deep understanding of the whole situation and practice based on intuition from past experiences, which they have a hard time explaining (Benner, 1984). The fifth stage of Benner’s model was not assigned to a level of preparedness from the Rural Nurse Practitioner Skills Needs Assessment as the content developed for the education seminar focused on emergency care skills many of the participating NP’s identified as “unprepared” or “somewhat prepared” in performing out in practice.

Iowa Model of Evidence-Based Practice

The Iowa Model of Evidence-Based Practice was utilized as the theoretical framework for guidance in achieving the desired outcome for the PIP. The step-by-step process laid out in the Iowa model helped guide the development of the emergency preparedness education seminar

for NPs practicing in the rural setting. According to Buckwalter et al. (2017), the Iowa Model was developed by Marita G. Titler and a team of nurses from the University of Iowa hospitals and clinics in the early 1990s. As stated by Titler (2018), “The Iowa Model is an action-oriented model to guide clinicians in the steps of evidence-based practice from a selection of a clinical focus through evaluation.” The Iowa Model of Evidence-Based Practice is a part of the translation science that evaluates implementations based on the use of the evidence-based practice to improve patient outcomes and overall health (Buckwalter et al., 2017). The Iowa Model has seven steps that can be used as a guide to promoting evidence-based practice implementation. The seven steps include: selection of a topic, forming a team, evidence retrieval, grading the evidence, developing an evidence-based practice (EBP) standard, implementing EPB, and evaluation (Doody & Doody, 2011). A diagram developed for the Iowa Model provides an easy to use visual for the step-by-step process of implementation of current evidence into clinical practice (Appendix C). The Iowa Model of Evidence-Based Practice allows for collaboration among an organization when incorporating research and evidence into practice (Doody & Doody, 2011). Permission to utilize the Iowa Model during the project was requested and attained from the University of Iowa Hospitals and Clinics (Appendix D).

Step 1: Selection of a Topic

EBP is the standard of care to help make decisions about patient care and management by using reliable, explicit, and judicious evidence when forming guidelines (Doody & Doody, 2011). According to Doody and Doody (2011), several factors need to be considered when choosing a topic for EBP which include: “the priority and magnitude of the problem, its application to all areas of practice, its contribution to improving care, the availability of data and evidence in the problem area, the multidisciplinary nature of the problem, and the commitment

of staff’. A gap in the evidence was identified after reviewing the literature and limited data has been published regarding rural NPs competency level and skill preparation in emergency care.

Step 2: Forming a Team

Forming a team for the PIP was based on the criteria developed by the NDSU graduate school. According to Doody and Doody (2011), the development, implementation, and evaluation of the topic is the responsibility of the team so choosing members who share a passion and are interested stakeholders in the selected topic will be important for the overall success of the project.

Step 3 and 4: Retrieval and Grading the Evidence

After selection of the topic and forming a team objectives were developed to guide the search for pertinent evidence. A literature review was completed using electronic databases to retrieve evidence from reputable sources related to the practice improvement topic. Inclusion and exclusion criteria were set to include keywords and peer-reviewed articles during the search to ensure the most up to date evidence were included. The overall strength of the body of evidence and quality of research was considered in order to grade the evidence (Doody & Doody, 2011).

Step 5 and 6: Developing and Implementing Evidence-Based Practice Standard

The development of the standard of practice needs to incorporate evidence that is clear and consistent, as well make recommendations for patient care based on identifiable benefits and risks (Doody & Doody, 2011). EBP should use a patient-centered care approach to increased autonomy of patients and allow for care to be individualized based on the guidelines. The EBP standard needs to be meaningful, effective, appropriate, and feasible prior to implementing it into the practice setting (Doody & Doody, 2011). According to Doody and Doody (2011), “For implementation to occur, aspects such as written policy, procedures, and guidelines that are EBP

need to be considered". The overarching goal of the PIP was to increase the level of perceived preparedness when performing emergency skills for NPs practicing in the rural setting. To determine the perceived needs and level of preparedness among rural NPs a secondary analysis of the Rural Nurse Practitioner Skills Needs Assessment was completed. Based on the results of the needs assessment, an emergency skills seminar was developed which provided hands on skills practice and didactics in emergency care, to help facilitate an increase in the participating NPs' perceived level of preparedness.

Step 7: Evaluation

In order to determine the effectiveness of the EBP standards evaluation it's important to see the value and utility in actual practice (Doody & Doody, 2011). During the emergency skills seminar a pre- and post-seminar survey was completed by participants to help evaluate their perceived level of emergency care skills preparedness, as well as the overall efficacy of the education seminar.

CHAPTER 3. METHODS

Project Design and Implementation Plan

Step 1: Selection of a Topic

NPs are a vital asset for rural healthcare to help increase access and provide needed healthcare to the rural population (Owens, 2019). Rural healthcare facilities rely heavily on NPs to provide care to the community which includes the responsibility of covering the emergency department. As a rural provider there are many challenges when taking on the emergency care provider role. Due to NP programs not thoroughly covering emergency care education and training in their curriculums, NPs transitioning into practice in rural settings have feelings of unpreparedness in emergency care skills which may lead to increased job dissatisfaction resulting in difficulties retaining providers in rural settings (Faraz, 2016). A gap in the evidence was identified after reviewing the literature and limited data has been published regarding rural NPs emergency care preparation and skill sustainment.

The population of interest for the PIP was NPs practicing in the rural setting from the Midwest region. Participant recruitment was obtained through an email sent to rural NPs from the Midwest region through the same listserv that contained the participants from the Rural Nurse Practitioner Needs Assessment. The Rural Nurse Practitioner Needs Assessment listserv was utilized as it provided the co-investigator access to a large number of rural NPs throughout the Midwest region. The email included information regarding the purpose of the PIP, invitation to participate, and the agenda for topics to be covered during the education seminar (Appendix E). The inclusion criteria for participant recruitment was practicing as an NP at a rural healthcare facility. The invitation to participate was sent to 101 rural NPs from the Midwest region. Third year NDSU Doctor of Nursing Practice (DNP) students were also invited to participate due to the

low volume of rural NPs that were able to participate in the PIP. The DNP students were invited to participate in order to have adequate group sizes for the hands-on skill stations in accordance with SIM-ND requirements.

Step 2: Forming a Team

Forming a team for the PIP was based on the criteria developed by the NDSU graduate school. The team consisted of four committee members which included: a committee chair, two additional committee members, and a graduate appointee. The committee chair is a faculty DNP at NDSU who has previous knowledge of the selected topic and extensive experience in both rural and urban emergency and critical care settings. The two additional committee members are both faculty at NDSU who are currently practicing NPs in rural primary care and sleep medicine. One of the NDSU faculty was chosen as a committee member due to knowledge pertaining to the selected topic, in addition to the faculty member co-authored and helped develop The Rural Nurse Practitioner Skills Needs Assessment. The graduate appointee also has previous experience in relation to the selected topic, and additional knowledge in research and statistics.

Steps 3 and 4: Retrieval and Grading the Evidence

Prior to the development of the PIP a literature review was completed to retrieve evidence on the emergency preparedness among rural NPs. Electronic databases were utilized to obtain information on the selected topic from reputable sources. Inclusion and exclusion criteria were set to include keywords and peer-reviewed articles during the search to ensure the most current evidence was included. Over sixty resources were reviewed during the process.

Keywords included: “nurse practitioner,” “family nurse practitioner,” “emergency preparedness,” “rural,” “North Dakota,” “competencies,” “primary care,” and “critical access hospitals.” As a part of the inclusion criteria, initially only articles within the last five years were

considered, but due to the limited search results the years of inclusion was expanded to the last ten years. Based on the literature review, there is limited data published regarding the emergency care role among rural NPs and a need for additional research was identified to evaluate the emergency care skills preparedness for NPs practicing in the rural setting.

Steps 5 and 6: Developing and Implementing Evidenced-Based Practice Standard

A secondary analysis of the Rural Nurse Practitioner Skills Needs Assessment data survey was conducted to guide the emergency care skills seminar development and implementation. The Rural Nurse Practitioner Skills Needs Assessment was developed by two assistant professors at NDSU's SON as a part of a HRSA ANEW grant (Barnacle & Gross, 2020) (Appendix B). For the HRSA ANEW grant, the needs assessment had been distributed yearly since 2017 and the needs assessment data utilized for the PIP was from 2019. The 2019 cohort included novice NPs practicing in primary care from the Midwest region. The needs assessment defined novice NPs as those who had recently graduated and were new to practice and delineated years of experience as registered nurses, settings of practice, rural experience, orientation/training time, and perceived level of preparedness on 59 clinical skills that were applicable in an emergency department setting (Appendix B). With each of the clinical skills the NPs rated their perceived level of skills preparedness on a scale of "unprepared", "somewhat prepared", "generally well prepared", or "very well prepared". The NPs also were asked if the clinical skills were within their scope of practice. Participants of the needs assessment survey were also asked to provide feedback on suggested changes to improve orientation/training for the rural provider role and additional procedures or skills training they would like to receive (Barnacle & Gross, 2020).

For the PIP, the development of an evidence-based emergency skill seminar was based on the data from the 2019 needs assessment of participant's perceived level of preparedness when performing emergency care skills. The level of preparedness of rural NPs in performing emergency care skills can be applied to the Benner's novice to expert model using the five stages of clinical competence. When comparing the level of preparedness scale used in the Rural Nurse Practitioner Skills Needs Assessment to Benner's model "unprepared" relates to the novice stage, "somewhat prepared" relates to the advanced beginner stage, "generally well prepared" relates to competent stage, and "very well prepared" relates to the proficient stage. The fifth stage of Benner's model, the expert stage was not assigned to the level of preparedness scale from the needs assessment as many of the participants identified as "unprepared" or "somewhat prepared" in performing the emergency care skills currently in their role that the PIP was developed for. In the development of the education seminar Benner's model was used to ensure didactic content was at an appropriate level to enhance learning for the participants.

The top identified emergency skills from the needs assessment were narrowed down based on feasibility of implementation, accessibility to training supplies, and ability to educate the particular skill in one day. The co-investigator identified three top-rated skills to focus on during the education seminar and are as follows: procedural sedation, emergency airway management, and arthrocentesis. The agenda for the Emergency Care Skills Seminar is shown in Figure 2. The content developed for the education seminar covered only three skills to ensure that the topics could be covered adequately in a one-day seminar. The education seminar included four hours of didactic content and discussion, and three hours of application using hands-on skills stations and the incorporation of high fidelity simulation.

Emergency Care Skills Seminar Agenda

- 8:00-9:30am: Procedural Sedation
- 9:30-11:00am: Emergency Airway Management
- 11:00-12:30am: Arthrocentesis
- 12:30-1:00pm: Lunch
- 1:00-3:55am: Separation into three skills stations:
 - Skill 1 – Procedural Sedation
 - Skill 2 – Emergency Airway Management
 - Skill 3 – Arthrocentesis
- 3:55-4:00pm: Conclusion, discussion, and post-seminar survey completion

Figure 2. Agenda for the Emergency Care Skills Seminar

The PIP was implemented at the NDSU SON located in Fargo, North Dakota. Rural NPs from the Midwest region who participated in the Rural Nurse Practitioner Needs Assessment were invited to the education seminar via the same email listserv. Implementation of the education seminar didactic content utilized multiple education modalities including Power Point presentations and tabletop/group discussions on the selected topics. The didactic content included the development of three PowerPoint lectures: Procedural Sedation, Emergency Airway Management, and Arthrocentesis. To further supplement competency of these skills, application of hands-on emergency skills was offered during the education seminar in collaboration with SIM-ND to allow for the use of high-fidelity mannequins and training equipment. Three different skills practice stations were developed which included: a scenario involving procedural sedation developed in collaboration with SIM-ND, emergency airway management, and arthrocentesis. The Emergency Care Skills Seminar was approved for 7.42 contact hours of continuing education (which included 3.5 hours of pharmacology) by the American Association of Nurse Practitioners (AANP). Activity ID 20124646 (Appendix J). The activity was planned in accordance with AANP Accreditation Standards and Policies. The AANP CEU accreditation

application process was completed a month prior to the education seminar and required the submission of objectives, details of the education seminar activities, agenda, invitations, instructor disclosure statements, post activity evaluation form, completion certificates, and a post activity report. The AANP CEU application fee and cost was taken on by the primary investigator of the PIP.

The Emergency Care Skills Seminar was implemented as a one-day, seven-hour seminar. A pre- and post-seminar survey was provided via Qualtrics to participants prior to and at the end of the education seminar. Qualtrics is an online software tool used to design, send, and analyze surveys. The pre-seminar survey was emailed to participants a week prior to the education seminar. The pre-seminar survey used a Likert scale to assess the participants' perceived level of preparedness in completing each of the three skills that were going to be taught during the education seminar and assessed if participants felt the skill was within their scope of practice. The post-seminar survey was emailed to the education seminar participants on the day of implementation after participants had completed the education seminar. The post-seminar survey reassessed the participants' perceived level of preparedness in completing the three skills, as well as evaluated the education seminar and collected demographical information from the participants. Data gained from the PIP was used to assess if the participants' perceived level of preparedness in completing emergency care skills increased after the education seminar. Table 1 outlines the timeline for the implementation of the PIP.

Table 1

Timeline of Practice Improvement Project

| Date of Completion | Intervention |
|--------------------|----------------------------------------------------------------|
| September 2020 | Develop dissertation proposal |
| October 2020 | NDSU proposal meeting with committee |
| October 2020 | Obtain NDSU IRB approval |
| November 2020 | Develop educational presentations and pre/post-seminar surveys |
| December 2020 | Implementation of education seminar on emergency care topics |
| January 2021 | Analyze data |
| February 2021 | Final defense |
| April 2021 | Disseminate results |

Resources

Resources necessary for the PIP included personnel, technology, and budget. The personnel involved in the PIP were the instructors who volunteered to teach didactic content and skills for the education seminar. The instructors for the Emergency Care Skills Seminar included a NDSU DNP faculty member and a practicing NP who have knowledge on the selected topics and extensive experience in both emergency and critical care in rural and urban settings. The additional instructor was a practicing NP with extensive experience and knowledge in orthopedics. Collaborating with NDSU’s SON provided the setting for the project, gave access to technology to allow for delivery of the PowerPoint presentations during the didactic portions of the education seminar, and provided the injection equipment for the arthrocentesis skill station.

Adequate room size and space during the education seminar was taken into consideration to accommodate precautions for the COVID-19 pandemic to abide by the social distancing regulations to ensure safety for participants. Additionally, recommendations from the Centers for Disease Control and Prevention (CDC) in regards to the pandemic were followed including proper personal protective equipment (PPE) and limitations on number of participants attending the education seminar.

Collaborating with SIM-ND provided no cost access to equipment and training supplies for the hands-on skill portions of the education seminar. SIM-ND is a mobile education system provided through the University of North Dakota School of Medicine and Health Sciences Simulation Center. SIM-ND was implemented in North Dakota through grant funding from the Leona M. & Harry B. Helmsley Charitable Trust. SIM-ND uses high-fidelity mannequins and training equipment to provide emergency care education to pre-hospital and hospital personnel across the state of North Dakota (University of North Dakota, 2020). SIM-ND provided airway supplies to aid in teaching the emergency airway management skill station, collaborated on the development of the procedural sedation scenario, and provided the high fidelity simulation mannequins and the mobile training bus where the procedural sedation skill station took place. Qualtrics was used to deliver the pre- and post-seminar surveys. The cost for the project was minimal. The co-investigator covered the cost of food and beverage for participants and speakers the day of implementation. The lecture material was provided by the lecturers who volunteered their time to teach so no additional cost was anticipated.

Protection of Human Subjects

The participants who were invited to participate were rural NPs from the Midwest region who were included in the listserv used for the Rural Nurse Practitioner Skill Needs Assessment. Implied consent was assumed of the participants by voluntarily accepting the invitation to attend and participating in the education seminar. All participants were aware of the purpose, details, and benefits of the education seminar as described in the invitation email. Additionally, information regarding COVID precautions, steps taken to maintain social distancing, and NDSU campus requirements on wearing a mask during the education seminar was included in the invitation email.

Participants were allowed to withdraw and leave the education seminar at any time. Participation in the pre- and post-seminar survey was voluntary and participants could opt out of completing the surveys without questioning. Participation in the PIP included some risk. A risk of the PIP was that the in-person education seminar was held during the COVID-19 pandemic, so risk of exposure was possible by attending. However precautions were taken to abide by the CDC guidelines to help ensure safety; participants were aware of pandemic precautions prior to attending and by voluntarily accepting the invitation to attend the risk was assumed by the participants. Confidentiality of participants was secured by omitting personal identification such as name and date of birth on the pre- and post-seminar surveys. All data obtained was reported as cohort data. The pre- and post-seminar surveys were developed in Qualtrics and were sent out via email to each of the individual participants. Only the primary and co-investigator had direct access to the online data results, which were kept on a password protected computer. Women were included in the study, though no particular gender was specifically sought for the purposes of the PIP. Potential participants were over the age of eighteen and children were not included in the project.

Institutional Review Board Approval

To complete the secondary analysis of the 2019 Rural Nurse Practitioner Skill Needs Assessment survey results approval from the NDSU Institutional Review Board (IRB) was needed. The assistant professors who developed the survey applied for an amendment to their research study to enable the co-investigator of the PIP to review the data results from their study. IRB approval through NDSU for the PIP was obtained after the co-investigator's dissertation proposal meeting and approval by the project committee. The IRB application titled Determination of Exempt Human Subjects Research, protocol #PH21060 was needed to include

human participants during the implementation of the Emergency Care Skills Seminar. IRB determined the human subject's research project was exempt in accordance with federal regulations (Appendix I).

Step 7: Evaluation

The PIP was evaluated at two different points during development. The first evaluation was completed by a secondary analysis of the Rural Nurse Practitioner Skill Needs Assessment data. The findings from the needs assessment were analyzed to facilitate the development of the Emergency Care Skills Seminar. The second evaluation point was completed by administering a pre- and post-seminar surveys to the participants as part of the Emergency Care Skills Seminar (Appendix G & H). Prior to the education seminar a pre-seminar survey was completed by the participants to evaluate their perceived level of preparedness on the three educational topics covered in the Emergency Care Skills Seminar. After completion of the education seminar a post-seminar survey was completed by the participants to assess the effectiveness of the Emergency Care Skills Seminar. The pre- and post-seminar survey were provided via Qualtrics, and were optional for the participants to complete.

Evaluation of Objective One

Objective one was to evaluate the perceived level of preparedness among rural nurse practitioners, in performing emergency skills at a rural healthcare facility. The intent of objective one was the performance of a secondary analysis of the Rural Nurse Practitioner Skill Needs Assessment findings to determine the perceived emergency care preparedness of rural NPs. The cohort was novice NPs working in primary care from the Midwest region and the needs assessment assessed years of experience, settings of practice, rural experience, orientation/training, and by using a self-rating scale identified how prepared they felt in

performing emergency care skills. As a means to guide the development of the education seminar, the needs assessment helped to identify rural NPs' perceived level of preparedness in performing emergency skills in 59 different clinical skills in an emergency department setting.

Evaluation of Objective Two

Objective two was to evaluate the emergency skills education seminar developed and implemented guided by the 2019 Rural Nurse Practitioner Skill Needs Assessment findings. A secondary analysis of the Rural Nurse Practitioner Skill Needs Assessment findings was completed to determine the level of preparedness of rural NPs in performing emergency care skills. The findings of the 2019 needs assessment identified nine novice rural NPs perceived level of preparedness in 59 clinical skills that were applicable in an emergency department setting. The Emergency Care Skills Seminar included didactic portions utilizing PowerPoint presentations and tabletop/group discussion, and further practice opportunities using hands-on application of emergency care skills. To evaluate the education seminar an optional post-seminar survey was administered to the participants (Appendix H). The post-seminar survey questions that evaluated objective two were questions ten through seventeen; these questions assessed the effectiveness of the seminar educational content, delivery methods used when implementing the seminar, and recommendations for future educational topics and improvement.

Evaluation of Objective Three

Objective three was to assess the perceived increase in the participants' level of preparedness of performing emergency skills after attending the education seminar. To evaluate objective three the responses from the pre- and post-seminar survey were compared in aggregate form against each other in order to assess the effectiveness of the Emergency Care Skills

Seminar (Appendix G & H). The same question was asked in both the pre- and post-seminar survey to evaluate objective three.

The replicated question assessed the participant's perceived level of preparedness in implementing the three emergency care skills taught in the education seminar. The question in the pre-seminar survey that evaluated objective three was question one, and the question in the post-seminar survey that evaluated objective three was question eight. By comparing the responses from the pre- and post-seminar survey the co-investigator was able to determine if the participant's level of preparedness increased after attending the Emergency Care Skills Seminar.

CHAPTER 4. RESULTS

Demographic and Practice Characteristics of Respondents

Emergency Care Skills Seminar

For the implementation of the PIP held in December 2020, there were a total of six participants that attended. Of the participants three were practicing NPs from rural communities within the Midwest region and three were third year NDSU DNP students. Due to the low volume of NPs that were able to participate in the Emergency Care Skills Seminar third year DNP students currently enrolled at NDSU were invited to attend. DNP students were included in order to have adequate group sizes for the hands-on skill sessions and to ensure there were adequate participants in accordance with SIM-ND requirements. All of the participants in the Emergency Care Skills Seminar were females.

The pre- and post-seminar survey were sent via Qualtrics and were anonymous. As the surveys were designed to be anonymous a correlation between an individual participant's responses from the pre- and post-seminar survey could not be determined. Of the participants (100%) completed the pre-seminar survey and five out of six (83.33%) completed the post-seminar survey. One of the participants opted out of completing the post-seminar survey after completion of the Emergency Care Skills Seminar. Participants who completed the post-seminar survey were two NPs and three DNP students. The demographic information collected from the five participants who completed the post-seminar survey is shown in Table 2. Of the five respondents, three were DNP students and not currently practicing, therefore did not have previous experience as a provider in a rural setting. Two of the respondents had previous experience and were currently employed in a rural position. Demographic questions pertaining to

current rural emergency department experience were answered by two of the five respondents in the post-seminar survey.

Table 2

Demographics

| Survey Response | % | Count |
|------------------------------------------------------------------------------|------|-------|
| Post-Graduate Program | | |
| Masters of Science in Nursing | 40% | 2 |
| Doctor of Nursing Practice | 60% | 3 |
| Total | 100% | 5 |
| Accredited Certification Program | | |
| Family Nurse Practitioner | 100% | 5 |
| Total | 100% | 5 |
| Previous Rural Provider Experience | | |
| Yes | 40% | 2 |
| No | 60% | 3 |
| Total | 100% | 5 |
| Years Employed in Current Rural Position | | |
| Over 9 years | 100% | 2 |
| Total | 100% | 2 |
| Years of Previous Rural Provider Experience | | |
| Over 9 years | 100% | 2 |
| Total | 100% | 2 |
| Frequency of Working in a Rural Emergency Department Setting | | |
| Every 6-8 months | 50% | 1 |
| Less than annually | 50% | 1 |
| Total | 100% | 2 |
| Average Patient Volume per 8-hour Shift in Rural Emergency Department | | |
| 0-2 patient | 100% | 2 |
| Total | 100% | 2 |

Question nine on the post-seminar survey assessed the average skill frequency completion of the participant's in their clinical role regarding the emergency care skills taught in the education seminar. The findings from question nine are shown in Table 3. If a participant selected more than once a month they had an option to provide a written answer for the amount of time per month. For the one participant who selected the more than once a month option for arthrocentesis, she reported completing the skill 10 times per month. Additional comments for frequency of arthrocentesis from one participant was "I do this skill all the time in my clinic practice".

Table 3

Frequency of Skill Completion in the Emergency Department

| Skill | More than once a month | Once a month | Once every 2-3 months | Once every 4-6 months | Once every 7-12 months | Less than once a year | I have never performed this skill before in my practice | Total |
|-----------------------------|------------------------|--------------|-----------------------|-----------------------|------------------------|-----------------------|---------------------------------------------------------|-------|
| Procedural Sedation | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 100.00% | 5 |
| Emergency Airway Management | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 100.00% | 5 |
| Arthrocentesis | 20.00% | 0.00% | 0.00% | 0.00% | 20.00% | 0.00% | 60.00% | 5 |

Objective One

Objective one evaluated the perceived level of preparedness among rural nurse practitioners in performing emergency skills at a rural healthcare facility. Prior to the development of the education seminar, a secondary analysis of the 2019 Rural Nurse Practitioner Skills Needs Assessment findings was completed which assessed an NP’s level of preparedness in performing emergency care skills in 59 different clinical areas. The needs assessment had been previously distributed to novice rural NPs practicing in primary care from the Midwest region as a part of a HRSA ANEW grant by two assistant professors from NDSU’s SON. A total of 11 NPs responded to the survey, nine completed question seven which assessed their perceived level of preparedness in performing emergency care skills in the 59 clinical areas. For the purpose of the PIP the nine respondents who completed question seven from the survey were included in the data analysis. An additional question asked about emergency care specific education that was included in their orientation, training, or self-initiated preparation, however none of the respondents answered the question. In the needs assessment question seven asked, “Considering your experiences from your educational program, previous work experiences, and

your orientation or training in your current position, how prepared were you for actual practice in the following clinical areas?” (Barnacle & Gross, 2020). NPs who participated in the needs assessment survey used a self-rating scale, “unprepared”, “somewhat prepared”, “generally well prepared”, or “very well prepared” to identify how prepared they felt in performing emergency care skills in each of the clinical areas. Table 4 shows the findings from the needs assessment on NPs perceived level of preparedness in each of the 59 clinical areas.

Objective Two

Objective two evaluated the emergency skills education seminar developed and implemented based on the perceived emergency skills needs of nurse practitioners. The topics for the Emergency Care Skills Seminar were chosen based on the findings from secondary analysis of the 2019 Rural Nurse Practitioner Skill Needs Assessment (Table 4).

Table 4

Perceived Level of Preparedness in Clinical Areas Among Participants of the Rural Nurse Practitioner Skill Needs Assessment

| Clinical area | Unprepared | Somewhat prepared | Generally well prepared | Very well prepared | Total |
|------------------------------------------------------|------------|-------------------|-------------------------|--------------------|-------|
| EMTALA –specified medical screening exam | 44.44% | 22.22% | 22.22% | 11.11% | 9 |
| Childhood obesity management | 33.33% | 11.11% | 44.44% | 11.11% | 9 |
| Telehealth | 22.22% | 33.33% | 44.44% | 0.00% | 9 |
| Opioid Prescribing | 0.00% | 22.22% | 55.56% | 22.22% | 9 |
| Medication Assisted Treatment – Opioids | 33.33% | 55.56% | 11.11% | 0.00% | 9 |
| Mental health management | 0.00% | 33.33% | 33.33% | 33.33% | 9 |
| Resiliency/avoiding burnout | 0.00% | 33.33% | 44.44% | 22.22% | 9 |
| Professional boundaries | 0.00% | 0.00% | 44.44% | 55.56% | 9 |
| Stress management | 0.00% | 22.22% | 55.56% | 22.22% | 9 |
| Rapidly changing the physiologic status of a patient | 11.11% | 0.00% | 77.78% | 11.11% | 9 |
| Sexual assault exam and evidence preservation | 66.67% | 33.33% | 0.00% | 0.00% | 9 |
| Laboratory diagnostics—ordering and interpreting | 0.00% | 11.11% | 33.33% | 55.56% | 9 |

Table 4. *Perceived Level of Preparedness in Clinical Areas Among Participants of the Rural Nurse Practitioner Skill Needs Assessment* (continued)

| Clinical area | Unprepared | Somewhat prepared | Generally well prepared | Very well prepared | Total |
|-------------------------------------------------------------|------------|-------------------|-------------------------|--------------------|-------|
| Pharmacologic and non-pharmacologic therapies | 0.00% | 0.00% | 44.44% | 55.56% | 9 |
| Electrocardiograms interpretation | 0.00% | 44.44% | 44.44% | 11.11% | 9 |
| Radiograph interpretation | 11.11% | 33.33% | 55.56% | 0.00% | 9 |
| CT scans and MRI interpretation | 33.33% | 44.44% | 22.22% | 0.00% | 9 |
| Manages <i>adult</i> patient in cardiopulmonary arrest | 22.22% | 22.22% | 44.44% | 11.11% | 9 |
| Manages <i>pediatric</i> patient in cardiopulmonary arrest | 44.44% | 33.33% | 22.22% | 0.00% | 9 |
| Emergency airways (e.g. King, Combitube, LMA) | 55.56% | 22.22% | 22.22% | 0.00% | 9 |
| Endotracheal intubation | 88.89% | 11.11% | 0.00% | 0.00% | 9 |
| CPAP/BIPAP | 33.33% | 22.22% | 22.22% | 22.22% | 9 |
| Intraosseous access | 33.33% | 44.44% | 22.22% | 0.00% | 9 |
| Central venous access | 77.78% | 11.11% | 11.11% | 0.00% | 9 |
| Procedural sedation | 77.78% | 11.11% | 0.00% | 11.11% | 9 |
| Ultraviolet examination of skin and secretions | 55.56% | 22.22% | 22.22% | 0.00% | 9 |
| Skin lesions treatment (e.g. ulcers, foot callus, skin tag) | 11.11% | 0.00% | 66.67% | 22.22% | 9 |
| Lesion excision: Punch biopsy | 0.00% | 22.22% | 55.56% | 22.22% | 9 |
| Injects local anesthetics | 11.11% | 22.22% | 33.33% | 33.33% | 9 |
| Nail trephination/removal | 33.33% | 55.56% | 11.11% | 0.00% | 9 |
| Nail bed closure | 55.56% | 44.44% | 0.00% | 0.00% | 9 |
| Single layer laceration repair | 0.00% | 11.11% | 77.78% | 11.11% | 9 |
| Complex or deep wound closure | 22.22% | 44.44% | 22.22% | 11.11% | 9 |
| Minor burn debridement | 33.33% | 22.22% | 33.33% | 11.11% | 9 |
| Abscess incision, drainage, and wound packing | 11.11% | 0.00% | 77.78% | 11.11% | 9 |
| Pupil dilation | 55.56% | 11.11% | 33.33% | 0.00% | 9 |
| Fluorescein staining | 22.22% | 22.22% | 33.33% | 22.22% | 9 |
| Slit lamp examination | 33.33% | 44.44% | 22.22% | 0.00% | 9 |
| Cerumen impaction curettage | 0.00% | 0.00% | 77.78% | 22.22% | 9 |
| Epistaxis control | 22.22% | 33.33% | 44.44% | 0.00% | 9 |
| Nasogastric or orogastric tube placement | 22.22% | 11.11% | 66.67% | 0.00% | 9 |
| Cervical spine management | 22.22% | 33.33% | 44.44% | 0.00% | 9 |

Table 4. *Perceived Level of Preparedness in Clinical Areas Among Participants of the Rural Nurse Practitioner Skill Needs Assessment* (continued)

| Clinical area | Unprepared | Somewhat prepared | Generally well prepared | Very well prepared | Total |
|----------------------------------------------------------------------------|------------|-------------------|-------------------------|--------------------|-------|
| Bartholin's cyst incision and drainage | 44.44% | 44.44% | 11.11% | 0.00% | 9 |
| Lumbar puncture | 100.00% | 0.00% | 0.00% | 0.00% | 9 |
| Imminent childbirth and post-delivery maternal care | 66.67% | 11.11% | 0.00% | 22.22% | 9 |
| Fecal impaction removal | 33.33% | 33.33% | 33.33% | 0.00% | 9 |
| Incise thrombosed hemorrhoids | 66.67% | 11.11% | 22.22% | 0.00% | 9 |
| Digital nerve block | 55.56% | 11.11% | 22.22% | 11.11% | 9 |
| Fracture reduction | 55.56% | 44.44% | 0.00% | 0.00% | 9 |
| Dislocation reduction | 55.56% | 44.44% | 0.00% | 0.00% | 9 |
| Immobilization devices—splints or casts | 22.22% | 44.44% | 22.22% | 11.11% | 9 |
| Bivalves/removes casts | 66.67% | 22.22% | 0.00% | 11.11% | 9 |
| Arthrocentesis (knee or elbow) | 77.78% | 22.22% | 0.00% | 0.00% | 9 |
| Compartment pressure measurement | 88.89% | 0.00% | 11.11% | 0.00% | 9 |
| Foreign body removal (e.g. eyes, ears, nose, rectum, vaginal) | 22.22% | 33.33% | 22.22% | 22.22% | 9 |
| Disaster and mass casualty incidents | 44.44% | 33.33% | 11.11% | 11.11% | 9 |
| Palliative care and end-of-life care | 0.00% | 55.56% | 33.33% | 11.11% | 9 |
| Acute neurologic disability | 22.22% | 55.56% | 11.11% | 11.11% | 9 |
| Mental health emergency | 22.22% | 55.56% | 11.11% | 11.11% | 9 |
| Long-acting reversible contraceptive (LARC) placement (eg. IUD, Nexplanon) | 11.11% | 44.44% | 22.22% | 22.22% | 9 |

The clinical areas in which the majority of NPs identified as feeling unprepared or somewhat prepared for in practice were reviewed considered for the education seminar. Initially the top clinical areas considered for the education seminar were defined by a majority of the respondents who reported feeling unprepared or somewhat prepared for actual practice in the clinical skill area. Considerations to further narrow down emergency skills to be included in the education seminar were accessibility to training supplies through the NDSU SON or SIM-ND and ability to complete each of the skills didactic content and hands-on training in one day. Procedural sedation, emergency airway management which included endotracheal intubation,

and arthrocentesis were the three emergency care skills selected for the implementation of the PIP. These skills were chosen given supplies for each of the skills were accessible and feasible to use during the training period. From the secondary analysis of the 2019 Rural Nurse Practitioner Skill Needs Assessment (Table 4), there were other emergency care skills NPs identified as feeling more unprepared for in practice such as lumbar puncture or central venous access, however these skills could not be considered given cost and the lack of access to training supplies, lack of subject matter experts, and no availability of appropriate simulation scenarios through SIM-ND.

Questions 10-17 from the post-seminar survey evaluated the effectiveness of the delivery methods used for implementing the education seminar, seminar educational content, and recommendations for future educational topics and improvement. In the post-seminar survey, question 10 asked participants if the teaching methods utilized in the education seminar were conducive to their learning by using a Likert scale: “Strongly Agree”, “Somewhat Agree”, “Neutral”, “Somewhat Disagree”, “Strongly Disagree” (Table 5). The Likert scale was used to measure participants’ perception of the effectiveness of the Emergency Care Skills Seminar teaching methods with strongly agree was the most conducive to learning and strongly disagree was the least conducive to learning.

Table 5

Participants’ Rating of Perceived Effectiveness of Teaching Methods

| Teaching Method | Strongly Agree | Somewhat Agree | Neutral | Somewhat Disagree | Strongly Disagree | Total |
|-----------------------------|-----------------------|-----------------------|----------------|--------------------------|--------------------------|--------------|
| PowerPoint lecture | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 5 |
| Tabletop discussion | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 5 |
| Hands-on skills application | 100.00% | 0.00% | 0.00% | 0.00% | 0.00% | 5 |

The participants were asked if they would recommend the emergency skills seminar to their colleagues, four reported strongly agree (80%) and one reported somewhat agree (20%). Five of the participants (100%) reported the level of content in the education seminar was appropriate for NPs and felt the education seminar would have been beneficial as a NP student. When asked if there were other emergency care skills they would rather be educated on five of the participants (100%) selected “no”. When participants were asked whether they would take an emergency care curriculum if it was offered as a post-graduate program, four (80%) selected yes and one (20%) selected no. On question 17 of the post-seminar survey there were no suggested changes to the education seminar with one participant commenting “excellent seminar” and “very helpful”.

Objective Three

Objective three assessed the participant’s perceived increase in their level of preparedness for performing emergency skills after attending the education seminar. To assess whether there was an increase in the participants’ perceived level of preparedness in performing the three emergency care skills taught in the education seminar responses from question one in the pre-seminar survey and question eight in the post-seminar survey, which asked “how prepared do you feel in implementing the following skills?” were analyzed and compared against each other. The associated question from each of the surveys addressed the participants perceived level of preparedness for procedural sedation, emergency airway management, and arthrocentesis by using a self-rating scale where they could identify as feeling unprepared, somewhat prepared, generally well prepared, or very well prepared in implementing each of the skills.

The overall perceived level of preparedness among participants in implementing procedural sedation increased after completing the education seminar. On the pre-seminar survey, 33.33% ($n=2$, $N=6$) of respondents reported feeling unprepared and 66.67% ($n=4$) reported feeling somewhat prepared for implementing procedural sedation in actual practice. After completion of the Emergency Care Skills Seminar, on the post-seminar survey, 80% ($n=4$, $N=5$) of respondents reported feeling generally well prepared and 20% ($n=1$) reported feeling somewhat prepared for implementing procedural sedation in actual practice. Figure 3 presents the findings from the pre- and post-seminar survey of participants' perceived level of preparedness for procedural sedation.

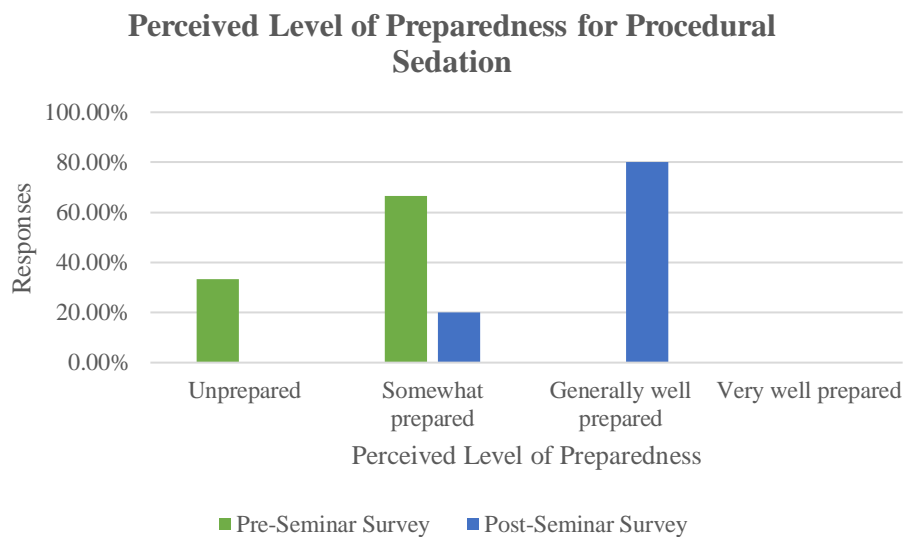


Figure 3. Participants' Perceived Level of Preparedness for Implementing Procedural Sedation

After completing the education seminar the overall perceived level of preparedness among participants in implementing emergency airway management increased. On the pre-seminar survey, 16.67% ($n=1$, $N=6$) of respondents reported feeling unprepared, 66.67% ($n=4$) reported feeling somewhat prepared, and 16.67% ($n=1$) reported feeling generally well prepared for implementing emergency airway management in actual practice. After completion of the

Emergency Care Skills Seminar, on the post-seminar survey, 60% ($n=3$, $N=5$) of respondents reported feeling very well prepared and 40% ($n=2$) reported feeling generally well prepared for implementing emergency airway management in actual practice. Figure 4 presents the findings from the pre- and post-seminar survey of participants' perceived level of preparedness for emergency airway management.

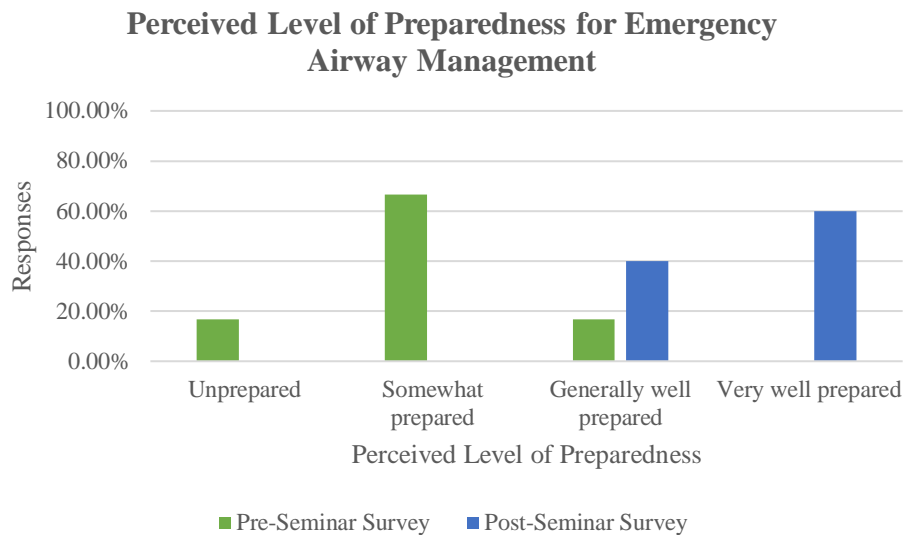


Figure 4. Participants' Perceived Level of Preparedness for Implementing Emergency Airway Management

The overall perceived level of preparedness among participants in implementing arthrocentesis increased after completing the education seminar. On the pre-seminar survey, 33.33% ($n=2$, $N=6$) of respondents reported feeling unprepared, 16.67% ($n=1$) reported feeling somewhat prepared, and 50% ($n=3$) reported feeling generally well prepared for implementing arthrocentesis in actual practice. After completion of the Emergency Care Skills Seminar, on the post-seminar survey, 80% ($n=4$, $N=5$) of respondents reported feeling very well prepared and 20% ($n=1$) reported feeling generally well prepared for implementing arthrocentesis in actual practice. Figure 5 presents the findings from the pre- and post-seminar survey of participants' perceived level of preparedness for arthrocentesis.

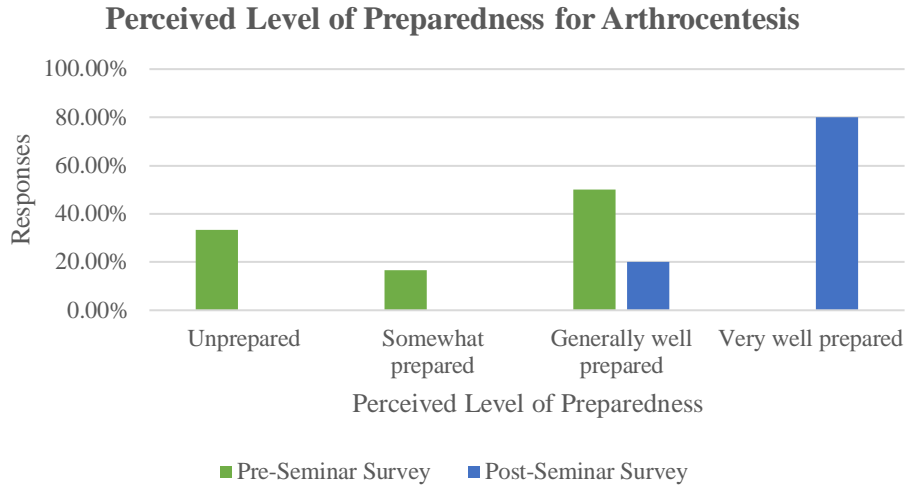


Figure 5. Participants’ Perceived Level of Preparedness for Implementing Arthrocentesis

On the pre-seminar survey participants were asked whether the three emergency care skills taught in the education seminar were within their scope of practice. There was an option available for participants to select unsure if they were not aware of whether the skills was in their scope of practice. Figure 6 shows the findings on NPs perception of scope of practice for each of the clinical skills.

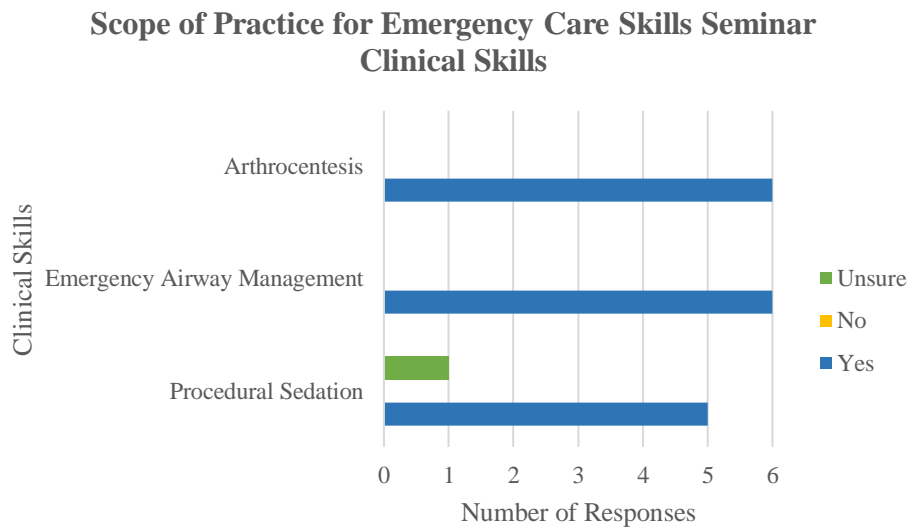


Figure 6. Participants’ Perceptions of Scope of Practice for Clinical Skills Implemented during the Emergency Care Skills Seminar

CHAPTER 5. DISCUSSION AND RECOMMENDATIONS

Summary and Discussion

The main findings from the PIP were identified during the secondary analysis of the Rural Nurse Practitioner Needs Assessment and the pre- and post-emergency care seminar surveys. From the data analysis of the needs assessment there appeared to be many clinical skills areas novice NPs identified as not feeling fully prepared for as they transitioned into practice. These findings are consistent with literature that revealed FNP programs prepare students well to take on the role of a primary care provider, however there are educational gaps among those who will be working in a rural setting with emergency department coverage responsibilities (Evans et al., 2015). During their initial education, the management of critical and unstable patients are not thoroughly covered in the curriculum of FNP programs. Receiving additional educational preparation in emergency care focused on acute stabilization, resuscitation, and the care of critically ill or trauma patients will help to increase their level of preparedness to provide quality care in the rural emergency setting. Based on the literature review and the secondary analysis of the Rural Nurse Practitioner Needs Assessment data findings, there were many clinical skills areas novice NPs identified as not feeling fully prepared for as they transitioned into practice, therefore, a need for additional emergency care education was recognized. The Emergency Care Skills Seminar was developed with the overall desired outcome of increasing NPs perceived level of preparedness in implementing emergency care skills.

Based on the findings of the analysis of the pre- and post-seminar survey there was a reported increase in the perceived level of preparedness in performing procedural sedation, emergency airway management, and arthrocentesis after completion of the Emergency Care Skills Seminar (Figure 3, Figure 4, & Figure 5). Five of the participants who completed the post-

seminar survey had an overall increase in preparedness for implementing procedural sedation, emergency airway management, and arthrocentesis. During the PIP, the participants' level of preparedness was assessed but given the timeline to complete the project, validated skill competency and continued sustainment was not addressed. To assess for continued emergency care skill competency in the future, completing additional surveys at intervals of six and 12 months after the education seminar could better evaluate the skill sustainment among the participants as relating to their actual practice.

The increase in perceived preparedness after the education seminar is supported by the literature that indicates having consistent and structured education can increase the perceived level of preparedness and competency among NPs when practicing in emergency care settings (Owen, 2019). A similar study completed by Ro et al. (2018), incorporated emergency care teaching modules and procedural skill practice during a nine-week emergency department preceptorship. Prior to and after completion of the preceptorship participants were evaluated on emergency care knowledge and skill acquisition. Overall there was a reported increase in emergency care knowledge and level of preparedness in implementing skills among participating NPs in the study. Another PIP completed by Olson (2015), identified a need for additional education among NPs taking on the role of an emergency care provider in a rural setting. Olson's study showed having an opportunity to receive additional emergency care education increased skill preparedness and competency among the participating NPs.

The five participants in the post-seminar survey strongly agreed the teaching methods utilized during the Emergency Care Skills Seminar were conducive to their learning and the content was at an appropriate level for NPs. In relation to Benner's theory, to ensure the didactic content for the Emergency Care Skills Seminar was conducive to learning it was developed for

participants in the novice and advanced beginner stage, because the three emergency care skills chosen for the education seminar were skills participants from the Rural Nurse Practitioner Needs Assessment identified as feeling “unprepared” or “somewhat prepared” for implementing in practice. Benner’s model discusses the importance of teaching strategies for each stage of clinical competence, and by using Benner’s model it allows for skill acquisition and enhanced knowledge as an individual progresses through each stage (Benner, 1984).

The participants in the Emergency Care Skills Seminar had a wide range of years of experience. Three of the participants were current DNP students with no previous experience in a rural setting and two of the participants had over 9 years of experience in their current role as NPs and had experience working in a rural emergency department. However, the two participants who had experience working in a rural emergency department reported not working frequently in the emergency department, had low patient volumes during their shifts, and did not have opportunities to implement two out of the three emergency care skills included in the Emergency Care Skills Seminar. The two skills from the Emergency Care Skills Seminar the participating NPs reported not having opportunities to perform in practice were procedural sedation and emergency airway management. Based on the responses from the pre-seminar survey, despite the wide range of experience, a majority of participants reported feeling unprepared or somewhat prepared for implementing each of the three emergency care skills in their current practice role. Additional qualitative questions could have been included in the post-seminar survey to assess the participating NPs perceived thoughts on reasoning for feeling unprepared for skill implementation in practice and recommendations they felt would be beneficial to help increase skill preparedness.

According to Benner (1984), to increase clinical competency nurses need proper background education before practice, as well as continued educational opportunities and experience during their clinical practice. By analyzing the data collected during the PIP regarding emergency care skill preparedness and frequency of skill implementation, many of the participants would be defined as novice and advanced beginners in Benner's Model. In relation to the PIP, Benner's stages of clinical competency can be applied based on clinical experience to develop education that is beneficial for the educational needs of NPs practicing in the rural emergency department setting. Clinical experience in relation to the PIP, is not defined by years of experience as an NP, but related to frequency of emergency care skill implementation which based on the responses from the participants of the Emergency Care Skills Seminar seems to influence their perceived level of preparedness.

Although Benner's is an educational model, in relation to the PIP the model was hard to apply to a provider working in a rural emergency department setting. Benner's model focuses on stages of clinical competence, and based on years of experience a provider should progress through the stages as they gain clinical experience. However, in the rural emergency department setting due to low patient volumes and variability of patient acuity progressing through Benner's stages of clinical competency in relation to emergency care skills may not be possible. Opportunities for implementing emergency care skills frequently in practice among rural emergency department providers may not be available, therefore, advancing to the proficient or expert stage may not be a realistic expectation. A recommendation for future PIP projects includes using an alternative nursing model or theory that is more consistent with skill acquisition for rural emergency care providers such as the Diffusion of Innovations (DOI) theory.

Each of the five participants strongly agreed PowerPoint lectures, tabletop discussion, and hands-on skills application were conducive to learning and increased their perceived preparedness in each of the emergency care skills taught at the education seminar. The participants also felt the education seminar would be beneficial for NP students to take prior to graduation and would recommend their colleagues to take the education seminar. Utilizing multiple learning methods such as lectures, teaching modules, discussion, and skills practice is beneficial to an NP's learning based on positive feedback from the participants and results from previous studies indicating an increase in emergency care competency (Olson, 2015; Ro et al., 2018). Continuing an emergency care education seminar annually using a variety of teaching methods such as PowerPoint lectures, tabletop discussion, and hands-on skills application can be conducive to learning and beneficial for rural NPs for continuing education and training in emergency care.

Of the five participants who completed the post-seminar survey, two NPs attended a Masters of Science in Nursing graduate program and the three NP students were currently attending a DNP graduate program. All five were either seeking FNP certification as students or were certified as FNPs. Two of the participants had over nine years of experience in their current position in addition to over nine years of experience in rural healthcare prior to their current position. Three of the participants had no previous experience as an advanced practice provider. Based on the heterogeneous group and small number of participants in the post-seminar survey an assumption can be made that the two participants with experience were the practicing NPs and the three participants with no previous experience were the DNP students.

Regardless of their years of experience all five participants had an increase in their perceived level of preparedness in implementing each of the skills after attending the Emergency

Care Skills Seminar. The two participants who completed the post-seminar survey and reported currently practicing in a rural setting did not routinely work in an emergency department setting. One reported working every four to six months and one reported working less than annually. Both of the two NPs who cover the rural emergency department reported that in an eight hour shift the average volume of patients was zero to two. The information collected from the participating NPs who currently cover an emergency department was consistent with the literature in which some of the challenges CAHs currently face are low patient volumes and lack of staff (Seright & Winters, 2015). Having emergency care skills training and continuing education can support providers at CAHs and help them maintain a full scope of practice to provide quality care for the population they serve.

Frequency of skill implementation related to a higher level of skills preparedness based on the PIP results. Among providers covering the emergency department at CAHs, initial training and continued emergency care education needs to be provided in order to deliver quality care to patients and maintain relevant emergency care skills (Carter, Cassidy, & Bhimani, 2012). Additionally, having support and continued education was reported as extremely important for NPs job satisfaction and retention at rural healthcare facilities (Owens, 2019). For rural NPs, emergency care skills unpreparedness appears to be related to infrequent implementation opportunities of skills due to low patient volumes during shifts and not working in the emergency department on a regular basis. Prior experience and training vary among NPs taking on an emergency care provider role at CAHs which is another factor that can influence emergency care skill preparedness. Some NPs have prior nursing experience in the emergency department, intensive care unit, or flight team and compared to those NPs with no background in

emergency care, previous experience can influence the NPs perceived preparedness when taking on a rural emergency department provider role at a CAH.

There is little information published on actual practice-training and validation of emergency care skills competencies for NPs practicing in an emergency care setting (Wolf et al., 2017). The Delphi studies completed by the ENA in 2008 led to the development of 60 entry-level competencies that cover the essential knowledge, behavior, and skills needed by NPs practicing in emergency departments (Hoyt et al., 2010). Despite the entry-level competencies for NPs in the emergency department, additional research is still needed on how validating emergency care competencies should be completed. Additional research is also needed to determine whether standardization of skills competency across all emergency care settings is a feasible option. When comparing urban and rural emergency care facilities there are many differences in the available resources, funding, patient volumes, and patient acuity levels which all impact a health care facility's ability implement and meet global standardizations.

According to Goodhue et al. (2019), individual states and healthcare facilities also vary on the requirements and opportunities for continued emergency care education that is offered for NPs working in the emergency department. From related studies evaluating the utility of providing continuing emergency care education opportunities to NPs practicing in an emergency department, the overall results showed an increase in the level of preparedness and competence among NPs after the education sessions (Olsen, 2015; Ro et al., 2018). To support rural NPs in emergency care skills sustainment, there is a need for increased continuing emergency care education on an annual basis to maintain skill competency and help NPs stay prepared to provide quality care for patients when they are covering the emergency department.

Recommendations

Based on findings from the PIP and related studies in the review of literature, providing emergency care educational opportunities by incorporating didactic and hands-on training improves knowledge and skill preparedness for providers practicing in a rural emergency department (Carter, Cassidy, & Bhimani, 2012; ENA, 2008; Hoyt et al., 2010; Olsen, 2015; Ro et al., 2018; Wolf et al., 2017). To help support NPs planning to work in rural areas, emergency care education can better prepare NPs to take on the role of a rural provider and provide safe, high-quality care (Evans et al., 2015). One recommendation is for FNP programs to incorporate curriculum providing additional education focused on acute, critical, and emergency care. Incorporating emergency care curriculum could be accomplished by adding an elective course for FNP students to take if they are planning to work at a rural facility in addition to offering the elective course as a post-graduate option for currently practicing NPs. The elective course could provide education and training for students to be better prepared for an emergency provider role as well as have clinical hours at a CAH or in an emergency department for additional role development. Potential topics in the course could include: stabilization of a critically ill patient (airway management, resuscitation, c-spine stabilization, and bleeding control), skin and complex wound care, extremity procedures (fracture/dislocation reduction, compartment pressure, and arthrocentesis), chest and abdomen complications (needle thoracostomy, chest tube management, and FAST scan), and spine procedures.

Based on previously completed emergency care education studies in the literature and the positive feedback from the Emergency Care Skills Seminar, using multiple teaching modalities was conducive to learning for emergency care continuing education. For the elective course, having an emergency care curriculum that thoroughly covers conditions seen in the emergency

department should be taught using multiple teaching methods (Carter, Cassidy, & Bhimani, 2012; ENA, 2008; Hoyt et al., 2010; Olsen, 2015; Ro et al., 2018; Wolf et al., 2017). If adding an elective course is not an option for FNP programs, various emergency care topics and skills could also be incorporated throughout existing FNP program curriculums by having emergency care simulation and skills days. The emergency care course could also be offered as continuing education for students and providers that could be used to meet licensure requirements.

Additionally, adequate emergency care education and training needs to be included during orientation for new providers when taking on an emergency care role to ensure they feel better prepared and supported to help with role satisfaction and sustainment (Carter, Cassidy, & Bhimani, 2012; Hoyt & Proehl, 2015; Owens, 2019). Formatting the emergency care education and training to include the entry-level competencies approved by the ENA would help ensure the essential knowledge, behavior, and skills needed by an NP practicing in emergency care are covered (ENA, 2008; Hoyt et al., 2010). However, additional studies need to be completed to assess actual practice and how emergency care skills should be validated (Wolf et al., 2017). Having standardizations for NPs covering emergency departments at CAHs which include all the ENA entry-level competencies may not be feasible given the variations in resources, patient volumes, and level of acuity that can vary between rural facilities. Some examples of emergency care skills that may be unrealistic in most rural facilities are lumbar puncture or central line placement due to the expense of training supplies and lack of skill lab capabilities. Additionally many rural facilities lack clinical resources such as a lab equipped to run the cerebral spinal fluid specimens, and lack critical care beds and specialists who are trained in the management of central lines. Emergency care transition to practice programs should also be offered as a post-graduate option, by having universities collaborate with local hospitals, for those who are

planning on working at a CAH or within an emergency department to provide additional education to increase competency and preparedness in emergency care skills. To support the NP's transition into a new provider role at a rural healthcare facility, transition to practice programs have been shown to ease the transition process, reduce stress, and increase overall retention (Barnacle, 2021; Olson, 2015; Stock, 2015).

Another recommendation is to provide opportunities for continued education specific to rural emergency care annually to help ensure sustainability of knowledge and skills for providers working in rural facilities. The curriculum for the continuing education would include emergency care topics and competencies as defined by the ENA. Encouraging rural facilities to collaborate with local universities and build partnerships with community resources such as SIM-ND to provide platforms for continued education would be a way to encourage emergency care skill sustainment and development among rural providers. SIM-ND is a state program, funded through a grant, with the overall purpose of providing emergency care education and simulation opportunities at no cost for pre-hospital and hospital personnel across the state of North Dakota (University of North Dakota, 2020). For an NP to work in an emergency department, most health care institutions only require certifications such as BLS, ACLS, PALS, CALS, and ATLS which are only required to be taken every two to four years. The above certifications provide an excellent knowledge base for emergency care training but the frequency between recertification does not guarantee retention and continued sustainment of emergency care skills. For providers who only cover the emergency department occasionally or who don't have opportunities to perform emergency care skills frequently in their role, having continuing education opportunities will provide more consistent education to meet their emergency care needs and allow them to continue to feel competent in their emergency care skill

implementation. Standardizing the requirements or definitions for emergency care skills competency and sustainment for rural providers in emergency care can also encourage the development of annual emergency care education based on evidence that supports all providers in an emergency care role (Hoyt & Proehl, 2015; Wolf et al., 2017).

Lastly, institutions could offer financial incentives to encourage NPs working in rural emergency departments to obtain their ENP certification as another way to seek additional education and role development in emergency care. For NPs to obtain their ENP-BC there are three options. Option one can be obtained through portfolio review by an NP practicing in an emergency department setting and meeting specific criteria. Criteria for option one includes: a minimum of 2,000 direct emergency care clinical practice hours as a certified NP within the past five years, evidence of 100 hours of emergency-related continuing education credits, and a minimum of 30 continuing education credits in emergency-related procedural skills within five years (American Academy of Nurse Practitioners, 2018). Getting an ENP certification can better prepare the NP to care for critically ill patients in the emergency department which is in the best interest of patients to provide safe and quality care (Evans et al., 2015). Utilization of more routine education and training on emergency care strengthens providers' knowledge and skills, and as a result improves their perceived levels of preparedness in implementing emergency care skills at the healthcare facility. Option two and three involve completion of an emergency care graduate program, post-graduate NP program, or emergency fellowship program.

Dissemination

Dissemination of the PIP proposal was completed during a poster presentation at the North Dakota Nurse Practitioner Association Twelfth Annual Pharmacology Conference. For further dissemination of the PIP, a poster presentation will be accomplished at NDSU in May

2021. The PIP findings will also be disseminated to the public and other healthcare communities through publication on NDSU's ProQuest website. In addition, in collaboration with the project chair a publication will be submitted to an appropriate journal such as the Journal of the American Association of Nurse Practitioners (JAANP) or the American Academy of Emergency Nurse Practitioners (AAENP).

Strengths and Limitations

Throughout the development and implementation of the PIP, strengths and limitations were identified. For the PIP only a small number of participants were included which was not a true limitation, but having a larger group of participants would have allowed for an increase in the education that could have been provided to rural NPs within the region. The small number of participants and responses was a limitation to the PIP. Due to the limited data and small sample size making global generalizations about the preparedness of rural NPs in completing emergency care skills based on the project is limited. Implementing the PIP during the Covid-19 pandemic was another limitation of the project as the number of participants able to attend the Emergency Care Skills Seminar had to be limited to 10 people in order to maintain safe social distancing. Additionally, implementing the education seminar during the COVID-19 pandemic may be the reason for the low response rate of participants who were able to attend the education seminar.

Another limitation was the 2019 needs assessment used to develop the Emergency Care Skills Seminar was not completed by the participants of the PIP. The participants of the needs assessment were novice NPs in primary care and due to the low number of respondents to the invitation email the target population for the Emergency Care Skills Seminar was expanded to include a general collection of practicing NPs from the Midwest region and DNP students. When planning the PIP, DNP students were not initially considered, thus the literature review, needs

assessment, and education seminar surveys were not inclusive of the DNP student population. By developing a needs assessment and education seminar survey specific for the PIP, the skills implemented in the Emergency Care Skills Seminar could have been based directly on the needs of the participating providers and students.

A strength of the project was given the small number of participants, during the group skills sessions each participant had adequate time to practice the skills and ask questions in addition to having a collaborative discussion with the subject matter experts. Based on feedback from participants teaching methods for the Emergency Care Skills Seminar were conducive to learning and additional comments on the overall education seminar reported from participants were “excellent seminar” and “very helpful”. Another strength of the PIP was the community collaboration that was established by incorporating the NDSU SON and SIM-ND to help provide continuing education for rural providers from the Midwest region and current NDSU DNP students. Additionally, having DNP students participate and learn concurrently with practicing rural NPs provided another collaborative experience during the Emergency Care Skills Seminar. The benefits of having intraprofessional education experience between students and practicing NPs include providing mentorship, building relationships, bringing additional learning opportunities through differences in level of experience, and allowing for networking.

Significance of the Project and Application of Project Findings to the DNP Role

Previous research identified a need for additional and continued education to support NPs taking on the role of an emergency department provider at a rural healthcare facility (ENA, 2008; Evans et al., 2015; Hoyt et al., 2010; and Hoyt et al., 2015; Olson, 2015; Owen, 2019; Ro et al., 2018). Continued research is also needed to develop standardization for emergency department training and skill competency validation (Wolf et al., 2017).

The PIP and the review of the literature further reinforces the need for additional and continued education among NPs working in an emergency department at CAHs. Based on the secondary analysis from the 2019 Rural Nurse Practitioner Needs Assessment there is an apparent need for additional emergency care education and preparation. For 41 of the 59 clinical skills assessed in the needs assessment, greater than 55% of the 2019 participants selected either “unprepared” or “somewhat prepared” to implement the skill in practice. The findings of the secondary analysis emphasizes the need for additional emergency care education, as participating NPs in the needs assessment reported not feeling fully prepared when implementing various emergency care skills that are required to provide care to critically ill patients in a rural emergency department setting.

Data from the Emergency Care Skills Seminar supported by providing continued education and hands-on skill training an increase in perceived level of preparedness among participating providers could be achieved. The project’s application to the DNP role is role advancement and advocating for changes in emergency care training and role preparation. Preparing NPs for the needs of the rural workforce can help with increased preparedness among NPs working in a rural emergency department setting to ensure we are providing quality care for our patients. By evaluating the level of preparedness and needs of NPs in their current role, continued emergency care education based on evidence-based practice can be provided to better prepare NPs, which ultimately improves patient outcomes and provider confidence during emergency situations.

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APPENDIX A. COMPETENCIES FOR NURSE PRACTITIONERS IN EMERGENCY

CARE

Competencies

The following competencies include knowledge, behaviors, and skills an entry-level nurse practitioner should have in order to practice in emergency care. These competencies are intended to supplement the core competencies for all nurse practitioners as well as population-focused nurse practitioner competencies while providing a model for entry-level practice in emergency care. Nurse practitioner practice may differ from that described in these entry-level competencies due to variations in state regulation, practice setting, employment arrangement, and as a result of increasing knowledge and experience.

I. Management of Patient Health/Illness Status

1. Triage patients' health needs/problems.
2. Completes EMTALA-specified medical screening examination.
3. Responds to the rapidly changing physiological status of emergency care patients.
4. Uses current evidence-based knowledge and skills in emergency care for the assessment, treatment, and disposition of acute and chronically ill and injured (e.g., physiologic, psychological, socio-economic, cultural) emergency patients.
5. Specifically assesses and initiates appropriate interventions for violence, neglect, and abuse (e.g., physical, psychological, sexual, substance).
6. Specifically assesses and initiates appropriate interventions and disposition for suicide risk.
7. Assesses patient and family for levels of comfort (e.g., pain, palliative care, end of life, bad news) and initiates appropriate interventions.
8. Recognizes, collects, and preserves evidence as indicated (e.g., forensic evidence).
9. Orders and interprets diagnostic tests.
10. Orders pharmacologic and non-pharmacologic therapies.
11. Orders and interprets electrocardiograms.
12. Orders and interprets radiographs.
13. Assesses response to therapeutic interventions.
14. Documents assessment, treatment, and disposition.

II. Professional Role

15. Functions as a direct provider of emergency care services.
16. Directs and clinically supervises the work of nurses and other healthcare providers.
17. Participates in internal and external emergencies, disasters, and pandemics.
18. Maintains awareness of known causes of mass casualty incidents and the treatment modalities required for emergency care.
19. Acts in accordance with legal and ethical professional responsibilities (e.g., patient management, documentation, advance directives).

III. Airway, Breathing, Circulation, and Disability Procedures

20. Assesses and manages a patient in cardiopulmonary arrest (e.g., neonatal resuscitation, leads code team, rapid response team).

21. Assesses and manages airway (e.g., endotracheal intubation, ventilated patients).
22. Assesses and obtains advanced circulatory access (e.g., intraosseous).
23. Assesses and manages patients with disability (e.g., neurologic).
24. Assesses and manages procedural sedation patients.

IV. Skin and Wound Care Procedures

25. Performs ultraviolet examination of skin and secretions (e.g., Woods Lamp).
26. Treats skin lesions (e.g., foot callus, skin tag, plantar lesion, decubitus care).
27. Injects local anesthetics.
28. Performs nail trephination.
29. Removes toenail(s) (e.g., partial or complete removal of an ingrown toenail).
30. Performs a nail bed closure.
31. Performs closures (such as a single layer, multiple, staple, adhesive).
32. Revises a wound for closure.
33. Debrides minor burns (e.g., nonadhering blister).
34. Incises, drains, irrigates, and packs wounds.

V. Head, Eye, Ear, Nose, and Throat Procedures

35. Dilates eye(s).
36. Performs fluorescein staining.
37. Performs tonometry to assess intraocular pressure.
38. Performs Slit lamp examination.
39. Performs cerumen impaction curettage.
40. Controls epistaxis.

VI. Chest and Abdomen

41. Performs a needle thoracostomy for life-threatening conditions in emergency situations (e.g., tension pneumothorax).
42. Replaces a gastrostomy tube.

VII. Neck, Back, and Spine Procedures

43. Clinically assesses and manages cervical spine.
44. Performs lumbar puncture.

VIII. Gynecologic, Genitourinary, and Rectal Procedures

45. Incises and drains a Bartholin's cyst.
46. Assists with imminent childbirth and post-delivery maternal care.
47. Removes fecal impactions.
48. Incises thrombosed hemorrhoids.
49. Performs sexual assault examination.

IX. Extremity Procedures

50. Performs digital nerve block.
51. Reduces fractures of small bones (e.g., fingers, toes).
52. Reduces fractures of large bones with vascular compromise (e.g., traction splint).
53. Reduces dislocations of large and small bones.

- 54. Applies immobilization devices (e.g., splint, traction).
- 55. Bivalves/ remove casts.
- 56. Performs arthrocentesis (e.g., knee, elbow).
- 57. Measures compartment pressure.

X. Other

- 58. Performs radio communication with prehospital units.
- 59. Interprets patient diagnostics (e.g., vital signs, 12-lead ECGs) as communicated by prehospital personnel.
- 60. Removes foreign bodies (e.g., from orifices and soft tissue).

Competencies for Nurse Practitioners in Emergency Care
©Emergency Nurses Association, 2008

APPENDIX B. RURAL NURSE PRACTITIONER SKILL NEEDS ASSESSMENT

1. How many years did you spend as a practicing RN in each of the following settings? (if none, please enter zeroes: if less than a year, please report the fractions.)
 - _____ Critical care
 - _____ Emergency department
 - _____ Home health care
 - _____ Inpatient medical/surgical unit
 - _____ Inpatient pediatrics
 - _____ Inpatient maternity
 - _____ Other inpatient clinic
 - _____ Outpatient clinic
 - _____ Public health
 - _____ Residential facility
 - _____ School/college clinic
 - _____ School/college teaching
 - _____ Other (please specify) _____

2. How long have you been employed in your current position?
 - Less than a year
 - 1-2 years
 - 3-5 years
 - 6-9 years
 - Over 9 years

3. Did you have previous experience as an registered nurse (RN) in a rural setting?
 - Yes
 - No

4. How many years of experience in rural care did you have prior to your current position?
 - Less than a year
 - 1-2 years
 - 3-5 years
 - 6-9 years
 - Over 9 years

5. What is the model of care within your clinical setting?
 - The sole provider with the second individual on call
 - Additional provider(s) during busier times of the day/week
 - Always at least two providers during operational hours
 - Other

6. If part of your job responsibilities include covering an emergency department, what *emergency care specific education* was included in your orientation, training, or self-initiated preparation? (check all that apply)

- Certifications
 - BLS—Basic Life Support
 - ACLS—Advanced Cardiac Life Support
 - CALS—Comprehensive Advanced Life Support
 - ATLS—Advanced Trauma Life Support
 - PALS—Pediatric Advanced Life Support or other pediatric life support course
 - TNCC—Trauma Nurses Core Course
- Classroom or class meetings
- Internet instruction or modules
- Videos or other audiovisual modality
- Shadowing with another APP
- Shadowing with a physician
- Assigned a preceptor
- Mentoring
- Telemedicine instruction
- Simulation
- Ultrasound course
- Airway course
- Regional conference (please specify)

- National conference (please specify)

- Other (please specify)

7. Considering your experiences from your educational program, previous work experiences, and your orientation or training in your current position, how prepared were you for actual practice in the following clinical areas?

| Unprepared | Somewhat prepared | Generally well prepared | Very well prepared | Skill within your scope of practice? Y/N | Clinical area |
|------------|-------------------|-------------------------|--------------------|---------------------------------------------|-------------------------------------------------------------|
| | | | | | EMTALA –specified medical screening exam |
| | | | | | Childhood obesity management |
| | | | | | Telehealth |
| | | | | | Opioid Prescribing |
| | | | | | Medication Assisted Treatment – Opioids |
| | | | | | Mental health management |
| | | | | | Resiliency/avoiding burnout |
| | | | | | Professional boundaries |
| | | | | | Stress management |
| | | | | | Rapidly changing the physiologic status of a patient |
| | | | | | Sexual assault exam and evidence preservation |
| | | | | | Laboratory diagnostics—ordering and interpreting |
| | | | | | Pharmacologic and non-pharmacologic therapies |
| | | | | | Electrocardiograms interpretation |
| | | | | | Radiograph interpretation |
| | | | | | CT scans and MRI interpretation |
| | | | | | Manages <i>adult</i> patient in cardiopulmonary arrest |
| | | | | | Manages <i>pediatric</i> patient in cardiopulmonary arrest |
| | | | | | Emergency airways (e.g. King, Combitube, LMA) |
| | | | | | Endotracheal intubation |
| | | | | | CPAP/BIPAP |
| | | | | | Intraosseous access |
| | | | | | Central venous access |
| | | | | | Procedural sedation |
| | | | | | Ultraviolet examination of skin and secretions |
| | | | | | Skin lesions treatment (e.g. ulcers, foot callus, skin tag) |

| Unprepared | Somewhat prepared | Generally well prepared | Very well prepared | Skill within your scope of practice? Y/N | Clinical area |
|------------|-------------------|-------------------------|--------------------|---------------------------------------------|-----------------------------------------------------|
| | | | | | Lesion excision: Punch biopsy |
| | | | | | Injects local anesthetics |
| | | | | | Nail trephination/removal |
| | | | | | Nail bed closure |
| | | | | | Single layer laceration repair |
| | | | | | Complex or deep wound closure |
| | | | | | Minor burn debridement |
| | | | | | Abscess incision, drainage, and wound packing |
| | | | | | Pupil dilation |
| | | | | | Fluorescein staining |
| | | | | | Slit lamp examination |
| | | | | | Cerumen impaction curettage |
| | | | | | Epistaxis control |
| | | | | | Nasogastric or orogastric tube placement |
| | | | | | Cervical spine management |
| | | | | | Bartholin's cyst incision and drainage |
| | | | | | Lumbar puncture |
| | | | | | Imminent childbirth and post-delivery maternal care |
| | | | | | Fecal impaction removal |
| | | | | | Incise thrombosed hemorrhoids |
| | | | | | Digital nerve block |
| | | | | | Fracture reduction |
| | | | | | Dislocation reduction |
| | | | | | Immobilization devices—splints or casts |
| | | | | | Bivalves/removes casts |
| | | | | | Arthrocentesis (knee or elbow) |

| Unprepared | Somewhat prepared | Generally well prepared | Very well prepared | Skill within your scope of practice? Y/N | Clinical area |
|------------|-------------------|-------------------------|--------------------|---------------------------------------------|----------------------------------------------------------------------------|
| | | | | | Compartment pressure measurement |
| | | | | | Foreign body removal (e.g. eyes, ears, nose, rectum, vaginal) |
| | | | | | Disaster and mass casualty incidents |
| | | | | | Palliative care and end-of-life care |
| | | | | | Acute neurologic disability |
| | | | | | Mental health emergency |
| | | | | | Long-acting reversible contraceptive (LARC) placement (eg. IUD, Nexplanon) |

8. Did you prepare for your current position in other ways that were not provided by your place of employment? (eg: YouTube, continuing ed modules, etc.)

Yes (please describe)

No

9. Can you suggest any changes to your training that would have improved your preparedness to practice?

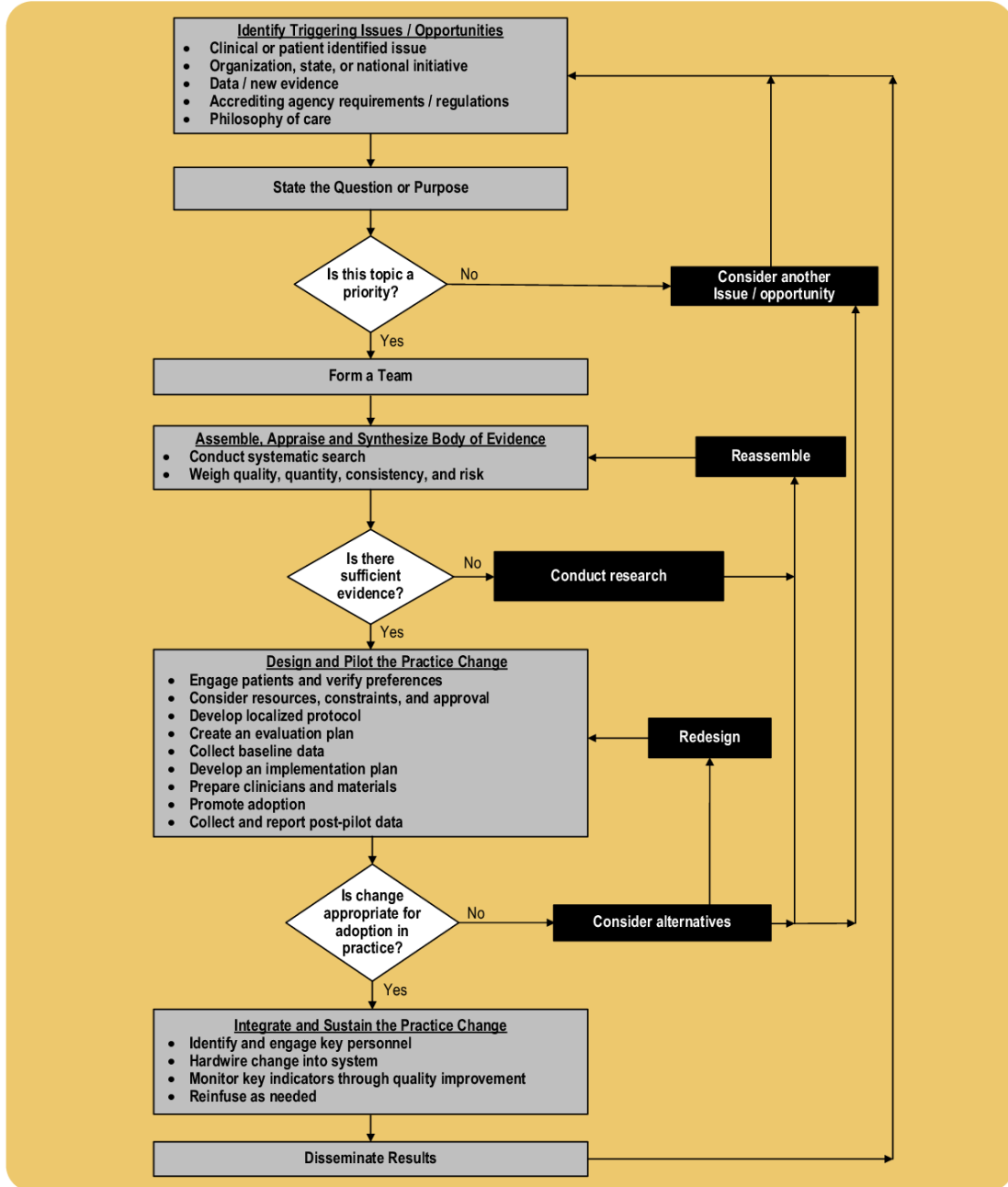
10. List the top 3 procedures or skills for which you would like to get additional training:

- a.
- b.
- c.

11. Do you have further comments?

APPENDIX C. THE IOWA MODEL REVISED: EVIDENCE-BASED PRACTICE TO PROMOTE EXCELLENCE IN HEALTH CARE

The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care



◆ = a decision point

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**APPENDIX D. UNIVERSITY OF IOWA HOSPITALS AND CLINICS PERMISSION
LETTER**

Permission to Use The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care

Kimberly Jordan - University of Iowa Hospitals and Clinics <noreply@qualtrics-survey.com>

Sat 11/2/2019 10:31 AM
Stueve, Erika

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Citation: Iowa Model Collaborative. (2017). Iowa model of evidence-based practice: Revisions and validation. *Worldviews on Evidence-Based Nursing, 14(3), 175-182. doi:10.1111/wvn.12223*

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APPENDIX E. INVITATION TO PARTICIPATE



NDSU Dept. 2670
Fargo, ND 58108-6050
701-231-7395

Emergency Care Skills Preparedness of Rural Nurse Practitioners

My name is Erika Stueve, and I am a DNP student at North Dakota State University. I am conducting a practice improvement project to improve emergency skills preparedness among rural nurse practitioners by developing an Emergency Care Skills Seminar. By participating in my project, it is my hope that rural nurse practitioners will have educational/training resources, knowledge, and enhanced preparedness to provide evidence-based emergency skills when caring for a patient in emergent situations.

As a rural nurse practitioner, you are invited to participate in my practice improvement project and attend the Emergency Care Skills Seminar. Your participation is completely voluntary, and you may withdraw from the seminar at any time with no penalty to you.

There are some risks to participants. These known risks may include: loss of confidentiality due to face-to-face participation and the expectation to follow CDC guidelines and take additional precautions due to the COVID-19 pandemic. By participating in the project, you may benefit by receiving education related to emergency care skills. The seminar will be submitted for approval of up to 7 contact hours of accredited education. Use the attachment to this email to collect more information on the Emergency Care Skills Seminar and RSVP to attend.

Prior of attending the Emergency Care Skills Seminar, I will request you take a pre-seminar survey. It should take less than 5 minutes to complete. After completion of the Emergency Care Skills Seminar, I will request your feedback on the seminar as well as obtain demographic information. It should take about 5-10 minutes to complete the post-seminar survey. These surveys are voluntary and seminar data is anonymous. That means that no one, not even members of the practice improvement project team, will know that the information you give comes from you.

If you have any questions or concerns about the project, please contact me at erika.stueve@ndsu.edu, or contact my chair Adam Hohman at adam.hohman@ndsu.edu

You have rights as a research participant. If you have questions about your rights or complaints about the research, you may talk to the research or contact the NDSU Human Research Protection Program at 701.231.8995, toll-free at 1-855-800-6717, or by email at ndsu.irb@ndsu.edu.

Thank you for your time and taking part in this practice improvement project,
Erika Stueve, DNP-student
Email: erika.stueve@ndsu.edu
Cell: 320-760-9140

North Dakota State University School of Nursing DNP Program

Invites you to attend: **Emergency Care Skills Seminar**

Speakers: Adam Hohman, DNP, APRN, FNP-BC

Aaron Lindstrom, DNP, FNP-BC

Nathan Tiedeman, DNP, FNP-C

Topics: **Procedural Sedation, Emergency Airway Management, & Arthrocentesis**

Education will be completed through lecture, table-top discussion, and hands-on simulation scenarios

Learning Objectives: At the end of the presentation, participants will be able to:

- Properly select, assess, and manage the patient undergoing procedural sedation and analgesia
- Identify and accurately select, assess, manage, and care for the patient with emergency airways
- Properly manage and accurately execute arthrocentesis

Friday December 18th, 2020 from 8:00am to 4:00pm

NDSU Aldevron Tower

1455 14th Ave North

Fargo, ND 58102

RSVP to: Erika Stueve at erika.stueve@ndus.edu by Tuesday December 1st, 2020

Participation is completely free. Lunch will be provided.

If a participant has any dietary considerations, please include these in the RSVP as well.

The education activity will be submitted to the American Association of Nurse Practitioners for approval of up to 7 contact hours of accredited education.

Due to limited space, time, and social distancing as a result of COVID-19, the first 10 RSVP's will be accepted. Any RSVP's after this will be placed onto a waiting list. If you are no longer able to attend, please reach out to me via email at least one week prior to the scheduled seminar date to allow for ample time to contact someone on the waiting list.

COVID-19 precautions: To maintain the safety of participants CDC guidelines and NDSU policies will be followed. Participants will be screened prior to the education seminar.

Participants will have access to disinfectant throughout the seminar and adequate room size is available to ensure there is at least 6 feet between participants. Per NDSU policy participants will be required to wear masks during the seminar, maintain social distancing, and wear gloves during the hands-on skill stations. SIM-ND also has guidelines in place for hands-on skills; they take temperatures and screen participants prior to simulations, require masks and gloves during the hands-on skills, limit the number of participants to maintain social distancing, and clean training supplies between each group.

APPENDIX F. SCREENING QUESTIONNAIRE

Screening Questions:

1. Do you have any of the following symptoms, or pending COVID-19 test because you were having any of the below symptoms?
 - a. Fever
 - b. Chills
 - c. Body aches
 - d. Cough
 - e. Shortness of breath
 - f. Sore throat
 - g. New onset loss of smell or taste
 - h. New onset of vomiting or diarrhea
2. Do you have a pending COVID-19 test without any of the symptoms previously mentioned?
3. In the last 14 days, have you been exposed to anyone with a lab confirmed COVID-19 test or have you had a COVID-19 positive test result?

*Anyone responding "yes" to any of the three questions should be excluded.

APPENDIX G. PRE-SEMINAR SURVEY

1. Prior to completing the educational seminar, how prepared do you feel in implementing the following skills?

| Clinical Skills | Unprepared | Somewhat prepared | Generally well prepared | Very well prepared | Skill within your scope of practice? Y/N/Unsure |
|-----------------------------|------------|-------------------|-------------------------|--------------------|----------------------------------------------------|
| Procedural Sedation | | | | | |
| Emergency Airway Management | | | | | |
| Arthrocentesis | | | | | |

APPENDIX H. POST-SEMINAR SURVEY

1. What type of post-graduate nurse practitioner program did you attend?
 - a. Masters of Science in Nursing (MSN)
 - b. Doctor of Nursing Practice (DNP)

2. What accredited certification program did you complete?
 - a. Family Nurse Practitioner
 - b. Emergency Nurse Practitioner
 - c. Acute Care Nurse Practitioner
 - d. Adult-Gerontology Nurse Practitioner
 - e. Other (please specify)

3. How long have you been employed in your current rural position?
 - Less than a year
 - 1-2 years
 - 3-5 years
 - 6-9 years
 - Over 9 years

4. Did you have previous experience as an advanced practice provider in a rural setting?
 - Yes
 - No

5. If you answered yes to the previous question, how many years of experience in rural care did you have prior to your current position?
 - Less than a year
 - 1-2 years
 - 3-5 years
 - 6-9 years
 - Over 9 years

6. On average, how frequently do you work in a rural emergency department setting?
 - Weekly
 - Monthly
 - Every 2-3 months
 - Every 4-6 months
 - Every 6-8 months
 - Annually
 - Less than annually

7. On average, what is your patient volume per 8-hour shift in the rural emergency department?
- 0-2 patients
 - 3-5 patients
 - 6-8 patients
 - 9 or greater patients
8. After completing the educational seminar, how prepared do you feel in implementing the following skills?

| Clinical Skills | Unprepared | Somewhat prepared | Generally well prepared | Very well prepared |
|-----------------------------|------------|-------------------|-------------------------|--------------------|
| Procedural Sedation | | | | |
| Emergency Airway Management | | | | |
| Arthrocentesis | | | | |

9. On average, how often do you complete the following skills in the emergency department?
- Procedural Sedation
 - More than once a month
 - If selected, how many times a month? _____
 - Once a month
 - Once every 2-3 months
 - Once every 4-6 months
 - Once every 7-12 months
 - Less than once a year
 - I have never performed this skill before in my practice
 - If selected, have you performed this skill in any form of training and, if so, what type of training? _____
 - Emergency Airway Management
 - More than once a month
 - If selected, how many times a month? _____
 - Once a month
 - Once every 2-3 months
 - Once every 4-6 months
 - Once every 7-12 months

- Less than once a year
- I have never performed this skill before in my practice
 - If selected, have you performed this skill in any form of training and, if so, what type of training? _____
- Arthrocentesis
 - More than once a month
 - If selected, how many times a month? _____
 - Once a month
 - Once every 2-3 months
 - Once every 4-6 months
 - Once every 7-12 months
 - Less than once a year
 - I have never performed this skill before in my practice
 - If selected, have you performed this skill in any form of training and, if so, what type of training? _____

10. The following teaching methods utilized in the educational seminar were conducive to my learning.

| Teaching Method | Strongly agree | Somewhat agree | Neutral | Somewhat Disagree | Strongly Disagree |
|-----------------------------|----------------|----------------|---------|-------------------|-------------------|
| PowerPoint lecture | | | | | |
| Tabletop discussion | | | | | |
| Hands-on skills application | | | | | |

11. I would recommend this program to my colleagues.

- Strongly agree
- Somewhat agree
- Neutral
- Somewhat disagree
- Strongly disagree

12. The level of content in the educational seminar for nurse practitioners was:
- Too advanced
 - Appropriate
 - Too simple
13. Were there other emergency care competencies you would have rather been educated on?
- Yes
 - No
14. If you answered yes to question 13, list the top 3 skills you would have liked to receive training on.
- a.
 - b.
 - c.
15. Prior to graduation do you feel this educational seminar would have been beneficial as a nurse practitioner student?
- Yes
 - No
 - Not applicable as I am a nurse practitioner student
16. If an emergency care curriculum was offered in a graduate program would you take it?
- Yes
 - No
17. Do you have any suggestions or comments about this educational seminar?

APPENDIX I. IRB APPROVAL



October 30, 2020

Dr. Adam Hohman
School of Nursing

Re: IRB Determination of Exempt Human Subjects Research:
Protocol #PH21060, "Emergency Care Skills Preparedness of Rural Nurse Practitioners"

NDSU Co-investigator(s) and research team: Erika Stueve

Date of Exempt Determination: 10/30/2020 Expiration Date: 10/29/2023

Study site(s): NDSU Funding Agency: n/a

The above referenced human subjects research project has been determined exempt (category 2(ii)) in accordance with federal regulations (Code of Federal Regulations, Title 45, Part 46, Protection of Human Subjects). This determination is based on the protocol received 10/19/2020.

Please also note the following:

- If you wish to continue the research after the expiration, submit a request for recertification several weeks prior to the expiration.
- The study must be conducted as described in the approved protocol. Changes to this protocol must be approved prior to initiating, unless the changes are necessary to eliminate an immediate hazard to subjects.
- Notify the IRB promptly of any adverse events, complaints, or unanticipated problems involving risks to subjects or others related to this project.
- Report any significant new findings that may affect the risks and benefits to the participants and the IRB.

Research records may be subject to a random or directed audit at any time to verify compliance with IRB standard operating procedures.

Thank you for your cooperation with NDSU IRB procedures. Best wishes for a successful study.

Sincerely,

A handwritten signature in blue ink that reads "Kristy Shirley".

Kristy Shirley, CIP, Research Compliance Administrator

For more information regarding IRB Office submissions and guidelines, please consult

https://www.ndsu.edu/research/for_researchers/research_integrity_and_compliance/institutional_review_board_irb/. This Institution has an approved FederalWide Assurance with the Department of Health and Human Services: FWA00002439.

INSTITUTIONAL REVIEW BOARD

NDSU Dept 4000 | PO Box 6050 | Fargo ND 58108-6050 | 701.231.8995 | Fax 701.231.8098 | ndsu.edu/irb

Shipping address: Research 1, 1735 NDSU Research Park Drive, Fargo ND 58102

NDSU is an equal opportunity

APPENDIX J. AANP CONTINUING EDUCATION ACTIVITY APPROVAL LETTER



The Voice of the Nurse Practitioner®

December 11, 2020

Erika Stueve
North Dakota Nurse Practitioner Association
706 24th Avenue S
Fargo, ND. 58103

Dear Erika,

The continuing education activity "Emergency Care Skills Seminar", sponsored by North Dakota Nurse Practitioner Association, is approved for continuing education by the American Association of Nurse Practitioners. Activity ID number 20124646 has been assigned to this application. All sessions are approved as submitted. This activity has been approved for 1 year (through December 31, 2021), provided no changes are made.

This activity may be repeated 1 additional time within the approval year with appropriate notification per the AANP Accreditation policy.

Use the following statement in your literature to indicate the maximum credit one person can obtain upon completion of this activity: "This activity is approved for 7.42 contact hour(s) of continuing education (which includes 3.5 hours of pharmacology) by the American Association of Nurse Practitioners. Activity ID 20124646. This activity was planned in accordance with AANP Accreditation Standards and Policies."

This approval is for the continuing education activity listed in the original application. With this approval, ALL changes to this program must be reported to the AANP for review as soon as they are identified. This includes, but is not limited to:

session drops/additions speaker changes objective changes date and/or venue changes

Any changes to content or speakers that are not reviewed by the AANP are not approved for credit.

Refer to this activity's ID number with all communication pertaining to this application including the required post-activity reports. Attendance sheets and evaluation summaries are due to AANP one month after the activity's initial presentation (no later than January 18, 2021). Please find important information and instructions attached regarding mandatory post-activity reporting.

Best Regards,

AANP Accreditation

Administration: PO Box 12846 • Austin, TX 78711 • Email: admin@aanp.org • Website: aanp.org
Government Affairs: 1400 Crystal Drive, Suite 540 • Arlington, VA 22202 • Email: governmentsaffairs@aanp.org

EXECUTIVE SUMMARY

Emergency Care Skills Preparedness of Rural Nurse Practitioners



Introduction

In the rural setting, emergencies present as high stress situations and can have significant consequences for the patient, family, provider, and hospital staff involved. Many rural hospitals rely heavily on nurse practitioners to provide care to the community, and in the rural setting, this means covering the emergency department. Thorough education in emergency training and skill competencies are essential when taking on the role of a provider at rural facilities and critical access hospitals. When a critically ill patient presents to the emergency department, a rural nurse practitioner may be the only provider available so having increased education and continued sustainment of emergency care skills is critical for patient safety and outcomes.

Purpose

The purpose of the practice improvement project was to evaluate the educational needs of rural nurse practitioners covering emergency departments within the Midwest region and develop an educational seminar that increases the knowledge and preparedness of nurse practitioner's emergency care skills during emergencies.

Project Design

Secondary analysis of the Rural Nurse Practitioner Skill Needs Assessment data survey results to aid in the development of an emergency care skills education seminar. Implement a one day education seminar covering three emergency care skills: procedural sedation, emergency airway management, and arthrocentesis, to provide education and hands-on training. Administer a pre- and post-seminar survey to participants before and after the implementation period to evaluate their perceived level of preparedness on the three educational topics covered in the education seminar.

Results and Conclusion

- Based on the Rural Nurse Practitioner Needs Assessment novice nurse practitioners do not feel fully prepared to implement emergency care skills as they transition into practice.
- Among nurse practitioners there is a need for additional emergency care education.
- Teaching methods utilized during the Emergency Care Skills Seminar: PowerPoint lecture, tabletop discussion, and hands-on skills application, were conducive to learning among participating nurse practitioners and DNP students.
- After completion of the Emergency Care Skills Seminar there was an overall reported increase in the perceived level of preparedness in performing procedural sedation, emergency airway management, and arthrocentesis.

Recommendations

- Provide routine emergency care educational opportunities incorporating didactic and hands-on training to help improve knowledge and skill preparedness for providers practicing in a rural emergency department.
- Encourage family nurse practitioner programs to incorporate a curriculum providing additional education focused on acute, critical, and emergency care as an elective course for nurse practitioner students to take if they are planning to work at a rural facility for additional role development and preparation.
- To support nurse practitioners transition into practice of an emergency care role to ensure adequate education and training during orientation or offer an emergency care residency program as a post-graduate option for additional role development prior to working at a CAH or in an emergency department.
- Provide opportunities for continued education specific to rural emergency care annually to help ensure sustainability of knowledge and skills for providers working in rural facilities.
- For continued role development and training offer incentives for nurse practitioners working in emergency care settings to obtain their ENP certification.