Spring 2022

Identifying and Enhancing Key Competencies for Emergency Nursing in Rural Alaska: A Quality Improvement Project

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Date of Submission: April 19, 2022

Abstract

BACKGROUND: Rural nurses practice in challenging environments that include remote villages and towns. They are faced with providing emergency care to patients without the resources that are available at larger tertiary hospitals. Low volume and high-risk scenarios challenge the nurse's ability to maintain competencies and respond to emergent patient needs. Identifying the most critical competencies to maintain and evaluating rural nurses' perception of those competencies is the purpose of the project. The setting for identifying and educating rural emergency nurses is in the state of Alaska, where access to healthcare is further encumbered by topography and vast expanses of ice fields, mountains, and inclement weather. If life flight services is unable to fly due to weather restrictions, it is up to the rural nurse to stabilize and provide a higher level of care with less resources.

METHODS: Expert emergency nurses (RNs) with 5 years or more experience working in a tertiary hospital in Alaska were surveyed to understand what they believed the top competencies are for rural emergency nurses. They rated 12 Rural Nurse Organization (RNO) context-based competencies and 12 National Emergency Nursing Association (NENA) skills-based competencies and narrowed them to the top 6. From this information, a gap analysis was prepared and sent to Critical Access Hospital (CAH) nurses and nurses practicing in standalone rural clinics. These rural emergency nurses scored their perception of competency in these areas on a 5-point Likert scale. Additionally, the nurses were asked to score their perception of competency regarding critical thinking, clinical reasoning, and clinical judgment.

INTERVENTIONS: Several educational interventions were designed based on the gap analysis outcomes. The first educational intervention is a system learning platform module that will allow all hospitals in Alaska to address competencies related to the uniqueness of rural practice and the integration of critical thinking, clinical reasoning, and clinical judgment. Further, a statewide initiative

in partnership with the Alaska State Hospital and Nursing Home Association and Providence Alaska Medical Center will provide additional venue options to continue with competency training to address the findings from the gap analysis.

CONCLUSIONS: Rural nursing practice and competencies are unique. The rural emergency nurse must understand how the complexities of the rural healthcare setting impacts the ability to perform in an emergency setting. Clinical judgment is essential and supports the rural nurse in attaining and maintaining competency.

*Keyword*s: Rural Nursing, Emergency Nursing, Competencies, Clinical Judgement

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Introduction

Problem Description

Alaska is a large state that encompasses 663,267 square miles and is larger than Texas, California, and Montana combined (https://www.alaska.org/how-big-is-alaska). Access to healthcare resources is a challenge due to only 17,681 public roads, and only 6,313 of those are reported as paved (https://dot.alaska.gov/stwdplng/transdata/cprm.shtml). Most remote villages and small towns are only accessible by air, ferry, or boat, including the state capital of Juneau. In addition, there are large distances between remote villages and small towns with unnavigable ice fields and mountain ranges. Some remote villages provide access to healthcare with Community Health Workers (CHW), and other small villages and towns may have single provider-based clinics. Other towns may have Critical Access Hospitals (CAHs) or small rural hospitals.

The population of Alaska was 733,391 in 2020 https://www.census.gov/quickfacts/fact/table/AK/POP010220). There are 17,750 registered nurses in Alaska (https://www.ncsbn.org/6161.htm), and some nurses practice in these small villages with single-provider clinics, CAHs, and rural hospitals. They are vital stakeholders when emergencies are brought to them. However, ensuring the competency of emergency-related nursing is challenging due to the infrequency of providing care and using this skill set. In addition, these nurses often lack the resources available to more populated areas with local trauma centers. The Emergency Nurses Association (ENA) has published a position statement for Emergency Nurse Orientation that speaks to the need for a skill set that requires a fluid and continual process of knowledge acquisition, skills refinement, and risk recognition through

continuing education (2019). The generalist rural registered nurse requires emergency room skills and competencies to provide care in these challenging environments.

Available Knowledge

Defining nurse competency, the basis for clinical understanding, and the implications of a proposed learning model are essential to understanding how this problem will be addressed. Competence (ability) is a premise for developing competency (behavioral characteristics). Nursing competency is the ability to acquire knowledge through experience and learning. Two essential concepts are central to competence. As defined in an article by Fukada, M. (2018), “1) potential abilities that may work effectively under certain circumstances and 2) motivation to show one’s usefulness using those abilities”.

The National Emergency Nurses Association (NENA) defines nurse competency as "an expected level of performance that integrates knowledge, skills, abilities, and judgment." An individual who demonstrates competence in performing successfully at an expected nursing education and orientation level should be based on NENA's Core Competencies and standardized education (NENA, 2019). The Rural Nursing Organization (RNO) describes the rural health nurse as a generalist. These nurses have close ties to their community and practice with high autonomy and independence. The age range of their patients is vast, and they must have the knowledge and ability to care for patients anywhere in this life cycle. Core competencies are listed on the RNO website. They include "physical assessment and emergency/trauma management skills and ability to use innovative and creative solutions” to the challenges that exist in locations without major medical centers. Also, to "practice independently, even without the supplies and equipment available that is needed"

(www.rno.org). Hurme (2009) acknowledged these challenges and published an article that detailed competencies required by rural nurses who practice at a CAH. The study surveyed nurse experts who supervise a CAH, identifying a comprehensive list of required clinical/technical, critical thinking, communication/interpersonal, and management/organizational competencies. The definition of nurse competency and the building blocks of such may be best understood when considering clinical reasoning and judgment.

The clinical reasoning and judgment model supports the theory that nurses who have clinical experience will develop strategies based on the intuition of the clinical situation. This is beyond the step-by-step approach of the nursing process. Nursing clinical judgment is separate from the nursing process. As the nurse gains clinical experience, nurses obtain an 'intuitive grasp" of the whole clinical situation outside the nursing process. Nurse education includes activities that develop this ability to support the student's ability to reason beyond single patient problems (Fonteyn & Ritter, 2008). This concept is essential in understanding that the nurses in these rural environments have received the education and experience and have the foundational structure to obtain and retain skills and competencies with continued support and education.

Experience, clinical reasoning, clinical judgment, and ongoing education can support nursing competency. In addition, multiple learning theories exist; however, behavioral-based adult learning theories align and support the teaching and reinforcement of nursing skill sets. More specifically, the Thorndike model supports argument, attention, judgment, and memory skills. Each of these is foundational for critical thinking and is strengthened with practice (Aliakbari et al., 2015). Other behavioral adult learning theories support nursing competency, such as Skinner's conditioning theory. Per (Aliakbari et al., 2015), "principles and techniques can be an effective method especially in teaching clinical skills." At first, the initial behaviors of each

procedure are encouraged to implement the procedures thoroughly. Then, they will be encouraged to understand and implement the correct procedures fully and gradually. The concept of competency is challenged when skill sets that have been attained are now practiced in a low volume setting and are high risk.

Rationale

This project aims to address the need for clinical competence for nurses who practice emergency care in rural health care settings. Nurses practicing in a rural environment have unique roles and require emergency skills critical to the mission of safe and competent patient care. These are essential basic skills required to care for rural patients in locations without major medical centers. The unique and foundational expectations for the rural nurse are well defined in the RNO nurse competencies (https://dailynurse.com/rural-health-nurse/o). For a nurse to practice safely, they must be and feel competent in their practice

Some of the challenges have been supported by studies that directly assess rural nurses' perception of competency. There is evidence of several factors nurses practicing in rural areas face that challenge the care they provide and include concerns regarding working outside their scope of practice. For example, a study published by Dekeseredy et al. (2019) demonstrated the evidence of stress experienced by nurses due to long shifts, fast-paced environments, and limited resources. This led to related implications such as mental health issues, compassion fatigue, and burnout. One other area supports the need to address competencies in this study group's concern for understanding what is within their scope of practice. They also expressed liability concerns.

Lack of resources contributes to this scope of practice-related concern. Nurses draw venous and arterial blood samples, run advanced point of care testing and act as respiratory therapists in many CAHs. Furthermore, some remote clinics do not have radiology technologists and rely on nurses and community health aides to obtain x-rays (Patricoski, 2004). Additionally, nurses spend time making phone calls to secure an accepting facility when needed for transfer. The same nursing staff may have to leave unsafe staffing levels in the Emergency Department (ED) to accompany the patient during transport.

Emergency nursing is a specialty within the nursing profession. Emergency nurses must possess a broad range of knowledge and skills to care for various complex health care issues from non-urgent to life-threatening; to various age groups involving multiple disease processes, body systems, and specific populations (ENA, 2019). Educational resources and validation of RNO competency expectations are not well understood in rural settings. For example, courses such as the Rural Trauma Team Development Course demonstrated decreased length of stay and earlier transfer acceptance times in rural hospitals. However, this does not address the need for ongoing competency assessment, education, and support. Continuing education and training are essential to ensure emergency care expertise. This includes critical emergency skills such as the function of nursing to begin resuscitation competently and to participate and facilitate effective collaboration and communication (Morgan & Calleja, 2020).

Specific Aims

The project's overall purpose is to identify critical rural emergency department nursing competencies that address the importance of underlying principles of rural nursing, such as lack of resources. The core competencies of rural nursing and the setting in which rural nurses

practice need to be considered to understand how emergency nurse practice and competencies are affected. The project's overall purpose is to assure patients receive the appropriate level of care required in rural health clinics and CAH settings. To achieve this, key competencies necessary to practice in a rural emergency setting must be in place. The competency sets published by RNO and NENA must be addressed in conjunction to demonstrate the interdependence of the two and their importance for rural emergency care delivery. The contextual nature of the RNO competencies provides a foundation that supports the intricacies of rural nursing as it relates to the skills-based NENA competencies expectations for emergency care. The identification and integration of both competencies are especially pertinent to nurses who practice in Alaska due to the vast distances between rural clinics, CAHs, and hospitals and related lack of resources.

Access to healthcare in general, is sub-optimal and perhaps therefore underutilized. Once a patient has an encounter for healthcare, it can very well be due to an emergency situation. When this occurs and a patient arrives in an emergency, the care frequently requires nursing skills that have not been used regularly. In these rural settings, low frequency, high-risk procedures provide a unique challenge for rural nurses due to the need to maintain competence even though the skills are not regularly needed. (Banks et al., 2010).

The objectives for this quality improvement project include:

1. Identify competencies that incorporate both Rural Nurse Organization core competencies and National Emergency Nursing Association competencies. This was achieved by gaining insight from tertiary facilities, expert ED nurses, and the type and condition of patients being received

as transfers from rural health clinics and CAHs. In addition, feedback from expert ED nurses regarding needed core competencies was utilized to build a gap analysis.

2. Perform knowledge, skill, and attitude gap analysis of rural clinic and CAH emergency nurses and providers based upon those competencies identified by the expert ED nurses to understand how to design and implement the subsequent educational intervention.
3. Develop a sustainable educational series to address deficiencies in needed competencies based upon the gap analysis outcomes and to target those competencies required to treat medical scenarios of high risk and low volume. The initial educational intervention targets all RNs practicing in rural clinics and CAHs in Alaska. This was developed and supported by Tanner's clinical judgment model (2006), the clinical reasoning model, and created using adult learning theory.

Tanner's clinical judgment model supports nursing practice by providing the language of how to think during complex patient care events. It also identifies areas for nurse educators to break down steps within these areas to target specific learning activities that support skills in clinical judgment (Tanner 2006). The clinical reasoning model is foundational for education, research, and practice for nursing. Patient care is complex and requires accurate reasoning to ensure safe and appropriate care. This cognitive process and strategy to understand pertinent patient data must be considered (Fonteyn, 2008). By incorporating adult learning theory and supporting lifelong learning in nursing, four principles identified by Knowles (2014) were addressed and allowed for engagement, experiential, work relevance, and problem-centered approach. These concepts will be further utilized for subsequent educational interventions.

Methods

Context

Nurses practicing in rural Alaska encounter emergencies and have varying degrees of experience and resources. Prior research has demonstrated the effects on nurses in this practice setting when competencies may be questioned (Dekeseredy et al., 2019). As a result, outcomes of the patient who present to these settings are at risk. Education and ongoing support of skills and competencies are known strategies to support the skill set and care provided. One of the most significant challenges of the hospital-based nurse educator is to ensure nursing staff integrate evidence-based guidelines and maintain an adequate level of competency for those nurses responsible for low frequency and high-risk procedures. Skill assessment is an essential first step through clinical observation and written examination. The minimum competency of bedside nurses managing high-risk, low-volume therapies should be validated through direct observation of a return-demonstration competency checklist. However, learning style impacts factors related to knowledge acquisition. Factors known to influence the educational experience include the responsibility to the patient and peer nurses. Educational interventions should be built upon reflection and intuitive knowledge (Banks et al. 2010).

Contextual elements considered when designing and implementing this project include the ability to define best practice competency standards for rural emergency nursing. The RNO lists 12 core competencies (https://dailynurse.com/rural-health-nurse/o), and NENA lists well over 100 skill-based competencies that fall under 12 multiple disease processes, body systems, and specific populations (NENA, 2019). To capture those skills impacting daily practice for this group of nurses and facilitate a pertinent and manageable gap analysis survey, a methodology to

stratify and limit the competencies to facilitate a meaningful and manageable survey process was facilitated by the involvement of ED nurse experts during the pre-work in designing the gap analysis.

Further, understanding how adults learn and retain information was essential in formulating any educational resources. A group of competencies requiring education was identified, and several educational interventions addressed and will continue to be the basis for ongoing education to acknowledge these shortcomings. Applying supportive educational theories to support these concepts supports evidence-based practice and allows educators to align strategies, objectives, and evaluation processes with the learner (Mukhalalati & Taylor, 2019). Adult learning theory was be applied and incorporated into the initial educational resource and will be the basis for subsequent educational opportunities.

Access to rural nurses was essential to ensure data collection was maximized. To assist with this process, Southeast Alaska Regional Health Consortium (SEARHC), Alaska State Hospital and Nursing Home Association (ASHNHA), Alaska Pacific University (APU) (all project stakeholders) worked to support the identification and outreach to rural nurses to complete the survey and gap analysis survey. In addition, ASHNHA and APU assisted with identifying an educational strategy and determining the first educational opportunities forum.

Cost-benefit analysis

The focus of cost and benefit for this project lies primarily with outcomes in patient care. The cost of one untoward outcome related to a lack of competencies on behalf of the nurse can be devastating for the patient and family and the nurse involved. The sentinel publication related to patient safety published by the Institute of Medicine (IOM) (2001) describes costs related to

poor patient outcomes. Benefits to the patient, the nurse, the community, and other stakeholders of well-prepared emergency nurses are numerous. Patient outcomes and the cost of transferring patients from a rural setting to a tertiary hospital can be significant. Tangible outcomes and savings can be gleaned if the rural hospital is prepared to care for the patient without transfer. In one study by Mohr et al. (2016), transfer from a rural hospital to a tertiary hospital was associated with a 9.2% increased risk of death and additional related costs between $5769–8024.

Other costs related to the project include human capital, such as the time of expert nurses and rural nurses to complete the survey and the cost of attending the competency-related training.

Interventions

An activities-based logic model provided an outline of the project plan development. Input, activities, output, short-term outcomes, immediate outcomes, and the impact were all plotted to ensure structure to the project. The interventions designed to address the needs assessment gap analysis findings include a written curriculum based upon NENA and Rural Nurse Organization (RNO) competencies, focusing on those areas identified by nurses and providers surveyed.

During a meeting facilitated by ASHNHA for the Chief Nursing Officers (CNOs) in Alaska, the project proposal was presented, and support and buy-in were requested from all hospitals in the state. The CNOs were supportive of the project proposal and welcomed the idea of surveying tertiary hospital expert ED nurses to stratify the lengthy list of competencies. A survey was prepared that listed the 12 RNO competencies and the 12 NENA competencies, and the link was sent to all tertiary hospital CNOs in Alaska. The CNOs were asked to forward the survey to their ED managers and directors or other expert ED nurses with more than five years

of experience in Alaska and currently employed by receiving facilities in which patients are transferred from these remote locations. This group of content experts were provided the RNO and NENA list of competencies and asked to rank each list of 12 competencies in order of importance they believe essential for rural ED nurses to possess. (Appendix A) The list of the top six competencies from each group identified provided baseline information for a gap analysis for rural ED nurses to understand the need for ongoing education. The gap analysis was sent to rural nurses who may provide emergency nursing services in their rural clinic or CAH (Appendix B). These settings were identified with the assistance of the CNOs from CAHs and the SEARHC database. The SEARHC database was used to identify rural nurses practicing in rural clinics that respond to emergencies. In addition, the same gap analysis questions were sent to rural providers identified by SEARHC to understand provider perception of competencies of the nursing staff they are working with. Although the rural provider outcomes were not included in the final analysis, it was interesting to understand their perception.

The gap analysis asked each respondent to rank on a 5-point Likert scale their feeling of competency in each area. In addition, the gap analysis asked the recipients to rate their feeling of competency in relation to critical thinking, clinical reasoning, and clinical judgment. Those competencies identified by the rural ED nurses as areas for improvement were analyzed and became the basis for the project's next step, an educational intervention.

The final intervention is the development of the curriculum developed in the coordination of nursing education experts (APU) and feedback from expert ED RNs. Providence Alaska Medical Center PAMC and the Institute of Learning, with the support of ASHNHA, will assist with the final execution of this core competency training and eventually provide a venue. A professional poster regarding survey and gap analysis outcomes was provided to the CNO

group, who assisted with the project. Several educational offers were prepared, one immediate voice-over PowerPoint for a healthcare online learning system format and a subsequent much larger multi-stakeholder program.

Study of the interventions

The survey of nurse experts provides a stratification of critical rural health nurse and emergency nursing competencies defined by RNO and NENA. It identified vital RNO core competencies and NENA essential skills-based competencies for rural nurses caring for patients in emergency settings. The gap analysis provided information aligning the nurse's perception of competency related to critical thinking, clinical reasoning, and clinical judgment. These then provided outcomes of a perceived gap in competency by the rural ED nurse related to the RNO and NENA.

The interventions allowed for stratification of the considerable number of competencies required by rural ED nurses and ranked them by importance. The next step allowed for the rural ED nurses to identify their feeling of competency within that smaller group and allowed for precise outcome data that provides the focus for a meaningful and targeted educational intervention. Additional relationships between the gap analysis components such as experience and education related to feelings of competency were evaluated to understand other potential barriers. Significant findings, among other gap analysis components, did not exist in the analysis.

Findings

Measure 1. Survey tertiary hospital expert ED nurses

Along with completing demographics and open-ended questions, four expert ED RNs ranked the top RNO competencies for rural ED nurse practice as physical assessment and emergency trauma, ability to adapt to resources available as the top two areas. Secondly, the ability to use innovative and creative solutions (Table 1). Next, the ability to practice even without supplies and equipment, a broad knowledge of resources in the community, and critical care skills. They ranked the top NENA skills-based competencies in order of importance as airway, breathing, circulation, cardiovascular, neurological, and maxillofacial eye, ear, nose, and throat.

Measure 2. Gap analysis of rural ED nurses

Along with the completion of demographics, the rural ED nurses responded to the gap analysis based upon the findings from the expert ED nurses using a 5-point Likert scale (Table 2). Twenty-one rural ED nurses responded to the gap analysis. The first task was to rate their feeling of competency in critical thinking, clinical reasoning, and clinical judgment. 42.86% of respondents strongly agreed they were competent in critical thinking, 42.9 strongly agreed they were competent in clinical reasoning. In addition, 33.3% strongly agreed they were competent in clinical judgment.

The second component of the gap analysis was to rate their feeling of competency related to the 6 RNO competencies identified as essential by the expert RNs. The largest gap in feelings of competency was found in critical care skills where 33.3% strongly agreed, 14.3% disagreed that they were competent, and the ability to practice even without supplies and equipment, 42.9% strongly agreed, and 9.5% disagreed they were competent. Additionally identified as a gap was

feelings of competency in possessing wide knowledge and ability to use innovative and creative solutions.

The third component of the gap analysis was to rate the feeling of competency related to the 6 NENA skills-based competencies identified as essential by the RNs. The most significant gap in feelings of competency was Maxillofacial, Eye, Ear, Nose, and Throat - Knowledge of EENT emergencies specific to the adult/pediatric/geriatric populations. 19.1% strongly agreed, and 14.3% disagreed that they were competent. In addition, Neurological - Knowledge of neuro emergencies specific to the adult/pediatric/geriatric populations was identified as a gap with 23.8% strongly agreed, and 4.8% disagreed they were competent.

Analysis

Cluster sampling was used for the survey for the ED nurse experts and the rural ED nurse gap analysis. Ranking methodology of ordinal data was used for the ED nurse expert survey, and a 5-point Likert scale was used for the rural ED nurse gap analysis. The competencies for both surveys were the same; however, the gap analysis included the competency question related to critical thinking, clinical reasoning, and clinical judgment. Rural ED nurses rated their perception of their feeling of competency on a 5-point Likert scale. Qualitative methods were used to draw inferences from the data, however not used for this project.

A basic analysis of the finding from the gap analysis was utilized to understand those competencies that identify areas for educational intervention. Further analysis to understand additional relationships was completed using Excel and COUNTIFS formulas. Relationships between rural ED nurse demographics and competency perception were not remarkable.

Intervention measure: Design educational intervention based on gap analysis

The survey and gap analysis outcomes were presented in a professional poster presentation and online discussion format for the ASHNHA CNO group. The CNO group agreed on the intervention of a health care online learning platform-based education session to allow for greater communication of the information. Due to the current staffing challenges and getting rural nurses together for an in-person or online platform was not feasible at this time, and the group agreed that an online learning platform could be reused during annual competency training. This educational intervention focused on the importance of understanding rural nurse practice challenges and uniqueness related to the nurse's ability to maintain competency and the application of clinical judgment. This was disseminated to the CNO group and will be reviewed by each hospital. In addition, the findings were shared with the chairperson of the PAMC Institute of Learning. ASHNHA will be working on a grant project with PAMC targeting rural nurse practice. Discussion is underway regarding the plan to move this educational intervention and others yet to be designed to a state-level program. The gap analysis outcomes will be used to support this rural nurse practice program.

Ethical considerations

This proposed project is a quality improvement initiative, and therefore the University of New Hampshire (UNH) and other involved organizations will not require Internal Review Board (IRB) approval. Ethical considerations include protecting patient personal health information (PHI) and adhering to the internal policies of each health care organization involved. Data from surveys will be de-identified, and conflict of interest related to project lead personal employment is not expected and will be continually evaluated.

Discussion

Summary

Rural nurses practicing in the ED have gaps related to their perceptions of competency in both RNO context-based competencies and NENA skills-based competencies. In addition, there is a lack of strong feeling competent related to critical thinking, clinical reasoning, and clinical judgment.

The strengths of the project are demonstrated by the healthcare community and stakeholders as they understand the significance of the need to address rural nursing. The support received, and collaboration with ASHNHA, APU, PAMC, and SEARHC was influential in identifying rural nurse stakeholders and in taking the next steps with the educational intervention and sustainability of the project. CNOs statewide, APU, and PAMC stakeholders identified key elements in support of the project and ensured a full continuum of vested interests were represented. Additionally, the involvement of expert emergency nurses and frontline rural nurses provided validity and substance in identifying this area of opportunity.

Especially remarkable was the interest and collegial commitment from the CNOs at the ASHNHA meeting. This committee represents the CNOs from all hospitals in the state and is a collaborative effort supported by the hospital association to identify and address common challenges fraught by nurse leaders. At the first meeting, the project proposal was introduced, demonstrating significant interest and a commitment to participate. CNOs were quick to identify ED nurse experts and rural ED nurses and supported participation in the survey and gap analysis.

Limitations

Limitations to the study include the inability to reach nurses in rural clinics. The success seen with the collaboration of ASHNHA and the CNOs was not matched when identifying and accessing rural nurses. ASHNHA is a hospital and nursing home association and therefore is not involved with rural clinics directly. There was not a professional platform or interest group available to support the effort. Research of a native corporation database identified 19 rural nurses with the title "Rural RN". The individuals were identified as employees practicing at small village clinics throughout Southeast Alaska. These nurses were all emailed the gap analysis, and one response was received. Implications related to competency and lack of resources for this group should be further evaluated and addressed. One solution may be the formation of a rural nurse group specific to this population and practice. Rural clinic size, number of rural nurses (or lack of any RNs in these settings), and geographic barriers may make this challenging. Nonetheless, this group was identified as rural nurses most likely to have fewer resources and practice in high-risk, low-volume situations.

Another limitation of the study was the short time span for surveying and gap analysis data collection. Additional time would have allowed for larger sample size and perhaps an educational intervention to have been embedded in the gap analysis. Lack of time to rally frontline nurses and to plan a larger educational session explicitly directed to those RNO and NENA competencies was also identified as a limitation. The initial educational intervention was developed to be broad in topic to ensure a larger group of rural nurses have access to the information. The audience will include all rural nurses and will not be specific to skills-based specialty competencies. The focus will address the need for rural nurses to understand how RNO competencies validate their practice and their influence on skills-based competency

perceptions. This, although pertinent, does not immediately address the need for skills-based competency education.

Recommendations

Future work around the uniqueness and complexities that exist in rural nursing must be acknowledged in the nursing curriculum and in competency work. Small community hospitals and critical access hospitals are all unique in location, services provided, and emergency care needs. The foundational construct of RNO competencies should be identified as the basis on which to build skill-based competencies to ensure nurses are prepared to react and treat low volume, high-risk scenarios and to understand and support clinical judgment skills. Additionally, work to identify and provide official support to rural clinic nurses should be addressed.

Conclusions

Implications for practice related to this project are essential to support and validate rural nurse practice. Continued competency training and education to ensure rural nurses understand their unique practice is a focus. Ongoing competency training to address low-volume and high risk scenarios will be facilitated and sustained as a result of this project. The collaborative effort by ASHNHA and PAMC and the concerted interest of nurse stakeholders will move the project forward to be an essential component of the grant-funded program to support education for rural nursing in Alaska.

Ultimately, patients who reside in rural Alaska will be the beneficiaries of such a program. The interest and dedication for this project from a large, state-wide group of health care professionals speaks to the importance and value that is placed on patient safety and outcomes.

Access to care for rural patients will be improved to ensure timely, appropriate and skilled care is provided for the residents of rural Alaska.

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Appendix A

Emergency RN Expert Survey

Thank you for participating in this survey. You have been identified as an expert in the field of rural emergency nursing and possess valuable information to assist with the design and delivery of an educational offering directed at rural emergency RNs practicing at Rural Health Clinics and Critical Access Hospitals in Alaska. Participation in this survey will support identification of pertinent competencies and curriculum development. Estimated 4 minutes to complete.

Emergency Nurse Experts Survey								
Questions	Answer Choices							
Demographics								
Age	25 years old and less		26-40 years old		> 40 years old			
How long have you worked in an ED setting in the state of Alaska?	0-2 years		3-5 years		5 or more years			
What position do you currently hold in the emergency dept?	ED Charge Nurse		ED Nurse Manager		ED Nurse Director		Other:	
What is your current level of nursing specific education?	ASN (2 year)		BSN (4 year)		MSN (graduate)			
What certifications do you currently hold?	ACLS Advanced cardiac life support	PALS Pediatric advanced life support	TNCC Trauma nurse core course	CEN Certified emergency nurse	NRP Neonatal resuscitation program	Other:		
Open ended question								
What trends cause concern regarding patients that are transferred from Rural Health Clinics and Critical Access Hospitals	(Type response)							
Rural Nurse Organization (RNO) Core Competencies - Rank (12) in order of importance (1 – most important to 12 – least important)								
Based upon the above question related to transfers to your facility, AND based upon your emergency nursing expertise, rate the top Rural Nurse Organization core competencies you believe	◯ Physical assessment and emergency/trauma management skills are vital to the practice for a rural nurse		◯ Skilled in all areas of nursing, with clinical and assessment skills that reflect this proficiency		◯ Critical-care skills		◯ An aptitude for teaching	

most essential for the rural emergency nurse				
	○ A wide knowledge of resources within the community	○ Management skills	○ Surgical, obstetric, and intravenous therapy skills and the ability to operate and troubleshoot equipment	○ Knowledge about the areas such as pharmaceuticals, the region in which one is practicing, as well as an in-depth awareness of cultural norms and values
	○ Ability to adapt to the resources that are available	○ Ability to use innovative and creative solutions to the challenges that exist in locations without major medical centers	○ Ability to practice independently, even without the supplies and equipment available that one needs	○ Value the close interaction they have with the individuals, families, and communities they serve
National Emergency Nursing Association (NENA) Systems Based Competencies – Rank 12 in order of importance (1 – most important to 12 – least important)				
Based upon the above question related to transfers to your facility, AND based upon your emergency nursing expertise, rate the top NENA skills based competencies you believe most essential for the rural emergency nurse				
	○ Airway Knowledge of airway anatomy and emergencies specific to the adult/pediatric/geriatric populations	○ Breathing Knowledge of respiratory anatomy and emergencies specific to the adult/pediatric/geriatric populations (e.g. asthma, croup, bronchiolitis, epiglottitis, COPD, pulmonary edema, pulmonary embolus)	○ Circulation Recognition and treatment of shock syndromes for the adult/pediatric/geriatric patient: cardiogenic, hypovolemic, distributive, and obstructive	○ Cardiovascular Assessment and knowledge of interventions for Acute Coronary Syndromes

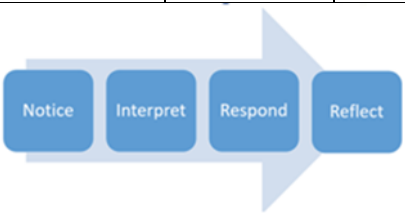
	○ Neurological Knowledge of neurological emergencies specific to the adult/pediatric/geriatric populations	○ Maxillofacial, Eye, Ear, Nose and Throat Knowledge of EENT emergencies specific to the adult/pediatric/geriatric populations (e.g. Otitis, Peri-tonsillar abscess, foreign body, sensory changes, angioedema, epistaxis)	○ Genitourinary Knowledge of genitourinary emergencies for males/females specific to the adult/pediatric/geriatric populations (e.g. renal colic, urinary tract infections, pyelonephritis, hematuria, urinary retention, acute/chronic renal failure)	○ Reproductive Female Knowledge of reproductive emergencies for females in the adult/pediatric/geriatric populations (e.g. ectopic pregnancy, ovarian cyst, foreign bodies)
	○ Reproductive Male Knowledge of reproductive emergencies for males in the adult/pediatric/geriatric populations (e.g. testicular torsion, penile/scrotal pain, priapism, prostatitis)	○ Toxicology Knowledge of various toxicological emergencies specific to the adult/pediatric/geriatric populations	○ Psychiatry Knowledge of psychiatric emergencies specific to the adult/pediatric/geriatric populations	○ Psychosocial Provides effective and timely communication to the patient and significant others

Appendix B

Rural ED Nurse Gap Analysis Survey

Thank you for participating in this survey. As rural nurse practicing in the field of rural emergency nursing you possess valuable information to assist with the design and delivery of an educational offering. This education will be directed at rural emergency RNs practicing at Rural Health Clinics and Critical Access Hospitals in Alaska. Participation in this survey will support the identification of pertinent perceived gaps in competencies and resulting curriculum development. Estimated 2 minutes to complete.

Rural Nurse Survey				
Questions	Answer Choices			
Demographics				
Age:	25 years old and less	26-40 years old	> 40 years old	
How long have you worked in an ED setting in the state of Alaska?	0-2 years	3-5 years	5 or more years	
What position do you currently hold in your Rural Health Clinic or Critical Access Hospital?	Emergency Department Nurse	Clinic Health Nurse	Other:	
What percentage of your shift are you expected to care for patients requiring emergency care? approximately	100%	75%	50%	25%
What is your current level of nursing specific education?	ASN (2 year)	BSN (4 year)	MSN (graduate)	Other:
What certifications do you currently hold?	ACLS Advanced cardiac life support	PALS Pediatric advanced life support	TNCC Trauma nurse core course	CEN Certified emergency nurse	NRP Neonatal resuscitation program	Other:
Critical Thinking, Critical Reasoning and Clinical Judgement				
Please rate your feeling of competency in practicing Critical Thinking, Clinical Reasoning, and Clinical Judgement				
Critical Thinking: Critical thinking is the process of intentional higher level thinking to define a client's problem, examine the evidence-based practice in caring for the client, and make choices in the delivery of care.	I feel competent in my practice to perform:			
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Clinical Reasoning:	I feel competent in my practice to perform:			

A process by which nurses make their judgments, includes both the deliberate process of generating alternatives, weighing them against the evidence, and choosing the most appropriate and those patterns that might be characterized as engaged, practical reasoning (e.g. recognition of a pattern, an intuitive clinical grasp, a response without evident forethought)	Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree
Clinical Judgement: An interpretation or conclusion about a patient's needs, concerns, or health problems, and/or the decision to take action (or not), use or modify standard approaches, or improvise new ones as deemed appropriate by the patient's response. (see image)	I feel competent in my practice to perform: Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree 

Tanner, C. (2006). Think like a nurse: A research-based model of clinical judgment in nursing

Rural Nurse Organization (RNO) Core Competencies Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree	
Based upon the below listed Rural Nurse Organization competencies, please rate your feeling of competency within each area:	
1. Physical assessment and emergency/trauma management skills	I feel competent in my practice to perform: Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree
2. Critical-care skills	I feel competent in my practice to perform: Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree
3. Ability to use innovative and creative solutions to the challenges that exist in locations without major medical centers	I feel competent in my practice to perform: Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree
4. Ability to practice independently, even without the supplies and equipment available that one needs	I feel competent in my practice to perform: Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree
5. Possess wide knowledge of resources within the community	I feel competent in my practice to perform: Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree
6. Ability to adapt to the resources that are available	I feel competent in my practice to perform: Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree
National Emergency Nursing Association (NENA) Systems Based Competencies	

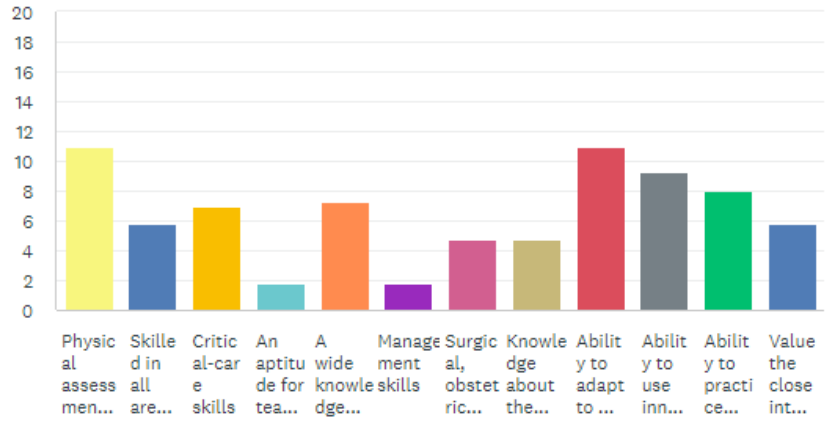
Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree					
Based upon the below National Emergency Nursing Association core competencies, please rate your feeling of competency in each area:					
1. Airway Knowledge of airway anatomy and emergencies specific to the adult/pediatric/geriatric populations	I feel competent in my practice to perform:				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
2. Breathing Knowledge of respiratory anatomy and emergencies specific to the adult/pediatric/geriatric populations (e.g. asthma, croup, bronchiolitis, epiglottitis, COPD, pulmonary edema, pulmonary embolus)	I feel competent in my practice to perform:				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
3. Circulation Recognition and treatment of shock syndromes for the adult/pediatric/geriatric patient: cardiogenic, hypovolemic, distributive, and obstructive	I feel competent in my practice to perform:				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
4. Cardiovascular Assessment and knowledge of interventions for Acute Coronary Syndromes	I feel competent in my practice to perform:				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
5. Neurological Knowledge of neurological emergencies specific to the adult/pediatric/geriatric populations	I feel competent in my practice to perform:				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
6. Maxillofacial, Eye, Ear, Nose and Throat Knowledge of EENT emergencies specific to the adult/pediatric/geriatric populations (e.g. Otitis, Peri-tonsillar abscess, foreign body, sensory changes, angioedema, epistaxis)	I feel competent in my practice to perform:				
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Table 1

Emergency RN Expert Survey Outcomes

Based upon the above question 6 related to transfers to your facility, AND based upon your emergency nursing expertise, rank the top Rural Nurse Organization core competencies you believe most essential for the rural emergency nurse (Rank 1 as the most important, Rank 12 as the least important)

Answered: 4 Skipped: 0

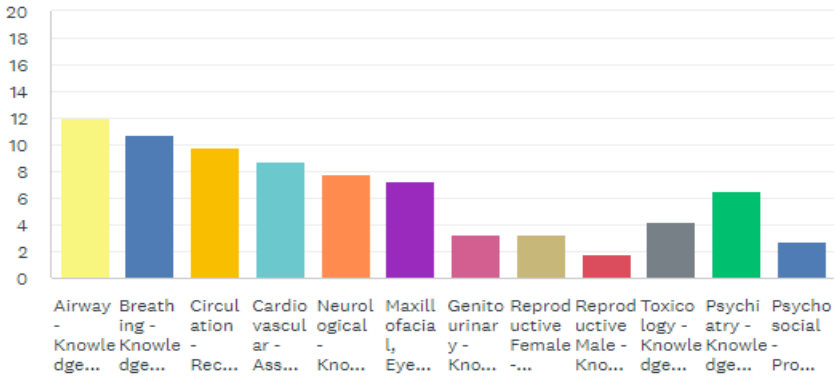


BASIC STATISTICS

	MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
Physical assessment and emergency/trauma management skills are vital to the practice for a rural nurse	1.00	3.00	2.00	2.00	0.71
Skilled in all areas of nursing, with clinical and assessment skills that reflect this proficiency	6.00	9.00	7.00	7.25	1.30
Critical-care skills	4.00	10.00	5.00	6.00	2.45
An aptitude for teaching	10.00	12.00	11.50	11.25	0.83
A wide knowledge of resources within the community	4.00	7.00	6.00	5.75	1.30
Management skills	11.00	12.00	11.00	11.25	0.43
Surgical, obstetric, and intravenous therapy skills and the ability to operate and troubleshoot equipment	5.00	12.00	8.00	8.25	2.59
Knowledge about the areas such as pharmaceuticals, the region in which one is practicing, as well as an in-depth awareness of cultural norms and values	7.00	10.00	8.00	8.25	1.09
Ability to adapt to the resources that are available	1.00	5.00	1.00	2.00	1.73
Ability to use innovative and creative solutions to the challenges that exist in locations without major medical centers	2.00	6.00	3.50	3.75	1.48
Ability to practice independently, even without the supplies and equipment available that one needs	3.00	9.00	4.00	5.00	2.45
Value the close interaction they have with the individuals, families, and communities they serve	2.00	10.00	8.50	7.25	3.11

Based upon the above question related to transfers to your facility, AND based upon your emergency nursing expertise, rank the top NENA skills-based competencies you believe most essential for the rural emergency nurse (Rank 1 as the most important, Rank 12 as the least important).

Answered: 4 Skipped: 0

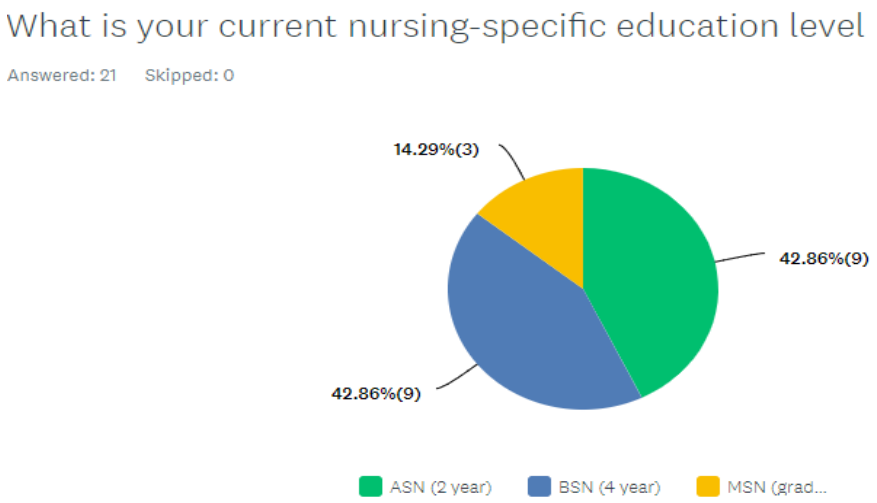


BASIC STATISTICS

	MINIMUM	MAXIMUM	MEDIAN	MEAN	STANDARD DEVIATION
Airway - Knowledge of airway anatomy and emergencies specific to the adult/pediatric/geriatric populations	1.00	1.00	1.00	1.00	0.00
Breathing - Knowledge of respiratory anatomy and emergencies specific to the adult/pediatric/geriatric populations (e.g. asthma, croup, bronchiolitis, epiglottitis, COPD, pulmonary edema, pulmonary embolus)	2.00	3.00	2.00	2.25	0.43
Circulation - Recognition and treatment of shock syndromes for the adult/pediatric/geriatric patient: cardiogenic, hypovolemic, distributive, and obstructive	3.00	4.00	3.00	3.25	0.43
Cardiovascular - Assessment and knowledge of interventions for Acute Coronary Syndromes	4.00	5.00	4.00	4.25	0.43
Neurological - Knowledge of neuro emergencies specific to the adult/pediatric/geriatric populations	5.00	6.00	5.00	5.25	0.43
Maxillofacial, Eye, Ear, Nose and Throat - Knowledge of EENT emergencies specific to the adult/pediatric/geriatric populations (e.g. Otitis, Peri-tonsillar abscess, foreign body, sensory changes, angioedema, epistaxis)	2.00	8.00	6.50	5.75	2.28
Genitourinary - Knowledge of genitourinary emergencies for males/females specific to the adult/pediatric/geriatric populations (e.g. renal colic, urinary tract infections, pyelonephritis, hematuria, urinary retention, acute/chronic renal failure)	8.00	11.00	10.00	9.75	1.09
Reproductive Female - Knowledge of reproductive emergencies for females in the adult/pediatric/geriatric populations (e.g. ectopic pregnancy, ovarian cyst, foreign bodies)	9.00	11.00	9.50	9.75	0.83
Reproductive Male - Knowledge of reproductive emergencies for males in the adult/pediatric/geriatric populations (e.g. testicular torsion, priapism, prostatitis)	10.00	12.00	11.50	11.25	0.83
Toxicology - Knowledge of various toxicological emergencies specific to the adult/pediatric/geriatric populations	7.00	11.00	8.50	8.75	1.48
Psychiatry - Knowledge of psychiatric emergencies specific to the adult/pediatric/geriatric populations	6.00	7.00	6.50	6.50	0.50
Psychosocial - Provides effective and timely communication to the patient and significant others	8.00	12.00	10.50	10.25	1.79

Table 2

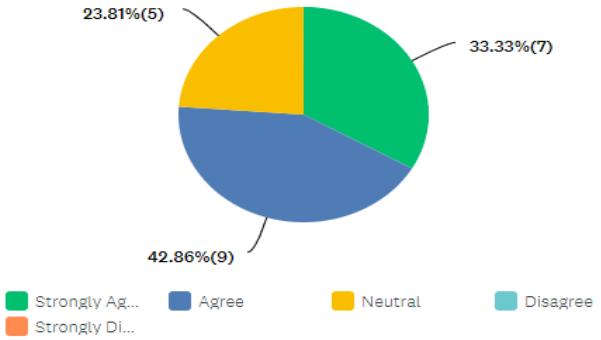
Rural ED Nurse Gap Analysis Outcomes



ANSWER CHOICES	RESPONSES	
ASN (2 year)	42.86%	9
BSN (4 year)	42.86%	9
MSN (graduate)	14.29%	3
TOTAL		21

Clinical Judgement: An interpretation or conclusion about a patient's needs, concerns, or health problems, and/or the decision to take action (or not), use or modify standard approaches, or improvise new ones as deemed appropriate by the patient's response.

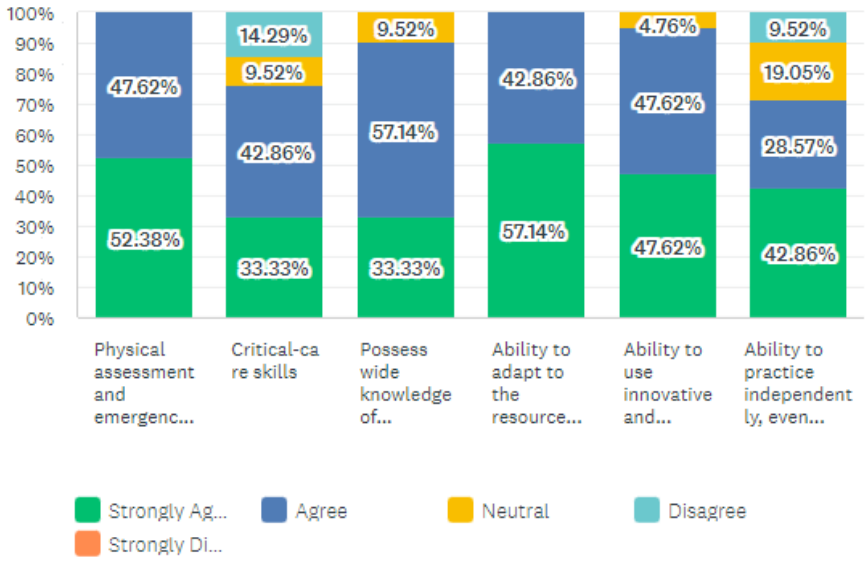
Answered: 21 Skipped: 0



	STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE	TOTAL	WEIGHTED AVERAGE
I feel competent	33.33% 7	42.86% 9	23.81% 5	0.00% 0	0.00% 0	21	1.90

Based upon the below listed Rural Nurse competencies, please rate your feeling of competency within each area: I feel competent -

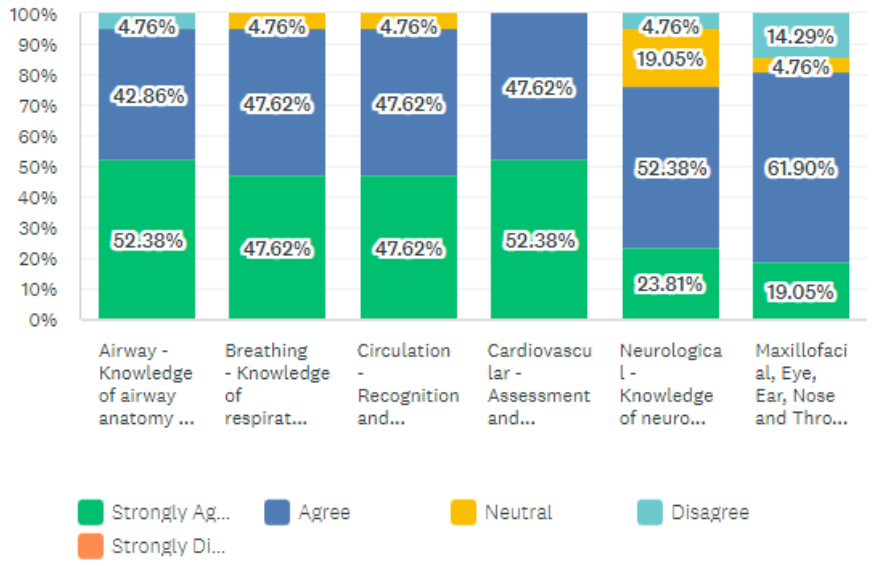
Answered: 21 Skipped: 0



	STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE	TOTAL	WEIGHTED AVERAGE
Physical assessment and emergency/trauma management	52.38% 11	47.62% 10	0.00% 0	0.00% 0	0.00% 0	21	1.48
Critical-care skills	33.33% 7	42.86% 9	9.52% 2	14.29% 3	0.00% 0	21	2.05
Possess wide knowledge of resources within the community	33.33% 7	57.14% 12	9.52% 2	0.00% 0	0.00% 0	21	1.76
Ability to adapt to the resources that are available	57.14% 12	42.86% 9	0.00% 0	0.00% 0	0.00% 0	21	1.43
Ability to use innovative and creative solutions to the challenges that exist in locations without major medical centers	47.62% 10	47.62% 10	4.76% 1	0.00% 0	0.00% 0	21	1.57
Ability to practice independently, even without the supplies and equipment available that one needs	42.86% 9	28.57% 6	19.05% 4	9.52% 2	0.00% 0	21	1.95

Based upon the below National Emergency Nurse Association core competencies, please rate your feeling of competency in each area: I feel competent -

Answered: 21 Skipped: 0



	STRONGLY AGREE	AGREE	NEUTRAL	DISAGREE	STRONGLY DISAGREE	TOTAL	WEIGHTED AVERAGE
Airway - Knowledge of airway anatomy and emergencies specific to the adult/pediatric/geriatric populations	52.38% 11	42.86% 9	0.00% 0	4.76% 1	0.00% 0	21	1.57
Breathing - Knowledge of respiratory anatomy and emergencies specific to the adult/pediatric/geriatric populations (e.g. asthma, croup, bronchiolitis, epiglottitis, COPD, pulmonary edema, pulmonary embolus)	47.62% 10	47.62% 10	4.76% 1	0.00% 0	0.00% 0	21	1.57
Circulation - Recognition and treatment of shock syndromes for the adult/pediatric/geriatric patient: cardiogenic, hypovolemic, distributive, and obstructive	47.62% 10	47.62% 10	4.76% 1	0.00% 0	0.00% 0	21	1.57
Cardiovascular - Assessment and knowledge of interventions for Acute Coronary Syndromes	52.38% 11	47.62% 10	0.00% 0	0.00% 0	0.00% 0	21	1.48
Neurological - Knowledge of neuro emergencies specific to the adult/pediatric/geriatric populations	23.81% 5	52.38% 11	19.05% 4	4.76% 1	0.00% 0	21	2.05
Maxillofacial, Eye, Ear, Nose and Throat - Knowledge of EENT emergencies specific to the adult/pediatric/geriatric populations (e.g. Otitis, Peri-tonsillar abscess, foreign body, sensory changes, angioedema, epistaxis)	19.05% 4	61.90% 13	4.76% 1	14.29% 3	0.00% 0	21	2.14