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## Introduction of Simulation to a Rural Health Care Facility

Jaime Lynn Duke  
*Walden University*

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# Walden University

College of Nursing

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Jaime L. Duke

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Review Committee

Dr. Sue Bell, Committee Chairperson, Nursing Faculty  
Dr. Deborah Lewis, Committee Member, Nursing Faculty  
Dr. Faisal Aboul-Enein, University Reviewer, Nursing Faculty

Chief Academic Officer and Provost  
Sue Subocz, Ph.D.

Walden University  
2021

Abstract

Introduction of Simulation to a Rural Health Care Facility

by

Jaime L. Duke

MSN, Walden University, 2016

BSN, Walden University, 2013

Project Submitted in Complete Fulfillment  
of the Requirements for the Degree of  
Doctor of Nursing Practice

Walden University

May 2021

## Abstract

Disparities exist between the quality and safety of care provided to patients seen in rural critical access hospitals and patients seen in metropolitan and suburban hospitals. These disparities result from lack of education opportunities and the infrequent exposure of staff to high-risk patient situations. The project addressed the lack of continuing education opportunities by introducing the hospital's nurse leaders to simulation-based education to improve staff competence. The practice-focused questions asked if providing the nurse leaders of the hospital with information about the benefits of simulation-based staff education would lead to increased knowledge about and support for this type of education. The participants ( $n = 7$ ) completed a pretest; attended the educational presentation, which included viewing the film *To Err Is Human*; and completed a posttest. Kirkpatrick's four-level training evaluation model was used to support the project. The pretest and posttest survey findings were compared using counts and percentages to determine whether knowledge was gained from the education. The pretest findings showed good initial knowledge about simulation (100% correct answers on 7 of 10 questions). After the presentation, participants scored 100% on 9 of 10 knowledge questions. Two additional questions on the posttest determined that the nurse leaders were satisfied with the education and reported interest in adopting simulation-based staff education. Undertaking the disparities in rural nurses' knowledge and skills through simulation training and exposure to high-risk patient scenarios will promote social change, quality of care, and safety of rural critical access hospital patients.

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## Dedication

Dedicated to my husband, Harold (Shane) Duke, who has supported me through my educational goals; my children, Devin, Zoe and Zachary, who have been taught to reach for the stars and no goal is too big to achieve; and finally, to my mother, Virginia Braithwaite, who taught me to never quit or give up and continue to educate myself to reach my goals.

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## Table of Contents

List of Tables .....	iii
Section 1: Nature of the Project .....	1
Introduction.....	1
Problem Statement.....	1
Purpose Statement.....	2
Nature of the Doctoral Project .....	4
Significance.....	5
Summary.....	6
Section 2: Background and Context .....	7
Introduction.....	7
Concepts, Models, and Theories.....	7
Relevance to Nursing Practice .....	9
Local Background and Context .....	12
Role of the DNP Student.....	13
Summary.....	15
Section 3: Collection and Analysis of Evidence.....	16
Introduction.....	16
Practice-Focused Questions.....	17
Sources of Evidence.....	18
Analysis and Synthesis .....	21
Summary.....	23



Section 4: Findings and Recommendations .....	24
Introduction.....	24
Findings and Implications.....	25
Recommendations.....	31
Strengths and Limitations of the Project.....	31
Section 5: Dissemination Plan .....	33
Analysis of Self.....	33
Summary .....	34
References.....	36
Appendix A: Pretest.....	40
Appendix B: Posttest and Survey .....	44

List of Tables

Table 1. Pretest and Posttest Results..... 27

Table 2. Survey Results ..... 29

## Section 1: Nature of the Project

### **Introduction**

Simulation training has been used in several modalities of education, such as nursing and medical schools, teaching health care facilities, and larger urban hospitals, to enhance skills of those working in health care. Nurses working in rural health care settings need to have skills in all areas of nursing, as they may be working in several different areas each day, such as medical surgical, emergency room, obstetrics unit, or critical care, depending on the patient census. With the need for nurses to be diverse in different skill sets, nurses need the opportunity to practice and establish skills that may not be used often. Simulation is one way to allow nurses to have hands-on training and gain immediate feedback on their current ways of practice. Educational opportunities, such as simulation, are essential to allow nurses in rural health care settings to hone their skills that are not used often to ensure that patients receive safe-quality care (Hendrickx & Winters, 2017). Educating nurse leaders in a rural health care setting may promote understanding of simulation use in staff education to increase safety and quality in the care provided by nurses.

### **Problem Statement**

The problem addressed in this project is the disparity in quality and safety faced by patients seen in rural area clinics and hospitals. Persons living in nonmetropolitan areas report less access to care and lower quality of health care received compared with care received in a metropolitan area (Moy et al., 2017). By not addressing the health needs of patients in rural areas, there can be detrimental consequences when nurses,

physicians, and other health care staff do not have access to adequate training opportunities to prepare adequately for care of their patients. Due to less frequent high-risk patient care situations in rural facilities, health care providers who deal with these situations rely on fewer resources and skills than health care professionals in urban areas (Reid, 2019). Addressing the gap in practice due to issues of training and exposure to high-risk patient scenarios promotes higher quality and safety in care than what is currently being offered.

The lack of educational opportunities for nurses employed in a critical access hospital was undertaken by introducing simulation-based training that can lead to better patient outcomes through targeted clinical experiences. Innovations in simulation-based education and training for rural health care professionals (nurses, physicians, and staff) have become essential to help rural health care providers gain valuable experience to promote safety, quality, and team collaboration in patient care (Martin et al., 2017). Through the project, I introduced the hospital's nursing leadership to simulation-based education information to bridge the knowledge deficits and possibly facilitate the adoption of a simulation training pilot.

### **Purpose Statement**

The purpose of this project was to educate rural critical access hospital nursing leaders about simulation-based education to change or augment current education practices within the organization. By introducing simulation-based education, the nursing leadership will be able to make improvements to nursing practices and ensure the staff have access to up-to-date standards of care. Key stakeholders in the nursing

administration of the rural western U.S. hospital can introduce simulation-based education to demonstrate how it will improve the competency level of not only the nurses, but also the medical staff.

Providing high-quality care poses significant challenges in rural areas as there is usually an older population, with poorer health and more risk of injury, which leaves rural critical care hospital staff ill prepared to take care of their communities when they lack updated skills (Fleet et al., 2017). The focused question for this project was:

- Will educating nursing leaders on simulation-based education lead to increased knowledge about this type of education within the rural critical access hospital?
- Will educating nursing leaders on simulation-based education lead to the support of this type of education within the rural critical access hospital?

The development and implementation of an educational class for nursing leaders in the hospital can create an avenue for a positive change to occur for the patient population served by this facility and can support social change through improved health care quality and safety in health care delivery.

Currently, rural nurses must have multispecialty nursing knowledge to serve their community. Rural nurses must be able to use critical reasoning and make quick clinical decisions to deal with a wide range of practice and work environment issues that can greatly impact patient outcomes (Sedgwick et al., 2014). The use of simulation-based education in the rural health care setting to train personnel is key to improving the outcomes of patient care in any rural community. By creating this educational opportunity through the doctor of nursing practice (DNP) project, I helped the rural

critical access hospital gain solutions to their educational needs that would be otherwise an unaffordable expense for such a rural area.

### **Nature of the Doctoral Project**

This doctoral project was a staff education project introducing simulation-based training to the critical access hospital nursing leaders. Simulation is being used in rural health organizations to help ensure that professional staff are trained to deal with a variety of care needs and are able to identify patient cues in emergency situations. The use of high-fidelity simulation-based education for clinical staff reduces medical errors and offers authentic learning experiences without risk to real patients (Cooper et al., 2016). By using simulation in rural health care, organizations offer opportunities for improvement to the patient safety and quality care their health care professionals offer and reduce the risk for medical errors and financial loss due to liability issues.

This education project is directed toward the nursing leaders of the organization, such as departmental directors (medical surgical, emergency services, obstetrics, care center, and intensive care units) so that information learned could be passed on to other stakeholders and decisions to implement a simulation-based education pilot could occur. This project was feasible in the setting as it was to include fewer than 10 people and the nursing leaders were motivated to increase staff education. The approach to the project was a pretest, education, and posttest design regarding knowledge of the different types of simulation, with a survey at the end to determine willingness in the organization to implement simulation training for the health care staff. During education of the leadership, the initial pretest assessed the knowledge base of simulation types and usage

and identified any gaps in understanding the purposes of simulation. After this pretest, the class consisted of showing the film *To ERR Is Human* and presenting PowerPoint slides about different types of simulation and the benefit they have in health care organizations. When the class completed a posttest, the survey was given to determine if there was willingness among the nurse leaders to implement a pilot simulation training program.

This educational project allowed for information to be presented to critical access hospital nursing leaders to transform their current means of continuing education for health care providers to create a hands-on approach to improve safety and quality of care for better service to the community.

### **Significance**

This educational project was targeted toward engaging nursing leaders to gain understanding of the benefits of simulation-based education and how it would allow their organization to improve quality and safety in care provided. Simulation offers hands-on experience for health care providers to enhance skills that may not be used often and offers immediate feedback in a safe environment to hone skills. Medical errors lead to significant gaps in quality and safety of patient care, which can be reduced by creating new educational opportunities to prepare staff for a variety of high acuity, low frequency incidents seen in rural health care hospitals (Keirnam, 2018). Simulation-based education can reduce medical errors and help improve the skills that current rural health care providers use to treat patients as they serve in multiple disciplines. This project helped the rural critical access hospital gain solutions to their educational needs that would be

otherwise an unaffordable expense. The information gained from completing this project offers opportunities to explore dissemination to other critical access hospitals and rural health care organizations to bring understanding about the role of simulation to improve staff education

### **Summary**

Simulation used in rural health care organizations can improve current skills of health care providers to offer better quality, safer care to a variety of patients seen in these organizations. Introducing the benefits of simulation education to nurse leaders could change the rural health care hospital's educational opportunities and improve the overall health care offered to the rural area. In Section 2, I review concepts, methods, and theories; relevance to nursing practice; local background and context; and role of the DNP student.



## Section 2: Background and Context

### **Introduction**

Health care providers in rural areas need to be skilled in various areas, as they take care of patients with a wide range of health issues from complex emergency care to simple clinic care. Interprofessional education using simulation creates an environment for mastery-level learning and deliberate practice by offering real-time feedback on current skills levels, improvement areas, and areas of strength (Brown, 2018).

Educational opportunities in rural health care facilities are often limited by budget and access to new technology due to location. By introducing simulation-based education to nurse leaders, a new pathway can be created for health care professionals to continue their education and improve their abilities to serve local community health needs. The focused questions for this project were:

- Will educating nursing leaders on simulation-based education lead to increased knowledge about this type of education in the rural critical access hospital?
- Will educating nursing leaders on simulation-based education lead to the adoption of this type of education in the rural critical access hospital?

This project may lead to future opportunities to expand simulation education and create opportunities for future educational practice changes to happen in the rural critical access hospital.

### **Concepts, Models, and Theories**

As evidence-based practice change agents in health care organizations, nurse leaders must adapt educational opportunities for staff to allow for their knowledge base to

be expanded to provide safe, quality, and cost-effective care to patients. Health care staff need consistent educational opportunities to ensure they are prepared for a multitude of complex technical skills and critical thinking for different types of patient presentations to reduce medical errors that have the potential to risk patient life (Walker & Stevenson, 2016). This need is evident in the critical access hospital site for this project, as staff often lack experience in different patient situations; they might not see certain types of patient issues on a daily, weekly, or even monthly basis.

This educational plan with pretest and posttest information to gauge nurse leaders' understanding of simulation and uses helped ensure that information offered in learning sessions was being understood. Using the pretest and posttest design will help assess the impact of the information provided in the educational setting (Terry, 2018). Understanding the participating nurse leaders' knowledge base before and after the educational session allowed me to see where deficits are remaining that could impact the adoption of a simulation program within the organization. The nurse leaders also completed a survey regarding their openness to the idea of incorporating simulation into their current educational processes.

Kirkpatrick's four levels of evaluation will support evidence collected with this project: (a) Level 1, reaction, the evaluation of the education provided and satisfaction with material used; (b) Level 2, learning, measures the level of learned material before and after training; (c) Level 3, behavior, measures the extent to which participants will apply what they learned or gained from education; and (d) Level 4, results, measures the outcomes of the educated participants (Lantu et al., 2020). Using this method allows

evaluation of different levels of achievement in simulation and how the educational course is perceived, while also allowing a determination of whether the organization is considering adopting simulation into their current education for health care providers.

Simulation has a range of meanings. For this project, the word *simulation* is used to describe an educational aid that mimics a clinical scenario to facilitate experiential learning with high- and low-fidelity manikins (Melling et al., 2018). Simulation can take place with people role playing, but this project is focused on information about simulation manikins and how this process helps increase educational knowledge bases in health care professionals.

### **Relevance to Nursing Practice**

Rural health care critical access hospitals are the cornerstone for medical care in small communities that may not have a large hospital within several hundred miles. There are more than 60 million people who live in rural environments and live in poverty and are unhealthy, older, underinsured, and medically underserved (Harvey, 2019). With so many people depending on health care services in rural areas, providers need to be equipped with the knowledge, skills, and attitudes to respond to the health needs of the community. Cooper et al. (2016) argued that there is a rising concern for “failure to rescue” in rural settings and simulation-based education may help reduce adverse events, lower medical errors, and increase safety in patient care. Implementing simulation-based education into rural health care organizations will increase staff preparation to provide the safe, quality, care for patients.

The use of high-fidelity simulators in health care education has grown significantly in the last 10 years, but access in rural areas continues to be an issue (Stellflug & Lowe, 2018). With the demonstrated knowledge gained from the use of simulation for continuing education, the rural areas of the northern United States may see improved individual and teamwork skills among health care providers and staff members. Educating nurse leaders on the importance of hands-on training with immediate feedback is crucial to improving the care that rural communities receive from their local health care organizations.

The 1999 Institute of Medicine report “To Err Is Human” was made into a film entitled *To Err Is Human: A Patient Safety Documentary*. The film was released in 2019 and discusses the silent epidemic of medical mistakes and helps bring awareness of using simulation to help bridge the knowledge and practice gap in nursing and health care (Eisenberg et al., 2019). This documentary shows a patient story of how medical errors happened and eventually resulted in a patient’s death. The film also shows how prevention measures, such as simulation to help train and prepare health care providers, can provide the needed skills to care for patients. Simulation has been beneficial in nursing education as it offers realistic experiences to care for a variety of patient scenarios to practice hands-on care and apply critical thinking skills with real-time feedback on areas for improvement in a safe environment (Rice et al., 2016). By using this educational tool, nursing schools have improved students’ ability to think critically and have provided additional hands-on clinical experience, which is especially necessary in rural environments where clinical experiences are limited.

There are limited studies available about simulation being used in rural critical access hospitals to help educate health care professionals. Simulation has become a well-established practice to train health care professionals in technical and nontechnical skills to prevent errors (Shrestha et al., 2019). Health care organizations have different modalities of continuing education for health care professional employees, such as online learning and demonstration sessions to ensure clinical competencies each year in health care professionals. Incorporating simulation education into health care organizations allows for improvement in knowledge bases, clinical judgment skills, and interprofessional collaboration with teams (Vanderzwan et al., 2020). Bringing the understanding about simulation education to rural critical access hospitals helps current health care professionals create confidence and hone in on needed skills to deal with patient care safely to ensure quality. The introduction of this educational based project to rural critical access hospital leaders helped provide an option for the future to incorporate simulation-based training education into their current educational system for their health care professionals.

Completing this project of bringing information about the usage of simulation to the rural health care organizational nursing leadership expanded the opportunities for educational experiences for not only nursing staff, but all health care providers at the hospital. The educational opportunities to improve organization teamwork in patient care while also helping reduce mistakes in high risk patient care areas are needed to improve the care offered in the rural community.

### **Local Background and Context**

The state where this project took place has more rural areas than urban areas, which means there is a deficit in access to health care, leaving patients with an over 100-mile drive to seek appropriate care (Saboe, 2018). With local critical access hospitals, the health care teams need to be prepared to take care of a wide variety of patient cases, as they may be the only care available to patients for several hundred miles in certain areas. To prevent harm to patients, health care staff need to be allowed to practice skills not used often in practice, such as running trauma codes, high-risk maternal deliveries, stroke drills—any high-risk event that is not conducted routinely at the health care facility. Educational reinforcement of skills needs to be practiced to ensure quality and safe patient care. Preventable adverse events and patient mortality can be reduced if health care facilities adopt a culture of safety and invest in prevention protocols (Kavanagh et al., 2017). Simulation is an educational opportunity to gain hands-on practice for high-risk areas of medical errors and allows practice of new protocols being implemented within the health care organization.

Just as patients have barriers to health care in rural areas, health care professionals have a lack of educational opportunities to enhance the care given to patients. There is current evidence that rural health professionals (physicians, nurses, and other health care providers) face unique challenges in gaining continuing education, such as a lack of access to ongoing education, professional isolation, limited opportunities for professional development, and lack of clinical support (Blayden et al., 2017). Presenting nurse leaders with information about a new educational opportunity to address the gap in practice has

the potential to open doors to professional development for those health care providers who have never worked outside the rural environment and help increase the knowledge base in all skill areas. Through this project, I provided the needed information to help change the current educational practices from online webinars and in-services to simulation with hands-on skills practice.

Continuing education is a requirement for nurses and physicians within the state for continued renewal of licensure. The state Board of Nursing requires 24 contact hours of continuing education credits to be completed every 2 years for continued licensure. By completing the project, nurse leaders in the rural hospital have gained the necessary information needed to utilize continuing education contact hours through simulation, as well as in-service or web-based offerings. The enhancement of educational opportunities allows for hands on training and mastery of skills that are individual, or team-based ensuring that the rural population has access to care that is evidence-based and delivered safely.

### **Role of the DNP Student**

I have completed all practicum hours required for the DNP at a local rural critical access hospital. During the practicum time, there have been several deficits identified in patient care, policies, and even leadership abilities that need to be updated to parallel those used within urban health care organizations. It is not that the individuals are not trained, it is a lack of experience outside of a rural environment. Current practices that are utilized in urban areas are not applied to those in rural environments, such as the one where this DNP project will take place. Simulation is something used by few nursing

schools in the state, but these sites provide access to educational practices that may not be seen in rural clinical sites.

The role I took in this project is to educate nurse leaders about the different types of simulation educational opportunities that are available to be started within their organization or by partnering with local universities to provide educational opportunities to their nursing and health care staff. I moved to a rural environment to take on an educational role in training students to become nurses. It was evident upon arrival that students needed far more hands-on experience than what was currently being offered, as their skills were lacking compared to those seen among novice nurses entering practice in an urban environment. While completing the practicum experience, it was realized that the nursing staff at the practicum site could benefit from simulation experiences, as there were skills that needed to be enhanced and an increased ability to create professional development was lacking in the practicum site. The goal of this project was to create awareness of new educational opportunities to nurse leaders to provide nursing staff the opportunity to continue learning and hopefully help reduce medical errors and create better care for those patients served.

There are currently not any ethical issues or biases that needed to be addressed, as this is an education project and will not endorse any simulation product or place to complete simulation. The only gain from this project was for nursing leaders to understand the different types of simulation available currently and how this education could potentially change the practice dynamics of the organization.



## **Summary**

In rural health care organizations, nurses and other health care providers must be competent in a variety of areas due to the small nature of their organization and the need to provide a patient with necessary care in different specialty areas. Introducing nurse leaders of a critical access hospital to the different types of simulation and how this education has the potential to improve the care provided will create awareness that may lead to improved quality and safety of care to this rural population. Simulation has the potential to allow nurses and other health care providers the ability to practice a variety of skills as a team or individually and monitor where improvement is needed, while also creating a safe environment where instant feedback is generated and given to those involved to improve current care provided. Section 3 will discuss the collection and analysis of evidence, sources of evidence, and analysis and synthesis of data.

### Section 3: Collection and Analysis of Evidence

#### **Introduction**

The problem addressed by this project is the disparity in quality and safety faced by patients seen in rural area clinics and hospitals. People living in nonmetropolitan areas report less access to health care and lower quality of health care compared with people living in metropolitan areas (Moy et al., 2017). Not addressing the health needs of patients in rural areas can lead to detrimental consequences when nurses, physicians, and other health care staff do not have access to adequate training opportunities to prepare for care of their patients. Due to less frequent high-risk patient care situations in rural facilities, health care providers who deal with these situations rely on fewer resources and skills than health care professionals in urban areas (Reid, 2019). Addressing the gap in practice due to issues of training and exposure to high-risk patient scenarios will promote higher quality and safety in care than what is currently being offered.

In rural health care organizations, nurses and other health care providers must be competent in a variety of areas due to the small size of their organization and the need to provide patients with necessary care across different specialty areas. Introducing nurse leaders of a rural critical access hospital to the different types of simulation and how this education has the potential to improve the care provided will create awareness that may lead to improved quality and safety of care for this rural population. Simulation has the potential to allow nurses and other health care providers the ability to practice a variety of skills as a team or individually and monitor where improvement is needed, while also

creating a safe environment where instant feedback is generated and given to those involved to improve current care provided.

### **Practice-Focused Questions**

Health care providers in rural areas need to be skilled in various areas because they take care of patients with a wide range of health issues from complex emergency care to simple clinic care. Interprofessional education using simulation creates an environment for mastery-level learning and deliberate practice by offering real-time feedback on current skills levels, areas for improvement, and areas of strength (Brown, 2018). Educational opportunities in rural health care facilities are often limited by budget and access to new technology due to location. Introducing simulation-based education to nurse leaders can create a new pathway for health care professionals to continue their education and improve their abilities to serve local community health needs. The focused questions for this project were:

- Will educating nursing leaders on simulation-based education lead to increased knowledge about this type of education in the rural critical access hospital?
- Will educating nursing leaders on simulation-based education lead to support for this type of education in the rural critical access hospital?

Conducting this project may lead to future opportunities to expand simulation education and create opportunities for future educational practice changes to happen in rural hospital.

Simulation is understood differently by educators and clinicians, as educators use different methods to train students versus health care employees. For this project, the

word *simulation* is used to describe an educational aid that mimics a clinical scenario to facilitate experiential learning, with high- and low-fidelity manikins (Melling et al., 2018). Simulation can take place with just people role playing, but this project is focused on information about simulation manikins and how training with manikins helps increase the educational knowledge base of health care professionals.

The creation of this educational plan with a pretest and posttest design to gauge nurse leaders' understanding of simulation and its uses helped ensure that information offered in learning sessions is being understood and will assess the impact of information provided (Terry, 2018). Understanding the participating nurse leaders' knowledge base before and after the educational session allowed me to see where deficits remain that could impact the adoption of a simulation program within the organization. The nurse leaders completed a survey to determine if they were open to the idea of incorporating simulation in their current educational processes. Kirkpatrick's four levels of evaluation support were used to evaluate the evidence collected in this project.

### **Sources of Evidence**

For this project, there were two sources of evidence: a review of the literature and data gained from pretest and posttest surveys completed by participants. Evidence from the review of literature for this educational project stemmed from peer-reviewed clinical journals and current literature about simulation and its uses in education and health care organizations. The development and implementation of an educational class for nursing leaders in the hospital has the potential to create a positive change in care for the patient

population served by this facility and support social change through improved health care quality and safety in health care delivery.

To gain information to help identify needed content areas to create objectives for the educational project on simulation, I used a variety of sources for literature review. Databases used for searching information on simulation education that were peer reviewed included the following: CINAHL & MEDLINE combined search, CINAHL Plus with Full Text, Embase, MEDLINE with full text, ProQuest Nursing & Allied Health Database, and SAGE. Key terms used to find peer-reviewed journal and research articles included *simulation, education, rural-based, health care, healthcare, nursing, schools, safety, quality, care, and evaluation*. Articles used as evidence to help create this educational project can be found in the references section. Years searched were 2015 to 2020, for current peer-reviewed literature. This search included items used in the writing of the proposal; however, available information on rural based simulation in health care was limited, as this is a new topic of research.

This educational project was directed toward the nursing leaders of the organization so that information learned could be passed on to other stakeholders and decisions to implement a simulation-based education pilot could occur. This project was feasible in the setting because it included fewer than 10 people and the nursing leaders were motivated to increase staff education. For the project, I used a pretest, education, and posttest design regarding knowledge of the different types of simulation, with a survey at the end to see if there was willingness in the organization to implement simulation training for the health care staff. During education to the leadership, the initial

pretest assessed participants' knowledge base of simulation types and usage and identified any gaps in understanding the purposes of simulation. After this pretest, the class consisted of showing the film *To ERR Is Human* and presenting PowerPoint slides about different types of simulation and the benefit to a health care organization's staff education. After the participants concluded a posttest, a survey was given to determine if the nurse leaders were willing to implement a pilot simulation training program. This educational project allowed for information to be presented to critical access hospital nursing leaders to transform their current means of continuing education for health care providers to create a hands-on approach to improve safety and quality of care for the community.

Participants for this educational project included nursing leaders of the organization, such as departmental directors (medical surgical, emergency services, obstetrics, care center, and intensive care units). Fewer than 10 participants attended and all organizational nursing department directors were invited to partake in the educational project. These nursing leaders influence the educational processes the organization uses to ensure patient safety and quality care.

The collection of evidence used for evaluation of this educational project included pretests and posttests to measure knowledge gained. These surveys were coded with numbers to protect individual privacy and covered the information about the uses of simulation and benefits for improved patient safety and quality. Surveys were given to participants to measure the possible implementation of simulation education within the

organization and if the information shared was beneficial to their current educational practices.

### **Analysis and Synthesis**

For this educational project, I used Kirkpatrick's four-level training evaluation model. Level 1, reaction, was used to measure if the training was valuable to the participants. This measurement was conducted on the posttest as an extra question on survey form. The question used was "Did this educational opportunity offer you enough information about simulation-based education that made it worth your time? Why or why not?"

Level 2, learning, was used to measure if the participants learned anything from the educational project. This measurement was done in the format of a pretest and posttest to identify the areas of information about different types of simulation-based education and why simulation-based education offers critical access hospitals the ability to improve current safety and quality care to patients. Learning objectives for this educational project included being able to (a) define the different types of simulation manikins; (b) identify how medical errors can be reduced with simulation, as medical errors are the third leading cause of death in the United States; and (c) understand the uses of simulation in clinical practice and how it helps improve clinical practice skills, communication, and teamwork, and increases patient safety and quality of care.

Level 3, behavior, was used to determine if simulation-based education would be an option that could be implemented within the rural critical care hospital in the future. This information was gained through an additional question on the posttest survey form:

“After completing this course, would you want simulation-based education offered as an educational opportunity for nurses and other health care professionals within your organization in the future? Why or why not?”

Level 4: Due to the time limits of the project, a measurement of intention to action was included in the project. For the educational project, I ensured integrity and confidentiality of the organization and the participants by using a numbering system for all data collected. The use of pretests and posttests included closed-ended questions, and the data collected should not create any outliers in the data. The survey questions used to collect information about the ability to use simulation-based education in the future and if the education offered enough information were also closed-ended, but participants were asked to explain their answers in a short answer question.

To analyze the data from this educational project the DNP student compared the number of participants who gave each answer on the pretests and posttests. Because the sample size will be less than 10 participants, data analysis software was not used and findings will be presented as raw numbers. The tests were numbered to protect the identity of participants and to ensure that information gathered was not compromised and offers information on the practice-focused questions. The survey questions at the end of the posttest were also compared and offered insight on the participants' satisfaction with the education project and their overall readiness to begin simulation to meet the educational needs of the nursing staff. See Appendix A and B for details. The Walden University Institutional Review Board (IRB) approval (#03-09-21-0329323) was obtained prior to beginning the education and data collection.



### **Summary**

Completing this educational project introducing nurse leaders to simulation-based education and the opportunity it offers to educate the health professionals within the rural critical access hospital created opportunity to create changes to the current education offered to health care staff and professionals. The data gathered offered additional insight on the willingness of the rural critical access hospital to consider implementing simulation-based education programs, along with the current knowledge base of simulation-based education. This educational project has created social change in the current status of education and promote clinical, verbal, and team dynamics of health care professionals that will improve the safety and quality of care that is offered to patients.

## Section 4: Findings and Recommendations

### **Introduction**

Patients receiving care in a rural health care environment may face disparity in the quality of care they receive compared to the care patients receive in a large metropolitan health care facility due to the limited training opportunities available in rural areas. Failure to address the health needs of patients in rural areas can create detrimental consequences when nurses, physicians, and other health care staff do not have access to training opportunities to prepare for care of their patients. Educating nurse leaders in a rural health care setting may promote understanding of simulation use in staff education to increase safety and quality in the care provided by nurses. The focused questions for this project were:

- Will educating nursing leaders on simulation-based education lead to increased knowledge about this type of education in the rural critical access hospital?
- Will educating nursing leaders on simulation-based education lead to support for this type of education in the rural critical access hospital?

The literature supported the development and implementation of an educational class for nursing leaders in the hospital as a potential approach to creating positive social change in care for the patient population served by this facility through improved health care quality and safety in health care delivery.

For this project, there were two sources of evidence: a review of the literature and the data gained from pretest and posttest surveys completed by project participants. Evidence from the review of literature for this educational project stemmed from peer-

reviewed clinical journals and current literature about simulation and its uses in education and health care organizations to facilitate the necessary education needed to address the identified gap in practice related to educational opportunities for knowledge and skill enhancement. This review of the literature helped in the development and implementation of the educational class for nursing leaders in a rural hospital. Participants completed a pretest and posttest to determine if the education increased the level of knowledge among these nurse leaders related to the use of simulation in staff education. The posttest also asked nurse leaders about their likelihood to support simulation as an avenue for education at the target facility. I compared the answers from the pretest and posttest. The total number of participants were seven nurse leaders who each chose a random number from a container holding numbers 1–10. Each participant applied their individual number to the pretest and posttest survey so the submissions could be matched for data analysis. Participants were not identified by anything other than a number during the comparison of data from the pretest and posttest. I did not know what number each participant drew, so the responses remained anonymous. Descriptive information was presented in a table for the findings from each question comparing the participants' answers on pretest and posttest surveys (See Table 1 and Table 2).

### **Findings and Implications**

The educational class was conducted in March 2021 with nursing leadership in a rural hospital setting. This class was conducted over a 2.5 hours in a conference room with technology that allowed the documentary and PowerPoint presentation to be shown. The class started with the completion of the pretest; the material was then collected, the

education was presented, and then the posttest and survey were administered. The pretest, posttest, and survey were all paper-and-pen instruments.

The findings from the educational class were presented to nurse leaders during a nursing leadership meeting in the rural hospital setting that lasted 30 minutes. The educational class allowed the following information to be collected: Questions 1 through 10 addressed Level 2 of the Kirkpatrick model (see Table 1). The first finding in the comparison of the pretest and posttest knowledge results was that there was a lack of general knowledge about medical errors happening in current practice; by the end of the educational class, 85% of participants understood that medical errors were the third leading cause of death in the United States prior to COVID-19. The second finding was that the nurse leaders already had a good knowledge base on types of simulation, uses of simulation, how simulation could be used in any practice area, and the ability of simulation to help identify the potential for errors in nursing practice.

**Table 1***Pretest and Posttest Results*

Questions	Pretest results ( <i>n</i> = 7)	Posttest results ( <i>n</i> = 7)
In 2019, prior to the COVID-19 pandemic what was the 3rd leading cause of death within the United States?	4 correct/3 incorrect 57% correct Other answers 29% Stroke 14% Heart disease	6 correct/1 incorrect 85% correct Other answers 15% Heart disease
What industry other than health care utilized simulation-based education as a top training tool to ensure safety to their customers?	6 correct/1 incorrect 85% correct Other answers 15% Railroad	7 correct/0 incorrect 100% correct
Define high-fidelity simulation manikins:	7 correct/0 incorrect 100% correct	7 correct/0 incorrect 100% correct
Define mid-fidelity simulation manikins:	7 correct/0 incorrect 100% correct	7 correct/0 incorrect 100% correct
Define low-fidelity simulation manikins	7 correct/0 incorrect 100% correct	7 correct/0 incorrect 100% correct
Simulation can be used in every area of clinical practice, what will simulation allow:	7 correct/0 incorrect 100% correct	7 correct/0 incorrect 100% correct
Simulation can promote interprofessional communication and teamwork to help facilitate better care to patients.	7 correct/0 incorrect 100% correct	7 correct/0 incorrect 100% correct
Scenario-based learning with simulation helps learners to identify potential errors in their care in a safe environment.	7 correct/0 incorrect 100% correct	7 correct/0 incorrect 100% correct
Patient safety and quality of care can be improved by utilizing or implementing simulation-based education for health care professionals within an organization.	7 correct/0 incorrect 100% correct	7 correct/0 incorrect 100% correct
Simulation allows for learners to receive what type of feedback	6 correct/1 incorrect 85% correct Other answers 15% Real time	7 correct/0 incorrect 100% correct

Posttest survey Question 11 (see Table 2) addressed Level 1 of the Kirkpatrick model (satisfaction with the education) and allowed identification that the educational opportunity offered enough information about simulation-based education to make it worth the nursing leaders' time to go through the educational class. Responses to this survey question included the importance of nurse leader education in providing patient safety reminders and benefits while providing ways to improve error prevention. Posttest survey Question 12 (see Table 2) addressed Level 3 of the Kirkpatrick model (likelihood of using the information) and indicated that all the nurse leaders supported the adoption of simulation in continuing education of staff nurses and health care professionals employed by the hospital. Comments from this survey question included the opportunity to reduce patient harm and the improvement of hands-on practicing to enhance knowledge, skills, confidence, and competence for patient care.

**Table 2***Survey Results*

Survey questions	Participant answers ( <i>n</i> = 7)
11. Did this educational opportunity offer you enough information about simulation-based education that made it worth your time? Why or why not?	7/7 answered yes. 100%  Comments included: <ul style="list-style-type: none"> <li>• Showed patient safety benefits</li> <li>• Increased thought on what kind of errors are possible and ways to improve</li> <li>• Good reminder about the importance of patient safety</li> </ul>
12. Would you consider using simulation-based education offered as an educational opportunity for nurses and other health care professionals within your organization in the future? Why or why not?	7/7 answered yes. 100%  Comments included: <ul style="list-style-type: none"> <li>• Improve nursing skills, competency &amp; confidence, help reduce patient harm</li> <li>• Can offer experiences that nurses may only see once a year in rural time so they can practice</li> </ul>

The focused questions for this project were:

- Will educating nursing leaders on simulation-based education lead to increased knowledge about this type of education in the rural critical access hospital?
- Will educating nursing leaders on simulation-based education lead to support for this type of education in the rural critical access hospital?

Based on the findings from the comparison of the pretest and posttest answers and the survey answers to both practice-focused questions for this project, the answer is *yes*. The education of nurse leaders on simulation-based education led to increased knowledge in

the rural critical access hospital. Also, support for simulation-based education of nurses was identified by the nurse leaders after the educational intervention.

No unanticipated limitations impacted the findings from this educational project. There was one unanticipated outcome to the findings in that nurse leaders were more aware of simulation-based education than anticipated, but this finding only strengthened the understanding between simulation-based education and the need for supporting this educational resource for nurses and other health care workers working in the rural hospital environment.

The findings from this educational project showed that simulation-based education in rural health care facilities is a supported and understood method to continued education for nurses and other health care providers who work in areas where there is great possibility for medical errors to occur, such as critical access rural hospitals. The findings from this educational project showed that rural community health care organizations do support increasing education with simulation-based education, along with understanding that more education is needed to ensure patient safety in this environment.

Understanding support for simulation-based education in rural critical access hospitals by nurse leaders is present will allow for future research and strategies to help implement and facilitate educational opportunities for staff nurse and other health care professionals. The support of simulation-based education usage by the nurse leaders in the hospital will help create new opportunities for health care professionals to experience and practice needed skills to create care competency comparable to that found in more



urban areas. This project has the potential to increase the quality and safety of care for patients seeking medical care.

### **Recommendations**

Recommendations from the findings would include for the project site to propose and implement simulation-based education into the assurance of practice competence among their health care professionals. Based on the support from nurse leaders, simulation-based education could deliver education, hands on practice, and team building for the critical access site. Skills could be enhanced, along with team dynamics and communication for care needs not routinely seen due to the geographical area. Nurse leaders can apply for grants, partner with other larger hospitals and medical centers, or work with college nursing programs to access simulation-based educational experiences, which will lead to improved confidence to provide quality, safe care to patients. Once the ability to conduct simulation-based education is established, each hospital department will be able to create their own learning experiences based on department needs.

### **Strengths and Limitations of the Project**

There were both strengths and limitations of this project in that the group size was limited to less than 10 nurse leaders at the project site. However, each nurse leader was from a different department in the hospital, so the education enabled them to see how simulation-based education could be used to fulfill their staff education needs across the organization and improve care provided. This project easily could be transferrable to a different health care facility, whether it is a critical access hospital or a rural hospital or clinic. The use of a pretest and posttest survey allowed for a good understanding of the

knowledge level prior to and after the education on simulation was offered. This method was an appropriate avenue to gain valuable information from the nurse leaders or decision makers within a smaller organization and helped to create group support for the positive social change that could occur if simulation is adopted to supplement online staff education.

## Section 5: Dissemination Plan

The plan to disseminate the findings of this project is to meet with the nurse leadership and review the information gained from the findings. Due to the small group size, this meeting will allow for information gained from the findings to be expressed to the project site participants to inform future educational endeavors to improve the care provided to the community and populations served. The information gained from this project could be used to inform other critical access or rural health care organizations, especially the nurse leaders, as these are the policy and procedure decision makers related to educational opportunities for the nursing staff.

### **Analysis of Self**

During the doctoral capstone project and prior to the project, the usage of simulation-based education has been at the forefront of both my career and in the creation of solutions to address the educational needs for the community I serve. Having strong foundational nursing skills from working in a large urban area has provided me insight into the skills and education needed to attain and maintain nursing competence in a rural community. After relocating to a rural area to teach prelicensure nursing students, I believe I can provide insight and pass on knowledge to improve the educational opportunities for rural health care providers. This role is one that needs to be advocated for, especially when there is such an opportunity to create positive social change in the way health care is handled. Addressing the gap in practice by introducing simulation-based education to critical access hospital nursing leaders was a way for me to facilitate future change and create opportunities to improve educational opportunities for nurses in

the area. The main long-term professional goal I have is to create a simulation-based educational program for rural critical access nursing staff and other health care professionals to be able to train together with hands-on realistic experiences that will strengthen current skills and help create higher quality and safer care for patients living in the area.

The completion of this project has allowed me to gain a better understanding of rural health care needs and to understand the different ways that my previous nursing experiences can help improve the care given to patients by creating educational opportunities for rural health care personnel. Challenges to simulation adoption after this project include the reality that many rural health care facilities do not have funds to promote or start their own simulation-based education. Creating awareness among nurse leaders could help promote or change funding opportunities through nurse leaders advocating to upper administration the budgetary needs to create these types of programs to reduce medical errors and improve the safety and quality of care their patients receive. From start to finish, the doctoral project has been educational, as it has taught me the need for research and to create social change within nursing to provide better opportunities for other nurses and help create better care for patients.

### **Summary**

In this doctoral project, my goal was to introduce simulation-based education to the rural critical access nurse leadership and hope that change could happen. Findings suggest that simulation-based education for critical access hospital would be supported by the nursing leadership and that a strong foundation of knowledge about the subject

already exists; thus, creation of simulation-based education within the rural health care organization might become a reality. Simulation-based education has the potential to create better patient outcomes, improved patient and family satisfaction with local care, and higher quality and safety in care provided to patients.

## References

- Blayden, C., Hughes, S., Nicol, J., Sims, S. & Hubbard, I. J. (2017). Using secondments in tertiary health facilities to build paediatric expertise in allied health professionals working in rural New South Wales. *Australian Journal of Rural Health*, 25(6), 376–381. <https://doi.org/10.1111/ajr.12347>
- Brown, D. K., Wong, A. H., & Ahmed, R. A. (2018). Evaluation of simulation debriefing methods with interprofessional learning. *Journal of Interprofessional Care*, 32(6), 779–781. <https://doi.org/10.1080/13561820.2018.1500451>
- Cooper, S. J., Kinsman, L., Chung, C., Cant, R., Boyle, J., Bull, L., Cameron, A., Connell, C., Kim, J., McInnes, D., McKay, A., Nankervis, K., Penz., E., & Rotter, T. (2016). The impact of web-based and face-to-face simulation on patient deterioration and patient safety: Protocol for a multi-site multi-method design. *BMC Health Services Research*, 16(1), 475. <https://doi.org/10.1186/s12913-016-1683-0>
- Eisenberg, M., Brackett, L., & Downe, M. (2019). *To err is human: A patient safety documentary*. <https://www.toerrishumanfilm.com/>
- Fleet, R., Dupuis, G., Fortin J., Gravel, J., Ouimet, M., Poitras, J., Legare, R., & Turgeon-Palchat, C. (2017). Rural emergency care 360°: Mobilizing healthcare professionals, decision-makers, patients and citizens to improve rural emergency care in the province of Quebec, Canada: A qualitative study protocol *BMJ Open*, 7(8), e016039. <https://doi.org/10.1136/bmjopen-2017-016039>
- Harvey, D. (2019). Perceptions of and policy making around aging in rural America.

*Generations*, 43(2), 66–70. <https://www.jstor.org/stable/26760117>

Hendrickx, L., & Winters, C. (2017). Access to continuing education for critical care nurses in rural or remote settings. *Critical Care Nurse*, 37(2), 66–71.

<https://doi.org/10.4037/ccn2017999>

Jeffery, A., Longo, M., & Nienaber, A. (2015). *Staff educator's guide to professional development: Assessing and enhancing nursing competency*. Sigma Theta Tau International.

Kavanagh, K. T., Saman, D. M., Bartel, R., & Westerman, K. (2017). Estimating hospital-related deaths due to medical error: A perspective from patient advocates. *Journal of Patient Safety*, 13(1), 1–5.

<https://doi.org/10.1097/PTS.0000000000000364>

Kiernan, L. (2018). Evaluating competence and confidence using simulation technology. *Nursing*, 48(10), 45–52. <https://doi.org/10.1097/01.NURSE.0000545022.36908.f3>

Lantu, D., Labdhagati, H., Razanaufal, M., & Sumarli, F. (2020). Was the training effective? Evaluation of managers' behavior after a leader development program in Indonesia's best corporate university. *International Journal of Training Research*, 18(1). <https://doi.org/10.1080/14480220.2020.1864446>

<https://doi.org/10.1080/14480220.2020.1864446>

Martin, D., Bekiaris, B., & Hansen, G. (2017). Mobile emergency simulation training for rural health providers. *Rural and Remote Health*, 17(3), 4057.

<https://doi.org/10.22605/RRH4057>

Melling, M., Duranai, M., Pellow, B., Lam, B., Kim, Y., Beavers, L., Miller, E., & Switzer-McIntyre, S. (2018). Simulation experiences in Canadian physiotherapy

- programmes: A description of current practices. *Physiotherapy Canada*, 70(3), 262–271. <https://10.3138/ptc.2017-11.e>
- Moy, E., Garcia, M. C., Bastian, B., Rossen, L. M., Ingram, D., Faul, M., Masseretto, G., Thomas, C., Hong, Y., Yoon, P., & ... Iademarco, M. F. (2017). Leading causes of death in nonmetropolitan and metropolitan areas- United States, 1999-2014. *Morbidity and Mortality Weekly Report. Surveillance Summaries (Washington, D.C: 2002)*, 66(1), 1–8. <https://doi:10.15585/mmwr.ss6601a1>
- Reid, T. (2019). Rural nursing: Simulation aids practice. *Kai Tiaki Nursing New Zealand*, 25(4), 39. Retrieved from [https://www.nzno.org.nz/resources/kai\\_tiaki](https://www.nzno.org.nz/resources/kai_tiaki)
- Rice, Y., Deletter, M., Fryman, L., Parrish, E., Velotta, C., & Talley, C. (2016). Implementation and evaluation of a team simulation training program. *Journal of Trauma Nursing*, 23(5), 298–303. <https://doi.org/10.1097/JTN.0000000000000236>
- Terry, A. (2018). *Clinical research for the doctor of nursing practice* (3<sup>rd</sup> ed.). Jones and Bartlett.
- Saboe, B. (2018). A majority of Montana counties face primary care shortages: The gap in health care access is particularly acute in rural areas. High Country News. Retrieved from <https://www.hcn.org/articles/the-montana-gap-a-majority-of-montana-counties-face-primary-care-shortages>
- Sedgwick, M. G., Grigg, L., & Dersch, S. (2014). Deepening the quality of clinical reasoning and decision-making in rural hospital nursing practice. *Rural and Remote Health*, 14(3).



Shrestha, R., Shrestha, A. P., Shrestha, S. K., Basnet, S., & Pradhan, A. (2019).

Interdisciplinary in situ simulation-based medical education in the emergency department of a teaching hospital in Nepal. *International Journal of Emergency Medicine*, 12(1), N.PAG. <https://doi.org/10.1186/s12245-019-0235-x>

Stellflug, S., & Lowe, N. (2018). The effect of high-fidelity simulation on knowledge retention and skill self-efficacy in pediatric advanced life support courses in rural state. *Journal of Pediatric Nursing*, 39, 21-26.

<https://doi.org/10.1016/j.pedn.2017.12.006>

Walker, M., & Stevenson, G. (2016). Learning theory support of simulation to improve nurses' care of critically ill patients. *The Journal of Continuing Education in Nursing*, 47(1), 27-31. <https://doi.org/10.3928/00220124-20151230-08>

Vanderzwan, K., Schwind, J., Obrecht, J., Obrecht, J., O'Rourke, J., & Johnson, A.

(2020). Using simulation to evaluate nurse competencies. *Journal for Nurses in Professional Development*, 36, 163-166.

<https://doi.org/10.1097/NND.0000000000000630>

## Appendix A: Pretest

Participant Number \_\_\_\_\_

## Pretest

Please circle your answer

1. In 2019, prior to the COVID-19 pandemic what was the 3<sup>rd</sup> leading cause of death within the United States?
  - A. Medical Errors
  - B. Heart Disease
  - C. Stroke
  - D. Cancer
  
2. What industry other than healthcare utilized simulation-based education as a top training tool to ensure safety to their customers?
  - A. Railroad
  - B. Airlines
  - C. Real Estate
  - D. Mechanics
  
3. Define high-fidelity simulation manikins:
  - A. Most realistic and maximum interaction for learners, creates a real environment and can run preprogrammed scenarios. Used to build performance and action.
  - B. More realistic and allow for procedures to be practiced on, mimics heart sounds and breathing and is used to build competence

C. Feels the least realistic to learner. Is used to build knowledge for a specific task or procedure, can be very static.

4. Define mid-fidelity simulation manikins:

A. Most realistic and maximum interaction for learners, creates a real environment and can run preprogrammed scenarios. Used to build performance and action.

B. More realistic and allow for procedures to be practiced on, mimics hear sounds and breathing and is used to build competence

C. Feels the least realistic to learner. Is used to build knowledge for a specific task or procedure, can be very static.

5. Define low-fidelity simulation manikins:

A. Most realistic and maximum interaction for learners, creates a real environment and can run preprogrammed scenarios. Used to build performance and action.

B. More realistic and allow for procedures to be practiced on, mimics hear sounds and breathing and is used to build competence

C. Feels the least realistic to learner. Is used to build knowledge for a specific task or procedure, can be very static.

6. Simulation can be used in every area of clinical practice, what will simulation allow:

A. To increase knowledge

B. Increase critical thinking skills

- C. Confidence in procedures.
  - D. Identification of areas that need improvement
  - E. All of the above
  - F. None of the above
7. Simulation can promote interprofessional communication and teamwork to help facilitate better care to patients.
- A. True
  - B. False
8. Scenario-based learning with simulation helps learners to identify potential errors in their care in a safe environment.
- A. True
  - B. False
9. Patient safety and quality of care can be improved by utilizing or implementing simulation-based education for health care professionals within an organization.
- A. True
  - B. False
10. Simulation allows for learners to receive what type of feedback
- A. Real time
  - B. Errors made
  - C. Proficiency
  - D. Areas in need of improvements
  - E. All of the above

F. None of the above

## Appendix B: Posttest and Survey

Participant Number \_\_\_\_\_

## Posttest and Survey

Please circle your answer

1. In 2019, prior to the COVID-19 pandemic what was the 3<sup>rd</sup> leading cause of death within the United States?
  - A. Medical Errors
  - B. Heart Disease
  - C. Stroke
  - D. Cancer
  
2. What industry other than healthcare utilized simulation-based education as a top training tool to ensure safety to their customers?
  - A. Railroad
  - B. Airlines
  - C. Real Estate
  - D. Mechanics
  
3. Define high-fidelity simulation manikins:
  - A. Most realistic and maximum interaction for learners, creates a real environment and can run preprogrammed scenarios. Used to build performance and action.
  - B. More realistic and allow for procedures to be practiced on, mimics heart sounds and breathing and is used to build competence

C. Feels the least realistic to learner. Is used to build knowledge for a specific task or procedure, can be very static.

4. Define mid-fidelity simulation manikins:

A. Most realistic and maximum interaction for learners, creates a real environment and can run preprogrammed scenarios. Used to build performance and action.

B. More realistic and allow for procedures to be practiced on, mimics hear sounds and breathing and is used to build competence

C. Feels the least realistic to learner. Is used to build knowledge for a specific task or procedure, can be very static.

5. Define low-fidelity simulation manikins:

A. Most realistic and maximum interaction for learners, creates a real environment and can run preprogrammed scenarios. Used to build performance and action.

B. More realistic and allow for procedures to be practiced on, mimics hear sounds and breathing and is used to build competence

C. Feels the least realistic to learner. Is used to build knowledge for a specific task or procedure, can be very static.

6. Simulation can be used in every area of clinical practice, what will simulation allow:

A. To increase knowledge

B. Increase critical thinking skills

- C. Confidence in procedures.
  - D. Identification of areas that need improvement
  - E. All of the above
  - F. None of the above
7. Simulation can promote interprofessional communication and teamwork to help facilitate better care to patients.
- A. True
  - B. False
8. Scenario-based learning with simulation helps learners to identify potential errors in their care in a safe environment.
- A. True
  - B. False
9. Patient safety and quality of care can be improved by utilizing or implementing simulation-based education for health care professionals within an organization.
- A. True
  - B. False
10. Simulation allows for learners to receive what type of feedback
- A. Real time
  - B. Errors made
  - C. Proficiency
  - D. Areas in need of improvements
  - E. All of the above



F. None of the above

Survey Questions:

1. Did this educational opportunity offer you enough information about simulation-based education that made it worth your time?
  - A. Yes
  - B. No
  - C. Why or why not?
  
2. Would you consider using simulation-based education offered as an educational opportunity for nurses and other health care professionals within your organization in the future?
  - A. Yes
  - B. No
  - C. Why or why not?