Implementation of the ESI Triage Tool in an Urgent Care Setting to Limit Wait Time for Acute Patients

By

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Abstract

Urgent care clinics (UCC) have become more numerous in the last decade. The choice between utilizing an emergency department (ED) or a UCC is dependent on many factors. The staff of a UCC must be able to differentiate between an acute and non-acute patient and be able to act swiftly to allocate an acute patient to a facility of higher care. Implementation of the Emergency Severity Index (ESI) triage tool will enable UCC health care personnel the knowledge to triage patients, allowing patients with acute complications, beyond the expertise and resources of the UCC, timely redirection to an ED. This quality improvement project was conducted over one month with a convenience sample of five licensed nurses. A pretest/posttest method was used to assess triage knowledge and for retention of the education. The ESI triage tool was implemented in the UCC setting to decrease wait times for acute patients. Results showed an increase in test scores at one-week of (22.5% to 58.5%) and one-month (13.5% to 50%) from the pretest scores. Acuity levels in the control group (CG) comprised 5.6% of the triaged patients with an acuity level in need of resources. In the intervention group (IG) 91.2% of triaged patients had a higher acuity level requiring resources. Wait times were comparable in both groups. The effectiveness to the ESI triage tool and the relative ease of utilization makes for a more efficient facility capitalizing on patient outcomes and wait times. The ESI triage tool compared to the basic triage tool used, allowed the triage nurse to contemplate resources needed to diagnose or treat the patient. Wait times and acuity levels for the IG reflected resource use.

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Chapter I

Introduction

Urgent care clinics (UCC) have become more numerous in the last decade. According to Urgent Care Association of America, the UCCs in the U.S. have grown by five percent in only one year, from 7,271 in 2016 to 7,639 as of June 2017 (Gelburd, 2018). The minimal staffing required to run a UCC makes it cost effective for the stakeholders and patients. The choice between utilizing an emergency department (ED) or a UCC is dependent on many factors. These factors are inconsequential to the patient, if the patient has lack of knowledge of the UCC's ability and resources. Consequently, the staff of a UCC must be able to differentiate between an acute and non-acute patient. This quality improvement project proposes a training program incorporating the Emergency Severity Index (ESI) triage tool (Gilboy, Tanabe, Travers, & Rosenau, 2011). Training on the use of the ESI triage tool will enable UCC health care personnel the knowledge to triage patients, allowing patients with acute complications, beyond the expertise and resources of the UCC, timely redirection to an ED.

Background and Significance

While UCC health care is proficient at sick calls, as they are not an ED, they lack the resources needed to care for an acute patient. Without proper training by the licensed nurses, acute patients will sit in a waiting room until they are called back to see the advanced practice nurse (APN). The wait time for the patient to be seen by the APN, can be detrimental to a patient's outcome. According to Horwitz, Green, and Bradley (2009), wait times decrease quality of care and increase adverse events.

Emergency department overcrowding in the United States has become blatantly severe causing the National Academy of Medicine to refer it as a "national epidemic" (Horwitz et al., 2009). According to Knapman and Bonner (2010),

> "Increased patient volume, overcrowding and excessive wait times have forced EDs to provide more complex and prolonged care, causing conditions that place patients at risk by delaying access to care and reducing the ability of ED staff to provide quality care" (pp. 310-311).

According to Goodacre and Webster (2005), the main reason patients in the ED left without being seen is prolonged wait times.

Urgent care clinics are readily accessible and provide quality healthcare. Patients are sometimes unaware of the stature of their health conditions and will seek out a UCC. Lack of triage tools negates familiarity that licensed nurses may have with a triage algorithm or previous training from an ED setting. The licensed vocational nurse (LVN) in the UCC where this project will be conducted have no prior triage training due to licensure restrictions in the state of Texas. However, the APNs have triage experience with a basic tool in place. The UCC's rural location is bordered by small densely populated towns that allot on average 30 to 40 patients a day workload. The UCC is highly capable of providing health care to the community, and when necessary has directed and physically taken acute patients to an ED located directly across the street.

Needs Assessment

According to Johnson, Myers, Wineholt, Pollack, and Kusmiesz (2009), "patients leaving the emergency department without full evaluation are a significant problem in US emergency departments" (p. 108), from a health care standpoint. Emergency department overcrowding and

long wait times cause patients to leave EDs (Johnson et al., 2009). These patients will either visit a primary care physician or look for medical care elsewhere. Urgent care clinics are readily available in many areas of the US. Some of these patients are in fact utilizing UCCs. According to Howard et al. (2014), the use of an ESI triage tool is to categorize patient acuity in order from level one (most ill) to level five (least resource intensive). Currently, there is no triage algorithm implemented in this UCC setting. The project will ensure patient acuity and wait times as the main priorities bringing the needs awareness of a triage tool in the UCC setting.

The SWOT analysis shows the strengths, weaknesses, opportunities, and possible threats associated with the quality improvement project (see Table 1). The objective is to educate licensed nurses on the use of the ESI triage tool to enable these nurses the ability to triage and assign patient acuity for patient care requirements reducing wait times. Analyzed strengths include this DNP student's knowledge of the facility and staff along with collaboration with nurses that have experience with triage settings. Weaknesses account for the size of the facility and the LVNs' lack of triage skills. Opportunities include a decrease in wait times for critical patients, increased knowledge of licensed nurses, and improved efficiency of patient care. Possible threats are responsibilities placed on LVNs that cause stress and anxiety, a full-service hospital ED directly across the street, and lack of knowledge of the general public of the UCC's patient care abilities. After assessing internal and external factors, the evaluation with proper training, the objective is viable. The stakeholders are welcoming this opportunity to advance quality patient care in this urgent care setting.

Table 1

SWOT Analysis

Objective:	
Educating licensed nurses with the Emergency Severity Index to enable the LVNs and RNs the ability to triage and assign patient acuity for patient care requirements.	
Internal Factors	
Strengths (+)	Weaknesses (-)
1. The DNP student is familiar with the established urgent care facility having done 300 clinical hours there. 2. The staff is welcoming and accepting of learning the proposed training. 3. LVNs and RNs requirements to collaborate over triage patients making the task a group effort. 4. The owners are receptive to allowing the training class.	1. No present triage room for (HIPAA) privacy. 2. Small urgent care facility with minimal staffing (4 NPs, 2 LVNs, 2 MAs, and 2 Secretaries). 3. Lack of formal training of LVNs with triage.
External Factors	
Opportunities (+)	Threats (-)
1. Decrease wait time for critical patients by getting them to the desired point of care. 2. Increase LVNs and RNs knowledge and skill set for triage. 3. Increase the efficiency of patient care in the urgent care setting.	1. Hospital Emergency Department directly across the street. 2. Lack of knowledge of the general public on the ability of the urgent care, and the services they provide. 3. LVNs not willing to assume triage responsibilities due to stress and anxiety of the position.
Evaluation of Objective:	
With proper training the objective is viable. The stakeholders are comfortable with this opportunity to advance patient care in this urgent care setting.	

Note. LVN: Licensed Vocational Nurse, RN: Registered Nurse, DNP: Doctor of Nursing Practice, HIPPA: The Health Insurance Portability and Accountability Act, NP: Nurse Practitioner, MA: Medical Assistant.

Problem Statement

Treatment priority is based on the severity of the disease and the anticipated resource needs (Christ, Grossmann, Winter, Bingisser, & Platz, 2010). According to Garbez, Carrieri-

Kohlman, Stotts, Chan, and Neighbor (2011), "studies of the triage process have shown that appropriate patient assessment and assignment of triage acuity score can shorten wait times and time to treatment and reduce patient morbidity" (p. 531). The ESI triage tool is a valid and reliable tool that is used in many EDs across the country, but there is no research literature of it being utilized in any outpatient settings such as urgent care clinics (Burgess, 2017). With the lack of a universal triage protocol or process, UCCs are limited during emergencies involving patients that need to be allocated to EDs. The problem is simple and concise. UCCs are often treated like EDs by the population they serve. Without a proper triage tool in place, for accountability, patients are taken on a first come first serve basis. This needs to be rectified to eliminate wait times for acute patients that may need allocated to a facility of higher care.

A majority of retirees populate the community and surrounding area. This community borders on two large popular lakes that attract vacationers and retirees alike. This community includes a population of baby boomers with failing health issues and vacationers that are often healthcare problematic, e.g. specifically COPD patients, accidental issues from thrill seekers, and cardiac patients. This DNP student has experienced patients in this UCC, during clinical, with breathing issues, chest pain, and stabbings all of which were redirected physically or by emergency medical services to an ED.

Project Purpose

The purpose of this quality improvement project is to implement and evaluate the ESI triage tool education to licensed nurses in order to quickly and accurately assess patient acuity and decrease wait times in the urgent care setting. Based on the patient's triage score the UCC care team, comprised of LVNs and registered nurses (RN) will engage in collaboration for

decision-making purposes. Redirection of the patient will then be dependent upon the patient's acuity level and the RN will make decisions regarding wait times and/or transport needs.

Objectives

The nurse will be able to:

- Understand wait times should be consistent with patient acuity levels within one week of required education as measured by before and after test scores.
- Demonstrate consistency and accuracy in assessing patients using the ESI triage tool in the urgent care setting within one week of required education.
- Implement the ESI triage tool in the urgent care setting within one week of required education.

Clinical Question

What is the difference in (P) nurse aptitude scores (C) before and after an (I) ESI triage tool educational intervention to decrease (O) patient wait times in an urgent care setting?

Congruence with Organizational Strategic Plan

The Jasper County Urgent Care (JCUC) (2017), mission statement is "Our Customers Come First. It is our mission to improve the health of those we serve with a commitment to excellence in all that we do" (p. 1). This project aligns with this organization committed to the phrase "Our Customers Come First" (Jasper County Urgent Care, 2017, 1). The ESI triage tool is an established algorithm to assist ED nurses, physicians, and administrators in the implementation of a comprehensive ESI educational program (Gilboy et al., 2011). Initially, the ESI triage tool assisted hospital emergency departments in identifying patients in need of immediate attention rapidly, and better identifying patients who could safely and efficiently be seen in a fast-track or urgent-care area rather than in the main ED (Gilboy et al., 2011). In

staying true to the UCCs commitment and dedication to improving patient health, the implementation of the ESI triage tool is warranted.

Synthesis of Evidence

The literature search was conducted utilizing a few keywords: triage, urgent care clinics/centers, emergency severity index, emergency department, registered nurse, licensed vocational nurse, emergency department wait times, and ESI training. The literature search was conducted in CINAHL, PubMed, EBSCOhost, Texas Board of Nursing, and Google Scholar databases. Twenty-one articles were selected from the literature review. These articles consisted of evidence-based findings that support this quality improvement project. There were various article design methods such as experimental studies, qualitative analysis, cohort studies, retrospective studies, case studies, prospective observational studies, cross-sectional, and quality improvement studies. With the limited amount of research with UCCs and triage this student forgoes publication years as a criterion. Twelve articles were included based on evidence of the ESI triage system that pertained to this project. Four articles based on UCCs were included. Five articles based on ED wait times were also included. Twenty-one articles were found with relevant information that were used for supporting evidence. Exclusion articles consisted of magazine articles and articles with no pertinent information regarding this project.

Urgent Care Clinics have become more prevalent across the country. Their accessibility, affordability, and quality of care have many patients displeased with conventional health care delivery systems (Hansen-Turton, Ryan, Miller, Counts, & Nash, 2007). UCCs are able to triage patients, diagnose and prescribe medications for common health problems, can recommend a primary care physician, and reduce the amount of ED visits (Hansen-Turton et al., 2007). According to Sharma and Inder (2010), by rerouting nonurgent patients to UCCs, ED

overcrowding will be reduced. However, without a triage tool in the UCC unnecessary transfers to EDs are prevalent, due to the lack of training to assess patients properly (Zitek, Tanone, Ramos, Fama, & Ali, 2018). According to Kaissi, Shay, and Roscoe (2016), hospitals are becoming more innovative by establishing and running UCCs due to the potential benefits they provide the organization. A proper triage tool is warranted in the UCC setting.

Wait times are also an issue that needs to be addressed at EDs across the country. With overcrowding of EDs there is an increase in wait times. This increase affects patients with triage scores that are considered non-urgent or level five on an ESI triage tool. These non-urgent patients are likely to leave without being seen by a physician (Goodacre, 2005; Knapman, 2010). Other issues concerning wait times suggest that wait times start at the moment of arrival into an ED setting which can significantly increase wait times to triage and treatment (Betz, Stempien, Trivedi, & Bryce 2017; Horwitz, 2010). Since overcrowding has created longer wait times, patient satisfaction with EDs has increasingly declined which can affect financial remuneration and patient compliance (Soremekun, Takayesu, & Bohan, 2011). Therefore, UCCs are more likely to be sought out as replacements for EDs.

According to Christ et al. (2010), "five-level triage instruments are the gold standard in emergency medicine worldwide" (p. 895). The ESI is the most commonly used triage system in the U.S. (McHugh, Tanabe, McClelland, & Khare, 2011). According to Singer, Infante, Oppenheimer, West, and Siegel (2012), the ESI is simple to use, reduces subjectivity, and is helpful to unexperienced ED nurses. Martin et al. (2014) found that no "statistical significance supports the notion that attitude, or a specified amount of experience contribute to accurate ESI score assignments" (p. 467). These findings weigh heavily in support of teaching LVNs how to use and apply the ESI algorithm. Garbez (2008) believes experienced nurses' factor in additional

symptoms and patient presentation to decision making enhancing ESI scoring decisions. The RNs are required to weigh in on the LVNs ESI score for accuracy purposes. Mistry et al. (2018) suggest, "there is a lack of specific guidance for the definition of a high-risk patient and for determining the number of resources required" (p. 366). Overall the ability to distinguish level two patients "is a crucial element of the triage decision making process" (Howard et al., 2014, p. 566).

There is a gap in research regarding the use of ESI in UCCs. However, one scholarly dissertation by Burgess (2017) was conducted with the same concepts but different clinical question approach of an ESI triage tool in a UCC setting. The ESI triage tool was successful in the scholarly dissertation with limitations due to time constraints. All other studies were based on the use of an ESI triage tool in the ED with successful outcomes. Currently, I have been unable to find a universal triage protocol associated with UCCs or stand-alone clinics. The limited use of triage in this UCC setting has directed this quality improvement project.

Theoretical Framework

Kurt Lewin's *theory of planned change* directed this quality improvement project. Lewin's theory is dependent on the need for a change to occur. As for the urgent care, this need for change is vital based on past occurrences with acute patients. Lewin identified three phases of change: unfreezing, change, and refreezing (Gilboy et al., 2011). The unfreezing phase notates that the environment is conducive to learning. The licensed nurses are receptive and eager to learn during the unfreezing phase which involves assessment of the problem and the benefit to both the facility and the staff. The change phase delineates that the desired state is achieved, and change can commence. The education was introduced to the participants during the change phase that included identifying, planning and implementing a strategy. Change

represented new ways of thinking and processing the information learned. Refreezing refers to the reinforcement of the learned change. The refreezing stage is important because it guarantees that the participants would not revert back to their original mindset. Learned changes were depicted in the ESI triage tool knowledge, utilization, and assigning the patient acuity level.

Lewin's *theory of planned change* is relevant to the clinical question due to the process that was initiated to answer the question. A before, one week after and post one month after education test method was proposed for this quality improvement project**.** The participants answered a short before test with scenario-based critical thinking questions regarding patient triage. After the education was delivered the same short after test was administered one week later to measure the effectiveness of the training. Post one month another after test was administered to measure how much information the participants retained.

Chapter II

Methodology

Project Design

The quality improvement project utilized a one-group before and after intervention design to test the effectiveness of the education regarding the use of the ESI triage tool.

Setting

Jasper County Urgent Care (JCUC) is a stand-alone urgent care clinic located in the city of Jasper, Texas. This facility was established to care for a variety of issues to include diagnosis and treatment of the most common health problems experienced by patients, sick visits, minor orthopedic issues, minor lacerations, immunizations, and preventive health care screenings (Hansen-Turton et al., 2007). The facility has four treatment rooms stocked with supplies for minimal health care needs. This setting was selected by this DNP student for its rural location with minimum health care facilities in the surrounding area. Additionally, this DNP student has completed 300 clinical hours at this urgent care and has experienced multiple patients with acuity levels beyond the urgent cares' ability.

Jasper is located in east Texas. The geography of the area is rolling hills with dense forests and large recreational lakes. Jasper has a population of 35,561 with 78% Caucasian, 16.8% African American, and 5.1% made up of other ethnicities. The median age of the population is 40.4 years. A majority of the population make the most of outdoor recreation such as fishing and hunting. The relevance of the setting, according to the patient population in the area, is the dislike of the established hospital. According to projects.propublica.org (2019), only 59% of the population would recommend the local hospital. The urgent care sees on average between 30 and 40 patients daily who avoid utilizing the local hospital which is directly across

the street. The urgent care's most vital physical resource is its location. This UCC is staffed with caring professionals intent on providing exceptional health care to the local population and surrounding areas. There are no leadership issues noted within the organization and respect is viewed as the norm. JCUC stakeholders have authorized the DNP student permission to conduct research in their facility (see Appendix A).

Population

The nurse population was a combination of an LVN and RNs. This convenience sample originally consisted of a total of six participants who are employed at the UCC. Prior to starting QA project one LVN took a position at another facility. The remainder of employees consisted of one LVN and four RNs. The LVN is a 38-year-old female with 18 years of experience. The LVN has experience in primary practice and hospital settings. The RNs consisted of two females one age 54 with 30 years of experience and the other 47 with 20 years of experience. Two males one age 48 with 19 years of experience and the other 35 with six years of experience. All the RNs have master's degrees in nursing with experience in various EDs and primary practices in the nursing profession. Nurse participant inclusion criteria for Phase two: nurses had to be licensed in the state of Texas, they were required to read and understand the English language, be employed with JCUC, and were required to be in attendance during the facility meeting with the ESI educational intervention. Inclusion criteria for Phase one and Phase four included a single sheet triage form developed by the DNP student. Exclusion criteria for Phase one and Phase four consisted of any patient that exited the facility without being assessed by a licensed nurse.

The patient population triage information sheet (see Appendix B) replaced chart reviews. The principal investigator reviewed the triage sheets to discover the chief complaint, acuity levels, demographics, vital signs, and wait times of the patients assessed by the licensed nurses.

One hundred and twenty-five patient triage sheets were reviewed before and 533 triage sheets were reviewed after the ESI education consecutively.

Tools and Instruments

ESI Triage Tool. The ESI triage tool (see Appendix C) is an established triage algorithm that "yields rapid, reproducible, and clinically relevant stratification of patients" (Gilboy et al., 2011, prefix v). The ESI triage tool categorizes the patient into five groups, from level one (most urgent) to level five (least urgent) acuity and/or resource needs (Gilboy et al., 2011). The ESI triage tool begins with scoring a patient's acuity level whether there be a need for life saving measures scoring a 1, high risk patients score a 2, pediatric patients with abnormal vitals or patients that need many resources score a 3, patients that only need one resource score a 4, and patients that are nonemergent score a 5. Notes for use of the ESI triage tool (see Appendix D) and copyright permission (see Appendix E) to use the tool is permissible for both nurses and doctors. The ESI has been researched and used in several studies and has been deemed reliable and valid (Gilboy et al., 2011). According to Gilboy et al. (2011), the five level ESI triage tool has a kappa statistic range from 0.68 to 0.89 respectively among many research studies.

ESI Education Test. The before/after education test was comprised of questions throughout the ESI Handbook V4 by this DNP student, to determine the extent of triage knowledge amongst the licensed nurses. The before test (see Appendix F) included 22 short scenario-based questions. These 22 questions consisted of fill in the blanks, true and false, and the number of resources needed in each ESI level. The before test took approximately 10-15 minutes to complete. Before test scores were logged into the nurse aptitude score sheet (see Appendix G).

Project Plan

This EBP quality improvement project was completed in four phases to completely answer the clinical question. Phase 1 and 4 addressed the patient acuity and wait times. The DNP student collected triage information sheet review data from one specified week (Monday through Sunday) for Phase 1. The triage information sheet review for Phase 4 also addressed patient acuity and wait times and consisted of collection from a month of data. Phase 2 assessed the effectiveness of ESI educational intervention and Phase 3 assessed the retention of the ESI education.

Phase 1. Upon facility approval, the project plan was initiated by the principal investigator through patient triage information sheet review. Patient demographic information (age, gender, ethnicity, and chief complaint), wait times, vital signs, and acuity scores were collected one week prior to the ESI educational intervention (see Appendix H). The data collected reflected the current wait times and triage acuity level at the UCC facility (see Appendix I).

Phase 2. A convenience sample of licensed nurses were recruited at the weekly facility meeting (see Appendix J). Participants recruited were given an ESI education packet consisting of two sections. Section 1 contained the informed consent (see Appendix K), demographics form, and the before education test. Section 2 contained the ESI educational material. The participant kept this section for personal use and review of the education. Sections 1 was assigned a code number for anonymity.

The implementation of the ESI education took place using scenario-based role-play, a short PowerPoint presentation, a poster board with the diagram of the ESI triage tool with a separate poster of the explanation of the different parts of the ESI triage tool, and individual flyers of the triage tool algorithm. Class participation was required along with a question/answer

session at various intervals to reinforce the learning process. The role play was modified from scenario-based triage education from the ESI handbook (Delnavaz et al., 2018). According to Delnavaz et al. (2018), "the role-playing method was more effective than the lecture method . . ." (p. 58), for nursing students. This form of intervention was chosen based on the lack of ESI triage tool use, knowledge, and licensure restrictions LVNs have with triage being comparable to a nursing student in the state of Texas (Texas Board of Nursing, 2018). The education and practice role-play scenarios took approximately 20 minutes to complete. Scores were logged in the nurse aptitude score sheet.

Phase 3. The licensed nurses were given one week to practice implementation of the ESI triage tool with guidance from the DNP student. Following the practice week, a one-week after test was administered to evaluate the retention of the ESI education. Additionally, these scores were logged in the nurse aptitude score sheet.

Phase 4. The licensed nurses were given a one-month after test to evaluate retention and assurance that the ESI education tool was used accurately in the urgent care setting. The scores were logged in the nurse aptitude score sheet and statistically analyzed. The DNP student conducted a patient triage information sheet review utilizing the same steps in Phase 1. The patient triage information sheets were reviewed for demographic information, wait times and acuity scores at the conclusion of the one-month post education after test.

The objectives of the project were to accomplish the following:

- Understand that wait times should be consistent with patient acuity levels within one week of required education as measured by before and after test scores.
- Demonstrate consistency and accuracy in assessing patients using the ESI triage tool in the urgent care setting within one week of required education.

- Implement the ESI triage tool in the urgent care setting within one week of required education.

Data Analysis

This EBP quality improvement project utilized SPSS V25 to statistically evaluate the clinical question. The data was analyzed according to level (nominal, ordinal, or interval) collected. Descriptive statistics were used to describe and summarize the participant populations. Phase 1 and 4 are the patient population. Phase 2 was the licensed nurses receiving the ESI education. Phase 2, 3, and 4 are nurse aptitude tests. A dependent *t*-test could not be utilized due to the inability of comparing triage tools with different triage levels. The basic triage tool that was in place prior to intervention consisted of 4 levels with level 1 being no distress and level 4 being unbearable distress. The ESI triage tool consists of 5 levels with level 1 being immediate lifesaving to level 5 no resources needed.

Ethical Issues

No names or identifying markers were used in this EBP quality improvement project for participants. Utilizing a coded system, anonymity and confidentiality of the patient triage information sheet and nurse participants were protected by concealing any information from sight or sound and protecting participant rights. The licensed nurse participation was voluntary. A consent form for participation in the project was provided. The licensed nurses' before and after tests were coded with an identification number of 1-6. The licensed nurses were informed of their right to withdraw from the project at any time. The patient triage information sheets for review were assigned a number (e.g. 1-100…) as an identifier for the EBP project data collection purposes only. Approval of this project was based on Bradley University's IRB committee and the facility.

Chapter III

Organizational Assessment and Cost Effectiveness Analysis

Organizational Assessment

After meeting with the organization, a basic visual acuity scale was in place to distinguish an acute patient with respiratory or chest pain issues. The medical assistants and secretaries are requested to immediately get an RN when a patient comes in struggling to breathe, complaining of chest pain with diaphoresis, in a lethargic or disoriented state, or has uncontrolled bleeding. For this reason, a systematic triage system with five levels was warranted for acuity purposes. This UCC was ready for the challenge of learning and expanding their triage system.

LVN barriers were lack of triage knowledge and licensure restrictions placing the LVN out of their comfort zone. This problem was brought to light by investigating the LVN's scope of practice related to the Texas Board of Nursing, "Board Rule 217.11, Standards of Nursing Practice, established that LVNs collect data and perform focused nursing assessments, assisting in the determination of predictable health care needs of patients" (Texas Board of Nursing, 2018, para. 1). Triage is considered a comprehensive assessment for which LVNs do not have the appropriate education needed for this kind of assessment. As a result of this, the RN was the determining factor and will conclude the prevention deemed necessary for the patient. Performing role-play ESI tool utilization alleviated some of the LVN and RN stress and facilitated confidence.

The role of interprofessional collaboration focused on the licensed nurses, the stakeholders, and the mentor. The licensed nurses were to collaborate when an ESI score of one, two, or three (pediatric patients) was given. Stakeholders input was necessary, as patient greeters they are the first to lay eyes on the patient and can visually assess if something is wrong in order

to notify the licensed nurse immediately after arrival. The mentor was vital from a supervisor standpoint to introduce their viewpoint and knowledge of research techniques.

Cost Factors

The budgetary needs for this scholarly project include a poster board ($2.97), pens ($5.69), markers ($6.99), copy paper ($3.72), printer ink ($39.89), and fuel for each 168 miles round trip ($275). Refer to (see Appendix L) for total budgetary supply cost. All incurred expenses were afforded by the DNP student to include a meal of pizza ($35).

Chapter IV

Results

Analysis of Implementation Process

Phase 2 and 3

Educational Intervention Group Demographics. Five licensed nurse participants engaged in this quality improvement project. Of these licensed nurses, females comprised (60%) of the participants. Among the participants, ages ranged within a span of less than 20 years. All participants were Caucasian. Interestingly, the one LVN was the initial person triaging at this UCC (see Table 2).

Table 2

Participant Demographics (n = 5)

Gender		N (%)
	Females	3 (60%)
	Males	2 (40%)
Age in Years		
	35-44	2 (40%)
	45-54	3 (60%)
Ethnicity		
	Caucasian	5 (100%)
Education Level		
	LVN	1 (20%)
	RN	4 (80%)

Note. (n) = number of participants; (N) = number of participants; (%) = percentage; LVN = licensed vocational nurse; and RN = registered nurse.

Educational Intervention. Data was analyzed to determine the effectiveness of the educational intervention. The participants were given a pretest prior to the educational intervention. A series of posttests were given to establish if the education was effective at one-week and again at one-month to evaluate the retention of the education information. In the one-

week posttest results, all nurse participants (100%) showed an increase in posttest scores supporting the effectiveness of the education intervention. At one-month posttest, twenty percent of the nurse participants maintained the same score as the one-week posttest. Of the remaining nurse participants (40%) declined over the one-month prior to education period, and 40% improved posttest scores over the one-month period (see Table 3). The initial project plan was revised by the project team prior to implementation to include an extra month of triage to evaluate the retention of the educational intervention. After data analysis was completed, a clinically significant difference in test scores from the pretest and one-month posttest was noted.

Table 3

*Pre- and Post-Test Educational Intervention Aptitude Scores**

Participant	Pre-Test Score	1-Week Post-Test Score	1- Month Post-Test Score
1	7	18	18
2	11	21	18
3	8	21	11
4	11	21	22
5	12	17	20

Note. Pre = before the intervention, Post = after the intervention: (*) = test scores range from 0 – 22 points, the higher the score the greater the knowledge.

Phase 1 and 4

Patient Participant Demographics for Acuity/Wait Times. In order to compare the two groups patient demographics consisted of the extraneous variable of gender and ethnicity. The control group (CG) consisted of 67.2% of the clientele were female as opposed to 32.8% male. Of these, 87.2% were Caucasian. The intervention group (IG) consisted of 63% female. Of the patient population in this group 89.9% were Caucasian (see Table 4). Homogeneity was found between the CG and IG demographic variables supporting the comparison of similar groups.

Table 4

Demographics of the Patient Participants(N = 658)

	CG (n = 125)	IG (n = 533)
Demographic	N (%)	N (%)
Gender		
Female	84 (67.2)	336 (63)
Male	41 (32.8)	197 (37)
Ethnicity		
Caucasian	19 (87.2)	479 (89.9)
Other	16 (12.8)	54 (10.1)

Note. CG = control group, IG = intervention group; (n) = number of participants; (N) = frequency of participants, (%) = percentage.

Patient Acuity Levels. Minor modifications were added to the ESI triage tool collection sheet to include vital signs (blood pressure, heart rate, respirations, oxygen saturation and temperature) in order for the proper use of the ESI triage tool. Acuity levels differed in the CG and IG groups based on triage scales that were currently in use at the facility (CG) and the ESI tool (IG).

Control Group. The CG was triaged with the UCCs basic triage scale, a four-level Numeric Rating Scale (NRS), which incorporated Level 1 as "no distress." Level 1 acuity was the score given to a majority of patient participants (94.4%) in the control group. Level 2 and 3 had no descriptors on the NRS and were scored by the interpretation of the triage nurse for the acuity level of patient. Level 4 acuity was "unbearable distress needing allocation to a facility with a higher level of care" were not observed during the control group facilitated triage.

Intervention Group. The IG was triaged with the ESI Triage Tool. This tool is a five-level triage tool. Level 1 requires "immediate lifesaving measures" while Level 2 is considered a "high-risk situation," both of which are commonly allocated to an ED. Level 1 and 2 were not observed during the IG triage. Level 3 is reserved for "pediatric patients and patients needing multiple resources" while Level 4 requires only "one resource." Levels 3 and 4 accounted for

91.2% of the triaged patients (20.1% and 71.1% respectively). Level 5 is "no resources needed" comprising of 8.8% of the triaged patients (see Table 5).

Table 5

Patient Acuity Levels for Both Groups

Control Group	Frequency	Percent	Intervention Group	Frequency	Percent
No Distress	118	94.4	0 Resources	47	8.8
NI of Acuity levels	6	4.8	1 Resource	379	71.1
NI of Acuity levels	1	0.8	Multiple Resources	107	20.1
Totals	125	100		533	100

Note. NI = nurse interpretation

Patient Wait Times. A majority of the patients had a wait time between 21 to 25 minutes for both the CG and IG. However, the CG had a considerably lower acuity level percentage per patient suggesting a first come first serve system of patient care. The substantially higher acuity levels of the IG suggested the increased use of resources causing the majority of patient wait times to be between 11 and 35 minutes. The IG exceeded the longest wait times of the CG by 22 minutes and 4% of the patients triaged in the IG (see Table 6).

Analysis of Project Outcome Data

Upon reviewing the data collected, the principal investigator (PI) discovered no higher level acuity patient ratings were documented pre- and post- the educational intervention. This raised concern since the PI was at the facility when this level of patient came into the UCC for care. The PI decided to investigate this problem. Between October 21, 2019 and October 27, 2019, one hundred and seventy-seven patients were seen in the UCC setting. Of the 177 patients seen, 125 were triaged using the UCCs basic triage tool and 52 patients were not triaged at all. Between November 4, 2019 and December 1, 2019, eight hundred and sixteen patients were seen

in the UCC setting. Of the 816 patients seen, there were 533 triaged using the ESI Triage Tool. There were 283 not triaged at all. A total of 335 patients were not triaged using either triage tool. The reasons maybe due to the nurse's lack of understanding of the tools usefulness, lack of desire to participate in the project, or intensity of the healthcare needed at the time the patient was being treated did not lend time for completing the tool documentation.

Table 6

Patient Wait Times for Both Groups

	CG (n = 125)	IG (n = 533)
Wait Times*	N (%)	N (%)
0-5	2 (1.6)	2 (0.4)
6-10	9 (7.2)	24 (4.5)
11-15	18 (14.4)	63 (11.8)
16-20	19 (15.2)	76 (14.3)
21-25	21 (16.8)	97 (18.2)
26-30	18 (14.4)	86 (16.1)
31-35	13 (10.4)	67 (12.6)
36-40	16 (12.8)	33 (6.2)
41-45	5 (4)	31 (5.8)
46-50	2 (1.6)	22 (4.1)
51-55	2 (1.6)	11 (2.1)
56-60		7 (1.3)
61-65		7 (1.3)
66-70		3 (0.6)
71-75		3 (0.6)
76-80		1 (0.2)

Note. CG = control group, IG = intervention group; (n) = number of participants; (*) = number of minutes; (N) = frequency of participants, (%) = percentage.

Chapter V

Discussion

Findings

The PICO question for this project was, "What is the difference in (P) nurse aptitude scores (C) before and after an (I) ESI triage tool educational intervention to decrease (O) patient wait times in an urgent care setting?" The data showed an increase in test scores one-week after education supporting the effectiveness of the educational intervention. Collectively, the one-month post-education scores remained higher than the initial pre-educational intervention scores adding to the effective retention of the educational intervention. This was consistent with a study by Delnavez et al. (2018) concluded results that "the role-playing method was more effective than the lecture method, and the former method can be recommended for triage education".

Addressing the study objectives, the difference between the wait times and acuity levels were not statistically significant pre-educational intervention. This may be due to the lack of direction on leveling requirements for the NRS for nursing interpretation of patient healthcare resources needed. A majority of the patients seen prior to the educational intervention were interpreted by the triage nurse as having no considerable distress. Wait times for these patients ran between three to 55 minutes with the large majority of these patient seen between 11 to 40 minutes.

After the nurse' education with the ESI triage tool, there were 533 patients triaged and 486 of those patients required at least one resource which increased their triage level. Wait times for these patients showed a majority being seen by the nurse practitioner (NP) between 11 to 35 minutes. Nonetheless, the IG exceeded the longest wait times of both groups by 22 minutes.

The nurses established the ability to accurately triage patients using the ESI triage tool following the educational intervention. In this project, the implementation of the ESI triage tool demonstrated a more effective acuity rating than the basic triage tool in this UCC setting. This was evident through the shifting of very few CG patients requiring healthcare resources, to a majority of the patients triaged using the ESI tool in the IG needing one or more healthcare resources.

After reviewing the literature, various research articles coincide with the diversity of the nursing population being majority female. In this quality improvement project, the female to male ratio was three to two concluding a more linear level of diversity than the research. Literature comparison to the ESI triage tool was only obtainable in one research dissertation. All other research articles were not comparable to an UCC setting, but in fact were comparable to an ED. The comparable research concluded that the ESI triage tool was easy to use for medical assistants, with no prior triage education, to alert health care providers in the event of an emergency situation.

Limitations

This project had some limitations that are important to note. First, the small convenience sample of five nurses used to analyze the effectiveness of the educational intervention may have influenced research findings and increased the margin of error. Secondly, all nurse participants were of the same ethnicity creating a possible bias. Thirdly, the nurses triaging patients did not complete the triage tool on all patients that visited the UCC leaving 335 patients without triage information sheets. Many reasons may contribute to this limitation to include the severity of the patient, lack of understanding of how to complete the forms, or even the lack of desire of the nurse to complete the forms. Finally, a hospital ED was located directly across the street.

Residents of the area with considerable health problems would likely use the ED rather than the UCC which may contribute to the lack of higher level acuity rated patients being seen in the UCC.

Implications for Practice

This project supports the effectiveness of the education of the ESI triage tool. Educating entry level nurses was key in assigning appropriate acuity levels and wait times. Sustainability would suggest incorporating the ESI triage tool into the patient care form for future practice. The UCC has adopted and continues to use the ESI triage tool. Generalizability was limited to this UCC due to the lack of representation of a large diverse population. Future project implementation is suggested with a larger sample size with diverse ethnicities. Also, a longitudinal quantitative study design to evaluate the effectiveness of the ESI triage tool acuity rating in decreasing wait times should be collaborated with other rural UCCs.

This project supports the effectiveness of the ESI tool in triaging patients with an accurate acuity level for the most appropriate level of care to increase patient outcomes. The acuity scale can be utilized by all levels of nursing education. For this UCC, the advanced practice nurses adopted an effective triage tool that is simplistic enough for all nursing education levels in their facility. This will not only ensure better patient outcomes, but also protect the liability of the UCC.

Chapter VI

Conclusion

Value and Impact

The value of this project to health care and practice is substantial to small and large scale UCCs. The effectiveness to the ESI triage tool and the relative ease of utilizing it, makes for a more efficient facility capitalizing on patient outcomes and wait times. The ESI triage tool compared to the basic triage tool used, allowed the triage nurse to contemplate resources needed to diagnose or treat the patient. Wait times and acuity levels for the IG reflected resource use.

DNP *Essentials*

DNP Essentials that corresponded with this project included, DNP Essentials II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking, Essentials III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice, Essentials V: Health Care Policy for Advocacy in Health Care (AACN, 2006).

DNP Essentials II employed leadership and communication skills directed at each stakeholder to enhance implementation of the education. The stakeholders were able to acknowledge the need for patient acuity within the facility. The increased knowledge afforded by the ESI triage tool improved wait times according to acuity. This improved the leadership skills of each stakeholder at their level of education and enhanced the facilities quality of care.

DNP Essentials III allowed for scenario-based training according to evidence-based practice from the literature. As the instructor, I was able to promote learning by role-play in an effective and timely manner congruent with patient centered care. This enhanced learning at all levels of licensed nurses in this quality improvement project. The LVN became adept with this

evidence-based style of learning which increased her test score consistently. Evidence-based literature proved to be essential in this DNP project.

With DNP Essentials V, the DNP student has advocated for the implementation of the ESI triage tool in this UCC. This 5-level tool proved to be beneficial for both the UCC and the patients triaged. It showed considerable improvement over the basic triage tool that was in place prior to the project. By implementing this quality improvement project using the ESI triage tool the facility was able to assert a trial run that proved beneficial to all parties involved.

Plan for Dissemination

Plan for dissemination will include a PowerPoint presentation to defend this quality improvement project. This quality improvement project will be downloaded into a DNP Scholarly Project e-Repository for future DNP students to collaborate with. I would also like to publish this DNP project in the hopes of implementing the ESI triage tool on a national level in the urgent care setting.

Attainment of Personal and Professional Goals

Attainment of personal and professional goals developed with the results from implementing a triage tool successfully in an UCC setting. With advancing nursing knowledge of different levels of licensed nurses, to using critical thinking in the attempt to categorize acuity, or even decreasing wait times were personal and professional goals that were attained. Increasing favorable patient outcomes by far is the most important reason for this quality improvement project.

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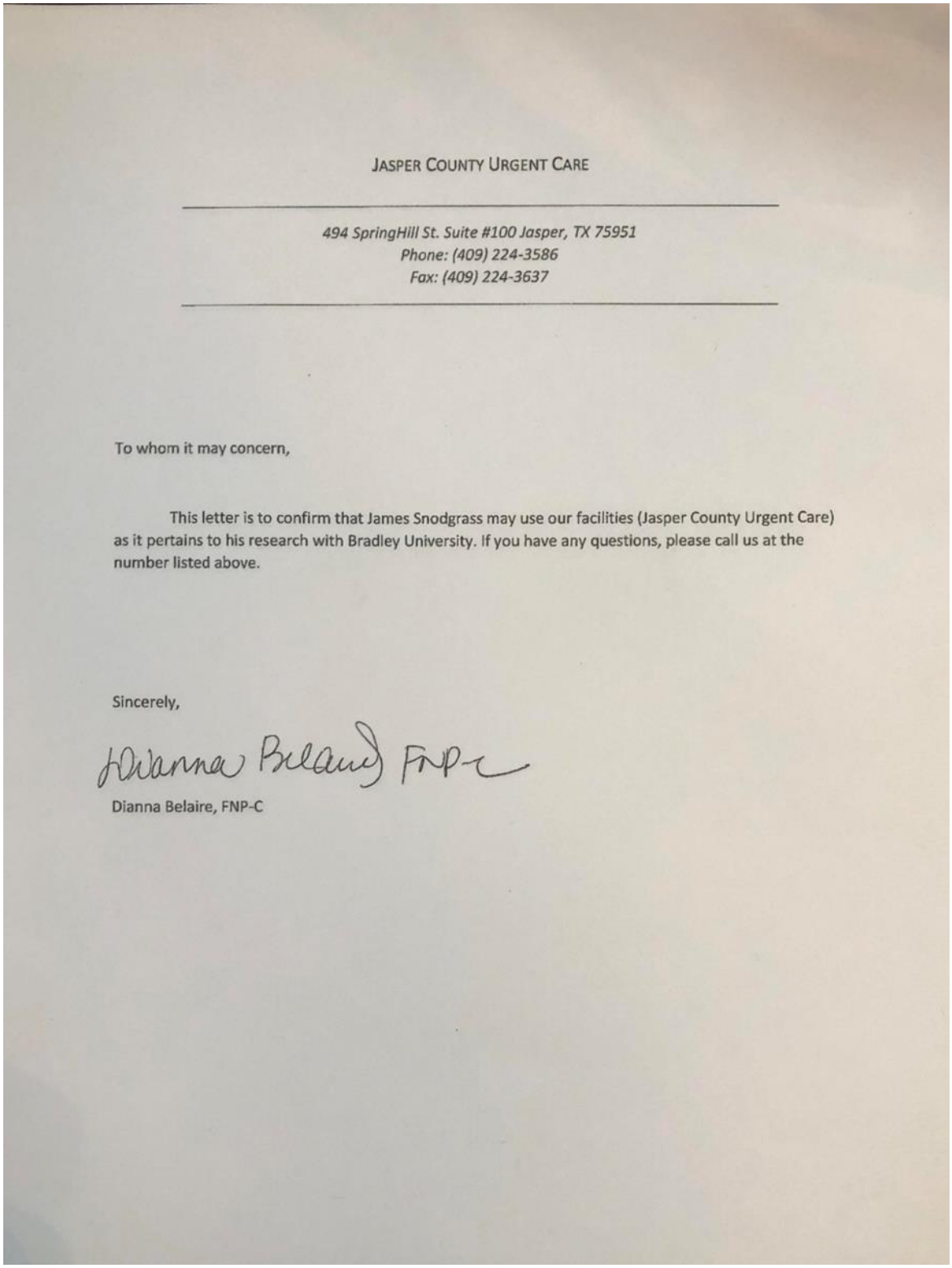
Appendix A

Facility Approval Letter



JASPER COUNTY URGENT CARE

494 SpringHill St. Suite #100 Jasper, TX 75951
Phone: (409) 224-3586
Fax: (409) 224-3637

To whom it may concern,

This letter is to confirm that James Snodgrass may use our facilities (Jasper County Urgent Care) as it pertains to his research with Bradley University. If you have any questions, please call us at the number listed above.

Sincerely,

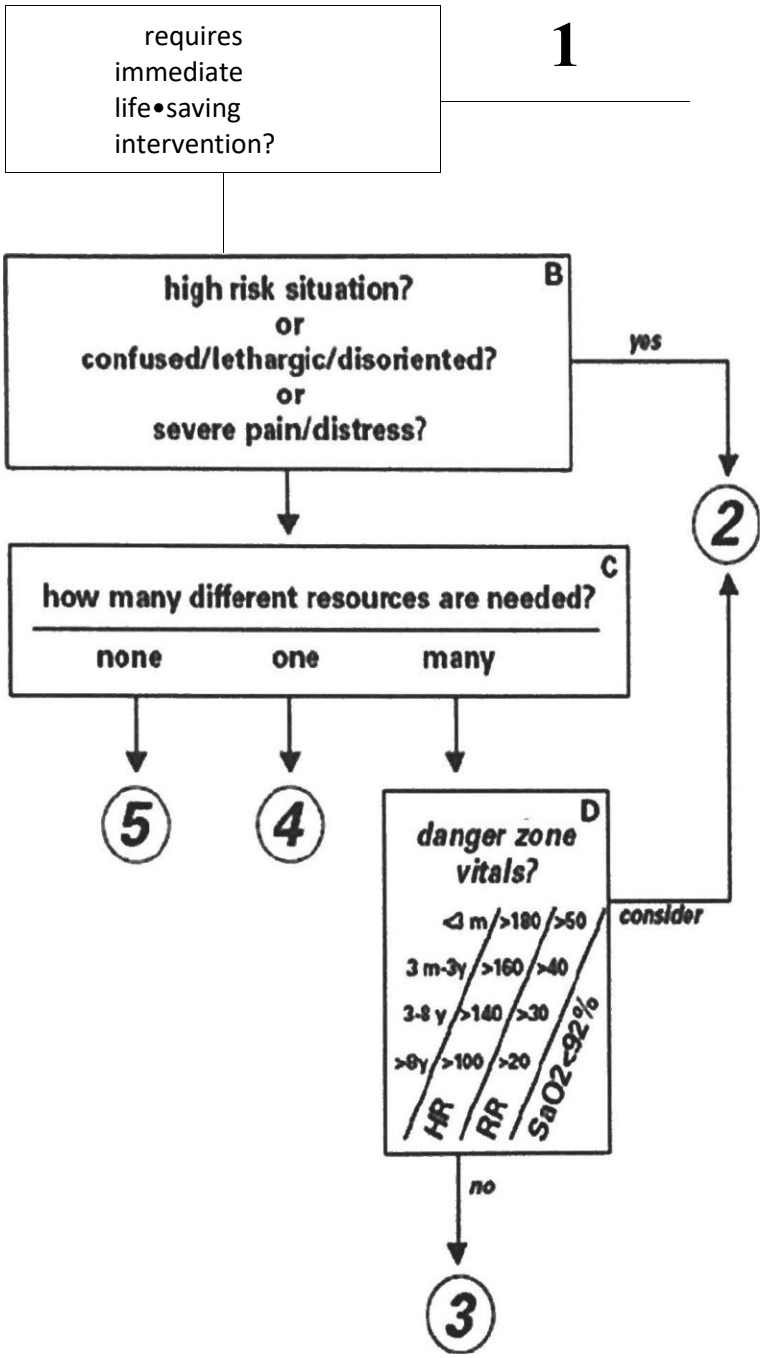
Dianna Belaire FNP-C

Dianna Belaire, FNP-C

Appendix B

Patient Triage Information Sheet

DATE: TIME:



GENDER:_____

ETHNICITY:_____

AGE:_____

cc: _____

VITAL SIGNS

B/P:_____

HR:

_____

TEMP:_____

02:

_____

RESP:

_____

TIME NP INITIATES CARE:

_____

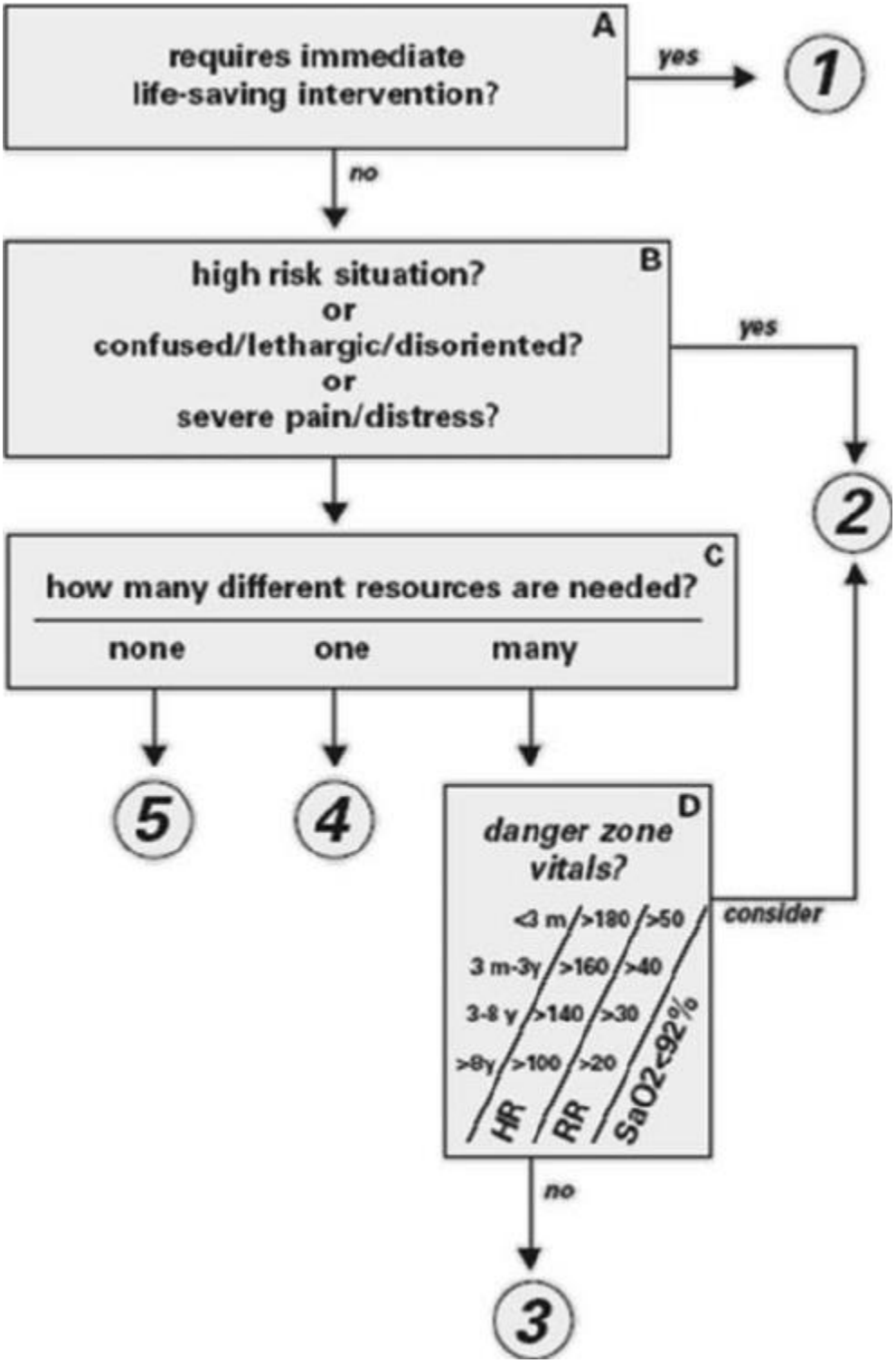
NOTES:

_____

_____

Appendix C

ESI Triage Tool Algorithm



Appendix D

Notes for ESI Triage Tool

Notes:

A. Immediate life-saving intervention required: airway, emergency medications, or other hemodynamic interventions (IV, supplemental O2, monitor, ECG or labs DO NOT count); and/or any of the following clinical conditions: intubated, apneic, pulseless, severe respiratory distress, SPO_2<90, acute mental status changes, or unresponsive.

Unresponsiveness is defined as a patient that is either:
(1) nonverbal and not following commands (acutely); or
(2) requires noxious stimulus (P or U on AVPU) scale.

B. High risk situation is a patient you would put in your last open bed.

Severe pain/distress is determined by clinical observation and/or patient rating of greater than or equal to 7 on 0-10 pain scale.

C. Resources: Count the number of different types of resources, not the individual tests or x-rays (examples: CBC, electrolytes and coags equals one resource; CBC plus chest x-ray equals two resources).

Resources	*Not Resources*
• Labs (blood, urine) • ECG, X-rays • CT-MRI-ultrasound-angiography	• History & physical (including pelvic) • Point-of-care testing
• IV fluids (hydration)	• Saline or heplock
• IV or IM or nebulized medications	• PO medications • Tetanus immunization • Prescription refills
• Specialty consultation	• Phone call to PCP
• Simple procedure =1 (lac repair, foley cath) • Complex procedure =2 (conscious sedation)	• Simple wound care (dressings, recheck) • Crutches, splints, slings

D. Danger Zone Vital Signs
Consider uptriage to ESI 2 if any vital sign criterion is exceeded.

Pediatric Fever Considerations
1 to 28 days of age: assign at least ESI 2 if temp >38.0 C (100.4F)

1-3 months of age: consider assigning ESI 2 if temp >38.0 C (100.4F)

3 months to 3 yrs of age: consider assigning ESI 3 if: temp >39.0 C (102.2 F), or incomplete immunizations, or no obvious source of fever

Appendix E

ESI Copyright

Copyright Notice from the ESI Handbook

The Emergency Severity Index Version 4 Triage Algorithm (the "Algorithm") is the intellectual property of The ESI Triage Research Team, LLC (the "Author"). The Author owns the copyright, which is on file with the United States Copyright Office. The Algorithm is the sole and exclusive property of the Author, and the Agency for Healthcare Research and Quality has a license to use and disseminate the two works derived from this algorithm: the two-DVD training set (Emergency Severity Index Version 4: Everything You Need to Know) and the implementation handbook (Emergency Severity Index (ESI), A Triage Tool for Emergency Department Care, Version 4, Implementation Handbook, 2012 Edition). The Author hereby assures physicians and nurses that use of the Algorithm as explained in these two works by health care professionals or physicians and nurses in their practices is permitted. Each professional user of these two works is granted a royalty-free, non-exclusive, non-transferable license to use the Algorithm in their own clinical practices in accordance with the guidance in these two works provided that the Algorithm is not changed in any way. The algorithm and the contents of the DVD set and implementation handbook may be incorporated into additional training materials developed by healthcare professionals or physicians and nurses on the condition that none of the materials or teaching aids include any technology or aids that replace, wholly or in part, critical thinking and the need for sound clinical judgment by the ultimate user, and that no fee or any other consideration is received from the ultimate user for the Algorithm, the contents of these two works, or the additional training materials. The Algorithm has been rigorously tested and found to be both reliable and valid, as described in the research references included in these two works. However, the Author and the Agency for Healthcare Research and Quality require that the implementation and use of the Algorithm be conducted and completed in accordance with the contents of these two works using the professional judgment of authorized physicians or nurses and staff directed and supervised by them. Each health care professional who decides to use this algorithm for emergency triage purposes does so on the basis of that health care provider's professional judgment with respect to the particular patient that the provider is caring for. The Author and the Agency for Healthcare Research and Quality disclaim any and all liability for adverse consequences or for damages that may arise out of or be related to the professional use of the Algorithm by others, including, but not limited to, indirect, special, incidental, exemplary, or consequential damages, as further set forth below. **Note:** The Authors and the Agency for Healthcare Research and Quality have made a good faith effort to take all reasonable measures to make these two works accurate, up-to-date, and free of material errors in accord with clinical standards accepted at the time of publication. Users of these two works are encouraged to use the contents for improvement of the delivery of emergency health care. Any practice described in these two works should be applied by health care practitioners in accordance with professional judgment and standards of care used in regard to the unique circumstances that may apply in each situation they encounter. The Authors and the Agency for Healthcare Research and Quality cannot be responsible for any adverse consequences arising from the independent application by individual professionals of the materials in these two works to particular circumstances encountered in their practices.

Appendix F

Before and After Education Test

With permission and adapted from the Emergency Severity Index (ESI) A Triage Tool for Emergency Department Care Version 4 Implementation Handbook 2012 Edition (Gilboy, Tanabe, Travers, & Rosenau, 2012).

Assign an ESI (acuity) level to each of these patients.

1. _____ A 62-year-old with CPR in progress.

2. _____ A 53-year-old with 30% body surface area burn.

3. _____ A 22-year-old who needs a work note.

4. _____ A 12-year-old with an earache.

5. _____ A 45-year-old involved in high speed motor vehicle collision, BP 120/60 HR 72, RR. 18.

6. _____ An unresponsive 14-year-old. EMS tells you he and his friends had been "doing shots."

Read the following statements and provide the correct answer.

1. A magnetic resonance imaging (MRI) procedure is considered a resource in the ESI triage system. (T/F)

2. A psychiatry consult is considered a resource in the ESI triage system. (T/F)

3. Cardiac monitoring is considered a resource in the ESI triage system. (T/F)

4. How many ESI resources will this patient need? A healthy 25-year-old construction worker presents with back pain. The triage nurse predicts he will need a lumbar spine x ray, oral pain medication administered in the ED, and a prescription to take home. (0, 1, 2 or more)

5. It is necessary to take vital signs to determine the number of ESI resources an adult ED patient will need. (T/F)

6. The triage nurse must have enough experience to be certain about the resources needed for each patient in order to accurately assign an ESI triage level. (T/F)

7. A 30-year-old sexually active female patient with vaginal bleeding and cramping, doesn't use birth control, and is dizzy and pale. In determining this patient's ESI triage level, does it matter if the local ED does urine pregnancy tests at the point of care versus sending a specimen to the laboratory? (Y/N) How many resources will this patient require? (0, 1, 2 or more)

8. How many ESI resources will this patient need? A healthy 40-year-old man presents to triage at 2:00 a.m. with a complaint of a toothache for two days, no fever, and no history of chronic medical conditions. (0, 1, 2 or more, irrelevant)

9. How many ESI resources will this patient need? A 22-year-old female involved in a high-speed rollover motor vehicle collision and thrown from the vehicle, presents intubated, no response to pain, and hypotensive. (0, 1, 2 or more, irrelevant)

10. How many ESI resources will this patient need? A 60-year-old healthy male who everted his ankle on the golf course presents with moderate swelling and pain upon palpation of the lateral malleolus. (0, 1, 2 or more, irrelevant)

11. Is it considered an ESI resource if a patient requires a constant observer to prevent a fall? (Y/N)

Rate the ESI level for each patient.

1. _____ A 14-year-old with rash on feet, was exposed to poison ivy 3 days ago. Ambulatory, with stable vital signs.

2. _____ A 3-month-old with petechial and purpuric lesions all over. Vital signs: respiratory rate 60, heart rate 196, oxygen saturation 90%, temperature 39°C rectal.

3. _____ A 5-year-old with rash on neck and face, with swelling and moist lesions around the eyes and cheeks. Vital signs: respiratory rate 20, heart rate 100, oxygen saturation 99%, temperature 37°C. Respirations nonlabored. Was treated by her pediatrician yesterday for poison

ivy on the neck, but the rash is worse and spreading today. Mom states child not eating or drinking well today and was up most of the night crying with itching and pain.

4. _____ A 10-year-old patient presents with facial swelling after eating a cookie at school. Fine red rash all over. Has a history of peanut allergies. Wheezing heard upon auscultation. Vital signs: respiratory rate 16, heart rate 76, oxygen saturation 97%, temperature 36.7°C.

5. _____ An 8-year-old healthy child with a fever of 38.7°C at home arrives at triage with complaints of a sore throat and a fine red sandpaper rash across chest. Sibling at home had a positive strep culture at the pediatrician a few days ago. Respirations are non-labored. Vital signs are stable.

Appendix G

Nurse Aptitude Test Score Sheet

Nurse	Before Test	1-Week After Test	1-Month After Test
1			
2			
3			
4			
5			
6			
Average			

Appendix H

Wait Times, Patient Demographics and Acuity Level Sheet

Day 1	Arrival	NP w/ Pt	Gender	Age	Ethnicity	Chief Complaint		Acuity Level	
Patients									
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
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17									
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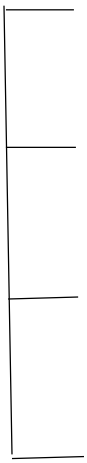
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

Appendix I

UCC Basic Triage Scale

Date _____

Time _____



1 No Distress

2

3

4 Unbearable Distress

Chief Complaint _____

Time NP Initiates Care _____

Age _____

Gender _____

Ethnicity _____

Appendix J

Recruitment Letter

Dear nursing staff,

My name is James Snodgrass and I am a graduate nursing student at Bradley University. I am inviting you to participate in my research study titled Implementation of the ESI Triage Tool in an Urgent Care Setting to Limit Wait Time for Acute Patients. If you decide to participate in this study, you will be asked to complete an informed consent form and complete a before test today followed by education on the ESI Triage Tool. You will be asked to complete an after test in one week to gauge understanding of the triage tool before it is implemented in this facility. After one month of implementing the tool you will be asked to take a final after test for retention of the educational information.

Remember, this is completely voluntary. You can choose to be in the study or not. If you would like to participate or have any questions about the study, please contact me at (409) 365-6952 or by email to jsnodgrass@mail.bradley.edu. Thank you for considering this research opportunity.

Sincerely,

James Snodgrass

Bradley University DNP Graduate Student

Appendix K

Informed Consent

BRADLEY UNIVERSITY

Consent Form

Study Title: Implementation of the ESI Triage Tool in an Urgent Care Setting to Limit Wait Time for Acute Patients

Invitation to be part of a research study:
You are invited to participate in a quality improvement project. In order to participate you must be a licensed nurse, read and understand English, and be in attendance during the facility meeting with the ESI educational intervention. Taking part in this research project is voluntary.

Key information regarding this study:
The purpose of this study is to implement and evaluate the ESI triage tool education to licensed nurses in order to quickly and accurately assess patient acuity and decrease wait times in the urgent care setting. If you choose to participate you will be asked to take a before test, one week after test, one month after test, and participate in education to properly use the ESI triage tool. The before test and education will be held on day one followed by a week of practice then an after test. The ESI triage tool will be implemented for one month followed by an after test. This project will be held at the Jasper County Urgent Care. Training will commence with a brief PowerPoint presentation followed by a role-play exercise with a question/answer session. This will take approximately 45 minutes. There is no risk associated with this study. Benefit will include an increase in knowledge and triage skills.

What is the purpose of the Study?
The purpose of the study is to implement and evaluate the ESI triage tool education to licensed nurses in order to quickly and accurately assess patient acuity and decrease wait times in the urgent care setting.

What will happen if you take part in this study?
If you agree to take part in this study, you will be asked to take a before, after, after the test, and participate in education to properly use the ESI triage tool. The before test along with education will be held on day one followed by a week of practice then an after test. You will then be asked to implement the ESI triage tool in the clinical setting for one month for research purposes followed by an after test. This project will be held at the Jasper County Urgent Care. Training will commence with a brief PowerPoint presentation followed by a role-play exercise with a question/answer session. This will take approximately 45 minutes.

What are the risks of participating in the study?
We do not believe that there are any risks associated with this study.

What are the benefits of participating in the study?
Benefits you might receive from this study include an increase in knowledge and triage skills.

How will your information be protected?
We plan to publish the results of this study. To protect your privacy we will not include any information that can directly identify you. We are collecting the data anonymously. There is no link between your name and the research record.

After the study, what will happen to the data collected?
We will keep your research data to use for future research. Your name and other information that can directly identify you will be kept secure and stored separately from the information collected as part of the project. We may share your research data with other investigators without asking for your consent again, but it will not contain information that could directly identify you.

What are the costs?
There is no cost to participate in this study.

Your participation in the study is voluntary:
Taking part in this study is voluntary. You may choose not to take part or may leave the study at any time. You do not need to answer any questions you do not want to answer. You may withdraw before the study is completed but any data that is collected before the time of withdrawal will be recorded for the purpose of the study and is subject to future research without asking for consent again. Participation may be terminated by the principal investigator if the participant manipulates the study in any way. This will be left up to the discretion of the principal investigator.

Who should I call with questions or problems study?
If you have any questions about this study, please contact the researcher in charge of this study:

James Snodgrass, BSN
DNP/FNP Student at Bradley University
(409)365-6952
jsnodgrass@mail.bradley.edu

Peggy Flannigan, PhD, MS, BSN
Associate Professor, Department of Nursing
Bradley University
309-677-2568
pnflan@fsmail.bradley.edu

Who should I contact with questions about my rights as a research participant?
If you have questions about your rights as a research participant, or wish to obtain information, ask questions, or discuss any concerns about this study with someone other than the researcher(s), please contact the following:

Committee on the Use of Human Subjects in Research (CUHSR)

Bradley University
1501 W Bradley Avenue
Peoria, IL 61625
(309) 677-3877

Where can I get more information?
Additional information can be obtained from:

Jasper County Urgent Care
494 Spring Hill St. Suite #100
Jasper, TX 75951
(409)224-3586

Your informed consent:
You are voluntarily making a decision to participate in this study. Your signature also means that the information on this consent form has been fully explained to you and all your questions have been answered to your satisfaction. If you think of any additional questions during the study, you should contact the researcher(s).

I agree to participate in this study.

Signature of Participant **Date**

Printed Name

I verify that I received a copy of this informed consent for my keeping and signed both copies of free will.

Signature of Participant **Date**

Appendix L

Budget Table

Supply Cost			
Manila Envelopes			$2.79
Paper			$3.72
Pens			$5.69
Poster			$2.97
Markers			$6.99
Printer Ink Tri Color Combo			$39.89
Fuel			$275.00
Total Cost			$337.05

Appendix M

CUHSR Approval Letter

OBRADLEY

University

DATE: 17 OCT 2019

James Snodgrass, Peggy Flannigan

FROM: Bradley University Committee on the Use of Human Subjects in Research

STUDY TITLE: Implementation of the ESI triage school in an urgent care setting to limit wait times for acute patients

CUHSR# 65-19

SUBMISSION TYPE: Initial Review

ACTION: Approved

APPROVAL DATE: 17 OCT 2019

REVIEW TYPE: Quality Assurance

Thank you for the opportunity to review the above referenced proposal. The Bradley University Committee on the Use of Human Subject in Research has determined the proposal to be NOT HUMAN SUBJECTS RESEACH thus exempt from IRB review according to federal regulations.

The study has been found to be not human subject research pursuant to 45 CFR 46.102(i), not meeting the federal definition of research (not contributing to generalizable knowledge). Please note that it is unlawful to refer to your study as research.

Your study does meet general ethical requirements for human subject studies as follows:

1 . Ethics training of project personal is documented.

2. The project involves no more than minimal risk and does not involve vulnerable population.

3. There is a consent process that:

e Discloses the procedures

- Discloses that participation is voluntary
- Allows participants to withdraw
- Discloses the name and contact information of the investigator
- Provides a statement of agreement

4. Adequate provisions are made for the maintenance of privacy and protection of data.

5. Your study is exempt for HIPAA regulations in that the covered entity will de-identify the health information used in your study pursuant to 45 CFR 164.502 (d).

Please submit a final status report when the study is completed. A form can be found on our website at htt s://www.bradle .edu/academic/cio/os /studies/cuhsr/forms/. Please retain study records for three years from the conclusion of your study. Be aware that some professional standards may require the retention of records for longer than three years. If this study is regulated by the HIPAA privacy rule, retain the research records for at least 6 years.

Be aware that any future changes to the protocol must first be approved by the Committee on the Use of Human Subjects in Research (CUHSR) prior to implementation and that substantial changes may result in the need for further review. These changes include the addition of study personnel. Please submit a Request for Minor

Modification of a Current Protocol form found at the CUHSR website at htt s://www.bradle .edu/academic/cio/os /studies/cuhsr/forms/ should a need for a change arise. A list of the types of modifications can be found on this form.

While no untoward effects are anticipated, should they arise, please report any untoward effects to CUHSR immediately.

This email will serve as your written notice that the study is approved unless a more formal letter is needed. You can request a formal letter from the CUHSR secretary in the Office of Sponsored Programs.