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Implementing the Use of the Emergency Severity Index Triage Tool in Urgent Care

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Implementing the use of the Emergency Severity Index Triage tool in Urgent Care

A DNP Project Submitted to the
Graduate Faculty
of Jacksonville State University
in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Nursing Practice

By

SAKEENA SPENCER

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Abstract

Background: The urgent care sector has quickly grown in the last decade. Patients who visit healthcare facilities seeking treatment for exacerbations of chronic conditions or episodic illnesses such as asthma without scheduled appointments receive healthcare services from Urgent Care Centers (UCC) or Emergency Departments (E.D.s). Upon visiting the UCC, these patients report life-threatening symptoms; hence require immediate medical attention. UCC healthcare workers should distinguish between non-acute and acute patients to prioritize providing healthcare to patients, ensuring they are not at risk for fatal outcomes. Using the Emergency Severity Index (ESI) triage tool while delivering healthcare services to these patients has resulted in superior health outcomes such as control of chronic diseases and decreased mortality or worsening symptoms. The ESI triage tool aims to improve patients' triage based on acuity. The triage protocol also has been shown to reduce door-to-provider time, walkouts, and emergent waiting room events.

Purpose: The quality improvement project is aimed at evaluating the significance of triage; minimizing door-to-provider times; lowering the risk of potential adverse events in the waiting area; eradicating perceived barriers to implementation, improving patient outcomes throughout the treatment process, and preventing adverse or near-adverse events.

Methods: Pre- and post-study design and PDSA model signified the use in this quality improvement project. The principal investigator utilized this design to evaluate the impact of incorporating the Emergency Severity Index triage system into urgent care centers.

Results: The average triage time for the pre-intervention and post-intervention periods were calculated separately. Average triage times pre-intervention was noted to be 45 minutes, while post-intervention triage times ranged between 17 and 18 minutes. Post-implementation data

showed improvement in all areas, including identifying patients with urgent medical needs, quickly sorting patients in constrained resource settings, allowing triage nurses to project operation and resource needs, and supporting the discrimination of patients who should not be seen in the emergency department.

Conclusion: The triage protocol helped reduce door-to-provider time, walkouts, and emergent waiting room events. Implementing the ESI triage tool led to improved clinical practices and decreased wait times and adverse wait room events.

Keywords: ***Acuity, Nurses, EHRs, ESIs, Patients***

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Lastly, I am grateful to the University Urgent Care and the University Hospital Administration for allowing me to utilize their facility while completing my DNP project. Lastly, I would like to thank everybody who positively impacted my program or the DNP project. I do not take your effort for granted.

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Implementing the use of the Emergency Severity Index Triage tool in Urgent Care

Urgent care centers significantly contribute to managing chronic illnesses and episodic diseases. Patients can receive healthcare services upon visiting the facilities without booking appointments. The Urgent Care Association defines urgent care services as (1) a medical examination, diagnosis, and treatment for non-life or limb-threatening illnesses and injuries that are within the capability of an urgent care center which accepts unscheduled, walk-in patients seeking medical attention during all posted hours of operation and is supported by onsite evaluation services, including radiology and laboratory services; and (2) any further medical examination, procedure and treatment to the extent they are within the capabilities of the staff and facilities available at the urgent care center (Adigun et al., 2019). With an increasing demand for the management of chronic diseases, urgent care centers are gaining popularity in the healthcare system. Advanced practice providers specializing in various disciplines can provide quality, safe, and efficient healthcare to patients presenting to these medical facilities, preventing their health conditions from deteriorating. The choice to choose the Urgent Care Clinic (UCC) over the emergency department depends on many factors (Snodgrass, 2020). Inconvenience office hours for doctors, overcrowding, long waiting times in the emergency department, and long waiting times for outpatient appointments have resulted in patients using urgent care to solve their immediate medical needs (Yoon et al., 2003). The average patient volume for UCCs has increased from 20 patients daily to over 100 patients (Memmel & Spalsbury, 2017). For this reason, healthcare staff in the UCC must distinguish between acute and non-acute patients and prioritize providing healthcare services to patients, preventing deterioration of their conditions or death (Snodgrass, 2020).

The (ESI) triage tool aims to prioritize incoming patients and identify those patients who cannot wait to be seen (Gilboy et al., 2020). Despite significantly impacting the quality of care and health outcome, ESI has not been successfully implemented in our UCC, compromising the quality of patient care, which leads to adverse health outcomes. This project aims to assess the ESI tool's effectiveness in improving patients' triage based on acuity. Additionally, the project will evaluate the effectiveness of triage protocol in lowering door-to-provider time, walkouts, and emergent waiting room events.

Background

Triage is the screening process that marks the beginning of the UCC throughput (patient flow through the department) and treatment experience for a patient. Patients who visit healthcare facilities seeking treatment for exacerbations of chronic conditions or episodic illnesses such as asthma without scheduled appointments receive healthcare services (McNeely, 2012; Weinick et al., 2010). The understanding of patients who walk into UCCs varies. In most cases, patients visiting UCCs present life-threatening or critical symptoms (Siegfried et al., 2019). Thus, healthcare providers must conduct an efficient patient screening to identify the patient's condition and respond promptly by preventing further health complications or death. Initiating immediate treatment such as stabilizing the patient, discharge, or transfer to ED. As the UCCs continue to see an increase in patient visits per year and the symptom acuity of walk-in patients continue to vary, it is essential to ensure a standard process for prioritizing care (Alkon, 2018). Health outcomes of patients seeking healthcare services from the UCC significantly depend on the time patients wait before being seen by a Nurse Practitioner, Physician Assistant, Medical Doctor, or Doctor of Osteopathic Medicine.

Recently, accessibility and utilization of acute care services have increased significantly, resulting in positive health outcomes like improvement of patient safety, management of chronic conditions and, decrease in adverse wait room events (Krause et al., 2018). In some cases, patients seeking healthcare services from UCC are unaware of their health status, necessitating appropriate assessment to understand the patient's health condition. The lack of triage tools creates an improper assessment for licensed nurses who may need to gain previous training in identifying higher acuity patients. The consequences of inadequate or lack of triage protocol implementation will impact the quality of healthcare and safety. Triage involves a designated registered nurse (RN) who performs a focused assessment of a patient's condition to determine the priority of the need for treatment or medical intervention (Falconer et al., 2018). When triage is not timely and accurate, or the essential triage information is not gathered and documented, the medical intervention and disposition of the patient can delay treatment.

The ESI is a five-level triage scale that facilitates patients' prioritization based on the urgency of their medical conditions (Gilboy et al., 2020). The ESI has two basic foundations. It aims to sort patients by levels of urgency and streamline patient flow (Gilboy et al., 2020). This tool allows for the rapid identification of patients with urgent medical needs and quickly sorting patients in constrained resource settings. Patients are sorted into five acuity groups from most critical to least urgent. The ESI tool allows triage nurses to project operation and resource needs (Gilboy et al., 2020). Although there is yet to be a standardized triage process for use in UCCs such as triage documentation, acuity tool, and assessment practices. Research indicates that UCCs function similarly to E.D.s (UCAOA, 2018; Sanders, 2000). The Emergency Severity Index (ESI) is a tool for use in emergency department (E.D.) triage (Gilboy et al., 2020). Therefore, standard triage mechanisms in E.D.s could benefit UCC settings.

Needs Analysis

The University Urgent Care is one of the central departments in the healthcare organization. It provides healthcare services to patients who visit the facility, seeking immediate medical attention following exacerbation of chronic illnesses or injuries. Notably, during the COVID-19 pandemic, urgent care has received many patients. Some patients are unstable enough to provide the health history needed during diagnosis and treatment. Thus, healthcare staff working in the urgent care department should screen patients thoroughly upon arrival. Assessment results guide healthcare providers during diagnosis and treatment. However, assessing patients seeking healthcare services from the urgent care unit needs a validated triage tool and a sufficient triage protocol.

SWOT Analysis

A Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis assesses internal and external factors affecting an organization's performance and the likelihood of successfully implementing a new project. The organization's inner strengths include support from the director and nurse manager, supportive and collaborative nurses, and the availability of highly competent and dedicated healthcare staff. The help from each staff member increases the likelihood of successfully implementing the ESI triage tool in the U.C (See Appendix A).

Between 2008 and 2015, there was an increase of 119% in inpatient visits to UCCs (Siegfried et al., 2019). As the UCCs continue to see an increase in patient visits per year and the symptom acuity of walk-in patients continue to vary, it is essential to ensure a standard process for prioritizing care (Alkon, 2018). From June 2021 to February 2022, 61,388 patients were seen at UCC. Those of higher acuity include chest pain, 1,628 shortness of breath, 625 abdominal pain, 1,559 weakness, 51 osteomyelitis, ten sepsis, nine deep vein thrombus, 7, and NSTEMI 4.

In the UCC, we are servicing a subacute to critically ill patients that are not being seen based on acuity. The gap analysis determined that the lack of triaging based on acuity has the potential for adverse outcomes. Weaknesses are no triage rooms for Health Insurance Portability and Accountability Act (HIPAA) patient privacy, insufficient staff members, and lack of formal training in triage for healthcare providers. There is also no clear or concise triage process; the current triage process in urgent care is based on first-come-first-served. This lack of triaging based on acuity has the potential for adverse outcomes. Opportunities include reduced wait times for high acuity patients, earlier referrals to E.D., prevention of waiting room emergencies or events, and greater efficiency in patient care. Possible threats are responsibilities placed on R.N.s and certified medical assistants that could cause stress and anxiety and continued lack of knowledge by the community on the services the urgent care can provide.

Problem Statement

The urgent care does not require a prior appointment and services patients on a walk-in basis. Once identified, patients requiring a higher level of care would need an escalation of care via ambulance to the University hospital. The intake process at the urgent care begins when the patient checks in with a service representative. There is no clear, concise protocol for patients that check in with "red flags symptoms."

The protocol currently used in urgent care to room patients is often first-come, first-served, and the structure does not enable prioritization based on patient acuity. An inquiry based on urgent care patients triaged with the ESI tool compared to no ESI with a decrease in wait time based on acuity.

Aims and Objectives

The overarching aims of this project were to reduce patient door-to-provider time and delays in transfer to higher levels of care through the implementation of a triage tool. The objectives involve assessing the average patient door-to-provider time change after implementing a triage protocol.

Review of Literature

The principal investigator performed an electronic search to obtain relevant evidence using keywords, including triage, emergency severity index, urgent care clinics/centers, emergency department, licensed vocational nurse, registered nurse, emergency department wait times, and ESI training used to guide the search process. The literature search was performed on several databases, including PubMed, EBSCOhost, CINAHL, and Google Scholar. Twenty-nine articles from the returned list were assessed to determine if they met the inclusion criteria or were relevant to the subject matter of the use of the ESI tool were selected. The P.I. selected four articles based on UCCs and ambulatory care clinics, and five articles were included based on E.D. wait times. Lastly, twenty-nine articles were selected based on relevance to the project's topic. Inclusion criteria were limited to articles in English published within the past ten years and peer-reviewed (See Appendix B).

Triage Process

The ENA (2017) explains that the triage nurse performs a brief, focused assessment and assigns the patient a triage acuity level, which is a proxy measure of how long an individual patient can safely wait for a medical screening examination and treatment. For example, a retrospective cohort study by Becker et al. (2015) showed that triage involved prioritizing

patients' treatment based on the severity of their conditions when there are insufficient resources to see all patients immediately.

Implementation of ESI Triage Tool in Delivery of Urgent Care in UCC

Snodgrass (2020) utilized the ESI triage tool to teach licensed nurses how to use the ESI triage tool to assess patient acuity and reduce wait times in the urgent care setting quickly and accurately. The UCC care team, including Licensed Vocational Nurses and R.N.s, will collaborate based on the patient's triage score for decision-making purposes. The ESI tool's ability to triage patients accurately for the most appropriate level of care improved patient outcomes, including patient satisfaction scores and nurse educational awareness in this study. All levels of nursing training can make use of the acuity scale. The advanced practice nurses adopted a simple but effective triage tool at this UCC, which is suitable for all levels of nursing education.

Burgess found that an evidence-based triage system can be successfully implemented and evaluated in an urgent care setting. According to the study's results, the educational course had a positive statistical impact showing that the ESI triage tool was essential to an effective triage system in an emergency room. Patients who need to be evaluated by a health care provider immediately and possibly referred to another level of care has led to triage nurses being able to rapidly identify those patients promptly, decreasing the possibility of a sentinel event.

Use of ESI Triage Tool in other emergent or ambulatory settings

Sarvari et al. (2020) surveyed patients in the E.D. to see if the emergency severity index (ESI) would reduce wait times. The Mann-Whitney test was used to evaluate the average time intervals for providing health services and the total length of stay in an emergency department.

ESI was determined to be better for emergency personnel, like training nurses, because of its positive impact on patient wait times following the implementation of the ESI triage system.

Admission triage to intensive care units (ICUs) is standard and frequently involves highly subjective decisions that could lead to unnecessary ICU admissions. Ramos et al. (2019) evaluated a decision-aid tool for ICU triage in this study to see if it affected ICU admission. They found that ICU admissions decreased after implementing an ICU triage decision-aid tool.

Same Day Emergency Care and Urgent Care Model Triage

According to Atkin et al. (2022), a review defines Same Day Emergency Care (SDEC) and describes the differences in service across the United States in 2012. According to their findings, in the U.K., SDEC is currently the highest priority in National Health Service acute care services to reduce hospital admissions, resulting in inpatient service demands for a select group of patients. Many questions remain unanswered. However, an evaluation of clinical benefit is required to grasp how systems can be effective and thoroughly optimize patient care. It is still being determined whether standardization across healthcare settings or pathways tailored to local demographics and healthcare needs is beneficial.

A study by Devriendt et al. (2018) examined the impact of Unplanned Readmission prevention by the Geriatric Emergency Network for Transitional care (URGENT) care model on the rate of unplanned emergency department readmissions in older adults. Unplanned emergency department and hospital readmissions measured primary and secondary outcomes. This retrospective cohort used variables such as age, gender, ESI score, and check-in day and time. Researchers found that implementation of the URGENT model showed that older patients in the emergency department could benefit from the URGENT care model, which has been thoroughly researched and tested. Results showed the duration of stays in emergency departments the need

for extended hospital stays, more intensive treatment, functional delays, and mortality; the URGENT model can tackle challenges in the emergency department and change the current management.

An effort to synthesize the existing emergency department triage articles using a framework that allows for contrast and benchmarking all over triage systems about clinical outcomes, reliability, and patient outcomes was the goal of Hinson et al. (2019). Researchers discovered many emergency department patients who died or became critically ill after their initial encounter with high acuity at triage. Staff can achieve triage by enhancing interrater reliability and triage accuracy.

Kaeppeli et al. (2020) evaluated the ability of the Clinical Frailty Scale to predict ICU admission, 30-day mortality, and hospitalization in the emergency department Their findings showed that a valid and reliable diagnostic tool in the emergency department, and it helps emergency department doctors make informed choices about whom to treat and how to treat them.

ESI Triage Implementation

Villa et al. (2018) studied whether adapting the ESI scale into a computerized algorithm in electronic health records (EHRs) shortened the emergency department triage time. The study results revealed that the median triage interval time for patients was 5.9 minutes before the use of the ESI scale and 2.8 minutes after the intervention (Villa et al., 2018). Patients with high acuity levels benefitted the most, with a decrease from 6.8 minutes to 2.9 minutes after implementing the ESI scale (Villa et al., 2018). The ESI triage scale improved when one nurse was present and for patients who came to the emergency department by ambulance. The median triage level for ambulatory patients decreased from 6 minutes to three minutes, while for ambulance patients

decreased from 5.9 to 2.3 minutes (Villa et al., 2018). The integration of the ESI algorithm decreased the triage time by an average of 3.4 minutes while creating an 11% improvement in the proportion of patients with high acuity triaged within 15 minutes at the emergency department.

A study was conducted by AlSerkal et al. (2020) to evaluate the accuracy of the ESI tool and its linkage with patient factors. Five hundred thousand patients visited the emergency department during the study, with 54.4% male. There was a significant increase in the length of hospitalization with increasing severity of illness, and there was a positive correlation between the accuracy of triage and illness severity. Patients aged 11-20 years had the highest rate of accurate triage acuity (AlSerkal et al., 2020). There was no link between the nationality of the patient and triage accuracy. Correct assigning of acuity level results in prompt treatment of patients, while incorrect assignment can result in unnecessary consumption of healthcare resources and increased wait time for patients (AlSerkal et al., 2020).

Ghafarypour-Jahrom et al. (2018) conducted a prospective study to determine the reliability and validity of the Emergency Severity Index (ESI) tool. The study established reliability and validity in triaging children less than 14 years of age in the emergency department.

Hinson et al. (2018) studied the frequency of errors using the ESI for triage in an emergency department in Brazil. The single-center retrospective cohort study compared initial ESI scores and the final one entered by the treating physician. Researchers found that many patients in the emergency department were not being triaged appropriately. Evidence supports the importance of triage education, training, and process standardization (Hitchcock et al., 2013). Mirhaghi (2016), wrote an opinion piece about the ESI and gave various valid factual points.

However, since this is not a study with a methodology, its value as evidence for evidence-based practice (EBP) change is minimal.

Mistry et al. (2018a) and Mistry et al. (2018b) are two studies that looked at the perceptions of nurses concerning the ESI (2018a) and the reliability and accuracy of the E.S. in triaging patients in the emergency department (2018b). The former found much subjectivity in triaging using the ESI by nurses. The latter study found that variability in the scores was relatively high, and reliability of the tool was low. These findings are in stark contrast with Ghafarypour-Jahrom et al. (2018), as indicated above. Finally, Silva et al. (2017) looked at the accuracy of risk classification just like Ghafarypour-Jahrom et al. (2018) and Mistry et al. (2018b). They found that nurses' accuracy in predicting risk using the ESI tool was low. There needs to be more research, given the limited use of ESI or any standard triage protocol in UCCs.

Theoretical Model

Kurt Lewin's theory of planned change was used as a theoretical model. The model demonstrates-how people react when dealing with change (Hussain et al., 2018). The change theory has three major concepts: driving forces, restraining forces, and equilibrium. Driving details facilitate change by pushing in the direction that causes it to happen and causing a shift in the equilibrium towards change. Restraining forces counter driving forces and hinder change by moving patients in the opposite direction and causing a shift in the equilibrium that opposes change. Equilibrium is a state that occurs when driving forces are equal to restraining forces and when an equilibrium state and no change occurs.

This project seeks to introduce a change in approaches to patient triage. The theory will help identify the changing focus (ESI triage tool utilization) and communicate with relevant stakeholders, creating a sense of security and trust for all involved in the proposed change. The

theory is relevant in the change implementation process by helping all involved sustain change and resolves challenges through further education (Rosenbaum et al., 2018).

The theory of change has three phases: unfreezing, changing, and refreezing. The unfreezing phase involves the willingness to change and learn new ways (Rosenbaum et al., 2018). This project assumes that the nurses will be receptive and willing to learn by conducting a needs assessment to identify the existing problems. The change phase entails actual changes until the desired state. The project will introduce a new triage process and educational tool to help the staff participants identify and implement a strategy to move in the desired direction. This tool enhances nurses' ways of thinking and processing information to minimize adverse events and create awareness of high-acuity patients. In the refreezing phase, the participants will have reinforced learning, evident in how nurses perform their duties and ESI triage tool knowledge. In addition, nurses' mindsets will be in a new state where they have accepted the change and are comfortable with the new state.

Methodology

The quality improvement project utilized pre- and post-study design and PDSA (Plan-Do-Study-Act) to implement the ESI triage tool in the urgent care center. The PDSA is an interactive, four-stage problem-solving model used for improving a process or carrying out change (Aggarwal, 2020).

The (Plan) stage begins with identifying a problem and creating an intervention that corrects the problem. The (Do) is to start the implementation of the intervention that has to address the issue. (Study) involves analyzing the data collected and continuous reinforcement to ensure the plan is working. (Act), actively working to improve or sustain the intervention (Taylor et al., 2022). The PDSA model has been utilized in several healthcare settings and is considered

a reliable and valid intervention method (Institute for Healthcare Improvement, 2018; Langley et al., 2009; Taylor et al., 2022). The project took place at a time the UCC was seeing high volumes. The project involved the receptionist, RNs, and all providers at the UCC. The principal investigator obtained patient demographic information, triage, and check-in times with time to the provider before the ESI educational intervention was initiated; the data collected showed the current wait times and acuity levels at the facility. This data was compared with the data at the end of the change implementation process in eight weeks.

This study design was preferred since it allows researchers to measure the outcome before and after implementing a particular intervention. The effectiveness of the intervention in addressing a specific issue or improving the process by comparing results before and after implementing the proposed intervention in the UCC. During the project, the waiting time for urgent care patients and providers wait time was measured before and after implementing the ESI triage tool.

Model for Improvement

In the study of applying the Deming PDSA model as it applies to implementing the ESI triage tool it applies an alternative to the current triage process. The goal is to reduce door-to-provider times; lower the risk of adverse events in the waiting area; improve patient throughout; and eliminate perceived barriers to implementation, such as: lack of staff, poor communication, low level of education and skills, and adverse or near-adverse events. The nurse participants were assigned eight weeks to use the ESI tool accurately. After eight weeks, the analysis of the ESI triage tool will compare to previous wait times, as well as emergent interventions. The research was collected pre- and post-intervention to evaluate the effectiveness of the ESI tool.

Plan

In the project's planning stage, a complete review and analysis of the current triage process and regulations that apply to the UCC policies for triage. There was an internal review conducted to assess the current UCC screening practices. Data analysis with the University's Clinical and Translational Science (CCTS) team. The data collected included a review of the recent triage times from check-in and triage times to provider and high acuity diagnosis. This step was an essential part of the project; it highlighted the gap at the UCC, which created awareness of the problem that allowed an easy buy-in from the stakeholders. The identified gap in practice from this review, along with inconsistent triage times, extended wait times, and the ability to identify the acuity of a patient due to triage training deficits, were discussed with the key stakeholders of this project. The stakeholders included department leadership, the education department, the compliance department, and physician leaders. After stakeholders reviewed evidence and suggestions for modification to the current triage process, approval for the final change process department administration, physicians, and leaders.

Do

The Do stage of the PDSA cycle was implementing the ESI triage tool in urgent care. Two informational sessions to inform clinical staff of the implementation of the ESI triage tool and its purpose. The performance of the ESI tool will start with informing staff of the change process, on two Mondays, given that the urgent care is on a seven-on-seven-off schedule period. The principal investigatory will administer the education as an in-service to prevent interruptions of the clinic's normal patient care processes. Teaching will take less than ten minutes. The principal investigator will be in the break room to hold each session for over eight hours, allowing everyone to step into the break room and learn the new change process.

The implementation of the project will be over an eight-weeks. Triage nurses utilize the ESI tool to determine the resource required for disposition. Each patient will have an ESI triage tool attached to the check-in form, where the time from the start of check-in, triage time, and time to the provider is. One additional sheet will be for the process. A score is assigned, and the provider is made aware. The triaged score to ensure the appropriate order of care.

Study

The third step in PDSA was monitoring the implementation effect to ensure objectives. To evaluate the triage protocols' effectiveness, the principal investigator audited each ESI triage tool daily. The screening analysis provided each patient and the appropriate diagnosis ESI scoring, check-in times, and triage times. The data obtained from this analysis were to identify any possible gaps that need further training. After eight weeks, the study of the ESI triage tool will lead to previous wait times, as well as emergent interventions. The research was collected pre- and post-intervention to evaluate the effectiveness of the ESI tool. During this stage, it was also essential to assess how the clinic would be able to maintain triage assessment and documentation competency moving forward.

Act

The act stage was to implement the ESI tool and reinforce its use for implication in everyday urgent care practice. Implementing the ESI triage tool at the urgent care demonstrated that a standardized triage protocol was beneficial. Adherence to the ESI triage tool must change the normal triage process, and it will be necessary for ongoing in-services and educational sessions to ensure that the implementation continues. Implementing the ESI triage tool into the regular tracking board will be a part of everyday practice after-implementation results for the medical director and office director.

Population/Setting

The University Urgent Care serves approximately 80 patients daily and 150 during flu season. The typical patients presenting to the UC are chest pain, shortness of breath, abdominal pain, flu, cold symptoms, sepsis, deep vein thrombosis, and NSTEMI. The physical layout of the urgent care consists of a waiting room, a reception desk (facing the lobby), a separate desk area adjacent to the reception desk for the triage nurse, and 11 exam rooms. Staffing consists of 2 secretaries, 1 RN, 2-3 CMAs, one physician, and 2-3 APPs a shift. The P.I. and head nurses were excluded from this project, making the sample size 17 nurses.

Inclusion/Exclusion Criteria

The participants were all patients receiving urgent care services during the study period. Persons excluded were the patients that did not require triage, such as covid, flu, and strep swab-only patients, employee swab-only patients, and travel covid test-only patients. It was essential for training before the implementation of the ESI tool to ensure every staff member grasped the aspect and the importance of triaging by acuity. This training helped strengthen the efficiency and quality when utilizing the ESI triage tool for screening. Office managers and charge nurses were included in the training so that they knew each staff member's content and performance expectations. Lab technicians, as well as administrative assistants, were not a part of the project.

Informational Session

An informational flyer was placed in the nurses' break room to provide to staff on the implementation of the project and the required educational session that would take place on dates: May 11, 2022, and May 18, 2022. The two educational sessions occurred on two-weekday shifts to ensure most day shift staff coverage: light refreshments, educational materials, and badge cards to all staff who attended (See Appendix C).

Consent

The DNP project does not require consent. It is a quality improvement change process that obtains data by secondary analysis. Secondary analysis refers to using existing research data to find answers to a question different from the original work. Secondary data does not subject the patient to harm or adverse outcomes. Full disclosure of the quality improvement project was shared with all participants, including registered nurses, physicians, CMAs, and all affiliated staff members, in a staff meeting and through email communication and posted flyers in the department (See Appendix D). Triage training times consisted of 8-hour intervals on each seven-on-7 off shift, and it allowed convenience for all staff to participate.

Tools and Instruments

The ESI is a five-level triage scale that facilitates patients' prioritization based on the urgency of their medical conditions (Gilboy et al., 2020). Triage nurses utilize the ESI tool to determine the resources required for emergency department (E.D.) disposition. The ESI has two basic foundations. It aims to sort patients by levels of urgency and streamline patient flow (Gilboy et al., 2020). The ESI tool is the fourth version of the tool. The ESI is a unique tool that requires triage nurses to foresee the necessary resources, such as procedures and diagnostic tests (Gilboy et al., 2020). The ESI tool has several benefits. It allows for the rapid identification of patients with urgent medical needs. ESI enables quick sorting of patients in constrained resource settings. Patients are sorted into five acuity groups from most critical to least urgent. This process allows triage nurses to project operation and resource needs (Gilboy et al., 2020). The rapid sorting of patients using the ESI tool improves patients flow in the emergency department (Gilboy et al., 2020). ESI tool allows for the discrimination of patients who should not be seen in the emergency department but also an urgent care facility (Gilboy et al., 2020). This tool

facilitates effective communication of patient acuity. The ESI offers emergency departments a reliable and valid triage system (Gilboy et al., 2020).

Data Analysis Tools and Procedures

Statistical analysis used descriptive statistics to provide a summary of the collected data, and they also created graphics and analytics to describe what the data showed. The descriptive statistics used were the time of check in, the time it took for the patient to be triaged, time to provider, and chief complaint of patient. Using these descriptive analytics allowed correlation of different characteristics and to check whether there was any relation between them. Using descriptive statistics, we could break down lots of data into a more straightforward summary. The data collected with this process was very time consuming and required a extensive amount time collecting pre and data post data. The analysis used a univariate technique in this project to examine the distribution, central tendency, and dispersion. The mean, median, and range were also calculated to compute the standard deviation and differences of the mean—all analyses using Microsoft Excel (2016).

Timeline

The timeline for this DNP project spanned the final three semesters of the academic program (See Appendix E).

Planning Phase

The planning phase involved identifying an area of clinical or healthcare concern with the faculty advisor for approval. Once approved, a PICOT question was created and submitted. The question of relevance was "An inquiry based on urgent care patients triaged with the ESI tool compared to no ESI with a decrease in wait time based on acuity." Clinical analysis and a literature review were completed to ensure evidence base information was relevant to the project.

Also, during the planning phase, a DNP chair was assigned who served on the JSU committee and has expertise relevant to the proposed project. Once the DNP chair and faculty approved the project title and proposal, the final Project Ethical Review Committee (PERC) review was completed and approved on April 26, 2022. Before Implementation of the project the agency IRB application was completed and approved on April 12, 2022 (See Appendix F). An IRB application was then submitted along with the Collaborative Institutional Training Initiative (CITI) certificate (See Appendix G and H) to the University on May 5, 2022 and approved on May 9, 2022.

Implementation Phase

Project implementation commenced on May 11, 2022 and continued until July 5, 2022. Before the project's performance, the office manager sent an informational letter to staff to create awareness of the new quality improvement process. Staff education sessions occurred on May 11 and 18 over 8 hours.

Budget & Resources

The DNP student volunteered time during in-service, and a hired statistician was paid $330 for their expense. The ESI triage tool required no equipment, and the fee for the paper to print the ESI tool was 10 dollars for ink and $20 for paper. There was no cost to the organization. For staff participating in the education session, pizza for refreshments cost $35 (See Appendix I).

Evaluation Plan

Upon IRB approval from the University and the facility, the principal investigator was then able to collect pre-data over six months from June 2021 until February 2022, which included: check-in, triage times, time to provider, and discharge time. All information from The Center of Clinical Translation Science (CCTS). A thorough examination of the information and

collected data reflected the current wait times and triage acuity levels at the UCC. An informational letter and a PowerPoint to present to the UCC stakeholders (physician leadership and management, including department supervisors). After reviewing the information letter approval was given by the stakeholders to initiate the new triage tool.

Phase 2. Corporate data for gap analysis and to determine the needs of the organization. Buy from stakeholder were accomplished in this stage, and another email to inform staff of the new change process would occur. The email was sent out as a group email by the office manager informing staff of the new ESI implantation tool to improve patient care and workflow in the clinic. The educational phase involved educating all staff on using the ESI triage tool and how to implement it on every patient. Education sessions occurred on two shifts over an eight-hour time frame. The principal investigator, a nurse practitioner with a master's degree and extensive experience in emergency nursing who had previously used the ESI system, informed, and trained all staff on the ESI tool. The educational program attendees were all staff that participated in patient care. All staff includes two attending physicians, two nurse practitioners, four physician assistants, and eight CMAs. Given that the ESI triage tool would start at registration, for the registration staff, a brief explanation of the project given they would attach the ESI tool to the check-in documentation.

Phase 3. During this phase, the ESI triage tool began implementation. The original triage form was removed from rotation and replaced with the ESI triage screening tool. The ESI triage tool occurred over an 8-week time frame. Each patient seen at the urgent care requires an ESI triage tool attached to the check-in form, where the time from the start of check-in, triage time, and time to the provider. Each document was collected after discharge and stored. The P.I. performed an audit weekly to evaluate the documentation accuracy of the triage tool and the

consistency of using each form with a check-in. Reviewing the documentation weekly was to ensure the proper techniques in assessing the vital signs and performing focused assessments based on the ESI triage guide and the chief patient complaints.

Phase 4. The results will be to the stakeholders and the administration in this phase. The initiative demonstrated success in implementing the triage process and the receptiveness of the staff. This protocol brought awareness of sustainability and adaptability, along with more re-education on the concept of triage for some staff. A training session for each R.N. and CMA performing triage will occur for two weeks to remind staff about the expectation of the documentation and awareness of acuity when triaging patients. The stakeholders also suggested that a triage protocol education or quarterly in-service will ensure ongoing skills competency. The ESI effectiveness to triage based on acuity into the EMR tracking board for future acuity screening. Incorporating the ESI tool into EMR will require collaboration with the information technology (I.T.) department.

Data Analysis

The principal investigator developed a manual tracking process to evaluate the adherence and retention of the new triage protocol. The following data were collected: Patient check-in time, Gender, Age, Chief Complaint, Time to Provider, and disposition with time. Information was collected from the documentation template. This template was used as a tracking form to analyze weekly by the principal investigator.

Results

During the pre-intervention phase, 42% of patients checked in with chest pain that was not routed back to the provider for an urgent assessment. The average triage time for all patients

was 45 minutes. The analysis separately calculated the average triage time for pre-and post-intervention periods (Appendix J).

Post-implementation data concluded that the triage process did improve in all areas. Each R.N. showed appropriate triage scoring and paid attention to understanding (See Appendix K). During the post-intervention period, we also graphically calculated and depicted the average triage times for high-acuity patients seen during the timeframe (See Appendix L and M). Post-implementation showed that the average triage time was 15 minutes for higher acuity patients 10 minutes. Triage times and times to provider were also graphically documented and depicted the time to provider also decrease after initiation of ESI triage tool (See Appendix N).

Discussion

The quality improvement project aimed to promote compliance and implement the ESI tool; doing so strengthens the triage nurse's assessment skills, decreases adverse waiting room events, and reduces door-to-provider time and walkouts. Adherence was monitored by collecting triage forms weekly to ensure compliance and sustainability. The project setting had an organizational goal to create a standardized triage process that became useful at UCC and was also in compliance with the University Hospital. While the average triage times decreased during post-implementation, during weekly audits, several of the ESI triage tools were not on each patient. There were several days when the census of the urgent care was over 100 patients. However, there were only 12 ESI triage screening records. At that time, a re-education session and flyers on each desk reminding staff to complete each screening for each patient. Some nurses that were performing the triage assessments skills were less intense than others. Their assignments were changed, and the more assertive nurses were required to triage. Also, additional staff to subset nurses are getting burned out on triage to allow a steady rotation. A

recent study showed that when ongoing education and training are not in place, it leads to disengagement and non-adherence within three months (Goransson et al., 2020).

The triage nurses could capture a majority of patients in urgent care to provide an accurate analysis. The feedback from staff and the project participants was positive and supportive of the implementation of the ESI triage tool. The medical director also requested that the screening process is to the EHR. It also created staff awareness of the higher acuity patients. Once the project started, the office manager realized how high acuity patients the clinic averages daily. Every patient with an ESI score of 3 or less should be emailed to the office manager to monitor their care.

Limitations

Several limitations occurred during the implementation of this project at the UCC. Firstly, there was a short implementation period due to the delays and approval from the site and University. Secondly, all staff members did not participate in initial training due to COVID exposure and leave of absence. Some days nursing staff and providers did not take the initiative to complete the form. During the implementation phase, the urgent care also became a testing site for university employees and the United States Football League players. The post-data information obtained proved adequate with additional education sessions and reiterating the importance of each patient using the tool.

Implications for Clinical Practice

Implementing the ESI triage tool at the urgent care demonstrated that a standardized triage protocol was beneficial. The acuity of patients who walk into UCCs varies, and it is not unusual for patients to present to UCC experiencing acute or other life-threatening symptoms (Siegfried et al., 2019). Patient safety is the priority. This project supports the effectiveness of

the implementation of the ESI triage tool in urgent care; it proved beneficial for both UCC and the patients that were triaged.

Implications for Healthcare Policy and Quality Safety

The value of this project to healthcare and practice is substantial. This urgent care is a relatively busier urgent care however the projects value is substantial to smaller and larger scale urgent cares. Patients that present to the UC desire to be seen and treated promptly. It is also the desire of UCs to address the needs of their patients in a prompt manner. In order to ensure quality of care is being rendered implementing the ESI for throughput metrics enable UCs to effectively accomplish their mission of service to their communities while serving patients in a safe, prudent, and timely manner. The effectiveness of the ESI triage tool makes a more efficient facility and optimizes patient outcomes by reducing door-to-provider times, triage times, and adverse wait room events. Because the first-come, first-served protocol is a utilized process is many urgent cares across the US, the implementation of the ESI triage tool provides a system that effectively triages patient with an accurate acuity level for the most appropriate level of care to increase patient outcomes.

Dissemination

The findings of this research study went through the three P's: poster, presentation, and paper—the DNP Project presented via poster and short presentation virtually at the University's Annual Dissemination. In addition, the project results were shared with the entire staff of the urgent care clinic including the providers and the office manager along with chief nursing officer. The DNP Project was also selected to via poster and short presentation to present at the 2023 NONPF 49th Annual Conference: Momentum and Sustainability in Advancing NP Education. Additionally, the DNP manuscript will be added to the JSU Library's Public

Repository. I would also like to consider submitting my DNP manuscript to be published in the *Journal of Urgent Care Medicine (JUCM).*

Sustainability

The sustainability of the ESI triage tool should be adapted to the normal triage process. It will be necessary for ongoing in-services and educational sessions to ensure that the implementation continues. Continuous monitoring and skill competency effectively keep nurses engaged and accountable in an area critical to patient care (Gorasson et al., 2020; Faheim et al., 2019). After reviewing the project results, the medical director has initiated implementing the UCC's current practice. Mission plans to continue this interdisciplinary approach to improve UC workflow and outcomes. The implementation of the ESI triage tool has been added to electronic medical records and is now the new and current process at the urgent care.

Plans for Future Scholarship

Although there is no standardized triage process for use in UCCs for example, triage documentation, acuity tool,and assessment practices. Research indicates that UCCs function similarly to E.D.s (UCAOA, 2018; Sanders, 2000). Previous research has identified that a triage process with clear, concise, and consistent communication between healthcare providers helps minimize the risk of delayed care and poor patient outcomes (Hitchcock et al., 2019). UCC can sometimes assume they provide services that the emergency department has. Future studies can show that implementing a triage tool utilized by the emergency department lessens some challenges or decreases the thought process of the nurses triaging the patients.

Conclusion

The project findings indicated the implementation of the ESI triage protocol tool to optimize patient outcomes. The value of this project to healthcare and practice is substantial. The

effectiveness of the ESI triage tool makes a more efficient triage process based on acuity and optimizes patient outcomes and triage times. The triage protocol tool is a feasible evidence-based intervention to combat triaging and wait times in UCC. Further investigation based on UCC location, high traffic times, and local resources impacts the use of ESI to benefit patient outcomes.

The stakeholders acknowledged the need for patient acuity within the facility and continued implementation of the ESI triage tool by adding the tool to the current process. While utilizing the ESI triage tool, the UCC improved their wait times and optimized patient care according to acuity. The use of the ESI tool showed effectiveness based on acuity and for future acuity screening added to the EMR tracking board.

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Appendix A:

SWOT Analysis: University Urgent Care

Internal		**External**	
Strengths	**Weaknesses**	**Opportunities**	**Threats**
-The DNP student is familiar with the established urgent care facility -Support from manager and director in the implementation of a new project. -Relationships with unit nurses can endorse the support of the head researcher. -Understanding of staff nurse work demands through principal investigator background. -Trained nurses and doctors who have a good understanding of their patient population.	-No present triage room for (HIPAA) privacy. - Small urgent care facility with minimal staffing (2 Physicians, 3 NPs, 5 Pas, 3RNs, 6 CMAs, and 4 Secretaries). - Lack of formal training with triage from most of the staff. - -Potential staff resistance to change.	- Decrease wait time for critical patients by getting them to the desired point of care. - Increase RNs, CMAs, Physicians, and other providers' knowledge and skill set for triage. - Increase the efficiency of patient care in the urgent care setting	-Increase adverse events. -Lack of public knowledge on the ability of urgent care and the services they provide. - Staff not willing to assume triage responsibilities due to stress and anxiety of the position.

Appendix B

Table of Evidence: Implementing ESI at the Urgent Care

APA Citation	Study Objectives	Design/ Subjects	Intervention and Outcome	Results	Limitations	Implications	Level of Evidence
(Zitek et al., 2018)	The primary goal of this investigation was to figure out how many unnecessary transmissions from a UCC to an E.D. Researchers looked at how often those treated in the emergency department were discharged, and a study was conducted to see which patients were most likely to be transferred again.	They reviewed patients' medical records admitted to our emergency department after being transferred from another facility. Patients were categorized into two groups by age (adults vs. children) and insurance type.	Most UCCs can perform ECG, onsite x-ray studies, and some blood and urine tests, but there is some variation in the capabilities of local UCCs.	Over one year, the study identified 3232 patients who had been transferred from a UCC to our E.D. Of these, 1159 were deemed unnecessary, and 2075 were sent home from the emergency department.	Retrospective studies have their usual drawbacks, such as the possibility of confounding variables. Additionally, this study was confined to a single region of the U.S. The number of patients transferred between UCCs may vary depending on where you live. As a result, our findings would hold for UCCs across the country.	Patients with back or stomach pain should go to the emergency department (E.D.) instead of a UCC unless the UCC is equipped to perform advanced imaging.	3A
(Snodgrass, 2020)	In teaching patient care, nurses and LVNs must	The quality improvement study used a single group	The P.I. concluded that there was no documentation	Compared to the scores obtained on the pretest, the results demonstrated an increase in the test	According to the findings, the small number of five nurses used	It should be incorporated into the patient care	3A

	learn how to prioritize and allocate patient acuity needs using the ESI for LVN and R.N. education.	design before and after the intervention to evaluate the education's efficacy regarding the ESI triage tool's application.	of patient ratings of increased mental understanding during and after the academic program.	scores after one week (22.5 percent to 58.5 percent) and after one month (13.5 percent to 50 percent).	to assess educational intervention effectiveness may have enhanced the margin of error, which could have affected the results. Second, the results could have been skewed because all the nurses shared the same ethnic background.	form to continue using the ESI triage tool in the future.	
(Sarvari et al., 2020)	research into whether and how long patients must wait for care after ESI is implemented and deployed.	All patients who came to the E.D. had to be referred by their primary care physician. Still, some needed to see a specialist and undergo additional diagnostic testing, so they were all included.	Before and after the intervention, neither the ages nor genders of the two groups differed significantly.	Mann-Whitney tests showed a link between shorter wait times for medical attention and a more extended overall stay in an emergency room.		There is less time spent in the emergency department than in other studies of this type.	2A
(Ramos et al., 2019)	implemented a decision-aid tool for ICU triage to evaluate the impact on ICU admissions	Before-and-after research was used in this case study. A tertiary hospital in Brazil analyzed the number of emergency ICU referrals made to	Patients were admitted to the ICU less frequently after implementing an ICU triage decision-aid system.	There were a total of 2201 patients who were evaluated, with 53.8% of them being admitted to the intensive care unit. Despite the definition, the decision aid tool decreased the		Patients were admitted to the ICU less frequently after implementing an ICU triage decision-aid system.	I.

		ten separate ICUs before using the decision-aid tool.		total number of potentially unsuitable admissions to the intensive care unit after adjusting for potential confounding factors.			
(Wechkunanukul et al., 2016)	Ethnicity was examined as a factor in the lack of urgency in obtaining medical care for chest pain in the present studies of CALD populations.	Patients from various ethnic backgrounds come to the E.R. complaining of chest pain. This review will focus on quantitative research, RCTs, retrospective cohort studies, non-RCTs, prospective case-control studies, and quasi-experimental and analytical cross-sectional studies.	A delay time measurement will be the primary outcome of this review. We will use the time between the onset of symptoms and arrival at an E.D. to determine how much time has passed.	Ethnic groups had different wait times. According to seven separate studies, a delay in hours ranging from 1.90 hours to 3.10 hours was observed, which is in line with findings from earlier studies. In contrast to the majority population, CALD populations had longer wait times. Ethnic groups were found to have more enormous proportions of later E.D. visits than most groups in the other studies.	Only a few research has concentrated on ethnic group delays.	The time it takes for patients of certain ethnic groups to seek medical treatment for chest pain is more significant than for the general population. Efforts to improve the health and well-being of these groups should be made.	1B

(Shelburne et al., 2022)	Oncological complications can be reduced, and their management improved through better care coordination. This report provides an overview of the current state of urgent and ECC issues and the research results conducted by workshop attendees.	Panelists and attendees at a workshop on O.U. and E.C. emphasized the importance of utilizing existing resources. Throughout the seminar, several existing E.D. research networks were brought up. Researchers and patients at the workshop agreed that increasing access between medical specialties is critical to the advancement of both.	Any decrease in emergency department transfers to a university medical center could be evaluated, as could improve telehealth in rural and community settings. Compared to patients in non-rural areas, cancer patients in rural areas are more likely to die from the disease and receive poor treatment because of the lack of access to specialists.	More than three times as many cancer-related E.D. visits result in inpatient admissions than those related to non-cancer conditions.	Non-oncology providers face challenges in providing patient-centered care for unexpected care needs because there are insufficient cancer-specific triage and supervisory staff routes supported by evidence in accessing patient treatment documentation.	There is a pressing need to understand better how cancer patients use acute care services, identify at-risk patients, minimize and support unplanned events, manage cancer-related presentations, and discuss cancer-related care goals when researching this area.	2A
(Atkin et al., 2022)	Reducing the number of patients who need to be admitted to the hospital and, as a result, the demand for inpatient services.	Before a diagnosis is suspected, Unselected medical cohorts are the target audience for the GAPS and Amb scores.	A higher pre-hospital NEWS score has been linked to an increased risk of inpatient admission and poor outcomes.	In a recent survey, ninety-nine percent of acute hospitals in the United Kingdom said they provide ambulatory emergency care. AEC admits about 20% of patients to critical Medicine, but this number varies widely among facilities, with as	Women were far more likely than men to be accepted. Male patients over 80 with no other negative characteristics would be considered unsuitable for	SDEC service structures vary from region to region within the United Kingdom, and there is no conclusive evidence of how these services	

				many as 75% of patients.	SDEC based on the Amb score.	should be best designed.	
(Devriendt et al., 2018)	The goal is to have a weighted sample with the same distribution of the identified variables across both cohorts.	Using a prospective, single-center quasi-experimental study compared to standard E.D. care regarding the number of unplanned readmissions. The international guidelines were discussed in focus groups by a variety of stakeholders. This group comprises emergency department doctors, nurses, managers, geriatric nurses, social workers, and case managers.	As a result of careful research and development, an URGENT care model is a potential approach for addressing the challenges folder patients face in the E.D. and changing the current leadership.	CGA and case management are well-established notions outside of the E.D. setting that guided the development of a nurse-led GEM care model.	Geriatric patients in the E.D. are not thoroughly evaluated because of time restraints, architectural issues, and staff shortages.	Due to the study's monocentric nature, randomization was not an option. Due to the belief that the GEM nurse would influence E.D. staff behavior and knowledge, randomization at the patient level was also dropped.	III.

(Hinson et al., 2019)	framework for comparing and scorecards the performance of different triage systems in terms of clinical outcomes and reliability to review available studies on E.D. triage	Studies that evaluated triage systems and had evidence of broad adoption were categorized and compared for their effectiveness in identifying patients who were at risk for mortality, critical illness, and hospitalization for interrater reliability. The Eligible Studies Items for Meta-analyses guidelines and Systematic Reviews were followed throughout this study's design, execution, and reporting.	At triage, many patients in the E.D. who die or become critically ill after their encounter are not given the designation of "high acuity."	Sophistication in recognizing critically ill patients and those who died in the immediate aftermath of the E.D. visit or during the index hospitalization was low in this study. Pulmonary embolism, severe sepsis, and non–ST-SEMI all had lower sensitivity than ST-SEMI, and the overall outcomes of ICU admission and life-saving intervention. However, this sensitivity varies by critical illness.	The vast and rapidly growing body of EMT literature is severely hampered by the wide range of existing triage systems and published evaluations. Only studies from our criteria were included in the review process.	The potential for triage performance, in general, was to be improved and unwelcome variability to be reduced.	3A
(Kaeppeli et al., 2020)	The CFS should be examined for ICU admission, 30-day mortality, and hospitalization to determine its predictive validity and reliability. With	During nine weeks, this potential observational study included E.D. patients 65 years from a tertiary care facility. Researchers	Difficulties can influence diagnosis, intervention, and even discussions about one's death. There are numerous underlying causes for	The higher the level of weakness, the greater the risk of death, regardless of age, sex, or health status. There was good interrater reliability between the standard and the research team.	Only a tiny percentage of patients had their CFS levels not tested or had their appointments not followed up.	An additional piece of information that can help predict the health outcomes of elderly E.D. patients is frailty, and the	2C

	the Clinical Frailty Scale (CFS), researchers measured the prevalence of frailty among patients in the E.D.	looked at the agreement between experts who independently assigned CFS levels and trained study assistants to determine the test's reliability by calculating Cohen's weight.	everything from life-threatening diseases to social problems. Frailty and urgency appeared to work together.			CFS fits into this category.	
(Villa et al., 2018)	To see if adapting a commonly used triage scale into a computer-controlled automated system in an EHR shortens E.D. triage time.	A quasi-experimental comparison was made before and after the results. Between July 2011 and June 2013, six consecutive adult patient visits were totaled.	The triage module of a commercial EHR was programmed with an ESI-5-based step-wise algorithm. All patients and the % of high acuity patients who completed triage within 15 minutes before and after the implementation of the algorithm, 12 months before and following the integration of the algorithm	After the intervention, the monthly time series showed an instant and long-lasting improvement. The door-to-balloon time and return visits within 72 hours were unchanged. The length of time spent in the country was about the same.	Single-institutional research was used in the study's design.	It is possible that collecting less information during triage will result in critical data being missed and not be collected later. Delaying high-risk patients' evaluations because of long triage times for other patients is also risky.	II.2

(AlSerkal et al., 2020)	Examine trends in E.D. visits, patient characteristics, and the accuracy of triage assessments using comparative analysis techniques to draw connections between patient parts and triage assessment accuracy in 2018.	It was a one-year retrospective observational study that concluded E.D. records. Data was gathered from 15 MOHAP-accredited emergency departments.	All E.D. data from 15 hospitals were retrieved using appropriate techniques and software. This study examines the patterns and dynamics of emergency department use in the United Arab Emirates, a country with a sizable population.	As the severity of the illness increased, the length of time patients spent in the hospital increased statistically significantly.	We could not evaluate the accuracy of understanding 1 and 2 because this analysis was done retrospectively.	Triage was accurate for patients with more severe conditions and specific age groups.	V
(Ghafarypour Jahrom et al., 2018)	ESI and ATS were evaluated for children admitted to the E.D. for their validity, reliability, sensitivity, and specificity.	Participants in this Iranian hospital's children's emergency department who were under the age of 14 and suffering from a medical condition were eligible for the study, which was conducted prospectively.	As a result, mortality and morbidity rates were reduced, as well as the overcrowding of the E.D. in the hospital, with the best triage method.	ESI had the best validity, followed by ATS when predicting admission based on triage urgency.	According to previous studies, these triage tools cannot be computerized when making critical decisions, such as in the pediatric emergency department, because of the psychological effects.	Triage systems have previously been shown to predict admissions based on urgency.	II

(Hinson et al., 2018)	Patient care should be prioritized over those who can wait so that patients in need of immediate attention can be found quickly. The hospitalization and critical outcome effects of under- and over-triage were studied.	This study used a retrospective cohort study design to characterize E.D. triage patterns. An experienced data user retrieved all E.D. records from a relational database underpinning the study institution's EHR and de-identified them before the study team could analyze them.	Clinical outcomes, in-hospital mortality, in-hospital mortality, Hospital admission, and multiple critical patient outcomes were among the outcome measures examined.	As many as one in five ESI patients arrived at the E.D. under or over-triaged. It was due to a lack of recognition of high cognitive functioning symptoms and overestimating non-severe illness patients. As a result of under-triage, there was a higher risk of critical clinical outcomes and hospitalizations.	The retrospective study limits our ability to verify that the a posteriori ESI scores accurately reflect the actual E.D. resource utilization of the physicians who assigned them.	The findings will benefit users, training programs, and future ESI versions. As a result of these findings, future triage tools will be more effective and objective.	II
(Levin et al., 2018)	Machine learning-based E-triage is the focus of this study, which seeks to improve patient differentiation by testing its ability to accurately predict the likelihood of an acute outcome.	This retrospective cross-sectional study included more than 172,000 ED visits from urban and rural settings.	An e-triage prediction is a straightforward indicator for a wide range of conditions that E.D. providers encounter.	Electronic triage provided the basis for risk-based differentiation of the more than 65 percent of emergency department visits that were triaged to the ESIS level. (E-triage) By comparing patient populations, more than 10% of ESI level 3 patients needing up triage had a significantly greater likelihood of emergency procedures and hospital readmissions across E.D.s.	Because it is based on data, a reliable and accurate EHR system is required. In addition, the reliability of medical history predictors varies among EHR and patients.	Predictive analytics can support triage decisions in e-triage, which more precisely classifies ESI level 3 patients.	II

(Mistry, Balhara, et al., 2018)	Understanding the ESI as emergency nurses perceive it helps identify its strengths, weaknesses, and obstacles to international adoption.	Twenty-seven emergency triage nurses were interviewed in semi-structured interviews for a cross-sectional qualitative study. Two independently conducted the content analysis and used NVivo to identify critical themes.	Nearly all interviewees cited ESI's significance of use as a significant strength.	Ease of use, efficiency, speed, patient safety, accuracy and reliability, and the ESI were among the seven core themes that emerged from interview coding. A great deal of consensus was reached among the coders.	A single-site research project was conducted in the United Arab Emirates, so the results may not apply to other settings.	As E.D. worldwide implements new triage systems to ensure efficient resource allocation and patient safety in the face of E.D. overpopulation, emergency nursing input is essential to recognize the benefits and drawbacks of triage tools.	II
(Mistry, Stewart De Ramirez, et al., 2018)	Triage scores assigned by emergency department nurses in three countries were evaluated for accuracy and variability.	87 ESI-trained nurses from E.D.s in Brazil, the UAE, and the U.S. participated in this cross-sectional multicenter study. One-way ANOVA and paired t-tests were used to compare the accuracy of the results.	A need for more accurate E.D. triage tools has emerged from our findings, despite the widespread use of ESIs in the United States and around the world.	ESI scores assigned by nurses did not always match up with the reference standard, and score assignments varied widely within and across sites. The accuracy of trauma scores at a facility with a higher volume of trauma patients was higher at a place where pediatric cases were treated than adult ones.	Because we used a small number of nurses from a few locations, our findings' external and internal validity may have been compromised.	These scales place a significant amount of reliance on the judgment of the triage provider; however, there is little systematic evidence to date of improved reliability compared with the ESI.	3A

(Hussain et al., 2018)	The study aims to establish a link between the process model and the changes it undergoes. When leaders pass on their expertise to facilitate change, one of the things they do is outline the various steps involved in the process.	An organizational change model was presented, centered on Kurt Lewin's three-step procedure for effecting change. This model reflects significant stages in the process of change implementation.	Organizational change is impacted when a transformational leadership style is utilized. The leader of this type of organization coordinates with the workers, shares their knowledge, and gives the employees opportunities to participate in the decision-making process at the organizational level.	Leadership style and employee involvement in organizational change are positive steps in the change process.		To raise awareness of the various stages of change within an organization. As can be seen, knowledge exchange is a critical driver in moving the process from unfreezing to the moving step.	

Appendix C

Informational Letter

TITLE OF STUDY: Implementing the use of the Emergency Severity Index Triage Tool in Urgent Care.

Principal Investigator: Sakeena Spencer MSN, CRNP-FNP-C

Why is this project being done?

This project aims to promote compliance by implementing the Emergency Severity Index too, an evidence-based triage tool. ESI has been successfully used in emergency departments and translated into other ambulatory settings. This tool will aim to improve the triage of patients based on acuity. The triage protocol also will reduce door-to-provider time, walkouts, and emergent waiting room events.

How will data be collected?

Patient demographic information (age, gender, ethnicity, and chief complaint), wait times, vital signs, and acuity scores will be collected one week before the ESI educational intervention by P.I. The data collected will reflect the current wait times and triage acuity level at the UCC facility. It will then be compared to results at the end of this change process quality improvement project.

What will you be asked to do if you take part in this research project?

You will be educated on the ESI tool and how it will be implemented in the U.C. The implementation of the ESI tool will start with education which will be held on two Mondays, given that the urgent care is on a seven on seven off schedule period. I will administer the education as an in-service to prevent interruptions of the clinic's normal patient care processes.

Instruction will take less than 10 minutes. I will be in the break room to hold each session over an 8-hour time to allow everyone to step into the break room and learn the new change process. The implementation of the project will be over an 8-week time frame. Each patient will have an ESI triage tool attached to the o check a form where the time from the start of examination, triage time, and time to the provider will be documented. One additional sheet will be added for the process to be implemented. Once the patient is triaged, a score will be given, and the provider will be made aware of the score to ensure the appropriate order of care.

Once the provider enters time on the ESI triage tool, it will then be placed in fa older the desk to collect data for the end of my project.

What is the goal of this project?

This tool will aim to improve the triage of patients based on acuity. The triage protocol also will reduce door-to-provider time, walkouts, and emergent waiting room events.

Whom can you call if you have any questions?

If you have any questions about taking part in this project, you can call the principal investigator:

Sakeena Spencer, MSN, CRNP-FNP-C

sbolden@stu.jsu.edu

UAB Urgent Care

(205) 215-7926

Appendix D

Information Flyer

PURPOSE:

The proposed project is to implement ESI. ESI has been successfully used in emergency departments and translated into other ambulatory settings. This tool will aim to improve triage of patients based on acuity. The triage protocol also will reduce door-to-provider time, walkouts, and emergent waiting room events.

WHO:

All University Urgent Care Providers, Nurses, CMAs in the Urban University Hospital. Participation is voluntary.

WHAT:

Attend a 30-minute lecture to learn how to implement, education on scoring the patients.

WHERE:

The Break room.

WHEN:

Two sessions will take place to accommodate opposite weekend

Participation Required!

Implementing the use of the Emergency Severity Index Triage Tool in Urgent Care.

If interested please contact

Sakeena Spencer FNP, CRNP

at If

sbolden@stu.jsu.edu

Appendix E

DNP Project Timeline

Completion:	Pre-Design	Design	Implementation	Evaluation
First Summer	Define clinical problem. Develop the initial Picot. Complete an initial Review of the Literature.			
Fall	Finalized the Picot Question. Communicated with University faculty about project ideas. Met with Preceptor and Stakeholders at Hospital. Review of Literature: Completed Table of Evidence on Implementation of the Emergency Severity Index Triage tool in urgent care. Select Theoretical Methodology Complete CITI training			

		Began draft of Project Proposal Obtain PERC Approval Submit and obtain IRB Approval.		
Spring			Implement DNP Project.	Data collection and statistical analysis Final project manuscript preparation.
Final Summer				Final project manuscript submission, Project Dissemination, Poster Presentation and submit ePortfolio.

Appendix F

Participating Agency Letter of Support

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM
Office of the Institutional Review Board for Human Use

470 Administration Building
701 20th Street South
Birmingham, AL 35294-0104
205.934.3789 | Fax 205.934.1301 |
irb@uab.edu

Spencer, Sakeena Rena

University of Alabama at Birmingham Institutional Review Board
Federalwide Assurance # FWA00005960
IORG Registration # IRB00000196 (IRB 01)
IORG Registration # IRB00000726 (IRB 02)
IORG Registration # IRB00012550 (IRB 03)

14-Apr-2022

IRB-300006779
Implementing the use of the Emergency Severity Index Triage Tool in the Urgent Care.

The Office of the IRB has reviewed your Application for Not Human Subjects Research Designation for the above referenced project.

The reviewer has determined this project is not subject to FDA regulations and is not Human Subjects Research. Note that any changes to the project should be resubmitted to the Office of the IRB for determination.

if you have questions or concerns, please contact the Office of the IRB at 205-934-3789.

Additional Comments:

Student Name: Sakeena Spencer

Thesis/Dissertation Title: Implementing the use of the Emergency Severity Index Triage Tool in the Urgent Care

Appendix G

University IRB Approval

JSU | INSTITUTIONAL REVIEW BOARD
JACKSONVILLE STATE UNIVERSITY

Institutional Review Board for the Protection of Human Subjects in Research
249 Angle Hall
700 Pelham Road North
Jacksonville, AL 36265-1602

May 9, 2022

Sakeena Spencer
Jacksonville State University
Jacksonville, AL 36265

Dear Sakeena:

Your project "Implementing the Use of the Emergency Severity Index Triage Tool in the Urgent Care" 05092022 has been granted exemption by the JSU Institutional Review Board for the Protection of Human Subjects in Research (IRB). If your research deviates from that listed in the protocol, please notify me immediately. One year from the date of this approval letter, please send me a progress report of your research project.

Best wishes for a successful research project.

Sincerely,

Lynn Garner
Associate Human Protections Administrator, Institutional Review Board

Phone: 256-782-8144 • Fax: 256-782-8146 • www.jsu.edu • An Equal Opportunity | Affirmative Action Employer

Appendix H

Citi Training Certificate

CITI PROGRAM

Completion Date 18-Sep-2021
Expiration Date 17-Sep-2024
Record ID 45141975

This is to certify that:

Sakeena Spencer

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Social and Behavioral Responsible Conduct of Research
(Curriculum Group)
Social and Behavioral Responsible Conduct of Research
(Course Learner Group)
1 - RCR
(Stage)

Under requirements set by:

Jacksonville State University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?wc17fd3c7-4e9f-476c-98a1-537b56036459-45141975

Appendix I

Budget

Item	Budget	Actual Cost
Printed Materials	$ 20	$ 20
Poster Printing	$ 5	$ 5
Refreshments for Educational sessions (2)	$ 35	$ 35
Data analysis by Statistician	$ 350	$450
Total Cost:	$470	$510

Appendix J

Table 1

Average triage times for patients seen at urgent care stratified by an intervention phase

	Time Period	Total Number of Patients Seen	Average Triage Time (minutes)
Pre-intervention	**6/1/2021 – 2/28/2022**	**61,388**	**45**
Post-Intervention	**5/10/2022 – 07/05/2022**	**2,950**	**17**

Appendix K

Table 2

Table 2. Average triage times for patients seen at urgent care during the post-intervention.

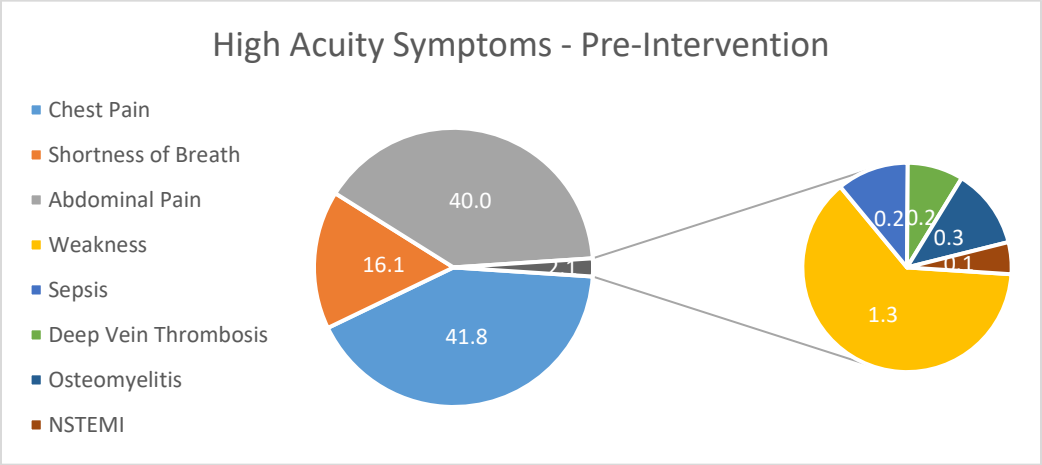
	Total Number of Patients Seen (%)	**Average Wait Time (minutes)**
All	**2,628 (95.6)**	**16.8**
High Acuity*	**121 (4.4)**	**8.7**

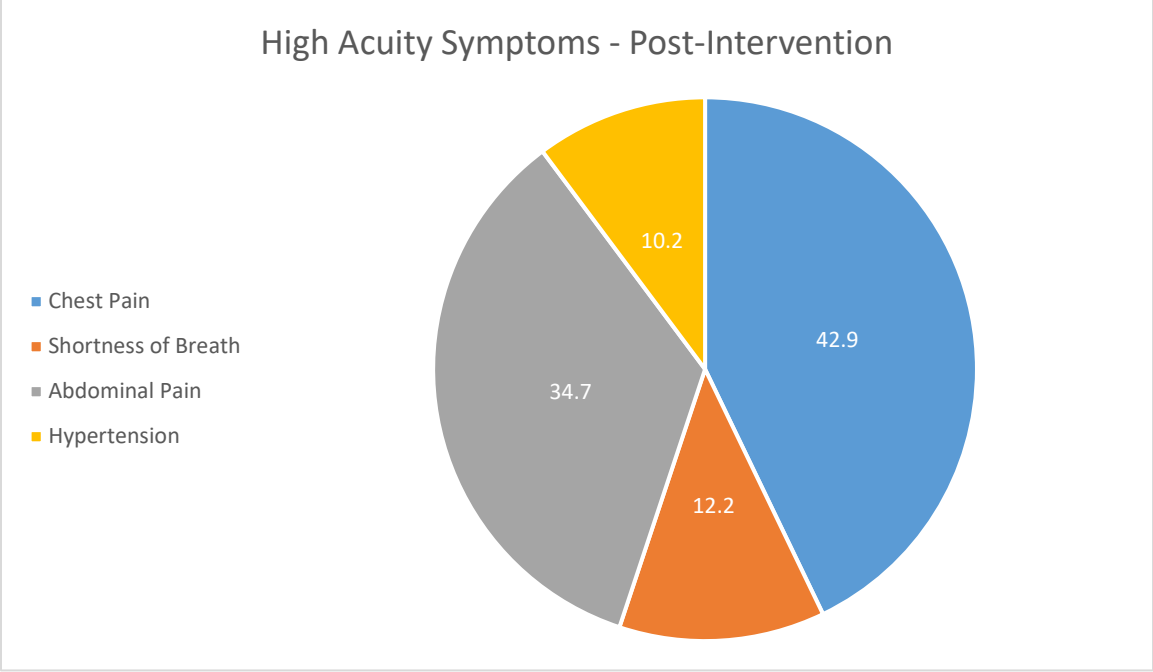
*High acuity is defined as having an ESI triage score of less than 4.

Appendix L

Table 3

Pie Charts of High Acuity Symptoms by Intervention Period

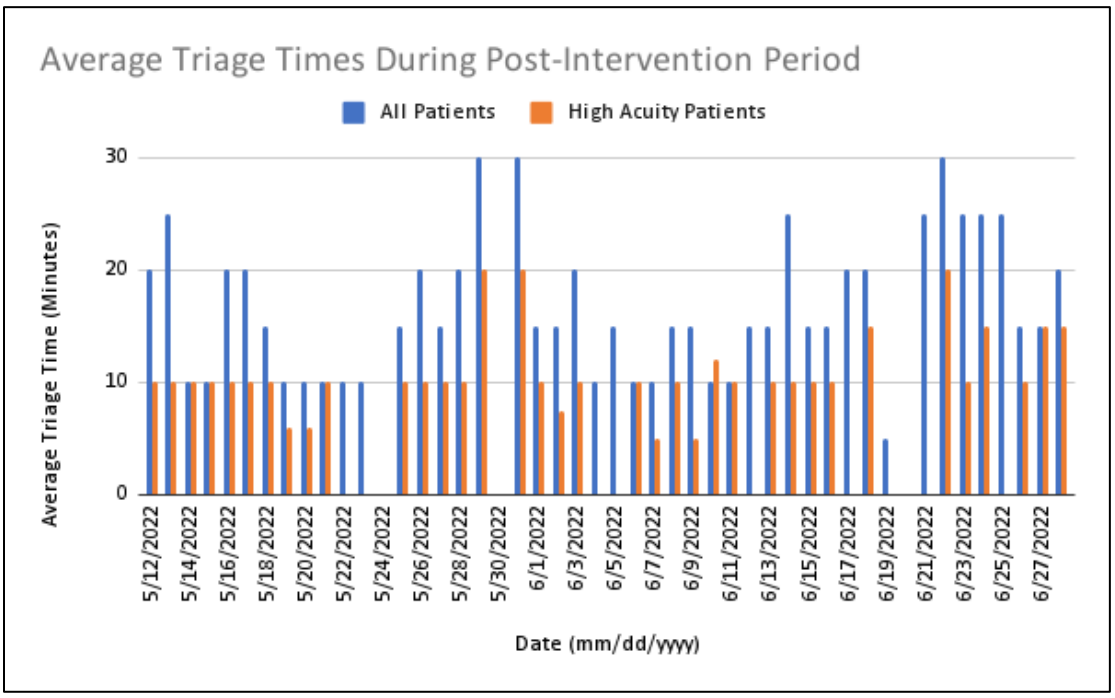




Appendix M

Table 4

Average Triage Times for All and High-Acuity Patients

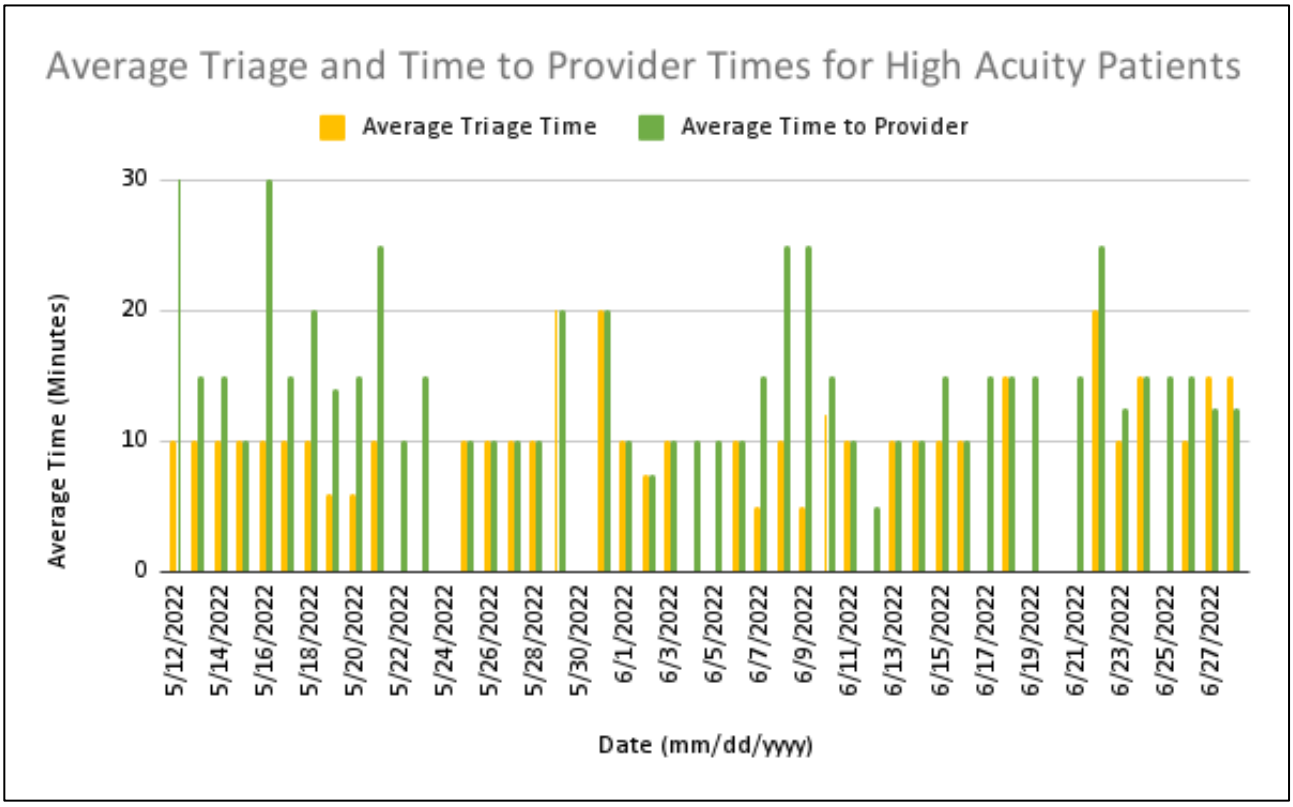


*Areas with no line depict no patients seen due to the clinic being closed or no high acuity patients being seen on that date.

Appendix N

Table 5

Triage Time and Time to Provider for High Acuity Patients



*Areas with no line depict no patients seen due to the clinic being closed or no high acuity patients being seen on that date.