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Jack A. Moody
jamoody@usfca.edu

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Refining Triage Documentation Practices in a Metropolitan Emergency Department

Jack Moody, RN

School of Nursing and Health Professions, University of San Francisco

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Sierra Dias-McEvoy MSN, RN, CEN, CNL

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Abstract

**Problem** California ranks ninth nationwide for its lengthy emergency department wait times, presenting a pressing challenge for healthcare facilities. **Context** This quality improvement project, set in the emergency department of a large urban hospital in the Bay Area, aimed to address this issue by targeting workflow efficiency through the reduction of triage times.

**Intervention** The intervention centered on implementing changes to the triage documentation, informed by staff feedback obtained through an opinion survey. Proposed modifications included the elimination of redundant questions, consolidation of related categories, and a logical reorganization of triage topics. **Measures** Key measures utilized in the project included triage times and pre- and post-intervention nursing opinion surveys. **Results** Despite encountering time constraints and other limitations, the intervention was not fully implemented, and post-intervention data collection did not occur. However, pre-implementation surveys revealed strong staff support for the proposed changes, indicating the potential efficacy of the intervention.

**Conclusion** Future recommendations for this project include prioritizing the implementation of the intervention and conducting post-implementation data collection to facilitate meaningful comparisons and further inform improvement efforts.

*Keywords: emergency department, triage, optimization, staff perception, survey analysis*
In North American emergency departments, prolonged waiting times have persistently plagued patient care efficiency. Recognizing this long standing issue, the following project endeavors to alleviate the burden of extended wait times by honing in on the critical juncture of triage documentation workflow in a metropolitan emergency department. With a targeted aim to mitigate waiting times by 10% at the end of April 2024, the project's objective is clear: to enhance the expediency and efficacy of triage processes. Central to this endeavor is the strategic intervention strategy, which entails a comprehensive assessment of the current triage workflow, followed by the implementation of refined procedures. Through meticulous pre and post assessments of nurses' perspectives, redundant or superfluous questions within the triage documentation process will be identified and subsequently eradicated. Moreover, a systematic restructuring of the remaining questions will be executed to foster a more logical and streamlined flow. By prioritizing efficiency and coherence, the overarching goal is to catalyze a discernible reduction in triage documentation times, thereby creating a more positive patient experience. The success of this intervention will be rigorously evaluated through meticulous tracking and analysis of triage documentation times, diligently documenting the trajectory of progress and the efficacy of implemented changes.

**Problem Description**

In the realm of emergency medicine, the efficient functioning of Emergency Departments (EDs) is paramount to delivering timely and effective care to patients in need. However, the
landscape of modern healthcare often presents numerous challenges, with overcrowding and prolonged wait times being two persistent issues that significantly impact the delivery of emergency care. Within the context of our project, which aims to investigate the optimization of the triage flow sheet to potentially alleviate these burdens, it's essential to thoroughly understand the extent and implications of these challenges.

Firstly, overcrowding in EDs is a multifaceted problem that arises due to various interconnected factors. One of the primary contributors to overcrowding is the mismatch between patient demand and available resources, including staff, beds, and equipment. With urban populations growing and healthcare facilities facing increasing pressure to accommodate a higher volume of patients, EDs often find themselves overwhelmed, leading to congestion, longer wait times, and compromised patient outcomes. Moreover, overcrowding exacerbates issues such as patient dissatisfaction, delayed care initiation, and increased risks of medical errors, posing significant challenges to healthcare providers striving to deliver high-quality emergency services.

Secondly, the average wait time of 18 minutes, as reported by Sara Sykes in the most recent available data from Hospital X in a 2013 article, highlights the urgency of addressing inefficiencies within the ED workflow (Sykes, 2013). While 18 minutes may seem relatively short compared to wait times reported in some other facilities, it's crucial to recognize that even seemingly brief delays can have profound implications in emergency care settings. During those critical minutes, patients may experience escalating symptoms, deteriorating conditions, or heightened anxiety, underscoring the importance of promptly assessing and addressing their needs. Prolonged wait times not only compromise patient satisfaction but also increase the
likelihood of adverse outcomes, including complications, unnecessary hospital admissions, and even mortality in severe cases.

In essence, the intertwined issues of overcrowding and prolonged wait times represent significant hurdles in the effective functioning of urban EDs, impacting patient care, staff workload, and overall healthcare system efficiency. As we delve into our project focused on optimizing the triage flow sheet, it's imperative to recognize these challenges as pivotal drivers of the need for innovation and improvement in emergency care delivery. By addressing these issues through strategic interventions, such as streamlining triage processes, enhancing resource allocation, and leveraging technology, we can strive towards mitigating the impact of overcrowding and reducing wait times, ultimately enhancing the quality and efficiency of emergency care provision in urban settings.

**Available Knowledge**

**PICOT Question**

In order to guide our initiative a PICOT question was formulated and is as follows: ‘For patients visiting an urban emergency department, does optimization of the triage flow documentation within the ED Navigator decrease triage times over a three month period?’ This PICOT question provided focus on investigating the impact of optimizing the triage flow sheet on waiting times for patients visiting an urban Emergency Department (ED). In this context, PICOT stands for Population (patients visiting an urban ED), Intervention (optimization of the triage flow sheet), Comparison (current triage flow sheet), Outcome (decrease in triage times), and Time (over a three month period). The question seeks to explore whether implementing
enhancements to the triage process can lead to reduced triage times, a critical factor in emergency care settings where timely access to treatment can significantly affect patient outcomes. Optimizing the triage flow sheet may involve various strategies such as streamlining data collection, improving communication among triage staff, implementing priority-based assessments, or leveraging technology to expedite the process. By investigating this question, healthcare providers and administrators aim to identify potential interventions to enhance the efficiency of ED operations, ultimately improving patient experience and potentially positively impacting clinical outcomes. Understanding the relationship between triage flow sheet optimization and waiting times is crucial for healthcare facilities striving to deliver timely and effective emergency care services in urban settings where ED overcrowding and long wait times are often prevalent issues.

Search Methodology

Utilizing our formulated PICOT question, a literature search commenced on databases such as CINAHL Ultimate, PubMed, and Scopus, with a primary focus on CINAHL Ultimate due to its emphasis on nursing workflow, aligning with the project's primary intervention. Given that the primary goal of this QI project was to streamline the triage flow sheet documentation process and decrease wait times, key search terms included documentation, triage, triage nurse, wait times, efficiency, and electronic health record. Various combinations of these keywords, particularly documentation, triage, and efficiency, were prioritized to explore literature with similar settings and goals. Phrases like emergency medicine, registration, regulations, emergency department, and screening proved less effective in identifying relevant literature. Throughout the literature investigation, CINAHL Ultimate emerged as the most
suitable database, focusing on nursing-related literature, in comparison to PubMed and Scopus. Although the search strategy remained consistent across all databases, literature from PubMed and Scopus appeared either too broad or too specific to be directly relevant. In the end, ten journal articles were identified as pertinent to the Quality Improvement initiative and underwent thorough review.

Ten research articles underwent critical appraisal using the Johns Hopkins Nursing Evidence Based Practice methodology to evaluate evidence level and quality (Appendix B). These articles are detailed in Appendix A (Dang & Dearholt, 2018). One of the strengths in synthesizing the literature lies in the diverse selection, encompassing qualitative and quantitative studies, case studies, and non-research data. Such inclusivity facilitates a thorough analysis and description of the identified problem (Dang & Dearholt, 2018). However, since our focus is qualitative, only ten articles were chosen for final integration. Among these, there is one Level II (quasi-experimental), eight Level III (qualitative, non-experimental, and mixed-method non-experimental), and one Level V (expert opinion) study. Despite this selective process, the literature review provides a robust representation of research concerning optimization of ED triage documentation, offering a broad spectrum of information.

**Literature Review**

In an article by Murrell et al. (2010), the authors show that implementing a Rapid Triage and Treatment (RTT) system in the emergency department, based on Lean principles, significantly improves efficiency by decreasing patient wait times and reducing the rate of patients leaving without being seen by a doctor (LWBS) (Murrell et al., 2010). The author
supports this claim by describing the Lean principles applied to make process improvements in the emergency department, leading to the development of the RTT system (Murrell et al., 2010). Through a retrospective observational study comparing data before and after the system's implementation, the author presents evidence of decreased mean ED length of stay, improved arrival-to-physician start time, and a notable reduction in LWBS rates. The author's purpose is to demonstrate that utilizing Lean principles and available resources can enhance emergency department processes, specifically through the implementation of the RTT system, in order to mitigate issues related to patient satisfaction, long wait times, and LWBS rates. The findings associated with the use of a RTT and its effectiveness at mitigating long wait times highlights the potential that optimization of triage documentation as a function of RTT could ultimately reduce emergency department triage times and enhance overall efficiency in patient care.

In an article by Sayah et al. (2014), the authors assert that a collaborative reengineering of the emergency patient experience at the Cambridge Hospital ED significantly enhanced operational efficiency, leading to decreased ambulance diversion, reduced total length of stay, increased patient satisfaction scores, and improved compliance with quality core measures (Sayah et al., 2014). Highlighting the struggles faced by the ED before intervention, including routine diversions and low patient satisfaction, the author describes the implementation of a front-end reengineering approach, prioritizing immediate patient care. The results serve as evidence of the success of these operational changes (Sayah et al., 2014). The purpose is to demonstrate that strategic operational improvements can significantly enhance ED performance without heavy capital investment, aiming to improve the patient experience, mitigate operational struggles, and increase overall efficiency (Sayah et al., 2014). This study provides supporting
evidence for optimizing triage documentation as a strategic operational improvement that could be crucial to improving patient flow, efficiency, and reducing triage time.

In a qualitative descriptive exploratory study by Wolf et al. (2024), they contend that the conflation of regulatory data collection with patient assessment during the initial triage encounter in emergency departments poses a significant challenge for emergency nurses in swiftly and accurately identifying patients at risk of deterioration. Conducting this study with 35 participants at a September 2022 emergency nursing conference, the author highlights concerns about a lack of expertise at various points in the triage process, emphasizing the confusion between data mandated by regulatory agencies and crucial triage assessment information (Wolf et al., 2024). Thematic categories, including questions about who assesses patients, the balance between assessment and compliance, situationally important inquiries, and the absence of emergency nurse input, were identified, offering a comprehensive understanding of the challenges faced. The author's purpose is to highlight the difficulties encountered by emergency nurses in the triage process due to this conflation, recommending a refinement of the initial triage process to include questions specifically focused on establishing patient stability and ensuring waiting room safety (Wolf et al., 2024). These findings show that there is a need to optimize triage documentation by clarifying guidelines and focusing on questions that contribute to swift and accurate patient evaluations.

The study conducted at King Fahad Medical City (KFMC), Saudi Arabia, aims to assess the triage knowledge and practices of emergency department nurses, employing a cross-sectional, descriptive, and correlational design. Data from 147 participants reveal generally high levels of triage knowledge and practice, although knowledge deficits and incorrect practices in
specific areas are noted (AlShatarat et al., 2022). Statistical analyses, including descriptive statistics, independent t-tests, one-way ANOVA, and Pearson correlation tests, indicate no significant differences in triage knowledge and practice based on participants' demographics (AlShatarat et al., 2022). The author's purpose is to identify factors associated with triage knowledge and practices, with a focus on recommending further training and education to address knowledge deficits and improve triage practices. By optimizing triage documentation to include only the necessary components, the documentation flowsheet could mitigate triage knowledge deficits and enhance triage efficiency by highlighting only the most important information required.

In a study by Johnson et al. (2021), the authors show that emergency nurses perceive a conflict between individualized care and maintaining systems and processes in triage, categorizing essential and nonessential components based on this perceived conflict. Conducting focus group discussions with 12 frontline emergency nurses, the research explores their perceptions, revealing an overarching theme of conflicting priorities. The study employs descriptive statistics and conventional content analysis of the transcripts to provide a nuanced understanding of the urgency attributed to different triage components. The identified sub-themes, such as components considered essential for determining patient acuity and others that can be delayed, contribute to the overall theme of balancing individualized care with system maintenance (Johnson et al., 2021). The purpose is to inform improvements in the triage process, emphasizing the identified essential components for efficient decision-making (Johnson et al., 2021). The findings of this study highlight that in order to support efficient decision-making during the triage process, emphasis on essential components within the triage documentation
could streamline the process to support nurse decision-making, reduce triage times, minimizing interruptions, and enhancing overall efficiency of patient care within emergency departments.

In a study by Weber et al. (2011), the authors assert that mandatory formal triage, utilizing the Emergency Severity Index-5 (ESI-5), for walk-in emergency department (ED) patients in a US urban academic setting does not consistently achieve timely recognition of the most acutely ill patients. Analyzing high-acuity (ESI 1 or 2) walk-in visits in the year 2008, the retrospective cross-sectional study reveals that less than half of high-acuity patients complete triage within the recommended time frames, potentially resulting in unsafe delays (Weber et al., 2011). Despite ESI-5 recommendations for immediate or within 10 minutes treatment for level 1 and 2 patients, only 41% of high-acuity patients, including those roomed immediately, completed triage within the suggested 10 minutes. The findings suggest a discrepancy between the theoretical value of mandatory formal triage and its practical limitations in identifying and prioritizing the most acutely ill patients. The author's purpose is to prompt a reassessment of the safety and efficacy of the current triage process, given the observed delays, with the aim of enhancing patient care and safety (Weber et al., 2011). Given the results of this study, modification of a disorderly flowsheet to a more optimal state could be beneficial. By identifying and reducing non-essential questions in the triage flowsheet, assignment of ESI levels could align more closely with observed time frames, thereby reducing triage times and improving the timely recognition and treatment of the most acutely ill patients in the emergency department.

In a study by Migdal et al. (2019), the authors argue that standardized screening questions in the emergency department (ED) incur potential monetary and time costs, impacting efficiency and suggesting a need for redirection toward more pertinent patient care. Conducting a
prospective observational study, the authors focused on ED registered nurses (RNs) performing triage assessments, timing the RNs while asking five pre-selected questions from the triage protocol. Covering topics such as pneumococcal vaccine status, tetanus vaccine status, medication allergies, influenza vaccine, and recent travel, the mean time spent per question ranged from 4.37 to 6.26 seconds (Migdal et al., 2019). The estimated annual time spent on these questions in the study ED amounted to 590.73 hours, translating to $20,675.50 in nursing costs per year (Migdal et al., 2019). The findings underscore the potential inefficiencies and costs associated with the current standardized screening questions in the ED, prompting a reassessment of their utility in improving patient care. To address these issues, the type of change that this project is implementing is the type of quality improvement that could solve these time delays and monetary loss. The results from this study highlight how impactful the documentation process can be on an emergency department, thereby supporting the need for optimization. Through the refinement and streamlining of screening questions to prioritize essential information, the triage process has the potential to significantly boost efficiency, optimize resource allocation, and expedite triage procedures which would enhance overall patient care and satisfaction.

In a realist review by Oullet et al. (2022), they aimed to assess the effectiveness of strategies influencing nurses’ behavior to improve triage quality in emergency departments (ED), utilizing the Behaviour Change Wheel (BCW) and the context-mechanism-outcome (CMO) models as its framework. The protocol, following the PRISMA-P statement, outlines the inclusion of any study type focusing on strategies to enhance the ED triage process, employing recognized and validated triage scales and assessing scientific quality using the Mixed Methods
Appraisal Tool (Oullet et al., 2022). With the BCW and CMO models, the review seeks to inform nurses and ED decision makers on evidence-based strategies, considering the contextual factors and mechanisms influencing their effectiveness. The ultimate purpose is to guide the adoption of best practices in ED nursing triage, addressing research gaps for future projects (Oullet et al., 2022). The results from this study show that optimizing triage documentation could benefit from evidence-based strategies derived from the realist review tailored to the specific context and mechanisms identified in the ED setting. By serving as a guide that highlights effective strategies which influence nursing behavior, this approach has the potential to enhance triage efficiency and contribute to reduced triage times.

In a systematic review by Fekonja et al. (2023), the authors describe the necessity of understanding factors contributing to patient safety during the triage process, given its critical role in assessing patients' urgency levels and health status in a dynamic and vulnerable environment. They analyzed 11 selected papers which identified various factors influencing patient safety in triage, aspects of the work environment (e.g., patient assessment, workload, interruptions, staffing) and personal factors (e.g., nurse traits, experience, knowledge, triage fatigue, work schedule) (Fekonja et al., 2023). The stated purpose of the review is to raise awareness among nursing administrators and healthcare professionals to create a safe triage environment for patients, emphasizing the importance of triage nurses' attitudes, capabilities, experiences, and dedicated time without disruptions (Fekonja et al., 2023). In order to address these findings in a quality improvement project, optimizing triage documentation could involve tailored interventions targeting the identified factors, aiming to create an environment that
supports triage nurses in providing efficient and safe patient assessments, ultimately contributing to reduced emergency department triage times.

In an article by Mackway-Jones et al. (2023), the authors argue that implementing efficiency and quality improvement interventions, guided by lean management principles and statistical process control methods, resulted in a near doubling of how many patients could be triaged at the Manchester Royal Infirmary ED without extra investment or compromising triage quality. The authors describe the project, involving the removal of non-contributory processes, support for individual triage nurses, and overall process optimization, which led to a significant 44% reduction in mean triage episode time, equivalent to saving 18,000 minutes of triage nurses' time monthly (Mackway-Jones et al., 2023). The purpose of the article is to share the successful implementation of these interventions and discuss their implications for emergency triage, emphasizing the importance of involving triage nurses in decision-making processes. In order to reduce emergency department triage times by optimizing triage documentation, lessons from this study can be applied which can identify and eliminate non-contributory processes in triage documentation. Additionally, involving triage nurses in the decision-making process regarding these improvements can draw upon their direct experience and understanding, contributing to more effective and streamlined documentation practices.

In summary, this comprehensive exploration of various studies and articles underscores the multifaceted challenges and potential improvements in emergency department triage processes. Implementing Rapid Triage and Treatment systems, collaborative reengineering approaches, addressing the conflation of regulatory data collection, assessing triage knowledge and practices, understanding emergency nurses' perceptions, and evaluating the impact of
standardized screening questions all contribute valuable insights. By connecting these findings to this quality improvement initiative, optimizing triage documentation emerges as a crucial focal point. This optimization comes in the form of reformatting the order of triage categories in a logical order, removing documentation redundancies, and condensing related categories into one. Streamlining processes, clarifying guidelines, and incorporating evidence-based strategies derived from realist reviews could collectively contribute to reduced emergency department triage times, enhanced patient care, and improved overall efficiency. Engaging triage nurses in decision-making processes and tailoring interventions to identified factors from systematic reviews further emphasize the importance of fostering a supportive triage environment. As healthcare providers navigate the complexities of emergency care, the integration of these evidence-based insights into triage documentation practices stands poised to improve patient experiences, increase efficiency, and mitigate challenges faced in emergency department settings.

Rationale/Framework

The ADKAR model is a prominent change theory which can be applicable to quality improvement in healthcare. This model focuses on individual change, with steps including awareness, desire, knowledge, ability, and reinforcement. (Kachian et al., 2018). Its strengths include its emphasis on the personal aspects of change and the recognition that successful change requires attention to each of these components. However, its potential weakness is that the primary focus on the individual could lead to overlooking organizational dynamics that influence the success. In general, this model provides valuable insights, and its application depends on the specific context and goals of the healthcare quality improvement project.
Applying the ADKAR change model to a quality improvement initiative centered on triage optimization in the emergency department (ED) involves integration of individual and organizational considerations. Initially, raising awareness among ED staff about the necessity and benefits of triage optimization is crucial. This involves communicating the urgency of the change and its positive impact on patient outcomes. Next, creating a desire for the change emphasizes the advantages of streamlined triage processes and its alignment with improving overall ED efficiency. Knowledge transfer ensures staff nurses are well-informed about the new triage protocols and procedures. Building the ability to execute these changes involves providing training, resources, and ongoing support. Mechanisms, such as interviewing staff nurses, designing and dissemination surveys, and modifying the proposed intervention based on feedback, solidify the new practices. By adopting the ADKAR model in this context, the focus on individual transitions ensures that healthcare professionals are equipped with the necessary skills and knowledge to stay motivated and committed to the improved triage processes. This ultimately can contribute to the success of this quality improvement initiative in the emergency department.

**Ethical Considerations**

Both the Jesuit value of cura personalis and provision 1 of the American Nurses Association (ANA) Code of Ethics hold significant relevance to the current project.

Firstly, the Jesuit principle of cura personalis emphasizes the holistic care of individuals, recognizing the interconnectedness of their mind, body, and spirit. In the context of this project, applying cura personalis means acknowledging that patients presenting to the emergency department are not merely cases with medical symptoms but whole persons with complex needs.
By considering the entirety of their being, including their emotional and spiritual well-being, nurses involved in the project can better understand the underlying factors contributing to patients' conditions and tailor interventions accordingly. This approach aligns with the project's objective of optimizing ED triage documentation to improve patient outcomes by ensuring that assessments capture not only physical symptoms but also address patients' psychosocial and spiritual concerns.

Similarly, provision 1 of the ANA Code of Ethics underscores the nurse's duty to practice with compassion and respect for the inherent dignity, worth, and unique attributes of every person (ANA, 2015). In the context of the project, this provision emphasizes the importance of treating each patient with empathy, regardless of their background, condition, or circumstances. By upholding this ethical standard, nurses involved in the project commit to fostering a culture of respect and dignity in the emergency department, ensuring that patients feel valued and heard throughout the triage process. This approach is essential for building trust and rapport with patients, which can positively impact their overall experience and outcomes.

**Project Aim**

In the dynamic environment of the emergency department (ED), the primary aim is to enhance the efficiency and effectiveness of the triage process for patients seeking urgent medical care by the end of April 2024. This endeavor involves implementing targeted interventions designed to mitigate prolonged triage times, thereby expediting access to critical medical attention. Central to this optimization strategy is the deliberate delay of certain triage questions to be posed by the primary nurse, ensuring that immediate attention is prioritized for the most pressing patient needs upon arrival. Additionally, adopting a unified triage tool shared seamlessly
across different levels of care streamlines the assessment process, facilitating continuity and consistency in patient evaluation.

This comprehensive approach to triage optimization encompasses the entire patient journey within the ED, commencing with the initial assessment upon arrival and culminating in the prioritization for further treatment, admission to specialized departments, or safe discharge to home. By focusing on improving the efficiency of each stage of the triage process, from initial evaluation to ESI assignment, the aim is to minimize patient wait times, enhance resource utilization, and ultimately improve patient outcomes. Through strategic implementation of these interventions, the ED endeavors to uphold its commitment to delivering timely and high-quality emergency care to all individuals in need, ensuring that every patient receives prompt attention and appropriate management tailored to their medical urgency.

Methods

Context

The Emergency Department (ED) microsystem serves a diverse population, including uninsured and insured individuals, ambulance arrivals, and in-house emergencies such as needle sticks or assaults on staff. Patients of all ages seek care for various illnesses and injuries, aligning with the microsystem's purpose of providing accessible and quality medical care to the community. The interdisciplinary team comprises nurses, physicians, technicians, registration staff, therapists, social workers, and others, collaborating closely to deliver comprehensive care.

Care processes in the ED encompass triage, interventions, pain management, admissions, transfers, counseling, and discharge planning. Effective communication, streamlined documentation, and clear roles contribute to efficient functioning, while protocolization
standardizes practice and optimizes resource utilization. The aim of the microsystem aligns with broader healthcare objectives of ensuring timely and effective care, particularly through improvements in triage times.

More specific to this project, the triage process typically begins with the registration of a patient upon arrival at the Emergency Department (ED), where basic demographic information and reason for seeking medical care are documented. Following registration, patients undergo vital sign assessment, including measurements such as blood pressure, heart rate, temperature, and respiratory rate, to provide crucial baseline information about their health status. Depending on the patient's presenting symptoms and medical history, an electrocardiogram (EKG) may be performed to assess cardiac function and detect any abnormalities. Once these initial assessments are completed, patients wait to be seen by a nurse for triage, during which a comprehensive evaluation is conducted to determine the urgency of their medical condition and prioritize the order in which they will receive care within the ED.

To tackle challenges and leverage opportunities within the microsystem, additional analytical tools such as a fishbone analysis were employed (Appendix E). This method facilitated the exploration of root causes contributing to inefficiencies or barriers in the triage process. By visually mapping out factors related to people, processes, equipment, environment, and management, the fishbone analysis provided valuable insights into areas for improvement, which facilitated the identification of inefficiencies in the triage flowsheet. A Gantt (Appendix D) chart was utilized as a project management tool to visually outline the timeline and milestones for implementing changes to the triage process within the Emergency Department (ED). It provided
a clear and structured overview of tasks, including survey distribution, data collection, analysis, and intervention implementation, along with their respective deadlines.

The SWOT analysis (Appendix F) conducted for this project provided a comprehensive assessment of the internal strengths and weaknesses, as well as external opportunities and threats, influencing the implementation of changes to the triage process within the Emergency Department (ED). The analysis identified several strengths, including the low cost and ease of implementation of proposed interventions, as well as a receptive staff open to change and potential improvements in quality metrics. However, notable weaknesses were also recognized. These included bureaucratic hurdles, a constrained time frame, limitations in accessing the EPIC electronic health record system, and inconsistent expectations exacerbated by the project's status as a low-priority student initiative. Despite these challenges, opportunities were identified, such as the potential to establish higher standards for triage processes within a high-resourced and Magnet Hospital setting, leveraging existing resources for enhanced efficiency and patient care. However, threats such as the complexities of shared governance and the absence of standardized recommendations for triage intake from regulatory institutions posed significant challenges to successful implementation. Overall, the SWOT analysis served as a valuable tool in guiding strategic decision-making and prioritizing efforts to maximize opportunities and mitigate threats throughout the project.

This comprehensive approach empowered the team to develop targeted interventions aimed at enhancing triage efficiency while aligning with the microsystem's overarching purpose and vision of delivering high-quality emergency care within the determined timeline. Through
collaboration and meticulous process optimization guided by these analyses, the microsystem aims to achieve significantly improved triage times.

**Intervention**

The proposed intervention for this project involves implementing changes to the ED navigator flowsheet, aimed at optimizing the triage process within the Emergency Department (ED) setting. These changes are designed to streamline documentation, improve efficiency, and enhance the overall triage experience for both patients and nurses. The intervention includes several key modifications to the existing flowsheet, each targeting specific aspects of the triage process to address inefficiencies and enhance clarity.

Firstly, the intervention proposes moving the interpreter section to the beginning of triage. This adjustment ensures that interpreter needs are identified promptly, allowing for effective communication with patients who require language assistance from the outset of their ED visit. By addressing language barriers early in the triage process, nurses can facilitate more accurate assessments and timely interventions. Secondly, the intervention aims to condense related sections within the flowsheet to reduce clutter and streamline documentation. This includes consolidating the allergy band verification question with the allergy section, eliminating redundancy and simplifying the triage list for improved usability.

Another crucial aspect of the proposed intervention is the removal of the interventions section, which is identified as a source of double charting that does not contribute to placing protocol orders for labs, medications, or imaging. By eliminating unnecessary documentation requirements, nurses can focus on essential tasks and expedite the triage process.
Furthermore, the intervention suggests adding a checkbox for cervical collar (c-collar) application in the chief complaint section, recognizing that cervical collar needs are typically identified early in triage. This modification aims to improve the documentation of critical patient information and enhance patient safety.

Additionally, the intervention proposes restructuring the triage plan section to include standalone sections for the ESI algorithm and triage destination. This reorganization enhances clarity and provides a clear endpoint for the triage process, facilitating more efficient decision-making and patient flow. Moreover, the intervention includes the addition of a section to condense important lone sections, such as EKG documentation, Disaster, and Treatment PTA (prior to arrival), further streamlining the triage list and improving documentation efficiency. Finally, establishing a more logical order of triage categories in the ED navigator, including triage start, interpreter needs, chief complaint, vitals, allergies, OB/Gyn status, covid/viral screen, suicide screening, ESI level, and destination, ensures a standardized approach to triage documentation and facilitates comprehensive patient assessments.

Overall, the proposed intervention represents a comprehensive approach to optimizing the triage process within the ED setting. By implementing these changes to the ED navigator flowsheet, nurses can improve efficiency, enhance documentation clarity, and ultimately deliver higher quality care to patients presenting to the emergency department.

**Study of the Intervention**

The Plan-Do-Study-Act (PDSA) cycle (Appendix G) provides a systematic framework for implementing and evaluating changes in healthcare processes. In the context of the intervention aimed at optimizing triage documentation to reduce long triage times in the
Emergency Department (ED) setting, the PDSA cycle serves as a valuable measurement strategy to assess the impact of the proposed changes.

In the planning phase, the problem of redundancy in the ED navigator flowsheet is identified, and the objective of optimizing this flowsheet measured by triage times is established. The plan is developed to optimize triage documentation based on the proposed modifications, which are informed by staff feedback gathered through the opinion survey. This phase involves detailed planning of the changes to be implemented and ensures alignment with the identified objective of reducing triage times. During the implementation phase, the changes to the triage documentation are executed according to the plan and supported by the survey results. This step involves rolling out the proposed modifications to the ED navigator flowsheet and ensuring that frontline staff are trained and equipped to implement the changes effectively.

In the study phase, data is collected on the impact of the changes by gathering triage time data before implementation and establishing a timeframe to collect and analyze triage times after the implementation. This phase typically involves a one-month period to assess the short-term effects of the intervention. The data collected is then analyzed to determine whether there has been an improvement in triage times following the implementation of the optimized triage documentation.

Finally, in the act phase, based on the results of the study phase, a decision is made on whether to adopt, adapt, or abandon the changes. If the data analysis indicates a significant improvement in triage times, the changes are adopted and integrated into regular practice. However, if the results are not as expected, adjustments may be made to the plan, and the PDSA cycle is repeated to refine the intervention and try again.
Overall, the PDSA cycle serves as a structured approach to implementing and evaluating changes in healthcare processes, providing a framework for continuous improvement. By systematically planning, implementing, studying, and acting on changes, healthcare organizations can drive meaningful improvements in patient care outcomes, such as reducing triage times in the ED setting, ultimately enhancing the quality and efficiency of care delivery.

**Outcome Measures**

The first survey (Appendix I) served as an initial assessment of the microsystem's (ED) readiness for change by gauging staff members' attitudes and receptiveness towards proposed modifications to the triage documentation. This survey aimed to determine whether frontline healthcare providers were open to change and whether there was a consensus among staff regarding the need for improvements in the triage process. Upon analysis of the responses, it was generally found that the microsystem was indeed open to change, with a significant proportion of respondents expressing willingness to explore opportunities for enhancing triage efficiency. Building on this positive indication, the second, more comprehensive survey was developed to delve deeper into staff preferences, gather additional insights, and garner broader support for the proposed changes.

The second opinion survey (Appendix J) employed in this project serves as a valuable tool for gathering feedback from staff regarding the proposed changes to the ED navigator flowsheet. This survey is designed to capture the perspectives, opinions, and insights of staff nurses who are directly involved in the triage process within the Emergency Department (ED) setting. The survey consists of targeted questions that address each proposed change individually,
allowing staff members to provide input on the potential impact, feasibility, and desirability of each modification.

The survey begins by presenting participants with a brief overview of the proposed changes to the ED navigator flowsheet, outlining the specific adjustments being considered and their rationale. Then, participants are asked what shift they work, how long they have practiced as an emergency nurse, and how long they have worked at the hospital. Participants are then asked if they agree, disagree, or are unsure with the proposed change. Additionally, a free response was included to allow staff members to provide qualitative feedback, suggestions, or concerns related to the proposed modifications. The results of the opinion survey can be measured and analyzed using both quantitative and qualitative methods.

Quantitatively, ‘yes’, ‘no’, or ‘unsure’ responses provide a numerical representation of staff members' attitudes and perceptions towards each proposed change. By calculating mean scores, standard deviations, and frequency distributions, the level of consensus or divergence among staff members regarding the proposed modifications can be assessed. This quantitative analysis enables the identification of trends, patterns, and areas of agreement or disagreement across different demographic groups.

Qualitatively, the open-ended responses offer valuable insights into the rationale behind staff members' attitudes towards the proposed changes, as well as potential barriers, challenges, or alternative suggestions. Thematic analysis can be conducted to identify recurring themes, concerns, or areas of consensus within the qualitative data. This qualitative analysis provides a deeper understanding of the underlying factors influencing staff perceptions and can inform subsequent decision-making and implementation strategies.
Overall, the opinion survey serves as a crucial tool for engaging frontline staff in the change management process, soliciting their input, and fostering a sense of ownership and buy-in for the proposed modifications to the ED navigator flowsheet. By leveraging both quantitative and qualitative data from the survey results, healthcare leaders can make informed decisions, prioritize changes based on staff feedback, and implement interventions that are both feasible and acceptable to those directly involved in the triage process.

Results

The results of the two surveys conducted as part of this project provide valuable insights into staff perceptions and preferences regarding the proposed changes to the triage documentation in the Emergency Department (ED) setting.

The first survey (Appendix I), with 37 responses, revealed that a majority of staff worked day shifts (56.8%), followed by night shifts (29.7%) and mid-shifts (13.5%). Regarding the current triage questions, the majority of respondents were neutral (51.4%), while 32.4% agreed and 10.8% strongly agreed with them. However, regarding the amount of questions in the current triage workflow, 35.1% agreed and 24.3% strongly agreed that there were too many. Furthermore, a significant majority (67.6%) strongly agreed that delaying non-essential questions would improve triage efficiency.

The second survey (Appendix J), with 94 responses, provided more comprehensive feedback. A substantial majority of respondents supported moving the interpreter section to directly after triage start (85.1%) and combining the allergy band verification question with the allergy section (97.9%). Moreover, a majority favored removing the interventions section
REFINING TRIAGE DOCUMENTATION

(74.5%) and adding a checkbox for c-collar application in the chief complaint section (72.3%). Additionally, most respondents were in favor of removing the room precautions section (78.7%) and making the ESI tab a standalone section (50%). However, opinions were more divided on removing the triage data section (56.4%) and rearranging the primary triage documentation tabs (75.5%).

Overall, the survey results indicate strong support for several proposed changes, such as moving the interpreter section and combining related sections, while opinions vary on others, such as rearranging the order of triage documentation tabs. These findings provide valuable guidance for implementing changes to optimize triage documentation and improve efficiency in the ED setting.

Qualitative data obtained from 51 open-ended responses from the second survey provided additional insights into staff perceptions and preferences regarding the proposed changes to the triage documentation. Several recurring themes emerged from the qualitative analysis, echoing and reinforcing the quantitative findings.

One prominent theme was the need for streamlining and simplifying the triage workflow. Many respondents expressed frustration with the current documentation process, citing it as cumbersome and time-consuming. They emphasized the importance of reducing redundant questions and non-essential documentation to improve efficiency and workflow. Additionally, there was a consensus among respondents regarding the importance of prioritizing patient care and safety. Staff members highlighted the significance of capturing critical information accurately and promptly during triage, such as interpreter needs and allergy verification. They
emphasized the need for clear and concise documentation to ensure that essential patient data is readily accessible to healthcare providers.

Overall, the qualitative data provided valuable context and depth to the quantitative findings, reinforcing themes of the need for streamlining, prioritizing patient care, and enhancing efficiency in the triage process. These insights further underscored the importance of implementing changes to optimize triage documentation in the ED setting, aligning with the overarching goal of improving patient outcomes and satisfaction through shorter triage times.

**Discussion**

**Limitations**

Despite the intention to optimize the triage process in the Emergency Department (ED), several limitations hindered the successful implementation of the proposed changes to the ED navigator. Communication delays emerged as a significant obstacle, with complexities in disseminating information and coordinating efforts among various stakeholders within the healthcare system. The intricate nature of hospital hierarchies and bureaucratic structures often led to delays in decision-making and hindered the timely execution of proposed modifications. Furthermore, regulatory requirements imposed stringent guidelines and protocols that necessitated careful consideration and adherence, adding another layer of complexity to the change process. Balancing these regulatory demands with the need for efficiency enhancements posed a considerable challenge, as navigating through regulatory red tape often consumed valuable time and resources.

Additionally, the shared governance methodology for change practices at this facility introduced inherent inefficiencies, as decision-making processes involved multiple layers of
consultation and approval, leading to delays and conflicting priorities. These challenges, coupled with significant time constraints imposed by the dynamic nature of the ED environment, created formidable barriers to the successful implementation of the proposed changes. Despite concerted efforts and the willingness of frontline staff to embrace change, these limitations ultimately constrained the project's ability to enact meaningful improvements to the ED navigator and optimize the triage process. Moving forward, addressing these limitations will be essential in fostering a more conducive environment for change and promoting the successful implementation of future quality improvement initiatives within the ED setting.

Summary

The project embarked on a noble endeavor to optimize the triage process within an urban Emergency Department (ED) setting, with the overarching goal of reducing long wait times and enhancing efficiency in patient care delivery. It commenced with a comprehensive needs assessment, utilizing surveys to gauge staff perceptions and preferences regarding the current triage workflow. The results provided valuable insights, revealing widespread support for streamlining and simplifying the triage documentation, as well as delaying non-essential questions to improve efficiency. Building on these findings, proposed changes to the ED navigator were developed, aiming to relocate certain sections, condense related questions, and remove redundant sections.

However, despite the initial enthusiasm for change and the positive reception from staff, the project encountered numerous challenges throughout its implementation journey. Communication delays emerged as a significant barrier, hindering the dissemination of information and coordination of efforts among stakeholders within the healthcare system.
Additionally, navigating through stringent regulatory requirements proved to be a daunting task, as it necessitated careful consideration and adherence, adding complexity to the change process. The shared governance methodology for change practices introduced inherent inefficiencies, with decision-making processes involving multiple layers of consultation and approval, leading to delays and conflicting priorities.

Despite concerted efforts and the dedication of frontline staff, these limitations ultimately thwarted the project's ability to achieve its intended outcomes. The proposed changes were not successfully implemented within the designated timeframe, and the project fell short of its goal of optimizing the triage process and reducing long wait times in the ED setting. Nevertheless, the project served as a valuable learning experience, offering insights into the complexities of implementing change within a healthcare environment.

Moving forward, several key takeaways emerged from the project. Effective communication, stakeholder engagement, and navigating regulatory requirements are crucial aspects that need to be addressed to drive successful quality improvement initiatives within the healthcare setting. Additionally, the project underscored the importance of flexibility and adaptability in responding to unforeseen challenges and adjusting strategies accordingly. While the project did not achieve its desired outcomes, it laid the groundwork for future endeavors aimed at enhancing patient care delivery and improving outcomes within the ED setting. Through reflection and continuous improvement, valuable lessons learned from this project can inform and guide future initiatives, ultimately leading to meaningful and sustainable improvements in patient care delivery.
Conclusion

In conclusion, while the project encountered significant challenges that impeded the successful implementation of the intended intervention to optimize the triage process within the Emergency Department (ED) setting, valuable insights were gained through the data collected from the second survey. Despite the inability to enact the proposed changes to the ED navigator, the overwhelming support expressed by staff members in favor of the proposed modifications provides compelling evidence for the feasibility and potential effectiveness of the intervention. The survey responses not only validated the need for streamlining and simplifying the triage workflow but also underscored the urgency of addressing inefficiencies to enhance patient care delivery and reduce long wait times in the ED. As such, based on the strong support demonstrated by frontline staff and the compelling evidence gathered from the survey data, it is recommended that the proposed intervention be revisited and considered for implementation within the ED setting. To truly conquer the obstacles ahead and ensure the successful implementation of this intervention, relentless collaboration, active engagement of stakeholders, strategic planning of actions, and diligent post-intervention surveying are crucial steps for progress towards enhancing triage efficiency.
References


Appendix A

Johns Hopkins Evidence-Based Practice Model for Nursing and Healthcare Professionals

Research Evidence Appraisal Tool
Appendix E

<table>
<thead>
<tr>
<th>Does this evidence answer the EBP question?</th>
<th>□ Yes ➔ Continue appraisal</th>
<th>□ No ➔ STOP, do not continue evidence appraisal</th>
</tr>
</thead>
</table>

<table>
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<th>Article Summary Information</th>
<th></th>
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</thead>
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<td>Author(s):</td>
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<td>Number:</td>
<td>Enter text</td>
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<td>Population, size, and setting:</td>
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<tr>
<td>Publication date:</td>
<td>Enter text</td>
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</tbody>
</table>

Complete after appraisal

| Evidence level and quality rating:       | Enter text                  |
| Study findings that help answer the EBP question: | Enter text |

Article Appraisal Workflow
## Evidence Table for Literature Review

**Student Name:** Jack Moody  
**QI Project Name:** Improving Pain Assessment and Reassessment Documentation in Med-Surg Units

<table>
<thead>
<tr>
<th>Journal #</th>
<th>Citation</th>
<th>Evidence Type</th>
<th>Sample, Sample Size, Setting</th>
<th>How Does Article Address Problem?</th>
<th>Quality of Evidence</th>
<th>Other Highlights from Article (consider including limitations &amp; outcomes)</th>
</tr>
</thead>
</table>
| **1**     | Triage knowledge and practice and associated factors among emergency department nurses  
Data collection occurred between February 11, 2021, and April 27, 2021. The study involved the participation of 147 emergency department nurses. All emergency department nurses working at the KFMC during the data collection period were included, while those on leave at the time were excluded.  
The article addresses triage knowledge and practice among Emergency Department (ED) nurses in Saudi Arabia. Through an empirical study, the authors aim to identify associated factors, considering the challenges posed by high patient volumes. The study explores the influence of sociodemographic and organizational factors on triage knowledge and practice, with the ultimate goal of enhancing patient outcomes and healthcare delivery in the Saudi Arabian ED. | Level III | Limitsations of the study involve the reliance on self-reported assessments of triage practice, introducing the possibility of response bias as respondents were aware of the evaluation. Additionally, the study lacked measurements of triage skills and other behavioral factors that could influence actual triage practice. These unmeasured variables may hold substantial implications for the study outcomes. |
| **2**     | Factors contributing to patient safety during triage process in the emergency department: A systematic review  
Sample: 5366 articles  
Size: 11 Articles seven of which were qualitative and 5 which were quantitative  
Setting: ED’s in the United States, Sweden, Iran, Taiwan, Australia, South Korea, and Canada  
The authors identify and examine factors contributing to patient safety during the triage process by narrowing their review down from extensive literature to include 11 pertinent papers for thematic synthesis. The identified factors influencing patient safety in triage encompass aspects of the emergency work environment, such as patient assessment, high workload, frequent interruptions, and staffing. | Level III | Limitations: The review acknowledges limitations, including potential exclusions of important articles due to language and specific inclusion criteria. The focus on records explicitly using certain keywords might overlook relevant literature using different terms. Exclusions of papers on medical errors and the absence of correlational data are also noted. Outcome: the authors emphasize that patient safety in triage is significantly influenced by the attitudes, capabilities, and experiences of triage nurses. They underscore the importance of dedicated and uninterrupted time for nurses to focus on patient care. |
<table>
<thead>
<tr>
<th></th>
<th>Perceptions of the Essential Components of Triage: A Qualitative Study</th>
<th>Qualitative Descriptive Study</th>
<th>Clarified nurses’ perspectives on triage assessments, highlighting that certain questions, such as those regarding risk behaviors, may not be urgent for triage purposes. Distinguished crucial components of triage into ‘Must A’, ‘Must B’ and ‘Actions of Triage,’ emphasizing that hospital-mandated questions were not deemed essential for the triage process</th>
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<tbody>
<tr>
<td></td>
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<td></td>
<td>The study employed focus groups for data collection, and it is important to note that results may be susceptible to influences such as other participants’ views, groupthink, and desirability bias. Participants were recruited from a single health system with a standardized electronic triage assessment and shared protocol.</td>
<td></td>
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<tr>
<td>4</td>
<td>Making more nurses, one minute at a time: an efficiency and quality improvement project in emergency triage</td>
<td>Quasi-experimental study</td>
<td>The authors applied the Manchester Triage System which is a 5-level triage system which implements the philosophies of Lean waste management in order to reducing waste and waits.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Setting: Large inner-city teaching hospital</td>
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<tr>
<td></td>
<td></td>
<td>Manchester Royal Infirmary Emergency department</td>
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<td>5</td>
<td>Time Cost of Standardized Nursing Screens in the Emergency Department</td>
<td>Prospective Observational Study</td>
<td>In the business of healthcare, time equates to money. This article quantifies the cost associated with asking specific questions: Have you received a pneumococcal vaccine? Have you had a tetanus shot within the last five years? What are your allergies? Have you received a flu shot this year? Any recent travel?*</td>
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<td>200 triage assessments observed and recorded</td>
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<td></td>
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<td>Setting: Prescribed</td>
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<tr>
<td>6</td>
<td>Applying Lean: Implementation of a Rapid Triage and Treatment System</td>
<td>Retrospective observational study</td>
<td>Applying Lean principles, researchers overhauled the Emergency Department (ED) process. As part of this redesign, they streamlined the registration protocol to focus solely on essential elements: name, medical record number, armband placement, and consent signature. The remaining registration steps were carried out after t</td>
<td></td>
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<tr>
<td></td>
<td>Marrell, K. L., Offeman, S. R., &amp; Kaufman, M. B. (2011). Applying lean: implementation of a rapid triage and treatment system. The western journal of nursing research, 23(2), 174–189.</td>
<td>Sample size: The analysis encompassed data from 30,981 patients during the six months preceding RTT, and from 33,926 patients during the subsequent study period after RTT</td>
<td></td>
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<tr>
<td></td>
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<td>Setting: Situated just ten miles from downtown Sacramento, this</td>
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</table>

**Level III**

The study employed focus groups for data collection, and it is important to note that results may be susceptible to influences such as other participants’ views, groupthink, and desirability bias. Participants were recruited from a single health system with a standardized electronic triage assessment and shared protocol.

**Level II**

Limitations: only performed at one hospital with a relatively specific triage process that may not be applicable to other triage processes at different emergency departments

Outcomes: With three discrete interventions they achieved a near doubling of triage capacity without any extra investment or reduction in triage quality.

**Level III**

Limitations: The time was measured using a stopwatch, suggesting a potential lack of precision. Additionally, the study was conducted at a single hospital. Further research is necessary to delve into the comprehensive cost analysis.

Outcome: They discovered that these questions consume a considerable amount of time during triage assessments.

**Level III**

Limitations of the study involve the reliance on self-reported assessments of triage practice, potentially introducing bias.

The research did not incorporate measurements of triage skills or consider other behavioral factors that might influence triage practice, potentially affecting the study’s outcomes.
<table>
<thead>
<tr>
<th>7</th>
<th>Strategies to improve the quality of nurse triage in emergency departments: A realist review protocol</th>
<th>Realist review protocol</th>
<th>Sample: members of a research team composed of experts in nurse triage, emergency nursing, emergency medicine and implementation science and quality improvement Size: 12 members of the research team Setting: General Emergency Department triage</th>
<th>The realist review aims to assess what works in triage, for whom and in what specific context when it comes to improvement strategies for triage in emergency departments</th>
<th>Level V</th>
<th>Limitations: The systematic review is very general which limits its results to specific triage issues. The realist review may have difficulty identifying or fully describing mechanisms that generate an outcome Outcomes: The review makes an empirical contribution to the current body of knowledge that is concerned with quality improvement for nursing triage.</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Minimizing ED Waiting Times and Improving Patient Flow and Experience of Care</td>
<td>Pre and post intervention analysis</td>
<td>Data spanning six years, from 2005 to 2011, was collected, with an average annual Emergency Department (ED) census of approximately 30,000 patients. The total number of records included in the analysis is estimated to be around 180,000. Setting: medium sized, urban hospital</td>
<td>Streamlined the initial registration process to its essential components, the revised mini-registration now comprises three questions: name, social security number (or date of birth), and chief complaint. Comprehensive bedside registration took place following assessments by nursing and physicians, patient stabilization, and the initiation of patient care.</td>
<td>Level III</td>
<td>It's crucial to emphasize that rapid triage and mini-registration were not the sole interventions implemented. Outcomes: The Emergency Department's overall length of stay decreased from 204 minutes to 132 minutes, the rate of patients leaving without being seen dropped from 4.1% to 0.9%, and patient satisfaction increased. Limitations: The conclusions drawn from medium-sized urban hospitals may not be generalizable to other emergency departments in different settings or serving diverse populations. The authors acknowledge the presence of the electronic health record (EHR) in the Emergency Department as a potential confounding factor but provide no further details.</td>
</tr>
<tr>
<td>9</td>
<td>Mandatory triage does not identify high acuity patients within recommended time frames</td>
<td>Cross-sectional study</td>
<td>3,932 high acuity walk-in patients to the ED Study was set in a US based, urban, tertiary care hospital</td>
<td>Revealed that fewer than half of high acuity patients underwent triage within the recommended 10 minutes of arrival. While the ESI does not specify a designated time for completing triage, it does offer recommendations on when physicians should initiate patient treatment. Prolonged triage times result in delays in providing necessary care</td>
<td>Level III</td>
<td>Limitations: The study was conducted at a sole tertiary hospital, and it is acknowledged that the triage process might vary from that of other facilities. Outcomes: Compulsory triage might lead to unsafe delays, diverting nursing resources from tasks that could contribute to shorter wait times for care.</td>
</tr>
<tr>
<td>10</td>
<td>The effect of mandatory triage questions on triage processes: A qualitative study approach</td>
<td>Qualitative descriptive study</td>
<td>The study involved a sample size of 78 nurses who responded to the call for participants. From this pool, 35 participants convened in one of two focus group sessions. The study took place at the ENA Emergency Nursing 2022 Conference in Denver, CO, where the participants were recruited.</td>
<td>The objective of this study is to assess the feasibility of patients safely awaiting treatment by optimizing components of the triage assessment process, with the goal of enhancing decision-making and clinical outcomes. To address this issue, a qualitative study was conducted, investigating the essential questions posed during the triage encounter in the emergency department. The research utilized focus groups to gather insights from experienced nurses in ED triage attending the ENA Emergency</td>
<td>Level III</td>
<td>The subjective nature of triage arises from assessments that often depend on individual judgments, introducing variability in how nurses prioritize and evaluate patients. This subjectivity has the potential to impact the accuracy and consistency of triage decisions. Influence of mandated screenings on the triage process, as specific screening questions could potentially impede the prompt assessment of patient stability and the determination of the necessary level of resources. The intricacy of the triage process can influence how triage nurses adjust to the dynamically changing Emergency Department (ED) environment. Juggling patient volume, high-risk situations, and interruptions poses challenges that may affect the efficiency and effectiveness of the triage process.</td>
</tr>
</tbody>
</table>

Appendix C

Project: Statement of Determination and Non-Research Determination Form

Student Name: Jack Moody

Title of Project: Optimization of Triage Documentation in a Large Urban Emergency Department

Brief Description of Project: North American emergency departments have had a longstanding problem of prolonged waiting times. This project is prompted by the desire to decrease waiting times by focusing on the triage documentation workflow process. The aim statement is to improve triage times by 10% by May 2024. The intervention strategy involves conducting pre and post assessments of nurses' perspectives on the current triage workflow. To optimize efficiency, questions deemed "unnecessary" in the triage process will be eliminated, and a more logical order for the remaining questions will be implemented. The overarching goal is to streamline the triage documentation process, thereby reducing overall triage documentation times. The success of the intervention will be measured through tracking and analysis of triage documentation times, both before and after the proposed changes.

To qualify as an Evidence-based Change in Practice Project, rather than a Research Project, the criteria outlined in federal guidelines will be used: [http://answers.hhs.gov/ohrp/categories/1569]

X This project meets the guidelines for an Evidence-based Change in Practice Project as outlined in the Project Checklist (attached). Student may proceed with implementation.

☐ This project involves research with human subjects and must be submitted for IRB approval before project activity can commence.

Comments:
**EVIDENCE-BASED CHANGE OF PRACTICE PROJECT CHECKLIST**

*Instructions: Answer YES or NO to each of the following statements:*

<table>
<thead>
<tr>
<th>Statement</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>The aim of the project is to improve the process or delivery of care with established/accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>The specific aim is to improve performance on a specific service or program and is a part of usual care. ALL participants will receive standard of care.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>The project is <strong>NOT</strong> designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control). The project does <strong>NOT</strong> follow a protocol that overrides clinical decision-making.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does <strong>NOT</strong> develop paradigms or untested methods or new untested standards.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does <strong>NOT</strong> seek to test an intervention that is beyond current science and experience.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP. The project has <strong>NO</strong> funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., <strong>not</strong> a personal research project that is dependent upon the voluntary participation of colleagues, students and/or patients.</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: “This project was undertaken as an Evidence-based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board.”

ANSWER KEY: If the answer to ALL of these items is yes, the project can be considered an Evidence-based activity that does NOT meet the definition of research. IRB review is not required. Keep a copy of this checklist in your files. If the answer to ANY of these questions is NO, you must submit for IRB approval.

*Adapted with permission of Elizabeth L. Hohmann, MD, Director and Chair, Partners Human Research Committee, Partners Health System, Boston, MA.

STUDENT NAME (Please print): Jack A. Moody

___________________________DATE_03/08/24________________

SUPERVISING FACULTY MEMBER NAME (Please print):
Signature of Supervising Faculty Member

_____ Sierra Dias-McEvoy __________________________ DATE: April 28th, 2024 ________
# GANTT CHART

**Department:** Hospital X Emergency Department

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<th>TASK TITLE</th>
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<th>End Date</th>
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<tr>
<td>Project Initiation</td>
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<td>Identify Change Theory</td>
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<td>1/28/2024</td>
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<td>Evaluate the 5 P's</td>
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<td>Develop PICOT Question &amp; AIM Statement</td>
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<td>2/11/2024</td>
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<td>Literature Review</td>
<td>2/22/2024</td>
<td>3/3/2024</td>
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<td>Statement of Determination</td>
<td>3/7/2024</td>
<td>3/8/2024</td>
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<td>Project Planning</td>
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<tr>
<td>Preintervention survey</td>
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<td>2/21/2024</td>
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<td>Meeting with Regulatory Affairs &amp; Department Leadership</td>
<td>2/21/2024</td>
<td>2/21/2024</td>
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<tr>
<td>Project Poster &amp; Create QR Code</td>
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<td>2/23/2024</td>
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<tr>
<td>Collect Preintervention Data</td>
<td>2/23/2024</td>
<td>4/3/2024</td>
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<tr>
<td>Project Implementation</td>
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<tr>
<td>Create Mock Triage Navigator</td>
<td>3/11/24</td>
<td>3/11/2024</td>
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<tr>
<td>Meet with Clinical System Analyst and Department Leadership to finalize changes</td>
<td>4/17/24</td>
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<td>Create Final Triage Navigator</td>
<td>4/17/24</td>
<td>4/26/2024</td>
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<td>Intervention Implementation</td>
<td>TBA</td>
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<td>Project Evaluation</td>
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<td>Postintervention survey</td>
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<td>Data Evaluation</td>
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<td>Final Paper Submission</td>
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<tr>
<td>Project Presentation</td>
<td>4/30/24</td>
<td>4/30/2024</td>
</tr>
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</table>
Appendix E

REFINING TRIAGE DOCUMENTATION

Long Triage Time

Processes
- Triage Nurses - Training/experience
- Varying level of triage training/experience
- Varying order on how triage assessment is conducted

Providers
- Triage Flow Facilitator - Training experience
- Adult ED Patients - Varying levels of acuity and resources needed

People
- Triage Navigator - Repeated questions
- Multiple tabs/clicks for nurses to navigate through
- No set order to conduct triage assessment
- Questions that do not contribute to the triage assessment

Policies
- Hospital X Pharmacy - Requires that allergies be included in the triage assessment
- Civil Rights Act of 1964 - Requires that interpreter services be offered during the triage assessment
- The Joint Commission - Requires screening questions be asked to all ED patients
- Emergency Medical Treatment & Labor Act (EMTALA) - Requires every patient who enters the ED to be examined and treated, leading to high patient volume
- Hospital X Infection Control Department - Requires travel screening

Abbreviations
ED: emergency department
Appendix F

SWOT ANALYSIS

INTERNAL FACTORS

<table>
<thead>
<tr>
<th>STRENGTHS +</th>
<th>WEAKNESSES –</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Financial Resources - low cost</td>
<td></td>
</tr>
<tr>
<td>● Easy to implement</td>
<td></td>
</tr>
<tr>
<td>● Staff is empathetic/open to change: easy to recruit, staff buy-in</td>
<td></td>
</tr>
<tr>
<td>● Improved quality metrics</td>
<td></td>
</tr>
<tr>
<td>● Bureaucracy</td>
<td></td>
</tr>
<tr>
<td>● Time</td>
<td></td>
</tr>
<tr>
<td>● No access to EPIC</td>
<td></td>
</tr>
<tr>
<td>● Inconsistent &amp; unclear expectations</td>
<td></td>
</tr>
<tr>
<td>● Student projects are low priority</td>
<td></td>
</tr>
</tbody>
</table>

EXTERNAL FACTORS

<table>
<thead>
<tr>
<th>OPPORTUNITIES +</th>
<th>THREATS –</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Sets higher standards than current standards “Stanfordize”</td>
<td></td>
</tr>
<tr>
<td>● Highly resource hospital</td>
<td></td>
</tr>
<tr>
<td>● Magnet Hospital</td>
<td></td>
</tr>
<tr>
<td>● Leverage existing resources</td>
<td></td>
</tr>
<tr>
<td>● Bureaucracy</td>
<td></td>
</tr>
<tr>
<td>● Shared Governance</td>
<td></td>
</tr>
<tr>
<td>● No current standardized/recommendations for triage intake from regulatory institutions</td>
<td></td>
</tr>
</tbody>
</table>

Group Members: Monica Reynoso-Prieto, Diego Valencia, Katherine Lau, Sylvia Nhan, Jack Moody
Appendix G

PDSA Cycle

**PLAN**
- Identify the problem with a survey to ED nurses
  - Set objectives to reduce triage times by 10% by April 2024
  - Optimize triage documentation requirements through reorganizing triage tabs

**DO**
- Implement change to triage documentation requirements as per the plan

**ACT**
- Based on the results, decide whether to adopt, adapt, or abandon changes.
- If successful, integrate

**STUDY**
- Collect data on the impact of the changes
- Measure triage times before and after implementation
- Analyze data to see if there's been improvement
### Appendix H

<table>
<thead>
<tr>
<th>Costs</th>
<th>Calculations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Nurse Leader- Hourly</td>
<td>$100 \times 200 \text{ hr} = $20,000</td>
</tr>
<tr>
<td>Senior Clinical Systems Analyst- Hourly</td>
<td>$63 \times 3 \text{ hr} = $189</td>
</tr>
<tr>
<td>Triage Task Force Training</td>
<td>$70 \times 1 \text{ hr} \times 5 \text{ nurses} = $350</td>
</tr>
<tr>
<td>Printing of Flyers</td>
<td>$0.30 \times 30 = $3.00</td>
</tr>
<tr>
<td></td>
<td><strong>Total $20,542</strong></td>
</tr>
</tbody>
</table>
Hi there! We're a group of graduate nursing students from the University of San Francisco working on a quality improvement project in the ED. Our aim is to optimize triage documentation to improve patient throughput. Your responses are essential in improving workflow and future patient outcomes.

Thank you!
USF/Stanford Quality Improvement Project in ED Triage
37 responses

What shift do you work?
37 responses

- Day Shift: 56.8%
- Mid Shift: 29.7%
- Night Shift: 13.5%

How do you feel about the current triage questions?
37 responses

- 1 (0%)
- 2 (5.4%)
- 3 (51.4%)
- 4 (32.4%)
- 5 (10.8%)
How do you feel about the amount of questions in the current triage workflow?
37 responses

Do you feel that delaying non-essential questions would improve the efficiency of triage?
37 responses
### Results Summary

1. **What shift are you?**
   - Days: 44
   - Mids: 7
   - Nights: 43

2. **How long have you worked at Stanford?**
   - Less than one year: 17
   - 1-2 years: 33
   - 2-3 years: 13
   - 3-5 years: 18
   - 5+ years: 11

3. **How long have you been a nurse in the emergency department?**
   - Less than 1 year: 3
   - 1-2 years: 19
   - 2-3 years: 20
   - 3-5 years: 27
   - 5+ years: 23

4. **Are you in favor of moving the interpreter section to be directly after triage start?**
   - Rationale: To establish interpreter needs at the very beginning of triage to facilitate effective communication with patients with a language barrier.
   - Yes: 80
   - No: 2
   - Maybe: 10
   - Other: 2
5. If you chose "other" and would like to elaborate on your response or make a suggestion, comment below.

8 Responses

3 respondents (43%) answered interpreter for this question.

6. Are you in favor of combining the Allergy Band verification question with the allergy section rather than having them as stand-alone sections?

**Rationale:** To condense related sections into one to de-clutter the list.

<table>
<thead>
<tr>
<th>Option</th>
<th>Votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>91</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>Maybe</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
</tr>
</tbody>
</table>

7. If you chose "other" and would like to elaborate on your response or make a suggestion, comment below.

2 Responses

8. Are you in favor of removing the interventions section in the triage tab? This section includes a list of interventions (c-collar application, protocol orders, antipyretics, ice, etc.).

**Rationale:** This section was identified as a source of double charting and doesn’t function to place protocol orders for labs, medication or imaging.

<table>
<thead>
<tr>
<th>Option</th>
<th>Votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>70</td>
</tr>
<tr>
<td>No</td>
<td>19</td>
</tr>
<tr>
<td>Maybe</td>
<td>5</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
</tr>
</tbody>
</table>
9. If you chose “other” and would like to elaborate on your response or make a suggestion, comment below.

10. Are you in favor of adding a check box to the Chief Complaint section asking if a C-collar was Applied instead of having to click to an intervention tab for this?

**Rationale:** Cervical collar needs are typically identified when determining the chief complaint. Having a checkbox within the chief complaint section would serve as a reminder and allow for efficient documentation of this critical intervention, when necessary.

11. If you chose “other” and would like to elaborate on your response or make a suggestion, comment below.

12. Are you in favor of removing the Room Precautions section?

**Rationale:** This section does not place an order from the provider and does not add value to determining an ESI level.

13. If you chose “other” and would like to elaborate on your response or make a suggestion, comment below.

14. Are you in favor of taking the ESI Tab out of the triage plan section and making it a stand-alone section?

**Rationale:** Creating a stand-alone ESI section to be placed at the very end of the section list will serve as a clear end point for triage.
15. If you chose “other” and would like to elaborate on your response or make a suggestion, comment below.

Responses

2

Latest Responses

“Prefer not to have the esu algorithm and rather type esu level. Add another hi...”

16. Are you in favor of removing the Triage Destination selection in the triage plan section and making it a stand alone section at the very end?

Rationale: Creating a stand alone triage destination section at the end of the list is the most logical location as this should be decided after an ESI is assigned.

Responses

6

Latest Responses  

“Move triage destination up because it’s important to click next”

17. If you chose “other” and would like to elaborate on your response or make a suggestion, comment below.

Responses

5

Latest Responses

“Move triage destination up because it’s important to click next”

18. Are you in favor of adding a section, which has not yet been defined, for EKG Documentation, Disaster, and Treatment sections to be placed after the triage end?

Rationale: These sections were identified to be valuable, but not required to be within the primary sections for triage. While seemingly unrelated, placing them in a category together just below the primary triage section list would still allow for easy accessibility when needed.

Responses

6

Latest Responses

“Remove disaster and moving to bottom”
20. Are you in favor removing the Triage data section which includes: Tetanus, Medication Pump, Domestic Abuse, Harm to Others, Treatment PTA, and Suicide Screening?

**Rationale:** This section includes several categories which would be more effectively utilized in sections more appropriately labelled. For example, the Suicide Screening will be its own section. Tx PTA will be in a category with EKG documentation and Disaster. The domestic abuse section will be moved to risk assessment to be asked by the primary nurse as it has no basis in determining an ESI level.

![Pie chart showing responses]

21. If you chose “other” and would like to elaborate on your response or make a suggestion, comment below.

![Form with 10 responses]

22. The new order of the primary triage documentation tabs in the ED Navigator starting at Triage Start would be:

- Triage Start
- Interpreter Needs
- Chief Complaint
- Vitals
- Allergies
- OB/Gyn status
- Critical/Vital screen
- Suicide Screening
- ESI level
- Destination

Are you in favor of this change?

**Rationale:** This list serves as the most logical order of sections that are essential and/or required by law for triage. This would be the default order. You can still customize it in EPIC, if you prefer it ordered differently.

![Pie chart showing responses]
23. If you chose “other” and would like to elaborate on your response or make a suggestion, comment below.

Latest Responses

“Move interpreter down, below EKG.”

11 Responses

More Details

Update

4 respondents (40%) answered sections for this question:

- use of antipyretics
- destination
- separate spot
- strongly suggest
- data selections
- triage start
- Covid symptoms
- interpreter data
- Covid screening
- sections
- triage
- PTA section
- no one has Covid
- tabs in triage
- patient
- ESI triage team
- section with emphasis febrile state