REDUCING PATIENT WAIT TIMES IN THE RURAL EMERGENCY DEPARTMENT

by

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As members of the DNP Project Committee, we certify that we have read the DNP project prepared by Patricia Ann Blosser, titled Reducing Patient Wait Times in the Rural Emergency Department and recommend that it be accepted as fulfilling the DNP project requirement for the Degree of Doctor of Nursing Practice.

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Final approval and acceptance of this DNP project is contingent upon the candidate's submission of the final copies of the DNP project to the Graduate College.

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DEDICATION

This project is dedicated to my daughters, Kim and Lily, who have supported and encouraged me through each step of my nursing journey. May you always be empowered to achieve your dreams.

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ABSTRACT

Purpose: This quality improvement project aims to assess the effectiveness of standing orders to improve patient wait times in a rural emergency department.

Background: Extended emergency department wait times are an ongoing issue, regardless of the size of the hospital or service area population. Long wait times could lead to poorer patient outcomes and can result in patients leaving without seeking the necessary follow-up. Therefore, evaluation of potentially beneficial interventions to reduce wait times is essential to improve this problem.

Methods: The Centers for Disease Control Framework for Evaluation and the Plan-Do-Study-Act implementation models were used to evaluate the efficacy of a standing order policy in a rural hospital. If the standing order policy does reduce patients wait times according to the evaluation of pre- and post-policy implementation data in conjunction with staff feedback, additional standing orders will be implemented to further improve efficiency and throughput.

Results: Overall, patient wait times improved and staff feedback was mostly positive. Although there is still room to improve the number of patients who left without being seen, the project improved communication between medical and nursing as tensions increased during a global pandemic.

Conclusions: Within the given research, there are several barriers to improving patient wait times in the emergency department. Causes for extended wait times include available space for assessment and care, the number of staff, efficiency of flow and allied services, and limited resources. While not all these barriers are easily corrected in a rural hospital, minor evidence-based adjustments can positively impact patient outcomes and overall satisfaction.

INTRODUCTION

As the respiratory infection season approaches, the problem of extensive patient wait times in the emergency department (ED) is a growing concern with crowded lobby areas during the current COVID-19 pandemic. Rural health organizations face challenges in small facilities, such as Sage Memorial Hospital in Ganado, Arizona, where it is burdensome to allow space for social distancing and adequately maintain infection prevention and control measures (Fleet et al., 2020). Additionally, prolonged wait times can negatively impact patient outcomes and contribute to low patient satisfaction (Derlet & Richards, 2000). Patient satisfaction has become increasingly important as competition increases, and federal reimbursements may depend on the patient's satisfaction survey responses post-discharge (Spechbach et al., 2019). Several interventions can improve patient flow in the emergency department, but there is no “one size fits all” approach to quality improvement in this area. Several factors, including patient room size and availability, limited resources, staffing constraints, lack of financial resources, and stakeholder buy-in, all play a role in assessing and implementing interventions to improve patient wait times (Patey et al., 2019).

Background Knowledge and Significance

Patients visiting the emergency department (ED) do so out of either necessity and/or convenience. True emergencies require critical care that only emergency rooms can provide; however, other complaints that could be managed in an outpatient setting are seen in the ED because of limited hours of business and appointment availability in an outpatient clinic (Oberlin et al., 2020). In rural health facilities, this problem is compounded during weekends and evenings when the ED is the only available option to seek medical care, which further prolongs

wait times and potentiates concerns for those patients who leave without being seen (Simpson et al., 2019). Additionally, the increased patient load is hampered by the lack of available space to assess and treat patients. Overcrowded emergency departments are an ongoing nationwide problem, and rural health facilities that serve a smaller population area can quickly become overwhelmed during a pandemic, mainly when there are only eight available beds to see patients (Olshaker, 2009). Additional staff or resources will not change the limited capacity of a critical access emergency department. This barrier is recognized in research, and recommendations have been made to evaluate space and determine how to make use of underutilized areas to improve service times (von Guionneau & Burford, 2019). Additionally, rural health facilities are often challenged by inadequate applicants to staff the necessary emergency department workforce and struggle with recruitment and retention, which further propagates long wait times and frustration for both staff and the patients (Fleet et al., 2020). Prolonged patient wait times have been a problem for some time, and research offers various causes and interventions for improvement.

The available research on patient wait times and proposed interventions provides an adequate baseline to work from when determining how to implement a change locally. The majority of studies reviewed for this proposal include pilot and qualitative reviews that recognize a problem and offer solutions such as additional staffing, reorganization of patient flow, space utilization, and a restructuring of procedures to optimize efficiency.

A pilot study by Amorim et al. (2019) discussed a potential intervention that included triaging patients by using a color-based card system, dividing the patients by acuity, and assigning providers to accommodate these groups as efficiently as possible. While triage competency plays a critical role in the flow of patients, this method is not feasible for all EDs, as

additional providers to allocate for different acuity groups are not necessarily available (Anderson & D'Andrea, 2017). In a prospective case-control study, phone questionnaires completed with parents of pediatrics patients who left the ED without being seen indicated the most common reason for leaving was an excessive wait time (Sousa et al., 2018). There is certainly room for improvement in healthcare for those children whose parents decide to leave due to excessive wait times when there is a critical problem requiring urgent attention from a medical provider.

A qualitative study that explored the effects of wait times on patient responses, including aggressiveness, determined that check-ins by emergency room staff members improved perceptions as patients considered the communication itself as part of their care (Efrat-Treister et al., 2020). Thus, patient communication regarding wait times is an intervention that can be directly implemented and can make a difference in how the patients view their wait time, and in turn, can affect their decision to leave without being seen when urgent care may be necessary (Spechbach et al., 2019).

The outcomes of these studies vary greatly, as well as the perceived root cause and corresponding interventions. A retrospective study discussed performing a root cause analysis on the clinical concern before implementing any interventions (Yuzeng & Hui, 2020). This allows for organizations to determine the appropriate interventions based on causes specific to their emergency department. The implementation of Plan-Do-Study-Act (PDSA) cycles to make minor changes over time, to not disrupt staff and care flows already in place, proved to be successful in improving wait times (Yuzeng & Hui, 2020).

Another intervention reviewed was utilizing nurse practitioners (NPs) and physician's assistants (PAs) in the emergency department (ED) to manage the care of less acute patients; thus, freeing up emergency providers to manage acutely ill and trauma patients (Gonçalves-Bradley et al., 2018). In this study, it was determined that there was insufficient evidence for the practice and safety of primary care providers (PCPs) providing care in the ED to improve wait times (Gonçalves-Bradley et al., 2018); however, further research is likely appropriate. Overall, considerations of space, staffing, and resources must be thoroughly reviewed to correctly assess the problem of patient wait times and implement appropriate interventions. Additional research is needed to determine the causes of wait times in critical access hospitals and rural healthcare facilities and the corresponding interventions (Patey et al., 2019).

According to Chartier et al. (2016), the most effective strategy to improve patient flow and decrease wait times was to improve staff-staff and staff-patient communications. Although it costs time, additional training and education that improved communication could ultimately result in improved patient care and overall satisfaction.

Implementing standing orders could also improve patient wait times by allowing the nursing staff to perform point-of-care testing or other simple nursing interventions prior to provider evaluation. Results from swabs, labs, and additional orders the nurse implements, based on the chief complaint, could be available when the provider was ready to see the patient, which would speed up assessment and disposition. Advanced practice nursing would also be impacted as results from these orders could impact the clinical decision process regarding the patient's level of care. For example, the patient may be seen by an NP versus the ED attending physician or may require admission or transfer based on results of orders carried out in triage. Therefore,

advanced practice registered nurses (APRNs) also play a role in the buy-in and education for clinical staff in the emergency department.

Local Problem

Critical access hospitals on the Navajo Reservation have limited beds and staffing to care for a steady stream of patients from the surrounding communities. Healthcare facilities are spread across many miles of sparsely populated reservation land. For instance, Sage Memorial Hospital, located in Ganado, Arizona, has an eight-bed emergency department; however, they provide emergency coverage to a service area population of over 20,000 people (Sage Memorial Hospital, 2019b). This system can quickly become overwhelmed—especially during a pandemic. Therefore, emergency preparedness planning needs to include measures to ensure that patients are seen safely and efficiently. In this setting, the implementation of standing order sets for nurses to carry out, based on the chief complaint, can significantly impact patient wait times, and in turn, patient outcomes. Currently, nurses and other ancillary staff must have a physician's order to carry out any medical treatment, including point-of-care testing and medication administration. Relevant stakeholders for this quality improvement (QI) initiative include healthcare providers, nurses, administration, and patients. The providers will need to discuss which orders can be carried out by nurses prior to provider evaluation and pass the final policy in the Medical Executive Committee meeting. Nurses need to understand their role in the implementation by reviewing the policy and carrying out orders as appropriate in triage. Administration needs to be comfortable with nurses completing these orders and be supportive of the changes to improve patient care. Patients' buy-in is also required as some patients may feel

uncomfortable having tests performed before seeing the provider. Patients will have to work with emergency department staff to implement this change.

Prolonged patient wait times have been an ongoing problem in the ED for some time. The emergency room nurse supervisor monitors patient wait times, the number of patients who leave without being seen, with comparisons of how long each patient waited before leaving, in addition to other quality improvement initiatives for the department. The staff has monitored the wait times and the number of patients who leave without being seen for over a year, and several ideas have been discussed for improvement. Some interventions have already been implemented, including staffing a nurse practitioner in the urgent care seven days a week during peak hours, but the wait times still exceed four hours for some patients. The hospital also implemented additional nursing and ancillary staff as well as an electronic medical record (EMR) system to mitigate this problem with little noticeable effect on wait times. The implementation of standing orders is the next logical step in improving patient flow through the ED, as other interventions have not significantly improved patient wait times (Retezar et al., 2011).

Intended Improvement

Project Purpose

Excessive wait times for patients in the ED at Sage Memorial Hospital on the Navajo Nation have been an ongoing concern. The purpose of this QI project is to determine if the implementation of standing orders for nurses to carry out point of care testing in triage, based on the patient's chief complaint, is an effective intervention to decrease the wait times.

Project Question

Do standing order sets for triage interventions improve patient wait times compared to patients whose care did not include the use of standing order sets during emergency department visits?

Project Objectives

The purpose of this project is to determine if the implementation of standing order sets for triage interventions in a critical access hospital emergency department on the Navajo Reservation decreases patient wait times.

Objective 1: Evaluate the effect of standing order sets on patient wait times in the emergency department.

Objective 2: Reduce patient wait times.

Objective 3: Decrease the number of patients with the disposition of "left without being seen."

Theoretical Framework

When implementing a new process in a busy emergency department (ED), it is essential to consider an applicable theoretical framework to anticipate potential problems and apply it to aid staff acceptance during the implementation process. The theoretical framework appropriate to guide this implementation is Lewin's change theory, which discusses the stages of change and anticipating resistance to change (McGrath et al., 2020).

Lewin's Change Theory

Lewin's change theory describes change in three stages: unfreezing, implementing the change, and then refreezing (McGrath et al., 2020). For this quality improvement (QI), the

change focuses on improving emergency department wait times by implementing a hospital policy. After successful implementation, the idea is to implement additional hospital-wide standing orders to improve efficiency throughout.

Kurt Lewin's change theory is recognized by many as a cornerstone for implementing change and is applicable in multiple healthcare scenarios (Cummings et al., 2016). First introduced in the 1940s, Lewin's change theory has become a foundational reference for alternate theories regarding the consideration of change (Cummings et al., 2016). Because change is constant in healthcare, based on evidence and quality, the theory remains relevant to the nursing practice (McGrath et al., 2020). The three stages of change, as described by Lewin, are *unfreezing,* which includes recognizing the need for an improvement, *changing* to a new level of behavior, and then *refreezing* by monitoring and evaluating the implemented change (McGrath et al., 2020). The unfreezing stage included introducing the idea of nurses performing standing orders to staff, preparing a standing orders policy, and seeking approval from the Medical Executive Committee and the Policy and Procedure Committee, and then performing staff training and education. The new level of behavior includes the triage nurses implementing the standing orders for point-of-care swabs, based on the chief complaint, and communicating with patients and providers to improve efficiency and decrease patient wait times in the ED. The refreezing stage for this change, which is really the focus of this QI project, includes the evaluation of patient wait times, the number of patients who left without being seen, and improved satisfaction. The project also indicates the appropriateness of implementing additional standing orders in the ED, as well as other departments throughout the critical access hospital. Implementing standing orders for point of care swabs is a pilot

intervention to improve patient wait times, which will lead to additional standing orders to include labs, urine analysis, and other testing, when appropriate.

In order to help the ED struggling with overwhelming workflows and limited resources during a global pandemic, it is necessary for the staff to recognize and understand the need for change. Implementing standing orders based upon the three phases of Lewin's change theory allowed for flexibility and encouraged adaption while minimizing the disruptions to current workflows, as well as the inclusion of the nursing staff in the development of the protocol (Stahley et al., 2020). Introducing the idea for standing orders with a review of the newly approved policy in the monthly ED staff meeting allowed time for the nurses to review and ask questions. Furthermore, it provided nursing and medical staff the opportunity to review data on prolonged patient wait times in the ED and to understand the opportunity to improve patient care and satisfaction.

The unfreezing stage included recognizing the problem by meeting with ED staff and discussing patient wait times, contributing factors, and proposed solutions. The change took place when a policy was written and implemented, allowing nursing staff to collect and process point of care testing, including swabs for influenza, COVID-19, and strep, based on the chief complaint, to improve visit times and bed turnover. The final stage (refreezing) was evidenced by the nursing staff regularly relying on the standing order policy for point-of-care testing in triage, based on the chief complaint. Refreezing also included the evaluation of change by comparing patient wait times and the number of patients who left without being seen post-implementation with the same data prior to policy implementation. The total

timeframe for the program evaluation is one year, as data will be compared from six months prior to the policy implementation and six months after.

Unfreezing:

Discuss extensive patient wait times (contributing factors and proposed solutions)

Decide as a team on an intervention

Submit policy to the Policy and Procedure Committee

Change:

Implement an approved policy for standing orders in triage

Provide training and education to emergency department staff

Begin point of care testing in triage based on the chief complaint

Refreezing:

Continue to monitor patient wait times

Continued assessment and training

Share improvements in data with emergency department staff

Encourage continued problem solving and teamwork

Analyze data to determine success of the program and implement additional standing orders as appropriate through future PDSA cycles

Literature Synthesis

The purpose of this literature synthesis is to discuss the impact of patient wait times in the emergency department (ED) and define the need for interventions that improve this problem to accurately evaluate the standing order program at Sage Memorial Hospital. Current literature supports the intervention of implementing standing order sets for point of care testing in triage to reduce patients' wait times in a rural ED as a prospective solution (Russ et al., 2010). A substantial amount of literature reviews patient wait times and the effects of prolonged wait times on patient outcomes. There is also literature available showing several interventions that have been shown to improve patient wait times, as well as suggestions for future research. Prolonged patient wait times adversely impact rural emergency rooms and their patients (Derlet & Richards, 2000). This QI project offers an assessment of a cost effective and time-efficient intervention and can be implemented with policy updates and staff training (Grant et al., 2020).

Evidence Search

The search for current, 2016-2021, peer-reviewed articles was conducted via the University of Arizona Health Sciences online library. The specific databases searched include PubMed and CINAHL. The following search terms were used in both databases to locate articles specific to this study: patient wait times (2,721), emergency room wait times (238), standing orders (394), and triage order sets (18), and left without being seen (154). For this

literature synthesis, 25 articles were used after filters were applied to limit search results to articles published in English and within the last five years (Appendix H).

Comprehensive Appraisal of Evidence

The literature reviewed provides sufficient evidence of a problem and offers several evidence-based solutions. There is agreement across the identified articles regarding the issue of patient wait times and the impact on patient safety and satisfaction. Interventions such as additional staffing, appropriate utilization of space, staff training, cause analysis, and improved communication are discussed. Although some of these interventions are not feasible for a critical access hospital, there is sufficient evidence to support a triage protocol for nursing orders that improves patient satisfaction, decreases the number of patients who leave without being seen, and reduces the patient's length of stay (Settelmeyer, 2018).

Strengths of Evidence

Throughout the articles reviewed, multiple tools are used to measure success, with one of the primary sources of measurement being surveys or questionnaires. Appropriate wait times versus the anticipated risk or outcome is subjective when patients are interviewed regarding their concerns with extended wait times, and what is considered too long to wait varied significantly in the studies. Studies that included actual wait time measurements corresponding to an intervention versus a patient's perception of the wait time provide more objective findings on wait times and outcomes and are included in this literature review.

One strength of the research is the data showing how prolonged patient wait times adversely affect patient outcomes, ED throughput, and patient satisfaction. In addition, there

is sufficient literature to discuss how patient wait times affect rural hospitals and how excessive wait times negatively impact patients' overall experience.

Another strength in the literature is that multiple studies on various interventions have been implemented to reduce patient wait times. Thus, a facility looking to improve patient flow could implement one or all relevant interventions based on costs, staffing, and logistics.

Weaknesses of Evidence

A weakness in the research reviewed is that very few articles pertain directly to rural or critical access hospitals. While the measurement of wait times and the discussion of implementing interventions is beneficial at urban facilities, studies related to rural healthcare would provide more valuable data. A smaller facility with limited staffing and resources can benefit from studies showing success with similar barriers.

Another weakness in the literature is the lack of information pertaining to ED standing orders. Many of the articles reviewed discuss nursing order sets for vaccine administration in an outpatient setting or for the use of naloxone for drug overdose in an ED. The use of standing orders and the relevance for improving patient wait times in a rural ED can be expanded with QI projects like this one.

Gaps and Limitations

There are several limitations on the information reviewed for this synthesis. Additional research is needed to determine the causes of wait times in critical access hospitals and rural healthcare facilities, as well as the corresponding interventions for improvement. Little research was uncovered regarding the use of standing orders by nursing in the ED to evaluate if the order sets improved patient wait times, bed turnover, and overall patient satisfaction.

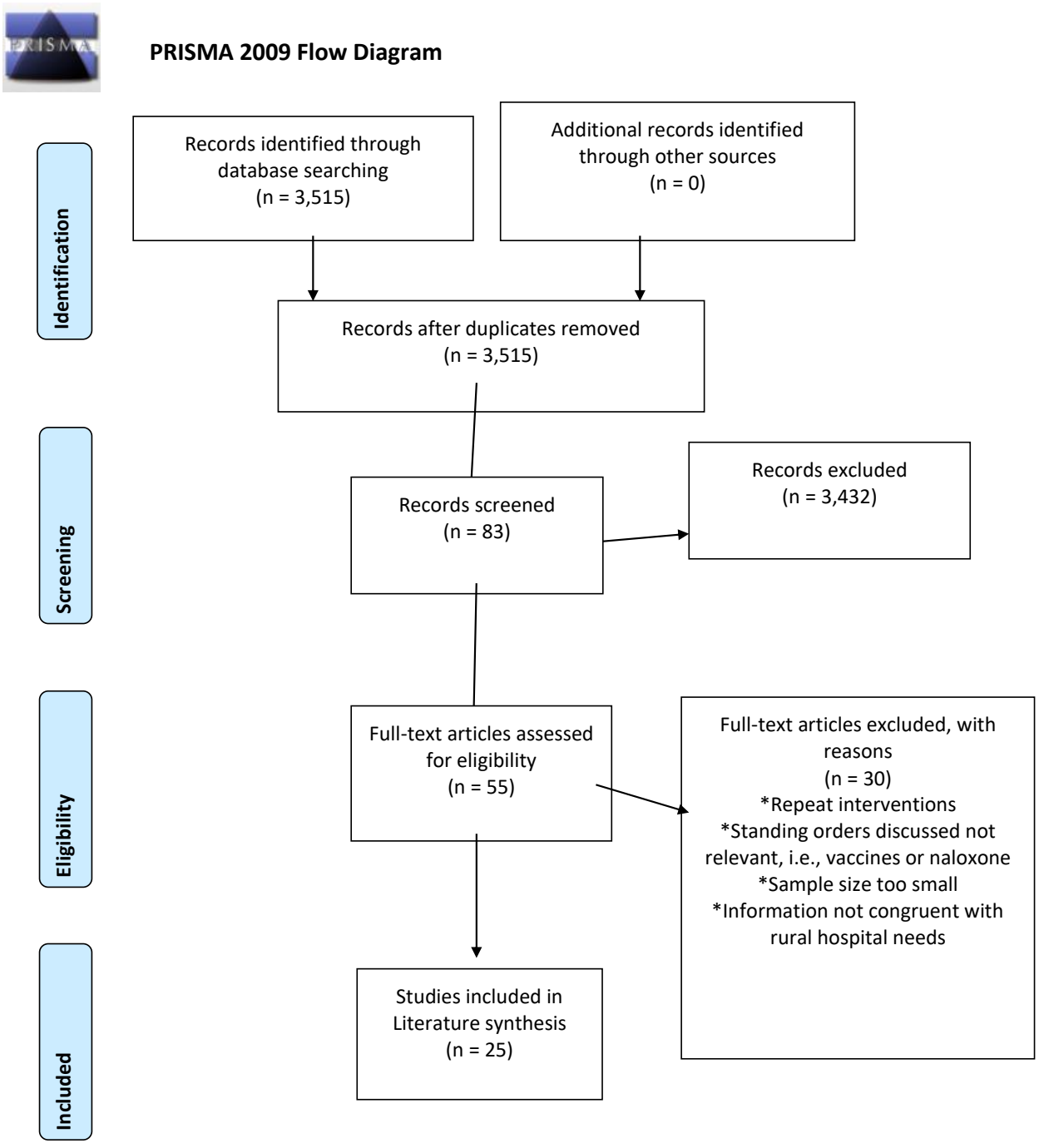
Several studies identified the metric of "left without being seen" as a determining factor for a needed improvement in ED flow; however, many indicate staffing and physician-related interventions rather than nursing. A cross-sectional study reviewed for this synthesis determined that continued evaluation and monitoring of these wait times is necessary as prolonged emergency wait times are a global problem (Ndu et al., 2020).

Conclusion

Overall, there is sufficient evidence to support this QI project. The evidence acknowledges the impact of excessive patient wait times for emergency room patients and discusses the potential adverse outcomes patients will suffer. The literature also discusses the effects of patient wait times on healthcare facilities regarding patient satisfaction, potential revenue impacts, and patient safety measures. In addition, the literature reviews nursing protocols as an intervention to improve emergency department throughput and supports each staff member working to the limits of their scope to improve patient outcomes. The literature further supports the implementation of standing orders in triage to improve patient wait times and decrease the number of patients who leave without being seen.

Figure 1

Literature Flow Chart



METHODS

Project Design

This project is a quality improvement (QI) necessary to improve nursing services in a critical access emergency department (ED). Extensive patient wait times in the eight-bed ED have been an ongoing issue within the facility. Staff have worked diligently to overcome this challenge by optimizing schedules, incorporating additional staffing, and effectively utilizing available workspace; however, there has been little noticeable improvement over time. There have been several internal discussions regarding standardized order sets, and the policy implemented specifically addressed a need during the COVID-19 pandemic that nursing staff hoped would help ED throughput. The policy was created and reviewed by ED staff and approved by the Sage Memorial Hospital Policy and Procedure Committee in October 2020 (Appendix E). The policy allowed nurses to quickly triage and perform point-of-care testing for patients presenting with symptoms of respiratory illness which aligns with the Centers for Disease Control's message regarding rapid recognition and isolation of patients with respiratory symptoms in the wake of the COVID-19 pandemic (Centers for Disease Control, 2021a). The design of the QI project includes comparing patient wait times pre- and post-policy implementation.

Additionally, there is beneficial insight in exploring the chief complaints of those patients who registered to be seen in the emergency department but left prior to being seen by a provider. This information was reviewed and analyzed to better understand the critical need of this and other improvements to decrease wait times and improve efficiency in the ED. Samples of this data were reviewed from each of the quarters over the length of this project to determine the

reason for the visit of patients who left without being seen and analyze patterns that may not have been recognized otherwise. This data may also assist future initiatives to improve ED throughput and quality care.

The population in this community is 93% Native American with most household incomes falling below the poverty line (Data USA, 2018). Sage Memorial Hospital serves Ganado and seven other communities in its rural service area including, Greasewood, Cornfields, Klagetoh, Kinlichee, Wide Ruins, Nazlini, and Steamboat (Sage Memorial Hospital, 2019b). Healthcare competency and medication compliance are low due to a limited number of healthcare providers serving a large population over a sizeable geographical setting, among other reasons. Furthermore, traditional native American beliefs value ceremonial healing over western medicine. Many staff members that work in these rural facilities recognize the issue of limited outpatient providers as a burden on the ED, but facilities lack the resources, funding, and oversight necessary for expansion and improvement (Anderson & D'Andrea, 2017).

Monitoring patient wait times has been an ongoing internal initiative for some time. The ED supervisor monitors the time patients wait as well as the number of patients who leave without being seen and consults with nursing and medical staff regarding potential improvements for this concern. When presented with the idea of standing orders, the initial policy included several orders to be carried out by nurses. However, the medical staff deemed the proposed adjustments excessive when making a change to the workflow of this magnitude. After reviewing these concerns with the Chief Medical Officer, the decision was made to initially implement three standing orders for point of care testing swabs and expand after evaluation of the program.

Model for Implementation

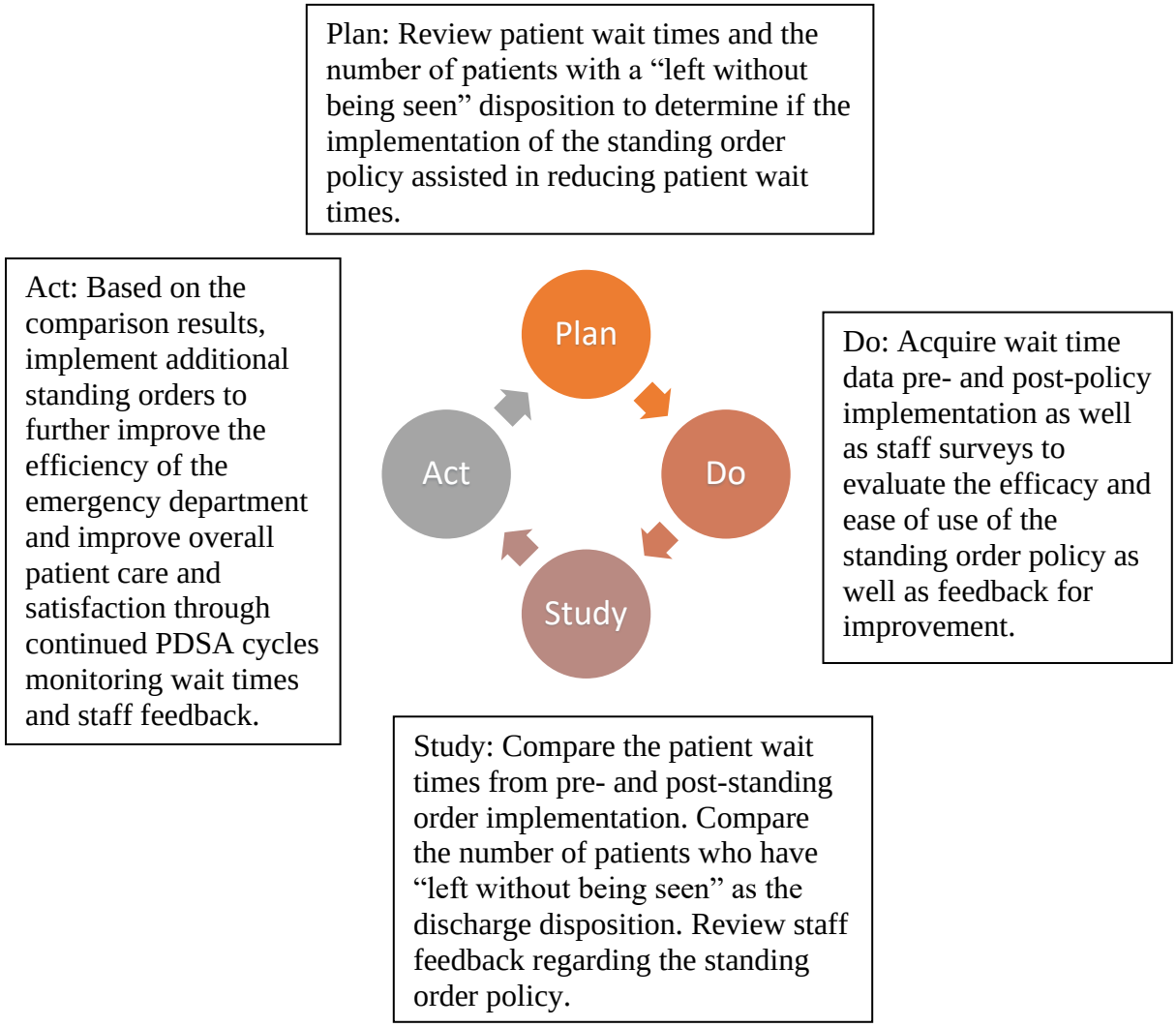
The Plan-Do-Study-Act (PDSA) Cycle model was followed throughout the course of this project. The (Plan) was to evaluate patient wait times after the implementation of a policy that allowed nurses to collect point of care testing swabs for COVID-19, strep, and influenza during triage of the patient's chief complaint, prior to the patient being seen by a provider. The nurses could swab any patients complaining of respiratory illness prior to seeing the provider, which not only allowed for faster isolation of contagious patients, but also added the potential for a quicker diagnosis and disposition by the provider once the patient was roomed. The plan also included evaluating the number of patients with a "left without being seen disposition" and staff feedback via electronic survey to determine the efficacy of the policy to improve patient wait times and staff efficiency.

The (Do) element for this project included data collection of patient wait times, discharge dispositions for patients who leave without being seen, and survey responses from nursing and medical staff regarding the current standing orders and suggestions for revision.

For the (Study) step, patient wait times and the number of patients who left without being seen post-implementation were compared to the same data from the months prior to implementing the policy. The expectation is that the standing orders will improve efficiency and ED throughput, which became even more critical during the global pandemic stemming from the COVID-19 virus. Staff surveys will also be utilized to further gauge improvement in patients wait times and overall efficiency of care in the ED with the use of standing orders (Appendix D). This data is represented in graph form for visual comparison and analysis in the results section.

Figure 2

The Model for Implementation (PDSA)



The (Act) stage of this project took place post-evaluation when success was measured through data analysis and feedback, and additional standing orders and protocols can be put into place. Initial ideas for future standing order sets include a chest pain protocol and conducting urinalysis for complaints of urinary frequency, urgency, and dysuria. Future PDSA cycles can be utilized as the need for additional standing order sets arises.

Additionally, a review was completed for those patients who decided to leave without being seen to further analyze the reason for their visit and the necessary follow up the hospital may need to consider. By reviewing the chief complaints and average wait times of patients who decided to leave without being seen, conclusions can be made about further standing order sets and other ways to maximize efficiency in the emergency department (ED).

CDC Framework for Program Evaluation

The CDC's Framework for Program Evaluation utilizes six steps to ensure the evaluation is inclusive of all stakeholders and offers potential for improvement to existing programs (Centers for Disease Control [CDC], 2017). The six steps for program evaluation include engaging stakeholders, describing the program, focusing the evaluation design, gathering evidence, justifying conclusions, and ensuring application and sustainability (Centers for Disease Control [CDC], 2021b). These steps are incorporated as a model for implementation for the program evaluation as a method for improved clarity and organization.

Figure 3

The Centers for Disease Control and Prevention. Framework for Program Evaluation in Public Health. MMWR 1999;48 (No. RR-11)

Step 1 – Stakeholder Engagement

The primary stakeholders in this quality improvement (QI) project are emergency room providers, nursing staff, patients, and hospital administration. All stakeholders can agree that improving patient wait times and emergency department (ED) bed turnover is a priority to ensure safe and efficient care. There is also an understanding of limited resources, funding, and staffing that further limit potential interventions. Implementing standing orders to improve patient care, ED throughput, and staff and patient satisfaction has long been a shared desire between the hospital stakeholders, but lack of training and buy-in has kept this change unimplemented. A meeting with the ED providers and nursing staff revealed increased concerns surrounding triage times and patient wait times at the start of the COVID-19 pandemic, which provided the appropriate opportunity for nursing leadership to push this long-awaited change.

The nursing and medical staff were encouraged to complete a brief survey via the company email system that compiled results automatically to provide additional feedback regarding the standing order policy, implementation, the effect on patient flow in the emergency room, and proposed additional orders for the next PDSA cycle for this QI project. Stakeholders also recognize previous attempts to improve bed turnover time in the ED, including increasing staff and the purchase of several equipment upgrades such as improved laboratory testing equipment, an electronic health record (EHR), and an updated automated medication dispensing unit. While these endeavors did seem to improve throughput and staff satisfaction, patients wait times remained extensive and in need of measured, sustainable improvement.

Step 2 – Describe the Program

This project includes a policy for standing orders in the ED to be carried out by the triage nurse, based on the chief complaint. This means that patients who complain of respiratory illness symptoms will be swabbed prior to seeing the provider, under a nursing order covered in the policy. The standing orders intend to speed up triage processes and quickly isolate symptomatic patients who have a potential positive or positive result for any of the three rapid swabs (influenza, strep, & COVID-19) covered under the policy. The long-term plan is to implement additional standing order sets that apply to all aspects of an ED visit to optimize care and improve wait times. This QI project intends to evaluate a standing orders guideline that is manageable for training and follow through and can be incrementally increased based on success (i.e., improved wait times, staff response, & increased patient satisfaction).

Step 3 – Focus the Evaluation

The specific elements of the project to be evaluated are patient wait times and the number of patients who leave without being seen. These elements have previously been measured as an internal QI initiative within the nursing department. The previously mentioned interventions for improvement have not significantly impacted patient wait times according to the data collected, as evidenced by the results of an internal quality review indicating average wait times of four to six hours for patients with the disposition of “left without being seen.” The policy implementation is to create a system change that affects the patient's time spent in the ED from the time of triage to the time of discharge.

The evaluation was completed by comparing data on patients’ wait times and the number of patients who left without being seen pre- and post-policy implementation to determine if there

is a sustainable improvement. The timeframe for data measurements will be two quarters before the standing orders policy implementation and two quarters after, or six months pre- and post-implementation. The initiative will be considered successful if the program does improve wait times with the use of standing orders and would propagate the initiation of additional standing orders. Because there are several external factors that can affect patient wait times, including weather, overall acuity of patients waiting to be seen, staffing, and pandemic concerns, an electronic staff survey was also used to gauge the success of the standing order policy at reducing wait times and increasing efficiency in the ED. Additionally, the chief complaints listed for patients who are triaged and leave without being seen were reviewed to determine if there are similarities or other improvements that could benefit patients by reducing wait times by maximizing ED efficiency.

Step 4 – Gather Evidence

Evidence utilized in the QI project is described in the literature synthesis. There is a vast amount of research covering patient wait times, the impact of wait times on patient outcomes, and interventions to improve wait times. Much of the evidence describes determining the cause of prolonged wait times in the ED to apply accurate interventions for improvement. The literature also discusses improving efficiency in a multidisciplinary approach, including staffing improvements or additions, maximizing space, utilizing automated equipment to increase throughput, and developing procedural changes to meet the goals outlined in an improvement project. The evidence discussed using standardized order sets as a means to improve efficiency and increase throughput, among other interventions that may or may not be successful in a rural ED.

Step 5 – Justify Conclusions

Conclusions regarding the efficacy were evaluated by comparing data covering patient wait times and the number of patients who left without being seen. This data analysis allowed nursing staff not only to determine if the standing order sets improved ED throughout, but also to brainstorm possible causes for continued delays in patient care. The expectation is that standing orders allow the nursing staff to work to the full extent of their license while still under the watchful eye of the attending provider, which maximizes efficiency. Moreover, discussions with nursing and medical staff will provide valuable information outside just the numbers, as other barriers can adversely impact the wait times. This feedback was also documented in the form of electronic surveys, where stakeholders will have the opportunity to provide feedback and share ideas for the next PDSA cycle. If the overall feedback from the ED staff is positive, in conjunction with improved wait times, the conclusion will remain that the program was successful in improving patient wait times. A successful conclusion will lead to the expansion of standing order sets with the approval of the Medical Executive and Policy and Procedure Committee. Additionally, the chief complaints of patients who leave without being seen were analyzed to determine if standing order sets or other interventions could further improve patient care and throughput.

Step 6 – Ensure Use and Lessons Learned

To ensure continued use of the standing order sets and an ongoing QI, the standing order policy is included in the nursing orientation packet for review and competency by each new nurse prior to the end of their probationary period. In addition, as the standing order sets increase, they will be stored in a binder in the triage room, organized by chief complaint, for the

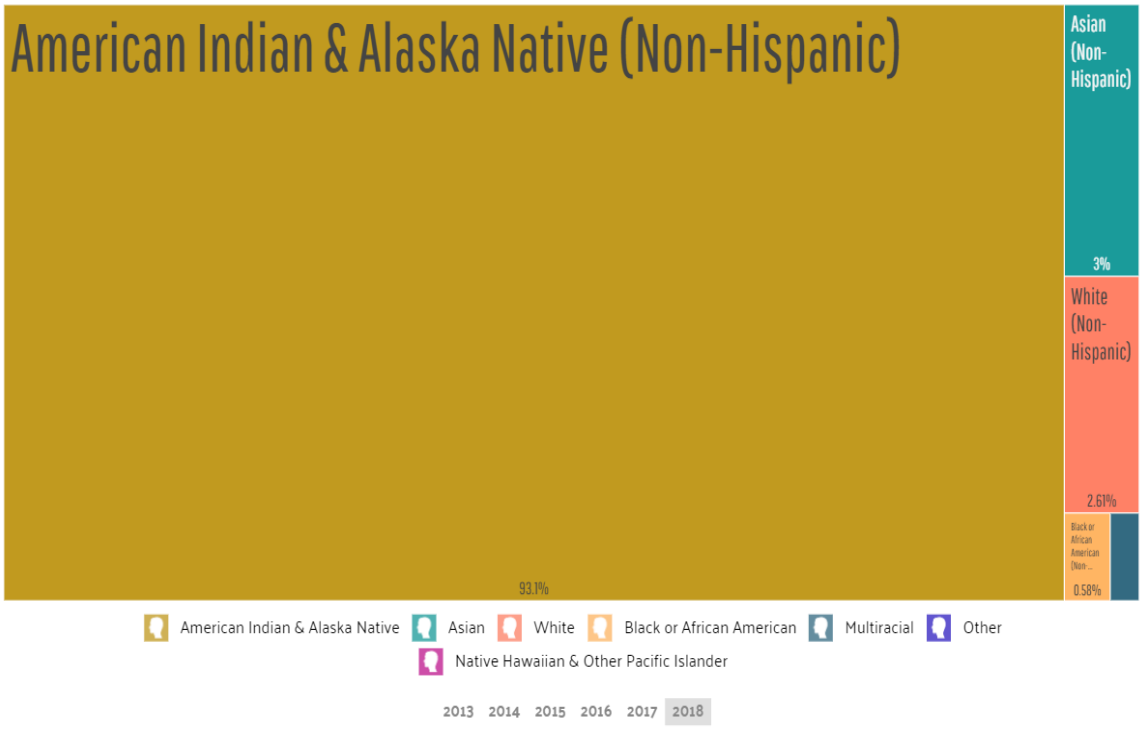
nursing staff to reference as needed. This will improve compliance with the completion of triage nursing orders and contribute to sustained improvements in the rural emergency room for patients' wait times.

Setting and Stakeholders

This QI project took place in northern Arizona on the Navajo Reservation. Sage Memorial Hospital is a 25-bed critical access hospital located in Ganado, Arizona, and has been providing services in this small tribal community for over 100 years. The hospital service area includes a population of 20,000 people comprised mostly of Native Americans (Sage Memorial Hospital, 2019a). The hospital employs nearly 300 staff members, with approximately 20 ED staff members.

Figure 4

Race and Ethnicity - Ganado, AZ



The emergency department (ED) nurses hold a high stake in this project, as the policy and change in workflow directly affects their day-to-day operations. The improvement highly depended on their buy-in and follow through with the fulfillment of standing orders, as well as necessary communication with the provider. The nursing staff helped determine ways to improve bed turnover in the ED, including implementing standing orders. Buy-in was sought by encouraging the simplification of triage, bed placement, treatment, final disposition, and discharge. The nurses' role in the project was to ensure the standing order policy has the review, edits, and approval from the nursing staff and complete point-of-care swabs as appropriate in triage to improve patient wait times. The nurse was also tasked with prompt communication with the providers regarding the point of care testing results.

The ED providers were also stakeholders in this project. The benefits of the policy for medical staff included improved patient satisfaction and decreased wait times, as well as the potential for improved patient outcomes and reduced liability. The providers also reviewed the policy for standing orders and discussed edits prior to the medical staff's approval. The providers wanted to ensure that swabs were completed by trained nursing staff based on the current standard of care, minimizing concerns regarding false billing, and unnecessary testing.

Hospital administration staff were also identified as stakeholders as they must consider financial implications, increased patient satisfaction, and decreased patient wait times. All policies drafted for the hospital must be submitted to the hospital's Policy and Procedure Committee for approval, with administration having the final authority on any additional edits. Governing board members attend the Policy and Procedure Committee meetings on a rotating basis, which provides additional leadership input and evaluation for procedural changes.

Ultimately, patients visiting the emergency room were essential stakeholders in this QI project. The policy was created and implemented to improve the patient experience and maximize patient outcomes at Sage Memorial Hospital. Improved patient wait times were an indicator of success during evaluation. The nursing department places a heavy emphasis on high-level, quality care and strives to be the healthcare provider of choice for all community members. It is a priority for all staff members to improve patient care, and each QI project initiated is done with a focus on optimizing the services we provide, as well as improving the care we provide our patients. This QI project assessed the optimization of ED throughput by comparing wait times for patients before and after the standing order policy implementation to determine if an improvement was seen with the utilization of standing order sets in triage.

Planning the Intervention

The intervention was to evaluate patient wait times from two quarters prior to and two quarters after the standing order policy implementation to determine if the standing orders did improve ED throughput for a comprehensive data analysis that covers a one-year period. In addition, the number of patients who left without being seen was also evaluated during the same period to determine if improvement was seen in that area. Finally, feedback was requested from ED staff regarding the policy's success and the pros and cons of implementing additional standing orders as part of the evaluation process via electronic survey. This data review supplied the necessary information to determine if additional standing orders are appropriate and will drive further additions to the standing order sets utilized in the rural ED.

Participants and Recruitment

Although patients are not recruited due to the nature of this QI project, considerations for patients of all ages and backgrounds were discussed during the planning stage for the improvement. Nurses with questions regarding patient status or point-of-care testing were encouraged to consult with the attending provider for clarification. The nursing staff attends annual in-service training with the laboratory director to review nasopharyngeal and oropharyngeal swab collection. All patients seen in the ED are included in the data collection for the internal quality initiative reports covering patient wait times and the number of patients who leave without being seen. No identifying patient information is gathered or reported in the quality council data. There were no demographic factors such as age or ethnicity to exclude patients from this data, pre- or post-policy update, as the concern was how long each patient waited to be seen, no matter the reason for the visit.

Consent and Ethical Considerations

Confidentiality and privacy were maintained throughout the policy implementation and data review. The policy for standing orders in the ED was implemented last year in response to the COVID-19 pandemic. This project aimed to evaluate the success of the implemented policy rather than perform human research. Institutional Review Board (IRB) determination of human subjects was submitted for this QI project to ensure the data review is ethical and appropriate, and it was determined that IRB review was not required (Appendix A). Vulnerable populations were not adversely affected by this QI project as the policy is applied to all patients equally, regardless of age, sex, ethnicity, or gender.

Timeline

The timeline for this QI project consisted of proposed dates for review of data and analysis. The plan was to review patient wait times and the number of patients who left without being seen for two quarters before the standing order policy implementation, and two quarters after, to analyze the effects on patient wait time. Thus, the total time span for the data was one year from April of 2020 to April of 2021, and the organization and analysis took approximately three months once the IRB determination was received. Staff feedback was also a vital aspect of the evaluation, as other factors could affect patient wait time, including changes in acuity and volume of patients due to the pandemic. Post analysis, the final step of this project was to propose additional standing orders—pending data and staff feedback that prove the standing orders to be beneficial. Additional standing orders will be implemented incrementally based on staff feedback, education and training, and patient experience in continuous PDSA cycles. The timeline for the project was also dependent on DNP committee approval and hospital administration at Sage Memorial Hospital (Appendix F)

Data Collection

The data collection for this QI project was extracted from the ED logbooks, which serve as a hard copy, handwritten register of all patients seen, location of the home, time of triage, time to room, diagnosis, and disposition. This process was necessary as the EHR was implemented in November of 2020 and may have led to inaccurate date during the build and testing time periods. Another data point that was reviewed is how long patients who left without being seen waited before deciding to leave. The data is presented in bar graphs for comparison and analysis in the results section. The data is organized by quarter, and the goal was to measure two quarters prior

to implementation of the standing order policy and two quarters after to demonstrate a fair distribution of data.

Feedback was also collected from ED staff to help gauge the success of the policy implementation and its effect on patient wait times. Emergency room (ER) nursing and medical staff were sent an electronic survey via the hospital email system to document feedback and provide suggestions for the next PDSA cycle after an IRB determination was received. This data was fundamental to evaluate improvements as wait times alone will be affected by multiple other elements, including the current state of the pandemic, ED staffing, new hires, patient acuity, a newly implemented EMR, and even community events.

Data Analysis

A comparison of quarterly reports from pre-implementation and post-implementation was reviewed to determine if the standing orders were, in fact, beneficial to the emergency department in terms of improving patient wait times and decreasing the number of patients who left without being seen. An overall improvement in the data for patient wait times and a decrease in the number of patients who leave without being seen during this program evaluation indicates success. Improved patient wait times in the analysis would indicate the opportunity to implement additional standing orders to further enhance improvement in patient wait times and ED efficiency. This data is displayed visually with bar graphs to effectively show any change in patient wait times in the results and discussion sections. The data analyzed from the staff surveys was reviewed and organized in the results portion, as well. Graphs and comments are discussed along with a policy revision that includes the next standing order protocol decided on by the ED

staff for implementation as part of the second PDSA cycle. Suggestions and feedback provided by the staff survey will be considered throughout future cycles for continued improvement.

Another measure that provided valuable feedback for further PDSA cycles and standing order updates involved reviewing the ED logbooks for the chief complaints of those patient who decided to leave without being seen. This information provided a better idea of the acuity and needs of patients who were leaving without being evaluated by a provider and initiated discussion of a potential process for follow-up. If patients are leaving after waiting too long for non-emergent care needs, a system could be implemented to call these patients and assist them to schedule a visit with a provider in our outpatient clinic. This data was reviewed and organized in the discussion and included in the final analysis of the QI project. The data was also shared with medical staff and hospital administration to determine if additional improvements can be implemented.

RESULTS

This DNP project was a quality improvement (QI) project to improve patient wait times in the rural emergency department (ED). The plan for the data analysis portion of the project was to collect the data for the measures as discussed in my DNP project proposal. This includes the number of patients who left without being seen, how long those patients waited on average prior to leaving, and the reason for their visit to determine the acuity of the patients who leave without being seen. This data for patient wait times and average wait times is organized in bar graphs to easily identify changes prior to, and after, the policy implementation. The data regarding the chief complaints of patients who left without being seen, as shown in Figure 7, is for informational purposes and does not affect the outcome of the QI initiative, although it may drive

decision making in future PDSA cycles. Also included are responses from staff surveys, which were administered anonymously through the facility online email system, to better understand staff feedback and recommendations for ongoing updates to the standing orders policy.

The main analysis includes comparing patient wait times and ED throughput for six months prior to the implementation of the standing orders policy, and for six months after, to determine if there is an obvious improvement in patient wait times with the standing orders in place. Because there are several other factors that influence patient wait times, especially during a global pandemic, the staff surveys helped to gauge the effectiveness of the standing orders and provide additional suggestions for improvement and future PDSA cycles through staff feedback.

Although the number of patients who left without being seen continues to fluctuate, overall patient wait times improved and staff survey responses were positive. As indicated in the graph for average wait times, wait time showed a significant decrease post-standing order policy implementation. Some 1.69% of all ED patients left without being seen prior to this policy implementation while only 1.05% of patients left without being seen after. Additionally, 28% of patients who left without being seen waited longer than three hours prior to the standing order policy while only 12% of patients who left without being seen waited more than three hours after the policy implementation.

Outcomes

This QI project involved a policy change applied to all patients who visited the ED after implementation. The policy was implemented to improve wait times, but also to assist in infection prevention and control efforts during a global pandemic. The patient demographic for this project included all visitors to the ED at Sage Memorial Hospital, pre- and post-policy

implementation. The policy was implemented in October 2020, while data aggregation and analysis took place in September 2021, to determine if there was improvement in patient wait times after the policy for standing orders was in place. The following tables represent that data collected the ED hard copy register of patient wait times in the logbooks.

The first graph (Table 1) shows total ED visits in blue with the number of patients who left without being seen in orange. The grey line in the graph demonstrates the percentage of ED patients who left without being seen which peaks in October-November 2020. According to this data, the percentage of patients who left the ED without being seen trends downward after the standing order policy implementation but begins climbing again in April of 2021. There are several reasons the upward tick could occur which is further explored through staff surveys and the analysis of the reason for the visit for those patients who left the ED without being seen by a provider. A data table is also included (Table 1) for a clear illustration of the data collected regarding the number of patients registered to be seen in the ED, the number of those patients who left without being seen by a provider, and the calculates percentage for clarity.

Additionally, data was collected to assess the average wait time for patients who left without being seen. This contributes to the QI initiative by evaluating how long patients who visited the ED waited, on average, prior to deciding to leave without being seen by a provider. The graph demonstrates that in the first and second quarters of 2021, after the standing order policy implementation, that patient wait times had decreased, although it did not significantly impact the number of patients who decided to leave without being seen. The trend lines for the number of hours patients waited to be seen depict longer wait times prior to the policy implementation.

The data from staff surveys is depicted in a spreadsheet (Figure 5) that is generated by the survey tool in the hospital email system. The surveys were anonymous and sent to ER nurses and physicians to provide the opportunity to give feedback, concerns, and suggestions for future PDSA cycles related to this QI project. Although the data for the number of patients who left without being seen might seem insignificant, the staff feedback demonstrates that the standing order policy was helpful in optimizing efficiency in the ED and improved workflows for staff. Based on the feedback, the next revision for this policy will include standing orders for a substance abuse protocol. For the next PSDA cycle, the medical and nursing staff will meet and formulate the proposed substance abuse protocol for standing orders. Upon completion, the policy update will be sent to the hospital's Medical Executive Committee and then, finally, the Policy and Procedure Committee for final review and approval.

In total, 11 surveys were returned from ED medical and nursing staff. The consensus was that the standing order policy did improve efficiency and ED wait times. One provider mentioned that they don't support the use of standing orders by nursing and that tests should only be ordered by the physician. Providers and nursing both commented that additional standing orders would be helpful and that changes in census related to COVID made it difficult to ascertain if the standing orders truly benefitted the ED by decreasing wait times and decreasing the number of patients who left without being seen. Furthermore, the survey responses indicate a majority requesting for a substance abuse protocol to be added to the standing order policy, which make sense when compared to the sampling of chief complaints for patients who left without being seen. A sample of 10 complaints per quarter was randomly collected from the ER logbooks and reviewed to determine any patterns or commonalities. One of the main chief

complaints for patients who left without being seen by a provider was alcohol intoxication. This finding coincides with the staff survey feedback requesting for a substance abuse protocol to be added to the standing order policy for the next PDSA cycle.

Lastly, a review was completed to determine the chief complaint or the reason for the visit of those patients who left without being seen by an ED provider. This data provides insight into the acuity of patients who leave without being seen and the need for an improved follow up process for these patients. It was determined that many of the patients presenting to the ED had complaints that could be managed on an outpatient basis and that the ER staff could implement a process for follow up by proving patient information to the outpatient clinic staff for a return visit phone call attempt. While additional improvements are needed in the optimization of care in the rural ED at Sage Memorial Hospital, this QI project did lead to additional insight into the needs of patients who seek care after hours in the ED, particularly for urgent complaints rather than nonemergent. This data will continue to be reviewed through PDSA cycles to determine the need for additional interventions including potential changes to outpatient clinic hours, telehealth options, and the use of an NP for afterhours care during peak times, all of which can further contribute to improvement in patient outcomes.

The objectives of this QI project were to evaluate the effect of standing order sets on patient wait times, improve patient wait times by implementing an evidence-based intervention, and to reduce the number of patients who left without being seen. The evaluation of the standing order set on patient wait times is demonstrated by evaluating average wait times patients experienced prior to deciding to leave without being seen, where improvement is noted post-policy implementation. Although there was not the significant improvement demonstrated by the

percentage of patients who left without being seen post policy implementation which the principal investigator (PI) would have hoped for, the data trended in the right direction and outside barriers to success must be considered. These barriers included staff turnover, unpredictable pandemic concerns, patient census and acuity of needs, as well as conflicting provider stances regarding the recommendations for testing of viral illness and concerns for antibiotic misuse.

During the COVID-19 pandemic, the CDC recommended to test for multiple viral illnesses for patients presenting with respiratory symptoms, using point of care testing to ensure all bases were covered in the diagnosis and isolation needs during an unprecedented global crisis (Centers for Disease Control, 2021a). Throughout the course of this QI initiative, a few Sage Memorial Hospital ED physicians expressed concerns regarding overuse of point-of-care testing and raised concerns related to the facility antibiotic stewardship program and the potential for overprescribing of medications for viral illnesses, particularly related to strep throat. The concerns will be discussed with the Medical Executive Committee in future PDSA cycles to ensure that the standing order policy for strep testing matches current best practice guidelines for the point-of-care testing of patients presenting with symptoms of pharyngitis.

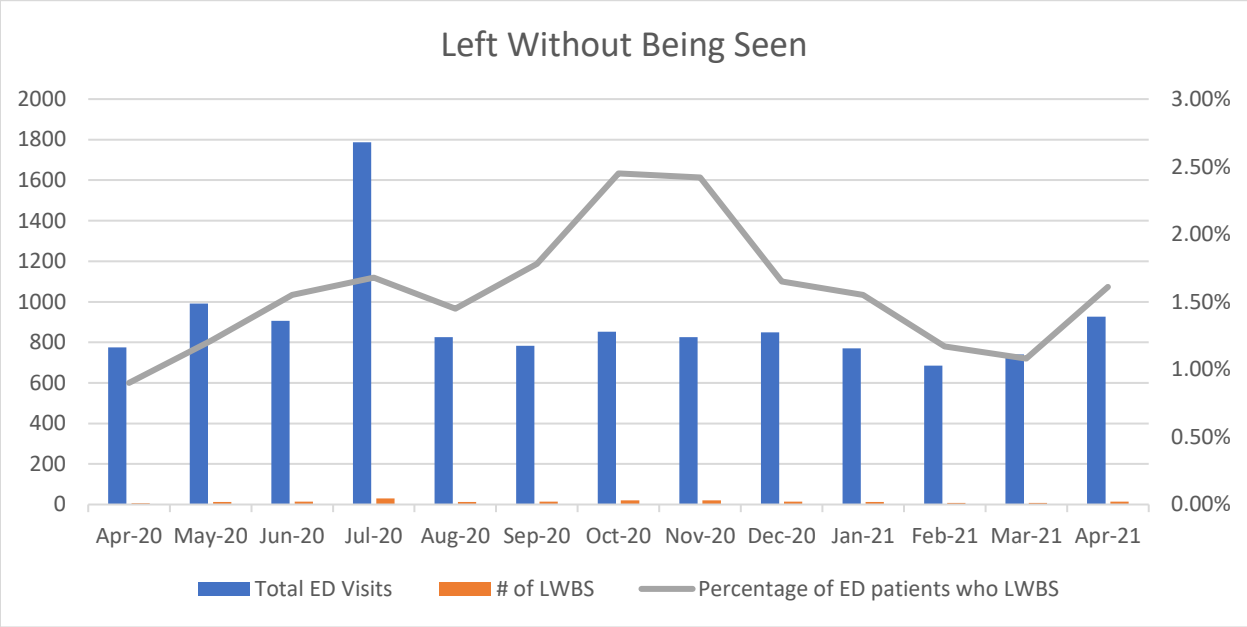
One problem encountered throughout the course of this QI project was conflicting information between current, pandemic related recommendations, and the usual practice guidelines followed by ED nursing and medical staff. The implementation of the standing order policy was welcomed by nursing staff, and most medical staff, although there were some suggestions for improvement made during the project. Additionally, frequent staff turnover

related to the pandemic nursing shortages, effected staff knowledge, and understanding of the policy which may have affected the execution and wait times documented.

Finally, the facility underwent electronic medical record (EMR) implementation which started with the build during the height of the pandemic, with a go live date of the software on November 1, 2020. Learning a new charting system, when many of the long-time staff had only utilized our paper charting previously, was a challenge, not to mention the effect of the demand for COVID-19 testing and increased patient acuity experienced during this timeframe. Not only was the ED staff learning a new documentation system, but they were also helping to build and edit the EMR system post 'go live,' which meant they were dealing with several delays while our information technology team worked to fix kinks in the system. All these contextual elements certainly contributed to the outcomes of this QI project which is why comparing hard data alone isn't enough to evaluate the success of the standing order policy. As key stakeholders, the staff remain a prime source of feedback and continued strength for improvement in the delivery of care in the rural health ED so their feedback regarding the policy and future PDSA cycles is critical.

Table 1

Left Without Being Seen April 2020 to April 2021



	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21
Total ED Visits	775	991	906	1787	826	783	853	826	849	771	685	740	926
# of LWBS	7	12	14	30	12	14	21	20	14	12	8	8	15
Percentage of ED patients who LWBS	0.90%	1.21%	1.55%	1.68%	1.45%	1.78%	2.45%	2.42%	1.65%	1.55%	1.17%	1.08%	1.61%

Table 2

Average Wait Time in Hours for LWBS

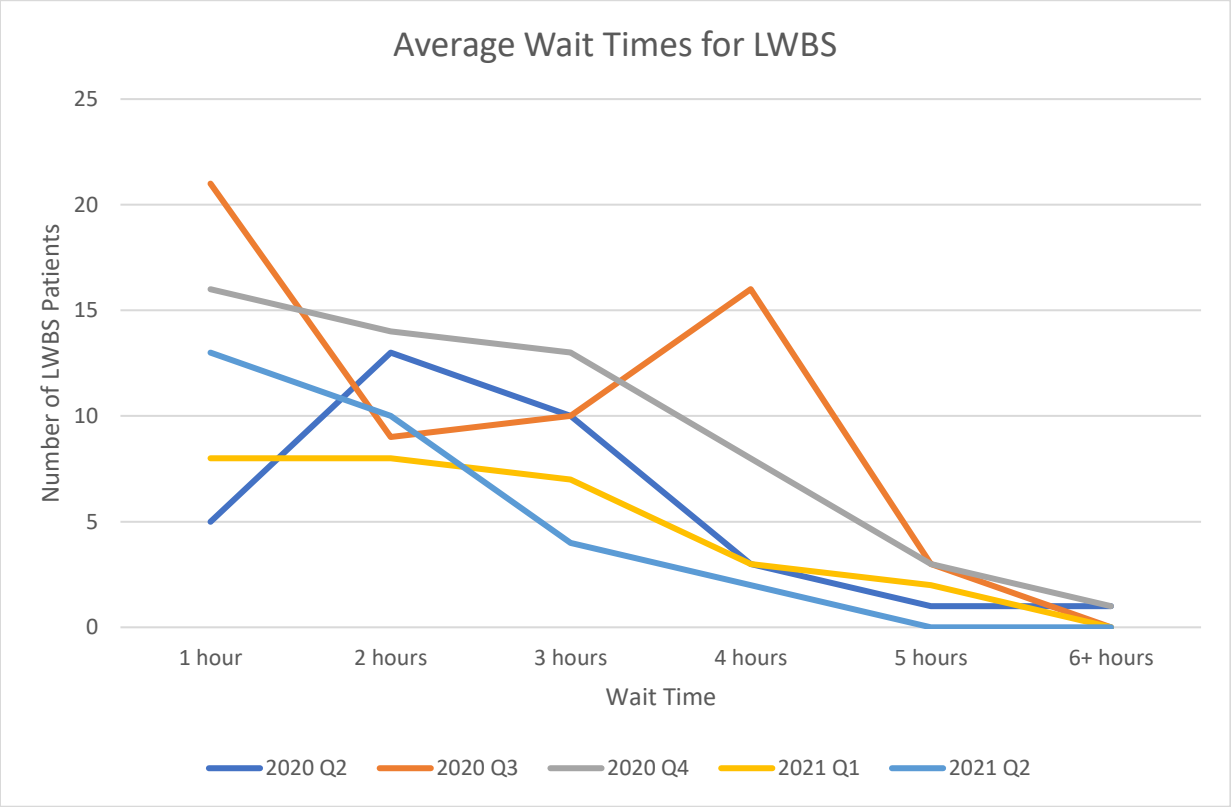


Figure 5

Staff Survey Results

ID	Email	What is your role in the emergency department	How many years of emergency department experience do you have?	Have you ever utilized standing order sets before?	In your opinion, do standing orders improve what times and efficiency in the emergency department?	Has the standing order policy assisted to triage patients more efficiently and complete necessary swabs prior to provider-patient interaction?	Have you noticed an improvement in our patient wait times or ED efficiency due to the standing order policy?	Were there any challenges with the policy or completing the swabs? If so, please share:	Did you receive any feedback from patients regarding changes in wait times: If so, please share:	Is there anything that could be added to the standing order policy that would improve triage, patient wait times, or ED through put?	Which standing orders would be most helpful?
1	anonymous	Registered Nurse	3-5 years	Yes	Yes	Yes	Yes	Providers sometimes didn't want strep swabs prior to assessment	No	No	ETOH/Substance abuse protocol
2	anonymous	Registered Nurse	More than 10 years	Yes	Yes	Yes	Yes		Yes, some of my patients expect to wait for hours to complete the test. But mostly test finished within 30-45 mins span.	Chest pain protocol. Every adult patient should have their ECG done within 10 mins of arriving in ER (Door to ECG). It is well tested that help suspected patient with suspected myocardial injury increase their survival rate.	Chest pain protocol
3	anonymous	Provider	More than 10 years	Yes	No	No	No	Having nurses perform rapid strep tests on patients is bad practice. I frequently see them perform strep tests on infants and children younger than three and patients who's symptoms suggest viral infection. This practice leads to inappropriate antibiotic use and unnecessary expenses.	None. Providers should be consulted prior to performing tests. This testing regime has no benefit for patients and does have potential for harm.		None

Figure 5 – *Continued*

ID	Email	What is your role in the emergency department	How many years of emergency department experience do you have?	Have you ever utilized standing order sets before?	In your opinion, do standing orders improve what times and efficiency in the emergency department?	Has the standing order policy assisted to triage patients more efficiently and complete necessary swabs prior to provider-patient interaction?	Have you noticed an improvement in our patient wait times or ED efficiency due to the standing order policy?	Were there any challenges with the policy or completing the swabs? If so, please share:	Did you receive any feedback from patients regarding changes in wait times: If so, please share:	Is there anything that could be added to the standing order policy that would improve triage, patient wait times, or ED through put?	Which standing orders would be most helpful?
4	anonymous	Registered Nurse	0-2 years	No	Yes	Yes	Yes	Patients are LWBS after receiving COVID swab result but prior to receiving discharge instructions	Patients are inpatient for coronavirus result	No	ETOH/Substance abuse protocol
5	anonymous	Registered Nurse	5-10 years	Yes	Yes	Yes	Yes	No	The patient appreciates faster COVID rapid testing result.	No	ETOH/Substance abuse protocol
6	anonymous	Registered Nurse	More than 10 years	Yes	Yes	Yes	Yes	The orders are different for rapid and send out swabs.	No	More standing orders.	Chest pain protocol
7	anonymous	Provider	More than 10 years	Yes	Yes	Yes	Yes	If COVID-19 rapid test is positive, the patient must be evaluated by a provider whereas negative patients can be discharged by the nurse.	Yes, they like our 24/7 rapid testing availability.	No	ETOH/Substance abuse protocol
8	anonymous	Provider	5-10 years	Yes	Yes	No	No	None	Additional standard orders need to be implemented to notice a real difference.		Dysuria protocol
9	anonymous	Registered Nurse	0-2 years	Yes	Yes	Yes	Yes				ETOH/Substance abuse protocol
10	anonymous	Registered Nurse	0-2 years	No	Yes	Yes	Yes	No	Patients appreciate ER nurses for fast service	No	Chest pain protocol
11	anonymous	Registered Nurse	0-2 years	Yes	Yes	Yes	Yes	The policy is helpful.	The patients always want fast, fast service.	More orders.	ETOH/Substance abuse protocol

Figure 6

Staff Survey Results with Charts

1. What is your role in the emergency department?

More Details

Provider	3
Registered Nurse	8

2. How many years of emergency department experience do you have?

More Details

0-2 years	3
3-5 years	1
5-10 years	2
More than 10 years	5

3. Have you ever utilized standing order sets before?

More Details

Yes	9
No	2

4. In your opinion, do standing orders improve wait times and efficiency in the emergency department?

More Details

Yes	10
No	1

5. Has the standing order policy assisted to triage patients more efficiently and complete necessary swabs prior to provider-patient interaction?

More Details

Yes	9
No	2

Figure 6 - *Continued*

6. Have you noticed an improvement in our patient wait times or ED efficiency due to the standing order policy?

More Details

Yes	9
No	2

7. Were there any challenges with the policy or completing the swabs? If so, please share:

More Details

9
Responses

Latest Responses
"the policy is helpful"
"NO"

8. Did you receive any feedback from patients regarding changes in wait times? If so, please share:

More Details

10
Responses

Latest Responses
"the patients always want fast fast service"
"Patients appreciate ER nurses for fast service"

9. Is there anything that could be added to the standing order policy that would improve triage, patient wait times, or ED throughput?

More Details

8
Responses

Latest Responses
"more orders"
"NO"

10. Which standing orders would be most helpful to add to the policy next?

More Details

Chest Pain protocol	3
Dysuria protocol	1
ETOH/Substance abuse protoc...	6
Other	1

Table 3

Chief Complaints of Patients who LWBS

Timeframe	Reason for Visit
2020 Q3	Alcohol withdrawal
	Sore throat
	Fell on right knee
	Right shoulder pain
	Chronic low back pain
	Drank hand sanitizer, vomiting blood
	Left middle toe pain
	Lower abdominal pain
	Right leg pain x 1 month
	Swollen left axilla
2020 Q4	Both feet swelling
	Urinary symptoms
	Anxious; out of medication
	COVID +; chest tightness
	Chronic right hand pain
	Right cheek pain; med refill
	Earache
	Tooth pain
	Injured left shoulder 1 week ago
	Rash on forearms
2021 Q1	Body aches after second COVID vaccine dose
	Upper back pain
	Ringing left ear
	Alcohol ingestion
	COVID test
	Binge drinking alcohol
	Dental referral
	Right lower leg pain
	Body weakness
	Fever
2021 Q2	Throat pain
	Left ankle pain
	Pain left elbow x 1 month
	COVID test
	Binge drinking x 2 weeks; tremors; nausea
	Burning during urination, cloudy urine
	Headache, fever, body aches
	Wound recheck
	Headache
	Ingrown toenail pain

DISCUSSION

Summary

This quality improvement (QI) project was implemented to apply evidence-based practice (EBP) to assess an intervention aimed at improving patient wait times in a rural emergency department (ED). Wait times have long been monitored by ED staff and several interventions have been attempted over the years aimed at improving wait times, patient satisfaction, and decreasing the number of patients who leave without being seen. After literature synthesis, it was found that standing orders could improve ED wait times and bed turnover by optimizing the efficiency of staff workflows. The standing orders policy was implemented in October 2020, and this project's objective, was to compare pre- and post-policy implementation to determine if there was an improvement in these clinical concerns. The literature revealed that extensive wait times for patients seeking care in the ED is a global concern and there is adequate research into the causes of the issue, while research regarding interventions for improvement is still lacking. The main objective was to determine if the standing orders policy was effective in reducing patient wait times and reducing the number of ED patients with a disposition of left without being seen.

Key findings from this QI project include minor improvements in patient wait time and the number of patients who left without being seen after the implementation of the standing order policy, both of which were objectives of the project. Additionally, the findings from staff surveys compound the need for additional improvement in workflows and communication between nursing and medical staff to improve patient care quality and efficiency, which also relate to the objectives of improving wait times. Key findings from ED staff surveys indicate that most

acknowledge the benefits of the standing order policy, particularly during the pandemic. It was stated more than once by staff that the policy enables them to test patients presenting with symptoms of COVID-19 more efficiently. Although there was one response that opposed the use of these standing orders, particularly for strep testing, the consensus was that the policy is beneficial and optimizes workflows in the department and improves patient satisfaction.

Strengths of this QI project includes improved communication between medical and nursing staff as well as hospital administration. Reviewing this clinical concern and working together to implement interventions and analyze data provides a basis for discussion and thought sharing by all parties which can further contribute to improvement in care, hospital wide. Another strength of the project was enabling nursing staff to optimize their efficiency during the COVID-19 pandemic and contribute to improvements in care and patient satisfaction through critical thinking and patient assessment in triage. This project also introduced the facility policy creation and implementation process to many of our clinical staff members who hadn't previously participated, as well as enabling nursing staff to realize they have a role in contributing to policy that directly affects their daily duties and ability to provide compassionate care to their patients.

Weaknesses of this QI project includes difficulties with staff turnover and continued education during the pandemic. Many ED staff did not have experience in managing a pandemic of this proportion. Policies and guidelines were being developed arbitrarily as new information and recommendations were received. The constant influx of new and changing information made it difficult to disseminate information quickly and resulted in challenges with communicating needs for assessment, testing and isolation related to viral illnesses. Additionally, as previously

mentioned, several factors contributed to delays in patients care including the implementation of an electronic medical record system and changes in ED patient census that makes accurate data analysis of wait times challenging.

Interpretation

The question guiding this QI project was, "Do standing order sets for triage interventions improve patient wait times compared to patients whose care did not include the use of standing order sets during emergency department visits?" According to the literature synthesis performed for this project, there are several evidence-based interventions that can be applied in the patient care setting to improve wait times, but a critical factor in choosing an intervention is analyzing the reason for long wait times and testing interventions for improvement accordingly. Limitations in an eight-bed critical access ER in an underserved area include interventions involving space, funding, and limited resources for additional staff. One intervention that could be applied with increased education and teamwork involved the implementation of a standing order policy to allow nursing staff to perform point of care testing in triage, based on the chief complaint, allowing preliminary results to be available when the provide evaluates the patient. Additionally, adding standing orders to the triage process allowed the nursing staff to recognize potentially infectious patients during this initial contact which improved their ability to isolate patients, contributing to infection prevention and control.

In the literature reviewed for this project, guidelines were reviewed which covered outpatient standing orders for vaccine administration and even employee health requirements, but little data was found regarding the use of standing orders to reduce wait times in critical access emergency rooms. While more formal research is necessary, this QI project can serve as

baseline data for future improvement initiatives within Sage Memorial Hospital. Additionally, a focus on improved communication and teamwork should remain at the center of these quality initiatives, as this provides the foundation for positive changes that benefit patient outcomes (Chartier et al., 2016).

Implications for Practice, Education, Research and Policy

The results from this QI project will affect future staff and patients of Sage Memorial Hospital by enhanced efficiency in the practice and care delivery. The policy creation and implementation allowed for ED staff to carry out standing orders and provide feedback for improvement. Moving forward, additional standing orders and updates to the current policy will improve efficiency by allowing nursing staff to perform testing in triage that contributes to the effective diagnosis and treatment of patients seeking care. Additionally, this project affects providers, nursing staff, and hospital administration with improved lines of communication and the ability to discuss clinical concerns and seek change through multidisciplinary collaboration on facility policy. This project ultimately strengthened team communication during a pandemic and allowed nursing staff to maximize efficiency during highly stressful times in the department.

The implications on education from this QI project include enhanced knowledge and advocacy related to nursing staff and their delivery of care in the ED. While medical and nursing staff can agree that all patient interventions require a provider's order, there is also a mutual understanding that some interventions can be covered in a standing order to optimize efficiency and improve ED throughput. Additionally, this QI project introduced staff members to the Sage Memorial Hospital policy and procedure process which requires approval of these policies through a hospital-wide committee to ensure review and revisions occurs across the clinical

spectrum. The nursing staff was able to learn about policy making and apply their suggestions for improvement in the care they provide.

Research will also be affected by this QI project as additional edits and interventions will be necessary to further improve patient wait times and ED throughput. Although this QI project is not generalizable, it may be reviewed by future critical access staff and provide the framework for improved planning and organization when it comes to caring for underserved populations. Future research within the facility will include the evaluation and improvement of additional standing orders as they relate to improved efficiency in an underserved area.

The standing order policy at Sage Memorial Hospital will require regular review and revision which makes this project a prime example of a 'quality improvement.' Multiple cycles of the Plan-Do-Study-Act (PDSA) process are needed for continuous update and improvement. Provider and nursing outlooks will differ as the policy advances, so it is critical that communication remain open within the multidisciplinary team. Working together, medical, clinical, nursing, and administrative staff can optimize efficiency, even when faced with challenges included short staffing and lack of resources so often seen in rural healthcare facilities. Additionally, this collaborative effort can lead to other policy improvements in the future with the open communication, feedback, and participation of the critical access hospital patient care team.

Limitations

It is important to note that this QI project is not generalizable as it applied to one site and the initiative was specific to the facility, as it addressed the previous interventions as well as the barriers faced there. Important limitations to consider include staff turnover that affected

knowledge and training surrounding the policy, a global pandemic that affected care delivery and timelines, as well as the implementation of an EMR system during the time that patient wait times were being reviewed. All these factors could certainly affect patient wait times and ultimately, the number of patients who chose to leave without being seen.

The hospital relied on mostly agency nursing staff throughout the pandemic, several of whom were enticed to other facilities with hazard pay and improved opportunities during the timeline of this QI project. Incoming nursing staff reviewed the policy and did their best to utilize it to improve triage processes and ED throughout, but ultimately this staff turnover makes it difficult to truly assess feedback regarding improvement as compared to workflows prior to the standing order policy implementation. To mitigate staffing shortages and turnover throughout the pandemic and this project, the facility did attempt to incentivize staff with hazard pay and other conveniences such as stocking the breakroom with nourishments and rehydration supplements. These incentives were not sponsored by the project coordinator but rather by the facility itself to improve staff satisfaction and retainment.

Furthermore, the ED staff played a major role in the build and implementation of a newly purchased EMR system, which was purchased to improve efficiency in documentation, but didn't come with its challenges as a new process for staff to learn and improve. Issues with the system came up regularly, and even when a concern involved pharmacy or lab, the problems affected nursing documentation, so the nursing staff had to be involved in lengthy resolution calls to fix the problems. Additionally, frequent downtime for maintenance and updates of the new systems caused confusion with downtime procedures which included paper documentation that later had to be scanned in. This additional workload certainly added to the frustration and

fatigue of an already burnt-out ED team. The nursing leadership at Sage Memorial Hospital worked to mitigate concerns with the EMR and participate in conference calls with the vendor to make necessary corrections, but ultimately, end users provide the most valuable feedback when it comes to adjusting the software, they are using in their everyday workflows to document their patient encounters.

Finally, the COVID-19 pandemic and its effects on the ED staff must be considered. While many of our staff had never faced a pandemic of this proportion, the staff accepted the challenge and worked tirelessly to maintain patient flow and administer COVID-19 tests consistently in the ED. At the height of the pandemic, a modular office space was brought to the back of the ED to allow for additional isolated space for staff to triage potentially infectious patients and administer rapid COVID-19 swabs. The standing order policy certainly helped the nursing staff to administer tests based on the patient's symptoms, as described in the standing order policy, without the patient ever stepping foot inside the facility. This contributed to effective infection prevention and control, and what staff believe to be a low-to-no transmission rate of COVID-19 within the ED. While the critical care staff read about nursing and medical personnel contracting COVID-19 all over the world, the facility's processes of isolating and testing symptomatic patients allowed for admirably low rates of transmission among clinical staff.

Additionally, ED personnel have discussed the benefit of reduced personal protective equipment (PPE) waste by allowing the nursing to triage and swab patients without prior provider intervention. The nursing staff could limit use of precious PPE and limit exposure time with infectious patients by utilizing the standing order policy for swabs to optimize efficiency in

the care of patients presenting with symptoms of respiratory infection. These point of care swabs also allow the medical providers the knowledge of the patient's COVID-19 status prior to any interaction which allowed the facility to capitalize on limited resources including isolation gowns and N95 masks during this unprecedented crisis clinicians faced.

DNP Essentials Addressed

There are several DNP essentials addressed in this quality improvement (QI) project, all of which are critical to the advancement of the nursing practice.

DNP Essential II – Organizational and Systems Leadership for Quality Improvement and Systems Thinking

The first DNP essential covered in this project is DNP Essential II which includes focusing on the needs of a target population and introducing change to improve care and outcomes (American Association of Colleges of Nursing [AACN], 2006). This project demonstrates this essential through policy creation, implementation, and assessment of results to create practice improvement. With guidance through this DNP essential, the advance practice nurse can create system change by introducing improvements backed by evidence-based practice (EBP) and to address systemic problems related to patient care, organizational policy, and quality improvement (QI). This project reflects this by recognizing a clinical issue, introducing an evidence-based intervention, and applying education and change to improve patient care and outcomes.

DNP Essential III – Clinical Scholarship and Analytical Methods for Evidence-Based Practice

Another DNP essential that is addressed in this quality improvement (QI) project is DNP Essential III which utilizes evidence based practice to guide improvements in the delivery of patient care (AACN, 2006). This is demonstrated in the project by literature review and appraisal, the design and implementation of a QI project, and the evaluation of data to determine continued improvement methods within the population specified. This project included a literature synthesis to determine a manner to improve the clinical problem of prolonged patient wait times and then implemented evidence-based interventions in the hopes of improving patient wait times.

DNP Essential V – Health Care Policy for Advocacy in Healthcare

The third DNP essential addressed in this project is DNP Essential V as evidenced by policy development, implementation, and evaluation as the basis of QI (AACN, 2006). This is demonstrated throughout the project by nursing involvement in the facilitation of change and improvement in the delivery of patient services, with the hope of improving patient wait times and satisfaction through the optimization of nursing services. The project also demonstrates the desire to generate sustainable policy that improves efficiency, safety, and quality of care provided to patients by way of policy creation, training and education, providing leadership, and the advocacy of policies that benefit patients seeking care within the facility (AACN, 2006).

DNP Essential VII – Clinical Prevention and Population Health

Lastly, this QI project was guided by DNP Essential VII demonstrated by the urgent need to address infection prevention and control through policy during a global pandemic. This policy was implemented not only with the hope of improving patient wait times in a critical access ED, but also to facilitate the rapid recognition and isolation of potentially infectious patients. This essential was critical during the pandemic when nurses were called upon to provide care to the full extent of their scope, when staffing shortages and lack of licensed healthcare personnel could mean the difference between life and death for so many patients. The inclusion of this essential in this project is evidenced by the development, implementation, and evaluation of an intervention to address disease prevention (AACN, 2006).

Conclusions

This quality improvement (QI) project was focused on assessing if the implementation of standing orders could positively impact patient wait times in a rural health ED. The basis for the initiative surrounded long patients wait times and limited space for patients waiting to be seen during a pandemic at the critical access ED of Sage Memorial Hospital. The standing order policy was implemented to assist nursing and medical staff optimize workflows in an overwhelmed ER, and there were improvements realized based on the data analysis. Although the data shows that patients are still leaving without being seen by a provider, the project highlights that the standing order policy has contributed to an overall reduction in wait times and that ED staff can improve workflows with open communication and improved teamwork. The policy allowed nursing staff to work within the limits of their scope while effectively

contributing to infection prevention and control during a pandemic of unprecedented proportions, particularly on the Navajo Nation, in northeastern Arizona.

The project question for this QI initiative was, “Do standing order sets for triage interventions improve patient wait times compared to patients whose care did not include the use of standing order sets during emergency department visits?” The key findings from the data results include that there was an improvement in the efficiency of ED throughput utilizing the standing orders. Although some patients are still choosing to leave without being seen post-policy implementation, average wait times have improved. Additionally, staff feedback received via anonymous online surveys indicates satisfaction with the quality initiative through increased efficiency and workflow optimization. The consensus of these surveys would be to continue editing the policy to match current best practice guidelines with the feedback of medical and nursing staff and implementing additional protocols for common complaints seen in the ED.

The standing order policy allowed for emergency department staff to provide care more efficiently. During the pandemic, the average daily census in the ED went from 20-30 patients to 80-100. This policy allowed the ED staff to continue providing quality care amidst a global nursing shortage. Overall wait times were reduced although the number of patients who left without being seen continues to fluctuate. The staff surveys indicate the need for additional standing orders related to the chief complaint of alcohol intoxication/substance abuse for the next PDSA cycle.

Plan for Sustainability

As this policy was approved as a permanent hospital-wide policy by the Sage Memorial Hospital Policy and Procedure Committee, it is certain that the standing order policy will remain in effect and continue to be utilized by nursing staff to triage and room patients more efficiently. More importantly, the standing order policy was an initial step in the PDSA process to determine if standing orders do, in fact, reduce patient wait times, which indicates that with review and revision, additional opportunities for improvement exist. The nursing staff have expressed the need for standing orders for some time but were unsure of how to create and implement such policies. This project has provided the framework for continued QI by providing education regarding the facility's policy and procedure process, opening lines of communication between administrative, medical, and nursing staff, as well as providing feedback regarding improved methods of training and workflow optimization. Patient wait times will continue to be reported to the hospital's internal Quality Council Committee on a quarterly basis so that continued policy revisions and their effects on ED throughput can be monitored. Additionally, Sage Memorial Hospital policy requires that all hospital-wide and department specific policies undergo review and revision biannually to ensure current practice guidelines are followed. This existing process will allow for frequent review and training on the standing order policy as it continues to advance the care provided by ED personnel.

Plan for Dissemination

The basis and findings of this QI project will be shared with Sage Memorial Hospital administration as well as clinical staff. The final approved DNP project will be shared post-defense with the ED staff for review. The project will be presented in the form of a printed

booklet to be finalized by the project coordinator, to include the entire DNP project paper as well as the DNP project poster presentation. Additionally, this project was shared with the University of Arizona College of Nursing staff, students, and other interested parties during the final defense with the project coordinator's DNP chair and committee in attendance. Additional feedback received during this presentation will be utilized to further improve the final paper to be stored in the online University of Arizona repository and future PDSA cycles related to this quality improvement initiative at Sage Memorial Hospital.

APPENDIX A:

SAGE MEMORIAL HOSPITAL SITE APPROVAL/THE UNIVERSITY OF ARIZONA INSTITUTIONAL REVIEW BOARD AUTHORIZATION LETTER

NAVAJO HEALTH FOUNDATION

SAGE MEMORIAL HOSPITAL

POST OFFICE BOX 457 / GANADO, ARIZONA 86505 / PH (928) 755-4500

4/1/2021

University of Arizona Institutional Review Board
c/o Office of Human Subjects
1618 E Helen St
Tucson, AZ 85721

Please note that Ms. Patricia Blosser, UA Doctor of Nursing Practice student, has permission from Sage Memorial Hospital to conduct a program evaluation project at our facility for her DNP project, "Reducing Patient Wait Times in the Rural Emergency Department."

Ms. Blosser will complete a program evaluation to determine if the implementation of standing orders related to point of care testing in triage improves emergency department wait times for patients. Ms. Blosser's activities will be completed by 8/1/2021.

Ms. Blosser has agreed to provide to my office a copy of the University of Arizona Determination when received. She will also present aggregate results to the Chief Medical Officer and Administration upon completion of the evaluation.

If there are any questions, please contact my office.

Signed,

Christi El-Meligi, BSN, RN
Chief Executive Officer

THE UNIVERSITY OF ARIZONA
Research, Discovery & Innovation

Human Subjects Protection Program

1618 E. Helen St.
P.O.Box 245137
Tucson, AZ 85724-5137
Tel: (520) 626-6721
http://rgw.arizona.edu/compliance/home

Date:	July 09, 2021
Principal Investigator:	Patricia Ann Blosser
Protocol Number:	2106963371
Protocol Title:	Reducing Patient Wait Times in the Rural Emergency Department
Determination:	Human Subjects Review not Required

Documents Reviewed Concurrently:

Data Collection Tools: *Staff Survey.docx*
HSPP Forms/Correspondence: *Advisor Confirmation Email.pdf*
HSPP Forms/Correspondence: *appendix_vul_pop_v2019-07.pdf*
HSPP Forms/Correspondence: *PB determination 06.25.21.pdf*
Other: *Standing Orders Policy.docx*
Other Approvals and Authorizations: *Site Authorization Letter.docx*
Recruitment Material: *Staff Survey Email draft.doc*

Regulatory Determinations/Comments:

- Not Research as defined by 45 CFR 46.102(l): As presented, the activities described above do not meet the definition of research cited in the regulations issued by U.S. Department of Health and Human Services which state that "Research means a systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge. Activities that meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program that is considered research for other purposes. For example, some demonstration and service programs may include research activities. For purposes of this part, the following activities are deemed not to be research."

The project listed above does not require oversight by the University of Arizona.

If the nature of the project changes, submit a new determination form to the Human Subjects Protection Program (HSPP) for reassessment. Changes include addition of research with children, specimen collection, participant observation, prospective collection of data when the study was previously retrospective in nature, and broadening the scope or nature of the study activity. Please contact the HSPP to consult on whether the proposed changes need further review.

The University of Arizona maintains a Federalwide Assurance with the Office for Human Research Protections (FWA #00004218).

APPENDIX B:

CONSENT DOCUMENT (DISCLOSURE AND CONSENT FORMS)

NAVAJO HEALTH FOUNDATION

Rural Health Clinic

1. AUTHORIZATION FOR RURAL HEALTH CLINIC TREATMENT
   The undersigned voluntarily agrees to treatment and services that his/her physician deems necessary. There are certain procedures for which special consent will be obtained.

2. RELEASE OF INFORMATION FOR BILLING SERVICES AND REVIEW:
   Rural Health Clinic may disclose all or any part of the patient's record to include information pertaining to medical history or mental and physical condition to any person or entity for the purpose of billing all or part of the Rural health Clinic charges insurance companies, pre-admission review, or for the purposes related to these activities.

3. FINANCIAL AGREEMENT:
   I understand that payment for health care may be denied by Indian Health Service for patients out of the service area for service not considered to be Emergency Treatment. I also understand that there may be charges not covered by insurance, AHCCCS, or Medicare. The undersigned agrees that in consideration of services rendered to the patient by Sage Outpatient Clinic, he/she is financially responsible for charges not covered I.H.S., Medicare, AHCCCS, or other insurance.

4. ASSIGNMENT OF BENEFITS:
   I hereby authorize payment directly to Sage Memorial Hospital of the health care payment benefits otherwise payable to me but not to exceed the regular charges for services

5. INFORMATION RELEASE WITHIN CLINICS AND HOSPITAL:
   Authorization is hereby given to release information concerning diagnosis and treatment for use between the Ambulatory Services, Rural Health Clinic, Sage Hospital Emergency Room and In-Patient.

DATE PATIENT WITNESS

DATE RELATIVE/LEGAL GUARDIAN WITNESS

Received Patient's Bill of Rights _____ Inform of Waiting Time _____

Received Notice of Privacy Practices _____ Refused Patient Privacy Notice _____

MEDICAL RECORD NUMBER: _____

POST OFFICE BOX 457 GANADO, ARIZONA 86505 (928) 755-4500

APPENDIX C:

RECRUITMENT MATERIAL (RECRUITMENT FLYER, RECRUITMENT EMAIL, ETC.)

Hello,

As many of you know, the standing orders policy was implemented in October of last year to assist with long wait times and infection prevention and control during the pandemic. In working to evaluate the success in doing so, I am attaching a brief survey for you to complete. This survey is optional and anonymous. Responses will be reviewed with the intent to incorporate additional suggestions and standing orders in the policy to further improve patient wait times and patient flow in the emergency department at Sage Memorial Hospital.

If you choose to take part in this survey, you will be asked to complete the survey questions online via the link below. It will take approximately 10 minutes to complete. There are no foreseeable risks associated with participating in this project. You will receive no immediate benefit from your participation. Your responses are anonymous. Your name will not be collected or linked to your answers.

If you choose to participate in the project, participation is voluntary, refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may withdraw at any time from the project. In addition, you may skip any question that you choose not to answer. By participating, you do not give up any personal legal rights you may have as a participant in this project.

For questions, concerns, or complaints about the project, you may call Patricia Blosser, MSN, FNP-C, MBA, at 928-755-4559 or send an email to patricia.blosser@sagememorial.com

You agree to have your responses used for this project.

https://forms.office.com/Pages/ResponsePage.aspx?id=YfBmdhQES0yUoR3Kk7dY7TpxxhAXO4hLk90UY13jQU9UQVo5UFdVM0tHTDJISTBLUjg0S0k5VzBaNC4u

Thanks,

Patricia Blosser

APPENDIX D:

EVALUATION INSTRUMENTS (STAFF SURVEY)

1. What is your role in the emergency department? *

- Provider
- Registered Nurse

2. How many years of emergency department experience do you have? *

- 0-2 years
- 3-5 years
- 5-10 years
- More than 10 years

3. Have you ever utilized standing order sets before? *

- Yes
- No

4. In your opinion, do standing orders improve wait times and efficiency in the emergency department? *

- Yes
- No

5. Has the standing order policy assisted to triage patients more efficiently and complete necessary swabs prior to provider-patient interaction? *

- Yes
- No

6. Have you noticed an improvement in our patient wait times or ED efficiency due to the standing order policy? *

- ○ Yes
- ○ No

7. Were there any challenges with the policy or completing the swabs? If so, please share: *

Enter your answer

8. Did you receive any feedback from patients regarding changes in wait times? If so, please share: *

Enter your answer

9. Is there anything that could be added to the standing order policy that would improve triage, patient wait times, or ED throughput? *

Enter your answer

10. Which standing orders would be most helpful to add to the policy next? *

- ○ Chest Pain protocol
- ○ Dysuria protocol
- ○ ETOH/Substance abuse protocol
- ○ Other

APPENDIX E:

PARTICIPANT MATERIAL PARTICIPANT MATERIAL (SAGE MEMORIAL HOSPITAL POLICIES AND PROCEDURES)

SAGE MEMORIAL HOSPITAL POLICIES AND PROCEDURES	
TITLE: STANDING ORDERS – SUSPICION OF COVID-19	
Check One **☒ HOSPITAL WIDE** **☐ DEPARTMENT - SPECIFIC FOR**	**List department(s) if department specific**
POLICY NUMBER:	**RESOURCE PERSON:** Chief Nursing Officer
ENDORSED BY: Medical Executive Committee	**APPROVED BY:** Policy and Procedure Committee

OBJECTIVE:

To provide guidelines for nursing interventions to enhance efficiency and consistency of nursing care prior to physician evaluation of patients.

POLICY:

Nursing services standing order protocols should be initiated in triage when a patient presents with complaints, as noted in this policy. Nursing staff should carry out the approved standing orders in order to facilitate timely care as well as infection prevention and control. Nurses will document all patient weights in kilograms and promptly notify provider of abnormal vital signs. Providers will acknowledge orders once patient is roomed with initials on the order set, as appropriate.

PROCEDURES:

Standing orders to be carried out by the triage nurse are as follows:

1. COVID-19 or other respiratory illness suspicion.
    - A. Obtain rapid strep test for complaints of sore throat, painful swallowing, fever, or pharyngeal erythema, with or without exudate.
    - B. Obtain rapid Influenza A/B during flu season for fever, respiratory complaints, or myalgias.
    - C. Obtain rapid COVID-19 swab for complaints of fever, cough, shortness of breath, myalgias, sore throat, congestion, headache, change in the sense of taste or smell, vomiting, or diarrhea.

Initial Approval: 10/2020
Reviewed:
Revised:

References: CDC. (2018, November 01). Group A Strep. https://www.cdc.gov/groupastrep/diseases-hcp/strep-throat.html
CDC. (2020, August 4). Test for Current Infection. https://www.cdc.gov/coronavirus/2019-ncov/testing/diagnostic-testing.html
CDC. (2020, September 01). Guide for considering influenza testing when influenza viruses are circulating in the community. https://www.cdc.gov/flu/professionals/diagnosis/consider-influenza-testing.html

APPENDIX F:

PROJECT TIMELINE

Completion Date	Planning	Pre-Implementation	Implementation	Evaluation
08/2020	Meeting with CMO to discuss problem, ongoing monitoring of patient wait times in the emergency department			
09/2020	Meeting with key stakeholders			
10/2020	Standing Orders policy creation & implementation with staff education and training			
04/2021	Obtain site authorization letter for project from Sage Memorial Hospital			
06/2021		Complete DNP project proposal defense		
06/2021		Complete required revisions and final submission of DNP project proposal to the CON		
06/2021		Submit IRB proposal		
07/2021			Collect and organize data for patient wait times and left without being seen disposition from 04/20 - 04/21, Send staff survey	
08/2021			Create graphs for data representing quarterly wait time information and quarterly “left without being seen” statistics	
09/2021				Analyze the efficacy of standing orders for reducing patient wait times and complete remaining sections of DNP project
10/2021				Final defense
11/2021				Provide summary to Sage Memorial Hospital Administration

APPENDIX G:

LITERATURE REVIEW GRID

Project Question: *Do standing order sets (I) improve patient wait times (O) in emergency department patients (P) compared to patients whose care did not include the use of standing order sets (C) during emergency department visits(t)?*

Pub. Year; Author's Last Name	Title of Publication	Type of Study	Main Outcomes of Findings	Support for and or Link to Project
2020; Efrat-Treister, Moriah, & Rafaeli	The effect of waiting on aggressive tendencies toward emergency department staff: providing information can help but may also backfire.	Qualitative study	The longer the wait duration, the lower care receivers' procedural justice perceptions and the greater their aggressive tendencies.	Wait times updates, explanation could affect the number of patients with "left without being seen" disposition
2020; Fleet et al.	Improving delivery of care in rural emergency departments: a qualitative pilot study mobilizing health professionals, decision-makers and citizens in Baie-Saint-Paul and the Magdalen Islands, Québec, Canada	Qualitative pilot study	Findings show the feasibility and relevance of mobilizing stakeholders to identify context-specific challenges and solutions	Reference other issues in healthcare that result in long wait times/poor patient outcomes
2020; Grant et al.	Throughput interventions to reduce emergency department crowding: a systematic review	Systematic review	Expediting diagnostic and treatment decisions by shifting physician-patient contact to the earliest possible process point (e.g., triage) is an effective cost-neutral strategy to improve flow	Discuss early diagnostics as a low-cost strategy for rural facility with limited resources
2020; McGrath, Elertson, & Morin	Increasing patient safety in hemodialysis units by improving handoff communication.	Quality improvement project	Lewin's planned change theory effectively applied to an improvement initiative	Discuss Lewin's change theory and effective application
2020; Ndu et al.	Evaluation of wait time in the children's emergency and outpatient units of a tertiary hospital in Southeast Nigeria.	Cross-sectional study	The duration of waiting time varies between and within countries. The ER mean waiting time reported in this study was approximately 9 minutes.	Long waiting time has been reported in both developed and developing countries
2020; Oberlin et al.	Emergency overcrowding and hospital organization causes and solutions	Author report	Significant contributing factor is lack of inpatient bed availability and necessary outpatient resources	Understanding and relating causes of emergency department overcrowding

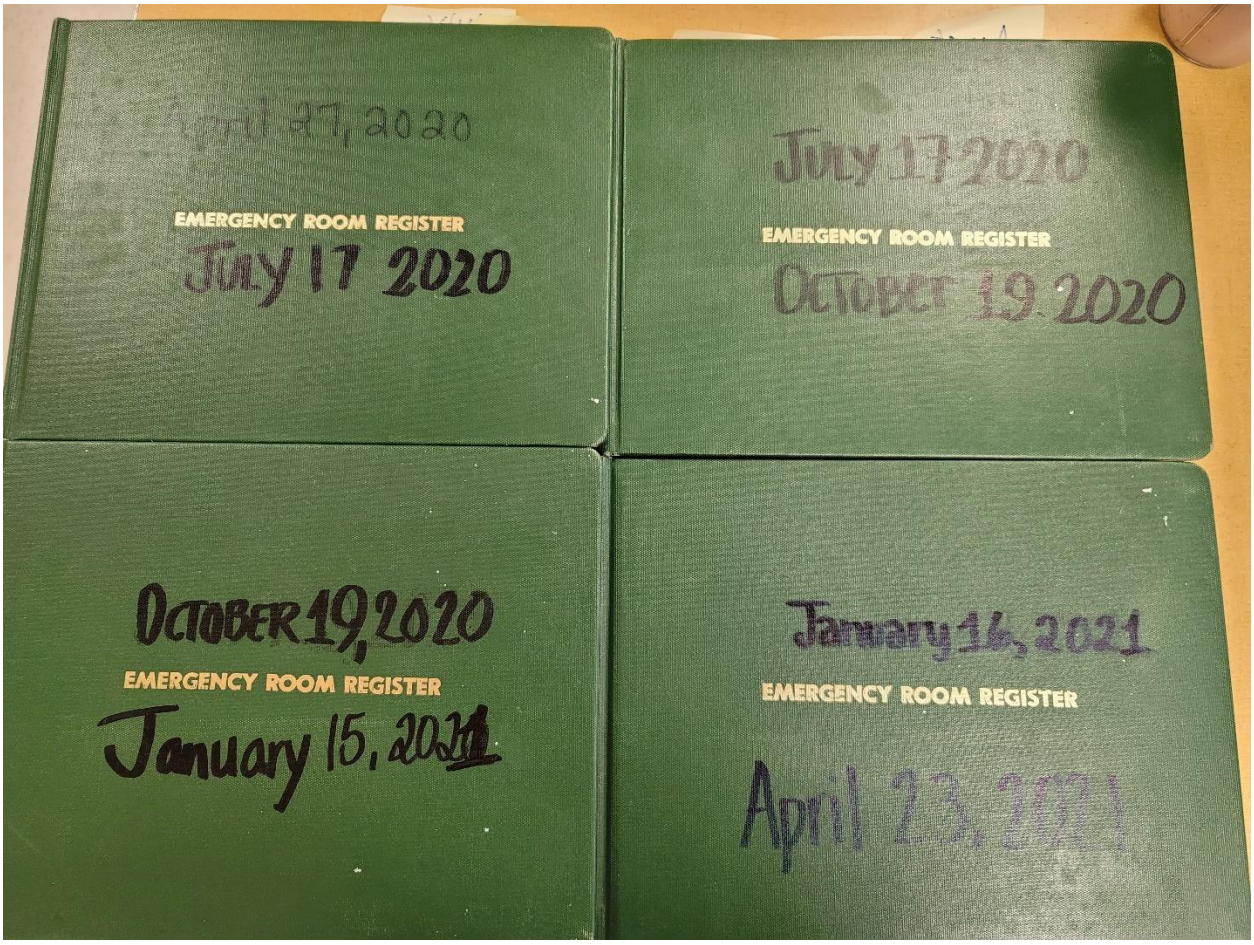
Pub. Year; Author's Last Name	Title of Publication	Type of Study	Main Outcomes of Findings	Support for and or Link to Project
2020; Stahley et al.	The impact of bed traffic control and improved flow process on throughput measures in a metropolitan emergency department	Quality improvement project	Successful implementation of triage pod system with team care approach	Utilizing department staff meetings to gain nursing buy-in and contribute to ideas and improvement
2020; Yuzeng & Hui	Improving the wait time to triage at the emergency department	Retrospective study	Improvement in the wait time to triage from a baseline duration of 18 min to the postimplementation period duration of 13 min	Reviewed RCA prior to choosing and implementing interventions
2019; Amorim et al.	Reducing overcrowding in an emergency department: a pilot study	Pilot study- What if analysis	Wait-time was 14 minutes for yellow patients, and 4 hours for green patients	Waiting times can be reduced by balancing the allocation of doctors to green and yellow patients and matching the availability of doctors to forecasted demand patterns
2019; Patey et al.	SurgeCon: priming a community emergency department for patient flow management	Interrupted time series (ITS) analysis	improved the key wait-time metrics in a rural ED in a country where average wait times continue to rise	Improve ED efficiency in community hospitals with limited resources
2019; Simpson et al.	Exploring the characteristics, acuity, and management of adult ED patients at night-time	Comparative study- adjusted regression analysis	Patients wait longer, leave without being seen, attend with non-urgent problems when arriving at night	Discuss alternate reasons for extended wait times, dissatisfaction
2019; Spechbach et al.	Patient's time perception in the waiting room of an ambulatory emergency unit: a cross-sectional study	Cross-sectional study	Appropriate assessment of emergency level by caregivers, the feeling of being forgotten, respect of privacy, and lack of information on the exact waiting time were identified as significant variables for wait perception	Reference patient satisfaction as a role in outcomes
2019; von Guionneau	How does clinical space utilization impact patient flow?	Quality improvement project- retrospective	The median wait time increased by 55 min during the project period. However, this difference in waiting time was not deemed significant	Reference space and capacity consideration for standing orders protocols

Pub. Year; Author's Last Name	Title of Publication	Type of Study	Main Outcomes of Findings	Support for and or Link to Project
2018; Gonçalves-Bradley et al.	Primary care professionals providing non-urgent care in hospital emergency departments	Case review	Evidence is insufficient to draw conclusions for practice or policy regarding the effectiveness and safety of care provided to non-urgent patients by GPs and NPs versus EPs in the ED to mitigate problems of overcrowding, wait times, and patient flow	This is a current intervention at my facility, initiated several years back to assist with flow in 8 bed CAH ED, discuss the need for further interventions
2018; Settelmeyer	Evaluation of an evidence-based throat-pain protocol to reduce left-without-being-seen, length of stay, and antibiotic prescribing	Retrospective case review	The overall mean length of stay was 6 minutes shorter in the nurse-initiated group than the other 2 groups evaluated, meaning patients who were treated with the nurse protocol experienced a shorter, but effective visit.	The protocol not only improved wait times but had other benefits including adherence to clinical practice guidelines and antibiotic stewardship considerations.
2018; Sousa et al.	Children who leave the emergency department without being seen: why did they leave and what would make them stay?	Prospective case-control study	The most common reasons for leaving were 'excessive waiting time' (92.7%) and 'problem could wait' (21.8%)	Felt safe in leaving and the low level of adverse outcomes highlights the low-acuity nature of the majority of patients who leave
2017; Anderson & Andrea	Emergency medicine and the Indian Health Service: overburdened and understaffed	Cross-sectional survey	43% of rural emergency physicians are board certified in emergency medicine compared with the 13% of Indian Health Service emergency physicians found in this study to be board certified or board eligible in emergency medicine	Reiterates the lack of staffing and overcrowding, builds problem foundation and background
2016; Chartier et al.	Improving emergency department flow through optimized bed utilization	Quality improvement project	Average time-to-bed decreased from 120 minutes at baseline to 66 minutes following seven PDSA cycles	Discuss PDSA cycles, additional future interventions including communication
2011; Retezar et al.	The effect of triage diagnostic standing orders on emergency department treatment time	Retrospective cohort study	Triage standing orders were associated with a 16% reduction in ED treatment time, whereas partial triage standing orders alone were associated with a 17% reduction in treatment time.	Standing orders can be applied to increase efficiency and decrease patient wait times.

Pub. Year; Author's Last Name	Title of Publication	Type of Study	Main Outcomes of Findings	Support for and or Link to Project
2010; Russ et al.	Placing physician orders at triage: the effect on length of stay	Pre-experimental study with retrospective data	Patients with triage orders had a 37-minute (95% confidence interval 34 to 40 minutes) median decrease in time spent in an ED bed	Standing orders decrease patient wait time in triage but also improve bed turnover time, allowing patients to be seen more efficiently
2009; Olshaker	Managing emergency department overcrowding	Author report	Overcrowded Eds have been recognized as a contributing factor to poor patient outcomes since the 1980's	Background details on the extent of the problem and potential concerns if not addressed
2000; Derlet & Richards	Overcrowding in the nation's emergency departments: complex causes and disturbing effects.	Author report	ED overcrowding has multiple effects, including placing the patient at risk for poor outcome, prolonged pain and suffering of some patients, long patient waits, patient dissatisfaction, ambulance diversions in some cities, decreased physician productivity, increased frustration among medical staff, and violence	Discuss effects of ED overcrowding including implication for patients and populations.

APPENDIX H:

OTHER DOCUMENTS AS APPLICABLE TO THE PROJECT (EMERGENCY DEPARTMENT LOGBOOKS)


April 27, 2020
EMERGENCY ROOM REGISTER
July 17 2020
July 17 2020
EMERGENCY ROOM REGISTER
October 19 2020
October 19, 2020
EMERGENCY ROOM REGISTER
January 15, 2021
January 14, 2021
EMERGENCY ROOM REGISTER
April 23, 2021

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