

**COMPLETING ACCELERATED REQUESTS IN THE
EMERGENCY DEPARTMENT (CARED For)**

Doctor of Nursing Practice Project

Presented to the Faculty of MU

Graduate Studies

University of Missouri

In Partial Fulfillment

Of the Requirements for the Degree

Doctor of Nursing Practice

By

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Completing Accelerated Requests in the Emergency Department (CARED For) Background and Significance

Since the implementation of the Affordable Care Act of 2010, Emergency Departments (ED) nationwide have seen an influx of patients unlike they experienced previously (Lin et al., 2018; Salway et al., 2017). While EDs have typically been seen as environments to evaluate and treat emergent situations, increasing numbers of patients are presenting to the ED for evaluation and treatment of non-emergent or chronic conditions (Lin et al., 2018). One estimate of the amount of care provided to non-emergent patients placed the cost to the medical system as high as \$65 billion per year (Jaffe et al., 2018). With this increased influx of patients, EDs are quickly becoming overcrowded, and the throughput of patients stalls, further increasing the difficulty of assessing patients most in need of evaluation and treatment. One intervention examined previously in multiple EDs around the world has been the utilization of a Provider in Triage (PIT).

Through incorporating a PIT, evaluation and treatment of the patients may begin while the patient is still awaiting a bed within the ED. The PIT evaluating and treating the patient while they await a room in the department has the potential to decrease the Door to provider (D2P), Left without being seen (LWBS), Door to decision (D2D), and Length of stay (LOS) if assessment, care, and disposition of the patient can all occur while the patient is in the waiting room waiting for their opportunity to be seen within the department. Developing a successful PIT position carries the potential to improve department metrics, increase funding to the department by meeting required Centers for Medicare and Medicaid Services (CMS) requirements, and improve patient satisfaction through assessing, treating, and dispositioning patients faster than they would normally be cared for in times of patient surge and overcrowding. Wait time is often a detrimental factor for patient satisfaction in EDs around the country (Gross et al., 2023). By providing a sense of movement as patients complete the tasks related to the orders that the PIT placed for their care patients will view their *wait time* for a bed as being reduced since they are not just sitting still and not having attention paid to them.

Project Purpose Statement, Objectives, and PICOT Question

The purpose of this project is to evaluate the use of a PIT in an ED that has never previously utilized a PIT to quickly evaluate and begin the treatment process for patients on their arrival to an ED. The PIT has the potential to improve on several critical metrics related to ED care, such as those listed above. The objectives of this project are to improve the average visit metrics as follows:

- Reduce D2P time by 30%
- Reduce LWBS LOS rate by 50%
- Reduce D2D time by 20%
- Reduce by 20%
- Improve patient satisfaction scores by 5%

In patients presenting to the ED (P), does utilization of an independently practicing PIT (I) compared to standard triage and waiting for a room assignment (C) improve the average visit metrics (D2P, LWBS, and D2D) of patients presenting to the ED (O) when compared to the prior year(T)?

Review of the Literature

A search of the literature was performed across several common databases of published research: CINAHL, Scopus, PubMed, and Google Scholar for all articles on PIT since 2017. Only articles written in the English language were included in the search. The following search terms were used: “Provider in triage” AND “Emergency Department OR Emergency Room.” The literature search resulted in Twenty unique articles that were evaluated for inclusion in the review (Appendix B).

When examining the published literature on PIT, one theme that stands out in all articles is that placing a PIT reduces D2P and LWBS. The finding that these two metrics were reduced was found universally across all nineteen articles presented in this paper. Where the articles vary is the impact that reducing these two metrics has on the total length of stay or the rate of leaving without being seen or leaving against medical advice. The research included presents several different outcome measures, which will be addressed beyond these two primary metrics.

Effects on Length of Stay

The published literature varies widely on the effects of a PIT on the LOS of a patient in the ED. In the three meta-analyses of the effects of PIT, each study found that there was too much variance in the LOS to be able to make a statement of significance to the effect (Benabbas et al., 2020; Franklin et al., 2021; Jeyaraman et al., 2022). It is important to note that many of the articles reference individual facility characteristics as potential explanations as to why they did not find positive results for changes in LOS rather than stating that they feel it is a direct result of the process.

Methods

Project Design

This quality improvement project was a cohort study examining vital statistics for quality-of-service indicators in the ED. This project sought to alter the LWBS rate, and the D2P, D2D, and LOS times for the ED in question when compared to the same time as the previous year. Secondly, the study planned to examine patient satisfaction scores to examine if there is an effect on patient satisfaction by implementing the intervention.

Intervention

In order to attempt alterations of the vital statistics, a two-pronged intervention was developed to be placed into effect. The first of these is placing an independently practicing provider, one with the ability to disposition patients on their own, near triage. By placing a provider as a part of the triage process, patients are given a medical screening exam on presentation to the department, effectively eliminating the D2P time and LWBS rate as patients presenting to the ED will be immediately seen and thus to leave without being seen is no longer applicable. Three treatment rooms from the ED will be utilized by the PIT. Once a patient has been triaged as an ESI 3,4 or 5, if one of these treatment rooms is available the patient will be taken to them for evaluation and initial orders. These providers will then place initial orders on the patients that they see to begin their care immediately. Once orders were placed, the patient was to be given a CARED For card with instructions for where to sit in the waiting room to better facilitate completion of orders and give the illusion of movement through their treatment while still waiting for bed placement.

While in one of these treatment rooms, the patient was to receive an initial nursing assessment from the PIT nurse, and if a provider had not arrived to assess the patient within 10 minutes the PIT nurse could have placed Nurse Initiated Protocols (NIPs) based on the patient's

complaints in order to begin their treatment, they would then be seen by the PIT as soon as possible. This allows the PIT nurse to move on to their next patient while the current patient is still awaiting assessment by a provider. At the conclusion of the provider assessment and completion of the initial orders by the PIT nurse, the patient will be returned to the waiting room until there is a room available, or results have been returned that can determine the patient's disposition.

Initial success at the start of the intervention resulted in a provider being assigned to the PIT area permanently during their shift, as well as the allocation of a nurse to perform interventions as ordered by the provider rather than the patient having to be returned to the waiting room. The successes also led to an immediate turnaround construction project in the ED to make a permanent space for the PIT and nurse to be able to assess and care for patients.

Setting

This quality improvement project was conducted in a large tertiary care center that is the only Level I trauma center in the region, which is also a Level I Stroke Center and Level I STEMI center. The facility also boasts an attached psychiatric hospital which the ED provides medical clearance to patients presenting for psychiatric evaluation. The ED in this facility is currently comprised of thirty-eight adult acute care beds, nine pediatric acute care beds, four resuscitation beds, nine fast track rooms, and a 12-bed observation unit.

Participants

Those patients that were considered for assessment and treatment by the PIT were greater than 18 years old and presented to the ED without symptoms of a time-critical diagnosis with one exception. Those patients presenting with chest pain but without electrocardiogram evidence of ST-segment elevation may be treated by the PIT if there is not a room in the department for them to be taken to on arrival. All other patients that presented through triage during the hours in which a PIT is present received a provider screening exam and initial treatment orders immediately following being triaged.

Sampling

For a one-month period, a PIT will be utilized during what is seen as the busiest time for patients to present to the ED, which is from 0900-2100 hours daily. During this period, any patient that presents to triage and meets the requirements outlined was included in the CARED For intervention.

Measurement Tools and Data Analysis

To evaluate the effectiveness of the CARED For intervention, multiple statistical points were examined. Mean LWBS and left against medical advice (AMA) rates were calculated, as well as a statistic combining the two statistics to be known as left without treatment completion (LWTC). Average lengths of time for D2P, and LOS were examined during the intervention period, and a time-matched sampling one year prior to the intervention as patient volume has been shown to be cyclical in the department and follows a pattern each year on average.

Lastly, D2D and patient satisfaction were planned to be evaluated, however, those two data points were unable to be extracted from data currently available for analysis. As those data points are not available for analysis they are not reported on.

Descriptive statistics were calculated for each data point to examine the effects of the intervention. One way analysis of variance was conducted to examine the effects of the intervention on the selected variables.

Following examination of the raw data, the decision was made to also examine the data from the 28 days prior to the start of the intervention to examine if the intervention had effects that were masked by the age of the previous data. IBM SPSS Statistic Version 29 (Chicago, IL) was used for statistical analysis. Statistical significance was defined as $p \leq .05$.

Results

A one-way ANOVA was conducted to determine if utilizing a PIT would have an effect on key visit metrics in the ED. Three time points were examined to determine the effectiveness of the intervention on throughput in the ED. Those points were a matched set of weeks one year prior to the intervention, the four weeks immediately preceding the intervention, and four weeks of the intervention. Data are presented as mean \pm standard deviation.


The LWOBS rate was significant between groups, $F(2,81)=8.736$, $p<0.001$. The LWOBS rate decreased from a daily mean of 2.89% (SD 2.50%), to 1.39% (SD 0.19%). There was no statistically significant difference between the LWOBS rate in March of 2023 when compared to the rate with PIT ($p=1$). Additionally, when examining the AMA rate, as expected from the literature, the AMA rate increased with the use of a PIT compared to March of 2023 (Mean Difference of 1.179, 95% CI(0, 2.36)). The LWOBS rate decreased 51.9% between February and March 2024. Despite the increase in AMA rate, the LWTC reduced by 27.56% between February and March 2024. Lastly the D2P time reduced by 24.93% between February and March 2024 a direct result of patients going from triage to the PIT rather than waiting in the waiting room for a bed assignment prior to being seen.

Conclusion

While the use of a PIT did not result in year over year net positive changes in throughput statistics, it did result in a realized 51.9% decrease in the LWOBS rate from the previous month. This change if continued will overall net positive growth for the ED and has already led to meeting benchmarks that had not been met in a year. Anecdotally the LWOBS rate in September 2023, was reported to be greater than 10% of all patients that arrived to the ED. Jeyaraman et al, (2022) reported in their research that a 1.2% rate of LWOBS was equivalent to 2.8 million patient visits nationwide, therefore the reduction from 2.89% in February to 1.39% in March was a significant reduction in the potential for increased patient morbidity and mortality within the department. ED throughput is a many faceted issue, and changing one aspect or statistic of ED care cannot change every variable that leads to increased lengths of stay or waits in the waiting room. It is only through altering the multitude of factors that true increases in throughput can be realized. Only seeing patients sooner will not solve all of the problems that EDs face. The other factors, such as, boarded patients in the ED, patients awaiting transport away from the hospital, extended wait times for laboratory or radiology reports etc. all affect the ability to place patients into exam rooms, treat patients, and disposition them out of rooms in order to make room for the next patient. By examining environmental and process issues as well as staffing and personnel issues, throughput can be realized, and the effectiveness of the ED improved.

Appendix A

DNP D1 Form

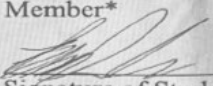
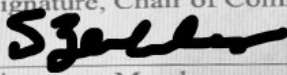
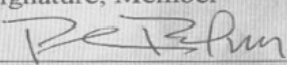
 **DNP Residential Project Committee
Appointment Request**

Student's Name: Benjamin Coe

Student's Number: 10205901

Date Submitted: 03 SEP 2022

I request that the faculty members listed below be appointed to serve as my Residential Project committee.

<p><u>Miriam Butler</u></p> <p>Name of Chair*</p> <p><u>Shawn Zembles</u></p> <p>Member*</p> <p><u>Phillip Rohde</u></p> <p>Member*</p> <p><u></u></p> <p>Signature of Student</p> <p>*Please type or print</p>	<p>Miriam D. Butler, <small>Digitally signed by Miriam D. Butler, DNP, NP-C, FNP-BC Date: 2022.09.10 23:48:04 -05'00'</small></p> <p><u>DNP, NP-C, FNP-BC</u></p> <p>Signature, Chair of Committee</p> <p><u></u></p> <p>Signature, Member</p> <p><u></u></p> <p>Signature, Member</p> <p>Signature, Member</p> <p>Miriam D. Butler, <small>Digitally signed by Miriam D. Butler, DNP, NP-C, FNP-BC Date: 2022.09.10 23:48:21 -05'00'</small></p> <p><u>DNP, NP-C, FNP-BC</u></p> <p>Signature of Director of DNP Program, School of Nursing</p>
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**To be completed during the semester enrolled in:
N9080 Section 1 DNP Residency Project**

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Appendix B

DNP D-3 Form

M **Approval of DNP Residency Project Proposal and the Institutional Review Board Protocol**

Candidate's name: Coe, Benjamin L Mizzou ID number: 10205901
(Last Name, First Name)

Project Title: Completing Accelerated Requests for care in the Emergency Department (CARED For)

Signatures of review members
(Please sign full names legibly)

		Acceptable	Unacceptable
Chair: <u>Miriam Butler</u>	Miriam D. Butler, DNP, NP-C, FNP-BC <i>print & sign</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Member: <u>Shawn Zembles</u>	Shawn L. Zembles <i>print & sign</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Member: <u>Phillip Rohde</u>	 <i>print & sign</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Member: _____	<i>print & sign</i>	<input type="checkbox"/>	<input type="checkbox"/>

The clinical project is:

The Program Committee has explained the decision regarding the acceptability of my project proposal.

 Student Signature

25JUL2023

 Date

 Director, DNP Program in Nursing

 Date

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