Implementation of Fast-Track Triage Process to Improve Ambulance Patient Offloading Time (APOT) in a Psychiatric Emergency Services (PES) Unit

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Implementation of Fast-Track Triage Process to Improve Ambulance Patient Offloading Time (APOT) in a Psychiatric Emergency Services (PES) Unit.

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DNP Project

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TABLE OF CONTENTS

Section I: Title and Abstract

Title ......................................................................................................................... 1
Abstract .................................................................................................................. 5

Section II: Introduction

Background ............................................................................................................. 7
Problem Description ................................................................................................. 8
Setting ...................................................................................................................... 9
Aim Statement ......................................................................................................... 10
Available Knowledge ............................................................................................... 10
    PICOT Question .................................................................................................. 10
Search Methodology ................................................................................................. 11
Integrated Review of the Literature ........................................................................ 11
Summary/Synthesis of the Evidence/Rationale ....................................................... 17
Conceptual and Theoretical Framework .................................................................. 18

Section III: Methods

Proposed Interventions .......................................................................................... 20
    Gap Analysis ...................................................................................................... 22
    Gantt Chart ......................................................................................................... 22
    Work Breakdown Structure .................................................................................. 23
    Responsibility/Communication Plan ..................................................................... 23
    SWOT Analysis .................................................................................................... 23
    Proposed Budget .................................................................................................. 24
Proposed Outcome Measures ................................................................. 24

Proposed CQI Method and Data Collection Instruments ...................... 24

Proposed Analysis .................................................................................. 24

Ethical Considerations ........................................................................... 25

Section IV: Discussion

Limitations ............................................................................................ 25

Conclusion .............................................................................................. 26

Section V: References ............................................................................ 29

Section VI: Appendices

Appendix A. PES Nursing staff training tip sheet........................................ 31

Appendix B. PES Fast Track Primary and Secondary Sections.................... 32

Appendix C. PES Triage Fast Track Work Flow........................................ 33

Appendix D. PES Triage Ambulance Tracking log....................................... 34

Appendix E. PES Fast Track Pretest Survey for RNs................................. 35

Appendix F. PES Fast Track Post-Survey for RNs...................................... 38

Appendix G. SWOT .................................................................................. 39

Appendix H. GAP Analysis...................................................................... 40

Appendix I. Communication Plan............................................................ 41

Appendix J. Proposed Budget.................................................................. 42

Appendix K. GANTT Chart....................................................................... 43
Appendix L. Fast Track Work Break Down Structure………………………………44
Appendix M. JGPH PES Intake Workflow Process………………………………45
Appendix N. APOT Average data…………………………………………………….47
Appendix O (a). JGPH APOT Graph…………………………………………….48
Appendix O (b). Alameda County APOT lost hours data………………………48
Appendix P. APOT Data meaning to community……………………………….49
Appendix Q. RN Questionnaire Pretest response results………………………50
Appendix R. RN Questionnaire Post-test response results……………………51
Abstract.

Background.

The occurrence of ambulance delays in hospital EDs has been very recently significant in the United States. This delay has been attributed to emergency department overcrowding, a record number of 911 calls, a shortage of ED staff (doctors and nurses), and poor resources available in the communities as alternatives to an ED visit. Local Emergency Medical Service Authorities (LEMSA) monitor and determine the community standards of measuring ambulance offload delays (AOD) measured usually in minutes.

Problem.

Lengthy ambulance patient offload times and their subsequent impact on EMS have been significant all around the state of California as well as nationwide. The ambulance delay problem in California is at the point that the state government is working to reduce the delay through the legislature. An assembly bill known as AB 40, authored by Assemblymember Freddie Rodriguez (D-Pomona), has officially been signed into law by Governor Newsom. AB 40 would require the California Emergency Medical Services Authority (EMSA) to take urgent actions to address the chronic issue of AOD and implement standards to ensure all Californians receive immediate care when faced with life-threatening emergencies. The Psychiatric Emergency Services/Crisis Stabilization Unit (PES/CSU) in this project, is an acute care psychiatric hospital in Alameda County (Northern California) plagued by long delays of up to 48 minutes of ambulance offload delays and up to 77 minutes at the 90th percentile for transfer of care. Under the provisions of AB 40, the Local Emergency Medical Services Authority (LEMSAs) in California will be required to maintain an APOT of 30 minutes or less.
Interventions.

This project seeks to implement the Fast-Track triage process to reduce the average Ambulance Patient Offload Time (APOT) to Alameda County Local EMS Authority set community standard of 30 minutes.

Proposed Measures.

For six months of the Fast-Track triage process implementation, psychiatric emergency services (PES) nurses at this project hospital will be trained on the Fast-Track triage process; APOT data will be collected every shift and collated monthly to assess the intervention’s progress. The impact of this process will be evaluated for effectiveness at the end of the six months. The PES nurses will also be surveyed on their knowledge, satisfaction, perceived bottlenecks with the Fast-Track triage process and their observed impact on APOT.

Keywords: PES (psychiatric emergency services), APOT (ambulance patient offload time), APOD (ambulance patient offload delay), EMS (emergency medical services), triage, ambulance offload delays (AOD), hospital throughput.
Implementation of Fast-Track Triage Process to Improve Ambulance Patient Offload Time (APOT) in a Psychiatric Emergency Services (PES) Unit.

Background.

Almost everyone has noticed an ambulance or emergency vehicle speeding past them on the roadways and freeways. We usually assume these patients will also be promptly delivered to the emergency rooms and seen immediately by doctors and clinicians. Still, on the contrary, these ambulances sometimes have to wait long periods when they arrive at the emergency rooms. Barton et al., (2014) stated that the delays in dropping off patients in the emergency result from factors like emergency department (ED) overcrowding, a record number of 911 calls, and poor resources available in the communities. There has also been an increasing number of emergency room visits in the United States over time. According to Hsia (2021), in 2019, in California, there were 14.9 million ED visits, indicating an increase of 27% more than in 2009, while the state's overall population only increased by 7% during the same period. Also, between 2009 and 2019, the number of EDs remained relatively stable, while the number of individual treatment stations increased 23% from 6,777 to 8,362 due to increased emergency room visits. It is also noteworthy that there has been an increase in mental illness due to the COVID-19 pandemic, which has undoubtedly increased the number of persons seeking psychiatric care in psychiatric EDs. In a 2002 scientific publication, the World Health Organization (WHO, 2022) stated that just in the first year of COVID-19 alone, the global prevalence of mental illnesses (like anxiety and depression) increased by a massive 25%, fearing that this is just a tip of the iceberg. This issue of the constantly growing number of mentally ill patients needing care has compounded the ED crowding and worsened ambulance wait times in psychiatric emergency rooms. Therefore,
solutions to ambulance delays can be further identified and resolved by streamlining internal processes and procedures in emergency departments, depending on the available resources.

**Problem Description.**

The continued increase in the annual number of ED visits has led to subsequent overcrowding of EDs and delays in emergency care. In recognition of this problem and its impact on the EMS and healthcare system in general, the California Fire Chiefs Association sponsored a state assembly bill in 2015 with the support of Paramedics Plus and California Professional Firefighters to address the issue of ambulance delay. California Assembly Bill 1223 was born out of this and directed the state EMSA to develop a standardized statewide methodology for calculating ambulance offload times (Becker et al., 2018). According to the Emergency Medical Services Authority (EMSA, 2022), roughly 70,000 Californians wait over an hour on an ambulance gurney once they arrive at the hospital before the emergency department staff assumes their care and they are moved to a hospital bed. EMSA has coined a term for this delay: (APOD), and the method of measuring this delay is (APOT). APOT is part of the Local Emergency Medical Services Agency (LEMSA) policies and procedures for calculating and reporting ambulance offload times as established by the Health and Safety Code 1797.225. For APOT evaluation across the state of California, the Emergency Medical Services Authority (EMSA), in collaboration with EMS system stakeholders, determined that 20 minutes is the maximum time any Californian transported to a hospital by an ambulance should ever wait at any given emergency department in the state before being transferred to a hospital bed (Becker et al., 2019). As indicated above, the 20-minute goal for APOT needs to be accomplished for various reasons in different emergency room settings. This number has been recently increased to
a target of 30 minutes APOT for emergency departments in Alameda County by the local EMS authorities.

**Setting.**

This project will be undertaken in an adult psychiatric emergency service (PES)/crisis stabilization unit (CSU) at a large acute Psychiatric Hospital in Northern California.

**Purpose.**

This paper is a quality improvement project to reduce the delay in (APOT) in psychiatric emergency service units by improving efficiency in psych ED throughput. This project is geared towards meeting the standards set by the assembly bill AB 40, authored by Assemblymember Freddie Rodriguez (D-Pomona), which has officially been signed into law by Governor Newsom in October 2023. AB 40 would require the California Emergency Medical Services Authority (EMSA) to take urgent actions to address the chronic issue of AOD and implement standards to ensure all Californians receive immediate care when faced with life-threatening emergencies. AB 40 requires that APOT should not be greater than 30 minutes and this goal must be met 90% of the time. APOT is more elaborately described as the time interval between the arrival of an ambulance patient at an ED and the time the patient is transferred to the ED gurney, bed, chair, or other acceptable location, and the emergency department assumes the responsibility for the care of the patient (California EMS Commission, 2016). Besides ED over-crowding in recent years, throughput (the movement of patients through the hospital from arrival to discharge while ensuring timely and appropriate care) has been affected by other various factors that contribute to ambulance delays in Emergency Departments, which include increased complex medical conditions, lack of hospital beds for inpatient admission (due to the inability to rapidly turnover hospital beds), and lack of specialist doctors. There are additional issues peculiar to psychiatric
emergency rooms that affect overcrowding and, therefore, throughput; they include an increased 5150 psychiatric holds due to fewer mental health community resources, attending to the needs of the homeless and mentally ill, record levels of 911 calls, increased difficulties with patient placements, shortage of specialists (e.g., Psychiatric Emergency Doctors), and increased EHR medical record documentation requirements (Barton et al., 2014)). I have worked for over a decade as a psychiatric emergency nurse. In my experience, it generally takes longer to triage and treat a patient with behavioral health issues on an involuntary 5150 hold than any other emergency room patient who consented to an emergency room visit. Aztema et al. (2012) suggested that patients with mental illness wait longer for care than other patients in the emergency department and added that the wait times for patients with mental illness would likely improve with the overall Emergency Room Wait Time Strategy.

**Aim Statement.**

Over the next six months, we will implement and maintain a Fast-Track triage process that will reduce the project hospital’s average APOT from 48 minutes to 30 minutes or less; and down from 77 minutes to 30 minutes at the 90th percentile of transfer of care in accordance with AB 40 and LEMSA/Community standard.

**Available Knowledge.**

**PICOT Question:**

The following PICOT question will guide the implementation of this project: For patients seeking care in an adult Crisis Stabilization Unit (CSU)/Psychiatric Emergency Services (PES) [P], how does an abbreviated triage screening process (FAST-TRACK) improve Ambulance Patient Offloading Time (APOT) [I] when compared to a routine (or regular) triage process [C]
to reduce the current average APOT time of 48 minutes to the community standard of 30 minutes [O] within a period of six months (May through October 2023) [T].

**Search Methodology**

This integrative review of scientific research and literature from articles comprising different quantitative and qualitative research studies and information meta-analysis validates this project's need and proposed outcome. This review used the Cumulative Index of Nursing and Allied Health Literature CINAHL database. Additional searches were conducted using APAPsycINFO and PubMed. Search for international journal articles was also conducted using Google and Google Scholar to search for research studies conducted in other parts of the world on causes of ambulance delays in emergency rooms and solutions to reduce ambulance patient offload times. Names of the foreign journals were applied in the 'Journal finder' section of the USF Gleeson Library to select relevant articles. These search criteria and Boolean phrases were used: Ambulance delays OR ambulance wait times OR Ambulance wall times. Emergency room delays OR wait times. Psychiatric Emergency Services triage throughput OR Psychiatric emergency room triage process. Wait times in the emergency department for patients with mental illness OR Wait times for psych patients in the ED. A total of 88 articles were populated. The author eliminated articles with data involving children with mental illness, Children's Hospitals Emergency Departments, sub-acute care hospitals, and clinics were excluded. Studies selected were within the hospitals or facilities that served adults aged 18 and above and mostly had emergency rooms. Finally, I selected sixteen articles for this paper.

**Integrated Review of Literature.**

Growing evidence supports the notion that ambulance drop-off delays in emergency rooms have been on the rise and are negatively affecting patient care outcomes in many acute
healthcare settings in the United States and internationally. This problem has been growing owing to various factors like a record number of 911 calls, overcrowded emergency departments, poor local/community outpatient resources, shortage of doctors and nurses in the ED, and shortage of inpatient beds. Throughput improvement is an essential factor that can positively impact APOT in EDs. According to Cooney et al. (2011), the ability of EMS crew to promptly transfer a patient to an ED bed is directly related to availability of beds in the hospital, therefore the EMS unit availability in the community is directly related to hospital throughput. Therefore, it is essential that acute healthcare settings/emergency rooms individually address their internal problems of APOD by assessing and addressing any shortcomings in the ED triage process to improve throughput.

**Ambulance Offload Delay**

Ambulance patient offload delays do not just negatively affect patient outcomes but also impact the community of occurrence. The emergency medical services (EMS), which has the duty of providing the public with emergency assistance and public safety, will have to be “stuck” or delayed at an ED due to APOD and, therefore, unable to return promptly to assist the community with life-or-death issues. Mengyu et al., 2018, reviewed literature and data that summarizes and addresses the growing APOD issues. The authors noted that keeping EMS crews at hospital EDs can have a significant adverse impact on ambulance availability and response times for future calls, adding that during life-threatening situations, the ability of the EMS providers to quickly respond to a 911 call to stabilize and transfer patients to the appropriate hospitals when needed will improve outcomes for the patients involved. This can be achieved by mitigating APOD issues. The authors proposed two categories of interventions to reduce AODs in EDs, grouping them into EMS-based and Hospital-based interventions. Among the hospital-
based interventions were: (i) offload programs that can free the ambulance by dropping patients in an offload zone (OZ) to be triaged later, (ii) expanding ED capacity, and (iii) increasing patient ED throughput by monitoring ED throughput times, identifying any correctable areas of delay, and implementing effective triage and bed utilization strategies by the use of the acute care clinics, observational units and the fast-track process.

**Ambulance Patient Offload Time (APOT)**

Becker et al. (2019) discussed the statewide method of measuring ambulance patient offload time, also known as “wall time.” According to the authors, ED overcrowding, lack of hospital beds, and insufficient staff contribute to ambulance delays, which decreases advanced life support response in the community and increases EMS response time for critical cases. Furthermore, the emergency departments in California, on average, see 12.5 million patients annually, of which 20-25% arrive at the ED via ambulance. To measure ambulance delays, an Ambulance Offload Delay Task Force was enacted to develop a set of standardized definitions and methodology to measure ambulance offload times for patients being transported via 911 ambulance calls. The authors of this study collected data from 2017 as reported from emergency 911 calls from 9 out of the 33 local EMS that make up 37% of the population in California. They included 830,637 ambulance transports to 126 hospital emergency departments. The study inferred that up to half of different EMS agencies demonstrated significant delays in APOT, which varied by hospital and region. Up to three-fourths of EMS crews had delays of APOT over one hour, 40% more than two hours, and over one-third were delayed for over three hours before returning to community service. As noted in this study, delays in APOT varied by hospital and region. In addition to the apparent facts that cause APOD, the Psychiatric ER in this project setting, is the only receiving hospital with a psychiatric emergency for patients on an involuntary
psychiatric hold (or 5150); this reason this PES in a position for overcrowding due to a lack of alternative resources in the community and further at risk for increased APOT.

**Improved Patient Outcomes with No Delays in Ambulance Patient Offload Time**

Given the problem of ambulance offload delays, timely ambulance arrivals to the scene of emergencies or 911 calls and prompt patient pick-up times do not guarantee immediate attention or care at the ED nor a good outcome for patients. Crilly et al. (2015) embarked on a retrospective multi-site cohort study in Australia with health data ranging from 2007-2008 and involving 40,783 ambulance patient visits to the ED to show the outcomes of ambulance patients that arrived at the ED but were delayed more than 30 minutes (APOT>30 mins) in comparison with those who were not delayed (APOT<30 mins). Using the data on the 40,783 ambulances studied, the authors found that 15% of the ambulances experienced delays of over 30 minutes, and 63% of those had an ED length of stay of over four hours. The authors inferred that APOT with less than 30 minutes showed that those patients had significantly better outcomes for almost all demographics. Using logistic regression analysis, they were also able to identify APOD as a modifiable predictor of an ED length of stay, indicating that the likelihood of having a length of stay in the emergency department of more than eight hours is 34% higher among patients who experienced delays in their drop off times. This study goes a long way to validate that implementing processes or projects that improve throughput in EDs by reducing APOT enhances patient outcomes and even reduces ED length of stay.

**Impact of APOD on EMS Resource Availability.**

One of the options popular for addressing overcrowding in the emergency departments has been ambulance diversion, whereby ambulances are diverted to take their patients to a different emergency department that might be ‘less busy.’ The feasibility of the ambulance
diversion option makes one wonder whether it is helpful to crowd another ED while trying to reduce crowding in another. Cooney et al. (2011), in a Resource Document for the National Association of EMS Physicians Position Statement, posited that hospitals, their EDs, and EMS agencies all represent a more extensive emergency healthcare system, and the efficiency/inefficiency of any component can drastically affect the other. Ambulance offload delays relate directly to a system status plan and resource availability, as ambulances must be readily available when called for. Therefore, ambulance offload times and factors leading to ED crowding must be addressed systemwide. The authors made it clear that the most effective way to ensure that the EMS system promptly responds to public emergencies as needed and, as expected, the throughput systems or strategies in the hospitals must be improved. In conclusion, the ultimate solution to ED diversion and APOD and overall hospital throughput depends on all entities of a healthcare system working together synergistically for the general good of public health.

**Higher ED Length of Stay for Mentally Ill Patients**

As previously mentioned, and according to research, ED overcrowding has been on the rise recently, leading to ambulance patient offload delays and increased lengths of stay for patients in the ED. Mentally ill patients have been noted to have even longer ED length of stay (LOS). Simko et al. (2022) studied ED length of stay and disposition among an estimated 28 million mental health visits and 526 million medical visits. The visits were categorized into mental health vs. medical visits and psychiatric vs. substance use visits within the four regions of the United States. The study used weighted data from the National Hospital Ambulatory Medical Care Survey (NHAMCS) from 2009 through 2015 among patient age groups 18-64 years old. According to the authors, the number of psychiatric patients visiting the emergency rooms has
been rising disproportionately over the years, tracing back to the 1960s deinstitutionalizations of the mentally ill. The deinstitutionalization caused a depletion of outpatient resources, which used to provide alternative resources for patients so they did not have to go to the ED. They noted that between 2006 and 2014, the rate of ED for mentally ill patients increased by 44%, while the visits for medically ill only increased by 12%. The authors inferred that there is an increased and substantial variation in LOS for mental health visits compared to medical visits, stating that the length of stay for mental health ED visits is more prolonged than for medical visits. Furthermore, they found a significant variation in disposition patterns for mental health versus medical visits across US regions. The odds of mental health visits lasting >6 and >12 hours were most significant in the Northeast and the least in the South, with a median (IQR) of 4.6 (5.8) hours and 3.3 (4.0) hours, respectively. In conclusion, the authors suggested a need for better standards in managing mental health emergencies and an increase of resources directed towards mental health patients to decrease crowding and improve care for patients in the emergency departments. In light of the above study, improving APOT using a process like Fast Track is a plausible means or standard for improving throughput to manage psychiatric EDs better to reduce crowding and improve patient outcomes.

*Note:* NHAMCS is a national survey conducted in the United States annually, resulting in a national sample of ambulatory care visits within the country.

**Ambulance Patient Offload Delay and Ambulance EMS Availability**

It is not complex to deduce that when ambulances are spending time waiting for their ‘turn’ or opportunity to offload patients in the emergency rooms, the community or society is being deprived of service by that same number of ambulances awaiting ultimately move patients off the EMS stretcher onto the ED stretchers. Cooney et al. (2013) conducted an observational
study of a convenient sample of 483 patients arriving via EMS ambulance to a level I academic trauma center for 12 months from March 2010 through March 2011. The authors recognized that ambulance offload delays have increasingly attracted a growing concern internationally. Also, they noted that APOD is now upheld as an ED performance marker among hospital administrators and EMS system officials. The study was carried out based on two hypotheses: (i) that the ambulance offload delay will be less than 30 minutes; (ii) that when ED is crowded, the median AOD would be longer as measured by the National Emergency Department Overcrowding Scale (NEDOCS) score. NEDOCS score ranges were categorized into four groups (group 1=0-100; group 2=101-140; group 3=141-180; group 4>181), where scores over 100 indicated ED overcrowding and scores of 200 depict disaster. This study found that AOD ranged from zero minutes to 157 minutes. Also, when data was grouped according to the NEDOCS score, they found a statistically significant difference in median AOD between the groups ($p<0.001$). This showed a positive correlation between ambulance offload delay and crowding in the emergency rooms and that NEDOCS scores can be good predictors of AOD. This study further emphasizes that shorter wall times or ambulance patient offload times indicate throughput efficiency in a hospital emergency department; therefore, further research will be instrumental in this area.

**Summary/Synthesis of the Evidence.**

As noted above, ambulances spend longer times in emergency departments waiting to offload and hand off transported patients to ED staff. Generally, APOT has been on the rise due to the frequently occurring APOD. The delays are a result of factors such as ED overcrowding, shortage of ED clinicians-Doctors and nurses; record number of 911 calls, poor local/community outpatient resources (that can be alternatives for ER visits), shortage of doctors and nurses in the
ED, shortage of inpatient beds and most recently, increased number of mental health patients post COVID-19. Other measures have been tried to reduce the delay or wall time for ambulances, such as ambulance diversions to nearby or another ED. Some have attempted to create a 'drop-off' zone in the ED so that ambulances can have a quick handoff. Still, more needs to be done to solve the issue of increased APOT. Ambulance diversions to other EDs created a domino effect in the long run, subsequently causing clogging in other EDs and increasing patients' travel/treatment time. It is essential to conduct more research on reducing APOT by minimizing delay; in the meantime, it is crucial that acute healthcare settings/emergency rooms individually address their internal problems of APOD by assessing and addressing any shortcomings in the ED triage process to improve throughput. The Fast-Track project is intended to address the internal bottlenecks that negatively affect throughput in this project hospital emergency department to reduce APOT to a community standard of average APOT at 30 mins.

**Conceptual and Theoretical Framework.**

Kurt Lewin's Change Theory serves as a framework for this project regarding changing from an average APOT of 48 minutes at the project hospital to the community standard of 30 minutes. Lewin's theory of change has only three stages but could be more complex in practice. Shirey (2013) pointed out that Lewin's theory of change involves three phases: *freezing* (need for change), *moving/unfreezing* (transition or change initiation), and *refreezing* (establishing equilibrium).

The first stage of Lewin’s Change Theory is *freezing* (need for change). The existing delay of almost an hour over the community standard ambulance patient offload time comes with disadvantages ranging from delayed access to care and prompt patient treatment to problems in the California EMS system. According to the California Emergency Medical Services Authority
(2014), there is a significant concern among emergency medical services and emergency
departments across California when it comes to APOD; offload delays in ED can cause extensive
wait times for patients while also impacting resource availability for hospitals and EMS
providers that serve their community for emergency response. The ambulance unit and crew that
are delayed are effectively out of service. For instance, in a psychiatric ED, a patient with
auditory hallucinations might be waiting long periods in the ambulance to be transferred to an
ED bed, while the community lacks an ambulance to transport a patient having a life-threatening
situation like a heart attack. The situation described above is a basis for change.

The second stage of Lewin's theory is moving/unfreezing (transition or change initiation).
This stage of change initiation was triggered because of the delay in APOT and its consequences
in a bustling EMS system which is seen in the project’s inner city hospital. The issue of finding
ways to provide care to medically or mentally ill patients whose access to care has been limited
by delays has exponentially increased the need to streamline and reduce the offloading time by
implementing interventions like a 'Fast-Track' triage process and other procedure adjustments to
be discussed further in detail.

The third stage of Lewin’s theoretical framework is refreezing (establishing equilibrium).
This stage calls for stabilizing the change to become embedded in existing culture, policies, and
practices. This stage is essential because locking in or institutionalizing change will be crucial to
sustainability (Shirey, 2013). The current task is establishing and maintaining an equilibrium
whereby the APOT will remain within or around the 30-minute offload time as proscribed by the
Local EMS Authority (LEMSA).
Methods.

Proposed interventions (as Illustrated in Appendix).

The plan is to reduce the current APOT in the psychiatric emergency unit, which currently stands at 48 minutes, to the county (community standard) of 30 minutes, using an abbreviated triage process (FAST-TRACK) as well as other internal measures within the psychiatric emergency services unit.

The Fast-Track process entails splitting the triage process into two sections:

- The primary section.
- The secondary section.

The Fast-Track will be initiated when there is more than one ambulance waiting at the ambulance bay. The Fast-Track is also applied when a patient’s disposition in triage is ‘discharge,’ and there is more than one ambulance waiting. The actual APOT interval will be manually recorded by triage security officers who already record ambulance arrivals as part of their routine duties. See the algorithm in Appendix O, and triage ambulance log in Appendix D.

For the Implementation of the Fast Track, the Following Steps were taken in JGPH PES:

i. Presentation of the Fast-Track process to the hospital stakeholders by PES leadership, which includes this writer (Appendix C).

ii. Meeting and presentation of the Fast-Track process to JGPH Epic builders to add the process as a part of the triage template to be used in triage as needed.

iii. A pretest questionnaire was used to assess PES nurses’ skill level and knowledge base, the need for a Fast-Track triage process, and other measures. The questionnaires were printed and administered on paper due to failure of nurses’ response via email (Appendix E).

iv. Training for psychiatric emergency nurses on Epic's Fast-Track triage process template (Appendix A) to illustrate the teaching tool.
v. Roll-out of the Fast-Track process (in collaboration with EPIC EHR builders) with daily APOT reports/data collection (Appendix B).

vi. Daily monitoring and a weekly review of APOT/APOD data as recorded by data collectors (Appendix D).

vii. Data collation will be done at the end of six months to evaluate progress compared to the project’s goal. Data result in Appendix N.

viii. A post-test for triage nurses at the six-month mark was used to evaluate workflow ease of use and throughput (Appendix F).

**PES Triage RN Questionnaire analysis (n=24)**

**Pre-Test**

The pretest part of the PES RN questionnaire was about RN experience, length of employment at JG, PES/ED experience, knowledge base/experience in the current triage process, awareness of increased APOT and need for improvement (data results on Appendix Q)

- Nurses aware of lengthy APOT: 24/24= 100%
- Understanding of the current triage process: 23/24=95.8%
- Nurses that support need for intervention to improve APOT: 21/24=87.5%

**PES Nurses’ perceived reasons for ambulance delays:**

- High acuity (manic or psychotic), non-cooperative patients: 12/24=50%
- More than 2 or more ambulances arriving at same time: 12/24=50%
- Triage M.D issues (delays, shift change, shortage, 1 MD in hospital at night): 14/24=58.3%
- Shortage of staff: 1/24=4.1%
- Prioritizing walk-in patients in the lobby: 1/24=4.1%.
Post-Test

The post-test part of the PES RN questionnaire assessed support that the Fast-Track process improved APOT and suggestions on issues to further be addressed in triage throughput (Appendix R).

➢ Understood the Fast-Track triage process: 23/24 = 96%
➢ Agree that Fast-Track process reduces APOT: 18/24 = 75%

Gap Analysis

The Gap Analysis is used here to benchmark the suggested best practice of improving throughput using the Fast-Track process in the AIM statement of this DNP project in comparison with the status quo (triaging without Fast-Track). In my gap analysis table, I pitched the best practices versus the current practice to show how they differ in practice and strategy for implementing the best practice (Appendix H).

Gantt Chart

I have used the Gantt chart to depict the length of this project, the needed resources, and the planned order of task accomplishments and progress. This DNP project is being implemented during my DNP program, and both run concurrently during the six months of the project implementation, as shown in the Gantt Chart (Appendix K).
**Work Breakdown Structure**

A breakdown of the project into smaller, easily manageable components is shown in the Work Breakdown Structure (WBS). The WBS details the project’s initiation, planning, development, implementation, and analysis sections (Appendix L).

**Responsibility Communication Plan**

The communication plan for this project that shows the contact person, frequency of communication, and mode of communication is laid out in Appendix I.

**Strengths Weakness(es) Opportunities Threats (SWOT) Analysis.**

A SWOT analysis chart (Appendix G) will be used to identify the *Strengths* of using a Fast-Track triage process to reduce APOT time in EDs: reducing/eliminating ambulance offload delay (especially for mentally ill patients) and improving efficiency of ED throughput. All of this will potentially improve patient outcomes for all demographics, reduces overall hospital length of stay, allow quicker return of ambulances back into the community for service, helps the ED comply with the 30 minutes community standard for APOT and reduces cost of EMS staff overtime expenditures. *Weaknesses*: The process can only function well when all resources are available, like doctors/full staffing for nurses; APOT feasibility can be constrained due to limited hospital capacity, and more research is needed on APOT. *Opportunity*: innovation, alternative ways to improve ED throughput, opportunities for further research, opportunities for continued enhanced patient outcomes. *Threats*: reducing APOT with Fast-Track versus ambulance diversion to other EDs versus EDs creating an Offloading Zone (OZ) for patient drop-offs.
Proposed Budget.

This project was implemented with a low budget and at a low cost. The costs incurred include staff training, paper questionnaires, Epic template builders, and data analysis (Appendix J).

Proposed Outcome Measures, Analysis, and Continuous Quality Improvement (CQI).

The aim of implementing the Fast Track process is to reduce the ambulance offload delay that is plaguing the project’s County by working on the triage throughput of hospital ED to reduce it from 77 minutes to the recommended Local EMS Authority community standard time of 30 minutes from June 2023 to November 2023. Therefore, to measure the progress of the Fast Track process, the baseline or benchmark data of 77 minutes will be the primary source for outcome measurement to compare progress made. The data collected will also measure essential factors like staff knowledge and satisfaction with the Fast Track triage process compared to the previous throughput process of not using Fast Track regardless of the number of ambulances waiting in the ambulance bay. The qualitative data will be collected from PES nurses with a PES Fast Track Satisfaction and Usefulness Questionnaire. The data will be analyzed with the SPSS software tool if our results support the hypothesis that the Fast Track process intervention has a statistical significance between an APOT of 77 minutes at the start of implementation and a post-implementation score (or APOT time in minutes). This outcome will be used to show that Fast Track improves (by reduction of) Ambulance Patient Offload Time. Future CQIs will be based on a positive outcome of this project implementation. Throughput will be continuously reviewed and fine-tuned for an even more improved APOT.
**Ethical Considerations.**

The American Nurses Association (ANA) code of ethics: Protection of privacy and confidentiality rights. Implementation of the triage Fast-Track process must maintain HIPAA laws of Privacy and Confidentiality. Jesuit core values of the University of San Francisco: This is a quality improvement project; no human subjects are involved, and no IRB approval will be needed to implement this project.

The USF DNP is yet to determine that this project meets the guidelines for an evidence-based change in practice project as outlined in the DNP project or my statement of determination (SOD) or checklist.

**Discussion**

**Limitations**

Implementing the Fast Track triage process has limitations. It is evident that (especially in healthcare) change is complex and, to a large extent, inevitable, especially when the status quo has become a culture or ‘just the way we have been doing it.’ According to Beasley et al. (2021), contemporary healthcare environments are characterized by frequent and rapid change, often with unrealistic and challenging time frames. The Fast Track process was no different; it was to be implemented quickly and over six months. So, there was palpable but passive resistance from the nurses and some doctors. The first huddle to overcome was a majority ‘buy-in’ by triage doctors and frontline staff. Secondly, an internal hospital policy that prioritizes ‘walk-in’ patients over ambulance arrival caused occasional impedance or delay in the APOT since ambulances ‘must’ wait until a walk-in patient is attended to. This priority for ‘walk-in’ patients or voluntary arrivals to the hospital lobby was made for safety reasons. Patients in the ambulance are assumed to be ‘secure’ and under care versus mentally ill patients sitting in the lobby unattended.
Therefore, the time it takes for nurses to triage lobby patients cannot be controlled and negatively impact APOT.

A peculiar issue stands out with ambulance offload delays in a psychiatric emergency department versus other types of emergency departments. The project ED is the only receiving hospital in the area for patients brought to the hospital on an involuntary hold (5150). As noted in the literature review, it takes longer to triage high acuity mentally ill patients as a result of poor cooperation due to psychosis or mania.

**Conclusion**

Over the past two decades, there has been a significant increase in the number of patients seeking psychiatric care and a decrease in the number of inpatient beds in psychiatric hospitals, as well as a decrease in the number of available resources for the mentally ill. The increase in the number of patients seeking psychiatric care in the emergency room has been evident since the deinstitutionalization of the mentally ill decades ago and has worsened since the COVID-19 pandemic. The problem of frequent and costly delays in the emergency departments seems to be perpetual. Patients are waiting longer in ambulances before accessing medical care, and ED lengths of stay are getting longer. In Alameda County, CA, the project hospital has an ED that is the only 5150-receiving hospital in the Bay Area, and this puts this ED in a peculiar position to receive a high number of psychiatric patient visits via ambulances. The Alameda County Local EMS Authority set 30-minutes community standard APOT target time to reduce APOD. They charged all EDs with improving throughput to reduce APOT time. The county further clarified that each ED reduction of five minutes in APOT/day equals two ambulances available in the community per day among the 300 ambulances operating daily (Appendix P).
Implementing the Fast-Track triage process improved the ED throughput at the project hospital’s ED from 05/01/2023 to 10/31/2023. Improving ED throughput to reduce APOT time further improves EMS resources, making ambulances promptly available to respond to other life-threatening 911 calls in the community. It should be noted that the ambulance company that serves local EMS in this project’s County for 911 calls is the Falck Ambulance Company. The LEMSA monitors the measurement of APOT county wide. Whereas there are other ambulance companies in the county, the rest focus on interfacility transfers, making Falck the ambulance of focus regarding ambulance offload delays. Based on the County’s EMS data infers that every 5 minutes saved/reduced off APOT equals creating or availing two ambulances back into the community, and the project hospital’s reduction of APOT from 48 minutes to 29 minutes. Also, APOT at the 90-percentile transfer of care came down from 77 minutes in May 2023 to 53 minutes by October, 2023 shows a 24-minute reduction in APOD during this Fast Track project implementation period. The 90th percentile reduction in APOT in the project’s hospital by 24 minutes has essentially made an average of 5 ambulances available back in the community daily (Appendix O). This improvement in APOT time was still achieved during the duration of the project despite the sustained increase in the number of psychiatric patients (voluntary and involuntary visits) that come to the psychiatric emergency, the ED crowding (without increased ED capacity) and the shortage of physicians and nurses. Considering these factors that continue to exist, there will still be ambulance patient offload delays because improving throughput is just one out of all the moving parts needed to diminish or eliminate ambulance delays significantly. While the Fast-Track triage process can help reduce APOT, its use or implementation has yet to be widely used to determine its generalizability. Therefore, the seemingly chronic situation of
ambulance patient offload delay calls for more study for more generalizable processes for a sustainable and improved APOD.
References


Appendices

Appendix A

PES Nursing Staff training tip sheet for EPIC Fast Track template.

JGP PES ONLY - Restore Triage Navigator Default

1. Open Triage Navigator Tab

2. Click on the wrench at the button left

3. Select “Modify Navigator Layout”

4. Select “Restore”

5. Select “Reset to Defaults”

6. Click on “Accept” to the bottom right
APPENDIX B

PES TRIAGE FAST TRACK PRIMARY & SECONDARY SECTIONS

(For Fast Track, complete only the Primary Section; Milieu Nurse completes the Secondary Section)
APPENDIX C

PES Fast Track Workflow for Triage Nursing Staff

Ambulance arrives. Security notifies triage nurse. Security logs-in ambulance arrival time as 'arrival 1'. Security logs-in patient off gurney time as 'arrival 2'. This is time interval is APOT

If this arrival is the only ambulance: RN engages in routine/full triage process

If this arrival counts as 2nd or 3rd ambulance in the ambulance bay, the triage nurse activates Fast Track Triage Process

In the event of a lobby walk-in patient, or a discharge order in triage, the triage RN informs the CN who immediately coordinates a plan for assistance to minimize APOT

The patient is then moved to the PES milieu and assigned a milieu RN who then completes the Secondary Section of the triage template

For Fast Track: The RN completes only the Primary Section of the triage template on Epic

If the Triage MD is occupied, Triage Nurse can start the triage process and MD will join as soon as available.
Appendix D

### John George Guidelines for Triage Ambulance Tracking

1. Nurses assigned to Triage will immediately report to the triage area upon arrival to the unit. This creates an opportunity to minimize shift change delays and receive triage updates and communicate to the outgoing Triage Nurse.

2. Security staff notifies Triage Nurses of Ambulance arrival. The security staff collects the data.

3. Triage Nurses are to communicate barriers to the Charge Nurse in the event of ambulance patient offload delay (APTD).

4. The Charge Nurse formulates and activates a plan immediately to reduce APTD (Ambulance Patient Offload Delay).

5. If the Triage Unit is occupied, Triage Nurses can start the triage process and MD will join as soon as available.

6. Security staff will continue to check for completeness of log and scan the previous 24 hrs sampled triage logs to the PES-clinical leadership in the morning.

7. Our Goal is to improve the quality of care provided to our patients and community by decreasing APTD.

8. Security staff is to call Charge RN if an ambulance is waiting for 30min or more and document the cause of delay and action taken by charge nurse.

<table>
<thead>
<tr>
<th>Comments (ex. Reason for delay)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Name</td>
</tr>
<tr>
<td>----------------</td>
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</tbody>
</table>

---

Triage Ambulance Tracking Log

- Date: 
- Circle Shift: AM, PM, MID

<table>
<thead>
<tr>
<th>Date</th>
<th>Ambulance #</th>
<th>Arrival Time</th>
<th>Walk In</th>
<th>Waiting Time</th>
<th>PT Off Survey</th>
<th>Back</th>
<th>Patient Name</th>
<th>Triage RN</th>
<th>Triage MD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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</tbody>
</table>
This survey evaluates your nursing experience and knowledge of the Psychiatric Emergency Triage process for quality improvement. This survey is for Registered Nurses only.

Thank you for your participation and contribution to this process.

1.) How long have you been a registered nurse?
- Less than a year
- 1-5 years
- 5-10 years
- 10 - 15 years
- 15-20 years
- Over 20 years

2). How long have you been employed at John George Psychiatric Hospital?
- Less than a year
- 1-5 years
- 5-10 years
- 10-15 years
- 15-20 years
- Over 20 years

3). How long have you worked as a Psychiatric Emergency Services
- Less than a year
- 1-5 years
- 5-10 years
- 10-15 years
- 15-20 years
- Over 20 years
4). Rate how well you understand the PES triage process

- Not well at all
- Slightly well
- Moderately well
- Very well
- Extremely well

5). Rate your overall comfort level with the 'routine' PES triage process

- Extremely comfortable
- Somewhat comfortable
- Neither comfortable nor uncomfortable
- Somewhat uncomfortable
- Extremely uncomfortable

6). Please rate your skill level in using the PES routine triage process.

- Extremely competent
- Somewhat competent
- Neither competent nor incompetent
- Somewhat incompetent
- Extremely incompetent

7). Please rate your current perception of the PES routine triage process

- Extremely easy
- Somewhat easy
- Neither easy nor difficult
- Somewhat difficult
- Extremely difficult

8). Are you aware of the generally lengthy ambulance wait times, also known as Ambulance Patient Offload Time (APOT)

- No
- Yes

*Please list any perceived causes of the protracted ambulance wait times in PES triage*
9.) Do you believe there is a need to implement interventions to reduce current ambulance wait times?

- Definitely yes
- Probably yes
- Probably not
- Definitely not

Survey Powered By Qualtrics
Appendix F

Psychiatric Emergency Services (PES) Fast-Track Post-Survey

1). Do you understand the PES Fast-Track process?
   - No
   - Yes

2). Do you believe the use of Fast-Track decreases ambulance wait times?
   - No
   - Yes

3). Does the use of Fast Track improve your triage process efficiency?
   - No
   - Yes

4). Please rate how well you understand the Fast-Track process.
   - Slightly well
   - Moderately well
   - Very well
   - Extremely well

5). Would you recommend the PES Fast-Track triage process?
   - No
   - Yes

6). What do you like best about the Fast-Track triage process?

7). Please list any other way ambulance wait times in PES triage can be improved.

Survey Powered By Qualtrics
## Appendix G

### SWOT

<table>
<thead>
<tr>
<th>STRENGTHS</th>
<th>WEAKNESSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reducing/eliminating ambulance offload delay (especially for mentally ill patients).</td>
<td>Fast-Track process can only function well when all resources are available like availability of doctors/full staffing for nurses.</td>
</tr>
<tr>
<td>Improves efficiency of ED throughput.</td>
<td>APOT feasibility can be constrained due to limited hospital capacity.</td>
</tr>
<tr>
<td>Improves patient outcomes</td>
<td>Not much research exists on APOT</td>
</tr>
<tr>
<td>Reduces overall hospital length of stay.</td>
<td></td>
</tr>
<tr>
<td>Quicker return of ambulances back into the community for service.</td>
<td></td>
</tr>
<tr>
<td>Help the ED comply with the 30 minutes community standard for APOT.</td>
<td></td>
</tr>
<tr>
<td>Reduces EMS staff overtime expenditures</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OPPORTUNITIES</th>
<th>THREATS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation.</td>
<td>Ambulance diversion to other EDs</td>
</tr>
<tr>
<td>Alternative ways to improve ED throughput.</td>
<td>Creating Offloading Zones (OZ) in the EDs for quick drop-offs</td>
</tr>
<tr>
<td>Opportunities for further research.</td>
<td></td>
</tr>
<tr>
<td>Opportunities to continuously improve patient outcome.</td>
<td></td>
</tr>
</tbody>
</table>

**SWOT**
Appendix H

Gap Analysis

<table>
<thead>
<tr>
<th>Current state</th>
<th>Objectives</th>
<th>Gap Analysis</th>
<th>Implementation</th>
<th>Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>On average of it takes 77 minutes for patients in an ambulance to be offloaded.</td>
<td>To reduce the ambulance patient offload time APOT; Improve patient outcomes with improved triage throughput; prompt return of ambulances to the community to be available for the next patient.</td>
<td>Local emergency medical services authorities set APOT time at 30 minutes per patient drop-off, but PES is currently at 77 minutes.</td>
<td>Implementation of the Fast Track Process consisting of Primary and Secondary sections of the triage process for six months (and beyond if the project is viable).</td>
<td>Project Start date: 05/01/2023</td>
</tr>
<tr>
<td>Security guards log ambulance arrival time and ambulance crew handoff/off gurney time for patients. The security guard notifies the triage RN of the ambulance's arrival. The Charge RN initiates measures for assistance.</td>
<td>Collecting data for APOT to evaluate APOD for improvement of throughput in the triage process.</td>
<td>APOT, per definition, is to be recorded from the time ambulances pull up to the ambulance bay to the time ED staff signs off and pt is transferred to the ED gurney or bed</td>
<td>Security staff fills the triage tracking log with the following info: • Date. • Ambulance # and company. • Arrival time. • Walk-in time. • Off-gurney time. • Patient Name. • Triage Nurse. • Triage doctor.</td>
<td>Start date: 05/01/2023. No end date; expected to be a permanent part of triage throughput.</td>
</tr>
</tbody>
</table>
On arrival of more than one or multiple ambulances, the routine triage process is continued, and the charge RN is notified.

To reduce the ambulance patient offload time APOT; Improve patient outcomes with improved triage throughput; prompt return of ambulances to the community to be available for the next patient.

Operating the triage process on occasions of more than one ambulance waiting without activating the Fast Track triage process does not reduce APOT.

The triage nurse completes triage assessments (Triage Primary section) and quickly transfers the patient to the milieu. Completes a warm handoff to the charge RN, who assigns the patient to a milieu nurse; the assigned milieu nurse completes the total triage (Secondary section).

Start date: 05/01/2023.

No end date (if Fast Track saves APOT and is adopted)

---

### Appendix I

#### Communication Plan

<table>
<thead>
<tr>
<th>Contact Person</th>
<th>Frequency</th>
<th>Mode of Communication</th>
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<tbody>
<tr>
<td>Dr. Trinette Radasa (DNP Chair)</td>
<td>As needed</td>
<td>Telephone, email, virtual</td>
</tr>
<tr>
<td>DNP Committee</td>
<td>As required</td>
<td>Telephone, email, virtual</td>
</tr>
<tr>
<td>Clinical Advisor and Second Reader</td>
<td>As needed</td>
<td>Telephone, In person, email, text messaging</td>
</tr>
<tr>
<td>Providers/clinicians</td>
<td>As needed</td>
<td>In-person, virtual</td>
</tr>
<tr>
<td>JGPH PES Leadership</td>
<td>As needed/scheduled</td>
<td>In-person, virtual</td>
</tr>
<tr>
<td>JGPH PES Nurses</td>
<td>As needed (training and questionnaires)</td>
<td>In-person</td>
</tr>
</tbody>
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## Appendix J

### Proposed Budget

<table>
<thead>
<tr>
<th>Proposed item</th>
<th>Itemized cost</th>
<th>Total estimate</th>
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<tbody>
<tr>
<td>Staff training</td>
<td>RN training @ $90/hr x 24</td>
<td>$2160</td>
</tr>
<tr>
<td>Paper Questionnaires</td>
<td>Paper or electronic</td>
<td>$200</td>
</tr>
<tr>
<td>Epic template builders</td>
<td>$100/hr. x 40hrs</td>
<td>$4000</td>
</tr>
<tr>
<td>Data analysts</td>
<td>$100/hr x 50hrs</td>
<td>$5000</td>
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Appendix K

GANTT CHART

Gantt Chart for Implementation of Fast Track Process in PES Triage

<table>
<thead>
<tr>
<th>TASK</th>
<th>Start date</th>
<th>Days Needed</th>
<th>Completion Date</th>
<th>Adjusted Length</th>
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<td>Project Presentation to Epic Builders</td>
<td>4/9/2023</td>
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<td>Pretest Questionnaire for Nurses</td>
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<td>Training For PES Nurses</td>
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<td>5/3/2023</td>
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<td>Roll-Out of the Fast Track Process</td>
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<td>5/2/2023</td>
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<td>Data Collection Continuum</td>
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<td>10/31/2023</td>
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<td>Data Collation at sixth month</td>
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<td>11/8/2023</td>
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<td>Post test for Triage Nurses</td>
<td>10/2/2023</td>
<td>14</td>
<td>10/16/2023</td>
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<tr>
<td>Evaluation</td>
<td>11/1/2023</td>
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<td>11/8/2023</td>
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Gantt Chart for Implementation of Fast Track Process in PES Triage
APPENDIX L

Work Break-Down Structure

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<tr>
<th>Project Name:</th>
<th>Implementation of Fast Track Triage Process in PES</th>
</tr>
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<tbody>
<tr>
<td>Project Manager:</td>
<td>Oke Umeugoji</td>
</tr>
<tr>
<td>Date:</td>
<td>10/30/2023</td>
</tr>
</tbody>
</table>

**Project Initiation**
- Assemble project group
- Identify stakeholders
- Submit project proposal

**Planning**
- Establish timeline, goals and Objectives
- Establish Framework
- Prepare and submit a budget
- Budget presentation to stakeholders

**Development**
- PES nurses' education
- Presentation to Epic builders
- Building Epic template for Fast Track
- Providing Epic Training for Nurses

**Implementation**
- Pre-test surveys for PES Nurses
- Roll-Out of Fast-Track Process
- Daily APOT data collection in triage
- Post-test surveys for PES Nurses

**Analysis**
- Data collation
- Analysis of Data
- Debriefing
- Evaluation & adoption to policy
Appendix M

### JGPH PES INTAKE WORKFLOW PROCESS

**Purpose/Description:** Ensuring timely and effective responses to referrals, triaging, APOT (Ambulance Patient Offload Time) and admission. Facilitating calls and providing appropriate responses to inquiries/referrals from other facilities.  

**Process Owner Position:** PES LEADERSHIP

**Related Policies:** (1) Emergency Medical Treatment and Active Labor Act (EMTALA). (2) Admission of patient (3) Patient transfers for evaluation, diagnostic testing, or treatment.

**Effective Date:**

**Campus/Dept./Work Unit:** PES John George Psychiatric Hospital  

**Date Revised:**

<table>
<thead>
<tr>
<th>Step No.</th>
<th>Responsible Role</th>
<th>Primary Steps</th>
<th>Key Tasks/Details (Tasks needed to execute Primary Step)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Referring MD</td>
<td>❖ Referral to JGPH</td>
<td>❖ ED to call intake supervisor @ 5103467544</td>
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</tbody>
</table>
| 2        | Intake supervisor  | ❖ Timely acceptance of calls from other facilities | ❖ Completion of transfer/admission checklist  
1) Date and Time  
2) Patient name and date of birth  
3) Referral source (Person that should be contacted for follow up)  
4) Call back phone number  
5) Legal status  
6) Referring facility and attending MD 7) Completes Brosel Violence Scale |
| 3        | Intake supervisor  | ❖ Notification of Triage’s MD   | ❖ Pink sheet given to Triage’s MD placed in the referral inbox for review |
| 4        | Triage’s MD        | ❖ Makes decision to accept or deny based on clinical information from | ❖ MD to MD communication  
1) Reason for ER visit and reason for psychiatric hold  
2) Level of orientation  
3) Medications given in the ED  
4) Past/Pertinent medical history and allergies (skin assessment) |

---

<table>
<thead>
<tr>
<th>Step No.</th>
<th>Responsible Role</th>
<th>Primary Steps</th>
<th>Key Tasks/Details (Tasks needed to execute Primary Step)</th>
</tr>
</thead>
</table>
| 5        | Intake supervisor| ❖ Keeps records of denied patients | ❖ Intake supervisor files the pink sheet in the designated binder.  
❖ Monitors referral, acceptance, denials  
❖ Log all referrals (pink sheets) in the log sheet |
| 6        | Triage’s nurse   | ❖ RN to RN Report              | ❖ Triage nurse receives calls from the referring facility for RN-to-RN report using (Situation, Background, Assessment, and Recommendation)  
1) Validate patient’s name and date of birth  
2) Reason for the transfer  
3) Patient’s legal status  
4) Present condition (orientation, Labs etc.)  
5) Pt current status, behavior, restraints, and pertinent information/hx etc.  
6) Last dose of medication  
7) Last vital signs  
8) Referring hospital sends patient when ready |
Appendix M (contd)

### JGPH PES INTAKE WORKFLOW PROCESS

<table>
<thead>
<tr>
<th>Step No.</th>
<th>Responsible Role</th>
<th>Primary Steps</th>
<th>Key Tasks/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Security Staff</td>
<td>Upon ambulance arrival with the patient.</td>
<td>Security Staff fills the Triage Tracking logs (Date, Ambulance#, Ambulance company, Arrival time, walk in time, Pt off Gurney time, Wait times, Patient Name, Triage Nurse, Triage MD). Security Notifies Triage Nurses of Ambulance arrival.</td>
</tr>
<tr>
<td>8</td>
<td>Triage MD</td>
<td>Pt upon arrival</td>
<td>Triage MD conducts a Medical Screening Exam in triage. Determines the plan of care and communicates with the Triage nurse.</td>
</tr>
<tr>
<td>9</td>
<td>Triage Nurse</td>
<td>Pt upon arrival</td>
<td>Triage Nurse completes triage assessment and transfers the patient to the milieu. In the milieu, Triage nurse completes a handoff to the charge nurse and goes back to triage. In the event of ambulance patient offload delay (APOD), Triage Nurse communicates barriers to the Charge Nurse. When there is more than 1 ambulance waiting/voluntary patient, triage nurse activates Fast Track.</td>
</tr>
</tbody>
</table>

- **Step No.**: 10
  - **Responsible Role**: Charge nurse
  - **Primary Steps**: Roboce APOT
  - **Key Tasks/Details**: The charge Nurse has to formulate and activate a plan immediately.

- **Step No.**: 11
  - **Responsible Role**: PES Clinical Leadership
  - **Primary Steps**: Achieve APOT of 30 minute or less.
  - **Key Tasks/Details**: Review the Triage Ambulance Tracking logs. Identify gaps and implement action plan for process improvement.
### APOT DATA (AVERAGE)
**May – October 2023**

<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th>Falck</th>
<th>Other Amb Companies</th>
</tr>
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<tbody>
<tr>
<td>May</td>
<td>0:44</td>
<td>0:48</td>
<td>1:17</td>
</tr>
<tr>
<td>June</td>
<td>0:35</td>
<td>0:38</td>
<td>0:38</td>
</tr>
<tr>
<td>July</td>
<td>0:40</td>
<td>0:39</td>
<td>0:58</td>
</tr>
<tr>
<td>Aug</td>
<td>0:36</td>
<td>0:40</td>
<td>0:38</td>
</tr>
<tr>
<td>Sep</td>
<td>0:52</td>
<td>0:30</td>
<td>0:37</td>
</tr>
<tr>
<td>Oct</td>
<td>0:27</td>
<td>0:29</td>
<td>0:26</td>
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</table>
Appendix O(a)

APOT 90th percentile of transfer of care (mm)

<table>
<thead>
<tr>
<th>FY 23</th>
<th>All (mm)</th>
<th>Falck (mm)</th>
<th>Other Ambulance Companies (mm)</th>
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</thead>
<tbody>
<tr>
<td>May-23</td>
<td>91</td>
<td>77</td>
<td>90</td>
</tr>
<tr>
<td>Jun-23</td>
<td>81</td>
<td>70</td>
<td>85</td>
</tr>
<tr>
<td>Jul-23</td>
<td>77</td>
<td>65</td>
<td>88</td>
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<tr>
<td>Aug-23</td>
<td>79</td>
<td>67</td>
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<tr>
<td>Sep-23</td>
<td>76</td>
<td>55</td>
<td>86</td>
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<tr>
<td>Oct-23</td>
<td>52</td>
<td>53</td>
<td>51</td>
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</tbody>
</table>

Appendix O(b)

APOT 90th percentile of transfer of care (mm)
Appendix P

What does this mean for people in the community?

• With an average of 300 transports per day:
  - 5 minute reduction – 2 extra ambulances per day
  - 10 minute reduction – 4 extra ambulances per day
  - 15 minute reduction – 6 extra ambulances per day
  - 20 minutes reduction – 8 extra ambulances per day and so forth

<table>
<thead>
<tr>
<th></th>
<th>Grand Total</th>
<th>Ambulance equivalent per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>5177.4</td>
<td>14</td>
</tr>
<tr>
<td>Feb</td>
<td>4397.9</td>
<td>12</td>
</tr>
<tr>
<td>Mar</td>
<td>5001.1</td>
<td>14</td>
</tr>
<tr>
<td>Apr</td>
<td>4637.8</td>
<td>13</td>
</tr>
<tr>
<td>May</td>
<td>4463.1</td>
<td>12</td>
</tr>
<tr>
<td>Jun</td>
<td>4507.9</td>
<td>12</td>
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<tr>
<td>Jul</td>
<td>4947.9</td>
<td>14</td>
</tr>
<tr>
<td>Aug</td>
<td>4978.5</td>
<td>14</td>
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<tr>
<td>Sep</td>
<td>4682.8</td>
<td>13</td>
</tr>
<tr>
<td>Oct</td>
<td>1786.7</td>
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<tr>
<td>Grand Total</td>
<td>44531.5</td>
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</table>
Appendix Q

Questionnaire Survey.

PES RN PRETEST SURVEY

<table>
<thead>
<tr>
<th>PES RN PRE-TEST QUESTIONNAIRE N-24</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>UNDERSTANDING OF CURRENT TRIAGE PROCESS</td>
<td>23</td>
</tr>
<tr>
<td>AWARE OF CHRONIC LENGTHY APOT</td>
<td>24</td>
</tr>
<tr>
<td>SUPPORT NEED FOR AN INTERVENTION</td>
<td>21</td>
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</table>
Appendix R

Questionnaire Survey

Post-Test RN Questionnaire

<table>
<thead>
<tr>
<th>RN PERCEIVED REASONS FOR AMBULANCE DELAY N-24</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>HIGH ACUITY PATIENTS</td>
<td>12</td>
</tr>
<tr>
<td>MULTIPLE AMBULANCE ARRIVALS</td>
<td>12</td>
</tr>
<tr>
<td>MD DELAYS AND ISSUES</td>
<td>14</td>
</tr>
<tr>
<td>STAFF SHORTAGE</td>
<td>1</td>
</tr>
<tr>
<td>WALK-IN PATIENTS</td>
<td>1</td>
</tr>
</tbody>
</table>

![Bar chart showing reasons for ambulance delay](image)