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## **Actualizing Best Care Practices at a Psychiatric Treatment Center to Validate the Asset of an On-Site Electrocardiogram**

Pamela Metts

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ACTUALIZING BEST CARE PRACTICES AT A PSYCHIATRIC TREATMENT  
CENTER TO VALIDATE THE ASSET OF AN ON-SITE ELECTROCARDIOGRAM

by

Pamela Metts

A Doctoral Project  
Submitted to the Graduate School,  
the College of Nursing and Health Professions  
and the School of Leadership and Advanced Nursing Practice  
at The University of Southern Mississippi  
in Partial Fulfillment of the Requirements  
for the Degree of Doctor of Nursing Practice

Approved by:

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## ABSTRACT

Considerations to be contemplated in daily health delivery systems are complex and require varied approaches to deliver best-care processes that produce optimal patient outcomes. Specialty practice sites not only require the capability but also necessitate proficiency and dedication in meeting and exceeding essential healthcare competencies. A psychiatric treatment center specialty practice was the setting for this DNP project. The focus of this project included: (1) care resourcefulness, (2) safety initiatives, (3) increased privacy and confidentiality compliance, and (4) cost-efficiency measures.

Technology use beyond the security of the safety available within the treatment complex is a current policy at the psychiatric treatment center producing suboptimal results. This project addressed the suboptimal care processes resulting from the use of the emergency department (ED) for the admitting electrocardiogram (ECG). Concentrated methods in support of this project change initiative included (1) literature research, (2) patient charting, (3) organizational expenses, (4) two policy briefs, and (5) two surveys. Project methods produced successful outcomes in acceptance of this project's initiative.

Literature supported decreased use of EDs for nonurgent health needs along with extensive recommendations in support of the clinical ECG. Extrapolated data exhibited greater sub-optimal care processes associated with obtaining the ECG at the ED than anticipated, as well as the generation of significant organizational costs. Policy briefings contained concise research results in support of an on-site ECG. Surveyors were in favor of the presented project solution. The purchase of an ECG will be a short-term technological investment that will produce profitable long-term returns in care quality and care delivery as well as being financially resourceful.

## ACKNOWLEDGMENTS

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To my committee member, Dr. Carolyn Coleman, thank you for your assistance and for your supportive presence during my project defense. Special thanks to Dr. Cathy Hughes for hosting the DNP Scholarship Day, 2019, and for the continuous supply of resources and contributory information to assist in meeting DNP project and graduation requirements. In special recognition to Dr. Marcus Gaut for instilling the essential core of the DNP as it relates to advanced nursing practice for the advanced practice registered nurse (APRN).

My project required extensive information and valuable time of this project site CEO. The major focus of the psychiatric treatment center CEO is the health and holistic well-being of each of the children and adolescents who are admitted to his facility. His ambitions for these patients are evident in his daily practice and organizational goals. I am grateful to be a provider at this facility and I extend my sincere gratitude for his confidence and support in the production and completion of this DNP project.

## DEDICATION

This career path was made possible by God's omnipotent guidance-praise be to God. With loving thanks, admiration, and dedication to my husband for his inspirational devotion and for his selfless, boundless love and support. He has been my "I can" when I no longer thought "I could". I also extend the dedication of this DNP project and DNP degree to my entire family whose love, support, and devotedness define my being.

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## LIST OF ABBREVIATIONS

AACN	American Association of Colleges of Nursing
APRN	Advanced Practice Registered Nurse
BNI	Business Network International
CEO	Chief Executive Officer
CINAHL	Cumulative Index to Nursing and Allied Health Literature
CNO	Chief Nursing Officer
DNP	Doctor of Nursing Practice
ECG	Electrocardiogram
ED	Emergency Department
ER	Emergency Room
FNPN	Family Nurse Practitioner
HIPAA	Health Insurance Portability and Accountability Act
IRB	Institutional Review Board
PDCA	Plan-Do-Check/Study-Act
PICOT	Patient Intervention Comparison and Type
QI	Quality Improvement
U.S.	United States
USM	The University of Southern Mississippi

## CHAPTER I - INTRODUCTION

The current drive for best care practices in a value-driven health arena requires consideration and innovation of multifarious collectives. Evidence-based practice reflects clinically proven care as well as recognizing the positive outcomes resulting from applicable use of resources, time management, appropriate staffing, and cost containment. Quality improvement (QI) measures that are evaluated and designed to combine best care practices with value-driven innovations create sustainable healthcare solutions.

There is a current nationwide practice of increased use of EDs for health needs that are not urgent conditions. “Inappropriate use of healthcare resources contributes billions of dollars to the nation’s healthcare budget annually,” explained by Thompson and Glick (1999), and a certain “setting in which notable inefficiency occurs is through use of emergency rooms (ERs) for non-urgent care” (p. 142). Gindi, Black, and Cohen (2016) noted that ED care is an expensive route when compared to clinic treatment and is an even greater national cost burden to those insured through Medicaid. ED overuse is an issue in the United States (U.S.) with children accounting for 800,000 visits per day (Barata, Brown, Fitzmaurice, Griffin, & Snow, 2015). Congestion in EDs jeopardizes healthcare outcomes and greatly increases overall wait times from arrival to discharge (Barata et al., 2015). Barata and colleagues (2015) indicated that patients with non-urgent health needs seeking treatment at the ED can cause delays in treatment for those patients with acute symptoms requiring emergency treatment.

Safe and sufficient staffing is not a new concern but an ongoing deliberation in the healthcare industry (Baker & Prymachuk, 2016). All areas of care require certain

levels of staff-to-patient ratios to maintain and promote safety with the area of mental health being the most important (Baker & Prymachuk, 2016). The National Health Service, United Kingdom (NHS) (2013) affirmed that adequate staffing maintained around the clock will guarantee the best care practice outcomes.

### Problem Statement

Expeditious, safe, cost-conscious care practices at a psychiatric treatment center for children and adolescents who are ages 5 to 17 will achieve optimal patient outcomes. This project determined whether obtaining an admitting ECG analysis at an ED (1) created non-therapeutic delays in treatment; (2) generated unsafe staff-to-patient ratios; (3) compromised patient safety, privacy, and confidentiality; and (4) accounted for avertible costs of care that substantiated an on-site ECG is a QI initiative that will improve care practices. Having access to an ECG at the point-of-care will present a clinically solid organization of value-driven health care.

### Background and Significance

The 25-bed acute psychiatric treatment unit is for chemical dependency and serious emotional, psychological, and behavioral issues of male and female children and adolescents who are ages 5 to 17 years. The 30-bed residential unit treats nonemergent males who are ages 6 to 17 years who are transferred from the acute unit or directly admitted to residential treatment. The acute and residential services are available to the local community as well as all remaining counties in the state of practice.

Age appropriate children are admitted to the psychiatric treatment center after an initial assessment to determine if he or she is a candidate for the services provided. Treatment services include psychiatric, medical, chemical history profile, education, and

nutritional support. Psychopharmacotherapy is required when deemed necessary by one of two staff psychiatrists in successful treatment processes for the admitted patients.

All medications can have adverse reactions and Ramanuj (2013) affirmed that psychopharmacotherapy can cause “cardiac arrhythmias” (p. 29). As reported by Andrade et al. (2016), “a standard 12-lead ECG offer important diagnostic and prognostic information” and “provide independent risk information for cardiovascular outcomes over and above that of established risk factors” (p. 413). An ECG is a standard of care essential for every child admitted to the acute care unit and for those children who are admitted directly to the residential program.

Current practice at the psychiatric treatment center includes sending each child or adolescent to the community ED to obtain an ECG reading. Two staff members are required to accompany the children and adolescents on all departures from the security of the treatment center. The absence of two staff members create a decrease in staff-to-patient ratio coverage and this time frame can reach three hours or more. The resulting dearth of staff can place the unit(s) in a compromised safety status. In addition, acquiring the ECG at the ED produces a breach in the privacy and confidentiality of each patient along with added jeopardy to personal safety while traveling to and from the ED.

ECG assessments have been interrupted, severely delayed, or omitted due to the unavailability of two staff to escort the patient(s) to the ED resulting from (1) a high influx in admissions during a short time period, (2) application of protective patient-restraining systems that require continuous patient monitoring, (3) patients being placed on one-to-one security measures due to high risk behaviors, or (4) due to low staff census. Delays in ECG assessments can create delays in successful treatment approaches.

Prompt therapeutics complements optimal psychiatric care processes when there are emergent psychological symptoms and also for optimal care delivery during the short treatment window allowed on the acute unit.

When two staff are available to accompany the patient(s) to the ED, an avoidable financial burden of overtime pay may result if the time required at the ED exceeds the employee scheduled off time. Reducing financial burdens entails formative cost containment approaches. Having immediate access to and utilizing in-house diagnostic equipment, such as an ECG, can be an economical solution that is also an advantageous tool in providing evidence-based care.

#### Needs Assessment

The environment at the psychiatric treatment center is primarily calm, quiet, and controlled. However, the unit(s) can become exceptionally busy requiring all hands to be on deck. During these times, patient safety is the eminent goal and ECG admitting requirements can be interrupted, severely prolonged, or omitted. Purchase and placement of an on-site ECG in the acute care unit will be a best-practice change initiative that will resolve disruption in care processes. This change initiative enables the best possible care afforded to the children and adolescents admitted to the psychiatric treatment center by keeping all personnel on site and functioning appropriately while expeditiously achieving the essential ECG with verified results. By initiating this proposed change initiative, a more affluent environment of technological resource usage will be created for all direct-care staff members. The chief executive officer (CEO) and the two staff psychiatrists are the main stakeholders. The chief nursing officer (CNO) and the four family nurse practitioners (FNPs) are secondary stakeholders.

## Review of Relevant Scientific Evidence

Cardiovascular disease is a health concern that affects all age groups and is of great concern in America. Cardiovascular disease reduces the quality of life and it can end life. Cardiovascular-related deaths rank first in the U.S. creating a nimiety of emotional and financial cost burdens. “The proper identification of those at greater risk for future cardiac events would result in a change in therapy, therefore, such risk stratification is clinically warranted” (Al-Zaiti et al., 2014, p. 516). An ECG is a non-invasive device that monitors and measures the electrical activity of the heart (Khunti, 2014). The quick insight to possible acute and/or chronic cardiovascular disease states provided by the ECG is invaluable and can be a cost-effective determinant of care processes (Al-Zaiti et al., 2014).

Al-Zaiti and colleagues (2014) conducted a meta-analysis of a pooled sample size of 349,756 to discover what risk values could be revealed upon various repolarization readings and if there are any changes when compared to age and gender. The entire study revolved around the results offered by ECG technology. This meta-analysis supported ECG used in “that novel ECG markers can provide clinically important findings beyond those readily available for clinicians” and the risk values associated with ischemic myocardial changes affect children greater than men or women (Al-Zaiti et al., 2014, p. 517).

Atrial fibrillation is the number one cardiac arrhythmia and Andrade et al. (2016) performed a systematic review of 5,164 individuals diagnosed with atrial fibrillation to decipher if specific readings in atrial fibrillation predicted worse prognoses than other rhythms. This study is important and sustains the quest for installation of an ECG in the

acute care unit at the psychiatric treatment center as the findings and recommendations conclude that specific ECG readings in atrial fibrillation patients predict hospitalization and death. Many young patients admitted to the psychiatric treatment center are taking antipsychotic medications upon their admittance or they have been treated with psychopharmacotherapy previously and could be experiencing atrial fibrillation or other rhythm disturbances that the psychiatrists or the advanced practice registered nurses (APRN) should be aware.

Cost containment in healthcare settings is a paramount strategy with regards to the consumer and for the success of medical organizations. The expert opinion of Gindi et al. (2016) affirmed purchasing an ECG monitor and placement on-site will reduce costs as evidenced by the extreme expense created by erroneous use of ED facilities for nonurgent care processes. This report reviewed information available from the years 2013 and 2014. Although it did not include children in the survey, definitive recommendations included reductions in not only erroneous ED use but overall use of EDs due to the overwhelming costs when compared to other avenues. Therefore, the purchase of an on-site ECG will be a beneficial cost savings policy for the psychiatric treatment center.

Practicing ECG usage on-site will increase proficiency and decrease the time from admit to ECG results. The growing overuse of EDs is a vast cost burden as well as a mainspring of prolonged wait times due to overcrowding conditions (Barata, Brown, Fitzmaurice, Griffin, & Snow, 2015). Their best practice report on congested EDs recognized that in 2015 relatively 800,000 pediatric patients received some type of care at EDs daily in addition to the extreme number of adult patients (Barata et al., 2015). The ED wait times can be longest for those patients requesting non-urgent care as triage

pushes these patients to lower treatment priorities. Having an on-site ECG will eliminate ED wait times for the admitting ECG analysis. Eliminating this unnecessary time delay at the ED will allow staff and patients to remain safely on-site and will allocate resources for prompt therapeutic care initiatives for each child and adolescent. In addition, keeping the admitted patients on-site will protect their privacy and confidentiality during treatment processes (see Appendix A for Literature Matrix).

#### Purpose Statement

On-site resource usage empowers the organization and healthcare providers. On-site resource usage is also a patient-based ethical standard of care (Crowe, 2010). This project purpose was to evaluate if an on-site ECG will be a QI initiative that will (1) expedite care practices; (2) increase on-site safety; (3) decrease compromised patient safety, privacy, and confidentiality; and (4) decrease costs. By implementing an ECG at the point-of-care, short and long-term organizational goals of value-driven, safe, and ethical patient-based healthcare outcomes can be realized.

#### PICO Question

As represented by Echevarria and Walker (2014), clinical decisiveness is most effective and conclusive when presented as “foreground questions” while attempting to attain clinical excellence based on evidential research (p. 18). By applying the aforementioned format, the following project question was developed: Will the convenience of an on-site ECG (1) minimize delays in therapeutic treatment; (2) maintain safe staff-to-patient ratios on-site; (3) protect patient safety, privacy, and confidentiality; and (4) reduce costs when compared to obtaining the admitting ECG at the ED? In

answering the presented question, the relevance of this project was revealed with the researched results becoming an initiative for a clinical practice change.

### Theoretical Framework

Two QI models, the Plan-Do-Check/Study-Act (PDCA) and the Donabedian, was instituted to accomplish this project while creating the strategic measures for continued long-range fulfillment of both models if the quality improvement initiative becomes a practice improvement. The PDCA cycle utilizes four stages of fulfillment, as illustrated by Brown (2018), that promote strategic QI changes including (1) plan, (2) do, (3) check/study, and (4) act. The four ordered steps strengthen leadership advocacy for policy transformation and implementation. Donnelly and Kirk (2015) elaborated further by explaining the PDCA advocates first to create a plan after recognition of the practice problem, followed by the second step that activates professional team members to implement the change. The third step is to check or study the results of the change for predicted accomplishments, and finally, the act step is the continual portion of the cycle that establishes ongoing collaborative support for the effective change process (Donnelly & Kirk, 2015).

“The Donabedian framework provides a useful model to guide planning, preparation, and evaluation of a health service innovation” (p. 153) and “lays the foundation for safe, effective, and patient-centered clinical care” (Gardner, Gardner, & O’Connell, 2014, p. 145). Avedis Donabedian is credited as the forerunner in QI theorizing who philosophized that quality healthcare practices be measured by (1) structure, (2) process, and (3) outcome (Lighter, 2015). Butts and Rich (2018) described structure as the healthcare surroundings, process as the actual giving of health care, and

outcomes as the systematic accomplishments that can be checked or studied for predicted and sought-after evidence-based results. More specifically, the literature reviews shared by Tomizawa, Shigeta, and Reeves (2017) included staffing as part of the structure measure, timing of evidence-based practice transformations as part of the process measure, and the outcomes measure of the effectiveness that innovative changes have generated. The Donabedian model embodies the PDCA leadership strategy and concentrates on QIs for best practice as it considers cost containment and supply constraints in healthcare delivery (Butts & Rich, 2018).

#### Doctor of Nursing Practice Essentials

The American Association of Colleges of Nursing (AACN) eight DNP Essentials guided our graduate program and instill the required core competencies for graduation (AACN, 2006). This scholarly project applied all eight essentials. Fundamentally, Essential I, scientific underpinnings for practice; Essential II, organizational and systems leadership for quality improvement and systems thinking; and Essential VIII, advanced nursing practice, including the sub-category for each, constituted the overarching paradigm in all aspects and elements fostered in the development and successful completion for this DNP doctoral project. The remaining Essentials were notably inscribed. Essential III is clinical scholarship and analytical methods for evidence-based practice. This project required extensive searches for evidence-based practices as it related to (1) cardiovascular disease processes; (2) ECG diagnostic equipment and its necessity in clinical practice; (3) current status of ED use/overuse, wait times, and expense; and (4) safe staffing for various clinical applications. Also, reviews were completed regarding theories, interprofessional collaboration, and team approaches to

care. Information systems/technology and patient care technology for the improvement and transformation of health care is Essential IV. The psychiatric treatment center is a specialty practice in treating patient diagnoses that require adept insight and vigilant attention to chronic and emergent conditions. Access to and use of information systems and technology at the point-of-care is the underpinnings for this DNP project solution. Essential V instills healthcare policy for advocacy in health care as the guiding structure to foresee, generate, and collaborate in unified goals of strategic development, enhancement, and reformation of care practices. Obtaining the admitting ECG at a location beyond the safety of the psychiatric treatment center is a substandard organizational policy. This DNP doctoral project, in collaborative efforts, addressed the inadequate policy in advocacy for increased (1) patient safety, (2) efficiency in diagnostics, (3) protection of privacy and confidentiality, and (4) recovery of avertible expenses. Essential VI covers interprofessional collaboration for improving patient and population health outcomes. A collaboration of the CEO, CNO, nursing staff, and the providers as a unified team to reach a common goal of prompt, cost-efficient ECG monitoring were part of the goals for the change initiative. Finally, Essential VII being clinical prevention and population health for improving the nation's health was addressed in that prompt, on-site ECG analysis will increase safety and create not only viable clinical outcomes but also improved overall organizational outcomes for best care practices and value-driven healthcare solutions. The consequence of this project solution will also be advantageous to the population health of the community by decreasing congestion at the local ED allowing for more judicious patient triage measures and

reductions in treatment delays for patients with emergent conditions (see Appendix B for the table of DNP Essentials).

### Summary

Researched evidence explicitly revealed the clinical value of an ECG. Researched evidence also revealed the steadily increasing use of EDs for non-urgent care purposes create a vicious cycle of (1) incommensurate use of time; (2) treatment diversions; (3) jeopardized safety, privacy, and confidentiality for patients; and (4) disproportionate expense. In the application of the reviewed evidence pertaining to ECG and ED use, Chapter I offered an overall introduction to this project's QI initiative to enhance and improve care processes at the psychiatric treatment center by implementing an on-site ECG.

## CHAPTER II – METHODOLOGY

### Setting

A psychiatric treatment facility was the setting for this DNP doctoral project. The facility is centrally located in a southeastern state that serves the local community as well as all counties within the residing state. The psychiatric treatment center has been providing multi-disciplinary treatment since 1977 and is accredited by The Joint Commission. The facility has been awarded the compliance Gold Seal of Approval by The Joint Commission.

### Population

This project included two population sets. The first population set consisted of 150 paper chart reviews for certain documented criteria regarding patients who are ages 5 to 17 admitted to the acute unit at the psychiatric treatment center. The second population set included the psychiatric treatment center CEO and two staff doctors of psychiatry who were the main stakeholders. The CEO strives for a successful, Joint Commission accredited healthcare organization and will be the final local decision maker for approval of the quality improvement initiative. The two staff psychiatrists are the only board-certified professionals who prescribe psychotropic medications if required. The experience and expert opinion of each of these individuals were integral in evaluations for an on-site ECG. Secondary stakeholders included the CNO and four FNPs. The CNO operates under the CEO and is an important participant in that she is the controller of all nursing aspects and the main decision maker for all nursing care practices. The four FNPs assess and treat the admitted patients for chronic medical states and any emergent conditions that arise during patient admittance. The FNPs strive to maintain the patients

in optimal health states to facilitate achieving the most favorable outcomes in psychiatric treatment responses. Although all direct-care staff are affected by the current suboptimal care practices that result from obtaining the admitting ECGs at the ED, the main stakeholders were the CEO and two staff psychiatrists.

### Outcomes Provisions

Two distinct outcomes were posited to produce measurement evaluations for the approval and acceptance by the stakeholders for the QI project. After receiving documented approval to proceed from The University of Southern Mississippi (USM) Institutional Review Board (IRB-18-129) and the psychiatric facility CEO, the outcomes process was inaugurated (see Appendix J for CEO Approval and Appendix K for IRB Approval). The project proceeded in an ordered step-by-step method for success as it followed the theoretical frameworks of the PDCA and the Donabedian Theory.

#### *Step 1 – PDCA Plan/Donabedian Structure*

Recognition and correction of the need for an on-site ECG was a practice initiative that required the collaboration of multiple intra-professional members and perusal of multiple chart documentation. The two population sets had two measurable outcomes. The CEO and two psychiatry doctors were informed of the intent of this DNP doctoral project. Each of these individuals was notified of the benefit for participation being a more proficient avenue in attaining and sustaining evidence-based, best-care practice measures on-site. Informed consent, with a requirement to be over 18 years of age to participate, was endorsed by each stakeholder.

Paper charting is the system of patient records at the treatment center. Approval for 150 chart reviews from September 2018, through November 2018, was obtained from

the CEO. The CEO also designated dates and the locations to review the charted information. He appointed the organization's Health Information Director to randomly select 50 charts for each applicable month.

*Step 2 – PDCA Do/Donabedian Process*

The first measurable outcome included the knowledge gleaned from the paper chart reviews of the most recent, completed, consecutive three months. Fifty patient charts were randomly selected by the Health Information Director for each month (September, October, and November 2018). Notations were tabulated for each month to include: (1) date and time of each admit; (2) total number of patients admitted that received an ECG; (3) date and time of each admit ECG procedure; (4) date and time of each admit ECG interpretation; (5) date and time of initial psychotropic medication treatment, if prescribed; and (6) number of days staff accompanied patient(s) to the ED for the admit ECG. Additional quantitative measures included: (1) ECG procedure charges, (2) ECG interpretation charges, (3) fuel charges and transportation costs for round trips per day to the ED, (4) the best ECG quote from three quotes, (5) a reduced ECG interpretation quote, and (6) an ECG Service Agreement quote. Although access to company financial records was not granted, the CEO released the requested applicable charges for their inclusion in this project.

The second measurable outcome included a pre-survey, a policy brief, and a post-survey administered to the main stakeholders that included the CEO and two staff psychiatrists. These individuals were the staff population set most affected by this project change initiative. The pre-survey included eight questions with three ECG related questions regarding (1) stakeholder awareness of the practice need for an on-site ECG,

(2) stakeholder awareness of the current sub-optimal care practices created by obtaining the admitting ECG at the ED, and (3) current individual stakeholder satisfaction levels concerning optimal patient outcomes. A policy brief covering results derived from the chart reviews and from evidence-based research was presented to the CEO and CNO. Following, the policy brief was presented to the two staff psychiatrists. After reading and reviewing the document, a post-survey was completed by each stakeholder. The post-survey included the same questions asked in the pre-survey with the addition of two questions. The first question queried willingness to consider a solution to the practice problem and the final question asked if each surveyed intra-professional was in favor of the presented project solution (see Appendix C for Pre-Survey and Appendix D for Post-Survey).

*Step 3 – PDCA Check, Study/Donabedian Outcome*

Chart reviews revealed (1) if there were patients who did not receive an admitting ECG and how many, (2) time from admit to ECG procedure, (3) average time from admit to ECG interpretation, (4) time from admit to psychotropic medication treatment if prescribed, and (5) how often the units were operating with substandard staff-to-patient ratios. Charges were broken into (1) three-month, annual, and five-year ECG charges; (2) three-month, annual, and five-year ECG interpretation charges; (3) three-month, annual, and five-year round-trip fuel charges; and (4) three-month, annual, and five-year transportation costs less insurance expense. The stakeholder's pre- and post-surveys disclosed (1) if their awareness of the project needs increasing, (2) changes in current satisfaction with treatment process outcomes, (3) willingness for an innovative practice change, and (4) acceptance of this project's suggested practice change. A second policy

brief was created to contain all the information included in the first policy brief with the additions of the compiled pre- and post-survey results and incremental expenses. Policy brief two was presented to the CEO.

#### *Step 4 – PDCA Act/Donabedian Outcome*

The final PDCA and Donabedian steps substantiated documented chart and financial support for the practice change. In this final step, evidence generated the platform for the effectiveness of the project solution. These two combined QI theory processes positioned this project to induce collaborative support to further advance actions to purchase and implement an on-site ECG. In his continued quest for an organization based on value-driven, safe, and ethical healthcare outcomes, the CEO will present the latter policy brief to the psychiatric center management company in a request for acceptance of the practice change initiative. The two QI theories also provide a continued, long-range, ordered process for outcome reviews as needed in collaborative support of the evidence-based, value-driven, quality healthcare innovation.

#### Ethical Conservation

Nursing ethics is inherent in all eight nursing practice essentials that guide doctoral education and post-doctoral practice, (AACN, 2006). Ethical sensitivity and bioethical awareness were integral components included in the development and production of this doctoral project (Butts & Rich, 2013). Conservation of ethical principle was advocated for both the survey participants and the privacy and confidentiality of the 150 chart-reviewed patient documents.

Approvals from the The University of Southern Mississippi's Institutional Review Board and the psychiatric facility CEO were obtained prior to survey presentation to

participants who completed participation consent. Although the stakeholders were not anonymous in identity, their surveyed answers were confidential and unable to be identified by stakeholder. Checked box answers were the only required answer markings on the surveys. Sealable envelopes were available for each survey participant to enclose their completed or partially completed surveys. Sealed surveys were stored in a secure area until my retrieval. The survey participation was voluntary with no repercussions for participant refusal to participate. Partial surveys were acceptable and participants were allowed to withdraw at any time without penalty. The time to take the surveys could have been an inconvenience, although the surveys were optional and partial completion was acceptable. Surveys were shredded following tabulation of the checked-box answers.

The CEO approved data perusal of 150 patient charts for supporting information along with convenient dates and a secure location to extract the relevant information. During chart reviews, strict confidence was maintained with no patient identifiable parameters included in the quantitative extraction of applicable information. Patient identifiers were not applicable in the sought-after measures for results to support an on-site ECG. Total patient counts, notation of dates, and time notations were the only search criteria required in compiling results for stakeholder recognition and acceptance of this doctoral project QI solution.

### Data Analysis

Applicable chart data was collected and entered into the data collection tools. Once the compilation of the three most recent, completed, consecutive months were concluded for the charted data, the coefficients were totaled for each relevant category. Expenses involved three-month, annual, and five-year amounts. All quantitative figure

totals were entered into the first policy brief that also yielded the evidence-based results. The first policy brief was presented to each stakeholder after completing the pre-survey.

Each pre-survey question, checked-box answer was summated. Separately, each post-survey question, checked-box answer was summated. A second policy brief was composed documenting (1) pre-survey responses in contrast to the post-survey responses, (2) quantitative figure totals with added incremental forecasting, and (3) researched evidence results. The second policy brief was presented to the CEO. The CEO will present policy brief two to the management company board members in a request for final approval of the DNP doctoral project change initiative (see Appendix E for Chart Data Collection Tool, Appendix F for Expense Data Collection Tool, Appendix G for Pre-Survey Collection Tool, and Appendix H for Post-Survey Collection Tool).

#### Summary

The setting as described in Chapter II was the paramount driving force for this project initiative in that on-site resource utilization is a best-care practice (Crowe, 2010). Chapter II also provided the population sets most affected by this change initiative. The avenues in outcomes attainment were presented as they followed the methodic advancement provided by two theoretical frameworks. Although ethical conservation was posited in Chapter II, ethical and bioethical awareness and inclusion were present at the onset of this project and continued with Chapter III and throughout the entire fulfillment of this project. Chapter II also included data analysis strategies for this project solution.

## CHAPTER III - RESULTS

Extrapolation of the associable data from the 150 reviewed charts validated the QI initiative for the psychiatric treatment center ECG at the point-of-care. Project data revealed greater sub-optimal care processes associated with obtaining the admitting ECG at the ED than anticipated (see Tables 1, 2, and 3). Aggregated overall time averages for the three months are also included in Table 4 (see Appendix I for Time-Related Bar Charts).

Table 1

*September 2018, Chart Data*

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▪ Patients that did not receive an ECG	64%
▪ Patients transported to the ED	36%
▪ Average time from admit to ECG	4 days, 0 hours, 31 minutes
▪ Average time from admit to ECG interpretation	6 days, 5 hours, 52 minutes
▪ Average time from admit to psychotropic medication	2 days, 3 hours, 32 minutes

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Table 2

*October 2018, Chart Data*

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▪ Patients that did not receive an ECG	38%
▪ Patients transported to the ED	62%
▪ Average time from admit to ECG	4 days, 11 hours, 12 minutes
▪ Average time from admit to ECG interpretation	6 days, 12 hours, 19 minutes
▪ Average time from admit to psychotropic medication	1 day, 15 hours, 19 minutes

---

Table 3

*November 2018, Chart Data*

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▪ Patients that did not receive an ECG	66%
▪ Patient transported to the ED	34%
▪ Average time from admit to ECG	6 days, 23 hours, 9 minutes
▪ Average time from admit to ECG interpretation	9 days, 13 hours, 12 minutes
▪ Average time from admit to psychotropic medication	2 days, 4 hours, 47 minutes

---

Table 4

*Aggregated Overall Time Averages for the Three Months*

Include the Following:

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▪ Acute patients that did not receive the admit ECG	56%
▪ Acute patients transported to the ED for the admit ECG	44%
▪ Overall time from admit to ECG	4.5 days, 11 hours, 17 minutes
▪ Overall time from admit to ECG interpretation	7 days, 10 hours, 28 minutes
▪ Overall time from admit to psychotropic medication	1.5 days, 7 hours, 33 minutes

---

Extrapolated data also verified significant organizational costs were associated with the ED off-site resourcing. ECG procedure charges and interpretation charges were provided by the CEO and calculated by actual chart data. All other expenses were provided by the CEO and calculated as either 3-month, annual and 5-year time periods (see Table 5).

Table 5

*Quantitative Measures Based on One Patient per ED Trip*

ED Expenses	3 Months	Annually	5-Years
ECG procedure charges based on chart data	\$5,445.00*	\$16,335.00*	\$ 81,675.00*
ECG interpretation charges based on chart data ((\$20.00 per reading-current charge)	\$1,320.00*	\$ 3,960.00*	\$ 19,800.00*
Fuel charges (round trips)	\$ 540.50	\$ 1,621.50	\$ 8,107.50
Transport costs (round trips) less insurance	\$ 31.50	\$ 94.50	\$ 472.50
<b>Total Recurring ED-Related Expenses</b>	<b>\$7,337.00*</b>	<b>\$22,011.00*</b>	<b>\$110,055.00*</b>

ECG Expenses	Annually	5-Years
<b>ECG purchase price \$7,677.60 (one-time cost, best price out of three quotes)</b>		
ECG Service Agreement Coverage – 5-year term (turnkey coverage)	\$2,900.00	\$14,500.00
ECG interpretation charges (new quote - \$10.00 per reading)	\$1,980.00*	\$ 9,900.00*
<b>Total Recurring Expenses – On-Site ECG</b>	<b>\$4,880.00*</b>	<b>\$24,400.00*</b>

Note: \*Figures are lower than actual amounts due to the unavailable number of patients per trip to the ED

Patient counts for each ED transport were unavailable for computation. The maximum patient capacity per admit ED trip is six, therefore, figures included in Table 5 are lower than actual amounts. Totals affected by this unknown number of patients causing ED-related figures to be substantially devalued include (1) ECG procedure charges, (2) ECG interpretation charges, and (3) total recurring ED-related expenses. Also, due to the unknown transported patient number per trip, calculated figures for the on-site ECG interpretation charges and total recurring expenses are lower than actual summations. Any increase in the number of patients that received an ECG per trip causes greater incrementally increasing rates of ED-related recurring expenses when compared to the increasing rates for on-site ECG-related recurring expenses (see the illustration of figures in bold in Table 6 compared to the bolded figures in Table 5).

Table 6

*Totals Based on Four Patients per ED Trip*

ED Expenses	3 Months	Annually	5-Years
ECG procedure charges based on chart data	\$21,780.00	\$65,340.00	\$326,700.00
ECG interpretation charges based on chart data (\$20.00 per reading-current charge)	\$ 5,280.00	\$15,840.00	\$ 79,200.00
Fuel charges (round trips)	\$ 540.50	\$ 1,621.50	\$ 8,107.50
Transport costs (round trips) less insurance	\$ 31.50	\$ 94.50	\$ 472.50
<b>Total Recurring ED-Related Expenses</b>	<b>\$27,632.00</b>	<b>\$82,896.00</b>	<b>\$414,480.00</b>

ECG Expenses	Annually	5-Years
<b>ECG purchase price \$7,677.60 (one-time cost, best price out of three quotes)</b>		
ECG Service Agreement Coverage – 5-year term (turnkey coverage)	\$2,900.00	\$14,500.00
ECG interpretation charges (new quote - \$10.00 per reading)	\$7,920.00	\$39,600.00
<b>Total Recurring Expenses – On-Site ECG</b>	<b>\$10,820.00</b>	<b>\$54,100.00</b>

Note: \*Figures are lower than actual amounts related to unavailable number of patients per trip to the ED

Main stakeholder dissatisfaction with the use of the ED for the admit ECG was evident in both surveys prior to and after the policy briefing. Both surveys received marks for each question even though each surveyor was aware partial completion was acceptable. Prior to the policy briefing, a pre-survey was made available to each main stakeholder for private completion by a disclosed due date. The pre-survey contained the following ECG practice-related questions with the majority answers listed subsequently:

- In your opinion, does obtaining admitting ECG recordings at the ED versus on-site at the point-of-care affect psychotropic medication treatment in any way? Answer majority: “A great deal”.
- In your opinion, do you feel obtaining the admitting ECG recordings at the ED creates delays in optimal patient treatment? Answer majority: “Strongly agree”.

- How satisfied are you with treatment processes and optimal patient outcomes as they relate to sending each patient to the ED for the required admitting ECG? Answer majority: “Very dissatisfied”.
- Do you feel a practice change is needed for placement of an on-site ECG at the point-of-care at this psychiatric treatment center? Answer majority: “Strongly agree”.

Following the policy briefing, a post-survey was distributed to each stakeholder for completion or partial completion privately during an allotted time frame. All post-survey answers were in support of the project solution. The post-survey also contained two additional questions regarding ECG practice-related opinions listed below with majority responses following:

- Would you be willing to consider a practice change that includes implementation of an on-site ECG to be utilized as a valuable resource in attaining best care practices at this psychiatric treatment center? Majority response: “Definitely would”.
- After reading and reviewing the presented policy brief regarding the ECG DNP Project Initiative, are you in favor of the presented project solution? Majority response: “Strongly agree”.

### Summary

There were 800 acute patients admitted to the psychiatric treatment center during the year of 2018. Averaged monthly admissions were approximately 67 patients. The CEO approved review of 50 patient charts for three consecutive months representing 75% of each monthly census and 25% of the calendar year. Therefore, the quantitative results

were accordant in representing the entire year. Extraction of the charted data regarding ECG practices and psychopharmacotherapy administration not only supported this DNP project purpose but also divulged time constraints and incrementally excessive expenses.

The percentages of patients who did not receive an ECG were considerable and represented a clinically unfavorable statistic. On the other hand, the safety of the patients and staff related to round trip transport to the ED and staff-to-patient ratios on-site were favorably higher due to the lower statistical percentages of ED trips.

Psychopharmacotherapy carried the least statistical averages. Although these figures represent efficient chemical therapeutics, ECG results prior to psychotropic medication administration is an evidence-based care essential.

ECG-related financial data supplied by the CEO and applied to the charted data was excessive and unreasonable as portrayed and forecasted by the expert and peer-reviewed resources for this DNP doctoral project. If the ECG is purchased and financing is not considered, approximate total first-year cost based on one patient per ED trip, including the service agreement and interpretation charges, is \$12,557.60. This amount is \$9,453.40 less than the annual total recurring ED-related expense of \$22,011.00 based on one patient per ED trip. Following the first year, after the ECG has been paid in full, the annual recurring expenses for the on-site ECG is \$4,880.00 representing a cost savings of \$17,131.00 annually. Over 5 years this figure reaches \$85,655.00 based on one patient per ED trip. When figures are based on four patients per ED trip, the annual figure of savings is \$72,076.00 and a savings accrual reaching \$360,380.00 over five years.

## CHAPTER IV – DISCUSSION

### Overview

An on-site ECG at the psychiatric treatment center is an unmet care need. When confronted with this DNP doctoral project initiative to acquire insight and adjuvant policy for the specific practice need, the CEO was in full support. The stepwise processes of the PDCA and the Donabedian theories provided frameworks and focused direction. To begin, evidence-based research knowledge was compiled with highlights of the information scripted to compose the introduction section of the first policy brief. Following research, the legwork portion ensued.

Substantiated data from chart reviews were tabulated onto pre-designed data collection tools. Several meetings with the CEO were needed for his approvals of the project objectives and for the required financial figures. Charted data and the financial figures were entered into Excel<sup>®</sup> spreadsheets created specifically for this DNP doctoral project. Outcomes were tabulated and recorded in the conclusion section of the first policy brief.

Main stakeholders were informed of this project intent and the processes for the surveys were explained. Consent forms were signed. Pre-surveys and sealable envelopes were made available during a window of opportunity for the stakeholders. The sealed pre-surveys were retrieved and results were entered into the pre-survey data collection tool.

Policy brief one was completed containing (1) researched knowledge, (2) compiled chart data, and (3) organizational costs related to accomplishing the admit ECG at the ED. The first policy brief meeting was scheduled. The CEO invited the CNO, a

secondary stakeholder, to share the insight contained in the policy brief. Although both stakeholders were in agreement expecting significant organizational expenses generated at the ED for the admitting ECGs, the following percentages were in excess of anticipated totals: (1) the number of patients who did not receive the essential ECG, (2) the average time from admit until ECG procedure, and (3) the average time from admit until ECG interpretation.

Following the meeting, the first policy brief, the post-survey, and a sealable envelope for each surveyor was delivered and available for a certain period of time. Stakeholders were informed to read the provided policy brief prior to completing or partially completing the post-survey. Sealed surveys were retrieved and answers were registered into the applicable data collection tools and tabulated. Majority survey responses were added to the conclusion section of policy brief two. Surveys were shredded after tabulation. Policy brief two was completed including the consolidation of both surveys. Comparative quantitative measures were also added to policy brief two.

#### Limitations

There were limitations for this project in the areas related to patient counts and financial expenditures. Although daily trips to the ED were accurate, the total number of patients per ED trip was considerably higher. Two staff members are required to escort patients transported to the ED. Trips to the ED may transit one patient or may transit a maximum of six patients in the company supplied van. Exact patient number per ED trip was unavailable for project calculations.

Chart reviews included acute patients only. Residential patient charts were excluded. Patients transferred from the acute unit to the residential unit receive an

updated ECG tracing with interpretation and those admitted directly to the residential unit receive an initial admitting ECG tracing with interpretation. Residential patients account for approximately 7% additional ECG related expense. Although this is a low percentage, it adds to the total financial burden of the exorbitant ED related ECG expenses.

### Recommendations

Policy brief two was presented to the CEO emphasizing the added survey results and additional quantitative comparisons. After the CEO reviewed the second policy brief, acceptance of the quality improvement initiative to purchase the best-quote ECG, including the 5-year turnkey service agreement coverage and lower ECG interpretation quote, was recommended. By accepting the DNP doctoral project change in policy, technological resource usage will be greatly increased. In addition, fundamentally improved overall healthcare processes and substantially decreased organizational expenses will be realized. An extended result includes alleviation of local ED congestion yielding more efficient care to the community. The CEO verbalized his gratitude and acceptance for the DNP doctoral project change initiative in continued efforts of obtaining and maintaining successful patient and organizational outcomes. The CEO plans to present policy brief two to the organizational management company in obtaining approval and appropriation of funding for the purchase of the ECG.

### Implications for Future Practice

According to the latest reports published by the American Heart Association/American Stroke Association, the number of citizens diagnosed with cardiovascular disease in America is reaching 50% (Benjamin et al., 2019). The underpinnings for cardiovascular disease are established in childhood and progress

through adolescence (Pediatrics, 2011). “The low prevalence of ideal cardiovascular health behaviors in U.S. adolescents, particularly physical activity and dietary intake, will likely contribute to a worsening prevalence of obesity, hypertension, hypercholesterolemia, and dysglycemia as the current U.S. adolescent population reaches adulthood (Shay et al., 2013, p. 1369). “When these current estimates of the prevalence of cardiovascular health components in the U.S. adolescent population are considered, it can be seen that significant clinical and public health interventions will be required to maintain the valuable asset of cardiovascular health from childhood throughout the lifespan of the population” (Shay et al., 2013, p. 1372).

In a peer-reviewed report by Meinert and colleagues (2018) recommendations were made for organizational technological absorption as an advantageous component for successful, value-driven healthcare. Acquisition of an ECG will be an organizational investment and will allocate a much-needed resource and technological tool for intervention at the point-of-care. As a result, expedited efficiency in assessments of chronic and acute cardiovascular disease states will occur for each child and adolescent admitted to the psychiatric treatment center. In addition, (1) levels of safety within the treatment center will no longer be compromised due to off-site resourcing, (2) efficient staff levels will be maintained in each unit, and (3) patients will no longer be transported beyond the security of the treatment facility for the admitting ECG. The Health Insurance Portability and Accountability Act (HIPAA) will be more strongly enforced for each patient as presentations to outside sources for the admitting ECG will no longer be required. Finally, cost containment will be realized as the organization becomes independent from the current expense catalyst created by the ED as an off-site supplier.

This project's implications for future practice include a policy practice reformation in obtaining best care practices that are value driven and sustainable. Reaching organizational and patient-based goals in current practice and for long-term applications are also implicated in the outcomes extended by this project. Project impacts will have favorable effects for (1) each stakeholder; (2) all providers; (3) all nursing staff; (4) the direct-care staff; (5) the organization as a whole unit, and most importantly (6) all patients admitted to the psychiatric treatment center. Extended impacts will be beneficial for the local community and surrounded rural areas by the decrease in ED admissions for nonurgent care requests.

### Conclusion

The psychiatric treatment center is suffering inadequate outcomes by utilizing the local ED for the fundamental admit ECG procedure. The inadequate outcomes include (1) delays in treatment measures, (2) unsafe staffing, (3) ethical compromises, and (4) financial wastes. In concentrated efforts, this DNP doctoral project was successful in providing insight into sound policy for redirection.

Reform in health care is a powerful asset. Reformation applied to care delivery can spawn effective transformations in all health care processes including resources, time, staffing, safety, and cost. This DNP doctoral project was an enterprise of evidence-based, value-driven reform.

This practice experience in efficient and effective resource allocation is the culmination of the foundational DNP Essentials one through eight for advanced nursing practice (AACN, 2006). As forecasted several years earlier by Crowe (2010), "review of economic trends suggest that providers will confront more situations calling for point-of-

care allocation decisions” (p. 465). This forecast still holds true as it was the impetus for this DNP project initiative.

APPENDIX A – Literature Matrix

Author/Year	Design	Sample/ Data Collection	Findings	Recommendations
Al-Zaiti et al. (2014)	Meta-analysis using a random-effect variance model	106 primary studies including a pooled sample size of 349,756 men and women with and without cardiac disease of average age 57 years. Web of Science, Medline, PubMed, and CINAHL databases were searched.	Suggestive results concluded that alterations in repolarization affect women greater than men and that ischemic myocardial changes affect children greater than men or women as depicted by ECG results.	Recommendations to use the ECG for forecasting arrhythmias. Also, further research into the adverse events following altered repolarization results in women and children due to greater risks outcomes of each group is needed.
Andrade et al. (2016)	Systematic review/post hoc analysis that included unblinded random assignment to a rate control or rhythm control groups	A sample of 5,164 individuals 59.9 to 76.5 years of age. ECG results from 7,159 readings with a maximum follow-up time of 6 years.	Specific ECG readings in atrial fibrillation patients predict hospitalization and death.	ECG results that include prolonged QRS duration, a prolonged PR interval or prolonged QT and JT intervals as depicted by the 12-lead ECG require higher degrees of care due to increased risks of cardiovascular events.
Barata, Brown, Fitzmaurice, Griffin, & Snow (2015)	Non-experimental Qualitative Descriptive Comparative	A technical report analyzing ED care practices for pediatric patients.	ED overuse and crowding create suboptimal care practices while prolonging stay and decreasing patient satisfaction.	Multi-system care providers are required to create increases in ED care availability by decreasing inappropriate

				in-flow of patients entering the ED including pediatric patients. Continued research for improving processes and practice guidelines are necessary.
Benjamin et al. (2019)	Guideline Expert opinion	Statistical analysis of U.S. adults	Deaths related to cardiovascular disease is rising in the U.S.	Preventative measures can have positive effects to almost 80 percent of those individuals suffering cardiac-related illnesses.
Gindi, Black, & Cohen (2016)	Opinion of nationally recognized experts	2013 and 2014 National Health Interview Survey	ER is an expensive route when compared to clinic treatment.	Reduction in erroneous ER use and overall ER use is needed.
Khunti (2014)	Systematic review	Ten studies: four cohort studies, three prospective cohorts, a prospective study, a cross-sectional study, and a prospective observational study. CINAHL, BNI, Embase, and Medline databases were searched.	“An important factor to consider when using ECG findings for clinical decision making is that ECG waveforms are influenced by normal physiological and technical factors as well as by pathophysiological factors” (p. 621).	“The standard 12-lead ECG is an essential diagnostic tool in the management of heart disease” when all leads are in the correct positions prior to impulse tracings (p. 611).
Meinert et al. (2018)	Peer-reviewed journal article	A technical report investigating technological effects related to value-based care systems.	On-site technology favorably impacts healthcare solutions.	Although on-site technology is an asset in value-based systems,

				continued efforts for ethically sound care processes must be a continuous systems achievement.
NHS UK (2013)	An opinion of nationally recognized experts	Guidelines for safe staffing levels.	Staffing capacity and capability are key determinants of quality care delivery.	Safe staffing is imperative and is to be adapted to individual institutional requirements. Safe staffing requires constant innovational changes to support care improvements.
Pediatrics (2011)	Expert panel Peer-reviewed	Cardiovascular guidelines for non-adults.	Cardiovascular disease emerges before adulthood.	Initiate risk reductions for cardiovascular disease beginning in childhood, through adolescence, and into young adulthood.
Shay et al. (2013).	Epidemiology Expert prevalence review	Cross-sectional data from National Health and Nutrition Examination Surveys (NHANES) over six years – 2005 – 2010. Sample size n=26,169.	Adolescent behaviors will continue to add to the worsening cardiovascular health of U.S. citizens.	Cardiovascular health-related behaviors and preventative measures must be enacted and supported during the early ages and beyond.
Ramanuj (2013)	Non-experimental Qualitative Descriptive Comparative	An audit and a re-audit of the patients admitted to four acute hospital wards (two general wards and two mental wards) who were prescribed antipsychotic medications.	Anti-psychotic medications pose multiple-system side effects that warrant increased	Due to the adverse effects of antipsychotic medications, greater promotion to

		Data collection included patient descriptive charting, results of metabolic testing, and ECG readings.	screening for adverse reactions.	increase monitoring processes, including ECGs, are needed.
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APPENDIX B – The Essentials of Doctoral Education For Advanced Nursing Practice

<p>I. Scientific Underpinnings for practice</p>	<p>Project development combined evidence-based practice guidelines and nursing science in a review of current practice problems to create future practice advancements. The project purpose integrated scientific knowledge with ethical facilitation in the promotion of QI approaches. The DNP project is based on evidence-based research guidelines and is ethically sensitive in all parameters.</p>
<p>II. Organizational and Systems Leadership for Quality Improvement and Systems Thinking</p>	<p>The DNP project required leadership practice in an innovative care initiative for improved outcomes while ensuring there were no ethical concerns.</p>
<p>III. Clinical Scholarship and Analytical Methods for Evidence-Based Practice</p>	<p>The project required utilization of scholarship of application to translate research into practice beginning with the creation of a PICOT question for precision and accuracy. The project solution promoted a new practice guideline to enhance practice by increasing on-site resource usage.</p>
<p>IV. Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care</p>	<p>Using the technology provided by an on-site ECG, the goal of the DNP project is to transform current care practices at the psychiatric treatment center into a more budgetary and time-efficient treatment center.</p>
<p>V. Health Care Policy for Advocacy in Health Care</p>	<p>This project created an initiative to establish an institutional policy for evidence-based care outcomes. The policy will overcome ethical issues and possible social injustice generated from decreased safety, privacy, and confidentiality when patients present to the ED for non-urgent care analysis.</p>
<p>VI. Interprofessional Collaboration for Improving Patient and Population Health Outcomes</p>	<p>The complex environment at the psychiatric treatment center requires precision care from all team members and care processes including diagnostic care processes. The DNP project combined intra-professional and</p>

	interprofessional collaboration from multiple disciplines for recognition and presentation of the QI care solution.
VII. Clinical Prevention and Population Health for Improving the Nation's Health	ECG analysis can reveal pre-existing cardiovascular health issues that may exist for the children and adolescents admitted to the psychiatric treatment center. An on-site ECG provides hasty clinical prevention to possible treatment errors and maintenance of safe levels of staff-to-patient ratios.
VIII. Advanced Nursing Practice	Application of the APRN DNP project in this specialty clinical setting (1) promotes evidence-based care according to research, (2) incorporates effective use of technological information, (3) augments collaboration in and between disciplines, (4) offers mentoring, (5) increases social justice, (5) embraces ethical promotion, and (5) ensures evidence-based guidelines and processes are the standards of care at the psychiatric treatment center.

(AACN, 2006).

## APPENDIX C – Pre-Survey

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1. Are you older than 18 years?
  - Yes
  - No
  
2. Are you aware that survey participation is voluntary with no repercussions for refusal to participate?
  - Yes
  - No
  
3. Are you aware that partially completed surveys are acceptable?
  - Yes
  - No
  
4. Are you aware you may withdraw from survey participation at any time without penalty?
  - Yes
  - No
  
5. In your opinion, does obtaining admitting electrocardiogram (ECG) recordings at the emergency department (ED) versus on-site at the point-of-care affect psychotropic medication treatment in any way?
  - A great deal
  - A lot
  - A moderate amount
  - A little

- None at all
6. In your opinion, do you feel obtaining the admitting ECG recordings at the ED creates delays in optimal patient treatment?
- Strongly agree
  - Agree
  - Neither agree nor disagree
  - Disagree
  - Strongly disagree
7. How satisfied are you with treatment processes and optimal patient outcomes as they relate to sending each patient to the ED for the required admitting ECG?
- Very satisfied
  - Satisfied
  - Neither satisfied nor dissatisfied
  - Dissatisfied
  - Very dissatisfied
8. Do you feel a practice change is needed for placement of an on-site ECG at the point-of-care at this psychiatric treatment center?
- Strongly agree
  - Agree
  - Neither agree nor disagree
  - Disagree
  - Strongly disagree
-

## APPENDIX D – Post-Survey

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1. Are you older than 18 years?
  - Yes
  - No
  
2. Are you aware that survey participation is voluntary with no repercussions for refusal to participate?
  - Yes
  - No
  
3. Are you aware that partially completed surveys are acceptable?
  - Yes
  - No
  
4. Are you aware you may withdraw from survey participation at any time without penalty?
  - Yes
  - No
  
5. In your opinion, does obtaining admitting electrocardiogram (ECG) recordings at the emergency department (ED) versus on-site at the point-of-care affect psychotropic medication treatment in any way?
  - A great deal
  - A lot
  - A moderate amount
  - A little

- None at all
6. In your opinion, do you feel obtaining the admitting ECG recordings at the ED creates delays in optimal patient treatment?
- Strongly agree
  - Agree
  - Neither agree nor disagree
  - Disagree
  - Strongly disagree
7. How satisfied are you with treatment processes and optimal patient outcomes as they relate to sending each patient to the ED for the required admitting ECG?
- Very satisfied
  - Satisfied
  - Neither satisfied nor dissatisfied
  - Dissatisfied
  - Very dissatisfied
8. Do you feel a practice change is needed for placement of an on-site ECG at the point-of-care at this psychiatric treatment center?
- Strongly agree
  - Agree
  - Neither agree nor disagree
  - Disagree
  - Strongly disagree

9. Would you be willing to consider a practice change that includes implementation of an on-site ECG to be utilized as a valuable resource in attaining best care practices at this psychiatric treatment center?

- Definitely would
- Probably would
- Probably would not
- Definitely would not

10. After reading and reviewing the presented policy brief regarding the ECG DNP Project Initiative, are you in favor of the presented project solution?

- Strongly agree
  - Agree
  - Neither agree nor disagree
  - Disagree
  - Strongly disagree
-

APPENDIX E – Chart Data Collection Tool

#	Admit Date	Admit Time	ECG Y/N	ECG Date	ECG Time	Interp. Date	Interp. Time	Med Date	Med Time	Staff To ED	Time Elapse	Notes
1												
2												
3												
4												
5												
6												
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10												
11												
12												
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44												

APPENDIX F – Expense Data Collection Tool

Charges	Per Patient	Three- Months	Annual	Five- Year
ECG				
Interpretation				
Fuel				
Transport				
Total				

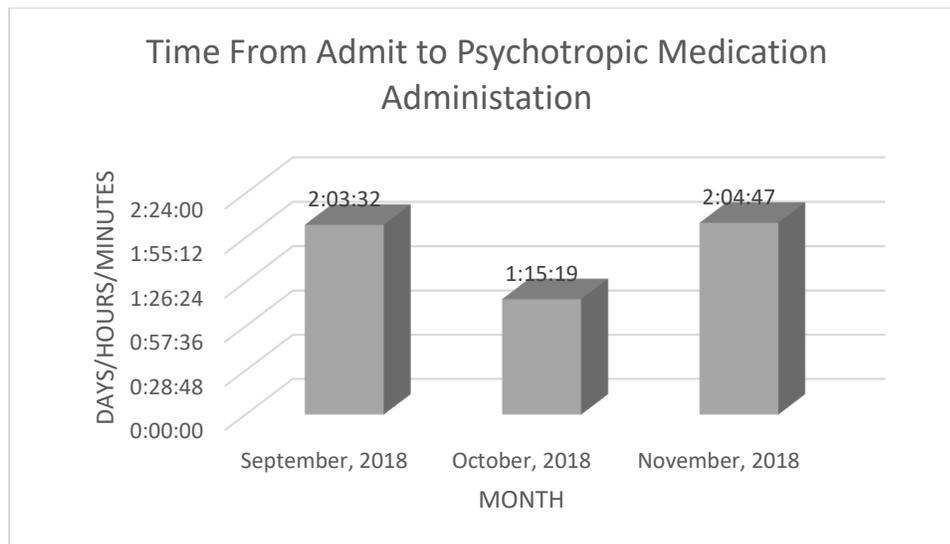
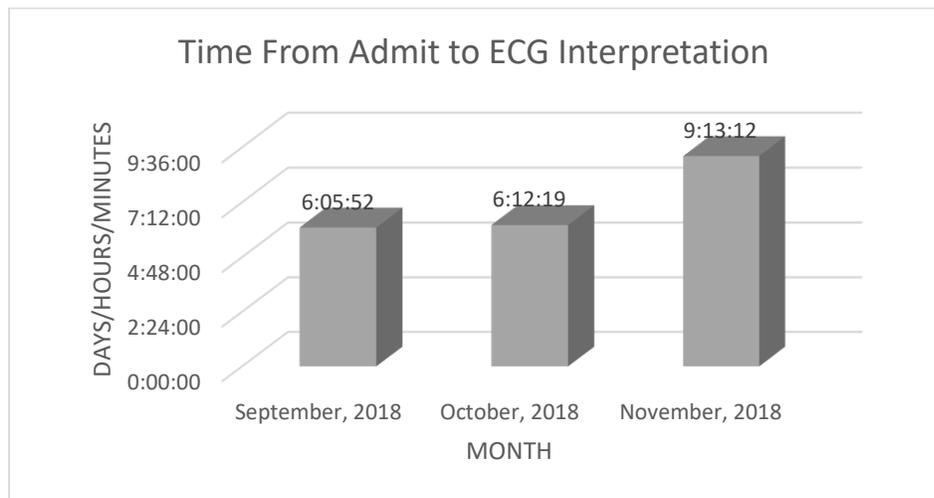
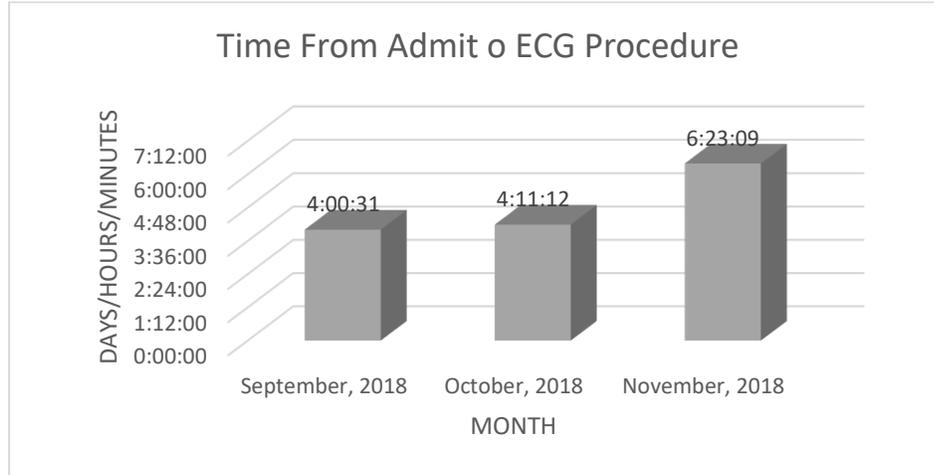
APPENDIX G – Pre-Survey Data Collection Tool

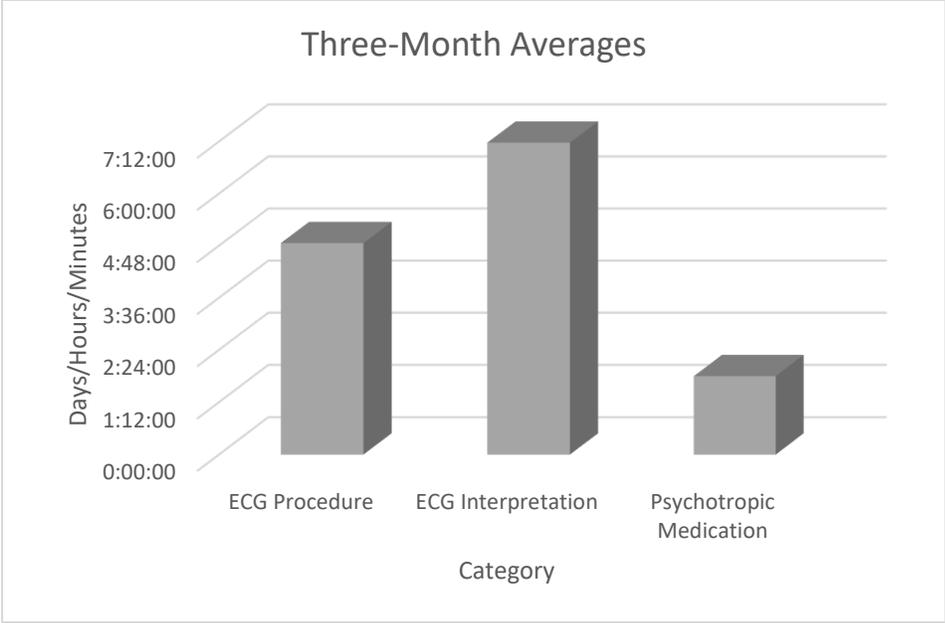
Question Number	Stakeholder One	Stakeholder Two	Stakeholder Three	Notes
1				
2				
3				
4				
5				
6				
7				
8				

APPENDIX H – Post-Survey Data Collection Tool

Question Number	Stakeholder	Stakeholder	Stakeholder	Notes
	One	Two	Three	
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

## APPENDIX I – Time-Related Bar Charts





APPENDIX J – Letter of Approval

[REDACTED]

[REDACTED]

Acute and Residential Inpatient Psychiatric Services for Children & Adolescents

[REDACTED]

[REDACTED]

October 25, 2018

To Who it may Concern:

My name is [REDACTED], Chief Executive Officer (CEO) of [REDACTED] Center located in [REDACTED], MS. I have the pleasure of working with Pamela Metts on the DNP Project and it is my pleasure. As part of the Project, Pamela will be allowed to review medical records to obtain information for the Project which, will be beneficial to the Project and [REDACTED] Center. As a part of the Project Pamela will submit pre -post surveys to me and two doctors of psychiatry. Please do not hesitate to call if you have any questions or if I can be of further assistance. Thanks and it is our pleasure to work with Pamela Metts, FNP-C.

Sincerely,

[REDACTED]

## APPENDIX K – USM IRB Approval

Pamela Metts

From: irb@usm.edu  
Sent: Friday, November 9, 2018 10:55 AM  
To: pamela.metts@usm.edu  
Subject: IRB-18-129 - Initial: Goshorn Committee Letter - Exempt



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### INSTITUTIONAL REVIEW BOARD

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### NOTICE OF COMMITTEE ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately, but not later than 10 days following the event. Problems should be reported to ORI via the Incident template on Cayuse IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.

PROTOCOL NUMBER: IRB-18-129

PROJECT TITLE: DNP Project-second Attempt

SCHOOL/PROGRAM: School of LANP

RESEARCHER(S): Pamela Metts

IRB COMMITTEE ACTION: Approved

CATEGORY: Exempt

PERIOD OF APPROVAL: November 9, 2018 - November 9, 2019

Edward L. Goshorn, Ph.D.

Institutional Review Board Chairperson

## REFERENCES

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