Provider Adherence to DoD Mental Health Policies and the VA/DoD Clinical Practice Guideline for Depression Treatment and Linkage to Depression Severity in Active-Duty Service Members Diagnosed with Depressive Disorders

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Abstract

Phase II Sites: United States Air Force Academy and Evans Army Community Hospital, CO

Project Title: Provider Adherence to DoD Mental Health Policies and the VA/DoD Clinical Practice Guideline for Depression Treatment and Linkage to Depression Severity in Active-Duty Service Members Diagnosed with Depressive Disorders

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Background: A higher proportion of active-duty service members (ADSM) have depressive symptoms and risk factors compared to the general United States population. This leads to decreased productivity, lost wages, and an increased risk of suicide. The DoD has created policies/guidelines for treating depression based on research to increase continuity of care and improve patient outcomes.

Clinical Question: In ADSMs with depressive disorders, does provider adherence to DoD mental health policies and the VA/DoD CPG for depression, compared to non-adherence, affect patient outcomes (depression severity as measured by PHQ-9) over a six-month duration?

Project Design: Our project is a process evaluation using the evidence-based approach of chart auditing to assess provider adherence to DoD mental health policies and the VA/DOD Clinical Practice Guideline for depression treatment in ADSMs, linking adherence to patient outcomes (depression severity) over 6 months.

Analysis of the results: We analyzed 80 patient charts meeting inclusion criteria and found a mean adherence rate of 83.4% (15.72) across all clinics. We found that provider adherence, after controlling for initial PHQ-9 scores at baseline, was significantly associated with decreased depression severity at 6 months, R^2 change = .06, F change (1, 77) = 6.99, p = .01.

Implications for Practice: This process evaluation identified that higher provider adherence to policies/guidelines was linked to a statistically significant reduction in depression severity, which will ultimately impact the MHS Quadruple Aim. This can be sustained by active education on the latest policies and guidelines and ongoing chart audits.

Provider Adherence to DoD Mental Health Policies and the VA/DoD Clinical Practice Guideline for Depression Treatment and Linkage to Depression Severity in Active-Duty Service Members Diagnosed with Depressive Disorders

Depression affects 264 million people worldwide and is a leading cause of disability (James et al., 2018). It is one of the most diagnosed mental health disorders, leading to lost workdays and wages, difficulty caring for self, and possibly suicide (National Institute of Mental Health, 2019). Military members are not immune to the effects of depression and could be at increased risk due to occupational hazards (The Management of Major Depressive Disorder Working Group, 2016). Recent data reports that 9.4% of active-duty service members (ADSM) have probable depression versus 6% in the United States adult population (Meadows et al., 2018). Healthcare providers who treat service members from different military branches in the Colorado Springs area have the added challenge of frequent moves and a plethora of mental health policies and guidelines to be familiar with, potentially impeding adherence.

Literature evidence supports the use of chart audit checklists based on policies and practice guidelines as an effective way to evaluate (Clark et al., 2017; Farran et al., 2013; Hollingworth et al., 2019; Jazieh et al., 2019; Moullin et al., 2016; Ross et al., 2018; Williams et al., 2019; Winer et al., 2015) and improve provider adherence to these policies or practice guidelines (Jezieh et al., 2019; Winer et al., 2015). The use of chart audits has also been shown to improve patient outcomes (Amoakoh-Coleman et al., 2016; Farran et al., 2013; Hollingsworth et al., 2019; Moullin et al., 2016; Ross et al., 2018). At our project implementation facility, to date, we were not aware of any evaluations conducted to link provider adherence to mental health policies and guidelines with patient outcomes in the context of depression treatment. Thus, our project focused on the area of depression treatment and constituted a process

evaluation using the evidence-based approach of chart auditing to assess provider adherence to Department of Defense (DoD) mental health policies, which includes branch-specific policies, and the VA/DoD Clinical Practice Guideline (CPG) for depression treatment (The Management of Major Depressive Disorder Working Group, 2016) and evaluate linkages to depression severity.

Problem Synthesis

In the United States, 17.3 million adults have experienced at least one major depressive episode in their lifetime, making it one of the most commonly diagnosed mental health disorders (National Institute of Mental Health, 2019). According to the Centers for Disease Control and Prevention (CDC), the percentage of U.S. adults experiencing depressive symptoms between 2015 and 2021 has more than tripled (2021). Depressive disorder symptoms include depressed mood, loss of interest or pleasure, decreased energy, feelings of guilt, sleep and appetite changes, and poor concentration (American Psychiatric Association, 2013). Depression is a highly treatable disease; however, if left untreated, it can lead to poor quality of life, decreased productivity, lost wages, and increased risk of suicide (Beck et al., 2011; Meadows et al., 2018). Younger adults between the ages of 18 and 25 are at a higher risk for depression. Since this age group comprises 45.7% of active-duty military members, this puts close to half of the military force at increased risk for depression (Meadows et al., 2018; Military OneSource, 2019; The Management of Major Depressive Disorder Working Group, 2016). Additionally, active-duty military members (ADSM) are at a higher risk for depressive disorders than the general population due to possible trauma from deployments; mission tempo; frequent relocations; and separation from friends, family, and support networks (The Management of Major Depressive Disorder Working Group, 2016; Vyas et al., 2016).

Relevance to Military Nursing

The military has pushed to remove mental health care stigma; thus, with more treatment being provided, the incidence of depression in service members has slowly decreased (Stahlman & Oetting, 2018). Despite the destigmatization of depression and mental health disorders in the military, readiness is still impacted. This impact on readiness is evident by mental health problems leading to increased hospital stays and generating the third-highest number of medical appointments within active-duty members in 2016 (Stahlman & Oetting, 2018). Per the Psychological Health Center of Excellence, the 2017 prevalence in all service branches for depressive disorders was 48,449 (3.3%) individuals, and the incidence was 41,449 (2.1%) individuals (2019). The DoD spends $1.5 billion annually on depressive disorders (Vyas et al., 2016), nearly 5% of the total Defense Health Program budget (Department of Defense, 2020). Untreated depression in this population leads to lower military retention, higher mortality, and decreased quality of life, ultimately leading to reduced overall readiness (Hepner et al., 2017; Meadows et al., 2018). The military is focused on maintaining a healthy mission-ready force, and this can be accomplished by ensuring the physical and psychological health and readiness of each service member is maintained (Hepner et al., 2017). The mission and health of military members depend on the provider's adherence to evidence-based treatment and literature-supported policies and guidelines. Like all military members, military healthcare providers live a transient lifestyle, which is why policy and guideline adherence will ease provider transitions between clinics, ensuring continuity of care and standardization of treatment.

Clinical Question

In ADSM with depressive disorders, does provider adherence to DoD mental health policies and the VA/DoD CPG for depression, compared to non-adherence, affect patient outcomes (depression severity as measured by PHQ-9) over a six-month duration?

Search Strategy and Results

We conducted our literature search using the following databases: PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and PsychINFO. The PICOT question used was, "In ADSM with depressive disorders (P), does provider adherence to DoD mental health policies and the VA/DoD CPG for depression (I), compared to non-adherence (C), affect patient outcomes (depression severity as measured by PHQ-9) (O) over a six-month duration (T)?" Keywords utilized were active-duty military, provider adherence, depressive disorders, policy, guidelines, audit, and patient outcomes. Results were then limited to the past ten years, English language, and full text availability. As of November 2021, this database search produced 94 articles. Of those articles imported to Covidence for initial screening, eight duplicates were removed, leaving 86 studies screened by title and abstract. Then 48 studies were deemed irrelevant, which left 38 full-text studies to be assessed for eligibility, and of these, 29 were excluded for wrong intervention, wrong study design, or wrong outcomes. The following inclusion criteria were applied in Covidence: guidelines, provider, major depressive disorder, adherence, PHQ, military, depressive disorders, policy, audit, outcomes, and exclusion criteria: patient adherence and self-report. A final count of nine articles were used. The nine articles in the evidence table were appraised using the Johns Hopkins Nursing Quality of Evidence-Based Practice tool to assign a level of evidence and quality rating that resulted in four at level IIB, four at level IIIB, and one at level IIIC. See Appendix A for the PRISMA diagram.

Solution Synthesis

Our project was a process evaluation using the evidence-based approach of chart auditing to: (1) Assess provider adherence to DoD mental health policies and the VA/DOD Clinical Practice Guideline for depression treatment in ADSMs and (2) Evaluate linkages between provider adherence and patient outcomes (depression severity) over six months. The section that follows describes how our team used current best evidence to support our selected project approach.

Throughout our literature review, three potential solutions were found to measure provider adherence to policies and guidelines: (1) use of self-report surveys from providers, (2) progress note templates, and (3) audit tools. One proposed approach to measuring provider adherence is self-report surveys. Beehler et al. (2013) used the Primary Care Behavioral Health Provider Adherence Questionnaire (PPAQ), which measures the behaviors of mental health providers who provide support in primary care clinics. This 48-item tool is split into two subsections in order to identify essential and prohibited provider behaviors. Internal consistency was reported using Cronbach's coefficient alpha with the essential and prohibited provider behaviors being 0.92 and 0.70, respectively. Another strength of this tool is that it is specific to the mental health specialty. However, the study found that a self-report approach can lead to individual and social desirability bias and overreporting of knowledge (Beehler et al., 2013). Therefore, we ruled it out as an adherence-measuring tool for this project.

A second approach to measuring provider adherence is the use of progress note templates. Jazieh et al. (2019) completed chart audits before and after implementation of standardized templates and provider education. The template utilized The National Comprehensive Cancer Network Clinical Practice Guidelines in Oncology to provide a

standardized way to document. Post-template implementation showed significant increase in guideline adherence to include management of lung cancer and tumor board referrals. This method's strength was provider satisfaction with the ease and adaptability of using the template for documentation as well as allowing providers to audit themselves in real-time to ensure adherence to guidelines. It also made documentation review by others easier due to the uniformity created by the template (Jazieh et al., 2019). However, there was insufficient data on reliability, validity, and bias to ascertain that this approach was the most appropriate. Thus, this option did not meet the criteria we would need to look at adherence to military mental health policies and guidelines.

Lastly, many studies utilized a chart audit tool to measure provider adherence to guidelines or standards of care. Our literature review found that baseline chart audits and subsequent education on using a checklist to follow policies and guidelines had positive effects on adherence to these CPGs (Farran et al., 2013; Jazieh et al., 2019; Ross et al., 2018). A locally created chart audit checklist can be customized to measure policy and guideline adherence, followed by retrospective audits, which limit the bias found with self-reports like the PPAQ (Beehler et al., 2013).

Despite our literature review identifying a number of potential approaches to assess provider adherence and its linkages to patient outcomes, we found that the majority of empirical evidence supports the use of chart audits with checklists to evaluate and improve provider adherence (Clark et al., 2017; Hollingsworth et al., 2019; Ross et al., 2018; Williams et al., 2019; Winer et al., 2015) as well as improve patient outcomes (Amoakoh-Coleman et al., 2016; Moullin et al., 2015). Through medical standardization using clinical practice guidelines and

checklists, patient outcomes are improved with a subsequent decrease in morbidity and mortality (Committee on Patient Safety and Quality Improvement, 2019).

The DoD has written policies and guidelines that outline the recommendations for caring for ADSM with mental health disorders and how this affects one's ability to serve. These policies and guidelines were created to ensure that no matter where a provider works or a patient receives care, the care is delivered in the same manner and quality. Although many services have separate and specific policies that address mental health, the Defense Health Agency (DHA) uses DoD guidelines to ensure interservice collaboration and standardization. Acknowledging the importance of all pertinent DoD policies and the VA/DoD CPG (for depression), our team ensured that our functional audit checklist that we used in this project to measure provider adherence was based on these policies and guidelines. To make a strong case for continued implementation of this solution, chart audits were conducted on PHQ-9 scores to see if providers that adhere to policies and guidelines have patients with PHQ-9 scores that decrease more over time compared to those with lower adherence rates. The checklist employed in this project was developed based on the DoD mental health policies and the VA/DoD CPG for the treatment of depression. This ensured that the checklist was comprehensive and aligned with the most current evidence-based practices (EBP). Chart audits were then completed using this checklist to evaluate provider adherence to these policies and guidelines and how this is linked to patient outcomes (depression severity).

Focus Areas

Our project had four main focus areas. The first area consisted of gathering evidence to identify that audit checklists are the most effective way to evaluate and improve provider adherence to policies and guidelines as well as improve patient outcomes. The second focus area

was creating the audit checklist based on DoD mental health policies and the VA/DoD CPG pertaining to depression treatment. Third, we conducted chart audits using this checklist and analyzed linkages to provider adherence and patient outcomes (depression severity). Lastly, audit and feedback sessions were completed with the clinic providers to assess perceived adherence and factors impeding their adherence. Audit and feedback sessions are proven to improve the process of care as well as clinical outcomes (American College of Cardiology [ACC] and American Heart Association [AHA] Task Force, 2017). A discussion guide was utilized during these audit and feedback sessions (see Appendix B).

Business Case Analysis

This project can impact all four areas of the MHS Quadruple Aim: readiness, improved population health, better experience of care, and decreased per capita cost (Military Health System [MHS], 2013). The readiness of the military and medical forces can be increased when adherent providers have patients with improved outcomes, which also contributes to the goal of better health of the population (MHS, 2013). Decreasing the cost of healthcare is a possibility if providers are adherent to the policies and guidelines as our project supported that increased provider adherence leads to decreased depression severity which requires fewer appointments per patient. Patient satisfaction has been shown to increase with standardization of care, further supporting the use of policies and guidelines based on EBP (Modesitt et al., 2016). Additionally, we can contribute to the MHS becoming a High Reliability Organization by increasing sensitivity to operations and ensuring deference to expertise at the Colorado Springs military treatment facilities (MTF) (Veazie et al., 2019). The results of our project bring awareness to the current state of provider adherence and how it affects depression outcomes, and it also

encourages providers to default to policies and guidelines that were written by subject matter experts.

Our project was fiscally responsible and has the potential to create cost savings in a very expensive area of the DoD budget. We calculated the upfront manpower costs to be $11,944.86 and only $2,956.95 per year to sustain, which can be seen in Appendix C. Sustainment includes the cost of continuing quarterly chart audits to track provider adherence to mental health policies and guidelines and comparing it with PHQ-9 scores. These costs pale in comparison to the current depression treatment costs of $1.5 billion per year in the DoD (Vyas et al., 2016). Our business case analysis showed that linking provider adherence to improved patient outcomes was a worthwhile endeavor in decreasing the cost of depressive disorder treatment in the DoD.

Organizing Framework

We used the Johns Hopkins Evidence-Based Practice Model (JHEBP) (Johns Hopkins Medicine, n.d.) as our framework to guide the translation of our EBP project (Appendix D). This model uses a problem-solving approach to guide clinical decision-making and has many easy-to-use tools available to aid in planning and implementation, which make it ideal for our use. It is set up in a cyclical nature allowing for constant inquiry as needed to improve and change the project as evidence and data dictates. This was imperative for our project since we were unsure of what the data would tell us at that time and may have had to make later adjustments to our plan. We began using this model to create our PICOT or practice question. Once we formed a practice question, we used the Evidence step in the JHEBP model to determine from the literature how to best approach our clinical question. Evidence from our literature review (Appendix E) supported the creation of a guideline audit checklist that was used in the translation stage of this model upon arrival to Colorado Springs. Within this Translation stage,

we audited charts to assess provider adherence to DoD mental health policies that pertain to depression treatment and to the VA/DoD CPG for depression treatment and how this affected patient outcomes (depression severity). We then used the model's steps of Best Practice and Practice Improvements to lobby our key stakeholders about the importance of continued implementation and sustainment of chart audits.

Project Design

General Approach

Our project was a process evaluation using the evidence-based approach of chart auditing to assess provider adherence to DoD mental health policies and the VA/DoD CPG for depression treatment in ADSMs, linking adherence to patient outcomes (depression severity) over six months. To carry out this goal, we audited charts of members with depressive disorders using a chart audit checklist our team created that is based on DoD policies on mental health and the VA/DoD CPG for depression treatment. During these chart audits, we determined how adherent providers were by calculating the percentage of checklist items they completed as well as recording the patient's PHQ-9 scores for that visit.

Setting and Population

The Colorado Springs area is home to 15 MTFs and supporting clinics spread out over five bases that service active duty, dependents, and retirees. Over 216,000 eligible beneficiaries receive care via the Colorado Springs Consortium, with over 3,400 patient visits per day, allowing for a higher level of collaboration and access to care for patients through sharing of resources (Moore, 2021; Tricare, 2021). With local leadership, stakeholders, and Institutional Review Board (IRB) approvals, we audited one mental health clinic and one family health clinic at both the United States Air Force Academy (USAFA) and Fort Carson. Auditing Air Force and

Army bases allowed a better understanding of different military branches' adherence to policies and guidelines. The population that our DNP project was interested in was active duty with a diagnosis of a depressive disorder. We excluded the cadet population. We also excluded charts that have other comorbidities such as substance use disorders, personality disorders, bipolar disorders, post-traumatic stress disorder, and any other mental health disorder. The comorbid diagnosis of anxiety was not excluded due to its prevalence in this patient population.

Procedural Steps

Our team's goal was to assess provider adherence to DoD mental health policies and the VA/DoD CPG for depression and how provider adherence linked to patient PHQ-9 scores. For us to assess this, a timeline (Appendix F) and JHEBP framework to include the PET process of Practice Question, Evidence, and Translation was implemented (Johns Hopkins Medicine, n.d.). After completing a thorough literature search, evidence supported the use of a chart audit tool to assess provider adherence to depressive disorder policies and guidelines. Subsequently, a chart audit tool was created specifically for this project which aligned with the JHEBP process of Evidence and Translation (Johns Hopkins Medicine, n.d.). We utilized the DoD policies on mental health and the VA/DoD CPG for depression treatment to guide the creation of the chart audit tool. Each item was written so that "met" indicated adherence, while "not met" indicated non-adherence. In addition, the audit tool included the patient's initial and final PHQ-9 scores within the allotted time.

The next steps fell within the Translation section of the JHEBP framework to include implementation of an action plan, data evaluation, audit and feedback sessions, and dissemination of findings (Johns Hopkins Medicine, n.d.). See Appendix G for the audit tool. Our research entailed a comprehensive retrospective chart audit of medical records spanning a

six-month period for ADSMs who had been diagnosed with depressive disorders. Initial implementation of the project was achieved through collaboration with the information technology (IT) department so we could be granted access to the patient charts we would be auditing. We requested charts to be organized by clinic with a de-identified record number in order to track provider adherence and PHQ-9 scores over time. To establish inter-rater reliability, chart audits were conducted concurrently with as-needed discussion of any identified concerns among the reviewers. Provider adherence rates and their linkages to changes in patient PHQ-9 scores were investigated to assess if adherence was linked to depression severity. To determine the adherence rate, we divided the number of criteria met by the total number of applicable criteria based on the patient's severity of depression. Upon completion of the chart audits, we worked within our team that included a statistician and our faculty team to analyze our project results. Audit and feedback sessions with self-reporting were conducted with all providers in each clinic that was audited. This was vital to assess perceived provider adherence and barriers to adherence.

Lastly, our team disseminated the findings to the Colorado Springs leadership along with faculty and students at Uniformed Services University (USU). We also compiled a continuity binder that included all the project resources, audit tool, discussion guide, and lessons learned to enhance a smooth transition to the individuals who will assume responsibility of the chart auditing after the current team. Continuation of the project through ongoing quarterly chart audits is important for the sustainability of adherence rates and was recommended to the clinics (Ament et al., 2015).

Data Analysis Plan

Using descriptive statistics, we calculated rates of provider adherence, mean PHQ-9 scores, as well as changes in PHQ-9 scores over the six-month period of the chart audit. Charts were pulled by IT using May through October 2021 dates and International Classification of Disease-10 (ICD-10) codes for depressive disorders. After data was collected, we ran a multiple hierarchical regression model to study the link between provider adherence and 6-months change in PHQ-9 scores while controlling for initial PHQ-9 values at baseline. See appendix H for data analysis details. Provider adherence was calculated from zero to 100 percent and PHQ-9 scores were reported between 0-27 (Levis et al., 2019; Manea et al., 2015). Qualitative data was collected through providers' self-reporting during the audit and feedback sessions to identify clinic specific barriers to policy and guideline adherence. This information was used to help determine the direction and interventions for improving practice moving forward.

Potential Barriers

Since our project did not include a change in practice, it had few potential barriers. Clinic staff were not asked to implement a new guideline, we were only looking at how they were adhering to current policies and guidelines. IRB approval was necessary to complete this project. We ensured timely review and approval by having a detailed plan submitted to the appropriate officials early in the process. The evaluative nature of our project, which involved assessing provider adherence to depression treatment guidelines, may have acted as a potential obstacle in obtaining support from any providers who served on the IRB. Early engagement of local stakeholders was key to enhancing smooth project execution. Another barrier that we might have encountered was working with the new electronic health record (EHR), which does not have the same functionality as the old one. It might have been more difficult to get the data that we

needed, and therefore we allotted ourselves plenty of time for that step of the process. Additionally, the audit and feedback sessions required provider time and participation, which was an initial concern. We overcame this by ensuring these sessions were scheduled during meetings that providers were already required to attend so that no additional time was taken from the providers' day.

Sustainment and Dissemination Plan

To create sustainability of adherence, we disseminated our findings amongst the MTFs in Colorado Springs and the leadership at USU. We did this by creating a PowerPoint and poster presentation that we presented to multiple stakeholders during our last semester at USU. Additionally, as we embark on our future provider roles, we intend to share the knowledge gained from this project with our colleagues and supervisors, thus promoting improved adherence to the DoD mental health policies and the VA/DoD CPG and, ultimately, enhancing patient care.

Health Insurance Portability and Accountability Act (HIPAA) Concerns

To protect the confidentiality of service members' private medical information, we gathered de-identified data from the IT department of the MTFs using ICD-10 codes to select medical records of those with diagnosed depressive disorders. In addition, we used project-issued unique codes and only requested access to applicable charts. We did not collect patient demographics such as name and date of birth. All project data remained password-protected, accessible only to project team members, and closely safeguarded throughout the project. Lastly, data was analyzed and reported in aggregates.

Project Results

The chart audit process commenced with the IT department's initial data pull of 230 patient charts. After further application of our exclusion criteria, a total of 80 patient charts were included in the project, yielding a 35% chart audit rate, and covering four clinics. Of the 150 excluded charts, 62 charts had only one or no PHQ-9 scores reported; 36 included comorbid diagnoses; 40 charts were for cadet patients; and 12 charts were not associated with depression. Using descriptive statistics, the results revealed a mean adherence rate to DoD mental health policies and the VA/DoD CPG for depression treatment across all included clinics of 83.4% (*SD* = 15.72). The patients' initial mean score on the PHQ-9 was 14.1 (*SD* = 7.57), which decreased to a mean score of 12.7 (*SD* = 7.72) within six months. Figures 1-3 show the overall adherence rate along with beginning and ending PHQ-9 scores across all clinics combined. At the Fort Carson mental health clinic, which had the majority of charts reviewed (*N*= 49), the mean percentage provider adherence score was 84.1% (*SD* = 14.30), followed by USAFA mental health Clinic (*N* = 14) with a mean adherence score of 91.1% (*SD* = 7.21), Fort Carson primary care clinic (*N* = 9) with a mean provider adherence score of 69% (*SD* = 17.53), and USAFA primary care clinic (*N* = 8) whose mean provider adherence score was 81.2% (*SD* = 23.30).

We ran a multiple hierarchical regression model to study the association between provider adherence and the resultant six-months change in patient PHQ-9 scores, after controlling for initial PHQ-9 scores at baseline. Prior to the analysis, we investigated the necessary assumptions. Our findings indicated that in our sample, initial PHQ-9 scores when entered as Step 1 of the regression, accounted for 26% of the variance in PHQ-9 scores. After controlling for initial PHQ-9 scores at baseline, the total variance explained by the model at Step 2 (including both initial PHQ-9 scores and provider adherence) explained 32.5% of the variance

in PHQ-9 scores, F (2, 77) = 18.56, $p < .001$. Provider adherence accounted for an additional 6.1% of the variance in PHQ-9 scores (after controlling for initial PHQ-9 scores), R^2 change = .06, F change (1, 77) = 6.99, $p = .01$. Both initial PHQ-9 scores and provider adherence were statistically significant, with initial PHQ-9 scores having a higher beta value ($\beta = .50$, $p < .001$, 95% *CI* [.32, .70]) than provider adherence ($\beta = -.25$, $p = .01$, 95% *CI* [-.21, -.03]), indicating that the higher the initial PHQ-9 scores were at the outset, the greater the PHQ-9 score reduction was at six months and the greater the provider adherence was, the lower the PHQ-9 scores were after six months. These results highlight the important role of provider adherence in reducing depression severity after six months of treatment consistent with clinical practice guidelines, taking into account the role of severity of depression at the outset. See Tables 1-3 for the above statistical analyses.

During our audit and feedback discussion with the clinics, 88% of providers reported being aware of the depression policies and guidelines. Of the providers that reported awareness, none reported following the guidelines 25% of the time or less, two reported following them 50% of the time, 11 reported 75% of the time, and nine reported 100% of the time. Of those providers that answered other than 100%, the items that prevented them from adhering to these policies and guidelines included: time constraints, lack of patient adherence to recommendations, dedicated time for training on policies and guidelines, inability of the CPG to adjust to a patient with comorbid diagnoses, inability to easily access the CPG, and inconsistent follow-up appointment availability.

Analysis of the Results

We found that provider adherence is crucial as increased provider adherence affects patient outcomes by improving PHQ-9 scores even after controlling for initial depression

severity. This finding is consistent with previous research on the benefits of provider adherence to guidelines. For instance, Hollingsworth et al. (2019) observed that ongoing chart audits promote guideline-based care, which leads to improved outcomes for patients. Similarly, Amoakoh-Coleman et al. (2016) reported that complete provider adherence to guidelines decreases complications. Our project findings are supported by the larger body of evidence which emphasizes the importance of developing a program that supports improving adherence. This will be outlined in the sections to follow.

Implications to Practice and Policy

Throughout the chart audit process, our team found items within the DoD mental health policies and VA/DoD CPG criteria that were frequently missing from the chart documentation. These included PHQ-9 scores not being consistently reported or documented, no discussion of exercise education or recommendations to help with depression, and a lack of consistent monthly follow-up if therapy was initiated or changed. The items missing in the chart audit could have affected both provider adherence rates and patient PHQ-9 scores over time. Despite this lack of education and follow-up, our team found consistent documentation of a thorough risk assessment if a patient was identified with depression, initiation of a combination of psychotherapy and pharmacology, and appropriate profile placement. The retrospective nature of chart audits conducted over a period of six months made it challenging to ascertain whether medication treatment was continued for six to 12 months following remission, as stated in the policies and guidelines. These gaps and strengths will be important to understand so that providers can acknowledge what commonly missed items they can improve on in their daily practice as well as what strengths they should continue to leverage.

Understanding the items in the policies and guidelines that are frequently missed is also important for policymakers to address when making new CPGs as labeling some items as weak or strong can have a large impact on how often providers feel inclined to implement them into practice. For example, education on exercise is a weak recommendation in the DOD/VA CPG for adjunct depression therapy and was seen as the most frequently missed item during the chart audit process. It could be speculated that this was the most missed item since it was labeled as weak, and policymakers should keep this in mind when developing policies.

Future Directions for Research and Practice

The DoD mental health policies and VA/DoD CPG contain a wealth of information, but they can be very difficult to understand and implement due to frequent policy/guideline changes, confusing vocabulary, and clinical time constraints. To successfully implement depression treatment policies and guidelines, it is crucial to identify and address not only the barriers, but also the attitudes and beliefs of providers regarding these protocols (Fischer et al., 2016; Sinnema et al., 2013).

In our audit and feedback sessions, barriers that providers reported were similar to the barriers found within the literature. During our literature search, we identified two specific studies that reported on common barriers to policy and guideline adoption and adherence. Common barriers found were: a high number of weak or conditional recommendations included, time constraints due to clinical responsibilities, complexity of guidelines, limited resources, timing, provider skepticism, knowledge of guidelines and age of the provider (ACC and AHA Task Force, 2017; Qumseya et al., 2021).

According to the ACC and AHA Task Force (2017) and Qumseya et al. (2021), factors that increased adherence and adoption of guidelines included: improved guideline focus during

training, access to guidelines at the point of care, format, resources, end user involvement, involving stakeholders, leadership support, scope of implementation, organizational culture, and the electronic guidelines system. Ament et al. (2015) found that a 90% provider adherence rate was identified as being the most sustainable after a year of implementation of quarterly chart audits. We recommended that clinics conduct these chart audits to achieve the goal of 90% provider adherence to policies and guidelines. Looking ahead, it would be beneficial for the facilities to utilize the identified barriers discovered during the audit and feedback sessions to develop a strategy to eliminate these obstacles and improve adherence to the guidelines, as our project results have shown that higher provider adherence is linked to better patient outcomes.

Fischer et al. (2016) reported that the mere creation and dissemination of guidelines to clinics is not enough to ensure their utilization by providers. Instead, an active implementation program to educate providers on the elements contained in the policies and guidelines is necessary for successful adherence. The ACC and AHA Task Force conducted a systematic review on CPG implementation. They found that audit and feedback as well as educational visits had the most impact on improving CPG adherence. Since the Task Force's project identified the importance of audit and subsequent feedback (2017), we recommend that the next step in assessing CPG adherence would be to complete a post-intervention audit to evaluate adherence and compare these results to those obtained during our process evaluation. This will help identify if a dedicated education program affects adherence to policies and guidelines and patient outcomes. To enhance the quality of future research on guideline adherence and depression severity, it is advisable to expand the sample size and extend the data collection period to 12 months or beyond. This will enable a more comprehensive analysis of the link between the two variables and increase the external validity of our results.

Conclusion

Depression is a pervasive mental health disorder that poses a significant challenge to the military. Not only does it impede the readiness of the force, but it also leads to exorbitant expenditures on treatment. High PHQ-9 scores are linked to decreased work productivity, with employees affected by depression experiencing a 37.8% work disruption over a week, compared to 8% for non-affected employees (Beck et al., 2011). A one-point increase in PHQ-9 scores can decrease productivity by 1.65% (Beck et al., 2011). Our project aimed to evaluate the current provider practices in treating depression in the ADSM population and to assess the level of adherence to DoD mental health policies and VA/DoD CPG. By conducting a retrospective chart review, we found a significant link between provider adherence to the policies and guidelines and the drop in depression severity at six months as measured by PHQ-9 scores. The current DoD spending on depression treatment is $1.5 billion per year (Vyas et al., 2016). Adherence to DoD mental health policies and the VA/DoD CPG could easily lead to reduced PHQ-9 scores and a subsequent projected reduction in DoD's spending on depression by $750,000 a year with just a 0.05% decrease in yearly cost of treatment. These findings stress the importance of developing interventions to promote adherence to established mental health policies, which may ultimately improve the outcomes of depression treatment in the military.

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Table 1

Model Summary

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2	Sig. F Change
1	.514[a]	.264	.255	6.668	.264	27.975	1	78	<.001
2	.570[b]	.325	.308	6.426	.061	6.989	1	77	.010

a. Predictors: (Constant), Beg_PHQ9 Beginning PHQ-9

b. Predictors: (Constant), Beg_PHQ9 Beginning PHQ-9, Perc_adherence_ach % adherence achieved

c. Dependent Variable: EndPHQ_9 Ending PHQ-9

Table 2

ANOVA of Models 1 and 2

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1243.731	1	1243.731	27.975	<.001[b]
	Residual	3467.756	78	44.458		
	Total	4711.488	79			
2	Regression	1532.276	2	766.138	18.556	<.001[c]
	Residual	3179.211	77	41.288		
	Total	4711.488	79			

a. Dependent Variable: EndPHQ_9 Ending PHQ-9

b. Predictors: (Constant), Beg_PHQ9 Beginning PHQ-9

c. Predictors: (Constant), Beg_PHQ9 Beginning PHQ-9, Perc_adherence_ach % adherence achieved

Table 3

Coefficients of Models 1 and 2

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	5.374	1.579		3.403	.001	2.230	8.518					
	Beg_PHQ9 Beginning PHQ-9	.524	.099	.514	5.289	<.001	.327	.721	.514	.514	.514	1.000	1.000
2	(Constant)	15.716	4.198		3.744	<.001	7.357	24.075					
	Beg_PHQ9 Beginning PHQ-9	.510	.096	.500	5.336	<.001	.320	.701	.514	.520	.500	.997	1.003
	Perc_adherence_ach % adherence achieved	-.122	.046	-.248	-2.644	.010	-.213	-.030	-.275	-.288	-.247	.997	1.003

a. Dependent Variable: EndPHQ_9 Ending PHQ-9

Figure 1

Overall Adherence Rates Amongst all Clinics

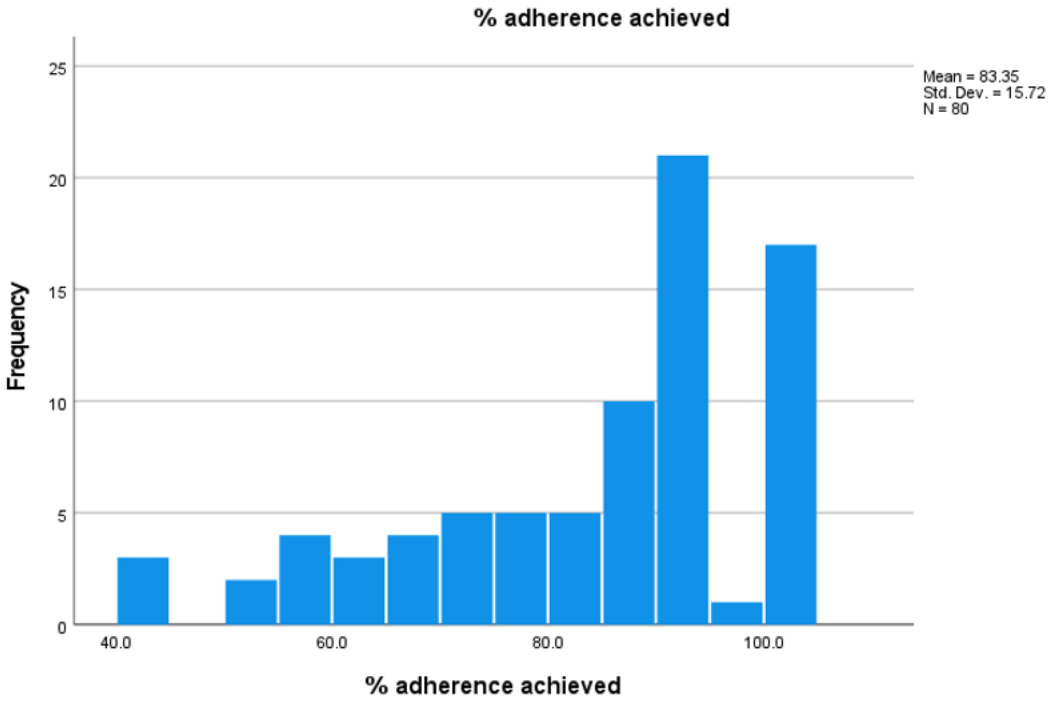


Figure 2

Beginning PHQ-9 Scores Amongst all Clinics

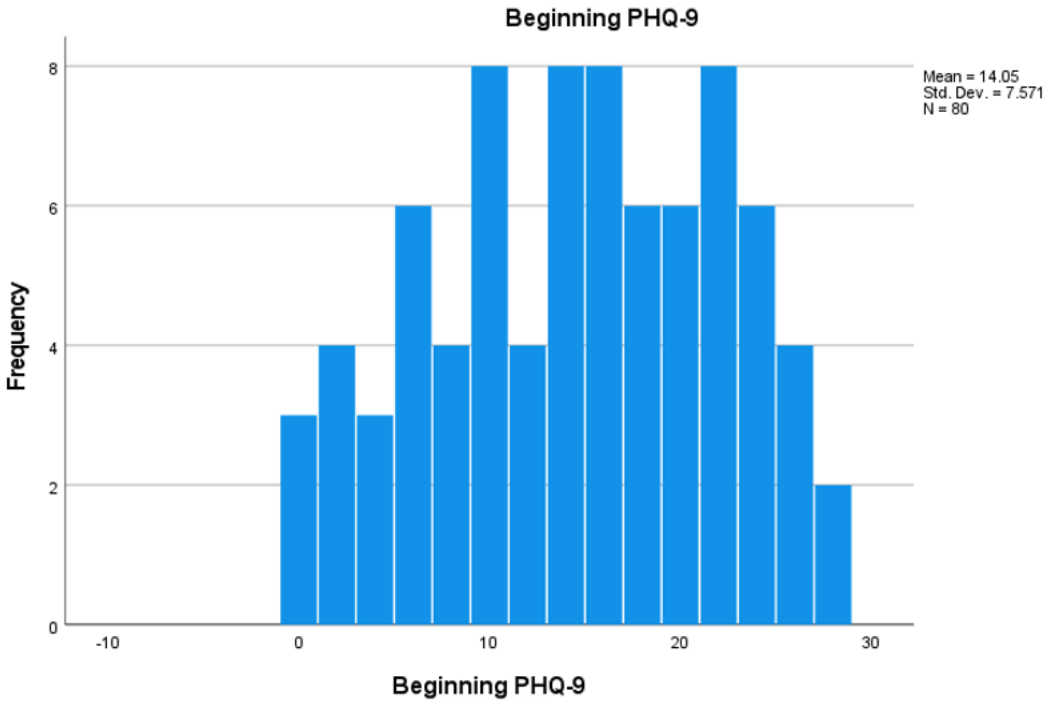
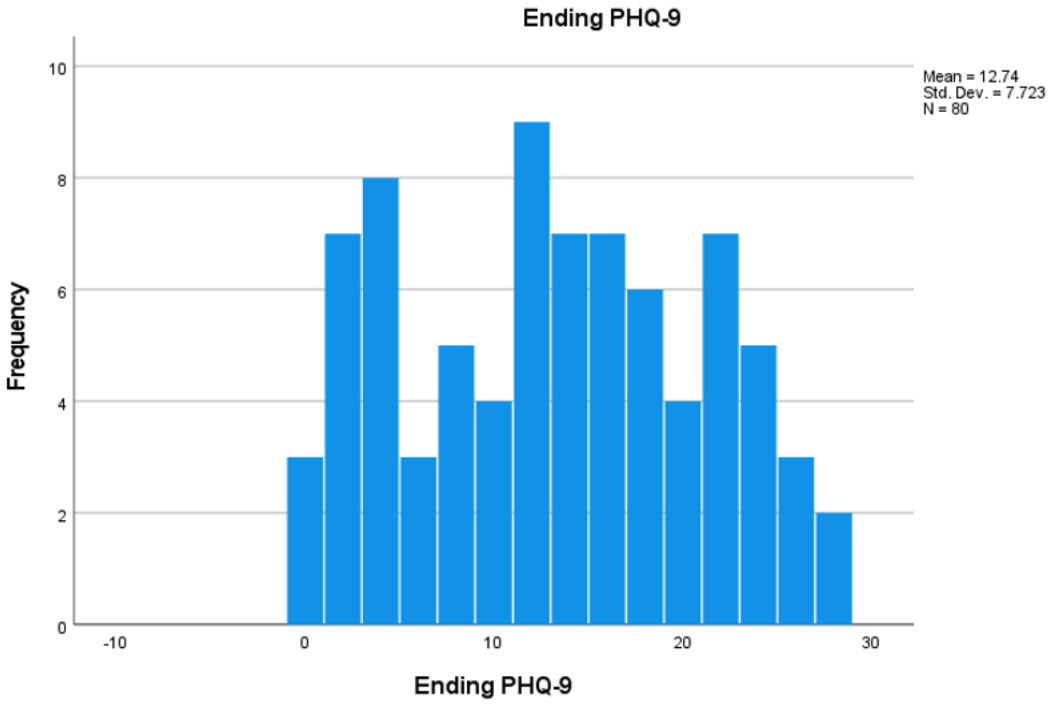


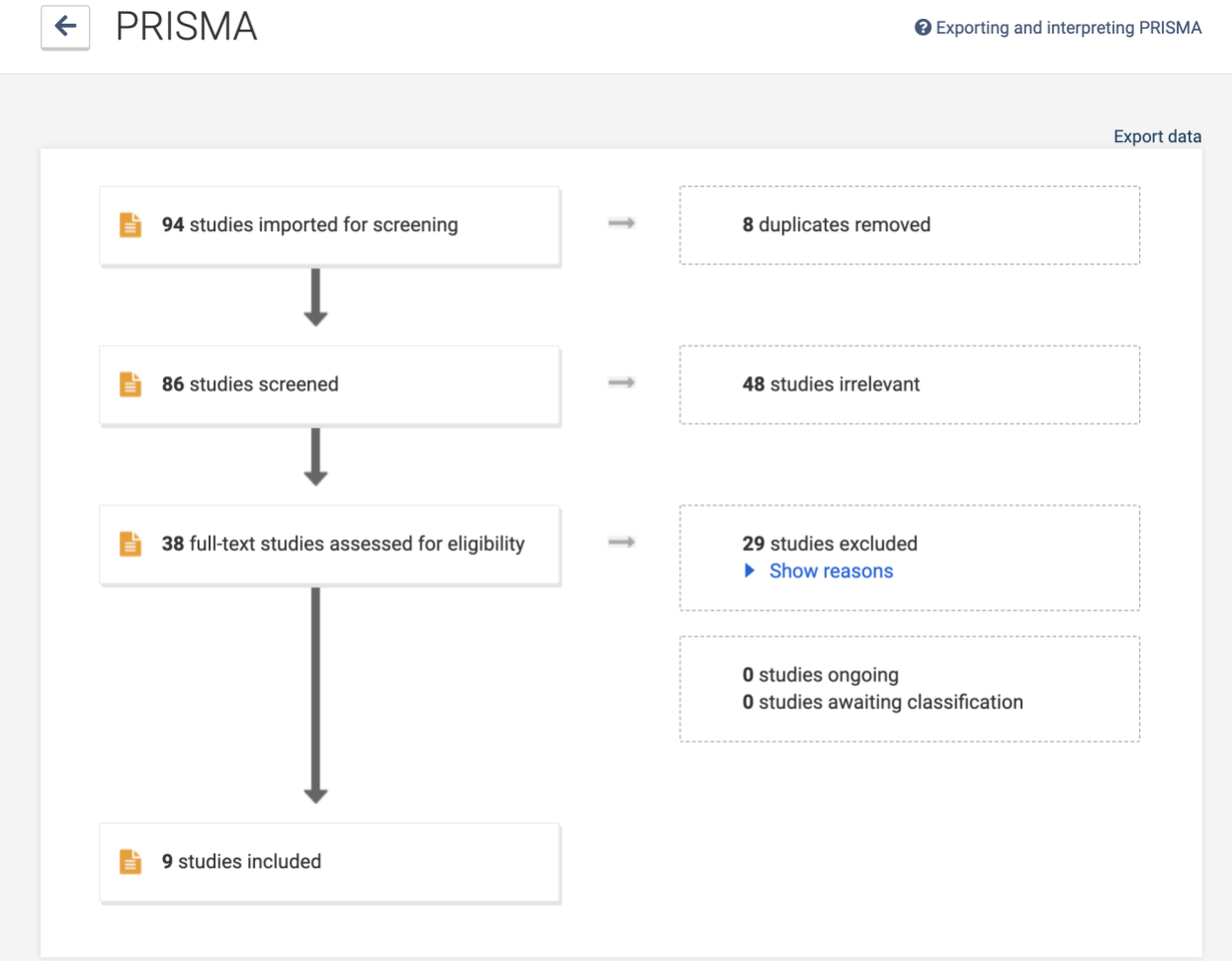
Figure 3

Ending PHQ-9 Scored Amongst all Clinics



Appendix A

PRISMA Flow Diagram



Appendix B

Discussion Guide

Pre-Audit and Feedback Discussion Guide for Providers

Clinic:_____

I am aware of the DoD mental health policies and Va/DoD CPG YES/NO

How often do you follow these policies and guidelines:

- Never=0%
- Rarely=25%
- Sometimes=50%
- Often=75%
- Always=100%

If your answer to the above was other than ‘Always,’ what prevents you from adhering to these policies and guidelines? Please describe below.

Appendix C

BCA Worksheet

BUSINESS CASE with VALUE BASED CARE ASSESSMENT
Proposed Title for Project/Initiative/Opportunity to Improve
Provider adherence to Department of Defense (DoD) mental health (MH) policies and the VA/DoD Clinical Practice Guideline (CPG) for depression treatment and linkage to depression severity in active-duty service members diagnosed with depressive disorders.
Opportunity Statement *(Description of proposed project/initiative/opportunity to improve)*
The development and implementation of a chart audit checklist that is consistent with DoD MH policies to include branch-specific policies and the VA/DoD CPG for treatment of depressive disorders will help assess provider adherence to those policies and the CPG. It will also help determine if patient outcomes as shown by PHQ-9 scores are better in those with higher provider adherence rates. As Ament et al. (2015) reported, adherence to standards after one year was decreased by 50% due to providers falling into old habits. Upon completion of our evaluation, active implementation and sustainment through ongoing quarterly chart audits should be continued to ensure quality maintenance and improvement (Ament et al., 2015).
Business Opportunity/Objectives *(Prioritize listing – macro and micro objectives)*
Macro Objective: The goal of this evidence-based project is to determine level of provider adherence to DoD MH policies and the VA/DoD CPG on depression and how that affects military members' PHQ-9 scores. Micro Objectives: To meet our macro objectives, we must create a chart audit checklist consistent with DoD MH policies and the VA/DoD CPG pertaining to depressive disorders. This chart audit checklist will be used to audit past medical records for provider adherence to DoD MH policies and the VA/DoD CPG as well as to obtain PHQ-9 scores. This chart audit checklist can then be used in the future as a reference for providers and future audits for ongoing process improvement and completing quarterly adherence assessments (Ament et al., 2015).
Potential Impact of the Initiative/Project *(Identify outcome metrics & benchmarks/and how objectives align with Quadruple Aim, Value Based Care, and HRO goals)*
1. Quadruple Aim, Readiness of Military Force: Adherence to DoD MH policies and the Va/DoD CPG affects the number of service members that are deployable 2. Quadruple Aim, Readiness of Medical Force: An adherent provider is more "ready" to treat patients 3. Quadruple Aim, Population Health: Improved PHQ-9 scores. PHQ-9 scores are related to depressive disorder severity and associated disability (Kroenke et al., 2001). Patient satisfaction and overall outcomes has also been shown to increase with standardization of care (Modesitt et al., 2016).

4. Quadruple Aim, Per capita cost: Improved patient outcomes leads to less care needed, thus, decreased lost workdays and wages. This also results in decreased loss of life from suicide which is the number one overall military asset (National Institute of Mental Health, 2019).
5. HRO Goal, Sensitivity to Operations (Veazie et al., 2019): Knowing the current state of provider adherence to the DoD MH policies and VA/DoD CPG at the Colorado Springs MTFs is essential to understanding what changes need to be made to enhance patient outcomes in depressive disorders.
6. HRO Goal, Deference to Expertise (Veazie et al., 2019): Mental health policies and guidelines are written by subject matter experts and thus should be relied on for providing quality patient care and adherence should be measured to ensure optimal patient outcomes.

Alternatives (courses of action) chosen for Analysis

1. Self-report surveys from providers to evaluate adherence to DoD MH policies and the VA/DoD CPG (Beehler et al., 2013).

2. Customized checklist to audit charts and evaluate provider adherence to DoD MH policies and the VA/DoD CPG (Clark et al., 2017; Farran et al., 2013; Hollingworth et al., 2019; Jazieh et al., 2019; Moullin et al., 2016; Ross et al., 2018; Williams et al., 2019; Winer et al., 2015).

3. "*Status Quo*:" Provider adherence to DoD MH policies and the VA/DoD CPG is not currently measured at this facility.

Analysis of Alternatives

Alternative 1:	Use of self-report surveys filled out by providers (Beehler et al., 2013)
Pros	**Cons**
- Surveys can be customized to the specific policies being measured - Keeps others from having to do the audits	- Adds more to already busy providers' plates - Individual and recall bias - Social desirability bias - Overreporting of knowledge
Alternative 2:	Use a chart audit checklist incorporating DoD MH policies and the Va/DoD CPG on depression to audit charts. Using a checklist to audit charts is linked to being an effective way to evaluate provider adherence (Clark et al., 2017; Farran et al., 2013; Hollingworth et al., 2019; Jazieh et al., 2019; Moullin et al., 2016; Ross et al., 2018; Williams et al., 2019; Winer et al., 2015), improve provider adherence (Jezieh et al., 2019; Winer et al., 2015), and improve patient outcomes (Amoakoh-Coleman et al., 2016; Farran et al., 2013; Hollingsworth et al., 2019; Moullin et al., 2016; Ross et al., 2018).
Pros	**Cons**

- Checklist can be customized to the specific policies being measured - Limits bias found with self-reports - Does not increase task load for providers	- Will require manpower hours to complete - For future use, must provide education to the auditors on completing chart audits
Alternative 3:	*"Status Quo*:" Provider adherence to DoD MH policies and the VA/DoD CPG regarding depressive disorders is not measured
Pros	**Cons**
-No additional manpower or further education for the providers is needed -Providers get to provide care how they would like - No additional cost or increased workload	- Adherence to the DoD MH policies and the VA/DoD CPG is unknown with everyone providing care how they would like. - Unable to assess PHQ-9 scores and adherence to guidelines - No data to support guideline implementation - No system in place for quality control

Assumptions

1. Data points needed to compare alternatives:
   a. Calculate cost of manpower hours to both create and complete self-report chart audit or the DoD MH policies and VA/DoD CPG chart audit checklist.
   b. Time frame of completing audits (3, 4, or 6 months).
   c. Synthesis of guidelines
2. The metrics that will be utilized are the most economical and effective way to acquire the data.

Recommendation and Rationale

Recommendation

Alternative 2: Use of a chart audit checklist to evaluate provider adherence to DoD MH policies and the VA/DoD CPG and the linkage to patient outcomes.

Rationale

Literature evidence supports the use of chart audit checklists based on policies and practice guidelines as an effective way to evaluate (Clark et al., 2017; Farran et al., 2013; Hollingworth et al., 2019; Jazieh et al., 2019; Moullin et al., 2016; Ross et al., 2018; Williams et al., 2019; Winer et al., 2015) and improve provider adherence to these policies or practice guidelines (Jezieh et al., 2019; Winer et al., 2015). The use of chart audits has also been shown to improve patient outcomes (Amoakoh-Coleman et al., 2016; Farran et al., 2013; Hollingsworth et al., 2019; Moullin et al., 2016; Ross et al., 2018).

Value Based Care - Investment Required by the Organization and the Associated "VALUE" or $ GAINED.

Initial Cost-Year Zero			

Personnel	Monthly Pay/Hourly Pay (40 hour work week)	Hours	Cost per person
O-4	**$7192/41.49**	**96**	**$3,983.26**
O-3	**$6628/38.24**	**96**	**$3,670.89**
O-3	**$6628/38.24**	**96**	**$3,670.89**
Technical Support	**$5495/31.70**	**8**	**$253.62**
Training of staff to include project team + continuation team	**combined hourly pay is $183.10**	**2**	**$366.20**
		Total initial cost year zero:	**$11,944.86**
Continuation Cost with 4 audits a year			
Personnel	**Monthly Pay/hourly pay**	**Hours (Quarterly chart audit)**	**Cost per person/year**
O-1	**$5290/30.52**	**16 hours**	**$488.31**
E6	**$3763/21.71**	**64 hours**	**$1,389.42**
E3	**$2236/12.90**	**64 hours**	**$825.60**
Technical Support	**$5495/31.70**	**8 hours**	**$253.62**
		Total continuation cost per year:	**$2,956.95**

There is a relationship between PHQ-9 scores and work productivity–with higher PHQ-9 scores productivity decreases (Beck et al., 2011). Over a single work week, 37.8% (or 14.2 hours) of an employee's total hours were affected by either decreased productivity or absences from work caused by their depression. In contrast, the average work disruption for employees not affected by depression is 8%. It has also been shown that PHQ-9 scores that increased by just one point decreased productivity by 1.65% (Beck et al., 2011). With that being said, the most recent data on active-duty military members diagnosed with depressive disorders is 52,383 out of a total of 1,315,087 Tricare eligible persons (or 4% of the force) (Defense Health Agency [DHA], 2017). With the expected outcome of this project being that increased provider adherence to DoD MH policies and the VA/DoD CPG can contribute to lower PHQ-9

scores and improve patient outcomes, the upfront cost of $11,944.86 and $2,956.95 in subsequent years pales in comparison to the current DoD spending of $1.5 billion per year on depression treatment (Vyas et al., 2016). Decreasing PHQ-9 scores will help with increasing work productivity, ultimately saving the DoD thousands of man hours.

In the long run, if provider adherence to DoD MH policies and the VA/DoD CPG regarding depressive disorders is linked to a reduction in depression severity, a subsequent projected reduction in DoD's spending on depression by even 0.05% would save $750,000 a year (Vyas et al., 2016).

Explanation of calculations above:

- ***Start-up hours were calculated for 3 months' worth of chart audits with an 8 hour day dedicated each week for 3 months (96 hours)***
- ***O-1 (officer) hours= 4 hours per quarter to review enlisted report and brief to command***
- ***Enlisted= 16 hours each for two-8 hour audit days each quarter***
- ***Technical support time is for pulling of chart data as needed and is estimated at this time***

*****All time is estimated and will need to be adjusted as we get a more realistic idea with boots on the ground***

https://militarybenefits.info/2021-military-pay-charts/

Risks and Mitigation Plan	
Risks	**Plan**
1. Our project shows that a majority of providers are adhering to DoD MH policies and the VA/DoD CPG, and there are significant differences in patient outcomes when comparing adherent to non-adherent charts in the expected direction.	1. This would be a good thing for patients and the organization as it allows a baseline evaluation of provider adherence at our site that can be used for future comparisons.
2. Our project results show that a majority of providers are adhering to DoD MH policies and the VA/DoD CPG, but there are no significant differences in patient outcomes when comparing adherent to non-adherent charts in the expected direction.	2. Analyze for the presence of other possible contributing factors to this finding (e.g. confounding variables)
3. HIPAA and ethical considerations	3. All data will be de-identified prior to auditing.

Implementation Plan- Johns Hopkins Evidence-Based Practice Model (JHEBPM)	
Phase 1:	Gather evidence
Milestone Description:	JHEBPM Step-Practice question and evidence. Literature search on best practices for measuring provider adherence. Document project plan.

Deliverables	Due Date	Accountable Person
1. Measurable Goal: Create evidence-based solution table by reviewing and utilizing the latest research evidence on how to evaluate provider adherence to the DoD MH policies and the VA/DoD CPG. 2. Develop data analysis plan 3. Decide on evidence-based framework that will guide project 4. Develop and refine PICOT question/clinical question	December 2021	MAJ Emily Lacey, Capt Linda Angotti, Capt Alicia Townsend
Resources Needed		
Access to research databases, library resources, covidence and time to perform tasks. We will utilize Learning Resource Center staff to ensure adequate database searches, as well as access to professional technical support. Current protocols from the Colorado Springs MTFs will be vital to understanding the "Status Quo."		
Expected Level of Benefit		
Analyze and study the evidenced-based practices for measuring provider adherence to DoD MH policies and VA/DoD CPG for depression and enable us to make the best choice for our solution.		
Phase 2:	Create a chart audit checklist that is based on DoD MH policies and VA/DoD CPG for depression treatment.	
Milestone Description:	JHEBPM Step-Evidence and translation. Compile DoD policies and CPGs regarding depressive disorders and use them to create a chart audit checklist.	
Deliverables	Due Dates	Accountable Person
DoD Depressive Disorder Chart Audit Checklist	December 2021	MAJ Emily Lacey, Capt Linda Angotti, Capt Alicia Townsend
Resources Needed		
All DoD MH policies and the VA/DoD CPG that involve depressive disorders.		
Expected Level of Benefit		
An easy-to-use provider adherence checklist will encourage future use with providers by compiling all the policies and the CPG in one spot. This will also assist in decreasing provider workload in the long term. This checklist will also be used after the initial year to complete process improvements through quarterly audits.		
Phase 3:	Project Implementation	
Milestone Description:	JHEBPM Step-Translation. Assess provider adherence to DoD MH policies and VA/DoD CPG	

	using the chart audit checklist and PHQ-9 scores (after obtaining local stakeholder and IRB approvals).	
Deliverables	Due Dates	Accountable Person
Chart audit results showing provider adherence to checklist and PHQ-9 scores via a chart/graph/table.	Oct 2022	MAJ Emily Lacey, Capt Linda Angotti, Capt Alicia Townsend
Resources Needed		
IRB and stakeholder approval, access to charts for auditing purposes, and the guideline checklist that was already created in Phase 2.		
Expected Level of Benefit		
Chart audits will provide the data needed to ascertain if patient outcomes are affected by provider adherence.		
Phase 4:	Evaluate Outcomes	
Milestone Description:	JHEBPM Step-Translation. Conduct an analysis of the data collected to identify any connection between provider adherence to DoD MH policies and the VA/DoD CPG pertaining to depression treatment and subsequent patient outcomes measured by PHQ-9 scores.	
Deliverables	Due Dates	Accountable Person
Paper with chart/graph/table	January 2023	MAJ Emily Lacey, Capt Linda Angotti, Capt Alicia Townsend
Resources Needed		
Support from a data professional to use SPSS or similar analytic software.		
Expected Level of Benefit		
Assess provider adherence to DoD MH policies and the VA/DoD CPG and identify any associations with adherence and patient outcomes in relation to PHQ-9 scores. When providers are able to see the impact of adherence on patients the more inclined they will be to make changes to their practice.		
Phase 5:	Disseminate Findings	
Milestone Description:	JHEBPM Step-Translation. Track association of patient PHQ-9 scores and provider adherence. *Measurable Goal:* Did provider adherence show an association with improved patient PHQ-9 scores.	
Deliverables	Due Dates	Accountable Person
Completed project and poster. Disseminate data to Colorado Springs MTF leadership.	February 2023	MAJ Emily Lacey, Capt Linda Angotti, Capt Alicia Townsend
Resources Needed		
Research information on how to pursue publication in specific organizations.		

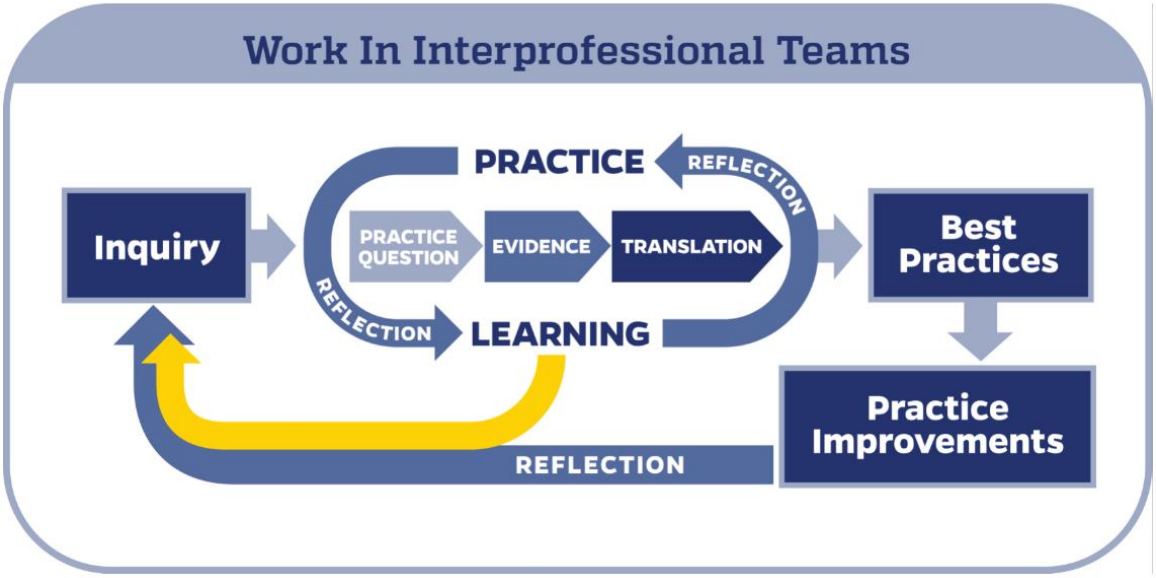
Time to put together a presentation for leadership at Colorado Springs MTFs and USUHS. Printing services for poster presentation.
Expected Level of Benefit
Pending the data that is synthesized from the EBP project, this can lead to higher adherence rates to DoD MH policies and the VA/DoD CPG pertaining to depressive disorders. Pursue publication in the American Psychiatric Association to further disseminate project findings.

NOTE: Modified from Harvard Business Review Press. (2011). *Pocket mentor: Developing a business case.* Boston: Author (pp 82-85).

Appendix D

Organizing Framework

Johns Hopkins Evidence-Based Practice Model



(Johns Hopkins Medicine, n.d.)

Appendix E

Literature Review

1st Author Name (Publication Yr)	Bucket Designation (Improve provider adherence, improve patient outcomes, evaluate provider adherence) **can be more than one but need to say which ones. Also she outlines them more clearly on the BCA feedback	Study Purpose/Aims	Research Questions/Hypotheses (IF different from/specifically described separately from study purpose & aims)	Study Design	Total Sample Size (How many initially, how many at final analysis?)	Sampling Plan	Independent Variables AND LEVEL OF MEASUREMENT	Dependent Variables AND LEVEL OF MEASUREMENT	Statistical Analyses - what tests were used for which research questions?	Results	Strengths (how promoted internal/external validity)	Weaknesses (biases; poorly controlled threats to internal/external validity)	LEVEL OF EVIDENCE - using JHNEBP tool (Strength and Quality)	APA Reference
Williams (2010)	Evaluate Provider Adherence	This study aims to examine the proportion of Army BHPs giving high quality psychiatric assessments through the use of CPG criteria, and identify BHP and patient characteristics that may contribute to obtaining a high-quality assessment	Utilizing Clinical Practice Guidelin	Non-Experimental-Descriptive cross sectional study	Initial: 2310; Final 348	An online survey of 2310 military and civilian Army BHPs, including psychiatrists, psychologists, social workers, and substance abuse counselors, was conducted from May to September 2010. Of the 2310 BHPs, 52 self-reported not being a BHP and 154 had undeliverable emails. The response rate among the remaining 2104 BHPs was 26% (n = 543). From that, a sample of 399 had treated an active-duty member. 51 questionnaires were incomplete leaving the final sample of n=348.	Review of 15 domains on an audit tool-ordinal level of measurement	The proportion of BHPs providing high-quality assessment on the 15 domains-interval level of measurement.	Pearson's correlation coefficient was used to measure the relationship between a quality assessment and hitting domains. Final models were chosen after testing for collinearity and goodness of fit using the Pearson goodness of fit test, and considering clinical relevance.	274 BHPs provided a high-quality assessment of their selected patient which was indicated by completing 14 of 15 domains on the audit tool. Providers who did not assess patients current health nor know of their patients history of mental health treatment were less likely to have a high-quality assessment.	The sample included over 70% of all Army BHPs which is a strength because the results are more likely to be representative of the whole population of Army BHPs. Logistic regression was used to examine associations between providers' assessment quality and (a) providers' demographics and professional characteristics, and (b) patients' demographics, military experiences, symptoms, and diagnoses.	Limitations of this study included: lack of TBI data; low response rates leading to potential selection bias; self report which can lead to bias; small sample size; outdated CPG's.	IIB	Williams, J. B., Tobin, R. L., Duffy, F. F., Shanahoff, M. E., & Wilk, J. E. (2010). Fidelity to best practices of psychiatric assessments in army behavioral health settings. Journal of Psychiatric Practice, 25(2), 103–117. https://doi.org/10.1097/pra.0000000000000365
Amoakoh-Coleman (2016)	Improve Patient Outcomes	The objective of the study was to determine the effect of provider adherence to antenatal care guidelines on the risk of maternal and neonatal complications.	None Specified	A cohort study that used both retrospective and prospective data.	Initial=946; Final=926	Randomized selection from public health care at delivery. A power analysis showed that a minimum sample size of 744 participants was required. Inclusion criteria: >18y/o; had one antenatal visit and one was before 5 months gestational age and at the facility they delivered at or a facility in this study.	Visit records were reviewed to assess providers' adherence to the guidelines, using a thirteen-point checklist. Nominal level	All maternal and neonatal complications during antenatal, delivery and post-partum periods-nominal level of measurement.	Chi-Square analysis to look at adherence.	Complete adherence to guidelines was found in 46.3% of women. Complete adherence to the guidelines decreased risk of any neonatal complication and delivery complication. It was found that complete provider adherence to antenatal care guidelines at first antenatal visit influences delivery and neonatal outcomes.	Adherence to first antenatal care guidelines was retrospectively scored from participants' records, which is a strength because then is was not possible for providers to change their practice because of the study. In addition, loss of follow-up was only 2.1%. Lastly this study used randomization for sampling and completed a power analysis to ensure enough participants were in each group.	It may be difficult to generalize the data since all of these women were receiving care in facilities; other co-morbid conditions such as anemia could have factored into complications rather than adherence.	IIB	Amoakoh-Coleman, M., Klipstein-Grobusch, K., Agyepong, I. A., Kayode, G. A., Grobbee, D. E., & Ansah, E. K. (2016). Provider adherence to first antenatal care guidelines and risk of pregnancy complications in public sector facilities: A Ghanaian cohort study. BMC Pregnancy and Childbirth, 16 (369), 1-10. https://doi.org/10.1186/s12884-016-1167-6
Winer (2015)	Improve and evaluate provider Adherence	To monitor mental healthcare delivery compliance for initial psychiatric assessment notes completed by psychiatric nurse practitioners (PNPs) as well as provide future direction for training and improvement to promote quality assurance.	None Specified	The audit tool was piloted for 3 months. After the audit tool was piloted, a non-experimental study was completed.	Initial PNPs evaluated: 18; Final PNPs: 18; Sample size of charts audited: 134	There are 18 PNPs in the country of Belize. 1 was on maternity leave during the study period of July-September 2013, and 1 was functioning in a predominately administrative role and did not see any new patients during the study. Those 2 PNPs were excluded from the study. Every initial assessment performed on a patient by the PNPs from July-September 2013 was included in the study, totaling 134.	20-item clinical audit tool-nominal level of measurement	0-100%: Adherence and non-adherence (to be measured as adherent, must score at or above 70% on the audit tool)-interval level of measurement.	Basic frequencies for statistical analysis were calculated.	The benchmark to ensure quality was set at 70%, which was a score of 14 out of 20 on the clinical audit tool; 17.2% of charts reached that benchmark. The average chart score among all PNPs was 9.57, ranging from 3 to 15. The highest score was 17 and the lowest was 2. With this information, quarterly audits is recommended with 10% of charts to ensure ongoing compliance.	The auditing process included every PNP in the country of Belize that was seeing patients at the time which is a strength for being able to generalize to the whole population. The sample sample size is small but because it included all PNPs in Belize there was no selection bias. Lastly, all initial assessments completed during the study were audited and this contributed to validity.	PNPs were told to keep a list of patients which could have led to recall bias; inability to chart information that they completed due to electricity issues leading to the appearance of nonadherence; audit tool only looks at a snapshot of the appointment which may lead to under reporting of compliance.	IIIB	Winer, R. A., Bennett, E., Murillo, I., Schuetz-Mueller, J., & Katz, C. L. (2015). Monitoring compliance to promote quality assurance: Development of a mental health clinical chart audit tool in Belize, 2013. Psychiatric Quarterly, 86, 373-379. https://doi.org/10.1007/s11126-014-9331-5
Clark (2017)	Evaluate Provider Adherence	The purpose of this study was to assess adherence to selected clinical practice guidelines (CPG) using an electronic auditing tool.	None Specified	Retrospective review of dental records of public pediatric patients. Non-experimental descriptive cross sectional study.	Initial: 205 audited charts with one excluded due to insufficient data; Final=204.	Randomized selection of charts from the public sector. Inclusion criteria: between 3-12 years; completed course of care in 2013; record of at least 1 direct restorative treatment on at least 1 deciduous tooth surface; complete record documentation. Exclusion criteria: dental work completed by students, emergency care, incomplete records and/or illegible records.	Chart auditiong tool-Nominal level of measurement.	Adherence to guidelines-interval level of measurement.	Audit tool underwent interrater and intrarater reliability and descriptive statistics.	Average adherence to CPG was 58%. Adherence changed with the different types of dental procedures. 14% of the cases audited did not fully adhere to the CPG; however, documentation was included on the rationale on why deviation from CPG. This study concluded that the 14% should be included in the 58% of adherence with a total of 72% of treatments being compliant.	This study included interreliability that ranged from 0.8-0.9. Charts were completely randomized and descriptions of inclusion and exclusion criteria were given all lending strength to the study.	There was no mention of a cronbach α to assess the internal consistency of the measurement tool. There was no ability to assess the providers non-adherence to the CPG after completing the study. There was not a very good description of the statistical analysis that the researchers used.	IIIB	Clark, R., Tomnukayakul, U., Mangan, Y., Smith, M., Guay, M., Manton, D., Bailey, D., & Calache, H. (2017). Measuring adherence to evidence-based clinical practice guidelines. The Journal of Evidence-Based Dental Practice, 17(4), 301-3019. http://dx.doi.org/10.1016/j.jebdp.2017.05.001
Jazieh (2019)	Improve and evaluate provider Adherence	This study aimed to assess practice variation with patients diagnosed with lung cancer using an audit tool and then conducted education on the guidelines. Practice adherence was then re-assessed post education to see if there was any change. Guidelines used were the National Comprehensive Cancer Network Clinical Practice Guidelines in Oncology (NCCN guidelines).	Following NCCN guidelines will i	Quasi-experimental, Pre and Post test Design: Concurrent and retrospective data collection.	Baseline audits, n=49 in 2012; n=46 in 2013; n=39 in 2014; n=26 in 2015	Records of patients charts with diagnosed lung cancer were audited.	Education for providers along with a progress note (template) for the patient with lung cancer-Nominal level of measurement.	Outcome Variables: compliance with documentation of pathological diagnosis; documentation of disease staging prior to treatment initiation; presentation of thoracic tumour board within 30 days of diagnosis; management course; and management of end of life in terms of early 'no code' initiation, stopping chemotherapy, and referral to palliative care prior to 3 weeks of death-Both nominal and ordinal level of measurement.	Descriptive with percentages.	Baseline measurement showed that adherence to guidelines were low. By 2015, there was 100% adherence to 3 out of the 4 guidelines. Running yearly audits, team discussions and use of progress notes had a positive effect on providing consistent evidence-based care for patients with lung cancer.	The research team obtained baseline data prior to implementing IV of education and progress notes which strengthed the study by showing consistent changes over time.	The yearly updates to the auditing tool makes it difficult to compare measures over time; the small sample size and short follow-up may not have been enough to measure outcomes with guideline adherence; they only used education and progress note updates to assist with non-compliance; there was no reported cronbach alpha score or interrater reliability; the statistical analysis was discussed in detail.	IIB	Jazieh, A., Alkaiyat, M. O., Ali, Y., Hashim, M. A., Adbelhafiz, N., & Olayan, A. A. (2019). Improving adherence to lung cancer guidelines: A quality improvement project that uses chart review, audit, and feedback approaches. BMJ Open Quality, 8(3), 1-9. https://doi.org/10.1136/bmjoq-2018-000436
Sass (2018)	Improve Patient Outcomes and evaluate provider adherence	To see if implementation of an electronic standardized order set would improve the rates of physical health monitoring on an inpatient psychiatry unit.	None specified	Quasi-Experimental one group pretest, post-test	Pre-test: 187 charts initially; 96 met inclusion criteria. Post-test: 305 charts initially; 190 met inclusion criteria	All charts of patients discharged during the study period were screened for inclusion. Inclusion criteria were patients aged 18 to 100 years, admitted to the inpatient psychiatric service, and prescribed a regularly scheduled antipsychotic medication for 3 or more days.	The implementation of developed quality improvement initiatives-Nominal level of measurement.	Adherence to the initiatives of chart audits-interval level of measurement.	Descriptive statistics including mean and standard deviation were used to compute continuous variables, frequency, and percentages for categorical variables. T test was used to compare continuous variables and chi-square test for categorical variables. Interrater reliability scores were calculated using percentage of concordance between the raters.	After the implementation and education on the standard electronic order set, monitoring rates for blood glucose, lipids, ECG, and TSH had statistically significant improvements from 2012 to 2016. The other physical health measurements had no change between these years.	The auditors thoroughly looked through written and online documentation. The screening of every single discharged patient's chart for inclusion in the study led to no selection bias. Interrater reliability was calculated as 1.0 (100% concordance) during the 2012 primary chart audits and at 0.97 in the 2016 chart re-audit which is strong.	Limitations: Missing information from not being documented; patient refusal of tests leading to underestimating monitoring numbers; no data on how many times the order set was used and the number of times actually carried out; there was high patient turnover between 2012 to 2016; no control group.	IIB	Sass, E., Barnett, R., Tudhope, R., & Vasudev, K. (2018). Can we improve physical health monitoring for patients taking antipsychotics on a mental health inpatient unit? Journal of Clinical Psychopharmacology, 38(5), 447-453. https://doi.org/10.1097/JCP.0000000000000931
Hollingsworth (2019)	Improve Patient Outcomes and evaluate provider adherence	The purpose of this study was to use an audit checklist tool to establish a safety strategy and guide to use while providing ECT.	None Specified	Non-experimental, descriptive study	67 procedures were audited over 2 months.	The audits targeted all ECT procedures that occurred in the study timeframe of May to June 2017.	Auditing of 67 ECT procedures using audit tool-Nominal level of measurement	Percentage of adherence to the policy-interval level of measurement.	The results were presented as total percentage of each item audited being complete and compared to a target percentage goal set by facility staff (each target goal has a specific percentage identified in Figure 3).	Ongoing audits and use of policy promote guideline-based patient care which leads to improved outcomes for patients.	Having the ECT clinical coordinator at the project site complete the audits and review the data for the project increased validity and feasibility as expert insight and the availability of a dedicated ECT team member informed audit strategies. Universal auditing of every procedure during the 2-month pilot project allowed inclusion of inpatient and outpatient procedures and ensured that diverse patient populations were represented.	Difficulty and length in the creation of the audit tool. Staff dissatisfaction with the audit tool which couldlead to reduced participation. There were ECT policy deficits that had not yet been adequately addressed by the facility. Some ECT guidelines used to create the audit tool varied considerably and some did not have best practices established. The small sample size may not be representative at a national level, so the data is unable to be generalized. Since it was a retrospective chart review, this can lead to reality and documentation not aligning.	IIIC	Hollingsworth, J., Ballin, B., McKinney, L., & Rosenquist, P. (2019). Developing and implementing a quality assurance strategy for electroconvulsive therapy. Journal of ECT, 35(1), 21-26. https://doi.org/10.1097/YCT.0000000000000497

1st Author Name (Publication Yr)	Bucket Designation (Improve provider adherence, improve patient outcomes, evaluate provider adherence) **can be more than one but need to say which ones. Also she outlines them more clearly on the BCA feedback	Study Purpose/Aims	Research Questions/Hypotheses (IF different from/specifically described separately from study purpose & aims)	Study Design	Total Sample Size (How many initially, how many at final analysis?)	Sampling Plan	Independent Variables AND LEVEL OF MEASUREMENT	Dependent Variables AND LEVEL OF MEASUREMENT	Statistical Analyses - what tests were used for which research questions?	Results	Strengths (how promoted internal/external validity)	Weaknesses (biases; poorly controlled threats to internal/external validity)	LEVEL OF EVIDENCE - using JHNEBP tool (Strength and Quality)	APA Reference
Moulin (2016)	Evaluate provider adherence and Improve Patient Outcomes	The objective of this study was to develop tools to measure components of fidelity with an adherence index and a patient responsiveness scale for the professional pharmacy service.	None specified	Quasi-Experimental	In total, 190 service providers from 128 pharmacies, across 11 provinces of Spain, responded to the questionnaires. 61 were not used due to missing data thus n=159. Pharmacies who were interested were entered into a random drawing to be in the study thus 100% of providers responded.	The recruitment process consisted of a written invitation to participate in the study, which was sent from pharmacy colleges to all pharmacies in their provinces. After a 2-day training session, pharmacy owners indicated their interest in their pharmacy participating in the 12-month implementation study. From each pharmacy, the pharmacists who would provide the service attended a 5-day training course. As part of their 6-month visit, these facilitators delivered and collected the questionnaires, which were self-completed during the visit by the service provider pharmacists.	Tool 1 (adherence index) and Tool 2 (patient responsiveness scale)-ordinal level of measurement.	Adherence and patient responsiveness-interval level of measurement	The patient responsiveness scale's internal consistency was confirmed by calculating Cronbach's alpha coefficient and inter-item correlations. In addition, for the patient responsiveness scale, the number of factors to retain was based on Kaiser criterion, parallel analysis and Cattell's screen test and the number of items was optimized as guided by iterative exploratory factor analysis (EFA). An initial assessment of item functionality was performed using descriptive statistics.	Acceptability of both tool 1 and 2 was high and an adherence index of 39 items was developed. After five EFA iterations, four items were removed, resulting in a reliable, 12-item, two-factor patient responsiveness scale, explaining 53.9% of total variance.	To minimize the risk of bias being introduced, the questionnaires were completed anonymously and were not used in a formative capacity as part of performance assessment or quality improvement.	Facilitators were employed to provide ongoing assistance as part of an implementation study and were also used to administer and collect the questionnaires. This is potentially a confounding factor if providers and/or facilitators believed they were being assessed by these individuals	IIB	Moulin, J. C., Sabater-Hernandez, D., Garcia-Corpas, J. P., Kenny, P., & Benrimoj, S. I. (2015). Development and testing of two implementation tools to measurer components of professional pharmacy service fidelity. *Journal of Evaluation in Clinical Practice*, 22(3), 369-377. https://doi.org/10.1111/jep.12496
Farran (2013)	Evaluate provider adherence and Improve Patient Outcomes	This study systematically assessed if adherence with adult overweight/obesity guidelines in primary care reduced patient risk	Can guideline compliance improv	Quasi experimental pre and post test	420 total encounter notes (210 before and 210 after the educational session)	3 private practices in Nashville. Inclusion criteria: ages 18-65, overweight/obese with BMI at or above 25, patients who were seen during the pre and post educational sessions. Exclusion criteria: pregnant or breastfeeding, did not meet inclusion criteria, or office visits that were not physicals or follow-ups.	Continuing education session-Nominal level of measurement	Adherence to the guidelines-interval level of measurement	Chi-Square analysis completed on the baseline information was used to compare frequency on the pre and post educational documentation. A wilcoxon test examined the completeness scores of the pre and post education.	Statistically significant improvement in the completeness scores and documentation of body mass index, height, diagnosis of overweight/obesity, and counseling for diet and physical activity were achieved with the use of this intervention.	Power analysis completed a priori with a sample of 70 encounter notes per clinic. Discussed the quality indicators that the researchers used which was the NHLBI.	This study used retrospective design with a pre-and post-education session which could be a limitation since a real-time audit would allow for provider feedback and may then influence guideline adherence. Additionally, the study included locations in a single metropolitan area, which could be a weakness because a larger sampling would have a broader applicability. Lastly, one auditor performed all data collection which is a weakness because multiple auditors with independent verification of findings would ensure the validity and reliability of data.	IIB	Farran, N., Ellis, P., Barron, M. L. (2013). Assessment of provider adherence to obesity treatment guidelines. *Journal of the American Association of Nurse Practitioners*, 25(3), 147-155. https://doi.org/10.1111/j.1745-7599.2012.00769.x

Appendix F

Project Timeline

Project Year 1 (2022)												
Activity/Month	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
USUHS VPR Submission and Approval				X	X	X	X	X				
Site IRB Submission and Approval				X	X	X	X	X				
Project Planning -Task 1: Stakeholder engagement meetings -Task 2: Finalize audit checklist -Task 3: Review DoD mental health policies for any updates	X	X	X	X	X	X	X	X				
Project Implementation/Data Collection -Task 1: Collaborate with IT at CO Springs Military Health System -Task 2: Approval from stakeholders -Task 3: Complete chart audits									X	X	X	X
Data Analysis -Task 1: Support from data professional -Task 2: Review data using Pearson's correlation coefficient												X

Project Year 2 (2023)												
Activity/Month	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
USUHS VPR Submission and Approval												
Site IRB Submission and Approval												
Project Planning												
Project Implementation/Data Collection												
Data Analysis	X											
Audit and Feedback Sessions with Providers		X										
Dissemination -Task 1: Create poster -Task 2: Include stakeholder and leadership on presentation			X	X								

Appendix G

Audit Tool

		Pseduo FIN #:				Appointment Dates:	PHQ-9 Scores:	Providers:
VA/DoD CPG for the Management of Major Depressive Disorder		Met	Not Met	Not Applicable	Comments			
Identification and Assessment	Identified a patient with suspected depression (clinical or scored + on PHQ-2)							
	Conducted a risk assessment and diagnostic work-up: PHQ-9, SI/HI, hx of suicide, psychotic features, causes of secondary MDD							
	Conducted a diagnostic evaluation: determination of functional status, medical hx, past treatment hx and relevant family hx. Collaborate with BH as needed (only applicable on initial visit)							
	If an acute safety risk was identified, was the correct action taken (Impatient or emergent care)							
	Did the patient meet criteria for MDD and was it documented (use the PHQ-9 score as long as documented in the note)							
Uncomplicated mild to moderate MDD (See Sidebar 1)	Was a monotherapy or combination therapy utilized? Psychotherapy, pharmacotherapy, or both							
	If pharmacotherapy was initiated with little to no response after 4-6 weeks, was a change made to the medication and/or therapy initiated							
	Was a referral considered							
Severe, chronic, or recurrent MDD (See Sidebar 1)	If complex MDD, referral to a mental health specialist was initiated							
	A combination of psychotherapy and pharmacotherapy was offered							
	Treatment resistant MDD who had 2+ adequate medication trials, recommendation of MAOIs or TCAs							
	Did not use Ketamine for first line treatment for severe MDD							
	Electorconvulsive therapy was offered with or without therapy in certain cases (See Sidebar 2)							
	Repetitive transcranial magentic stimulation was used for treatment during a major depressive episode							
Monitoring	When a therapy was initated or changed, the patient was monitored at least once monthly until remission was obtained to include: symptom measurement, med/therapy adherence, and adverse effects							
	If remission was accomplished through meds, the med was continued for at least 6 months at the therapeutic dose							
	If patient has high risk of recurrent depressive episodes and on meds, the med was continued for at least 12 months (See Sidebar 3)							
	If a patient has a high risk of relapse, therapy was offered after remission was achieved (See Sidebar 3)							
Other	Mild to moderate MDD patients who are pregnant or breastfeeding were first trialed on psychotherapy							
	For adults 65 years and over, psychotherapy was used as first line treatment for mild to moderate MDD							
	Light therapy was initated for mild to moderate MDD that had a seasonal component							
	Education was provided on the benefits of exercise/activity							
	In a non-pregnant or breastfeeding patient who requested an herbal treatment instead of meds, St. John's Wort was the recommendation							
Army Regulation 635–40								
	Was the soldier referred for an DES appropriately (See Sidebar 4)							
Army MEDCOM Policy Memo 21-019								
	If patient attends intensive outpatient or residential treatment, was there a temporary profile for the duration							
	If lithium, valproic acid, carbamazepine, other anticonvulsants, or benzos used, was a 90-day temporary profile initiated and renewed for the duration							
	If antipsychotics used for primary stabilization, was a 90-day temp profile initiated							
	If sedative hypnotics or antipsychotics used 4 or more days a week longer than 3 months for sleep problems, was a 90-day temp profile initiated and renewed for the duration							
	If using 4 or more psychotropics daily, is a 90-day temp profile initiated and renewed for the duration							
	Upon initiation of or change in psychotropics if it is causing significantly impairing side effects or if patient is within 90 days of deployment and medication has yet to demonstrate efficacy and symptom stabilization, was a temp profile initiated							
	If inpatient psychiatric hospitalization, was a 30-day temporary profile initiated							
AIR FORCE INSTRUCTION 36-3212								
	Was the patient referred to the DAWG if an unfitting mental health condition (sidebar 5) was identified							
	Was the patient Referred to MEB (See Sidebar 5)							
Med Standards								
	Was member placed on a code 31 (mobility profile) in ASIMS for 90 days							
	Did clinician review duty or deployment/PCS limitations with AMRO to determine need for elevation or further action							
	Did clinician re-evaluate with AMRO every three months							
	At 12 months was the Q2 criteria reviewed (See sidebar 7)							
DOD INSTRUCTION 6130.03, VOLUME 2								
	Was the patient referred to the DES or processed for service specific administrative seperation if their depressive disorder despite approriate treatment: (1) Require persistent duty modifications to reduce psychological stressors or enhance safety; or (2) Impair function so as to preclude satisfactory performance of required military duties of the member's office, grade, rank, or rating							
CPG for Deployment-Limiting Mental Disorders and Psychotropic Medications								
	Was the Service member with mental disorders or who are taking psychotropic medications that prevent them from meeting retention standards (See Sidebar 6), or limit their ability to deploy if that is a requirement of the member's office, grade, rank, or rating lasting 1 year or is expected to exceed 1 year from date of onset referred for disability evaluation							
	Was a deployment waiver proceesed for: Individuals diagnosed with mental disorders that demonstrate a pattern of stability without significant symptoms or impairment for at least 3 months prior to deployment							
	When determining the ability to retain a service member or keep them in a deployed environment did the provider consider: severity of symptoms, SE of meds, functional impairment, risk of exacerbation with stress, individuals ability to tolerate a deployment, and overall prognosis							
	Were regular evaluations of psychotropic medication use in regards to: clinical response, limitations to deployment, continued service in deployed environment documented appropriately							
		% Compliance:						

Sidebar 1: MDD Severity (PHQ-9 score)	Sidebar 2: Conditions meeting recommendation for electroconvulsant therapy (ECT)	Sidebar 3: Hig-hrisk of relapse if >1 depressive episode
Mild: 10-14	Catanoia	
Moderate: 15-19	Psychotic depression	
Severe: >20	Severe suicidality	
	History of good response to ECT	
	Need for rapid, definitive treatment	
	Risks of other treatments outweight the risks of ECT	
	History of poor response to medications	
	Intolerable side effects to all classes of medications	

Sidebar 4:
1. Is the soldier able to perform common military task required for the soldier's office, grade, rank, or rating?
2. Is the solider medically prohibited from taking the APFT?
3. Is the soldier able to deploy?
4. Duration of condition or limitation is expected to exceed 1 year from date of onset.

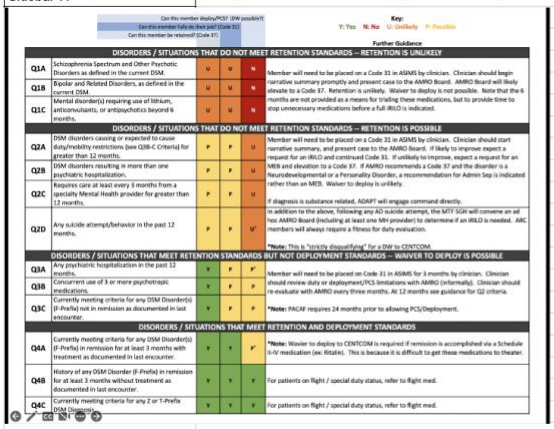
Sidebar 5: Referral for disability evaluation
1. One or more medical conditions prevent the service member from reasonably performing the duties of his/her office, grade, rank or rating
2. Medical condition that represents an obvious medical risk to the health of the service member or to the health or safety of other members
3. A medical condition that imposes unreasonable requirements on the military to maintain or protect the service member.
4. Duration of condition or limitation is expected to exceed 1 year from date of onset.

Sidebar 6: Medications that could disqualify an individual for deployment include:
(1) Antipsychotics
(2) Lithium
(3) Short acting benzodiazepines (unless prescribed as part of a policy directed operational fatigue management program)
(4) Barbiturates and Anticonvulsants, with the exception of those prescribed for migraine
(5) Medications that have special storage considerations, such as refrigeration (does not include those medications maintained at medical facilities for inpatient or emergency use)
(6) Medications that require laboratory monitoring or special assessment of a type or frequency that is not available or feasible in a deployed environment
(7) The demonstrated pattern of stability should account for medications prescribed within 3 months of deployment that have not yet demonstrated efficacy or have side effects that could impair a Service member's ability to deploy

DSM-5 MDD Diagnostic Criteria

- Five (or more) of the following symptoms have been present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood or (2) loss of interest or pleasure.
  Note: Do not include symptoms that are clearly attributable to another medical condition.
  - Depressed most of the day, nearly every day as indicated by subjective report (e.g., feels sad, empty, hopeless) or observation made by others (e.g., appears tearful)
  - Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by subjective account or observation)
  - Significant weight loss when not dieting or weight gain (e.g., change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day
  - Insomnia or hypersomnia nearly every day
  - Psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down)
  - Fatigue or loss of energy nearly every day
  - Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick).
  - Diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others)
  - Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide
- The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- The episode is not attributable to the physiological effects of a substance or to another medical condition.
  Note: The above criteria represent a major depressive episode.
- The occurrence of the major depressive episode is not better explained by schizoaffective disorder, schizophrenia, schizophreniform disorder, delusional disorder, or other specified and unspecified schizophrenia spectrum and other psychotic disorders.
- There has never been a manic episode or a hypomanic episode.
  Note: This exclusion does not apply if all of the manic-like or hypomanic-like episodes are substance-induced or are attributable to the physiological effects of another medical condition.

Sidebar 7:



Appendix H

Data Analysis Table

		Variable Name	Variable Description and type of measure	Data Source	Possible Range of Values	Level of Measurement	Time Frame for Collection	Statistical Test	Decision Rule
Event	IV	-% provider adherence to policy	**Variable Description**: -Retrospective chart review using an audit tool to evaluate provider adherence to DoD mental health policy **Measure Type**: -Process measures	-GENESIS	-0-100% provider adherence	-Ratio	-May 2021 through Oct 2021	-None	Based on literature, total provider adherence to policy ≥90% after 1 year (Ament et al., 2015)
	DV	-PHQ-9 scores calculating delta change over 6 months	**Variable Description**: -Patient PHQ-9 scores over time pulled from chart review **Measure Type**: -Outcome measures	-GENESIS	-0-27 for PHQ-9 scores	-Ratio	-May 2021 through Oct 2021	-Multiple hierarchical regression model	Based on literature, PHQ-9 scores <10 (Levis et al., 2019; Manea et al., 2015)

Appendix I

Team Mentor Agreement Form

Appendix B: Daniel K. Inouye Graduate School of Nursing
Topic Selection and Senior Mentor Agreement Form

DOCTOR OF NURSING PRACTICE PROJECT
Topic Selection and Senior Mentor Agreement Form

Graduation Year: 2023

Name(s) of DNP Project Student Team:

1. Capt Linda Angotti Phase II Site: CO Springs FNP
2. MAJ Emily Lacey Phase II Site: CO Springs PMHNP
3. Capt Alicia Townsend Phase II Site: CO Springs FNP

DNP Project Topic Area: In active-duty military members diagnosed with a depressive disorder, how does provider adherence to DoD mental health policies and the VA/DoD CPG for depression, compared to non-adherence, affect patient outcomes (depression severity as measured by PHQ-9) over a six-month time period?

SENIOR MENTOR AGREEMENT STATEMENT:
I agree to serve as the **Senior Mentor** (Committee Chair) for the above DNP Student Project Team. As Senior Mentor, I agree to the duties and responsibilities outlined within the DNP Project Manual which include but are not limited to the provision of consultation and guidance supporting the entire DNP project journey and to ensure the DNP project is of sufficient rigor and demonstrates doctoral level scholarship to meet the requirements for USUHS GSN graduation.

LTC Brent Donmoyer	DONMOYER.BRENT.LOWELL.1036190198 Digitally signed by DONMOYER.BRENT.LOWELL.1036190198 Date: 2022.05.25 13:51:27 -04'00'	25 May 2022
Senior Mentor (Chair) Name (typed)	*(signature)*	*(date)*

Form Version: 4 Sept 2016

Appendix J

CITI Certificates

CITI PROGRAM

Completion Date 12-Apr-2021
Expiration Date 11-Apr-2024
Record ID 42004531

This is to certify that:

Linda Angotti

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

OUSD P&R Human Research
(Curriculum Group)
Biomed Research Coordinators, Clinical Coordinators, Study Coordinators & Research Administrators
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?waef10dbb-5762-4750-b979-aba9b1405433-42004531

CITI PROGRAM

Completion Date 18-Apr-2021
Expiration Date 17-Apr-2024
Record ID 42130272

This is to certify that:

Emily Lacey

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

OUSD P&R Human Research
(Curriculum Group)
Biomed Research Coordinators, Clinical Coordinators, Study Coordinators & Research Administrators
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w6ecfa0f1-f3cd-4869-bd98-cd7c803d27e6-42130272

CITI PROGRAM

Completion Date 12-Apr-2021
Expiration Date 11-Apr-2024
Record ID 42062199

This is to certify that:

Alicia Townsend

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

OUSD P&R Human Research
(Curriculum Group)
Biomed Research Coordinators, Clinical Coordinators, Study Coordinators & Research Administrators
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w66f28fb7-7d12-4697-b4fd-6436b9f64440-42062199

Appendix K

USU Form 3202N

USUHS FORM 3202N
DANIEL K. INOUYE GRADUATE SCHOOL OF NURSING
EVIDENCE-BASED PRACTICE/PERFORMANCE IMPROVEMENT PROPOSAL

VPR Date Stamp

Project Number: _____ (VPR will assign)

Project Title: Provider adherence to DoD mental health policies and the VA/DoD Clinical Practice Guideline for depression treatment and linkage to depression severity in active-duty military members diagnosed with depressive disorders

SECTION A: STUDENT POC INFORMATION

1. Name (Last, First, MI): **Townsend, Alicia** Student E-mail: **alicia.townsend@usuhs.edu**
2. Home Address: [redacted] Cell Number [redacted]

SECTION B: COMMITTEE CHAIR / SENIOR MENTOR INFORMATION

3. Name (Last, First, MI): **Brent Donmoyer**
4. Telephone [redacted] Fax: E-mail: **brent.donmoyer@usuhs.edu**
5. USUHS Building/ Room No.:

SECTION C: PROJECT INFORMATION

6. Attach the Abstract for the proposal, including the following sections: Site Location of the Project, Title, Authors, Background or Problem/Issue, Clinical Question/Purpose, Project Design, Anticipated Organizational Impact/Implications for Practice and also include the Proposed Timeline. Single space the abstract and use Times New Roman font, size 12.
7. Is this proposal related to an active research project of the Chair/Senior Mentor identified in Section B? ☐ Yes ☒ No
   If yes, complete below; if no, proceed to Part 8.
   Project Number: _____
   Project Title: _____
   Project Start Date: _____ Project End Date: _____
8. Anticipated period of performance: Project Start Date: **7/1/2022** Project End Date: **5/1/2023**
9. Performance Site(s): **USAFA 10th Med Group, CO; Evans Army Community Hospital, CO**
10. Does this project involve any classified information? (Contact the USUHS Security Office for guidance) ☐ Yes ☒ No
11. Do you have a funding source for this project? ☐ Yes ☒ No ☐ NA
    If yes, specify the funding agency and the amount provided:

SECTION D: SIGNATURES

The following signatures attest to the validity of the above information:

TOWNSEND.ALICIA.MARIE JENSEN.1471699469 Digitally signed by TOWNSEND.ALICIA.MARIE JENSEN.1471699469 Date: 2022.05.09 10:01:14 -06'00'
Student (Project Point of Contact for the Group) (Signature and Date)

DONMOYER.BRENT.LOWELL.1036190198 Digitally signed by DONMOYER.BRENT.LOWELL.1036190198 Date: 2022.05.25 13:48:02 -04'00'
Chair/Senior Mentor (Signature and Date)

JONES.TEKIA.L.1037838353 Digitally signed by JONES.TEKIA.L.1037838353 Date: 2022.05.25 15:03:49 -06'00'
Chair/Program Director (Signature and Date)

OWEN.REGINA.D.1253117423 Digitally signed by OWEN.REGINA.D.1253117423 Date: 2022.11.01 13:27:07 -04'00'
Chair/Program Director (Signature and Date)

DNP Project Director or PhD Director (Signature and Date)

SEIBERT.DIANE.C.1084932279 Digitally signed by SEIBERT.DIANE.C.1084932279 Date: 2022.11.01 14:52:24 -04'00'
Associate Dean for Academic Affairs, GSN (Signature and Date)

SIMMONS.ANGELA.MARIE.1143313375 Digitally signed by SIMMONS.ANGELA.MARIE.1143313375 Date: 2022.11.01 12:48:42 -04'00'
Associate Dean for Research, GSN (Signature and Date)

ROMANO.CAROL.A.1032050294 Digitally signed by ROMANO.CAROL.A.1032050294 Date: 2022.11.01 12:54:31 -04'00'
Dean, DKI Graduate School of Nursing (Signature and Date)

In light of the above signatures, the project is approved.

WOODBERRY.MITCHELL.WAYNE.1060957114 Digitally signed by WOODBERRY.MITCHELL.WAYNE.1060957114 Date: 2023.02.23 10:31:34 -05'00'
USUHS Vice President for Research Date

USUHS Form 3202N (VPR) - Revised Sep 2015 v1.2
Previous versions are obsolete

Appendix L

MTF IRB Letter of Determination

DEPARTMENT OF THE ARMY
UNITED STATES ARMY MEDICAL DEPARTMENT ACTIVITY
1650 COCHRANE CIRCLE
FORT CARSON, CO 80913-4604

REPLY TO ATTENTION OF:

MCXE-QSD-PI/HPD 13 September 2022

MEMORANDUM FOR RECORD

SUBJECT: Review and Determination of eIRB Protocol Submission

1. Project Details:
   a. Title: "Provider Adherence to DoD Mental Health Policies"
   b. Principal Investigator: Major Tekia Jones, USAF, NC, DNP,
   c. Local Reference Number: **952445**
   d. Determination: Not research

2. The Evans Army Community Hospital (EACH) Human Protections Administrator has completed the OUSD(P&R) Exemption Determination Review Checklist and concluded the aforementioned activity is not research.

3. Confirmation of the credentials and qualifications of Major Jones is fully licensed RN. The Evans credentialing office confirmed her profile remains in good standing.

4. Please copy the EACH PI on correspondence for institutional visibility.

5. POC for this action is the undersigned, EACH HPD, 719-526-7758 or donald.a.ohare.civ@health.com.

DA OHare
DON OHARE
HPA

Enclosures:
A. Completed OUSD(P&R) Exemption Determination Review Checklist

Appendix M

PAO Clearance

DEFENSE HEALTH AGENCY
COLORADO MARKET
1681 SPECKLER AVE, BLDG 1011
FORT CARSON, COLORADO 80913-5107

April 25, 2023

MEMORANDUM FOR Uniformed Services University of the Health Sciences

SUBJECT: PAO Clearance

1. A Security and Policy Review was conducted for the document titled, "Provider Adherence to DoD Mental Health Policies and the VA/DoD Clinical Practice Guideline for Depression Treatment and Linkage to Depression Severity in Active-Duty Service Members Diagnosed with Depressive Disorders."

2. There are no issues or concerns with the public release of this document and release of project results is authorized for the following venues:

- Abstract that is to be submitted for USU Research Days
- Poster that will be presented during USU Research Day events
- Oral podium presentation of a summary of the Final Report
- Approval to upload final report to the "USU Archives"

[redacted]

GINO G. MATTORANO
DHA CIV, GS-13
Chief, Public Affairs

Appendix N

DNP Project Completion Verification Form

Appendix G: Daniel K. Inouye Graduate School of Nursing
DNP Project Completion Verification Form

DOCTOR OF NURSING PRACTICE PROJECT
Completion Verification Form

The DNP Project titled:

Provider Adherence to DoD Mental Health Policies and the VA/DoD Clinical Practice Guideline for Depression Treatment and Linkage to Depression Severity in Active-Duty Service Members Diagnosed with Depressive Disorders

was completed at: Colorado Springs Health System, Colorado

by the following student(s):

(type student name)	*(signature)*	*(date)*
Linda Angotti	ANGOTTI.LINDA.ROSE.1469929660 Digitally signed by ANGOTTI.LINDA.ROSE.1469929660 Date: 2023.04.16 12:57:07 -06'00'	04/16/2023
Emily Lacey	LACEY.EMILY.RUTH.1369494992 Digitally signed by LACEY.EMILY.RUTH.1369494992 Date: 2023.04.16 19:56:09 -06'00'	04/16/2023
Alicia Townsend	TOWNSEND.ALICIA.MARIE JENSEN.1471699469 Digitally signed by TOWNSEND.ALICIA.MARIE JENSEN.1471699469 Date: 2023.04.16 19:12:23 -04'00'	04/16/2023

The DNP Practice Project Team verifies that the following components of the DNP project, accomplished by the above students, is of sufficient rigor and demonstrates doctoral level scholarship to meet the requirements for USUHS GSN graduation:

- Presentation of DNP project to the leadership/stakeholders at the Phase II Site,
- Abstract/Impact Statement (*Appendix F*), and
- DNP Project written report.

Verified by:

	(type name)	*(signature)*	*(date)*
Senior Mentor:	Brent L. Donmoyer	DONMOYER.BRENT.LOWELL.1036190198 Digitally signed by DONMOYER.BRENT.LOWELL.1036190198 Date: 2023.04.26 22:04:23 -04'00'	26APR2023
Team Mentor:			
Team Mentor:			
Phase II Site Director:	Tekia Jones	Tekia Jones Digitally signed by Tekia Jones Date: 2023.04.23 22:39:13 -06'00'	4/23/2023

For RNA Students only *- add the following additional signature for final verification of project completion:*

N/A		
RNA Project Director *(type name)*	*(Signature)*	*(Date)*

Form Version: 26 Aug 2017/30 Mar2020