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Adherence to Evidence-Based Practice for Major Depressive Disorder

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Abstract

Phase II Site(s): Bennett & Thomas Moore Health Clinics, Fort Hood, Texas
Project Title: Adherence to Evidence-Based Practice for Major Depressive Disorder
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Background or Problem/Issue: The U.S. Army has the highest percentage of service members diagnosed with major depressive disorder (MDD). Compliance with antidepressant drug therapy six months after diagnosis of MDD is an evidence-based quality of treatment performance measure.

Clinical Question or Purpose: To determine whether MDD is being evaluated and treated in accordance with the evidenced-based Veterans Affair (VA)/ Department of Defense (DoD) MDD clinical practice guideline (CPG) and national Healthcare Effectiveness Data and Information Set (HEDIS) standards at Fort Hood's Bennett and Thomas Moore Soldier Centered Medical Home Clinics.

Project Design: Evaluation of clinical practice and treatment of MDD was accomplished via a 12-month retrospective chart analysis (RCA), comparing VA/DoD MDD CPGs to documented care in the electronic health records. Active duty patients age 18-65 with a first-time predetermined ICD-10 code for MDD were randomly selected for audit. A targeted educational intervention (EI) was developed based on identified gaps.

Analysis of the results: The RCA revealed consistent assessment, diagnosis, and CPG recommended pharmacotherapy at initial diagnosis. However, percentages of CPG congruent care for follow up and continuation of antidepressants for the recommended time interval were noted to be less than the target compliance rate of 75%. A targeted EI improved provider knowledge in all areas of CPG congruent care.

Organizational Impact/Implications for Practice: Enhancement of provider knowledge through targeted EIs translates to increased CPG knowledge. Anticipated outcomes from increased knowledge include increased CPG adherence, reduced MDD treatment costs, decreased long-term disability associated with delayed or inadequate depression treatment, enhancement of Soldier readiness, and increased HEDIS compliance.

Adherence to Evidence-Based Practice for Major Depressive Disorder

Introduction

In a Research and Development Corporation (RAND) study assessing quality of care for ADSMs with a diagnosis of depression and post-traumatic stress disorder (PTSD), the authors noted during the period between 2013 and 2014, approximately 51% of the 24,174 ADSMs who received outpatient care related to a depression diagnosis received care from their primary care provider (PCP) (Hepner et al., 2017). Deficiencies in depression care, particularly in primary care environments, are well documented within the Military Health System (MHS) (Hepner et al., 2017). According to the same 2017 RAND study, the MHS has moderately low scores for providing adequate initial care and follow-up for services members beginning treatment for depression (Hepner et al., 2017). Specifically, the authors identified the percentage of depression patients with a new treatment episode assessed were for manic/hypomanic behaviors and the rate of depression patients with a newly prescribed antidepressant receiving a follow-up visit within 30 days was less than 50% of the identified depression cohort participants (Hepner et al., 2017).

One approach to influencing care is the use of performance measures for comparison, accountability, and quality improvement purposes for depression care. The National Quality Forum has endorsed measures of responsibility for improving the delivery of Behavioral Health (BH) services such as the NCQA HEDIS metrics (National Quality Forum, 2013a; National Quality Forum, 2013b). The NCQA outlines HEDIS as a set of standardized performance metrics which serve as a measurement for quality improvement processes and preventative care programs (National Committee for Quality Assurance [NCQA], 2015). HEDIS metrics are

among the most frequently used performance measures in the managed healthcare industry and are one component of the NCQA's accreditation for a Patient-Centered Medical Homes (NCQA, 2015). HEDIS metrics have been used to improve the delivery of BH services and to achieve better BH outcomes for MDD since 1999 (Horgan, Merrick, Stewart, Scholle, & Shih, 2008).

Given that 7% of Army ADSMs were diagnosed with a depressive disorder in 2015, proper screening and depression treatment are of critical importance (Deployment Health Clinical Center, 2017). Performance measurement improvement and adherence efforts in this area need to remain current and operational. The two 2018 MDD HEDIS metrics tracked at Fort Hood's Bennett and Thomas Moore Clinics are acute and continuation phases of AMM (Green, 2017), which are congruent with VA/DoD MDD CPG recommendations to remain on antidepressant medication for approximately six months (The Management of Major Depressive Disorder Working Group, 2016). Acute and continuation phase medication compliance is achieved when a patient remains on antidepressant medication therapy for a minimum of three or six months respectively (Optima Health, n.d.). The goal for these HEDIS metrics to the 75th percentile benchmark percentage for acute phase management is currently 71.8% of identified patients and 54.9% for the continuation phase management at Bennett Health Clinic (Carl R. Darnall Army Medical Center [CRDAMC], 2017a; CRDAMC, 2017b). From March to August 2017, the percentage of newly diagnosed ADSMs with MDD who remained on an antidepressant for at least three or six months at the Bennett Health Clinic was 60.04% and 39.56% respectively (CRDAMC, 2017a, b). At Fort Hood's Thomas Moore Health Clinic, the three-month measure was 57.22%, and the six-month measure was 35.34% (CRDAMC, 2017c,d). Both clinics fell short of the 75th percentile HEDIS benchmark established by the NCQA, respectively achieving 71.8% and 54.9% compliance acute and continuation phase goals. According to the RAND study

(2017), military-wide minimum treatment durations for patients newly diagnosed with MDD were 65% for acute and 46% for continuation phases of medication therapy.

Hepner et al., (2017) noted there could be a great value and clinical utility in conducting retrospective CPG adherence assessments. As healthcare reform moves toward quality-driven reimbursement, hospitals and providers must justify treatments and demonstrate satisfactory quality outcomes. Hence, a retrospective analysis of adherence to the VA/DoD CPG for MDD could improve the quality of care for ADSMs diagnosed with MDD by addressing the care processes identified during the gap analysis requiring treatment modifications and enhancement (Hepner et al., 2017).

Significance of the Problem

Impact on Active Duty Service Members

ADSMs with depression experience high rates of comorbid health conditions and have complex physical and psychological needs (Hepner et al., 2017). Depression is a known risk factor for developing coronary heart disease and associated complications suggesting that ADSMs with inadequately treated depression are at increased risk for heart disease (Khawaja, Westermeyer, Gajwani, & Feinstein, 2009). Furthermore, ineffective treatment of MDD in ADSMs may contribute to sleep disturbances, emotional distress, and conditions that increase absenteeism, thereby lowering productivity in the military workforce and impacting military readiness (Hepner et al., 2017). With rates of MDD rising in the civilian and military populations it is imperative that the Military Health Service (MHS) work to improve clinical outcomes and metrics related to the diagnosis, treatment, and management of MDD.

Performance quality measures for MDD care align with several MHS priorities; including the MHS strategic Quadruple Aim framework to increase readiness at the individual and

organizational level through better health, better care, and decreased costs (Defense Health Agency [DHA], 2017b). The Quadruple Aim is a significant component in the MHSs goal of becoming a high-reliability organization (Schimmel, 2018). Identifying variances in MDD treatment, not comparable with the VA/DoD CPG can be used to develop and implement strategies to increase military readiness. Identification may be achieved through tailoring interventions to offset absenteeism and promote presentism. A possible outcome of the Doctor of Nursing Practice (DNP) project is the reduction of complications for inadequately treated and unidentified patients with MDD secondary to increased provider knowledge of the CPG. Also, the DNP project will illuminate in further detail the gaps in care pathways and lead to better care such as ensuring adequate workup for secondary causes of MDD and follow up of depressive symptoms after initiation of a new antidepressant medication. By identifying pathways for enhancement in the delivery of healthcare for MDD, the retrospective analysis will be the initial step in change processes for corrective action, thus potentially decreasing healthcare costs associated with unidentified or inadequately treated MDD.

The NCQA released new specifications for the 2018 edition of the HEDIS measures. One such addition is the metric regarding the percentage of patients 12 years and older that received standardized depression screening with a standardized tool such as the PHQ-9, and when screening is positive, follow-up care was received (NCQA, 2017). The PHQ-9 is a nine-question patient-completed screening tool useful for depression screening, diagnosis, and ongoing monitoring of depression (American Psychological Association [APA], 2018). Use of the PHQ-9 facilitates the collection of patient information required for diagnosing MDD, establishes a baseline severity of symptoms, and assists in determining the impact on daily functioning (APA,

2018). Hepner et al. (2017) identified that 37% of ADSMs in the depression cohort beginning new treatment for depression had a baseline assessment of symptom severity with the PHQ-9.

This new guidance will be beneficial for improving the rate of depression screening, diagnosis, and follow-up treatment in primary care. This metric is consistent with the VA/DoD MDD CPG recommendation to utilize the PHQ-9 for detection and monitoring of MDD (The Management of Major Depressive Disorder Working Group, 2016). Since this metric is congruent with the VA/DoD MDD GPG, data obtained from the retrospective chart reviews for this project were analyzed to assess if Fort Hood is achieving a goal of 75% of initial screening and documentation of the PHQ-9 according to 2018 HEDIS metric for PHQ-9 utilization.

The literature suggests there are a great value and clinical utility in conducting retrospective CPG adherence assessments (Hepner et al., 2017). Retrospective analysis improves the quality of care for ADSMs diagnosed with MDD by focusing on care processes identified as needing modification and enhancement (Hepner et al., 2017). Individual medical readiness is vital for achieving a medically ready force.

Impact on the MHS

The VA/DoD MDD CPG focus areas align with the MHS Quadruple Aim of creating and sustaining high-quality health care within the MHS. These goals can be achieved by optimizing population health, improving patient healthcare experiences, decreasing total healthcare expenditures, and enhancing military readiness (Federal PCMH Collaborative, 2012).

Inadequately treated MDD adversely affects individual ADSMs and overall military readiness. Upstream ramifications of poorly treated MDD at the service member level jeopardizes the organization across all arms of the MHS Quadruple Aim framework. Patients

with inadequately treated MDD are more likely to over or underutilize healthcare services which can adversely affect the cost and provision of care (Druss, Rask, & Katon, 2008). Increased costs detract from the MHS economic health through increased expenditures diverted toward MDD care. Patients with depression often concurrently suffer from comorbid conditions like anxiety and various somatic complaints, predisposing them to overuse medical services (Druss, Rask, & Katon, 2008). Increased utilization of medical services for MDD treatment requires additional MHS allocations for depression care.

Conversely, avolition and hopelessness may inhibit patients from participating in routine and preventative health services such as mammograms, chronic disease management (Druss, Rask, & Katon, 2008). This decrease in preventative healthcare use impacts the MHS Quadruple Aim goal of better health. Early screening and detection can not only prevent disease and illness but can also identify them at an earlier stage. Patients with MDD are also less likely to adhere to prescribed medical regimens and more likely to use the emergency department for routine or preventative healthcare (Druss, Rask, & Katon, 2008). According to the National Priorities Partnership (2010), overuse of America's emergency departments for non-urgent healthcare wastes 38 billion dollars annually, with each visit costing 580 dollars more than a primary care visit. ADSMs with adequately treated MDD are less likely to use the ED for routine or preventative healthcare (Druss, Rask, & Katon, 2008). Appropriate healthcare resource utilization, such as visiting a PCP for MDD management, leads to better care as the ADSM can receive comprehensive care from a provider who is familiar with their needs. Hence, optimizing MDD screening, diagnosis, and management at Bennett and Thomas Moore Health Clinics will likely assist Fort Hood and the MHS in meeting the Quadruple Aim goal of achieving increased readiness throughout the organization.

Impact on Nursing

U.S. Military registered nurses (RN), and advanced practice registered nurses (APRNs) engage with ADSMs on multiple fronts including at the unit level as Brigade RNs, Battalion PCPs (PA, physician or APRN) and in military clinics and treatment facilities as PCPs or specialty providers. Given the widespread nature of depression within the MHS (Hepner et al., 2017) and depression being the second most frequently encountered chronic conditions in primary care (Gaynes, Jackson, & Rorie, 2015), military RNs and APRNs likely interact with depressed ADSMs and those prescribed antidepressant medications. The military RNs' close interactions with ADSMs allow them to provide impactful assistance with the early screening, identification, and support in referring ADSMs to APRNs and other health professionals for early depression diagnosis and treatment. Early interventions by RNs can prevent delays in diagnosis and treatment.

APRN training and education make them the ideal change agent for improving depression care within the MHS. APRNs should play a fundamental role in enacting this transformation. The Institute of Medicine's report "The Future of Nursing: Leading Change, Advancing Health" recommends utilizing APRNs to the full extent of their educational preparation and capabilities in providing care (Institute of Medicine, 2011). According to the DoD, mission readiness is highly contingent upon the physical and psychological training of ADSMs, with the MHS (Hepner et al., 2017) and APRNs playing critical roles to that end. Primary care providers encounter twice as many BH patients compared to psychiatrists and prescribe two-thirds of antidepressant medications (Gaynes, Jackson, & Rorie, 2015). Primary care APRNs are likely to encounter depressed patients in their daily practice. Therefore, their

knowledge of and adherence to DoD/VA CPG for screening and treating MDD in primary care will be critical to ensure ADSMs receive optimal BH treatment.

Impact on Fort Hood/Military

Fort Hood is the largest active duty armored installation within the United States Armed Forces, home to the 1st Cavalry Division, and plays a significant role in Army-wide training and testing (Columbia Broadcasting System [CBS], 2009). Many of the units at Fort Hood have deployed overseas to places such as Iraq and Afghanistan more than once (CBS, 2009). MDD is a common diagnosis within active duty military populations and if not appropriately identified and treated, may cause morbidity (Hepner et al., 2017). Therefore, MDD represents a potentially significant threat to the readiness of the individual and the military force. A total of 130 ADSM suicides during the first six months of 2017, with 55 or 42% occurring in the Army (Franklin, 2017). Hoge et al. (2004) found rates of depression between 11% and 17% in Soldiers three to four months after deployment to the countries of Afghanistan or Iraq, which is consistent with the 14% identified by Tanielian, Jaycox, & RAND (2008). These findings of depression prevalence amongst active-duty combat veterans have generated a growing body of literature demonstrating a relationship between deployment and MDD (Tanielian, Jaycox, & RAND, 2008). Fort Hood remains one of the highest deploying installations within the United States Armed Forces (Ft. Hood Fast Facts, 2017); implying ADSMs at Fort Hood are at increased risk for MDD and would benefit from high levels of adherence with the evidenced-based VA/DoD MDD CPG.

Tanielian, Jaycox, and RAND (2008) conducted a study to estimate the cost of MDD during the first two years post-deployment. *The value* was defined as “lost productivity, treatment, and suicide attempts and completions" (Tanielian, Jaycox, & RAND, 2008, p. 17).

They estimated that over two years MDD cost between 15,461-23,757 dollars per ADSM. Additionally, they determined savings of 9,240 dollars per ADSM when 100% of persons diagnosed with MDD received evidence-based care, thereby identifying that proper diagnosis and treatment could reduce costs associated with MDD by approximately 50% (Tanielian & Jaycox, 2008).

MDD is noted to impact individual and unit readiness, and when MDD is poorly managed or undertreated, it can have far-reaching impact and implications at the individual, unit, installation, and MHS levels. Retrospective assessment and analysis of practices outside of the VA/DoD MDD CPGs is an essential step toward future efforts to improve the quality of care for ADSMs diagnosed with MDD at Fort Hood and throughout the DoD.

Clinical Question

Were patients with a first-time ICD (International Classification of Diseases) -10 code diagnosis of MDD (select ICD diagnoses), age 18-65, being managed in accordance with the evidenced-based VA/DoD MDD CPG and national Healthcare Effectiveness Data and Information Set standards at Fort Hood's Bennett and Thomas Moore Clinics over a period of 12 months?

Focus Areas

The primary focus areas for this project are adherence to VA/DoD MDD CPG, monthly HEDIS metric compliance rates for acute and continuation phases of depression medication management at Bennett and Thomas Moore Health Clinics. Additional focus areas include developing an EHR data extraction program and chart audit tool, conducting a gap analysis, and assessing provider CPG knowledge before and after implementation of EI or other EB

recommendations for improvement based on gap analysis findings. Information technology (IT) will be consulted to assist in the development of the data extraction program and chart audit tool.

The clinics' HEDIS metric compliance rates demonstrate a disparity between best and actual practice. HEDIS benchmarks for acute and continuation phases of AMM are 75-90th percentile (Green, 2017). Between March and August of 2017, acute phase compliance rates ranged between 53.25%-64.57% and 29.91%-37.79%, for Bennett and Thomas Moore Clinics respectively. Continuation phase compliance rates during the same period were 32.90%-43.25% and 52.84%-60.07% respectively (Green, 2017). Between 2013-2014 MHS-wide acute and continuation phase quality measures were 65.3% and 46.0% respectively (Hepner et al., 2017). These percentages for acute and continuation phase fail to meet the 75th percentile benchmark. Therefore, a thorough gap analysis will help identify patterns of nonadherence to practice guidelines, which will help guide future practice changes to optimize MDD treatment.

Project Short and Long-Term Goals

The vital short-term goal for this project was to determine if providers were detecting, diagnosing, and managing depressed patients following VA and DoD CPG for MDD to improve metric performance adherence relevant to MDD and improve clinical practice compliance to the CPG. The standards are based on the VA/DoD MDD CPG. Measures included the presence of the assessment of symptoms with a PHQ-9, evaluation for manic/hypomanic behaviors, evaluation of suicide risk, and evaluation for recent substance abuse. With a goal of improving depression follow-up and medication adherence, evidence-based recommendations were made to relevant stakeholders for the development of further implementation programs to improve CPG congruent care and HEDIS measure performance.

A long-term goal of this project is the establishment of a primary care provider-focused MDD treatment EI. Preferably, the EI would be delivered to current providers, be integrated during new provider orientation, and be administered during annual refresher training. Currently, informational and educational meetings at Thomas Moore and Bennett Clinics are not protected times for providers, and attendance is optional. Establishing a protected time and mandating provider attendance of recurrent depression continuing education could promote increased understanding of CPGs at Fort Hood. Continuing education has been shown to improve patient outcomes (Forsetlund et al., 2009).

Other potential long-term goals of this project are the expansion of current efforts to increase the transparency of the quality of care being provided to patients with MDD. The provider questionnaire questions assessing provider knowledge of MDD HEDIS measures revealed providers at Thomas Moore and Bennett clinic were unfamiliar with the specifications for the MDD HEDIS AMM measures. Increasing transparency provides vital information to guide current and future projects to improve the quality of care delivered.

Also, the data obtained in this project will be used to inform follow-on DNP cohorts on areas for improving the quality of care delivered by the MHS for MDD by immediately focusing on specific care processes identified for improvement.

Anticipated Global Impact

Overall reduced healthcare expenditure and decreased long-term disability associated with MDD, combined with enhanced population outcomes and increased military readiness are among the possible long-term global impacts that adherence to the CPG could have on healthcare in the MHS. Another potential global effect of CPG compliance, not included in our proposed inclusion data, is the potential to decrease the number of suicides that occur in the military.

Depression is the BH diagnosis most commonly linked to suicide (Fawcett, 2012). Furthering the provider's understanding of untreated MDD consequences and the association with increased risk for suicidality will improve clinical knowledge and enhance capacity to intervene in ways to prevent the development of acute suicidal risk states in vulnerable ADSMs. The potential patient outcomes detailed above support the Quadruple Aim through enhancement of population health, improved patient healthcare satisfaction, decreased health care expenditures, and optimization of Soldier readiness (Federal PCMH Collaborative, 2012).

Organizing Framework

The knowledge-to-action cycle (KTAC) is a comprehensive model that incorporates the full sequence of knowledge translation from the starting point of identifying gaps from knowledge to implementation of interventions to improve practice (White & Dudley-Brown, 2012). Integration of knowledge from research and knowledge application represents the theoretical foundation to support the implementation of a program to increase adoption of MDD EBP by PCPs. Graham et al. (2006) proposed the KTAC framework as a valuable tool for facilitating the identification of gaps from knowledge to practice.

The KTAC framework provides a theoretical basis for identifying methods to improve provider adherence to MDD CPG through assessing practice gaps in knowledge application, as well as through selecting, tailoring, and implementing an EI. A provider questionnaire (see Appendix A) with incorporated clinical vignettes was used as a means to assess provider understanding of current MDD CPG along with the implementation of a tailored EI. Use of the KTA cycle and framework for this project was directed towards the outer action or application cycle, as we did not seek to create new knowledge regarding the management of MDD. Knowledge regarding management of MDD is established by the VA/DoD CPG for MDD.

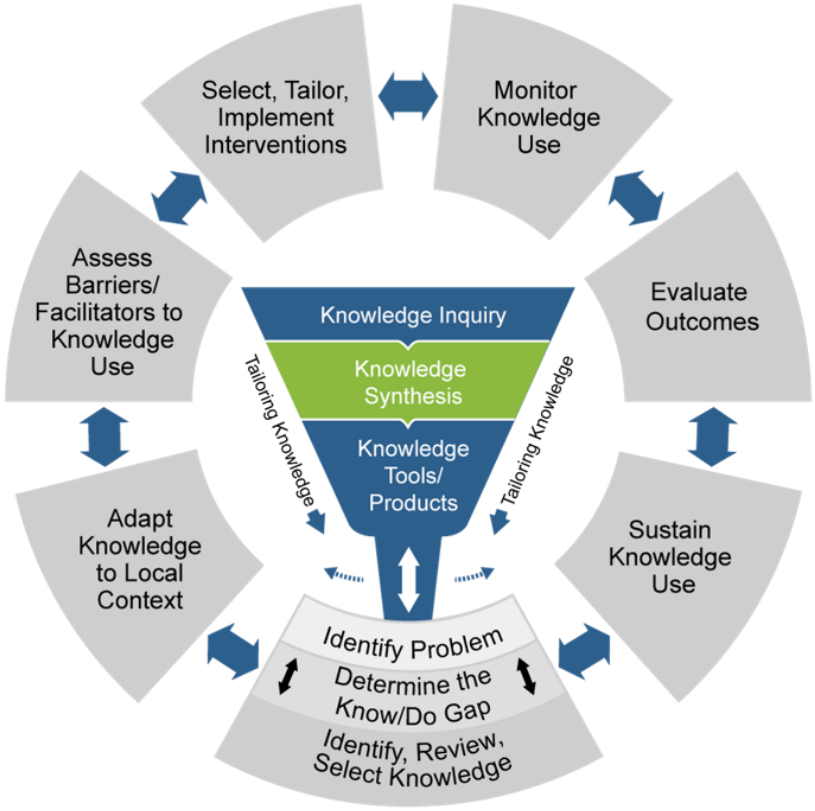

Figure 1. The Knowledge-to-Action Framework. Adapted by Crockett, L. (2017) from "Lost in knowledge translation: Time for a map?" By Graham, I. D., Logan, J., Harrison, M. B., Straus, S. E., Tetroe, J., Caswell, W., & Robinson, N. (2006). *Journal of Continuing Education in the Health Professions, 26*(1), p.19. doi:10.1002/chp.47

Project Design

Overview

The evaluation of clinical practice and treatment of MDD at Fort Hood was accomplished through a 12-month retrospective chart analysis, comparing VA and DoD MDD CPG to documented care in electronic health records in select medical clinics. Active duty patients age 18-65 with a first-time predetermined ICD-10 code for MDD were randomly selected for chart audit. Approximately ten charts per month for all patients meeting the predetermined ICD-10 codes were evaluated. A gap analysis of the data was performed to identify areas for improvement in care pathways for MDD.

Additionally, a knowledge assessment of PCPs' understanding of CPG utilization was conducted and used to inform the development of an EI. Kutcher, Lauria-Horner, MacLaren, & Bujas-Bobanovic (2002) conducted a study to evaluate the impact that a brief educational program, including various practice adjuncts, played on family physicians' knowledge about diagnosing and treating depression. They concluded that a short and cost-effective educational program could increase PCP knowledge of depression, enhance diagnosis, and improve the treatment of depression (Kutcher et al., 2002).

Evidence Evaluation

Search strategy.

The PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL) and PsychINFO databases were searched to access articles related to depression, guideline utilization, education intervention, and patient adherence in the PC setting. These search terms were utilized as the HEDIS scores indicate patients are not maintaining the EBP recommended duration of pharmacotherapy as noted in the VA/DoD MDD CPG. The literature search included combinations of keywords and appropriate subject headings for each database. Developing the list of terms to capture the concept of *depression*, *guideline utilization*, *educational intervention*, and *patient adherence* required identifying terms from key papers provided by the authors at the onset of the review. Search strategies in Pubmed, CINAHL, and PsychINFO utilized the terms: *guideline, guideline utilization, education in service, * educational intervention,* training, education, curriculum, depression, depressive disorder,* primary care,* and *outpatient*. *Guideline adherence, Medication Adherence, patient compliance,* and *lost to follow up* as MESH terms were incorporated into the search to expand the search yield as writers have used different terms for the same concept or topic. The initial search in all three databases resulted in 173, 903

articles. These results were further limited to the English language, human subjects, full text, abstract available, subject age range of 19-64, and a date range of 2014 to 2019. This search strategy identified a total of 1,112 articles for possible inclusion. A total of 1,100 articles remained after duplicates were removed. These articles' titles and abstracts were screened and retained if they included content relevant to depression, guideline utilization, educational intervention, and patient adherence. After title and abstract review of the 1,100 articles, six articles were found to be relevant to our interested inquiry and clinical question. The article selection is presented in Appendix A, using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Diagram.

Literature appraisal.

The final six selected articles were analyzed for strength and quality of evidence using a standardized evidence appraisal form. Clinical evidence and criteria for clinical application were evaluated by a review of the studies' methodology, validity, and reliability. A modified Melnyk Pyramid Model provided by the authors LoBiondo-Wood & Haber (2014) was used to determine the level of evidence type associated with the reviewed studies' design. A modified John Hopkins Evidence-Based Nursing Practice Rating Scale was used to assign a quality rating grade to the articles based on the appraisal (Newhouse, Dearholt, Poe, Pugh, & White, 2007). A study rating grade of an A would be of high quality, whereas, a study rated as a C grade indicates it has flaws that raise serious questions about the validity of the findings (Newhouse et al., 2007). Individual evidence appraisal forms assessing the quality can be found in Appendix C. A Systematic Evaluation Table for the reviewed articles is located in Appendix D. An Evidence Synthesis Table for the reviewed articles is found in Appendix E. This table summarizes the impact of the studies interventions on provider outcomes, medication adherence, and follow up.

Literature synthesis.

An overarching theme of nonadherence to MDD treatment being a pervasive issue emerged from the appraised literature. Keeley et al. (2014) discuss poor outcomes in depression management in the primary care setting are in part because of widespread nonadherence. In turn, nonadherence is associated with lower remission rates (Keeley et al., 2014). This review and appraisal of the six selected articles did identify that providers generally are more knowledgeable and confident about implementing clinical practice recommendations after receiving education, but the evaluation did not deliver substantive information regarding best practices to improve adherence to MDD treatment plans. Additionally, none of the articles in the literature appraisal answered our clinical question as they did not address the active duty population.

None of the reviewed articles provided specific information as to the content of the curriculum incorporated in the EIs. Therefore, there is no way to determine the particular aspects of instruction that were most useful, and what was less successful in driving change in provider practices. Also, the EIs were not all aimed at improving the implementation of clinical practice guideline recommendations, which is the focus of our project.

Of note, two studies demonstrated improvements in provider knowledge and application of guideline recommendations (LeBlanc et al., 2015; Sinnema et al., 2015). In a randomized cluster trial conducted by LeBlanc et al. (2015) the authors found education and implementation of a shared decision-making tool of recommended antidepressants in a primary care setting lead to overall increase in provider decisional comfort (80%) compared to usual care (68%). However, there were no statistical improvements in medication adherence or improvement in depression symptoms (LeBlanc et al., 2015). A randomized control trial was conducted by Sinnema et al. (2015) to assess whether the addition of a tailored implementation program would

promote increased provider recognition and treatment of anxiety or depression in general practice. The authors noted increased provider identification of patients exhibiting depressive symptoms. However, following the identification of depressed patients, no significant increase in antidepressant prescribing or patient referral to BH was noted (Sinemma et al., 2015). Burton, Cochran, and Cameron (2015) conducted a primary care database review to assess the percentage of patients who resumed antidepressant medication therapy after previously self-discontinuing their medication for a minimum of one month. Their study did not address measures for increasing patient antidepressant medication compliance, provider adherence to treatment depressive disorder CPG compliance, or educational strategies directed at overcoming those obstacles.

One study elucidated that a drug adherence program increased patient medication adherence. Vannachavee et al. (2015) conducted a randomized control trial to determine if patient adherence to antidepressant medication regimens would improve with the addition of a Drug Adherence Enhancement Program (DAEP) based upon motivational interviewing concepts. The DAEP consisted of an educational component on depressive disorders and treatment along with motivational and cognitive components. Participants receiving the DAEP had higher average drug adherence tendencies as contrasted with the control group during study week six. However, the study failed to demonstrate medication adherence after week six (Vannachavee et al., 2015). Despite some minor improvement in short term treatment plan adherence noted in a few of the studies utilizing patient psychoeducation (Aagaard et al., 2017) and motivational interviewing (Keeley et al., 2014), neither of these studies demonstrated these strategies lead to improvement with long term medication adherence.

The conclusion can be made that one-time interventions alone are ineffective in improving adherence. The limitation above suggests a significant gap in the literature regarding the use of specific EIs to increase long term adherence to MDD treatment plans and compliance with AMM. Also, there is a significant gap in knowledge regarding best practices for improving MDD outcomes in the military population. A review of the available literature supports targeted EIs and strategies to strengthen provider compliance with the delivery of care congruent with CPG (LeBlanc et al., 2015; Sinnema et al., 2015). In the absence of evidence-based practice recommendations for the most effective strategy to improve provider knowledge of and adherence to the VA/DoD MDD CPG, clinical vignettes and knowledge assessment questions were selected and used as a means to assess and reassess provider understanding of current guidelines with the implementation of a programmatic EI. The programmatic education intervention had a pre/post-test design with a review of an educational handout on current CPG.

Setting

This project was conducted at Bennett and Thomas Moore Health Clinics at Fort Hood, Texas. Data was collected via retrospective chart reviews using the MHS's electronic outpatient medical record, the Armed Forces Health Longitudinal Technology Application (AHLTA).

Procedural Steps

Retrospective chart review.

This project consisted of a 12-month retrospective chart review to assess provider VA/DoD MDD CPG compliance at Bennett and Thomas Moore Health Clinics. The time frame selected was from February 2017 to February 2018. This timeframe allowed for adequate follow-up care and management to be performed by providers after an initial diagnosis of MDD. Compliance measures data were binary, with compliance graded as "yes" and noncompliance

graded as "no." The compliance measures chosen were based on the HEDIS Depression Measures Specified for Electronic Clinical Data Systems and the VA/DoD MDD CPG recommendation for screening, initial diagnosis, pharmacotherapy, and follow-up management. The HEDIS Depression Measures Specified for Electronic Clinical Data Systems were included in the audit as at the time of project implementation; CRDAMC did not track these performance metrics. A total of 17 different measures were chosen and incorporated into a data collection tool developed in Excel (see Appendix F). Advantages of using an electronic-based tool included a cost-effective method of conducting a large number of chart reviews, reduction of auditor input error, and allowing for more natural centralization and access to the data.

Patients were included for chart review if they met the inclusion criteria of being an ADSMs between the age of 18-65 years newly diagnosed with MDD, associated with an ICD-10 code and inclusion criteria utilized in the HEDIS AMM for depression. The HEDIS AMM inclusions criteria designate enrollees to be continuously enrolled to TRICARE Prime from 105 days before their index prescription start date through 231 days after the index prescription start date, be newly treated with antidepressant medication, and diagnosed with MDD within 60 days of that initial dispensing of medication (DHA, 2017a). The HEDIS ICD-10 codes for MDD include: F32.0, F32.1, F32.2, F32.3, F32.4, F32.9, F33.0, F33.1, F33.2, F33.3, F33.41, and F33.9 (DHA, 2017a). Patients for the chart review were identified by the earliest prescription date through the HEDIS Metrics Registry for depression medication management on the CarePoint Military Health Service Population Health Portal (MHSPHP). Patients were filtered to narrow results to Fort Hood and the clinic sites, Thomas Moore and Bennett Health Clinic. Limitations in the CarePoint MHSPHP prevented patients who did not have continuous Tricare enrollment to be filtered out automatically from included patients. During EHR audits, the charts of patients

who transitioned out of the military or chose to receive behavioral healthcare services with a provider outside of Fort Hood before the eighth month following the earliest prescription date were not chosen for review.

Patients who received BH care services from a provider outside of Fort Hood were excluded from the chart review as the intended focus of the project is to assess Fort Hood provider compliance with CPG recommendations. Each month 10 charts were randomly selected for the retrospective chart review in 12 months, with a final total of 120 charts. Using the online randomization calculator http://www.graphpad.com/quickcalcs/index.cfm, randomization for inclusion in the audit was completed. Randomization was achieved by assigning a number to each patient during the selected month. The calculator randomly picked 10 subjects from the total number of patients for that month. This randomization was repeated for each subsequent month until a total of 120 charts were identified. A limitation of this software is that once a randomization plan is generated, the same randomization sequence cannot be reproduced as the web-based calculator uses the seed point of a user's local computer clock and is not visible for further use or future retrieval (Suresh, 2011). If a chart revealed the patient did not have continuous enrollment, their chart was eliminated from the audit. Then an additional chart not included in the randomization sequence was selected to ensure a total of 10 charts a month were selected. The investigators reviewed 60 charts each individually, for a total of 120 cumulatively. Each auditor reviewed 33% of the other auditor's charts to ensure the accuracy of content obtained during the retrospective chart review.

Provider questionnaire procedural steps.

Questionnaires were developed and distributed to assess provider pre and post-MDD EI understanding of MDD CPG and to identify knowledge gaps about MDD. Questionnaires

consisted of self-identification of practice specialty (i.e., psychiatrist, FNP, PA), four clinical vignettes with short answer responses and six multiple choice questions about MDD. VA and DoD CPGs were used to help guide question and answer formulation. The document was reviewed by the CRDAMC Human Protections Administrator and was approved for local dissemination.

On-site visits were conducted at Thomas Moore and Bennett Clinics. A brief overview of the MDD PI project, including background, process, and summary of the provider questionnaire were briefed to clinic staff. Clinicians were informed that questionnaire completion was optional and that their responses would remain confidential. Questionnaires were provided to clinicians present during site visits, resulting in a convenience sample distribution. A total of 23 providers completed pre-EI questionnaires. Responses were entered into a data collection tool (see Appendix G), and the percentage of correct answers were calculated for each question.

Following completion of retrospective chart reviews and preliminary data analysis, secondary clinic visits were conducted to update providers about our findings and to deliver a brief EI on treating MDD in a manner consistent with VA and DoD guidelines. Educational interventions consisted of an overview of MDD guidelines, practice trends observed during chart reviews, followed by a brief question and answer session. Questionnaires were administered to 19 providers following the EI to determine if clinician understanding of MDD management improved. Provider responses were once again entered into the data collection tool (see Appendix G). Comparison of scores from the pre and post-EI questionnaires elucidated that scores improved in all categories following delivery of the EI. An informational booklet entitled "MDD VA/DoD CPG and HEDIS Brief Overview" generated by the project team was

distributed to those in attendance for future reference. A copy of this booklet can be found in Appendix H).

Educational intervention procedural steps.

Data revealing patterns of provider non-compliance with VA/DoD CPG were not aggregated by name or another easily identifiable characteristic, to avoid retribution or punitive action taken against them based on CPG compliance rates. Instead, strategies for improving MDD treatment compliance were provided to PCPs during the EI. Essential educational elements included VA/DoD CPG, HEDIS measures, and applicable site-specific standard operating procedures. Clinic staff was offered an opportunity to ask questions and provide insight and recommendations for improving depression treatment compliance.

Findings from the initial record review were disseminated to CRDAMC, Bennett, and Thomas Moore Clinic leadership along with practice improvement recommendations. Suggestions included establishing protected staff training time and embedding CPG components within the EHR to enhance treatment compliance rates.

HIPAA Concerns (IRB)

Retrospective chart reviews without patient consent are legal under federal regulations when certain conditions are met, such as not using any personally identifying information (Office for Civil Rights, 2013). To avoid any possibility of the disclosure of protected health information (PHI), we did not include any PHI in our audit tool for the retrospective chart review to identify patients. Also, we did not use PHI in any form of communication when discussing or transmitting the results of our chart review in any format. Throughout the project, all member's-maintained Health Insurance Portability and Accountability Act (HIPAA) training compliance requirements.

This project was submitted to the Independent Review Board (IRB) at Fort Hood for review to ensure regulatory adherence. Based on the conditions published by the Office of Human Research Protections (OHRP) document of Code for Federal Regulations, Title 45 Public Welfare, Part 46 Protection of Human Subjects (45CFR 46) and OHRP decision charts, this proposed project does not meet the specifications for a research project (Department of Health and Human Services, 2009) and received Fort Hood IRB exemption. The Privacy Rule allows for records research to be performed when it is not feasible to use de-identified information or if it is impractical to obtain authorization from research participants by applying for a waiver of HIPAA Authorization (US Department of Health and Human Services, 2013). PHI was secured in a locked drawer to mitigate the risk of unintentional disclosure. Data was only accessible to authorized individuals associated with the project.

Due to the sensitive content of the data to be reviewed in the proposed retrospective assessment, providers were not identified in the data collection to avoid a culture of blame. Before conducting the chart review, members of the group met with project advisors and local installation leaders to discuss current procedures involving providers delivering care outside of CPG recommendations and EBP. If the review uncovered possible evidence of intentional harm or incompetence, members of the DNP group followed local procedures for submitting a patient safety report and notified clinic leadership when cases of this type occurred and when patient intervention may still be of benefit.

Project Results

Retrospective Chart Review

The available literature reveals there is no national consensus on the percentage goal of CPG care being delivered as ideally the practice of CPG congruent care should be 100%. A

measure score of above 75% was considered to be high, and scores below 50% were found to be low. This determined level of compliance was based on reported adherence compliance rates by the RAND study assessing the quality of care for PTSD and MDD in the MHS (Hepner et., 2017).

A total of 120 patient charts were reviewed. Of the 120 patients with a new diagnosis of an ICD -10 code for MDD, 93% (n=111) patients had a PHQ-9 documented within the EHR at the time of encounter with the ICD-10 code. During follow-up appointments within four months after the initial diagnosis, 94% (n=113) had a PHQ-9 administered and documented during an outpatient encounter at least once. The presence of a PHQ-9 score in the electronic health record documented at least once during the four months is a HEDIS Electronic Clinical Data Systems depression metric not tracked at Fort Hood at the time of project data abstraction. Evidence of improved response in PHQ-9 scores within 4-8 months was demonstrated in 80% (n=96) of charts. However, only 38% (n=45) achieved remission. The VA/DoD MDD CPG defines remission as, "…the significant reduction of symptoms such that the PHQ-9 score is four or less, maintained for at least one month" (2016, p. 27).

The VA/DoD MDD CPG recommends upon diagnosis patients should be evaluated for suicidal ideation and a history of suicide attempts (TMMMDWG, 2016). Upon initial diagnosis with a HEDIS ICD-10 code for MDD, providers evaluated 97% (n=116) of patients for suicide risk and 88% (n=106) of patients for a history of suicide attempts. Also, the VA/DoD MDD CPG recommendations for initial workup include ruling out secondary causes of MDD, evaluating for the presence of psychotic features or mania, and assessing for comorbidities such as substance abuse. A total of 54% (n=65) of the patients' charts demonstrated evidence of evaluation for secondary causes of MDD. Providers assessed 98% (n=117) of patients for

substance abuse upon initial diagnosis. The retrospective chart review revealed documentation of assessment for psychotic features and manic features in 86% (n=103) of the charts. Evidence of appointments offering to see integrated behavioral health upon initial diagnosis was demonstrated in 98% (n=118) of patient charts. The VA/DoD MDD CPG strongly recommends the use of the collaborative care model for the treatment and management of MDD within a primary care setting (TMMMDWG, 2016). The guidelines elaborate collaborative care interventions for MDD include the involvement of targeted clinical support, such as behavioral healthcare specialists, for the care of the patients with MDD (TMMMDWG, 2016).

Per the VA/DoD MDD CPG recommendations for routine monitoring and reassessment of suicide risk and substance abuse, 100% (n=120) of patients were assessed for suicide risk, and 98% (n=117) were evaluated for substance abuse upon initial follow up. The VA/DoD MDD CPG recommends patients should be asked about any current or recent substance use and assessed for suicide risk periodically (TMMMDWG, 2016). After initiating therapy or changing treatment, the VA/DoD MDD CPG recommends monitoring MDD patients at least monthly until remission is achieved (TMMMDWG, 2016). A total of 51% (n=61) of the 120 charts reviewed demonstrated documentation of monthly follow up for six months after initial diagnosis.

The VA/DoD MDD CPG pharmacotherapy for the first-line treatment of mild/moderate MDD are selective serotonin reuptake inhibitors (SSRIs [excluding fluvoxamine]), serotonin-norepinephrine reuptake inhibitors (SNRIs), mirtazapine, and bupropion (TMMMDWG, 2016). In cases of severe MDD where monotherapy with an antidepressant fails to achieve a response or remission, combined pharmacotherapy and psychotherapy is recommended (TMMMDWG, 2016). The retrospective chart review revealed 95% (n=114) of patients received an initial

prescription of an antidepressant recommended by the VA/DoD MDD CPG. Of the medications prescribed; 67% (n=80) were SSRIs, 8% (n=10) SNRIs, 4% (n=5) Mirtazapine, 18% (n=21) Bupropion, and 3% (n=4) other. Assessment of compliance with pharmacotherapy upon initial follow up was demonstrated in 99% (n=119) of charts. Guidelines recommend patients with MDD who are treated with antidepressants need to remain on antidepressants for at least 6-12 months to prevent relapse (TMMMDWG, 2016). The chart review revealed 59% (n=71) of providers placed a prescription for antidepressants for a minimum of 6 months after the initiation of pharmacotherapy. A total of 55% (n=66) of patients refilled antidepressants for a minimum of 6 months after the initiation of pharmacotherapy. A summary of the above-discussed findings of this retrospective chart review can be found in Figure 2.

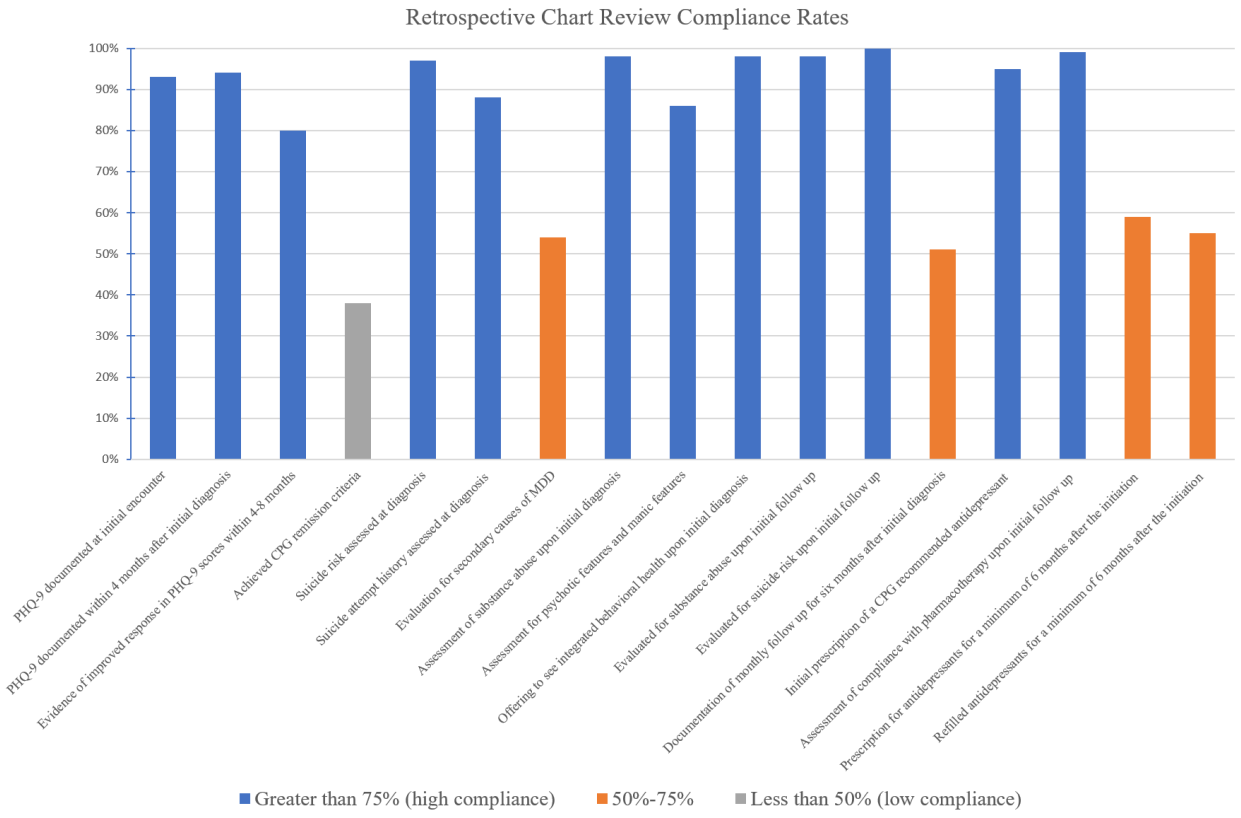

Figure 2. Bar graph representation of the retrospective chart review compliance rates.

Provider Questionnaire Pre-Intervention Results

At the time of pre-intervention dissemination of the provider questionnaires, 100% (n=12) of Bennett clinic providers and approximately 61% (n=11) of Thomas Moore clinic providers were available and agreed to participate in the project. Twenty-three providers completed MDD questionnaires. Of those queried, 78% (n=18) were physician assistants (PA), 21% (n=5) were physicians, and 0.5% (n=1) was an advanced practice registered nurse (APRN). Providers were asked questions to assess knowledge regarding the VA/DoD MDD CPG recommendations for the initial diagnosis, management, and treatment of MDD. Also, their knowledge of MDD HEDIS measures was assessed. Concerning knowledge of what regulation(s) or CPG guide MDD management, only 17% (n=4) of respondents reported utilizing the VA/DoD guidelines. A total of 52% (n=12) did not provide a specific guideline utilized in clinical practice to manage MDD.

When asked about the diagnosis of MDD, 52% (n=12) correctly identified the minimum number of symptoms required to make the diagnosis of MDD according to DSM-5. Only 22% (n=5) of providers were able to accurately identify the PHQ-9 score associated with severe MDD as categorized by the VA/DoD MDD CPG. Providers were asked further questions pertinent to the PHQ-9 tool. According to the VA/DoD MDD CPG, the PHQ-9 should be used to monitor response after initiation of treatment, it should also be used after each change in treatment, and at least monthly until remission is achieved (TMMMDWG, 2016). Responses revealed 43% (n=10) of providers correctly identified this tool as recommended by the VA/DoD MDD CPG to track progress and treatment response in patients with MDD. Providers were also asked to list the criteria for remission as defined by the VA/DoD MDD CPG. According to the most current guidance from the VA/DoD MDD CPG, the criteria for remission is defined as a

PHQ-9 score of four or less, maintained for at least one month (TMMMDWG, 2016). Of note, only 0.5% (n=1) responded correctly to this question.

A total of 91% (n=21) of queried providers were able to list at least one of the VA/DoD MDD CPG recommended first-line antidepressant for mild/moderate MDD. After initiating therapy or changing treatment, the 2016 VA/DoD MDD CPG recommends monitoring patients at least monthly until remission is achieved (TMMMDWG, 2016). The results of the provider questionnaire demonstrated 65% (n=15) of providers were familiar with this recommendation. In patients who achieve remission with an antidepressant medication, The VA/DoD CPG recommends continuation of the antidepressant at the therapeutic dose for at least six months to decrease the risk of relapse (TMMMDWG, 2016). The number of providers who possessed knowledge of this guidance to remain on therapy for six months was 52% (n=12).

In addition to the assessment of provider knowledge regarding the VA/DoD MDD CPG, providers' knowledge regarding HEDIS MDD AMM was also evaluated by the pre-intervention questionnaire. For the minimum number of days, a prescription for an antidepressant should cover in the acute phase, and continuation phase, 17% (n=4) of providers correctly identified 84 days for the acute phase and 74% (n=17) of providers correctly identified 180 days for the continuation phase (see Appendix I).

Provider Questionnaire Post-Intervention Results

At the time of the post-intervention dissemination of the provider questionnaires, 58% (n=7) of Bennett clinic providers and approximately 66% (n=12) of Thomas Moore clinic providers were available and agreed to participate in the EI and complete the post EI questionnaire. There was a total of 19 participants. Of those queried, 63% (n=12) were physician assistants (PA), 32% (n=6) were physicians, and 5% (n=1) was an APRN. Providers were asked

the same questions as the pre-EI questionnaire to assess knowledge regarding the VA/DoD MDD CPG recommendations for the initial diagnosis, management, and treatment of MDD. Knowledge of MDD HEDIS measures was assessed as well.

When asked about the diagnosis of MDD after the educational intervention, 84% (n=16) correctly identified the minimum number of symptoms required to make the diagnosis of MDD according to DSM-5 during two weeks. Also, 74% (n=14) of providers were able to accurately identify the PHQ-9 score associated with severe MDD as categorized by the VA/DoD MDD CPG. Responses regarding the PHQ-9 revealed 79% (n=15) of providers correctly identified this tool as recommended by the VA/DoD MDD CPG to track progress and treatment response in patients with MDD. Providers were also asked to list the criteria for remission as defined by the VA/DoD MDD CPG. Of noted improvement compared to the pre-EI results, 68% (n=13) responded correctly to this question. Before the educational intervention, only 0.5% (n=1) correctly listed the criteria.

There was also demonstrated improvement in provider knowledge regarding medication management after the EI. A total of 100% (n=19) of queried providers were able to list at least one of the VA/DoD MDD CPG recommend first-line antidepressant for mild/moderate MDD. The results of the provider questionnaire demonstrated 84% (n=16) of providers could correctly identify the CPG recommendation for monitoring patients at least monthly until remission is achieved after initiating therapy or changing treatment (TMMMDWG, 2016). The number of providers who possessed knowledge of guidance to remain on pharmacotherapy therapy for six months after remission was 95% (n=18).

In addition to the assessment of provider knowledge regarding the VA/DoD MDD CPG, providers' knowledge regarding HEDIS MDD AMM was also evaluated by the post-EI

questionnaire. A total of 89% (n=17) of providers correctly identified 84 days for the acute phase and 89% (n=17) of providers correctly identified 180 days for the continuation phase.

Improvements were noted regarding provider knowledge of all areas on the diagnosis, management, and follow up of patients with MDD after implementation of an EI (see Appendix I). This project supports the large body of available literature that EIs improve provider knowledge on CPGs.

Analysis of the Results

Areas of strength and areas with opportunities to improve CPG congruent clinical practice were identified during retrospective chart reviews. Noted areas for sustainment include initial diagnosis with the CPG recommended validated instrument, use of collaborative care and initial prescription of VA/DoD MDD CPG recommended pharmacotherapy. Areas for improvement include monthly follow-up and continuation of antidepressants for the CPG recommended time interval.

Treatment recommendations in the VA/DoD MDD CPG are based on a synthesis of the research literature. Proposals are assigned a grade based on the strength of the evidence supporting their use in clinical practice. A “strong for” or “grade A” indicates strong evidence that the intervention improves outcomes for those with MDD and that the benefits of treatment outweigh potential harms (TMMMDWG, 2016).

The VA/DoD MDD CPG recommends providers use the PHQ-9 as a quantitative measure of depression severity at initial diagnosis and to monitor therapy progress. This recommendation is a grade B recommendation, indicating clinicians provide this service or treatment to eligible patients (TMMMDWG, 2016). Thomas Moore and Bennett Health Clinic providers consistently utilized and documented PHQ-9 results. The retrospective review

revealed 93% (n=111) of patients had a PHQ-9 documented within the EHR at the initial encounter and 94% (n=113) had a PHQ-9 recorded at least once in the subsequent four months. The EHR design may contribute to high CPG congruent practice of PHQ-9 documentation as the instrument is embedded within the system.

In 2010, the Army mandated the establishment of Patient-Centered Medical Homes (PCMH) offering comprehensive and easily accessible patient-centered healthcare under one roof. In line with comprehensive care, every PCMH must offer in-house integrated behavioral health services to beneficiaries (Shinneman, 2016). These services are provided by Internal Behavioral Health Consultants (IBHC) and Behavioral Health Care Facilitators (BHCF). IBHCs may be any of the following: psychiatrist, psychologist, psychiatric mental health nurse practitioner (PMHNP), or licensed clinical social worker (LCSW). BHFCs are licensed practical nurses who work closely with PCPs, IBHC, and patients with a BH diagnosis. Services provided by BHFCs include contacting patients beginning or undergoing dosing changes of psychoactive medications (e.g., antidepressants, anxiolytics) prescribed in primary care to assess medication compliance, adverse medication side effects, and treatment response (Shinneman, 2016, 2017; U.S. Army Medical Command, 2014).

Bennett Clinic's IBHC is a clinical psychologist, and they recently hired for the BHCF role (Noya, 2019). Thomas Moore Clinic's IBHC is an LCSW, and their BHFC is a registered nurse (Edgar, 2019). High rates of PHQ-9 use at the time of diagnosis and periodically to monitor treatment efficacy, collaborative BH care and use of recommended first-line antidepressant medications likely stem from robust BH support located within the clinics. The above findings may not be directly translatable to other Fort Hood clinics lacking IBHC and BHCFs. Future analysis of MDD treatment in clinics other than Thomas Moore and Bennett

may yield data beneficial for identifying primary care MDD treatment practice patterns, best practices, and areas for improvement.

The VA/DoD MDD CPG also recommends the incorporation of a collaborative care model and practices for the treatment of MDD in a primary care setting (TMMMDWG, 2016). The retrospective chart review demonstrated a high percentage of patients were offered collaborative care practices as described by the CPG. A total of 98% (n=118) of patients showed documentation of appointments offering to see integrated BH. The collaborative care strategies suggested by the VA/DoD MDD CPG as a Grade B recommendation include patient education via systematic in-person or telephonic, follow-up and routine monitoring to assess adherence, and self-management strategies (TMMMDWG, 2016).

The VA/DoD MDD CPG recommends SSRIs, SNRIs, mirtazapine, and bupropion as an initial treatment choice. This a grade A recommendation and 95% (n=114) of providers prescribing habits were congruent with this guideline. While initial pharmacotherapy was appropriate, chart review revealed that a significant portion of patients was lost to follow up and did not maintain appropriate pharmacotherapy for the recommended duration. Improved patient response to the acute phase of treatment typically occurs within 6 to 12 weeks of initial therapy (TMMMDWG, 2016). In patients who achieve improved response with antidepressants, the risk of relapse is about 41% at six months if antidepressants are discontinued (Geddes, 2003). Therefore, the continuation phase of treatment is essential to sustain remission and prevent relapse. The VA/DoD MDD CPG recommends that once patients with MDD achieve remission, medication should be continued for six months to avoid relapse (TMMMDWG, 2016). A total of 22% (n=26) of patients in the chart did not refill antidepressants for a minimum of 6 months

after the initiation of pharmacotherapy due to no follow-up. The record review did not reveal the barriers for patients to achieve adequate monitoring.

Lastly, another opportunity for improvement includes routine follow up and monitoring. After initiating therapy or changing treatment, the VA/DoD MDD CPG recommends monitoring at least monthly until the patient achieves remission (TMMMDWG, 2016). Systematic measurement of treatment response in patients with MDD has been found to increase the likelihood of improved response to therapy (Bower, Gilbody, Richards, Fletcher., & Sutton, 2006; Williams et al., 2007). Therefore, providers should utilize the PHQ-9 at least monthly to track patient response and monitor progress.

Analysis of provider questionnaires revealed that providers are knowledgeable regarding initial screening and management but are most unfamiliar with the VA/DoD CPG MDD recommendations for follow up, monitoring, and achieving remission for MDD. Additionally, providers were unfamiliar with the recommended HEDIS time frames for AMM. Kutcher et al. (2002) concluded in their study that a short and cost-effective educational program could increase provider knowledge of depression and improve the treatment of depression. Interventions, such as targeted education programs, should be utilized to enhance provider knowledge of CPG.

A summary of the current state of MDD care and knowledge, along with the gap analysis findings which informed the development of the action plan of an EI could be found in Appendix J, Gap Analysis Tool.

Limitations

Several factors adversely affected the retrieval of patient data and the inclusion of randomly selected patient charts. Limiting factors include the inaccessibility of some network

BH encounter notes, no documentation explaining why antidepressant medication prescriptions were changed or discontinued, the absence of documentation explaining why patients missed scheduled behavioral appointments, convenience sampling of providers completing questionnaires, and non-receipt of pertinent data from other organizations within the MHS.

Medical records from network BH encounters were inconsistently uploaded to the Health Artifact and Image Management Solution (HAIMS) and Joint Legacy Viewer (JLV). The HAIMS system facilitates MHS system-wide provider access to images and artifacts generated during patient encounters, including medical records from network providers (DHA, n.d.). The JLV clinical application allows MHS providers read-only access to VA, DoD, and participating network provider-patient health data. Data in HAIMS and JLV includes inpatient and outpatient medical records, laboratory results, detailed prescription medication information on order entry and whether patients filled their medications (DHA, 2019). Both HAIMS and JLV databases were reviewed with suspected gaps in BH. Patients randomly selected that received their BH diagnosis or psychiatric care from outside providers were excluded from the project. Exclusion of these patients was necessary to ensure analysis of MDD management included only the care administered within select clinics. Charts of excluded patients were replaced in a 1:1 ratio via the online randomization calculator program to achieve the desired threshold of at least 120 retrospective chart review.

Incomplete access to some network BH clinical notes prohibited comprehensive chart reviews regarding medical diagnosis, treatment plan, screening for recent or remote substance abuse, suicidal/homicidal ideation, evaluation of manic/hypomanic behavior upon initial diagnosis, patient follow-up, and patient response to MDD treatment. This information is

essential for capturing accurate and comprehensive assessment of MDD treatment and analysis of gaps between current practice and standard of care.

Another limiting factor was the use of a convenience sample for completion of provider questionnaires. Randomized sampling is regarded as more representative of a given population demographic as compared to convenience sampling. Non-randomized methodologies such as convenience sampling prohibit comparison between the sample and desired study populations (Tyrer & Heyman, 2016). The use of convenience sampling instead of a randomized sampling of PCPs increases the likelihood of sample bias in this DNP project. Data collection, provider questionnaire completion, and EIs were only conducted at two SCMHs located at Fort Hood, Texas. Practice trends observed at the clinics may not accurately reflect MDD treatment in all Fort Hood primary care clinics and is not generalizable to other practice settings.

A Data Sharing Agreement Application (DSAA) was submitted to the DHA to permit release of useful project data obtained by organizations within the MHS, to investigators. Review and approval of the DSAA allowing information release was not complete before data analysis and project conclusion. The inaccessibility of more detailed statistical and aggregated data likely inhibited comprehensive data analysis and generalizability of findings.

Organizational Impact/Implications to Practice and Policy

MDD screening, diagnosis, treatment, and monitoring of patient responsiveness to therapy was evaluated at Fort Hood's Bennett and Thomas Moore SCMHs. Of note, provider knowledge of MDD treatment guidelines and patients lost to follow-up were areas with the highest potential for practice improvement.

Possible short-term impacts include the future establishment of brief EIs directed at improving primary care management of depressive disorders. Post EI provider questionnaire

results demonstrated that brief, targeted EIs lead to improved provider knowledge of MDD CPG. By extension, improved MDD patient clinical outcomes could stem from clinical provider application of CPG knowledge and patients potentially achieving remission of depressive symptoms in a timelier manner. Long-term impact for improving MDD management in Fort Hood SCMHs include improving outcomes (i.e., achieving depression remission) for service members suffering from MDD, reducing the amount of emergency services utilization, ensuring CPG compliance, reducing medical costs, and improving service member readiness.

The most significant potential impact of treating MDD according to VA/DoD CPG at Bennett and Thomas Moore SCMHs is improving Soldier and unit readiness. Improved recognition and treatment of MDD could potentially reduce the number of service members medically separated from the military. Adequately treating and returning the service member to duty as soon as possible following a diagnosis of MDD will likely result in reduced numbers of MDD patients progressing to a chronic disease state. Potential benefits of appropriate depression treatment are a decreased incidence in the suicide attempts, increased productivity, enhanced career progression, and servicemember retention (Tanielian et al., 2008).

Future Directions for Research and Practice

The results of our project helped identify both strengths and weaknesses in the current management of MDD at Fort Hood. While this is a good starting point, there are many opportunities for improvement that have been identified, and finding the root cause of the underperformance in specific categories would be the next step in quality improvement. Future directions for practice should include determining the barriers to medication adherence, follow up, and provider use of CPG. Also, there are potential areas for future research regarding best practices for the management of MDD specific to military patients.

Future Directions for Practice

The retrospective chart review found 22% (n=26) of patients did not refill antidepressants for a minimum of 6 months after the initiation of pharmacotherapy due to lack of follow up. The literature indicates potential causes for poor follow up may include stigma associated with a depression diagnosis, hesitation about seeking psychiatric help, or shame associated with a diagnosis (Groves & Muskin, 2019; Velligan et al., 2009). Another possible cause includes feelings of helplessness that are especially prevalent in patients with mental health disorders (Velligan et al., 2009). Patients may also have financial barriers, transportation or parking issues that act as barriers to follow up.

There may be barriers to antidepressant medication adherence that is unique to military patients, not readily identified with this project, hindering patients' ability to follow up. Hepner et al. (2018) report military patient barriers to receiving high-quality MDD or PTSD care include patients' ability to balance appointments and therapy schedules with military duties. The same obstacles may also be present at Fort Hood. Reaching out to Thomas Moore and Bennett Health Clinic patients lost to follow up through phone calls and surveys may assist in identifying their specific challenges and hurdles to attending follow up appointments. Questionnaires can be developed to compare adherent vs. non-adherent patients to identify factors facilitating or inhibiting treatment adherence. The same can be done in regards to patients that follow up versus those failing to do so.

Approximately 23% (n=28) of patients did not refill medications for reasons not revealed in the chart review. The literature indicates a vast pool of potential causes of medication non-adherence. Possible causes may include inadequate understanding of the disease (Groves & Muskin, 2019). The patient may have a poor understanding of the benefits of follow up,

behavioral health intervention, and medication adherence. Surveys can be completed by the patients that did not refill medication to help determine patients' level of understanding of MDD and the importance of maintaining medication adherence. Surveys would also allow a better understanding of patients' attitudes and expectations of treatment, and this could be mitigated through targeted patient education interventions.

Other potential opportunities to address the concern with antidepressant refills would be to develop teaching tools to educate providers on how to improve adherence in a non-judgmental manner, emphasizing a discussion with patients regarding their expectations of benefits and adverse effects may be helpful. Preemptive discussions about monitoring for side effects and possible alternative medication regimens with fewer side effects may also increase adherence (Osterberg, & Blaschke, 2005). Increased provider availability (in person or virtual) to answer questions about medications and dose adjustment plans can also be beneficial (Osterberg, & Blaschke, 2005).

While not a primary intended outcome to be evaluated, this project also identified potential areas for improvement in documentation and reimbursement regarding depression follow up. The Current Procedural Terminology (CPT) code 96127 can be used in the electronic health record of primary care appointments throughout the DoD when BH screening tools are used. The most current reimbursement rate is 0.17 RVU with this code (Matas, 2018). If one assessment or screening tool is used, only 96127 is entered for the encounter. If two are completed and properly documented, the provider would enter the 96127 code with two units of service, and so on for the number of tests done up to a max of 4 in AHLTA. This improvement in coding would thereby yield higher reimbursement for services rendered. Both lack of entering

the 96127 code and lack of documenting multiple units of service was observed during the retrospective chart review.

Identifying barriers to provider implementation of VA/DoD CPG is an area for future inquiry at Fort Hood. Barriers to provider implementation of VA/DoD CPG for MDD and PTSD was explored in a 2018 study conducted by Hepner et al. In the study, 503 providers across the MHS were surveyed to assess facilitators and barriers to providing care consistent with the CPG. Among the obstacles assessed in the provider survey, obstacles to training were identified as a barrier; specifically, a lack of protected training time (Hepner et al., 2018). It could be extrapolated that these barriers also exist at Thomas Moore and Bennett Health Clinics. Providers at these two clinics were informally queried about barriers to enhancing CPG knowledge, and providers reported a lack of opportunity and time to attend training seminars. One provider stated that training seminars are not mandated, with the time often utilized for completion of administrative and clinical requirements. A survey of providers at Thomas Moore and Bennett Health Clinic should be conducted to explore further challenges to delivering CPG congruent care.

Future Areas for Research

The maximal benefit of MDD management and treatment can only be achieved if those that require pharmacotherapy are adherent with treatment regimens. Patient adherence was identified as the most substantial opportunity for improvement identified in the chart review. Studies have shown that psychological health problems, particularly depression, are an independent risk factor for poor medication adherence and follow up (Van Servellen, Heise, & Ellis, 2011). Future areas for research should focus on specific strategies and establish best practices for addressing non-adherence and lack of follow up in military patients with MDD.

Possible strategies to explore for best practice in future studies would include those currently being used with success within the civilian community such as prescription refill reminder phone calls, smartphone applications, and use of a collaborative care team-based approach including pharmacist and nursing staff interventions, and telephone calls using techniques such as motivational interviewing and adherence counseling (Hedegaard et al., 2015).

Another possible direction for future research and practice could be the integration of computer support tools to improve MDD performance measures and CPG congruent care. As stated previously, PHQ-9 documentation rates were high, and this was likely related to the PHQ-9 questionnaire being embedded within the EHR. This is an excellent example of how utilization of information technology can also be used to improve CPG adherence. Integration of electronic support tools has demonstrated to be a cost-effective way to improve efficiency and accuracy of medical disorder screening, management, and follow up care (Dexheimer, Talbot, Sanders, Rosenbloom, & Aronsky, 2008). Improved CPG compliant management of patients with MDD through the use of computer-generated prompts integrated within the EHR could lead to better healthcare outcomes, decreased healthcare costs, and improved troop readiness. Directions for future research should include studying the effects of other clinical practice prompts integrated within the EHR and their impact on military patient outcomes and CPG adherence.

Conclusion

Improvements in MDD management aligns with the U.S. Army's top priority of military readiness (Milley, 2016). HEDIS benchmarks and CPG standards for achieving better health care outcomes are concurrent with standards for reaching and maintaining medical readiness. By addressing variances in the health care delivery for MDD and adherence to the VA/DoD MDD CPG as identified by the gap analysis, improved monitoring and antidepressant adherence may

increase the number of patients who achieve remission sooner. According to DoD Instruction 6490.0, a psychiatric disorder under treatment must demonstrate stability for three or more months for a Soldier to return to a deployable status. Achieving early remission would allow Soldiers to return to duty and deployable state more quickly. Also, clinical mental health disorders with residual symptoms impairing duty performance limit an SM from deploying (Department of Defense, 2010). Therefore, we conclude that improved adherence to the VA/DoD MDD CPG for MDD could increase medical readiness and deployability rates.

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Carl R. Darnall Army Medical Center. (2017c). *Charles Moore Care Clinic Antidepressant Med Mgt Acute Phase - HEDIS* (Rep.).

Carl R. Darnall Army Medical Center. (2017d). *Charles Moore Care Clinic Antidepressant Med Mgt Cont Phase - HEDIS* (Rep.).

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Appendix A
Provider Questionnaire

DNP Project Provider Questionnaire

The following questionnaire was developed to gain further understanding of current practices and perspectives regarding the assessment, diagnosis, and management of major depressive disorder (MDD) by providers within the active duty population. In the interest of maintaining confidentiality, we will be doing a paper and pen format. Your name, email address, or PII is not required.

The first question will be simple demographic information for the project team to use to compare responses. The remaining questions will focus on current practice related assessment and management of MDD. It is your decision whether to complete all, some, or none of the questionnaire packet. The responses will be analyzed in aggregate. By completing the questionnaire, consent is implied. Please know that the information gained through the responses of participants will be used to help improve practice at Fort Hood and the health of the active duty military population and may be shared with the DoD/VA systems focused on Active Duty and veteran health.

Thank you for your time and voluntary participation.

Very Respectfully,

MAJ Joseph Michna & CPT Amanda Rodriguez
Phase II DNP/FNP Students
Uniformed Services University

What is your role in this clinic/unit? (Please check one)

- ☐ Advanced Practice Nurse
- ☐ Physician Assistant
- ☐ Physician (MD/DO)
- ☐ Other (please specify) _____

Is there a guideline you follow for the management of Major Depressive Disorder? If so, please specify below.

Clinical Vignette 1

A 27-year-old female patient presents to your primary care office for follow up after initiation of pharmacotherapy approximately 4 months ago. The patient has achieved remission with antidepressant medication and is doing well. Her PHQ-9 score today is 4. The patient asks you how long she should remain on medications. What timeframe does the VA/DoD CPG recommend this patient remain on an antidepressant for MDD?

Clinical Vignette 2

A 54-year-old female with suspected depression screens positive on the PHQ-9. The patient is interested in initiating medication and receiving a referral to see integrated behavioral health. After initiation of therapy what is the recommend frequency for monitoring patients with MDD?

Clinical Vignette 3

A 34-year-old male patient presents to your primary care office and screens positive for MDD. The patient would like to start medications. What are the recommended first-line pharmacotherapy treatments for uncomplicated mild to moderate MDD according to the VA/DoD MDD Clinical Practice Guideline?

Questions

1. What is the minimum number of symptoms required during the same two-week period; with at least one being either depressed mood or loss of interest/pleasure to make the diagnosis of Major Depressive Episode according to the DSM-5?

    a. 2
    b. 3
    c. 5
    d. 7

2. What is the minimum PHQ-9 score required for classifying major depressive disorder as severe?

    a. 10
    b. 16
    c. 19
    d. 20

3. What tool is recommended by the 2016 VA/DoD MDD CPG to track progress and treatment response in patients with MDD? (Please write response below)

4. What are the criteria for remission of MDD as defined by 2016 VA/DoD MDD CPG? (Please write response below)

    _____

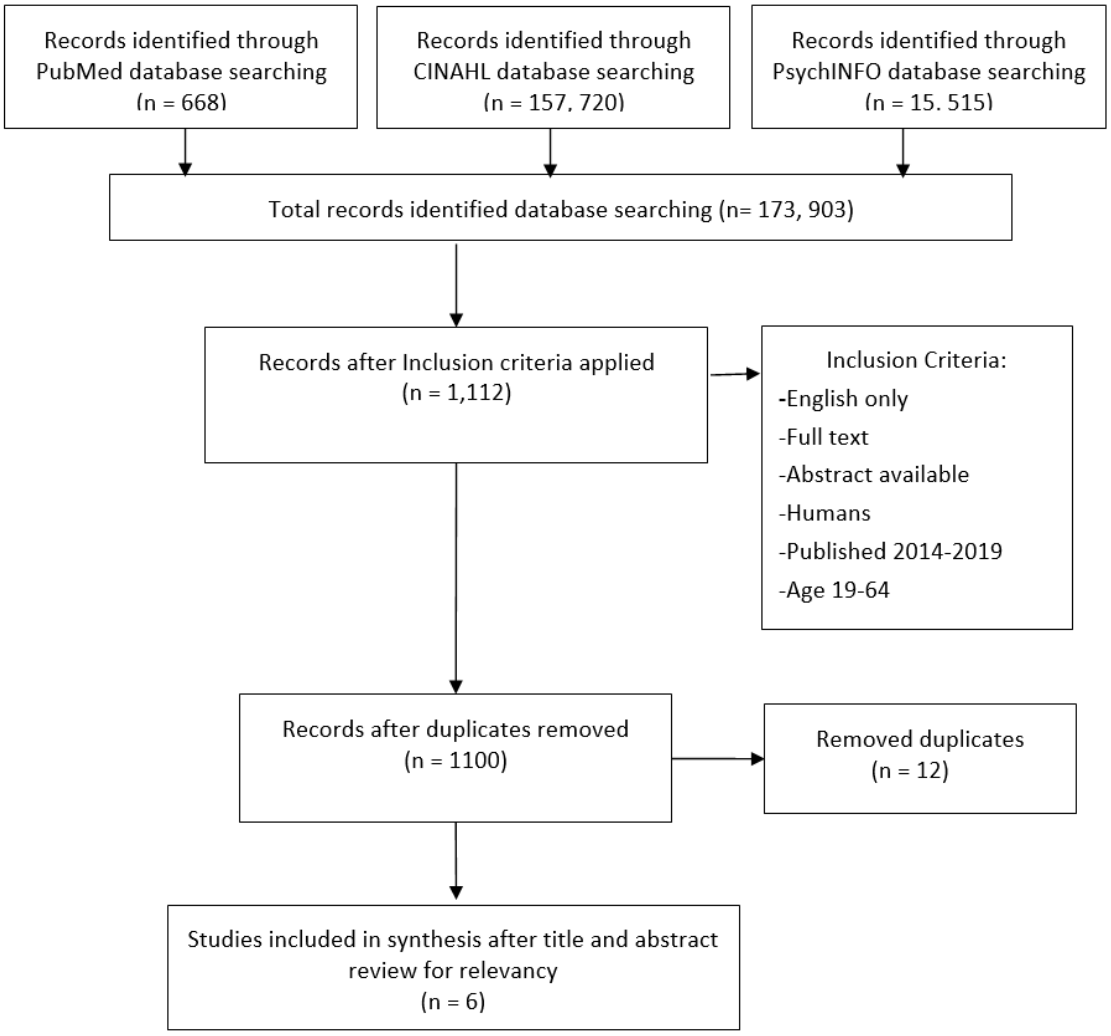
5. What is the minimum number of days a prescription for an antidepressant must cover in a 115-day period in adults newly diagnosed with major depression according to the HEDIS Metric for effective acute phase treatment?

    a. 76
    b. 84
    c. 90
    d. 95

6. What is the minimum number of days a prescription for an antidepressant must cover in a 231 day period in adults newly diagnosed with major depression according to the HEDIS Metric for effective continuation phase treatment?

    a. 160
    b. 170
    c. 180
    d. 190

Appendix B
PRISMA Diagram



Appendix C
Evidence Appraisal Forms

First Author	Aagaard	
Article Citation	Aagaard, J., Foldager, L., Makki, A., Hansen, V., & Müller-Nielsen, K. (2017). The efficacy of psychoeducation on recurrent depression: A randomized trial with a 2-year follow-up. *Nordic Journal of Psychiatry, 71*(3), 223-229. doi:10.1080/08039488.2016.1266385	
Brief Title	The effect of psychoeducation on patient outcomes with recurrent depression	
Study Question	Does psychoeducation positively patient outcomes with recurrent depression compared to usual care?	
Design Type *(descriptive, experimental, etc.)*	Randomized control trial	
Sample / Size	What was the sample size?	80
	Is the sample patients or non-patients?	patients
	If patients, what was the male/female count?	**Male:** 23 **Female:** 57
	What was the sampling method?	Stratified
	What was the response rate (if applicable)?	N/A
Outcome Variables & Definitions *IV/DV*	**IV:** psychoeducation **DV:** use of psychiatric inpatient services, Beck's Depression Inventory (BDI), compliance.	
Measures *Instruments or tools used, validity and reliability, level of data (nominal, ordinal, interval, ratio)?*	**BDI:** Interval, **admission incidence rate:** nominal	
Analytical Approach *Statistical tests–appropriate based on design assumptions?*	Stata 11 (35) and R2.13, confidence interval, and odds ratio.	
Findings *What were the results of the study? Each statistical test should have a result*	Patients in the intervention group were found to be more compliant with treatment, utilized inpatient services less, and demonstrated reduce depression scores. However, control group also demonstrated decline in inpatient services and BDI Scores.	
Limitations *What does the author state as limitations? Do you see any additional limitations?*	Generalizability of findings may be limited due to patient population demographic and small sample size. Over 60% of participants in intervention group married. The study did not discuss ethnicity in sample description. Study question could not be confirmed, as both intervention and control patients experienced an equally significant decline in inpatient service and decline in BDI score. The sample size of the study is small with 80 participants.	

Hierarchy of Evidence Rating System Please check one. *(Modified from Melnyk & Fineout-Overholt, 2011)*			
	☐ I	Evidence from a systematic review or meta-analysis of all relevant randomized controlled trials, or evidence-based clinical practice guidelines based on systematic reviews of RCT's	Strongest ↕ Weakest
	☒ II	Evidence obtained from at least one well-designed RCT	
	☐ III	Evidence obtained from well-designed control trials without randomization	
	☐ IV	Evidence from well-designed case control and cohort studies	
	☐ V	Evidence from systematic reviews of descriptive and qualitative studies	
	☐ VI	Evidence from a single descriptive or qualitative study	
	☐ VII	Evidence from the opinion of authorities and/or reports of expert committees	

Level of Quality Please check one. *(Modified from Johns Hopkins Nursing Quality of Evidence Appraisal, 2007)*	*Grade*	*Level*	*Research*	*Non-research*
	☐ **A**	**High**	Consistent results, sufficient sample size, adequate control and definitive conclusions; consistent recommendations based on extensive literature review that includes thoughtful reference to scientific evidence	Expertise is clearly evident.
	☐ **B**	**Good**	Reasonable consistent results, sufficient sample size, some control, and fairly definitive conclusions; reasonable consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence	Expertise appears to be credible.
	☒ **C**	**Low/ Major flaw**	Little evidence with inconsistent results, insufficient sample size, conclusions cannot be drawn	Expertise is not discernable or is dubious.

General Comments	Lack of power in the study due to the small sample size.

First Author	Burton, C.	
Article Citation	Burton, C., Cochran, A. J., & Cameron, I. M. (2015). Restarting antidepressant treatment following early discontinuation: A primary care database study. *Family Practice, 32*(5), 520-524. doi:10.1093/fampra/cmv063	
Brief Title	Restarting antidepressant treatment following early discontinuation: A primary care database study.	
Study Question	What percentage of patients who stopped antidepressant therapy after only one prescription (previously failed to complete prescribed treatment duration) used antidepressant medications again in the future?	
Design Type *(descriptive, experimental, etc.)*	Retrospective case study.	
Sample / Size	What was the sample size?	24,817
	Is the sample patients or non-patients?	Patients
	If patients, what was the male/female count?	Female: 16,613; Male: 8,204
	What was the sampling method?	Simple randomized
	What was the response rate (if applicable)?	N/A
Outcome Variables & Definitions *IV/DV*	**IV:** Percentage of patients who stopped antidepressant therapy after only one RX who resumed antidepressant therapy in the future. **DV:** How providers code: depression diagnosis; patient age/sex; prescribed antidepressant treatment duration; patient/provider level of agreeance regarding prescribed treatment regimen(s).	
Measures *Instruments or tools used, validity and reliability, level of data (nominal, ordinal, interval, ratio)?*	**Carstairs & Morris Index of Deprivation**: Interval	
Analytical Approach *Statistical tests–appropriate based on design assumptions?*	Post hoc analysis of data obtained from retrospective chart reviews concerning resumption of antidepressant medication therapy following premature treatment discontinuation. Statistical analysis conducted using R-3.0.1 and Cox proportional hazards model.	
Findings *What were the results of the study? Each statistical test should have a result*	Patients that discontinue antidepressant medication after receiving only one prescription are unlikely to resume therapy within the next 12 months. Patients electing to resume therapy are rarely adherent to or complete prescribed medication treatment regimen; this is particularly true in the less than 35-year-old patient demographic. Evidence of repeated cycling of taking and withholding antidepressant medication is uncommon in all patient groups.	
Limitations *What does the author state as limitations? Do you see any additional limitations?*	Patients did not require a coded depression diagnosis to be included in the study. Therefore, some patients included in the study were likely prescribed antidepressant medications for an episodic depressive event. Authors were unable to tie premature medication discontinuation to clinical outcomes (positive or negative).	
Hierarchy of Evidence Rating System Please check one. *(Modified from Melnyk & Fineout-Overholt, 2011)*	☐ I	Evidence from a systematic review or meta-analysis of all relevant randomized controlled trials, or evidence-based clinical practice guidelines based on systematic reviews of RCT's
	☐ II	Evidence obtained from at least one well-designed RCT
	☐ III	Evidence obtained from well-designed control trials without randomization
	☐ IV	Evidence from well-designed case control and cohort studies
	☐ V	Evidence from systematic reviews of descriptive and qualitative studies
	☒ VI	Evidence from a single descriptive or qualitative study
	☐ VII	Evidence from the opinion of authorities and/or reports of expert committees
	Strongest ↕ Weakest	

Level of Quality Please check one. *(Modified from Johns Hopkins Nursing Quality of Evidence Appraisal, 2007)*	***Grade***	***Level***	***Research***	***Non-research***
	☐ **A**	**High**	Consistent results, sufficient sample size, adequate control and definitive conclusions; consistent recommendations based on extensive literature review that includes thoughtful reference to scientific evidence	Expertise is clearly evident.
	☒ **B**	**Good**	Reasonable consistent results, sufficient sample size, some control, and fairly definitive conclusions; reasonable consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence	Expertise appears to be credible.
	☐ **C**	**Low/ Major flaw**	Little evidence with inconsistent results, insufficient sample size, conclusions cannot be drawn	Expertise is not discernable or is dubious.
General Comments				

First Author	Keeley	
Article Citation	Keeley, R. D., Burke, B. L., Brody, D., Dimidjian, S., Engel, M., Emsermann, C., . . . Kaplan, J. (2014). Training to use motivational interviewing techniques for depression: A cluster randomized trial. *Journal of the American Board of Family Medicine, 27*(5), 621-636. doi:10.3122/jabfm.2014.05.130324	
Brief Title	Impact of motivational interviewing (MI) training on change talk and short term adherence in patients with depression	
Study Question	Does training primary care providers (PCP) to use MI when treating depressed patients improve providers' MI performance and patients' expressions of interest in depression treatment ("change talk") and short-term treatment adherence?	
Design Type *(descriptive, experimental, etc.)*	Cluster Randomized Trial	
Sample / Size	What was the sample size?	21 PCPs, 171 patients
	Is the sample patients or non-patients?	Patients and non-patients
	If patients, what was the male/female count?	**Male:** 115 patients, 7 PCPs **Female:** 56 patients, 14 PCPs
	What was the sampling method?	Stratified sample
	What was the response rate (if applicable)?	N/A
Outcome Variables & Definitions *IV/DV*	**IV:** 16 hours provider MI training **DV:** MI performance, depression related patient change talk, patient adherence	
Measures *Instruments or tools used, validity and reliability, level of data (nominal, ordinal, interval, ratio)?*	**PHQ-9**: Interval, **Motivational Interviewing Treatment Integrity global score:** Ordinal, **Frequency of MI-consistent language score:** Ordinal, **MI sprit score:** Ordinal	
Analytical Approach *Statistical tests–appropriate based on design assumptions?*	SAS version 9.3 (SAS, Inc., Cary, NC), Confidence interval, Cohen's D. Tests used are reliable and valid.	
Findings *What were the results of the study? Each statistical test should have a result*	MI training resulted in improved MI performance, more depression-related patient change talk, and better short-term adherence. However, no statistically significant findings present for antidepressant medication and fill rates compared to intervention group or control group.	
Limitations *What does the author state as limitations? Do you see any additional limitations?*	The training approach of up to 16 hours of paid classroom time may not translate or be feasible to other medical settings. The PCPs were not blinded to patient participation.	

Hierarchy of Evidence Rating System Please check one. *(Modified from Melnyk & Fineout-Overholt, 2011)*			
	☐ I	Evidence from a systematic review or meta-analysis of all relevant randomized controlled trials, or evidence-based clinical practice guidelines based on systematic reviews of RCT's	Strongest ↑
	☒ II	Evidence obtained from at least one well-designed RCT	
	☐ III	Evidence obtained from well-designed control trials without randomization	
	☐ IV	Evidence from well-designed case control and cohort studies	
	☐ V	Evidence from systematic reviews of descriptive and qualitative studies	
	☐ VI	Evidence from a single descriptive or qualitative study	
	☐ VII	Evidence from the opinion of authorities and/or reports of expert committees	↓ Weakest

Level of Quality Please check one. *(Modified from Johns Hopkins Nursing Quality of Evidence Appraisal, 2007)*	*Grade*	*Level*	*Research*	*Non-research*
	☐ **A**	**High**	Consistent results, sufficient sample size, adequate control and definitive conclusions; consistent recommendations based on extensive literature review that includes thoughtful reference to scientific evidence	Expertise is clearly evident.
	☒ **B**	**Good**	Reasonable consistent results, sufficient sample size, some control, and fairly definitive conclusions; reasonable consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence	Expertise appears to be credible.
	☐ **C**	**Low/ Major flaw**	Little evidence with inconsistent results, insufficient sample size, conclusions cannot be drawn	Expertise is not discernable or is dubious.

General Comments	Cohen's D works best for larger sample sizes. It tends to over inflate results when a smaller sample size is used.

First Author	LeBlanc	
Article Citation	LeBlanc, A., Herrin, J., Williams, M. D., Inselman, J. W., Branda, M. E., Shah, N. D., . . . Montori, V. M. (2015). Shared decision making for antidepressants in primary care: A cluster randomized trial. *JAMA Internal Medicine, 175*(11), 1761-1770. doi:10.1001/jamainternmed.2015.5214	
Brief Title	Utilization of a shared decision making for antidepressant management	
Study Question	Does a shared decision-making tool for patient with depression improve patient and antidepressant medication outcomes?	
Design Type *(descriptive, experimental, etc.)*	Cluster Randomized Trial	
Sample / Size	What was the sample size?	117 clinicians, 301 patients,
	Is the sample patients or non-patients?	Patients and non-patients
	If patients, what was the male/female count?	**Male:** 101 patients, 50 clinicians **Female:** 200 patients, 67 clinicians
	What was the sampling method?	Stratified sample
	What was the response rate (if applicable)?	N/A
Outcome Variables & Definitions *IV/DV*	**IV:** Depression decision aid tool **DV:** patient and clinician decisional comfort and satisfaction, encounter duration, medication adherence, symptoms, and PHQ-9	
Measures *Instruments or tools used, validity and reliability, level of data (nominal, ordinal, interval, ratio)?*	**PHQ-9:** Interval, **Decisional Conflict Scale**: Interval	
Analytical Approach *Statistical tests–appropriate based on design assumptions?*	Cluster adjusted t-tests, Hierarchal generalized liner models, X^2 tests. Testing choices account for randomization of practices in clusters in the study.	
Findings *What were the results of the study? Each statistical test should have a result*	Improvement in patient's decisional comfort, satisfaction, and involvement noted. No effect in outcomes for medication adherence or depression control.	
Limitations *What does the author state as limitations? Do you see any additional limitations?*	Risk of bias. Participants and analysts were not blinded. Generalizability of findings may be limited due to intervention utilization (majority of clinicians only used tool with only 2 patients) and patient population demographics (over 50% greater than 40 years of age and over 60% self-identified as white for ethnicity).	
Hierarchy of Evidence Rating System Please check one. *(Modified from Melnyk & Fineout-Overholt, 2011)*	☐ I	Evidence from a systematic review or meta-analysis of all relevant randomized controlled trials, or evidence-based clinical practice guidelines based on systematic reviews of RCT's
	☒ II	Evidence obtained from at least one well-designed RCT
	☐ III	Evidence obtained from well-designed control trials without randomization
	☐ IV	Evidence from well-designed case control and cohort studies
	☐ V	Evidence from systematic reviews of descriptive and qualitative studies
	☐ VI	Evidence from a single descriptive or qualitative study
	☐ VII	Evidence from the opinion of authorities and/or reports of expert committees
	Strongest ↕ Weakest	

Level of Quality Please check one. *(Modified from Johns Hopkins Nursing Quality of Evidence Appraisal, 2007)*	***Grade***	***Level***	***Research***	***Non-research***
	☐ **A**	**High**	Consistent results, sufficient sample size, adequate control and definitive conclusions; consistent recommendations based on extensive literature review that includes thoughtful reference to scientific evidence	Expertise is clearly evident.
	☒ **B**	**Good**	Reasonable consistent results, sufficient sample size, some control, and fairly definitive conclusions; reasonable consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence	Expertise appears to be credible.
	☐ **C**	**Low/ Major flaw**	Little evidence with inconsistent results, insufficient sample size, conclusions cannot be drawn	Expertise is not discernable or is dubious.
General Comments	Multiple gaps in reproducibility and generalizability identified by authors but findings consistent with body of evidence demonstrating shared decision making improves patient knowledge and engagement.			

First Author	Sinnema, H.	
Article Citation	Sinnema, H., Majo, M. C., Volker, D., Hoogendoorn, A., Terluin, B., Wensing, M., & Van Balkom, A. (2015). Effectiveness of a tailored implementation program to improve recognition, diagnosis and treatment of anxiety and depression in general practice: A cluster randomised controlled trial. *Implementation Science, 10*(1), doi:10.1186/s13012-015-0210-8	
Brief Title	Program to improve recognition, diagnosis, and treatment of anxiety and depression in general practice (GP).	
Study Question	Will a tailored implementation program along with enhanced standardized training for general practitioners improve recognition, diagnosis, and treatment of anxiety and depression in GP?	
Design Type *(descriptive, experimental, etc.)*	Two-arm, general practice level cluster RCT.	
Sample / Size	What was the sample size?	444 patients; 46 general practitioners
	Is the sample patients or non-patients?	Patients & non-patients
	If patients, what was the male/female count?	Undefined
	What was the sampling method?	Convenience
	What was the response rate (if applicable)?	Undefined
Outcome Variables & Definitions *IV/DV*	**IV:** Tailored implementation program and enhanced standardized training for general practitioners to improve recognition, diagnosis and treatment of anxiety and depression in GP settings. **DV:** Improved recognition and treatment of anxiety and depression by general practitioners working in GP.	
Measures *Instruments or tools used, validity and reliability, level of data (nominal, ordinal, interval, ratio)?*	Kessler 10: Interval, Four-Dimensional Symptom Questionnaire (4DSQ): Interval, World Health Organization's Disability Assessment Scale II (WHODAS II): Interval, Quality Of care Through the Eyes (QUOTE): Nominal, Provider consultation registration form: Ordinal	
Analytical Approach *Statistical tests–appropriate based on design assumptions?*	Descriptive statistics were applied to define practices, general practitioners, and patients. T tests and X2 tests were applied to contrast differences between intervention and control groups. Statistical analysis using the Statistical Package for the Social Sciences (SPSS) 19.0. Stata (version 12) was used for multilevel regression analyses.	
Findings *What were the results of the study? Each statistical test should have a result*	Tailored interventions were significantly more effective for improving general practitioner (intervention group) recognition of anxiety and depression in GP as compared to practitioners receiving only training and feedback (control group). Practitioners in intervention group (IG) also consulted more frequently with patients recognized as depressed or anxious as compared to control Group (CG). However, increased consultation did not result in increased prescribing of antidepressant medications or specialty referral to behavioral health. Patients cared for by IG providers demonstrated greater decreases in depressive symptoms at 3-month mark in contrast to CG patients. No clinically significant difference in depressive symptoms appreciated at 6-month among CG/IG patient cohorts.	
Limitations *What does the author state as limitations? Do you see any additional limitations?*	Approximately ⅓ of patients screening positive (Kessler 10) for anxiety and depression scored low on the 4DSQ, indicating they were not experiencing or suffering from anxiety or depression. Thus, patients may have been included in the study who should not have been. Some patients were included in the study four months after tailored intervention commenced. Study findings may have been adversely affected since patients were included prior to completion of tailored intervention training was completed.	
Hierarchy of Evidence Rating System Please check one. *(Modified from Melnyk & Fineout-Overholt, 2011)*	☐ I	Evidence from a systematic review or meta-analysis of all relevant randomized controlled trials, or evidence-based clinical practice guidelines based on systematic reviews of RCT's
	☒ II	Evidence obtained from at least one well-designed RCT
	☐ III	Evidence obtained from well-designed control trials without randomization
	☐ IV	Evidence from well-designed case control and cohort studies
	☐ V	Evidence from systematic reviews of descriptive and qualitative studies
	☐ VI	Evidence from a single descriptive or qualitative study
	☐ VII	Evidence from the opinion of authorities and/or reports of expert committees
	Strongest ↕ Weakest	

Level of Quality Please check one. *(Modified from Johns Hopkins Nursing Quality of Evidence Appraisal, 2007)*	***Grade***	***Level***	***Research***	***Non-research***
	☒ **A**	**High**	Consistent results, sufficient sample size, adequate control and definitive conclusions; consistent recommendations based on extensive literature review that includes thoughtful reference to scientific evidence	Expertise is clearly evident.
	☐ **B**	**Good**	Reasonable consistent results, sufficient sample size, some control, and fairly definitive conclusions; reasonable consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence	Expertise appears to be credible.
	☐ **C**	**Low/ Major flaw**	Little evidence with inconsistent results, insufficient sample size, conclusions cannot be drawn	Expertise is not discernable or is dubious.
General Comments				

First Author	Vannachavee, U.
Article Citation	Vannachavee, U., Seeherunwong, A., Yuttatri, P., & Chulakadabba, S. (2016). The effect of a drug adherence enhancement program on the drug adherence behaviors of patients with major depressive disorder in Thailand: A randomized clinical trial. *Archives of Psychiatry Nursing, 30*(3), 322-328. doi:10.1016/j.apnu.2015.12.001
Brief Title	The effect of a drug enhancement program on the drug adherence behaviors of patients with major depressive disorder in Thailand.
Study Question	Were patients diagnosed with major depressive disorder (MDD) more compliant with medication adherence a week six following diagnosis who received the Drug Adherence Enhancement Program (DAEP) compared to MDD patients who did not receive DAEP?
Design Type *(descriptive, experimental, etc.)*	Randomized control trial.
Sample / Size	What was the sample size? — 60 Is the sample patients or non-patients? — Patients If patients, what was the male/female count? — Undefined What was the sampling method? — Convenience What was the response rate (if applicable)? — N/A
Outcome Variables & Definitions *IV/DV*	**IV:** Addition of four-week Drug Adherence Enhancement Program (DAEP) to provision of usual care for patients with first-time diagnosis of major depressive disorder (MDD). DAEP consists of four face-to-face sessions with three components: 1) educational component on depressive disorders and treatment; 2) motivational component; 3) cognitive component. **DV:** Rates of patient drug adherence in experimental (received DAEP) and control group (usual care).
Measures *Instruments or tools used, validity and reliability, level of data (nominal, ordinal, interval, ratio)?*	Montgomery-Aspberg Depression Rating Scale (MADRS): Interval, Self-Medication Intake Record Form (SMIR): Nominal, Chi-square: Interval, Fisher's exact test: Interval, IBM SPSS Statistics (version 17): Nominal
Analytical Approach *Statistical tests–appropriate based on design assumptions?*	Chi-square or Fisher's exact testing utilized for comparison of characteristics of experimental and control groups. Independent *t-test* utilized for comparison of age and depressive symptoms. Independent *t-test* also used for analysis of mean difference in drug adherence behaviors following intervention in both groups.
Findings *What were the results of the study? Each statistical test should have a result*	Patients in the experimental group had statistically significant higher mean scores at week six related to drug adherence behaviors compared to the control group. Authors noted the three largest barriers to antidepressant drug compliance during second week of study were: adverse drug side effects (33%); belief that medications cannot alleviate mental distress (21%); concern about the dangers of taking drugs (10%). After participating in second session at week 3, patients reported personal reasons for taking antidepressants: getting better after taking medication (40%), adverse drug side effects had subsided (20%), and commitment to completing treatment plan (20%). Experimental group displayed more correct drug adherence behaviors pertaining to dosage and timing compared to control group.
Limitations *What does the author state as limitations? Do you see any additional limitations?*	Patients may have overreported medication adherence, leading to potentially inaccurate study results. Patients enrolled in experimental group met with researcher on a weekly basis and were followed more closely during acute phase than were control group patients. Thus, increased medication adherence noted in experimental group may not stem exclusively from the DAEP intervention, but in part from frequent interactions with the researcher. An additional study limitation is the lack of pretest medication adherence scores which could be contrasted with adherence scores of control and intervention groups following care as usual versus DAEP.

Hierarchy of Evidence Rating System

Please check one.

(Modified from Melnyk & Fineout-Overholt, 2011)

☐ I	Evidence from a systematic review or meta-analysis of all relevant randomized controlled trials, or evidence-based clinical practice guidelines based on systematic reviews of RCT's	Strongest ↕ Weakest
☒ II	Evidence obtained from at least one well-designed RCT	
☐ III	Evidence obtained from well-designed control trials without randomization	
☐ IV	Evidence from well-designed case control and cohort studies	
☐ V	Evidence from systematic reviews of descriptive and qualitative studies	
☐ VI	Evidence from a single descriptive or qualitative study	
☐ VII	Evidence from the opinion of authorities and/or reports of expert committees	

Level of Quality

Please check one.

(Modified from Johns Hopkins Nursing Quality of Evidence Appraisal, 2007)

Grade	*Level*	*Research*	*Non-research*
☒ **A**	**High**	Consistent results, sufficient sample size, adequate control and definitive conclusions; consistent recommendations based on extensive literature review that includes thoughtful reference to scientific evidence	Expertise is clearly evident.
☐ **B**	**Good**	Reasonable consistent results, sufficient sample size, some control, and fairly definitive conclusions; reasonable consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence	Expertise appears to be credible.
☐ **C**	**Low/ Major flaw**	Little evidence with inconsistent results, insufficient sample size, conclusions cannot be drawn	Expertise is not discernable or is dubious.

General Comments	

Appendix D
Systematic Evidence Evaluation Table

Citation	Relevance to PICOT (+ to ++++)	Design Type	Sample / Size	Outcome Variables & Definitions	Measures	Analytical Approach	Findings	Limitations	Evidence Rating/ Level of Quality
Aagaard et al., 2017	+	Randomized Control Trial	Stratified sample of 80 patients	**IV:** psychoeducation 8 sessions **DV:** use of psychiatric inpatient services, Beck's Depression Inventory (BDI), compliance.	BDI: Interval Admission incidence rate: nominal	Stata 11 (35) and R2.13 confidence interval odds ratio	Patients in the intervention group were found to be more compliant with treatment, utilized inpatient services less, and demonstrated reduce depression scores. However, control group also demonstrated decline in inpatient services and BDI Scores. Drop-out/non-compliance: 12% intervention vs 27% control.	Generalizability of findings may be limited due to patient population demographic and small sample size. Over 60% of participants in intervention group married. The study did not discuss ethnicity in sample description. Study question could not be confirmed, as both intervention and control patients experienced an equally significant decline in inpatient service and decline in BDI score. The sample size of the study is small with 80 participants.	II/C
Burton et al., 2015	+	Retrospective Case Study	Simple-randomized sample of 24,817 patients	**IV:** % of pt's who quit antidepressant after the first RX who resumed antidepressant therapy in the future **DV:** how providers code depression	Carstairs & Morris Index of Deprivation: Interval	Post hoc data analysis Statistical analysis using: -R-3.0.1 -Cox proportional	Patients that discontinue antidepressant medication following only one prescription are unlikely to resume therapy within the next 12 months. Patients electing to resume therapy are rarely adherent to or complete prescribed medication	Patients did not require a coded depression diagnosis to be included in study. Therefore, some patients included in study were likely prescribed antidepressant medications for an episodic depressive event. Authors were unable to tie premature medication discontinuation to clinical	VI/B

				diagnosis patient age/sex prescribed antidepressant treatment duration patient/provider level of agreeance regarding prescribed treatment regimen(s)		hazards model	treatment regimen; this is particularly true in the less than 35-year-old patient demographic. Evidence of repeated cycling of taking and withholding antidepressant medications is uncommon in all patient groups.	outcomes (positive or negative).	
Keeley et al., 2014	++	Randomized Control Trial	Stratified sample of 21 PCPs and 171 patients	**IV:** 16 hours provider MI training **DV:** MI performance, depression related patient change talk, patient adherence	PHQ-9: Interval Motivational Interviewing Treatment Integrity global score: Ordinal Frequency of MI-consistent language score: Ordinal MI spirit score: Ordinal	SAS version 9.3 Confidence interval Cohen's D	MI training resulted in improved MI performance, more depression-related patient change talk, and better short-term adherence. However, no statistically significant findings present for antidepressant medication and fill rates compared to intervention group or control group.	The training approach of up to 16 hours of paid classroom time may not translate or be feasible to other medical settings. The PCPs were not blinded to patient participation.	II/B
LeBlanc et al., 2015	+++	Randomized Control Trial	Stratified sample of 117 clinicians and, 301 patients	**IV:** Depression decision aid tool **DV:** patient and clinician decisional comfort and satisfaction, encounter duration, medication adherence, symptoms, and PHQ-9	PHQ-9: Interval Decisional Conflict Scale: Interval	Cluster adjusted t-tests Hierarchical generalized linear models X2 tests.	Improvement in patient's decisional comfort, satisfaction, and involvement noted. No effect in outcomes for medication adherence or depression control.	Risk of bias. Participants & analysts were not blinded. Generalizability of findings may be limited due to intervention utilization & patient population demographics (over 50% greater than 40 years of age and over 60% self-identified as white for ethnicity).	II/B

Sinnema et al., 2015	++++	Two-arm, general practice level cluster randomized control trial	Convenience sample of 444 patients & 46 general practitioners	**IV:** Tailored implementation program and enhanced standardized training for general practitioners to improve recognition, diagnosis and treatment of anxiety and depression in GP settings. **DV:** Improved recognition and treatment of anxiety and depression by general practitioners working in GP.	Kessler 10: Interval Four-Dimensional Symptom Questionnaire (4DSQ): Interval World Health Organization's Disability Assessment Scale II (WHODAS II): Interval QUality Of care Through the Eyes (QUOTE): Nominal Provider consultation registration form: Ordinal	Descriptive statistics T test X2 test Statistical Package for the Social Sciences (SPSS) 19.0. Stata (version 12)	Tailored interventions significantly more effective for improving clinician recognition and documentation of anxiety & depression in GP as compared to practitioners receiving only training & feedback. Practitioners in intervention group (IG) also consulted more frequently with patients recognized as depressed or anxious as compared to control Group (CG). However, increased consultation did not result in increased prescribing of antidepressant medications or specialty referral to behavioral health. Patients cared for by IG providers demonstrated greater decreases in depressive symptoms at 3-month mark No clinically significant difference in depressive symptoms appreciated at 6-month among CG/IG patient cohorts. IG patients expressed significantly more positive experiences	Approximately ⅓ of patients screening positive for anxiety & depression scored low on the 4DSQ, indicating they were not experiencing or suffering from anxiety or depression. Thus, patients may have been included in the study who should not have been. Some patients were included in the study four months after tailored intervention commenced. Study findings may have been adversely affected since patients were included prior to completion of tailored intervention training was completed.	II/A

							regarding care accessibility, and receipt of better advice/information than CG patients.		
Vannachavee et al., 2016	+	Randomized Control Trial	Convenience sample of 60 patients	**IV:** Addition of four-week Drug Adherence Enhancement Program (DAEP) to provision of usual care for patients with first-time diagnosis of major depressive disorder (MDD). DAEP consists of four face-to-face sessions with three components: 1) educational component on depressive disorders and treatment; 2) motivational component; 3) cognitive component. **DV:** Rates of patient drug adherence in experimental (received DAEP) and control group (usual care).	Montgomery-Aspberg Depression Rating Scale (MADRS): Interval Self-Medication Intake Record Form (SMIR): Nominal Chi-square: Interval Fisher's exact test: Interval IBM SPSS Statistics (version 17): Nominal	Chi-square Fisher's exact testing Independent *t*-test	Patients in the experimental group had statistically significant higher mean scores at week six related to drug adherence behaviors compared to the control group. Authors noted the 3 largest barriers to antidepressant drug compliance during second week of study were: -adverse drug side effects (33%) -belief that medications cannot alleviate mental distress (21%) -concern about the dangers of taking drugs (10%). After participating in second session at week 3, patients reported personal reasons for taking antidepressants: -getting better after king medication (40%) -adverse drug side fects -had subsided (20%) -commitment to completing treatment plan (20%). Experimental group	Analysis of patient medication compliance was conducted via patient self-reporting. Patients may have overreported medication adherence, leading to potentially inaccurate study results. Patients enrolled in experimental group met with researcher on a weekly basis and were followed more closely during acute phase than were control group patients. Thus, increased medication adherence noted in experimental group may not stem exclusively from the DAEP intervention, but in part from frequent interactions with the researcher. An additional study limitation is the lack of pretest medication adherence scores which could be contrasted with adherence scores of control and intervention groups following care as usual versus DAEP.	II/A

							displayed more correct drug adherence haviors pertaining to dosage and timing compared to control group. Study results show that a ulti- faceted components program with integrated strategies consisting of motivational erviewing & cognitive therapy designed to meet the eds of patients newly diagnosed with MDD n improve drug adherence behaviors.		

Appendix E
Evidence Synthesis Table

Article	Intervention	Effect on medication adherence	Effect on follow-up	Effect on provider outcomes
LOE II				
Aagaard et al., 2017	Patient psychoeducation (8 sessions, 2 hours each)	N/A unknown	↑ short term follow-up	N/A
Keeley et al., 2014	16 hours provider MI training	≠ No effect on adherence	↑ short term follow-up	↑ use of MI language ↑ MI spirit proficiency
LeBlanc et al., 2015	Shared decision-making antidepressant medication decision aid tool	≠ No effect on adherence	N/A	↑ provider adherence to AMM
Sinnema et al., 2015	Tailored implementation program to aid general practice providers in recognition/diagnosis of anxiety & depression	≠ No effect on adherence	N/A	↑ provider recognition of depression/anxiety ↑ provider documentation of depression/anxiety
Vannachavee et al., 2016	Four-week Drug Adherence Enhancement Program (DAEP)	↑ medication adherence	N/A	N/A
LOE VI				
Burton et al., 2015	N/A	N/A	N/A	N/A

Appendix F
Blank Retrospective Chart Analysis Tool

		ICD-10 DX	PHQ-9 documented upon initial diagnosis		PHQ-9 administered and documented during an outpatient encounter at least once during a four-month period after initial diagnosis		Evidence of improved response within 4-8 months of the elevated scores		remission within 4-8 months of the elevated score (remission defined as PHQ-9 score of four or less, maintained for at least one month)			monthly follow up for at least 6 months			evaluation for manic/hypomanic behaviors upon initial diagnosis		evaluation of history of suicide attempts upon initial diagnosis		evaluation for suicide risk upon initial diagnosis		evaluation for suicide risk upon follow up		assessment for recent substance abuse upon initial diagnosis		assessment for recent substance abuse upon follow up		evaluation for secondary causes of MDD upon initial diagnosis (hypothyroidism, B-12 deficiency, syphilis, etc.)		Evidence of appointment offering to see integrated behavioral health upon initial diagnosis		Evidence of CPG recommendation of first line pharmacotherapy of SSRIs, SNRI, Mirtazapine, and Bupropion for mild to moderate depression									assessment of compliance with pharmacotherapy upon follow up		Evidence of patient filled prescription when refill order placed at 1 month, 3 month, 6 month		Evidence of provider prescription refill order placed at 1 month, 3 month, 6 month		
Patient	Clinic	ICD-10 DX	yes	no	yes	no	yes	no	Tool used	yes	no	reason if no	yes	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes	No	Medication	SSRI	SNRI	Mirtazapine	Bupropion	Other	yes	no	yes	no	Reason	yes	no
		TOTALS:	0	0	0	0	0	0		0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0		0	0

Appendix G
Blank Provider Questionnaire Excel Tool

	Is there a guideline you follow for the management of Major Depressive Disorder? If so, write it down below.	Clinical Vignette 1 at least 6 months			Clinical Vignette 2			Clinical Vignette 3 SSRIs, SNRI, Mirtazapine, and Bupropion for mild to moderate depression			Question #1				Question #2				Question #3 PHQ-9			Question #4 PHQ-9 score of four or less, maintained for at least one month.			Question #5				Question #6			
Survey Responder#	GUIDELINE	Correct response	Incorrect	Answer response	Correct response	Incorrect	Answer response	Correct response	Incorrect	Answer response	A	B	C	D	A	B	C	D	Correct	Incorrect	Answer response	Correct	Incorrect	Answer response	A	B	C	D	A	B	C	D
TOTAl		0	0		0	0		0	0		0	0	0	0	0	0	0	0	0	0		0	0		0	0	0	0	0	0	0	0

Appendix H
Provider Education Tool

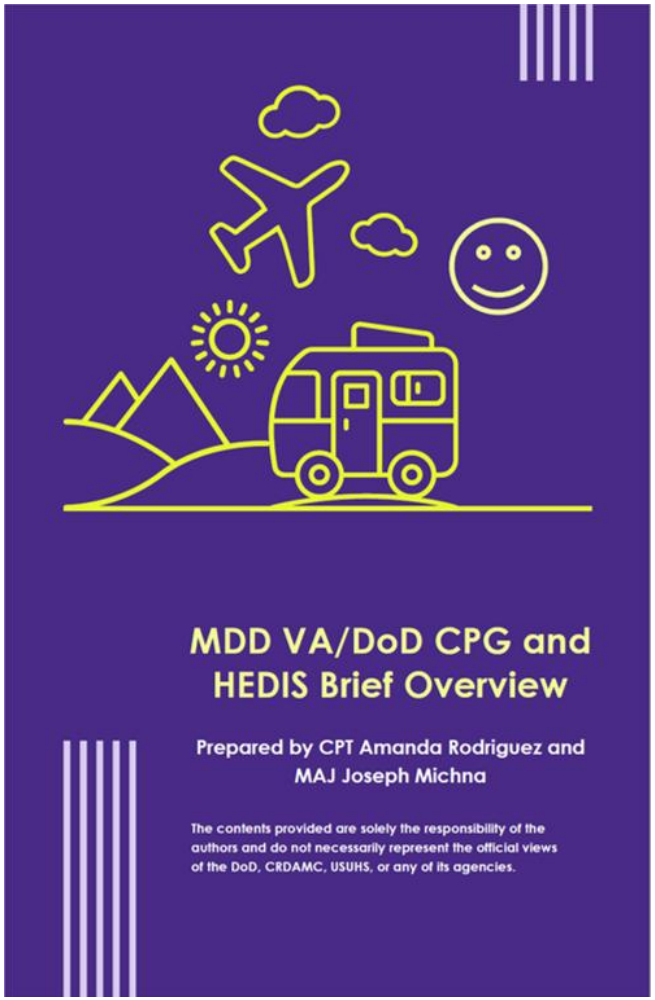


Table of Contents

KEY

CPG	Clinical Practice Guideline
DSM	Diagnostic and Statistical Manual
HEDIS	Healthcare Effectiveness Data and Information Set
MDD	Major Depressive Disorder
PHQ	Patient Health Questionnaire
VA/DoD	Veterans Affair/Department of Defense

Diagnosis of Major Depressive Disorder (MDD)

VA/DoD MDD CPG Recommendations

-Screen with PHQ-2.
-If positive, screen with PHQ-9.
-Evaluate for SI or HI, hx of suicidal attempts, and presence of psychotic/mania features.
-Rule out medical conditions as secondary cause of MDD (see below)

Medical conditions	Hypothyroidism, anemia, syphilis, b12 deficiency, chronic disease

Diagnostic Criteria for Major Depressive Episode based on DSM-5

5 or more of "sig-e-caps" present during the same two-week period; at least one of the symptoms is either (1) depressed mood or (2) loss of interest/ pleasure:

Sleep (↑ or ↓), Interests (↓), Guilt, Energy (↓), Concentration (↓), Appetite (↑ or ↓), Psychomotor changes (↑ or ↓), Suicidal ideas.

PHQ-9 Severity

Severity Level	PH-9 Score	# of symptoms according to DSM-5
MILD	10-14	2
MODERATE	15-19	3
SEVERE	> or equal to 20	4 or 5

1

Medications

VA/DoD MDD CPG pharmacotherapy recommendations for 1st line treatment of mild/moderate MDD

Evidence-based pharmacotherapy:
- Selective serotonin reuptake inhibitor (except fluvoxamine) (SSRIs)
- Serotonin–norepinephrine reuptake inhibitor (SNRIs)
- Mirtazapine
- Bupropion

The VA/DoD MDD CPG states, "The evidence does not support recommending a specific evidence-based psychotherapy or pharmacotherapy over another" (TMMMDWG, 2016, p. 18).

Considerations for starting pharmacotherapy

DRUG CLASS	Comments
SSRI	-Sexual dysfunction common -dose-related conduction effects with Citalopram and escitalopram -Paroxetine most anticholinergic; avoid in elderly
SNRI	-Sexual dysfunction common -Venlafaxine norepinephrine activity dose related
BUPROPION	-dose related seizure risk, avoid if seizure history -avoid if bulimia or eating disorder
MIRTAZAPINE	-May stimulate appetite

2

VA/DoD MDD CPG Monitoring/Follow Up Recommendations

After starting or changing therapy

Monitor at least monthly

After initiation of therapy or a change in treatment, the VA/DoD MDD CPG recommends monitoring patients at least monthly until the patient achieves remission.

Once in remission

Maintain dose at least 6 months

In patients with MDD who achieve remission with antidepressant medication, the VA/DoD CPG for Major Depressive Disorders recommends continuation of antidepressants at the therapeutic dose for at least six months afterwards to decrease risk of relapse.

REMISSION AS DEFINED BY VA/DoD MDD CPG	"For depression, remission is defined as the significant reduction of symptoms such that the PHQ-9 score is **four or less**, maintained for **at least one month**" (TMMMDWG, 2016, p. 27).

3

Antidepressant Medication Management HEDIS Measures

Short Definition: Percentage of enrollees newly treated MDD who remain on antidepressant during the acute and continuation phases of treatment

Effective Acute Phase Treatment: percentage of patients newly diagnosed with MDD who remained on antidepressant for a minimum of 84 days (12 weeks) in the 115-day acute phase period

Effective Continuation Phase Treatment: percentage of patients newly diagnosed with MDD who remained on antidepressant for a minimum of *180 days (6 months) in the 232-day* continuation phase period

Rationale for measurement: Guidelines recommend patients with MDD who are treated with antidepressants need to remain on antidepressants for at least 6-12 months to prevent relapse.

ICD 10 codes used to identify MDD for Antidepressant Medication Management HEDIS Measure

F32.0	MDD, single episode, mild	**F33.0**	MDD, recurrent, mild
F32.1	MDD, single episode, moderate	**F33.1**	MDD, recurrent, moderate
F32.2	MDD, single episode, severe without psychotic features	**F33.2**	MDD, recurrent severe without psychotic features
F32.3	MDD, single episode, severe with psychotic features	**F33.3**	MDD, recurrent, severe with psychotic symptoms
F32.4	MDD, single episode, in partial remission	**F33.41**	MDD, recurrent, in partial remission
F32.9	MDD, single episode, unspecified	**F33.9**	MDD, recurrent, unspecified

4

NEW MDD HEDIS Measures

Documented PHQ to monitor patient following depression diagnosis (HEDIS 2016)

-At least one PHQ score recorded within four months of depression diagnosis

Remission and Response to Treatment (HEDIS 2017)

Measured by PHQ-9 documentation

-Follow up PHQ-9 after diagnosis
-Remission: PHQ-9 score of 4 or less
-Improved Response: 50% improvement over 1st elevated PHQ-9 documented
-Depression remission and response within 4 – 8 months of first elevated PHQ9 (HEDIS 2018)

Depression Screening and Follow Up (HEDIS 2018)

-If screened positive on depression screening, received follow up care within 30 days

5

References

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The Management of Major Depressive Disorder Working Group (TMMMDWG). (2016). VA/DoD clinical practice guideline for the management of major depressive disorder. 1-373. Retrieved on August 24, 2018, from https://www.healthquality.va.gov/guidelines/MH/mdd/VADoDMDDCPGFINAL82916.pdf

Contact Us

Email: joseph.michna@usuhs.edu or amanda.rodriguez@usuhs.edu

Appendix I
Provider Questionnaire Pre and Post EI Results: Percentage Correct

Provider Questionnaire Pre and Post EI Results

Questions	PRE (n=23)	Post (n=19)
Prescription minimum number of days HEDIS continuation phase	74%	89%
Prescription minimum number of days HEDIS acute phase	17%	89%
Duration of pharmacotherapy for 6 months after remission	52%	95%
CPG remission criteria	0.5%	68%
Recommended monthly frequency of follow up	65%	84%
CPG complaint first line pharmacotherapy	91%	100%
CPG recommended tool to monitor response	43%	79%
Minimum number of symptoms in two weeks for Severe MDD	22%	74%
Minimum number of symptoms in two weeks for diagnosis for MDD	52%	84%

Appendix J

Gap Analysis Tool Table

Gap Analysis Tool				
Objective	Current State	GAP	Action Plan	Desired outcomes
% of enrollees with newly treated MDD who remain on antidepressants during the acute phase and continuation phase that meet 75th percentile	Between March 2017 and August 2017, Bennett and Thomas Moore clinics failed to achieve the 75th percentile or higher for patient adherence during acute and continuation phases of AMM (Green, 2017).	The chart review revealed 59% (n=71) of providers placed a prescription for antidepressants for a minimum of 6 months after the initiation of pharmacotherapy. A total of 55% (n=66) of patients refilled antidepressants for a minimum of 6 months after the initiation of pharmacotherapy	Brief Educational Intervention to increase provider knowledge regarding HEDIS AMM inclusion criteria and disseminate findings regarding need for increased patient follow up	Increase performance measure adherence
To determine if providers are screening, diagnosing, and managing depressed patients following the VA/DoD CPG for MDD at a target goal of 75% CPG congruent care	The RCA revealed consistent assessment, diagnosis, and CPG recommended pharmacotherapy at initial diagnosis. However, percentages of CPG congruent care for follow up and continuation of antidepressants for the recommended time interval were noted to be less than the target compliance rate of 75%.	A total of 22% (n=26) of patients in the chart did not refill antidepressants for a minimum of 6 months after the initiation of pharmacotherapy due to no follow-up.	Disseminate findings and recommendations for addressing gaps to leadership and stakeholders	Improve delivery of CPG congruent care to goal rate of 75%
To determine providers' knowledge regarding screening, diagnosing, and managing patients with MDD consistently with the VA/DoD CPG for MDD	Analysis revealed providers are knowledgeable regarding initial screening and management but are most unfamiliar with the VA/DoD CPG MDD recommendations for follow up, monitoring, and achieving remission for MDD.	Knowledge deficit gap was identified	A targeted educational intervention (EI) developed based on identified gaps.	Improve provider knowledge in all areas of CPG congruent care for MDD

Appendix K
Timeline

Project Year 1 (2018)												
Activity/Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
USUHS VPR Submission and Approval								X	X			
Complete PHASE II specific documents for IRB /PI Determination						X	X					
PHASE II-IRB/PI Determination Letter or "Notification" document and email to the Senior Mentor (Chair) + DNP Project Director						X		X				

Project Planning								X				
Project Implementation/ Data Collection									X	X		
Data Analysis											X	X
Dissemination												X

Project Year 2 (2019)												
Activity/Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Dissemination	X	X	X	X								
Senior Mentor Approved Poster		X	X	X								
DNP Project Senior Mentor Approved Abstract/Impact Statement Form			X	X								

(Appendix I)												
Oral Presentation given to MTF Leadership			X	X								
Senior Mentor Approved "all-inclusive" DNP Project Report				X								
DNP Project Completion Verification Form (Appendix J) + email a copy to the DNP Project Director				X								
Senior Mentor Approved Project Overview - Oral PPT Presentation; (Final presentation of project At GSN Research Day)					X							

Team Mentor Agreement Form

DOCTOR OF NURSING PRACTICE PROJECT
DNP Project Clinical Question and Team Mentor (Committee Membership) Agreement Form

Graduation Year: 2019

Names of DNP Project Student Team:

1. CPT Joseph Michna	**Phase II Site:** Fort Hood, TX	**FNP** ☒
2. CPT Amanda Rodriguez	**Phase II Site:** Fort Hood, TX	**FNP** ☒

The tentative title of the DNP Project Proposal for this student group is:
A retrospective assessment of depression clinical practice guideline adherence at Fort Hood, Texas.

Committee Approved DNP Project Clinical Question:
Were patients with a first-time ICD 10 code diagnosis of depression or depression related disorder (selected ICD 10 diagnosis), age 18-65, being managed in accordance with evidence based Veterans Affairs (VA)/Department of Defense (DoD) Major Depressive Disorder Clinical Practice Guidelines (CPG) and national HEDIS standards at Fort Hood Bennett and Thomas Moore Clinics over a period of 12 months?

Names of DNP Project Team Mentors:

I agree to serve as a member of the DNP Project Team (Team Mentors) for the above DNP Student Project Team. As a Project Team 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.

NOTE: You may have 3-4 DNP Team Mentors [committee members including your DNP Senior Mentor (Chair)]. The Phase II Site Director may also be a member of the group, as well as other USUHS faculty or others who may serve as content experts. All non-USUHS faculty selected as a Team Mentor must be approved by the DNP Project Director.

Senior Mentor (Chair): LTC Andrea Fuller	Signatur[redacted]	Date: 7 NOV 17
Co-Senior Mentor (Chair): Lt Col Shawna Greiner	Signatur[redacted]	Date: 7 Nov 17
Team Mentor (Committee): MAJ Sheila Medina	Signatur[redacted]	Date: 8 NOV 17

Form Version: 4 Sept 2016

Appendix M

CITI Certificates

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 1 OF 2
COURSEWORK REQUIREMENTS*

* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** Joseph Michna (ID: 5746742)
- **Email:** joseph.michna@usuhs.edu
- **Institution Affiliation:** Office of the Under Secretary of Defense (Personnel and Readiness) (ID: 603)
- **Phone:** 301-295-9004

- **Curriculum Group:** OUSD P&R Human Research
- **Course Learner Group:** Biomedical Investigators and Research Study Team
- **Stage:** Stage 1 - Biomedical Investigators

- **Report ID:** 20636618
- **Completion Date:** 29-Aug-2016
- **Expiration Date:** 29-Aug-2019
- **Minimum Passing:** 80
- **Reported Score*:** 89

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Avoiding Group Harms - U.S. Research Perspectives (ID: 14080)	29-Aug-2016	3/3 (100%)
Recognizing and Reporting Unanticipated Problems Involving Risks to Subjects or Others in Biomedical Research (ID: 14777)	29-Aug-2016	4/5 (80%)
Populations in Research Requiring Additional Considerations and/or Protections (ID: 16680)	29-Aug-2016	4/5 (80%)
Module for Non-DoD Personnel Conducting Research Involving Human Subjects Supported by the DoD (ID: 16769)	29-Aug-2016	No Quiz
History and Ethics of Human Subjects Research (ID: 498)	29-Aug-2016	7/7 (100%)
Basic Institutional Review Board (IRB) Regulations and Review Process (ID: 2)	29-Aug-2016	4/5 (80%)
Informed Consent (ID: 3)	29-Aug-2016	4/5 (80%)
Social and Behavioral Research (SBR) for Biomedical Researchers (ID: 4)	29-Aug-2016	4/4 (100%)
Records-Based Research (ID: 5)	29-Aug-2016	3/3 (100%)
Genetic Research in Human Populations (ID: 6)	29-Aug-2016	5/5 (100%)
Vulnerable Subjects - Research Involving Children (ID: 9)	29-Aug-2016	3/3 (100%)
Vulnerable Subjects - Research Involving Pregnant Women, Human Fetuses, and Neonates (ID: 10)	29-Aug-2016	3/3 (100%)
FDA-Regulated Research (ID: 12)	29-Aug-2016	5/5 (100%)
Conflicts of Interest in Research Involving Human Subjects (ID: 488)	29-Aug-2016	4/5 (80%)
Office of the Under Secretary of Defense (Personnel and Readiness) (ID: 912)	29-Aug-2016	No Quiz
Vulnerable Subjects - Research Involving Prisoners (ID: 8)	29-Aug-2016	2/4 (50%)

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

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COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 2 OF 2
COURSEWORK TRANSCRIPT**

** NOTE: Scores on this Transcript Report reflect the most current quiz completions, including quizzes on optional (supplemental) elements of the course. See list below for details. See separate Requirements Report for the reported scores at the time all requirements for the course were met.

- **Name:** Joseph Michna (ID: 5746742)
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- **Report Date:** 29-Aug-2016
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REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT	SCORE
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Genetic Research in Human Populations (ID: 6)	29-Aug-2016	5/5 (100%)
Vulnerable Subjects - Research Involving Prisoners (ID: 8)	29-Aug-2016	2/4 (50%)
Vulnerable Subjects - Research Involving Children (ID: 9)	29-Aug-2016	3/3 (100%)
Vulnerable Subjects - Research Involving Pregnant Women, Human Fetuses, and Neonates (ID: 10)	29-Aug-2016	3/3 (100%)
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Office of the Under Secretary of Defense (Personnel and Readiness) (ID: 912)	29-Aug-2016	No Quiz
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Populations in Research Requiring Additional Considerations and/or Protections (ID: 16680)	29-Aug-2016	4/5 (80%)
Module for Non-DoD Personnel Conducting Research Involving Human Subjects Supported by the DoD (ID: 16769)	29-Aug-2016	No Quiz

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COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COMPLETION REPORT - PART 1 OF 2
COURSEWORK REQUIREMENTS*

* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** Amanda Rodriguez (ID: 5744043)
- **Email:** amanda.rodriguez@usuhs.edu
- **Institution Affiliation:** Office of the Under Secretary of Defense (Personnel and Readiness) (ID: 603)
- **Phone:** 301-295-9556

- **Curriculum Group:** OUSD P&R Human Research
- **Course Learner Group:** Biomedical Investigators and Research Study Team
- **Stage:** Stage 1 - Biomedical Investigators

- **Report ID:** 20628921
- **Completion Date:** 28-Aug-2016
- **Expiration Date:** 28-Aug-2019
- **Minimum Passing:** 80
- **Reported Score*:** 92

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Avoiding Group Harms - U.S. Research Perspectives (ID: 14080)	28-Aug-2016	3/3 (100%)
Recognizing and Reporting Unanticipated Problems Involving Risks to Subjects or Others in Biomedical Research (ID: 14777)	28-Aug-2016	5/5 (100%)
Populations in Research Requiring Additional Considerations and/or Protections (ID: 16680)	28-Aug-2016	5/5 (100%)
Module for Non-DoD Personnel Conducting Research Involving Human Subjects Supported by the DoD (ID: 16769)	28-Aug-2016	No Quiz
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Vulnerable Subjects - Research Involving Children (ID: 9)	28-Aug-2016	3/3 (100%)
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FDA-Regulated Research (ID: 12)	28-Aug-2016	4/5 (80%)
Conflicts of Interest in Research Involving Human Subjects (ID: 488)	28-Aug-2016	4/5 (80%)
Office of the Under Secretary of Defense (Personnel and Readiness) (ID: 912)	28-Aug-2016	No Quiz
The Federal Regulations - SBE (ID: 502)	28-Aug-2016	3/5 (60%)

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COURSEWORK TRANSCRIPT**

** NOTE: Scores on this Transcript Report reflect the most current quiz completions, including quizzes on optional (supplemental) elements of the course. See list below for details. See separate Requirements Report for the reported scores at the time all requirements for the course were met.

- **Name:** Amanda Rodriguez (ID: 5744043)
- **Email:** amanda.rodriguez@usuhs.edu
- **Institution Affiliation:** Office of the Under Secretary of Defense (Personnel and Readiness) (ID: 603)
- **Phone:** 301-295-9556

- **Curriculum Group:** OUSD P&R Human Research
- **Course Learner Group:** Biomedical Investigators and Research Study Team
- **Stage:** Stage 1 - Biomedical Investigators

- **Report ID:** 20628921
- **Report Date:** 28-Aug-2016
- **Current Score**:** 92

REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT	SCORE
History and Ethics of Human Subjects Research (ID: 498)	28-Aug-2016	7/7 (100%)
Informed Consent (ID: 3)	28-Aug-2016	4/5 (80%)
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Office of the Under Secretary of Defense (Personnel and Readiness) (ID: 912)	28-Aug-2016	No Quiz
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Avoiding Group Harms - U.S. Research Perspectives (ID: 14080)	28-Aug-2016	3/3 (100%)
Basic Institutional Review Board (IRB) Regulations and Review Process (ID: 2)	28-Aug-2016	5/5 (100%)
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Populations in Research Requiring Additional Considerations and/or Protections (ID: 16680)	28-Aug-2016	5/5 (100%)
Module for Non-DoD Personnel Conducting Research Involving Human Subjects Supported by the DoD (ID: 16769)	28-Aug-2016	No Quiz

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

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Appendix N
USU (VPR) Form 3202 N

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

VPR Date Stamp

Project Number: GSN-61-10255 (VPR will assign)

Project Title: Adherence to Evidence-Based Practice for Major Depressive Disorder

SECTION A: STUDENT POC INFORMATION

1. Name (Last, First, MI): Amanda Rodriguez — Student E-mail: amanda.rodriguez@usuhs.edu
2. Home Address: [redacted]

SECTION B: COMMITTEE CHAIR / SENIOR MENTOR INFORMATION

3. Name (Last, First, MI): Archer, Holly, R
4. Telephone: 301-295-1059 Fax: E-mail: holly.archer@usuhs.edu
5. USUHS Building/ Room No.: Building E, Room 1035

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: 4/23/2018 Project End Date: 5/1/2019
9. Performance Site(s): Ft. Hood Bennett and Thomas Moore Clinics
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:

[redacted]

Student (Project Point of Contact for the Group)	(Signature and Date)	Chair/Senior Mentor	(Signature and Date)
Chair/Program Director	(Signature and Date)	Chair/Program Director	(Signature and Date)
DNP Project Director or PhD Director	(Signature and Date)	Associate Dean for Academic Affairs, GSN	(Signature and Date)
Associate Dean for Research, GSN	(Signature and Date)	Dean, DKI Graduate School of Nursing	(Signature and Date)

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

[redacted] 30 Nov 2018

USUHS Vice President for Research — Date

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

Appendix O
MTF IRB/PI Letter of Determination

DEPARTMENT OF THE ARMY
HEADQUARTERS, CARL R. DARNALL ARMY MEDICAL CENTER
36065 SANTA FE AVENUE
FORT HOOD, TEXAS 76544-5060

MCXI-QCD

MEMORANDUM FOR CPT Amanda Rodriguez, RN, FNP, Carl R. Darnall Army Medical Center (CRDAMC)

SUBJECT: Not Research Status Determination

PROJECT TITLE: Evaluation and Behavioral Health Intensive Outpatient Programs at Fort Hood

REFERENCE: CRDAMC #18-21

REVIEW TYPE: Administrative

ACTION: NOT RESEARCH STATUS DETERMINATION

DETERMINATION DATE: 3 July 2018

1. This letter is in response to your request for a "not research" determination for the above-referenced project.

2. A Carl R. Darnall Army Medical Center (CRDAMC) Determination Official (DO) has reviewed your proposed project and has determined that your project does not meet the definition of research as defined under 32 CFR 219.102.

3. Research is defined under 32 CFR 219.102 as follows:

> "Research means a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge."

4. Based on the information you provided, the project was determined to be "not research" for the following reasons:

a. The project is not designed to contribute to generalizable knowledge. The primary intent for the information learned is to provide immediate and continuous feedback at CRDAMC. The goal is to increase documentation of PHQ-9 scores in newly diagnosed patients, to increase performance measure adherence, and to improve compliance. No experimental techniques are being investigated. The project is not designed to influence theory or future research designs.

MCXI-QCD

SUBJECT: Not Research Status Determination

b. The intent of the project is immediate and continuous improvement at CRDAMC. The design is specific to the unit under consideration at CRDAMC and would not lend itself to a statistical generalization to the broader population (e.g., no inferential statistics will be used).

5. Because the project has been determined to be "not research", it is not subject to further review from the Institutional Review Board (IRB). This determination should not be construed as approval to initiate the project. Other institutional approvals may be required and should be coordinated through your department.

6. Please be reminded that your project may become research subject to IRB review if it becomes and/or includes a systematic investigation to develop or contribute to generalizable knowledge.

7. Please be reminded that publication clearance is required prior to the release of any information outside of the institution. Please refer to the Public Affairs Office (PAO) for specific requirements.

8. The POC for this action is the undersigned at (915) 742-9502, or larissa.a.schmersal.civ@mail.mil.

7/3/2018

X [redacted]

Larissa A. Schmersal, PhD
Determination Official
Signed by: SCHMERSAL.LARISSA.A.1458668880

DEPARTMENT OF THE ARMY
HEADQUARTERS, CARL R. DARNALL ARMY MEDICAL CENTER
36065 SANTA FE AVE
FORT HOOD, TEXAS 76544-5060

MCXI-QCD 21 August 2018

MEMORANDUM FOR CPT Amanda Rodriguez, RN, FNP, Carl R. Darnall Army Medical Center (CRDAMC)

SUBJECT: Amendment/Modification for Previously Approved Not Research Status Determination

PROJECT TITLE: Evaluation and Behavioral Health Intensive Outpatient Programs at Fort Hood

REFERENCE: #18-21

REVIEW TYPE: Administrative

ACTION: Acknowledgment of Amendment

DETERMINATION DATE: 21 August 2018

1. This letter is in response to your request to the CRDAMC Human Protections Administrator for review of the above-referenced amendment.

2. The proposed amendment requests the addition of a single item asking providers "Is there a guideline you follow for the management of Major Depressive Disorder? If so, write it down."

3. The amendment to the protocol does not change the status as initially determined on 03 July 2018 and does not meet the definition of research as defined under 32 CFR 219.102. You may therefore continue your study to include the amendment.

4. Please be reminded that your project may become research subject to IRB review if it becomes and/or includes a systematic investigation to develop or contribute to generalizable knowledge.

5. Please be reminded that publication clearance is required prior to the release of any information outside of the institution. Please refer to the Public Affairs Office (PAO) for specific requirements.

6. The POC for this action is the undersigned at (254) 553-9779 or rachell.l.jones.civ@mail.mil.

8/21/2018

X [redacted]

Rachell L Jones, PhD
Human Protections Administrator
Signed by: JONES.RACHELL.LEANNE.1461470919

Appendix P
PAO Clearance

DEPARTMENT OF THE ARMY
HEADQUARTERS, CARL R. DARNALL army MEDICAL CENTER
36065 SANTA FE AVE
FORT HOOD, TEXAS 76544-4752

RREPLY TO
AATTENTION OF:

11 MARCH 2019

MCXI-CS-PAO

MEMORANDUM FOR RECORD

SUBJECT: ROI Approval of Presentation Materials– MAJ Joseph Michna and CPT Amanda Rodriguez

1. In accordance with AR360-1, poster, *Adherence to Evidence-Based Practice for Major Depressive Disorder*, submitted by MAJ Joseph Michna and CPT Amanda Rodriguez to be presented for the USU Research Day events has been reviewed.

2. Materials were reviewed locally by PAO and OPSEC manager and found to contain no objectionable material.

3. Materials were submitted to RHCC and US Army Medical Command IAW release of information clearance procedures for topics related to TBI, PTSD, polypharmacy, and other behavioral health topics for review and found to contain no objectionable material.

4. Recommend inclusion or attachment of disclaimer if the author will use an official title or other identification connected with DOD. Disclaimer: "the views expressed in this paper are those of the author and do not reflect the official policy or position of the Department of the Army, DOD, or the U.S. Government."

5. Reviewed materials are cleared for oral and written presentation as outlined above.

6. POC for the above information is the undersigned and can be contacted at (254) 288-8005 or email mikaela.t.cade.civ@mail.mil.

DEPARTMENT OF THE ARMY
HEADQUARTERS, CARL R. DARNALL army MEDICAL CENTER
36065 SANTA FE AVE
FORT HOOD, TEXAS 76544-4752

RREPLY TO
AATTENTION OF:

11 MARCH 2019

MCXI-CS-PAO

MEMORANDUM FOR RECORD

SUBJECT: ROI Approval of Presentation Materials– MAJ Joseph Michna and CPT Amanda Rodriguez

1. In accordance with AR360-1, abstract, *Adherence to Evidence-Based Practice for Major Depressive Disorder*, submitted by MAJ Joseph Michna and CPT Amanda Rodriguez to be presented for the USU Research Days has been reviewed.

2. Materials were reviewed locally by PAO and OPSEC manager and found to contain no objectionable material.

3. Materials were submitted to RHCC and US Army Medical Command IAW release of information clearance procedures for topics related to TBI, PTSD, polypharmacy, and other behavioral health topics for review and found to contain no objectionable material.

4. Recommend inclusion or attachment of disclaimer if the author will use an official title or other identification connected with DOD. Disclaimer: "the views expressed in this paper are those of the author and do not reflect the official policy or position of the Department of the Army, DOD, or the U.S. Government."

5. Reviewed materials are cleared for oral and written presentation as outlined above.

6. POC for the above information is the undersigned and can be contacted at (254) 288-8005 or email mikaela.t.cade.civ@mail.mil.

[redacted]

DEPARTMENT OF THE ARMY
HEADQUARTERS, CARL R. DARNALL ARMY MEDICAL CENTER
36065 SANTA FE AVE
FORT HOOD, TEXAS 76544-4752

RREPLY TO
AATTENTION OF:

28 MARCH 2019

MCXI-CS-PAO

MEMORANDUM FOR RECORD

SUBJECT: ROI approval of oral presentation material– MAJ Joseph Michna and CPT Amanda Rodriguez

1. In accordance with AR360-1, *Adherence to Evidence-Based Practice for Major Depressive Disorder* materials submitted by MAJ Joseph Michna and CPT Amanda Rodriguez to be presented during USU Research Days events.

2. Materials were reviewed locally by PAO and OPSEC manager and found to contain no objectionable material.

3. Materials were submitted to RHCC and US Army Medical Command IAW release of information clearance procedures for topics related to TBI, PTSD, polypharmacy, and other behavioral health topics for review and found to contain no objectionable material.

4. Recommend inclusion or attachment of disclaimer if the author will use an official title or other identification connected with DOD. Disclaimer: "the views expressed in this paper are those of the author and do not reflect the official policy or position of the Department of the Army, DOD, or the U.S. Government."

5. Reviewed materials are cleared for oral presentation of the results of the final report during the USU research days.

6. POC for the above information is the undersigned and can be contacted at (254) 288-8005 or email mikaela.t.cade.civ@mail.mil.

[redacted]

DEPARTMENT OF THE ARMY
HEADQUARTERS, CARL R. DARNALL ARMY MEDICAL CENTER
36065 SANTA FE AVE
FORT HOOD, TEXAS 76544-4752

RREPLY TO
AATTENTION OF:

28 MARCH 2019

MCXI-CS-PAO

MEMORANDUM FOR RECORD

SUBJECT: ROI approval of oral presentation material– MAJ Joseph Michna and CPT Amanda Rodriguez

1. In accordance with AR360-1, *Adherence to Evidence-Based Practice for Major Depressive Disorder* materials submitted by MAJ Joseph Michna and CPT Amanda Rodriguez to be presented during Uniformed Services University Research Days events.

2. Materials were reviewed locally by PAO and OPSEC manager and found to contain no objectionable material.

3. Materials were submitted to RHCC and US Army Medical Command IAW release of information clearance procedures for topics related to TBI, PTSD, polypharmacy, and other behavioral health topics for review and found to contain no objectionable material.

4. Recommend inclusion or attachment of disclaimer if the author will use an official title or other identification connected with DOD. Disclaimer: "the views expressed in this paper are those of the author and do not reflect the official policy or position of the Department of the Army, DOD, or the U.S. Government."

5. Reviewed materials are cleared for oral presentation of the results of the final report during the USU research days. The final report will be archived in the Uniformed Services University archives.

6. POC for the above information is the undersigned and can be contacted at (254) 288-8005 or email mikaela.t.cade.civ@mail.mil.

Appendix Q
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: _ Adherence to Evidence-Based Practice for Major Depressive Disorder_____
was completed at _____Fort Hood, Texas_____ by the following student(s):

(type student name)	*(signature)*	*(date)*
__Amanda Rodriguez ___	[redacted]	_04/19/2019_
__Joseph Michna_____	[redacted]	_04/19/2019_

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)*	
__Holly Archer__	[redacted]	19 APR 19	Senior Mentor
			Team Mentor
			Team Mentor
[redacted]		24 Apr 19	Team Mentor & Phase II Site Director

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

RNA Project Director *(type name)*	*(Signature)*	*(Date)*

Form Version: 26 Aug 2017