2015

DNP Practice Inquiry Project Report: Depression Screening in Primary Care

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The document mentioned above has been reviewed and accepted by the student's advisor, on behalf of the advisory committee, and by the Assistant Dean for MSN and DNP Studies, on behalf of the program; we verify that this is the final, approved version of the student's DNP Project including all changes required by the advisory committee. The undersigned agree to abide by the statements above.

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DNP Practice Inquiry Project Report

Depression Screening in Primary Care

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University of Kentucky

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Dedication

This capstone project is dedicated to my family, whose love, support, and encouragement made this achievement a reality. To my dear husband, Sean, who has encouraged me from day one, listened to the daily celebrations and struggles, and continuously helped me to remain balanced during these last three years, thank you and I love you with all my heart. To my parents, Russell and Teresa McGuire, and my sister Heather, who have always supported my dreams, provided endless hours of listening and advice, reviewed numerous papers, and celebrated every accomplishment along the way, I couldn't have done this without you all. Lastly, to the rest of my extended family and friends, thank you for traveling along this journey with me.

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Chapter 1: Introduction to DNP Practice Inquiry Project Report

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Depression is estimated to affect 350 million people worldwide and is the leading cause of disability (WHO, 2012). According to the Center for Disease Control (CDC) 8% of the U.S. population age 12 years or older report current depressive symptoms, while approximately 8 million ambulatory care visits result in the diagnosis of major depressive disorder per year (Centers for Disease Control, 2011; Centers for Disease Control, 2012). Twice annually, college students are asked to complete a college health assessment by The American College Health Association (ACHA). Each year this health assessment provides a startling look at the mental health status of American college students. In the spring of 2013, ACHA released the results showing 45% (n= 55,385) of college students stated they "felt things were hopeless", 31.3% (n=38,523) "felt so depressed it was difficult to function", while 7.4% (n=9,107) had seriously considered suicide, and 1.5% (n=1,846) had attempted suicide in the preceding 12 months.

Screening for depression in primary care has been supported by the World Health Organization, the U.S. Preventive Services Task Force, and the American Academy of Family Physicians (AAFP). The AAFP and U.S. Preventive Services Task Force both recommend clinics with the capability to treat depression should screen adults 18 years and older at every visit. The Institute for Clinical Systems Improvement developed a guideline titled *Adult Depression in Primary Care* (Mitchell et al., 2013) to assist providers in the assessment, diagnosis, and treatment of depression.

Despite these statistics and guidelines, many providers struggle to implement depression screening. The purpose of this practice inquiry project was to evaluate potential changes in provider's documentation of depression screening after implementing a provider education session and the use of a depression screening tool. This practice inquiry project

consists of three manuscripts each of which provide further insight for the implementation of a depression screening program.

- Manuscript one is an integrative review of literature that assisted in providing the foundation for this project. The integrative review focused on reported barriers to the implementation of depression screening programs, depression screening tools, and published reports of successful integration of depression screening.
- Manuscript two is a review of the guideline *Adult Depression in Primary Care* (Mitchell et al., 2013). This guideline provided guidance in the creation of the depression screening program implemented in this practice inquiry project.
- Manuscript three describes the development, implementation, and evaluation of a depression screening program at a large university student health clinic.

Manuscript 1

Implementation of Depression Screening in the Primary Care Setting: An Integrative Review

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Implementation of Depression Screening in the Primary Care setting: An Integrative Review

According to the Center for Disease Control, approximately 25 million Americans, age 12 years or older report current depression (2012), and in 2009-2010 eight million ambulatory care visits resulted in the primary diagnosis of major depressive disorder (2013). With the vast number of patients experiencing depression and depressive symptoms, depression screening rates are astoundingly low with only 2.2% of primary care office visits having depression screening documented as performed. In an attempt to improve these rates, Healthy People 2020 objective MDMD 11.1 calls for an increase in the percentage of primary care providers who screen patients for depression during office visits from 2.2% to 2.4% (2012).

Depressive symptoms have the ability to interfere with all aspects of a person's life including interpersonal relationships, physical health, and having a functioning role in society. As a society, the burden of depression is experienced through the cost of someone's life, decreased work productivity, and increased cost of medical care (U.S. Preventive Services Task Force, 2009). The recommendation for depression screening in primary care has been supported by the World Health Organization (WHO), the U.S. Preventive Services Task Force (USPSTF), and the American Academy of Family Physicians (AAFP) (WHO, 2013; USPSTF, 2015; & AAFP, 2012). AAFP's guideline, *Screening for Depression,* recommends providers screen for depression in adult populations when staff-assisted depression care supports are in place (2012). The AAFP's guideline for depression screening coincides with the recommendation of the U.S. Preventive Task Force that adults should be screened for depression in practices that

have the ability to correctly diagnose, effectively treat, and provide follow-up care (2002).

Despite these recommendations, many providers struggle to implement depression screening due to the multitude of factors that serve as barriers to depression screening. Barriers to depression screening include limited appointment time to screen and address other chief complaints, lower priority during the appointment, limited resources within office to screen, limited community resources to treat and follow-up on positive screens, and potential limited knowledge regarding screening recommendations and screening tools. Therefore, the focus of this literature review is to understand potential barriers to and suggestions for the implementation of a successful depression screening program.

Methods

Before implementing a screening program, it is imperative to review the literature for other programs that have been both successful and found areas for growth. This author attempted to find programs that addressed and attempted to overcome common barriers to depression screening. Previous research has shown barriers to depression screening to include the following: lack of knowledge regarding current guidelines, lack of providers' confidence in screening and treating depression, lack of resources to diagnosis, treat, and manage depression, and the providers' limited time with a patient (Machado & Tomlinson, 2011).

To assist with the literature search, the following PICOT question was formulated: In primary care patients 18 years or older, what are the barriers to depression screening? A search of the literature was conducted using CINAHL, Cochrane Library,

PubMed, and MedLine. The following terms were used while performing the search: depression, screening, program, project, primary care, implementation, nurse practitioner, and family physician. Based on the search terms, the original search yielded 225 articles. Using inclusion and exclusion criteria, seven articles were selected to be included in this review. The inclusion criteria for this review included: English language, peer-reviewed journal, participants 18 years or older, depression screening, and the primary care setting. Studies that were excluded included those containing a non-English language, patient populations with co-morbid conditions, depression interventions other than screening, patient populations with children and adolescents, and settings other than primary care were excluded from this review.

To analyze the literature, the strength of recommendation taxonomy (SORT) method was utilized to provide the literature grades from levels one to three (Ebell et al., 2004). Within the SORT method (see Table 1), level one is assigned to good-quality, patient-centered evidence presented through randomized-control trials. A level two distinction is given to limited-quality patient-centered evidence and includes systematic reviews and meta-analyses. Lastly, a level three distinction is given to other evidence presented through guidelines, general practice, expert opinion, or case studies (Ebell et al., 2004).

Findings

The initial literature search returned many studies related to depression, however only two provided synthesis of current evidence to support or negate the use of routine depression screening, while the remaining five articles addressed barriers related to depression screening. A systematic review (level I in SORT methodology) conducted by

Gilbody, House, and Sheldon (2009) was performed reviewing 12 studies with the purpose of evaluating the effectiveness of depression screening in improving the recognition and management of depression. Of the 12 studies, nine were performed in the primary care setting, two in a general outpatient setting, and one in an elderly inpatient setting. The patients within these nine studies fell within two populations: 1) patients were included regardless of their baseline screening score or probability of having depression and 2) a *high-risk* population where patients were only included and randomized if they scored above certain scores on the depression screening tool. The intervention groups consisted of reporting the depression screening scores to the providers versus the control groups where depression screening scores were not reported to the healthcare provider.

Nine of the studies included in this systematic review addressed the potential effects of screening on the recognition of depression (Gilbody, House, & Sheldon, 2009). Overall, the studies showed a very slight positive increase on depression recognition with the use of a depression screening tool with a relative risk of 1.38 (95 % confidence interval 1.78 to 3.96). A more significantly positive increase was shown in three studies that only used *high risk* populations with patients scoring higher on the depression screening tools (relative risk 2.66, 95% confidence interval 1.78-3.96). This effect was lessened by the six studies that utilized the *unselected feedback* patient populations, which provided no improvement in the recognition of depression recognition (relative risk 1.00, 95% confidence interval 0.89-1.13).

Gilbody, House, & Sheldon (2009) also reviewed the effects of screening on the management of depression, with eight of the 12 studies addressing this objective. The

authors included any documented intervention as a positive outcome for the management of depression. Although overall the studies provided a slightly higher intervention rate (relative risk 1.35, 95% confidence interval 0.98 to 1.85) in the studies utilizing a depression screening tool, these results were primarily due to two studies using the *high risk* patient populations versus the patient populations including all patients screened regardless of risk. Lastly, using four of the 12 studies the authors addressed the potential effects of depression screening on long-term outcomes of depression finding no significant improvement at zero to six months or at a 12 month follow-up.

In comparison to the above systematic review, O'Connor, Whitlock, Gaynes, and Beil (2009) conducted a systematic review (level I evidence) with the primary objective of reviewing updated evidence regarding the Agency for Health Care Research and Quality's B grading supporting depression screening in primary care. This systematic review served as an update of literature following the 2002 systematic review conducted by Pignone, et al., which served as the original foundation supporting the recommendation. The authors asked key questions to guide their research specifically focusing on if screening for depression would reduce morbidity and mortality, and if any potential harms related to depression screening had been documented. To evaluate reduction of morbidity and mortality, only one study was found that specifically attempted to compare a screened versus unscreened group. Within the screened group, 969 patients were randomly assigned and were screened prior to their appointment with the provider, a non-screening group was also utilized in which the patients were not screened prior to their appointment but were screened after to evaluate for depressive symptoms. The authors found the depressed patients screened for depression were more

likely to have recovered at 3 months (with less than 1 depressive symptom) compared to the unscreened group. However, when combining the groups, the study lacked the necessary power to apply their results to a broader population.

O'Connor, Whitlock, Gaynes, and Beil (2009) also attempted to address the potential impact of provider response to screening results on the recovery from depression by reviewing eight randomized control trials with varying screening and levels of intervention strategies to address positive depression screens. Within the eight studies, conflicting reports of potential reduction of depressive symptoms were given, with the more significant impact reported in studies with greater availability of resources for intervention. The authors deduced a potential decrease in depressive symptoms with intervention resources available, yet the authors were unable to specifically identify the effect of provider feedback related to depression screening scores. Regardless of the mixed review, O'Connor, Whitlock, Gaynes, and Beil (2009) did not find reports of potential harm in screening patients for depression, and the U.S. Preventive Services Task Force used this review as part of the evidence to support depression screening in primary care.

The remaining articles retrieved in the literature search addressed the multitude of barriers to screening for depression in primary care that have been cited in the literature. Although the major guidelines recommended screening, this recommendation is based on the foundation that supports are in place to provide adequate diagnosis, treatment, and follow-up for patients. One barrier that was hypothesized was lack of provider knowledge regarding current guidelines. As demonstrated by the two systematic reviews, conflicting data exists regarding support for depression screening. In an attempt to

disseminate the recommendations from USPSTF, Richardson and Puskar (2012) provided a brief overview of the recommendation to screen only when staff-supported resources are in place (evidence level II). The authors reviewed seven potential screening tools providers might utilize, with the majority of their focus on the PHQ-9, including its 81% sensitivity and 92% specificity. As supported by USPSTF, the authors stressed the importance of follow-up care with the patient.

To provide further confidence in screening recommendations, Roman and Callen (2008) provided brief summaries of eight screening tools available for adults in primary care. The authors sought to find instruments that were brief (to save the provider time and keep from tiring an older adult patient) and were evidence-based. In harmony with the USPTF recommendations, Roman and Callen (2008) stressed the need for a delivery system to care for patients needing further evaluation and treatment of depression. However, this summary of the literature functioned as a quick overview and would allow a provider to quickly decide which tool may fit specific situations. Although this study provided a review of the literature, it would be given the evidence rating of *Level Three*.

Staff-supported resources may include trained staff to provide screening, access to screening tools, patient education materials, and the ability to follow-up and treat whether it is the primary care provider or a mental health provider within the community. Cashman, Hale, Candib, Nimiroski, and Brookings (2006) attempted to address the barriers related to staffing resources as they studied the implementation of a pilot depression screening program. Stating the USPTF's recommendation for screening of depression and a previously performed internal audit showing 33% of patients having a diagnosis of depression, Cashman et al. (2006) developed a screening program.

In the formative stages of this program, medical assistants and nurses were trained to recognize the difference between depression and grief, as well as the use of the Center for Epidemiologic Studies-Depression Screen (CES-D) (Cashman et al., 2006). However, due to limited staff resources, the authors trialed the use of first-year graduate nursing students (GSNs) to provide consistent depression screening. Providers picked *red-flag* patients for which the GSNs provided the depression screening instead of providing depression screening to all patients. In eight months of screening, 117 patients (out of 207) responded positively to one of the two screening questions of the CES-D, while 100 patients were diagnosed with depression. Of these 100 patients, 84% accepted a form of treatment (cognitive therapy, pharmacologic, or *watch and wait*).

Although Cashman et al (2006) found the use of GSNs beneficial in providing additional providers to screen patients, the use of students was not a reliable avenue for fulfilling staffing shortages. The authors found other barriers in implementing their pilot program which included: limited lime for screening, limited time for investigating other risk factors, the need for interpreters, and issues with the information technology used. Using the strength of recommendation taxonomy (see Table 1), Cashman et al. (2006) study would be considered a *Level Two*, as this study is a non-randomized control trial.

Multiple authors have attempted to address the barrier of time necessary to perform depression screening. Schmitt, Miller, Harrison, Touchet (2010) attempted to address the barrier of time in regards to depression screening. The authors utilized data from the National Ambulatory Medical Care Survey which included data regarding patient visits within 17,463 physician offices. Of the patient visits 3.4% documented depression screening and was associated with increased probability of having longer visit

duration when compared to visits without depression screening. The authors explained due to the increase in appointment time a lack of incentive exists for depression screening for primary care providers. The lack of incentives include increased visit duration of 1 to 15 additional minutes (with the mean of 6 minutes added to the appointment), increased cost due to staff and resources, and limited reimbursement. As seen in Table 2, this qualitative study has an evidence level rating of two.

In a desire to meet current recommendations regarding screening and attempting to be mindful of time, Farrell et al. (2009a) sought to decrease the amount of time necessary for depression screening through the use of touch screen computer-based technology. The authors performed initial depression screening in a rural, primary care setting using the PHQ-9 questionnaire. The setting for this study was the University Medical Associates (UMA) at the University of Virginia Primary Care Clinic. The investigators first piloted a small study (9 participants) to critique the use of a touch screen computer to facilitate depression screening. The authors found the participants and medical providers were accepting of the electronic program, as long as it worked into the flow of the clinic visit and was in a convenient location within the office.

The implementation of the screening program has been described in a second article by Farrell et al. (2009b). After piloting the use of computer touch screens with nine participants and receiving feedback, the authors attempted to implement the screening program with a small convenience sample of 20 participants with the average age of 44. Of these participants, 20% were found to have depression needing treatment, while 25% needed further evaluation. The authors also reported the average time

required for a patient to complete the electronic depression screening to have been less than three minutes.

Gap Analysis

Thus far, the evidence has provided conflicting, minimal support for the recommendations regarding depression screening. The two systematic reviews showed only minimal decreases in mortality or morbidity, as well as minimal improvement in overall depressive symptoms when comparing entire study samples. One downfall to the studies discussed in both systematic reviews, is the potential for confounding variables and the difficulty to truly extract positive impacts depression screening alone has on overall mortality and morbidity. However, regardless of the minimal improvement, no adverse effects of depression screening have been identified therefore allowing the recommendations to continue to stand.

The literature does support the use of screening tools with a variety being tested and validated in the primary care setting and the literature provides several consolidated reviews (Richardson & Puskar, 2012; Roman & Callen, 2008). With the variety of screening tools, the provider may be able to choose an appropriate tool for differing situations for *goodness of fit* (Roman & Callen, 2008). It is beyond the scope of this paper to individually review each screening tool and the tool's potential in differing settings.

It has been shown depression screening does increase the duration of office visits, (Schmitt, Miller, Harrison, & Touchet, 2010). To overcome this particular barrier, studies have been performed to look at the use of different technologies for screening, such as the example of the use of computer-based screening tools in patients (Farrell et

al., 2009). Further analysis of the literature could be performed specifically comparing various screening methods such as the use of paper encounter forms, electronic sign-in, and provider administered screening. Regardless of the tool used for depressions screening, Cashman, et al. (2004) found an increased incidence of positive identifiers for depression, therefore allowing for increased diagnostic screening, and treatment or referral.

The literature provided by the systematic reviews focused on an all-encompassing inclusion criteria of adults (18 years or older), with several focusing on specifically the older adult. During the literature the author found little information on specifically the young adult population ranging from 18 to 35 years old. Further research could be conducted on this age group due to the many changes and new stressors this population faces. These changes and stressors include college, beginning careers and families, becoming independent from their parents, and changes in support groups.

Schmitt et al. (2010) suggest further research should be performed to analyze the *real-world application* of depression screening. Few figures have been published regarding the cost versus benefit of implementing a depression screening program in the primary care setting. As mentioned above, Schmitt et al. (2010) also notes increased cost and decreased reimbursement as a barrier.

Lastly, one limitation cited by both Gilbody, House, and Sheldon (2009) and O'Connor, Whitlock, Gaynes, and Beil (2009) is that most studies regarding implementation of depression screening programs have been small pilot studies, which make the results more difficult to generalize to an entire population. With the current guideline stating the need for screening of all patients but only in a system that has the

support for referral, treatment, and follow-up; more effort needs to be applied in creating and analyzing macrosystem changes related to depression screening.

Overall, the literature is lacking in its strength of evidence as discussed by Gilbody, House, and Sheldon (2009) and O'Connor, Whitlock, Gaynes, and Beil (2009). With several different depression screening tools, a variety of populations and settings, and many ideas on how to implement, there is little consistency within the evidence. Also lacking within the literature are descriptions of successful program implementation larger than a small pilot study. Finally, the evidence providing cost analysis is minimal, creating larger barrier to implementing depression screening programs.

Recommendations

Although the literature review focused on the many barriers to implementing a depression screening program, the studies all recommended specific designs for the implementation of a depression screening program. Richardson and Puskar (2012) and Roman & Callen (2008) strived to educate providers regarding the current validated depression screening tools available, including the general adult population and the older adult population. Schmitt et al. (2010) recommended the use of the PHQ-9 screening tool due to its specificity and sensitivity as well as its brevity. Cashman et al. (2004), recommended the use of screening questions in the patient encounter form. The use of the encounter form while the patient was waiting to be seen was thought to decrease the time required for staff to screen and review the depression screening tool. Schmitt et al. (2010) utilized computers to screen patients for depression, similar to the study of Farrell et al. (2009).

The implementation of a depression screening program is multifaceted and requires the knowledge and research of many. Further studies are needed regarding specific implementation strategies, those that are both successful and not as successful. Lastly, cost analysis should be provided in future implementation programs. Cost analyses would allow for future program planners to evaluate strategies to increase incentives for primary care providers to perform depression screening for all adult patients.

Table 1. Grading Criteria Legend – SORT Method

Study Quality	Diagnosis	Treatment/prevention/screening	Prognosis
Level 1: Good Quality, patient-oriented evidence	Validated clinical decision rule SR/meta-analysis of high-quality studies. High-quality diagnostic study.	SR/meta-analysis or RCTs with consistent findings. High quality individual RCT. All-or-none Study	SR/meta-analysis of good quality cohort studies. Prospective cohort study with good follow-up.
Level 2: limited-quality patient-oriented evidence	Unvalidated clinical decision rule. SR/meta-analysis of lower quality studies or studies with inconsistent findings	SR/meta-analysis of lower quality clinical trials or of study with inconsistent findings Lower quality clinical trial. Cohort study Case-control study	SR/meta-analysis of lower quality cohort studies or with inconsistent results. Retrospective cohort study or prospective cohort study with poor follow-up. Case-control study Case series
Level 3: other evidence	Consensus guidelines, extrapolations from bench research, usual practice, opinion, disease-oriented evidence (intermediate or physiologic outcomes only), or case series for studies of diagnosis, treatment, prevention, or screening).		

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Table 2. Summary Review of Articles

Depression Screening in the Primary Care Setting							
Author & Year	**Type of Literature Design**	**Sample**	**Purpose of Article**	**Findings**	**Implications**	**Evidence Level**	**Comments**
(Cashman, Hale, Candib, Nimiroski, & Brookings, 2004)	Non-randomized control trial	207 Patients 117 patients + for one or both questions Of the 117, 100 scored positive for depression	To evaluate the pilot study of a depression screening and treatment program.	Training required for medical staff and nurses. Initial use of 2 question screen If + completed CES-D Screened small number of *red flag*" patients	Must address challenges: limited, time, and staff.	Level 2	In the conclusion, decided the 2 questions would have been helpful on the *encounter form* before the patient is seen.
(Farrell et al., 2009)	Non-randomized control trail	20 person convenience sample	To evaluate the implementation of e-screening in a rural population.	7 % of participants had no depression. 25% mild, 20% moderate, 10% moderately severe, 0% severe depression Reported easy use of e-screening	Electronic screening is efficient and accurate in screening for depression.	Level 2	Use of PHQ-9
Gilbody, House, & Sheldon, 2009)	Systematic Review	Twelve studies -9 in primary care -2 outpatient -1 elderly inpatient setting Patient screened regardless of risk versus *high-risk* patients	Effectiveness of use of screening tool on detection and management of depression	Conflicting data with minimal improvement in regards to patients risk for depression or provider notification. Difficulty differentiating screening versus interventio	States limited support for depression screening	Level 1	Cochrane review Limited evidence to support screening

		Interventions included provider notified or not of screening score		n effect on improved *screening* scores			
(O'Connor, Whitlock, Gaynes, & Beil, 2009)	Systematic Review	1 RCT (n= 969) addressing screening effects on mortality and morbidity 8 RCTs (n=1908) addressing clinical feedback and remission of depression Unknown number articles to rule out adverse effects related to screening	To update literature related to USPTF's statement supporting depression screening	Minimal improvement on mortality or morbidity. Difficulty in generalizing improvement in depressive symptoms related to provider feedback due to limited power in sample size.	Due to no adverse effect finding, USPSTF continues to recommend depression screening with staff-supported resources in place.	Level 1	Primary focus on staff-supported resources.
(Richardson & Puskar, 2012)	Expert Opinion	N/A	Educate providers on brief depression screening and assessment methods.	PHQ-2 and PHQ-9-quick, effective, and tested in primary care settings.	PHQ-9 may be used to tracking outcomes. All positive screenings require diagnostic interviewing or referral.	Level 3	Barriers to screening-limited time, uncertainty regarding tool, limited follow-up plan.
(Roman & Callen, 2008)	Expert Opinion and Extrapolations from research.	N/A	To education providers on 8 depression screening tools	All are appropriate screening tools for depression: Geriatric Depression Scale (GDS), GDS-15, Center for Epidemiologic Studies Depression Scale (CES-D),	Recognizing symptoms is first step in preventing suicide. Provider treatment plans, or referral plans must be outlined.	Level 3	N/A

				CES-D Short Form, Hamilton Depression Scale, Beck Depression inventory, PHQ-9, Cornell Scale for Depression in Dementia			
(Schmitt, Miller, Harrison, & Touchet, 2010)	Qualitative Study	14,736 physician office visits	To evaluate the increase in office visit duration due to the addition of depression screening.	Depression screening significantly increased the duration of the office visit.	Methods to increase efficiency and decrease time screening must be evaluated. Different technologies to make screening easier are needed- such as computerized screening,	Level 2	Must continue to assess barriers: must have plan in place to treat or refer patients once diagnosed.

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Manuscript 2

Guideline Analysis: Adult Depression in Primary Care

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Guideline Analysis: Adult Depression in Primary Care

The National Institute of Mental Health (2011) defines depression as a serious illness in which the symptoms interfere with all aspects of an individual's life. Individuals experiencing depression experience lack of interest in pleasurable things, weight loss or gain, insomnia or excessive sleeping, fatigue, decreased ability to concentrate, and thoughts of suicide (American Psychological Association, 2013). Depression is estimated to affect 350 million people worldwide and is the leading cause of disability (WHO, 2012). In the United States, approximately 1 in 10 people currently experience depressive symptoms (CDC, 2012), and the cost of depression in the U.S. is as high as $44 billion (CDC, 2013).

The ultimate cost of depression, is that of a person's life. In 2004 the CDC ranked suicide as the 11th leading cause of death (CDC, 2012). In 2007, Mental Health America (MHA) reported rankings for each state and the District of Columbia regarding their depression and suicide rates, and the overall mental health of each state. The overall mental health of Kentucky was ranked by the MHA (2007) as 49th (out of 51 states and the District of Columbia). According to 2004-2005 data, 8.5% of Kentucky adults suffered from a major depressive episode and suicide rates in Kentucky ranked 34th in the country.

Depression is an important issue in Kentucky and the nation. Due to its high importance national evidence-based guidelines and recommendations have been created to support providers in the practice of screening for depression and to help guide providers in correctly identifying depression. The purpose of this paper is to analyze the guideline *Adult Depression in Primary Care*. The developing organization of this

guideline was the Institute for Clinical Systems Improvement (ICSI). This guideline was last revised in September 2013. The overall objective of this guideline was to inform providers about effective assessment, diagnosis, and treatments of adults diagnosed with depression, as well as increase the percentage of patients accurately diagnosed with depression (Mitchell et al., 2013).

Stakeholder Involvement

The ICSI is a nonprofit organization sponsored by five Minnesota and Wisconsin non-profit health plans. When developing guidelines ICSI utilizes a multidisciplinary work group of medical professionals. To develop guidelines, work groups are created with 6-12 individuals who are knowledgeable about the topic. The work group for this particular guideline included physicians, pharmacists, psychologists, psychiatrists, and nurse practitioners (Mitchell et al., 2013). In the interest of full disclosure the individual organizational affiliations of each group member were provided. However, many national organizations such as the American Psychological Association or the American Academy of Family Physicians were not named, although these individuals may be members of larger organizations. Also credentials for each work member were provided but lacked explanation of specific experience related to caring for patients with depression.

Rigor of Development

To evaluate the evidence to inform the guideline development, a literature search was divided into two phases: the first stage identified systemic reviews, while the second phase identified randomized control trials, meta-analyses, and other literature (Mitchell et al., 2013). The authors did not list which databases were utilized for this literature

search. At the completion of the literature search the work group ranked the evidence. ICSI utilized the GRADE methodology where the quality of the evidence was rated as high, moderate, or low depending on the likelihood further research would change their recommendations (Mitchell et al., 2013). Using the GRADE methodology, the work group formulated their recommendations based on the overall review of the evidence. An overall rating of the literature was not provided, however guideline grades were provided for each individual reference cited.

The guideline *Adult Depression in Primary Care* provided many recommendations including screening, diagnosis, treatment options, and follow-up care for those with depression. Mitchell et al. (2013) supported the use of the Patient Health Questionaire-9 (PHQ-9) by presenting meta-analyses, systematic reviews, and many references they graded as low-level evidence. In addition to the use of the PHQ-9, the authors recommended further assessment of the patient to include past medical history, co-morbidities, substance use, and the safety of the patient and others, supported by a multitude of evidence ranging in meta-analyses, references graded as high-evidence, systematic reviews, and what the work group deemed as low-quality evidence. Recommendations for cultural considerations, special populations (geriatrics, patients with cognitive impairment, and perinatal patients), had the same variety of evidence levels as other recommendations presented, ranging from high-evidence, to specific types of studies like meta-analysis and systematic reviews, and also included low-quality evidence. For the diagnosis of depression the criteria from the DSM-IV and the American Psychiatric Association Guideline were outlined within this guideline and included to discuss evidence-based treatment and follow-up plans.

Overall, the recommendations were appropriate for the supporting evidence. The authors of the guideline provided an extremely comprehensive review and synthesis of literature. Each individual recommendation had the foundation of sound evidence, and a provider could rely on the recommendations of this guideline. Lastly, the procedure for updating the guideline was specifically explained. Mitchell et al. (2013) explained revisions occurred every 12-24 months dependent on changes within the literature and practice. Each of the work group members remained current on the literature by reviewing peer-reviewed journals and meeting with the work group during and at the end of the guideline cycle (Mitchell et al., 2013). With each revision, the guideline must be approved by the ICSI Committee on Evidence-Based Practice, which was comprised of medical providers and nurses representing the ICSI member organizations within the United States (Mitchell et al., 2013).

Clarity and Presentation

In *Adult Depression in Primary Care* (Mitchell et al., 2013), the key recommendations were easily identified within the algorithm and were available to assist providers in the screening, diagnosis, treatment, and follow-up for patients with depression. These recommendations included the use of the PHQ-9 or other identified screening tools when patients were suspected or presented with depressive symptoms (Tragel et al., 2013). Tragel et al., (2013) also specifically detailed the DSM-IV criteria for diagnosing depression, as well as guided providers in the clinical interview to include history of present illness, co-morbidities, substance abuse, and current medications. It was then recommended the clinician assess if the patient diagnosed with depression is unsafe to themselves or to others (Tragel et al., 2013).

The guideline recommended utilizing patients' PHQ-9 score to assist with potential treatment options, as shown in the table below.

PHQ-9 Score	**Depression Severity**	**Treatment Recommendations**
5-9	Mild Depressive Symptoms	• Exercise • Behavioral activation • Call provider if symptoms worsen. • No improvement in 1-2 months, contact mental health provider.
10 -14	Mild Major Depression	• Above interventions • Begin pharmacotherapy or psychotherapy • Weekly contact initially, decreased to monthly follow-up
15-19	Moderate Depression	• Above interventions • Weekly contacts, bi-monthly follow-ups, then finally reduced to monthly
Scores ≥ 20	Severe Major Depression	• Above interventions • Weekly follow-ups until symptoms lessen in severity

Table 1. Depression treatment recommendations (Mitchell et al., 2013)

The above recommendations are specific and unambiguous. The specificity of the recommendations can be shown in the recommendation for diagnosing depression with the use of the clinical interview. Mitchell et al. (2013) provided the detailed explanation of the DSM-IV criteria required for a diagnosis of depression. They also provided to a mnemonic SIGECAPS to help providers remember the symptoms of depression, which include *sleep disorder, interest deficit, guilt, energy deficit, concentration deficit, appetite disorder, psychomotor retardation or agitation, and suicidality*. The authors also provided explanation of differential diagnoses such as anxiety or somatoform disorder, adjustment disorder, and bipolar disorder.

The variety of treatment options were explained in detail as well as a comparison of psychotherapy versus pharmacotherapy. Mitchell et al. (2013) provided evidence to support the use of various psychotherapies including cognitive behavioral therapy, interpersonal therapy, short-term psychodynamic psychotherapy, and problem-solving treatment. Complementary and alternative therapy including acupuncture and herbals were also discussed within the guideline. In regards to pharmacotherapy, the use of selective serotonin reuptake inhibitors as the first-line treatment was discussed. Alternate pharmacotherapy options included the use of secondary amine tricyclics, monoamine oxidase inhibitors, and atypical antipsychotics. The guideline stressed the importance of choosing the right medication depending on the patient's response to previous treatment, patient preferences, medication side effects, availability, costs, drug-drug interactions, and safety. Proper administration of pharmacotherapy along with potential side effects was also discussed in detail.

Application

When discussing potential organizational barriers, Mitchell et al. (2013) discussed barriers ranging from implementing a screening program to the potential barriers in the patient's care. For caring for the patient with depression, the first recommendation was to assess the current organizational culture in regards to depression screening and treatment. This assessment included the evaluation of a need for a shift in the organizations beliefs, values, and behaviors (Mitchell et al., 2013). Other potential barriers listed included the necessity of training staff, the implementation of the recommended collaborative care model, and creation of patient education and self-care management materials (Mitchell et al., 2013). With the recommendation of the collaborative care model, which encouraged the use of a mental health specialist, this may present a barrier such as in rural areas where mental health specialists may be scarce (Mitchell et al., 2013). To assist in overcoming potential barriers and provide educational resources, the authors of the guideline provided a variety of resources and tools that addressed comorbidities, cultural considerations, drug interactions, electroconvulsive therapy, professional organization resources, governmental resources such as databases, and perinatal resources (Mitchell et al., 2013).

The authors of the guideline also briefly discussed potential cost implications of applying the recommendations included in the guideline. The discussion of cost implications focused on the implementation of a collaborative care model. Mitchell et al., (2013) provided evidence that suggested an increased cost to the care system for the first year, but a potential turn in cost in the second year. The authors list the only long-term study, the IMPACT study, which showed a cost savings of $3,363 per patient over

the four year period (Unutzer, 2008).

Editorial Independence

ICSI provided an explicit statement stating the organization did not influence the guideline development. The statement acknowledged the work group was not paid by the organization and all the recommendations were based on the *independent* evaluation of the evidence by the work group (Mitchell et al., 2013). Conflicts of interest were also specifically listed. Mitchell et al., (2013) shared every work group member along with the presence or absence of potential conflicts of interest. For each work group participant, the conflict of interest section specifically listed job titles, department, affiliated organizations; local, regional, and national committee affiliations; guideline related activities; research grants; and finally financial and non-financial conflicts of interest. Those with potential financial conflicts of interest specified an estimated dollar amount. Of the nine work group members, only one listed financial and non-financial conflicts of interest which included being a lecturer for the University of Minnesota, and stock holdings with two pharmaceutical companies.

Comparison of Other Guidelines

Other depression screening guidelines that are available include the Veteran Affairs and Department of Defense clinical practice guideline for management of major depressive disorder (2009) and the American Psychiatric Association (APA) guideline *Practice Guideline for the Treatment of Patients with Major Depressive Disorder* (2013). The Department of Veterans Affairs (VA) and Department of Defense (DOD) created a guideline related to the screening, diagnosis, and treatment of major depression. Their explanation of the method used to retrieve evidence is more detailed in the use of a

PICOT question, provided a list of the databases that were searched, as well as a more detailed inclusion criteria. The Department of Veteran Affairs inclusion criteria were English studies performed in the U.S., United Kingdom, Europe, Australia, Japan, and New Zealand (Department of Veteran Affairs, Department of Defense, 2009). The evidence provided from the literature review was also rated by the strength of evidence, the scheme used was provided.

The American Psychiatric Association (APA) published the third edition of their guideline *Practice Guideline for the Treatment of Patients with Major Depressive Disorder* in 2010. This guideline was revised by an APA work group that reviewed literature published after the year 2000, which allowed the work group to review literature published after the second edition of this guideline. The work group created evidence tables with the current literature to evaluate its strength. Recommendations made in this guideline underwent both internal and external work group peer review.

Overall, the recommendations are very similar between the Department of Veteran Affairs and Department of Defense guideline and the APA guideline when compared with the ICSI guideline. The Department of Veteran Affairs and Department of Defense guideline also recommended the use of the PHQ-9 (2009), whereas the APA guideline did not specifically recommend one screening tool over another. The VA/DOD guideline also evaluated the evidence in regards to different populations such as the elderly and post-partum women (2009). Recommendations were also made for a detailed evaluation that included history of present illness, comorbidities, the current use of medications, and substance abuse (VA/DOD, 2009). As with the ICSI guideline, the VA/DOD explained the symptoms of differential diagnoses which include bipolar

disorder, substance use disorder, depression not otherwise specified, and dysthymia (2009). The Department of Veteran Affairs and Department of Defense and the APA guideline recommended and explained very similar treatment options as ICSI; which included detailed explanation of psychotherapy and pharmacotherapy. Also included in the VA/DOD guideline is a more detailed discussion of self-management strategies which include nutrition, exercise, sleep hygiene, tobacco use, caffeine use, alcohol use and abuse, and pleasurable activities (2009). One topic the VA/DOD addressed that the ICSI guideline did not, is that of psychosocial issues including housing, finances, problematic relationships, social support, spiritual issues, occupational problems, difficulties with activities of daily living, and other potential stressors (2009). The APA guideline also coincided with the ICIS guideline by stressing the importance of a collaborative effort in regards to the treatment of a patient with depression.

Although the three guidelines addressed were very similar, the ICSI guideline might be considered superior due to the recommendations guided specifically to primary care, and the use of the screening and treatment algorithm. Algorithms allow for providers to have a simple and fast guide in assessing and diagnosing depression. Algorithms may also help the provider quickly remember steps that may have otherwise been forgotten or skipped. The presentation of the ICSI guideline along with the foundation of evidence allows for providers to have confidence in this guideline and its recommendations. The ICSI guideline also is focused on primary care and encourages the use of collaborate efforts in regards of the patient.

This author recommends the utilization of this guideline by nurse practitioners due to the ease of the screening and treatment algorithm and foundation of guideline as

evidence-based. Recommendations for this guideline could also be made to the investment and resources ICSI has in the revision process of the guideline. Providers can be confident this guideline has more current evidence in comparison to the older VA/DOD guideline whose last updated version was released in 2009. Guidelines such as ICSI enables a more efficient transition of evidence from research to practice, enhancing the care provided by nurse practitioners and other healthcare providers

Conclusion

In the primary care setting, the knowledge foundation a provider must maintain is extremely large. The use of guidelines and recommendations facilitates the nurse practitioner and other providers to provide the most up to date care to their patients as possible. However many guidelines and recommendations are available and providers must be able to quickly analyze the quality of the guideline as well as the organization or group that is providing the recommendations. Based on the above analysis, this author recommends the use of the guideline *Adult Depression in Primary Care*, as the most current and most appropriate for the use of depression screening and treatment in the primary care setting.

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Manuscript 3

Depression Screening in Primary Care: A Practice Inquiry Project

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Depression Screening in Primary Care: A Practice Inquiry Project

Depression knows no boundary and is estimated to affect 350 million people worldwide and is the leading cause of disability (WHO, 2012). The Center for Disease Control (CDC) reported 8% of the U.S. population age 12 years or older report current depression (2012). The American College Health Association (ACHA) has performed the National College Health Assessment twice each year. In the spring of 2013, the ACHA released the results of data on 123,078 participants aging 18 years and older. Of these participants, 45% (n=55,385) stated they "felt things were hopeless", 55% (n=67,747) "felt very lonely", and 31.3% (n=38,523) "felt so depressed it was difficult to function". The ultimate cost of depression is that of a person's life. In 2004 the CDC ranked suicide as the 11th leading cause of death in adults 18 years and older (CDC, 2012). The American College Health Association (2013) found among college students in the last 12 months, 7.4% (n=9,107) seriously considered suicide, 5.9% (n=7,261) intentionally cut, burned, bruised, or otherwise injured themselves, and 1.5% (n=1,846) attempted suicide (Table 1).

Depression in College Age Students			
In the last 12 months	**National College Health Assessment (2013)**	**UK 2013 Health Behavior Study** (J. Brown, personal communication, April 30, 2013)	**LGBT Statistics at UK** (J. Brown, personal communication, April 30, 2013)
Considered Suicide	7.4%	7.7%	24%
Made A Plan	(no data available)	5%	27%
Attempted Suicide	1.5%	0.9%	6%
Intentionally Harmed	5.9%	5.7%	19.4%

Table 1. Depression in College Age Students

In 2013, the University of Kentucky conducted a Health Behavior study focusing on stress and coping behaviors among 151 college students, 17 years or older; statistics related to suicide ideation and self-injury at the University of Kentucky were very similar

to the national average. As seen above in Table 1, the statistics were significantly higher in those students who identified on the lesbian, gay, bisexual, transgender (LGBT) spectrum. Unfortunately, the ACHA National College Health Assessment did not further stratify the results into students identifying on the LGBT spectrum. The rates of students struggling with depression and thoughts of harming themselves, should compel providers to provide depression screening and treatment among college age students.

Screening for depression in primary care has been supported by the World Health Organization, the U.S. Preventive Services Task Force, and the American Academy of Family Physicians (AAFP). The AAFP and U.S. Preventive Task Force both recommend in clinics with the capability to treat depression, adults 18 years and older should be screened for depression at every visit. The Institute for Clinical Systems Improvement developed a guideline titled *Adult Depression in Primary Care* (Mitchell et al., 2013) to assist providers in the assessment, diagnosis, and treatment of depression.

Despite these statistics and guidelines, many providers struggle to implement depression screening. A literature review found many validated screening tools are available but the primary barrier to depression screening was the limited resources available to providers, limited time providers have for appointment times, number of trained staff available to perform screening, and the variety of depression screening tools. It has been shown depression screening does increase the duration of office visits by an average of 6 minutes if a depression screening tool was administered by a nurse and scored by a physician (Schmitt, Miller, Harrison, & Touchet, 2010).

To overcome this particular barrier, studies have been performed to look at the use of different technologies for screening, such as a computer-based approach, or on the sign-

in forms for the patients to allow for faster screening (Farrell et al., 2009; Fann et al., 2009). Fann et al. (2009) utilized electronic registration to screen patients for depression. Initially, the patients were quickly screened using the PHQ-2, if either question was answered positively, the following seven questions of the PHQ-9 would be triggered. The average reported time to complete the PHQ-9 screening was two minutes (compared to six minutes found by Schmitt, Miller, Harrison, & Touchet). The guideline, *Adult Depression in Primary Care,* further recommends screening for depression via the PHQ-9, and further assists providers to efficiently provide further evaluation and treatment to continue to decrease patient appointment times (Mitchell et al., 2013).

Evidence from the literature raises multiple questions: how often do providers currently screen for depression?, will electronic screening tools at intake improve attention to and documentation of depression screening by clinicians?, and would education provided to clinicians about depression screening and available resources improve attention and documentation to depression screening? Thus the purpose of this study was to answer these questions by evaluating the implementation of a depression screening program at a large public university student health clinic utilizing patient charts and a provider survey. The objectives of this study were as follows:

- To evaluate the current frequency with which providers perform and document depression screening.
- To determine the potential effect of education on the clinic's providers' attention to and documenation of depression screening.
- To determine the potential effect a pre-administered PHQ-9 may have on providers' attention to and the documentation of depression screening.

Theoretical Framework

To assist with the evaluation of the implementation of depression screening at a large university's student health clinic, the Model for Evidence-Based Practice Change (Larrabee, 2004; & Ciliska et al., 2011) was utilized. The Model for Evidence-Based Practice Change is composed of six steps used to discuss the process of implementing and evaluating the depression screening program. The first step requires the assessment for a need for practice change. This assessment was performed prior to the implementation of this study through chart reviews performed previously (by others not involved in this study) and clinician statements regarding the need and support of depression screening. The second step in this model requires the review of the best and most current evidence. The review of literature supporting this study consisted of reviewing successful depression screening programs at another large, public university; reviewed evidence supporting depression screening tools; the evidence supporting national recommendations regarding depression screening; and finally, literature addressing barriers to depression screening.

The third and fourth steps of the Model for Evidence-Based Practice Change (Larrabee, 2004; Ciliska et al., 2011) consisted of analyzing the evidence and designing the practice change. The planning of the practice change consisted of three parts. The first part of the planned practice change was to evaluate the current depression screening rates at a large university health clinic, which was performed by performing an initial retrospective chart review. The second part of the practice change consisted of a provider educational session regarding current depression screening rates and the planned initiation of depression screening within the clinic. The final component consisted of the actual implementation of the PHQ-9 screening tool within the clinic. The evidence from the

literature supported the use of the PHQ-9 depression screening tool in an electronic-sign in format (Mitchell et al., 2013; Fann et al, 2009).

The fifth step was the focus of this study which included the implementation and evaluation of the change in practice (Larrabee, 2004; Ciliska et al., 2011). Ciliska et al (2011) describes the smaller components of step five to include the evaluation of the post-pilot data and verbal feedback from providers to decide if the practice change will be adapted, adopted, or rejected. The sixth and final step of the model, integrating and maintaining the change, would be completed by the clinic after the evaluation and recommendations regarding the practice change have been made at the conclusion of this study.

Design

This study consisted of a quasi-experiemental, pre-post intervention design that was performed in three parts. Initially, a retrospectice chart review was performed to evalaute the current frequency of depression screening at a large university health clinic in the fall of 2014. During the winter break between semesters, a 25 minute provider educational session during a provider monthly meeting, was conducted to review the results of the initial chart review, discuss national depression screening recommendations, and to inform providers about the planned pilot of a depression screening program utilizing the PHQ-9 within the electronic patient sign-in form. After this educational session, providers were asked to answer a brief survey regarding the usefulness of the educational session, if the educational session might be useful in changing their current screening practices, and finally to include the two largest barriers they see to screening within the clinic. Finally, the third component of the study included a final chart review, performed during the Spring

of 2015. This chart review attempted to evaluate potential changes in provider's performance and documentation of depression screening.

Setting and Study Population

The university health clinic was located on a large university campus and provided health services to all full-time students of the university and part-time students who paid the health fee or paid on a fee-for-service basis. This clinic provided services such as behavioral, general, and women's health. The clinic was staffed by physicians, nurse practitioners, registered nurses, nursing care technicians, a dietician, and two health educators. The university also had behavioral health and counseling services available for students.

The study consisted of two convenience samples, 1) electronic medical records of patients age 18 and older and 2) providers at a large university health clinic. The clinic appointments consisted of patients for both acute and wellness visits. To be included in the study the patient must have been 18 years or older, and had completed the annual medical history form at the time of sign-in. The annual medical history form is automatically generated for patients to fill-out when seen in the clinic every 365 days. This form allows the patients to review and updated their medical history, current medications, social history, and etcetera. Patient charts were excluded from the study if patients were younger than 18 years or had not completed the annual medical history form at the time of their visit. Providers were invited to participate in the study at the educational session. Fifteen providers completed the informed consent forms as well as completed the anonymous paper survey provided at the end of the session.

Method

Initial Retrospective Chart Review

After receiving approval from the Institutional Review Board (IRB), the initial retrospective chart review was performed by systematically reviewing 116 medical records of patients meeting the inclusion/exclusion criteria. Within a two week period, approximately 500 patients were seen at the clinic that were required to complete the annual medical history form. For a quality improvement study such as this, with a population size of 400-500 the World Health Organization recommended a sample size of 116 patient charts (Agins, Seung, & Heiby, 2008). For the initial chart review, to achieve a sample size of 116 patient charts, the principle investigator pulled every fourth chart for patients seen that had completed the annual medical history form between November 10-21, 2014.

Provider Educational Session

A 25 minute educational session was conducted during a monthly provider meeting on February 12, 2015, after the initial chart review and before the initiation of the PHQ-9 screening on the electronic sign-in form. The presentation included a brief didactic portion followed by discussion with the providers to address any comments or concerns regarding the screening program. The purpose of this educational session was to educate providers regarding the current depression screening practices, the PHQ-9 screening tool and its implementation on the electronic intake form, depression treatment options, campus resources available for students with depression, and depression screening practices at other universities. At the end of the session, providers were asked to anonymously complete a brief survey evaluating the effectiveness of the session (Appendix C). At the time of the

study, 15 physicians and nurse practitioners were employed in primary care at the clinic. Only providers employed by the university health clinic were recruited and included in this survey. Exclusion criteria included other employees of the clinic such as office staff, certified medical assistants, and nurses.

Post-intervention Chart Review

After the initial retrospective chart review and provider educational session, the health clinic created a depression screening template utilizing the Patient Health Questionnaire-9 (PHQ-9), consisting of nine questions that have shown to be effective in screening for depression (Kroenke, Spitzer, & Williams, 2001), and the use of the PHQ-9 is recommended by the guideline, *Adult Depression in Primary Care* (Mitchell et al., 2013).

The university clinic had the unique ability to create templates within their electronic medical record on the clinician side (without having to utilize technical support). Originally, the PHQ-9 template was planned to included as a part of each patient's annual medical history form, requiring the patients to be screened once each year. However, prior to implementation the clinic opted to implement the screening template to generate every 90 days a patient was seen in the clinic. The clinic providers thought that the depression screening frequency should be increased, but yet desired a smaller proportion of students screened as the practice change was implemented.

The screening template began by quickly screening patients using the PHQ-2, consisting of the first two questions of the PHQ-9: "in the past two weeks how often have you been bothered by any of the following problems? 1) little interest or pleasure in doing things, 2) Feeling down, depressed, or hopeless" (Kroenke, Spitzer, & Williams, 2001). For each question, students selected an answer ranging from 1) not at all, 2) several days,

3) more than half the days, or 4) nearly every day. A positive screen (a score of 4 or more) occurred if the patient answered more than half the days or nearly every day to either question. A postive screen resulted in asking the patient to answer the remaing seven questions of the PHQ-9. Each answer of the PHQ-9 has a weighted score that totaled allowed the healthcare provider to quantify the depressive symptoms in terms of transient (score of 1-4), mild (score of 5-10), moderate (score 10-19), or severe depression (scores ≥ 20).

After the patient completed the PHQ-2 or PHQ-9 the template automatically totaled the weighted respones, and the template with the total screening score was immediately sent electronically to the patient's provider to review while the patient was being placed into the exam room. If the patient had a screening score of 4 or greater, the provider could discuss the score with patients, print an educational handout, and send the patient one of two secure e-mail messages further discussing the depression screening score, severity of score, recommendations for further evaluation, and campus resources available to the student (Appendix A and B).

The depression screening template was initiated on Februray 16, 2015. A second chart review was performed utilizing the same procedure as the intital chart review. This second chart review evaluted charts of patient seen between the dates of February 16-27, 2015. Due to several factors discussed later in the limitations section of this paper, including the discontinuation of the pilot screening tool two days early, a smaller sample size (n=97) was utilized. Both chart reviews gathered data including the date of visit, gender, age, current diagnosis of depression, current treatment for depression, if depression

screening was documented, the tool used for screening, depression screening score, and if treatment or an intervention was provided.

Results

Pre-intervention Chart Review

Of the 116 charts reviewed 33.6% (n=39) were male and 66.4% (n=77) were female patients, with ages ranging from 18 to 34 years old and a mean age of 20.5 years. Upon reviewing the patient charts, 11% (n=15) patients listed a history of depression with 4.4% (n=6) listing a current medication for the treatment of depression, and 0.7% (n=1) documenting current treatment of depressoin with counseling. Despite the above, depression screening was not documented for any patient.

Educational Session Survey

Results of the anonymous provider survey which evaluted the educational session may be seen below in Table 2.

Depression Educational Session Survey Results (n=15)					
Results by individual question	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
The educational session provided new information regarding depression screening tools.			15.8% (n=3)	42.1% (n=8)	26.7% (n=4)
The educational program provided new information regarding depression screening programs at other uniersity health clinics.			33.3% (n=5)	40% (n=6)	26.7 (n=4)
I found the educational program to be beneficial.			13.3% (n=2)	53.3 (n=8)	33.3 (n=5)
The educational program increased awareness of current depression screening practices here at the univserity health clinic.			26.7% (n=4)	40% (n=6)	33.3 (n=5)

The information received from the educational program made me think about the way I practice.		13.3% (n=2)	33.3% (n=5)	40% (n=6)	13.3 (n=2)
The infromation motivated me to screen patients for depression.	6.7% (n=1)		13.3% (n=2)	53.3% (n=8)	226.7% (n=4)
How often did you think you were providing depression screening for patients?	6.7% (n=1)	6.7% (n=1)	26.7% (n-4)	33.3% (n=5)	26.7% (n=4)

Table 2. Depression Educational Session Survey Results

Perceived screening barriers. At the end of the survey, providers were asked to list two factors that are currently impeding depression screening at the university health clinic. These questions were open ended with 52.6% of the providers responding (n=10) that limited time for screening was the major factor hindering depression screening at the health clinic. Other responses included fear of liability of the provider (10.5%, n=2), limited resources (10.5%, n=2), no screening tool in place (15.8%, n=3), lack of awareness regarding the need for screening (5.3%, n=1), and limited clinician availability (5.3%, n=1). Based on the two most common barrier responses (limited time and lack of screening tool), the intervention was tailored to provide a valid, time efficient screening template utilizing the PHQ-2 and PHQ-9.

Post-intervention Chart Review

The post-intervention chart review resulted in a sample size of 97 patients. Table 3 provides a comparison of the patient demographics and screening results of the initial retrospective and post intervention chart reviews. The primary investigator did not stratify the demographics beyond age and gender.

	Pre-Intervention Review	**Post-Intervention Review**
Charts reviewed	116	97

Gender Male Female	 33.6% (n=39) 66.4% (n=77)	 37.1% (n=36) 62.9% (n=61)
Age	18-34, mean of 20.4	18-47, mean of 21.6
Hx of depression listed	11% (n=15)	6.2% (n=6)
Current Treatment Medication Counseling	 4.4% (n=6) 0.7% (n=1)	 2.1% (n=1)
Screening Documented	**0%**	**60.8% (n=59)**

Table 3. Pre and Post Chart Review Results Comparison

With the initiation of the PHQ-9 screening, 60.8% (n=59) charts had depression screening with the PHQ-9 documented. Of the charts documenting depression screening 6.7% (n=4) patients had a postive depression screening with scores of 4, 6, 7, and 15. For the patients with a postive screen, all four charts (100%) had documentation of discussion regarding the depression screening score and interventions provided. Three (75%) of the four patient charts received the first secure e-mailed message (Appendix A) discussing the depression score, symptoms of depression, the potential need for further evaluation, and campus resources available for treatment. One (25%) of the four patient charts received the second secure-email message (Appendix B) discussing the same information as the first letter, however containing more strongly worded discussion regarding suicidal thoughts and the need to seek immediate attention. The secure e-mail messages were automatically sent to patients the day after the visit, and depended on the severity of their scores. The messages were also included in the electronic medical record as documented coorespondence between the provider and the patient.

Although not shown in the results of this study, verbal feedback from providers and campus resources expressed concern regarding a perceived marked increase in students receiving postive depression screens requiring further evaluation. Campus resources and the student health clinic expressed concern regarding the increased demand and the limited availability of appointment times and providers for further evaluation. Due to these expressed concerns, the depression screening period was ended two days early on Thursday, Februrary 26, 2015. Due to the screening tool being stopped, 39.2% (n=38) of the charts did not have depression screening documented, which all 38 visits occurred on the last two days of the planned two week pilot period. Had the screening tool been continued, depression screening would have been documented on 100% of the charts reviewed. Although the screening tool had been stopped, the two dates were included into the study due to the parameters of IRB approval based on the number of days of the study.

When evaluating the potential effect of implementing the PHQ-9 screening tool, the chi-square test was utilized showing a significant association (<0.01) between the implementation of the PHQ-9 tool and the documentation of depression screening. It was noteworthy the charts reviewed of patients in the post-intervention review without documented depression screening occurred on days when the PHQ-9 screening tool was not being used throughout the clinic (discussed further in the limitations section of this paper). A second chi-square test was utilized to showing a significant association (<0.01) between the lack of the PHQ-9 screening tool and no documentation of depression screening.

Discussion

Overall, the intervention was effective in increasing the rates of depression screening at the university health clinic. Initially, when presented to the providers during the educational session, the results of the initial retrospective chart review did not surprise the providers at the university health clinic. Previous reviews had been performed with similar results, however using this knowledge and the Model for Evidence-Based Practice Change efforts were made to assist the health clinic in making a sustainable change. Similar to barriers listed in the literature review, in the survey providers listed limited time for depression screening as the primary barrier, while a second barrier listed was the lack of a screening tool available. This study attempted to assist the providers at the university health clinic in overcoming both of these barriers.

In 2011, Klein, Ciotoli, and Chung performed a similar study at a large urban university health clinic. The authors also utilized an electronic PHQ-2 initial screening with positive scores resulting in the continuation of the PHQ-9. As a retrospective chart review, the authors found a 6% depression rate (similar of those nationally), with less than 1% of those patients scoring greater than 20 with severe depressive symptoms. Within the study, clinicans were able to refer to campus resources and reported no additional strain on the resources infrastructure, however the results showed only 35.7% of the patients with positive screens received any type of intervention.

During the planning phase of the implementation of the depression screening program, verbal feedback from providers at the university health clinic, behavioral health, and campus counseling services were sought and valued. Initially, the electronic depression screening tool was planned to be used for students completing the annual health

history form. The orginial annual screening frequency was thought to slowly introduce a practice change without burdening the campus resources such as behavioral health and the on campus counseling center.

As described above, the depression screening template began with the PHQ-2, and patients with a positive screen were asked to complete the remaining seven questions of the PHQ-9. At the conclusion of the screening, the template automatically computed the patient's depression screening score based on their responses to the PHQ-2 or PHQ-9. Providers were then able to review the scores prior to seeing the patient, and had the ability to discuss the scores, and provide a treatment or intervention as deemed necessary. Although this process required a slight practice change for the providers, the intention was to create a screening tool that was placed within the current workflow of the clinic reducing the additional efforts of the provider to screen and compute scores. The use of the electronic sign-in form was also an attempt to limit the amount of time required for screening, as previous studies demonstrated a varying time of two to minutes to screen electronically (Fann et al., 2009) compared to the six minutes to screen utilizing various methods of paper or staff-assisted screening tools found by Schmitt, Miller, Harrison, & Touchet (2010). This study did not specifically evaluate the time spent by patients or providers screening and addressing scores, as the retrospective chart review design did not allow for time measurement.

Not only was the time used to screen a patient for depression a voiced concern, but additional time required to discuss depression screening scores, treatment, and interventions was also discussed. In an attempt to reduce the necessary time, the health clinic created a depression screening handout that could be printed at the time of the visit,

as well as two different letters that could be securely emailed to the patient the day after a positive screen. As discussed earlier, the first letter (Appendix A) was created for patients with mild to moderate depression scores (scores between five and nine). This letter discussed symptoms of depression, campus and community resources, and addressed suicidal ideation. The second letter (Appendix B), was designed for scores suggesting moderate to severe depression (scores greater than 10), which presented the same information as the first letter, but was more strongly worded to stress the need for further evaluation. Again, actual time reduction with the use of the depression screening handout or e-mails was not able to be gathered by utilizing the chart review design of this study, and remains an area for further study. The clinic stakeholder and primary investigator created these documents in an effort to guide and provide the provider and patient with supplemental materials to ease the transition of the intervention.

Comparing the pre-intervention and post-intervention depression screening frequencies, there was a statisitcally significant increase in depression screening after the PHQ-9 screening tool was implemented. The screening tool was piloted for a two week period from February 16 to Februrary 27, 2015. However as discussed previously due to increased concern regarding limited the availablility of resources, the screening tool was ended two days earlier than planned. This study provided only four positive screens of the patients completing the annual health history form. However, with the clinic's decision to change the screening frequency from using the annual health history from to screening every 90 days, the new template automatially screened every patient seen at the university health clinic in that two week period. Anecdotally, the clinic providers voiced concerns of much higher postive screening rates (greater than 20% postive screens) than shown in the

results of this study. The difference in the positive screening rates occurred due to the continued use of the annual health history form as the inclusion criteria for the study. The annual health history form was continued to be used to provide a more detailed picture of the patient population and to remain consistent with patient selection and remain compliant with the IRB approved chart selection methods. Further studies could be performed to assess the postive depression screening scores of the all patients seen at the clinic during the pilot time period. Also, studies could attempt to look further into college majors, class (freshman, sophmore, junior, senior, graduate student), and sexual orientation. Due to the results of the UK 2013 Health Behavior survey, further evaluation of depression and sexual orientation would be beneficial.

The two dates that the screening tool was on hold were included in this study originally to evaluate potential changes in depression screening if no tool was active within the workflow of the provider. Interestingly, although depression screening was a *hot topic* of discussion surrounding the implementation of the screening program, upon the discontinuation of the screening tool, it was noted by the primary investigator that of the charts reviewed for February 26-28, 2015, no depression screening was documented. The difference in depresison screening while the tool was operational versus when the tool was discontinued was statistically significant. This supports the need for a simple tool that may be seemlessly incorporated into the provider's workflow to assist in screening patients for depression.

However, this also supports a larger issue: resource utilization. The primary reason the screening tool was stopped, was due to the concern of the demand the number of postive depression screens placed on campus resources. Both the behavioral health and the

campus counseling center quickly filled all appointment times, with the next available appointments stretching into a two to three week window. The decreased appointment availability created concern regarding the ability to further evaluate and treat students in a timely and appropriate manner.

Studies reviewing depression screening have shown the importance of only providing depression screening when staff-supported resources are in place to allow for further evaluation, treatment, and follow-up (O'Connor, Whitlock, Gaynes, & Beil, 2009; Gilbody, House, & Sheldon, 2009), while the USPTF recommendation statement categorizes depression screening with support a Grade B, however without support the recommendation drops to a Grade C (USPTF, 2009). Although unintended, the most important outcome of this study was the fact that regardless of thoughtful planning, stakeholder buy-in, and the best of intentions, without the resources to further care for the patient, screening for depression is futile and creates the potential for liability.

Limitations

One limitation to the generalizability of this study was the small sample sizes for both the pre-intervention and post-intervention chart reviews. The post-intervention chart review sample size was smaller than desired due to several uncontrollable factors. The first factor lending to the smaller sample size was due to weather as classes were cancelled for four days and the clinic was closed for a day during the two week pilot period. This limited the patients who were on campus or who were able to be seen during the two weeks the screening tool was operational.

Another limitation to the study was the use of the annual medical history form as the sole template for inclusion criteria. After the initial planning period and IRB approval,

the providers at the health clinic desired a more frequent screening than annually and opted to use a template that automatically generated every 90 days. Although the 90-day screening template screened every patient initially seen in that two week period, using the annual medical history form for inclusion limited the number of charts reviewed that potentially could have shown a greater presence of depression in the patient population.

A final limitation of the smaller sample size was the early discontinuation of the depression screening tool. Providers at the health clinic and the campus resources voiced concerns regarding a noticed increase in the demand of services during the screening period. Although, not depicted in the results of this study, the health clinic made the decision to hold the screening tool until after the results of this study were analyzed and revisions to the practice change could be made (step 4 and 5 of the Model of Evidence-Based Practice).

Application

The results of this study may be used for this particular student health clinic to conduct a further needs assessment to improve resources for patients with positive depression screens. Discussions are currently being focused on improving the referral system to behavioral health providers and the campus counseling center. Further support staff such as social workers and additional registered nurses may be shown to be beneficial in the further evaluation and education of patients that may receive a new diagnosis of depression.

The study may also be applied to assist in the implementation of depression screening in other university health services and in primary care clinics. The results of the 2013 University of Kentucky Health Behavior Study and the pre-intervention chart review

supports the need for screening patients for depression at a university student health clinic. However, the results of this study can more importantly be used to stress the importance of having the necessary resources in place to provide further evaluation, treatment, and follow-up for the patients with a positive screen as recommended by the evidence-based practice guidelines.

Conclusion

Many university health and primary care clinics have difficulty with depression screening. With an increased patient load and limited appointment times, many providers are hesitant to add yet another time consuming task to the appointment. To implement a depression screening program, clinics must be able to have a system in place to appropriately evaluate and treat a diagnosis of depression. Clinics must also assess their individual practice and plan a program that may be as seamless as possible within their workflow as well as limit the amount of time required for screening. The depression screening program described above discussed one potential program that may be utilized by clinics for successful screening.

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Practice Inquiry Project Conclusion

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Screening for depression in primary care has been supported by the World Health Organization, the U.S. Preventive Services Task Force, and the American Academy of Family Physicians (AAFP). The AAFP and U.S. Preventive Task Force both recommend in clinics with the capability to treat depression, adults 18 years and older should be screened for depression at every visit. However, many barriers inhibit the implementation of depression screening in primary care offices such as limited time available to providers and the lack of a depression screening program; however the largest barrier in practice is that of limited resources.

This practice inquiry project discusses the strategy one university student health clinic utilized in piloting a depression screening program. Manuscript one evaluated the current literature related to the potential barriers of depression screening, available screening tools, and attempted to review screening programs that have been successfully implemented. Manuscript two analyzed the guideline *Adult Depression in Primary Care* that was used as the foundation for the planning of the depression screening program implemented in manuscript three. Manuscript three described the planning, implementation, and evaluation of a depression screening program piloted at a large university student health clinic. The findings of the project showed a significant increase in depression screening when a depression screening tool was placed within the workflow of the practice setting. However, the most significant findings occurred when resources had been exhausted and the screening tool was not in place; thus providing additional evidence to support national guidelines recommending depression screening only when the clinic has the ability to further evaluate, treat, and provide follow-up care. Further work is necessary to assist the clinic in maintaining the depression screening program.

Appendix A. Depression Letter 1

Dear Student,
At your recent visit to University Health Services you completed a questionnaire about depression during the electronic sign-in process. Based on the answers you provided, you may be experiencing a period of mild depression.

What is Depression?

Depression is a condition in which you might feel sad, hopeless, or have a decreased interest in activities of daily life. Everyone has times when they feel sad or blue, however if you experience these feelings for 2 weeks or more, it may be depression.

What are the symptoms of depression?

- Irritability
- Difficulty falling asleep, staying asleep, or sleeping too much.
- Changes in appetite and weight
- Changes in energy level, usually a decreased energy, but may be periods of feeling overexcited
- Decreased sexual desire
- Difficulty concentrating or remembering things
- Feeling hopeless
- Not caring about anything
- Unexplained physical symptoms
- Thoughts about death or suicide

*Sometimes other conditions may mimic depression; a healthcare provider can help you find the cause for your symptoms.

How is depression diagnosed?

Your clinician or a mental health therapist can tell you if your symptoms may be related to depression. The University of Kentucky offers several resources that may help you during this time.

- UHS Behavioral Health Clinic may provide you with further evaluation and treatment
    - Call 323-5511 to make an appointment
- UK Counseling Center: Consultation and Psychological Services
    - http://www.uky.edu/StudentAffairs/Counseling/index.html
    - Eligibility: Students enrolled and paying for a minimum of 6 credit-bearing hours in the current semester are eligible for an Initial Assessment which may lead to recommendations for services at UKCC and/or other providers. (UKCC services are not extended to residents, post-doctoral fellows, or those enrolled solely via the Employee Education Program benefit.) For summer eligibility, please see the website or call for information.

    - Call 859-257-8701 or go to 201 Frazee Hall to make an appointment M-F 8 a.m. - 4:30 p.m. or walk in M-F 9 a.m. - 3 p.m. to be seen same-day as availability allows.
- Other local resource in Lexington
    - Comprehensive Care – 1351 Newtown Pike, Lexington, KY
        - Call 859-253-2737 for an appointment

If you have a healthcare provider at home, they may also be able to offer further evaluation and assistance.

What can you do?

- Call UHS or your regular healthcare provider if you are concerned about these symptoms.
- **If you have thoughts of hurting yourself or others call 911 immediately**
    - Please do not wait to talk, someone can help!
    - National Suicide Prevention Lifeline 1-800-273-TALK (8255)
- Maintaining a healthy lifestyle may reduce the symptoms of depression
    - Exercise at least 20 minutes every day
    - Learn which activities make you feel better and do them often
    - Talk to your family and friends
    - Eat a healthy diet
    - Limit intake of caffeine
    - Get 7 to 9 hours of sleep per night
    - Do not abuse alcohol or drugs
    - Learn ways to lower stress, such as breathing exercises or relaxation.

Zieman, G. (2009). Depression: its symptoms and treatment. *Relayhealth.*

Appendix B. Depression Letter 2

Dear Student,

At your recent visit to University Health Services you completed a questionnaire about depression during the electronic sign-in process. Based on the answers you provided, you may be experiencing a period of moderate or severe depression. **Please call the UHS Behavioral Health Clinic at 323-5511 as soon as possible to make an appointment for further evaluation or go to the Good Samaritan Emergency Department at 310 S. Limestone Street**. We want to help!

What is Depression?

Depression is a condition in which you might feel sad, hopeless, or have a decreased interest in activities of daily life. Everyone has times when they feel sad or blue. However if you have been feeling sad or blue for 2 weeks or more, or have had a worsening in symptoms it may be depression.

What are the symptoms of depression?

- Irritability
- Difficulty falling asleep, staying asleep, or sleeping too much.
- Changes in appetite and weight
- Changes in energy level, usually a decreased energy, but may be periods of feeling overexcited
- Decreased sexual desire
- Difficulty concentrating or remembering things
- Feeling hopeless
- Not caring about anything
- Unexplained physical symptoms
- Thoughts about death or suicide

*Sometimes other conditions may mimic depression; a healthcare provider can help you find the cause for your symptoms.

How is depression diagnosed?

Your clinician or a mental health therapist can tell you if your symptoms may be related to depression. The University of Kentucky offers several resources that may help you during this time.

- UHS Behavioral Health Clinic may provide you with further evaluation and treatment
    - Call 859-323-5511 to make an appointment
- UK Counseling Center: Consultation and Psychological Services
    - http://www.uky.edu/StudentAffairs/Counseling/index.html
    - Eligibility: Students enrolled and paying for a minimum of 6 credit-bearing hours in the current semester are eligible for an Initial Assessment which may lead to recommendations for services at UKCC and/or other providers. (UKCC services are not extended to residents, post-doctoral fellows, or those enrolled solely via the Employee Education Program

benefit.) For summer eligibility, please see the website or call for information.
    - Call 859-257-8701 or go to 201 Frazee Hall to make an appointment M-F 8 a.m. - 4:30 p.m. or walk in M-F 9 a.m. - 3 p.m. to be seen same-day as availability allows.
- Other local resource in Lexington
    - Comprehensive Care – 1351 Newtown Pike, Lexington, KY
        - Call 859-253-2737 for an appointment

If you have a healthcare provider at home, they may also be able to offer further evaluation and assistance.

Please do not wait to make an appointment, call one of these resources as a soon as possible.

What can you do?

- Call UHS or your regular healthcare provider as soon as possible for further assistance.
- **If you have thoughts of hurting yourself or others call 911 immediately**
    - Please do not wait to talk, someone can help!
    - National Suicide Prevention Lifeline 1-800-273-TALK (8255)
- Depression may be treated in a variety of ways, your healthcare provider will be able to help choose the best treatment for you
    - Medication
    - Therapy
    - Natural and Alternative treatments such as massage, acupuncture, and art or music therapies.
- Maintaining a healthy lifestyle may reduce the symptoms of depression
    - Exercise at least 20 minutes every day
    - Learn which activities make you feel better and do them often
    - Talk to your family and friends
    - Eat a healthy diet
    - Do not drink a lot of caffeine
    - Get 7 to 9 hours of sleep per night
    - Do not abuse alcohol or drugs
    - Learn ways to lower stress, such as breathing exercises or relaxation.

Zieman, G. (2009). Depression: its symptoms and treatment. *Relayhealth.*

Appendix C. Provider Survey

This survey pertains to the educational session you attended regarding depression screening. Please answer the following questions to the best of your ability.

1. The educational program provided new information regarding depression screening tools

Strongly Disagree				Strongly Agree
1	2	3	4	5

2. The educational program provided new information regarding depression screening programs at other university health clinics.

Strongly Disagree				Strongly Agree
1	2	3	4	5

3. I found the educational program to be beneficial.

Strongly Disagree				Strongly Agree
1	2	3	4	5

4. The educational program increased my awareness of current depression screening practices here at UHS

Strongly Disagree				Strongly Agree
1	2	3	4	5

5. The information received from the educational program made me think about the way I practice.

Strongly Disagree				Strongly Agree
1	2	3	4	5

6. The information provided motivated me to screen patients for depression.

Strongly Disagree				Strongly Agree
1	2	3	4	5

7. How often did you think you were providing depression screening for patients?

Never				Every Time
1	2	3	4	5

What are 2 factors that are currently impeding depression screening at UHS?

1.

2.

Comments:

Appendix D. Guideline Summary

The guideline, *Adult Depression in Primary Care*, provides detailed recommendations regarding depression screening and implementation in primary care. Below is a very brief overview of the recommendations made within this guideline.'

1) If depression is suspected, providers use standardized instrument such as the PHQ-9 to screen for depression. Providers should be mindful of symptomatic presentation of depression, potential co-morbidities, and other potential risk factors.
2) Diagnosis of major depression should be done through a clinical interview utilizing the DSM-4 criteria. The mnemonic SIGECAPS may help aid the providers' memory of the symptoms of major depression.
3) If in place, utilize organization's protocol to assess and minimize suicide risk and involve mental health specialist. If no protocol is in place, it is recommended the organization develops one.
4) Assess for substance misuse, such as alcoholism using the CAGE questionnaire if suspected. Also assess for other psychiatric comorbidities such as bipolar disorder, generalized anxiety disorder, or panic disorder.
5) When evaluating a patient for depression, the provider should also consider medical comorbidities, the impact of culture and cultural differences on mental health, and special populations such as geriatrics, dementia, and pregnant or postpartum women
6) The collaborative care approach is recommended for patients with depression. This includes a comprehensive treatment plan allowing the patient to share in the decision-making process. The primary goal of treatment (rather psychotherapy,

pharmacotherapy, or both) is for the patient to receive remission or be mostly symptom free.

7) The guideline provides a brief table with treatment recommendations based on the patient's PHQ-9 score; see on next page.

Table 1. Translating Patient Health Questionnaire, 9-Item (PHQ-9) Depression Scores into Practice based on DSM-5 Criteria

PHQ-9 Symptoms and Impairment	PHQ-9 Severity	Intensity	Treatment Recommendations (for treatment durations, see also Annotation #10)
1 to 4 symptoms, minimal functional impairment	5-9	Subclinical	Education to call if deteriorates Physical activity Behavioral activation If no improvement after one or more months, consider referral to behavioral health for evaluation Consider for persistent depressive disorder*
2 symptoms, #1 or #2 >0 score 2+, functional impairment	10-14	Mild Major Depression	Pharmacotherapy or psychotherapy, or both Education Physical activity Behavioral activation Initially consider weekly contacts to ensure adequate engagement, then at least monthly
≥3 symptoms, #1 or #2 >0 score 2 +, functional impairment	15-19	Moderate Major Depression	Pharmacotherapy, psychotherapy, or both Education Physical activity Behavioral activation Initially consider weekly contacts to ensure adequate engagement, then minimum every 2-4 weeks
≥4 symptoms, question #1 or #2 >0 score 2 +, marked functional impairment, motor agitation	≥20	Severe Major Depression	Pharmacotherapy necessary and psychotherapy when patient is able to participate Education Physical activity Behavioral activation Weekly contacts until less severe

8) Follow-up appointments may be utilized to help the provider assess the patient's response to treatment. The guideline defines remission as absence of symptoms or a PHQ-9 score less than 5; and a response to treatment with a 50% or greater reduction in depressive symptoms.

9) A second table provided within the guideline, assists providers in evidence-based decisions regarding continuation and maintenance treatment duration. As seen below.

Table 2. Depression Medication Treatment Duration Based on Episode

Episode	Treatment Duration*
1st episode (major depression, single episode)	Acute phase typically lasts 6-12 weeks. Continue psychotherapy/medication treatment for 4-9 months once remission is reached. Total = approximately 6-12 months
2nd episode (major depression, recurrent)	Continue medication treatment for 3 years once remission is reached. Withdraw gradually.
Persistent depressive disorder or 3+ episodes or 2 episodes (major depression, recurrent) with complicating factors such as: Rapid recurrent episodes More than 60 years of age at onset of major depression Severe episodes or family history	Continue medication treatment indefinitely.

10) With each visit, it is recommended the provider evaluates the dose, duration, type, and adherence to treatment. If unsuccessful the use of a mental health specialist may assist in further treatment options such as such as combinations of

antidepressants, outpatient versus inpatient treatment, light therapy, or electroconvulsive treatment.

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