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Evaluating Depression Management in Primary Care

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DNP Practice Inquiry Project

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Dedication

I dedicate this project to those who silently suffer with mental illness. Whose lives were altered or ended because they were not identified or treated. I also dedicate this work to my husband who has supported me in my own struggles with mental illness and its daily effects on my life. Also, to my own child, who I pray never has to struggle with mental illness, and if she does that she is identified and treated appropriately.

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Abstract

Background: Within primary care patients identified with depression often do not receive appropriate care (43%). Guidelines recommend combining pharmacotherapy and psychotherapy when possible and establishing follow up with patients to improve their response to treatment According to the APA, only 10% of patients receive combination therapy.

Purpose: The purpose of this study was to evaluate depression management practices in a primary care clinic, describe providers' attitudes and skills related to depression treatment, and work with the healthcare team to identify strategies to improve depression management within the clinic.

Methods: A single site, descriptive study utilized a retrospective chart review of 115 patients with a PHQ-9 score greater than or equal to 10. A provider questionnaire assessed perceptions and attitudes of depression management and identified barriers to management in current practice.

Results: Of the 115 patient charts, the average PHQ-9 score was 14.7 (SD=3.9). Based on guideline recommendations, 100% of visits would have expected combined therapy and documentation of follow-up within four weeks. However, 43% of patient visits had documentation for combined treatment, 58% of visits had a follow up for the patient, and the average time frame was 6.5 weeks. The top barrier identified to depression management was lack of availability of mental health services (M=4.00, SD=1.12).

Conclusion: This clinic is providing appropriate management when compared to national statistics. Areas of improvement include increasing documentation of behavioral health discussion and follow-up and decreasing follow-up time frame. Availability of mental health services is being improved with the integration of behavioral health and family medicine.

Background

Depression is defined as five or more symptoms that have been present during the same two-week period and represent a change from previous function; a patient may be diagnosed with depression if at least one presenting symptom includes either depressed mood or loss of interest or pleasure (American Psychiatric Association, 2013). Typically, depression manifests through psychological symptoms including feeling depressed, loss of interest in everyday activities, lack of concentration, feeling worthless or guilty, and thoughts of suicide. Non-specific—somatic—symptoms can also be present such as pain, increased or decreased appetite, fatigue, insomnia/hypersomnia, headache, or weakness (Maurer, 2012).

Depression is a mental health disorder that can have serious repercussions on a person's physical, emotional and spiritual well-being; it is a leading cause of disability (National Institute of Mental Health, 2015). Mental illness overall is associated with an increased occurrence of chronic diseases, a lower usage of medical care and decreased adherence to treatment for those diseases (American Psychological Association, 2017). A 2014 study in the *Journal of Clinical Psychiatry* estimated that the incremental costs associated with major depressive disorder were around $210.5 billion in 2010. Direct costs accounted for 45-47% of that total, 5% to suicide related costs, and 48-50% to workplace costs. The pharmaceutical and medical costs of depression were approximately $27.7 billion in 2010 (Greenberg, Fournier, Sisitsky, Pike, & Kessler, 2014). In addition to the direct costs of depression, depression has been associated with worse outcomes for patients with coronary artery disease, diabetes mellitus, and stroke (Maurer, 2012).

Across the country, depression is widespread. In 2016, approximately 16.2 million adults in the U.S., or 6.7%, had at least one major depressive episode (NSDUH, 2017). The 2015-2016

National Survey on Drug Use and Health (NSDUH) estimated that Kentucky's average is higher than the national average of major depressive episodes. Approximately 7.5% of Kentucky adults had at least one major depressive episode in the time frame of the survey (NSDUH, 2017). According to the 2016 Kentucky Health Issues Poll (KHIP), 49% of Kentucky adults perceived a friend or family member to have a serious problem with depression (KHIP, 2017). Similarly, results from KHIP showed that 52% of adults surveyed in Lexington knew someone they perceived to be depressed (KHIP, 2017).

In the primary care setting, 25% of patients suffer from depression; however, only 33% of these patients will be diagnosed (American Psychological Association, 2017). To improve identification of depression, the United States Preventative Services Task Force (USPSTF) made a final recommendation that all adults and adolescents aged 12-18 should be screened for depression (USPSTF, 2016). Even then, of those who are diagnosed with depression, almost half do not receive appropriate care (American Psychological Association, 2017). Of those patients being treated for depression, 25.9% receive antidepressants, 27.6% counseling, and 10.2% receive both (American Psychological Association, 2017). The gold standard for treatment is a combination of these two therapies, as together they provide the quickest response and highest rates of improvement, quality of life, and compliance (Halverson, 2017). For the treatment of mild-moderate depression, psychotherapy alone can often lead patients into remission (Halverson, 2017).

The Institute for Clinical Systems Improvement (ICSI) guideline for the management of depression in adults in primary care was utilized to guide evaluation of management practices within a primary care clinic. This guideline was selected because it is an all-inclusive guideline that spans recommendations for screening through follow-up that follows recommendations from

other leading authorities such as the American Psychological Association but is specifically designed for primary care. Patients are regularly seen by their primary care providers, and it is in this setting that depression will likely be identified and managed (Reilly, et al. 2012).

The first treatment recommendation for the treatment of major depressive disorder within the guideline is as follows: "Consider combining pharmacotherapy and psychotherapy treatments for patients with major depressive disorder when practical, feasible, available and affordable" (Trangle, et al. 2016). The second treatment recommendation for depression is recognition that all patients will not be able to do the combined therapy. This can be true for any number of patients, including but not limited to cost, availability, and insurance. The second recommendation states: "When unable to do combined therapy due to patient preference or availability/affordability of the treatments: (1) Consider starting with psychotherapy for mild to moderate major depression; (2) Consider starting with pharmacotherapy for severe major depression" (Trangle, et al, 2016). Alone, medication and psychotherapy are still effective in the treatment of depression; when both cannot be implemented, it is best to start a form of treatment, regardless of which one.

Purpose

The purpose of this study was to evaluate depression management practices in a primary care clinic. The specific aims were to:

1. Evaluate depression management practices in accordance with an evidenced-based guideline.
2. Describe providers' attitudes and skills with regard to depression treatment.
3. Work with the healthcare team to identify strategies to improve depression management within the clinic.

Extensive work was previously done by a quality improvement team within the clinic to evaluate and improve PHQ-2 and PHQ-9 screening. This increased screening rates to a goal of 10% of all eligible visits, where previously screening rates were not documented. This study was the next step in evaluating depression management within the clinic.

Methods

This project involved a retrospective chart review of patients seen at a single primary care office location. Patients greater than 18 years old and younger than 65 with a PHQ-9 score greater than or equal to 10 were targeted for the chart review. A score of ten or greater was selected as it has a high sensitivity (88%) and specificity (88%) for major depression (Kroenke, Spitzer, Williams, 2001). A questionnaire was also handed out to providers within the office to assess knowledge of depression management and to identify barriers to management in current practice (see Appendix B). The provider survey was comprised of 21 total questions with Likert scale responses. It was inspired by other similar questionnaires examining provider attitudes, barriers, and behaviors regarding depression management. There were 10 questions assessing provider perceptions and attitudes and 11 assessing barriers. Institutional Review Board (IRB) approval was obtained as part of an IRB approved larger study with the goal of training primary care providers about quality improvement and healthcare transformation.

Conceptual Framework

To guide the evaluation of the providers' attitudes and perceptions towards depression management the theory of planned behavior/reasoned action was utilized. The theory of planned behavior/reasoned action (TPB) was developed by Icek Ajzen and examines relationships between beliefs, attitudes, and behaviors (Montano, Kasprzyk, 2002). The theory correlates beliefs to attitudes, norms, and perceived behavioral control. These are then believed to influence

intentions and behaviors. This theory is useful in determining correlations between the beliefs and values that influence motivation and behavior. This study's questionnaire asked 10 questions that examined the providers' confidence, perceptions of depression management, and their perceptions of the impact of depression. Through these questions, possible links could be made between providers' attitudes and beliefs and the outcomes of management (see Appendix B). Attitude was assessed by questioning the providers' positive or negative views regarding depression as a disease and the management of depression. Perceived behavioral control was assessed by questioning the providers' perceptions on the ease of treating depression.

Setting

This study was held at a large primary care clinic affiliated with a large academic medical center in Kentucky. The clinic provides services for adults and children from the city and surrounding communities. The clinic has co-located behavioral health within its family practice for improved collaborative care.

Sample

Two samples were obtained as a part of this study: a sample of patient charts from a retrospective chart review and one from a provider survey. Patient chart data were obtained through a report obtained by UKFMC IT. Inclusion criteria were: the presence of PHQ-9 data, and patients over the age of 12 and without an existing comorbidity of bipolar disorder or bipolar depression. Patients 12 and older were included in the report per USPSTF recommendations of screening adolescents 12-18 (USPSTF, 2016). For the months of September-November this totaled 453 medical records. For the chart review, inclusion criteria were narrowed further to consist of patients over the age of 18 and younger than 65 with a PHQ-9 score greater than or equal to 10. A total of 115 medical records from the months of September-November 2018 met

the inclusion criteria and were utilized in the chart review. Once charts were reviewed, data were deidentified and stored on a password protected spreadsheet.

A convenience sample was used for the provider survey and the inclusion criterion was a willingness to complete the survey. A paper and pencil questionnaire with cover letter was hand delivered to providers on three separate days within the office and anonymously returned to manila folders at each provider station. These folders were collected at the end of one week. The goal of this questionnaire was to assess providers' perceptions and attitudes about depression management and to identify barriers to management in current practice.

Data Collection

Medical records for the retrospective chart review were obtained from the electronic database of patients seen at UKFMC using the medical record numbers (MRN) provided from the initial UK IT report. Data from the original report were filtered to exclude patients younger than 18 years old and older than 65. PHQ-9 scores less than 10 were also filtered out. Patient data were selected from the months September through November 2018. Charts were then individually reviewed to determine the provider plan for management and documented within a password protected spreadsheet (see Appendix A).

The provider questionnaires (see Appendix B) were a paper and pencil questionnaire with cover letter that was hand delivered to providers within the office and anonymously returned to manila folders at each provider station. Returned surveys were recorded within REDCap (NIH National Center for Advancing Translational Sciences, grant number UL1TR001998), a secure online data collection tool provided by the University of Kentucky. The data are securely hosted on Biomedical Informatics servers in the secure data center operated by the Institute for Pharmaceutical Outcomes and Policy. For the provider questionnaire, any provider was able to

participate, and the only exclusion criterion was a lack of willingness to complete the questionnaire. A convenience sample of providers was utilized based on the presence of the providers on three different clinic days. Any available provider was asked to complete the survey, and copies of the survey were left at each provider station. Nine providers out of 19 completed the questionnaire for almost a 50% response rate, seven physicians and two nurse practitioners. Currently within the clinic there are fourteen physicians and five nurse practitioners.

Data Analysis

Results from the retrospective chart review were analyzed using the Statistical Package for the Social Sciences (SPSS) software. Frequencies were utilized to assess gender, race, insurance type, provider type for selected visit, utilization of pharmacotherapy and behavioral health, and if a follow up was discussed or ordered. Descriptive statistics were utilized to determine the mean and standard deviation of age, PHQ-9 score, and the time-frame documented for follow up. In addition, chi-square tests were conducted to look for variability between provider type and utilizing pharmacotherapy or behavioral health. Results were considered significant if the p-value was <0.05. Provider survey results were also analyzed using descriptive statistics, examining the means and standard deviations of the individual questions and provider demographics.

Results

Retrospective Chart Review

A total of 115 patient charts were reviewed. The mean age of the patients was 41 years old, the majority of patients were Caucasian (82%) and female (67%). Over half of the patients had Medicaid or Medicare (52%). For the majority of visits, it was not the patient's first

diagnosis of depression (86%) and the average PHQ-9 score was 14.7 with a standard deviation of 3.9. See Table 1 for a full summary of patient characteristics.

Of the 115 visits, 74 (64%) were managed by physicians and 41 (35%) by nurse practitioners. This is consistent with the ratio of providers currently within the clinic, 14 physicians and 5 nurse practitioners. Depression management interventions were assessed by examining three categories. Pharmacotherapy was broken into five categories of action: medication started if not previously on, medication adjusted if already on, medication therapy declined by the patient, no change in current medications, and medication therapy not discussed. Similarly, behavioral health interventions were broken into five categories of action: patient already receiving, patient declined, patient referred, and behavioral health not discussed. A fifth category was also utilized examining the rate of patients referred to an in-clinic behavioral health. Follow-up with the patient was divided into yes and no categories, examining whether a follow up was documented or ordered (see Table 2).

Pharmacotherapy was utilized in 76% of patient visits when combining starting and adjusting medications, and those on medications without adjustment. Behavioral health was already being utilized in 32% of patients, 17% declined, and 17% were referred to a form of behavioral health. There was no discussion of behavioral health in 33% of the visits. For follow-up regarding depression, over half (58%) of the time providers discussed or ordered a follow up for the patient and of those visits, 57% were within an appropriate time frame. The average time frame for follow-up was 6.5 weeks, with a standard deviation of 3.9 (see Table 2). It is important to note that the possibility exists of the provider having discussed these interventions with the patient but failing to document the discussion.

The ICSI guideline recommends different follow-up recommendations for the level of severity of depression based on the PHQ-9 score. For mild major depression, classified as a PHQ-9 score of 10-14, it recommends considering weekly contact with the patient then visits at least every 4 weeks. The average time frame for PHQ-9 scores of 10-14 was 7.23 weeks with a standard deviation of 4.33. For moderate major depression with a PHQ-9 score 15-19, weekly contact with the patient and then at least every 2-4 weeks, for 15-19, the time frame was 4.94 weeks (SD=2.46). Finally, for severe major depression with a PHQ-9 score greater than or equal to 20, the ICSI recommends weekly contact with the patient until their depression is less severe. Results for PHQ-9 scores greater than or equal to 20 the average time frame was 6.2 weeks (SD= 3.46; Table 3). Additionally, just under half of the visits (42%) had no documentation or indication of a follow up with the provider. Establishing a follow up plan and utilizing the PHQ-9 to monitor patient progress is a strong recommendation from the guideline and will aid in the recovery of patients from depression (Trangle, et. Al 2016).

A comparison was completed using a chi-square analysis to determine any statistical significance between provider type and intervention. Physicians and nurse practitioners were compared in their utilization of pharmacotherapy and behavioral health, but no statistical significance was found (Table 4).

Provider Survey

Nine out of 19 providers completed surveys for approximately a 50% response rate. Results of the demographics are summarized in Table 5. Two-thirds of the providers were female, seven were physicians, and two were nurse practitioners. The average clinical experience of all providers was 7.5 years.

Provider perceptions and attitudes were assessed with ten questions using a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Data were examined using means and standard deviation. Two questions indicated a negative response and were recoded from strongly agree (5) to strongly disagree (1) so the answers reflected in the same direction as the other eight questions. All nine providers strongly agreed that depression impacts quality of life and patient adherence to medical care (M=5.00, SD= 0.00). Most providers felt confident in diagnosing depression (M=4.67, SD=0.707), selecting pharmacotherapy (M=4.56, SD=0.726), and discussing depression with their patients (M=4.56, SD=0.527). They also agreed with the belief that it was their responsibility to treat and manage depression (M=4.78 SD=0.441) and that it was rewarding to care for patients with depression (M=4.11, SD=0.928). In general, providers did not believe that depressed patients were better managed by a specialist, that primary care was appropriate (M=3.12, SD=1.36), and that it was not difficult to differentiate between a patient's unhappiness and depression (M=3.33, SD=1.22). They also agreed that algorithms for treatment and follow-up are available to provide decision making support (M=3.78, SD=0.667; Table 6).

Barriers to depression management can often be broken into three categories, provider limitations, patient limitations, and external limitations. These barriers were assessed with eleven questions using a five-point Likert scale ranging from never to always. Data were again examined using mean and standard deviation. There were four questions examining provider limitations, three examining patient limitations, and four examining external limitations. The top barriers to depression management included limited time for counseling/education (M=2.56, SD=0.882), patient reluctance to utilize mental health services (M=3.00, SD=0.707), and the patient's medical concerns being more important or pressing (M=3.00, SD=0.886). The top barrier was lack of availability of mental health services (M=4.00, SD=1.12; Table 7).

Free text questions regarding barriers, facilitators, and suggestions regarding depression management were also recorded. Two providers indicated time as a barrier to treatment. Other barriers included patients' lack of willingness to see a mental health provider and social issues such as homelessness or a lack of health insurance. Three providers listed facilitators to depression management within their clinic. These included routine screening of patients for depression and easy access to the PHQ-9. Two providers indicated the co-location of behavioral health within the clinic as a facilitator. Three providers suggested more mental health providers or resources to improve depression management. Another suggestion included implementing more staff to improve follow-up on depression management.

Discussion

Depression is a widespread mental health disorder that affects all aspects of a person's life and is associated with poor health outcomes and high costs to society. The purpose of this study was to evaluate the depression management practices within a primary care clinic, describe providers' attitudes and skills related to treatment, and work with the healthcare team to identify strategies to improve depression management within the clinic.

The retrospective chart review found that depression management practices were comparable or higher than national averages. ICSI guideline recommendations for depression management endorse combination therapy of counseling and pharmacotherapy when possible. The APA (2017) reports that only 10% of patients treated for depression receive combination therapy, and this study found that 43% of patients reviewed were receiving combination therapy. This is key as the combination of these two therapies have been shown to provide the quickest response and highest rates of improvement, quality of life, and compliance (Halverson, 2017). The ICSI guideline recognizes that not all patients may be able to partake in combination

therapy, whether due to patient preference or availability of treatments, and recommends psychotherapy for mild to moderate depression and pharmacotherapy for severe depression. This study did not reveal any association between classification of depression and treatment modality. However, 76% of patients were receiving or were started on pharmacotherapy and 50% were receiving or were referred to behavioral health. This far surpasses the APA reports of only 26% patients receiving pharmacotherapy and 28% receiving counseling (APA, 2017).

Discussion and implementation of follow-up after an elevated PHQ-9 score was one area that was found to need improvement. A follow up was only documented or discussed 58% of the time. The average time frame for follow-up when documented was 6.5 weeks with a standard deviation of 3.9. With an average PHQ-9 score of 14, the time frame should have been four weeks or less. See Table 3 for a full breakdown of average follow-up time and related PHQ-9 score. Establishing a follow-up plan is a strong recommendation from the ICSI guideline that will aid in the effective treatment of depression, and this is why the United States Preventative Task Force recommends depression screening only when systems are in place to provide follow-up (Trangle, et. Al 2016; USPSTF, 2016). Patients do not improve without consistent follow up with their provider (Cameron, Habert, Anand, Furtado, 2014).

The goal of the provider survey was to assess the provider's attitudes and perceptions towards depression and depression management, and to identify any perceived barriers. Overall, providers felt strongly that depression is an impactful disorder and that they feel confident in treating patients with depression. They also largely agreed that primary care is appropriate to manage depressed patients and that there were reliable algorithms available to guide their clinical decision making. One limitation to this study was that we did not request clarification from providers regarding the difference between managing mild to moderate depression versus severe

depression in primary care. Additionally, it would have been beneficial to request examples of algorithms used by providers within the clinic.

Time is most often a barrier for any diagnosis during visits. For example, a 2007 analysis of office visits between 1998-2000 showed a median visit length of 15.7 minutes, with the longest average of five minutes being spent on one topic (Tai-Seale, McGuire, & Zhang, 2007). From this survey, providers indicated that there was limited time for counseling and education about depression. This is similar to findings from a study evaluating the views of primary care provider; the authors found 96% of providers agreed or strongly agreed with the statement that treating depression is time consuming (Upshur, Weinreb, 2008). This clinic has made strides to increase the amount of time providers have to spend with their patients by implementing what is called a "+20 workflow." Patient appointments are scheduled 20 minutes before the provider is to see them. The extra 20 minutes give the clinical services technicians (CSTs) time with the patients to complete their vital signs, perform screenings (such as the PHQ-2 and 9), and update the patient chart. The provider then has their full 20 minutes with the patient to complete the visit. This strategy has been beneficial to maximize the time a provider has to spend with their patients, and could be the reason why time was not the number one perceived barrier from this survey.

Providers also indicated that the patient's medical concerns were often more important during the visit. A study analyzing the Prevention of Suicide in Primary Care Elderly: Collaborative Trial (PROSPECT) compared usual care versus depression care management in older adults with depression and common comorbid health conditions and the effect on long-term mortality. This study found that patients receiving "usual care" with the highest levels of medical comorbidities and depression were at an increased risk of mortality. In comparison,

patients receiving interventions for depression with the highest level of medical comorbidities and depression were not at a significantly increased risk of mortality (Gallo, et. Al, 2016). While providers must manage their patients' pressing medical conditions, it is important to not let depression become a secondary focus of their care.

The number one barrier based on the results of this survey was a perceived lack of available mental health services. One provider stated that often there are not enough available services near the patient's home. The clinic setting of this study has co-located behavioral health into its family medicine clinic. Providers can consult behavioral health and immediately implement a "warm-handoff" directly to the mental health provider. Patients are then able to schedule a visit and often meet the therapist, although may still have to wait several weeks for their appointment. This integration of behavioral health is what is known as a care management model. The Agency for Healthcare Research and Quality (AHRQ) defines care management as a team-based, patient-centered approach to coordinating care and managing chronic illnesses more effectively. The concept of care management is to provide interventions for individuals within a population with the aim to reduce health risks and decrease costs (AHRQ, 2015). Care management models (CMM) are optimized for use in primary care and provide an outline for the management of depression from screening to treatment and beyond. Implementation of these care models has been demonstrated to be feasible within primary care offices, but it is important to recognize the impact of implementation. While one concept of CMMs is to decrease health care costs, upon implementation the utilization of services increases, then declines. Increased utilization suggests that these high-risk patients, who frequently have co-morbid conditions, are actually following up with their providers and fine-tuning their treatment plans. The decline

suggests a more stable maintenance period and possibly fewer depressive episodes (Angstman, DeJesus & Williams 2009).

Implications

Overall, this clinic has taken numerous steps to provide the best care for its patients. With the information obtained from this chart review and provider survey, additional steps can be taken to further improve their processes and reduce barriers to care. A meeting took place with members of the behavioral and family medicine teams to share information regarding this study. The meeting helped to address many of the barriers noted earlier and allowed for insight into the next steps that need to be taken.

It was revealed that during the data collection period there was large turnover among the behavioral health providers, and since then more providers have been or are being hired. This will increase availability of mental health services within the clinic. Additionally, work has been done to create a list of local mental health providers and the insurance they accept to have available for family medicine providers. In addition to this meeting providing the opportunity to improve depression management within the clinic, it also opened the door for increased collaboration between the Master of Social Work and the Doctorate in Nursing Practice programs.

Suggestions were also offered to address the barrier of time and patient reluctance to care. One suggestion made was the implementation of self-help or self-care packets that providers can offer to their patients. Packets of self-care tools, self-help booklets, and mindfulness therapy are all interventions that can be executed in the office, and the patient can continue treatment at home. All have shown an improvement on depression symptoms, PHQ-9 scores, and overall psychological distress. These interventions were met with positive feedback

from both patients and physicians within these studies (Holst et. Al, 2017; Lucock, et. Al, 2010; McCusker et. Al, 2012; Radford, et. Al, 2012). The behavioral health providers have a similar packet that provides a brief overview of depression, it's etiology, common treatments, and cognitive behavioral therapy techniques that they provide to patients. It was suggested to make these packets available to the family medicine providers to provide a method of education and counseling that may take less time. Supplementary self-help packets will also be explored and provided to the behavioral health leaders for vetting and distribution to family medicine. Through the utilization of these patient education packets, patient refusal of pharmacological and behavioral health interventions may decrease.

As for further recommendations, although there were high percentages of appropriate care seen, there is room for improvement. The next steps that should be taken are increasing provider awareness of their documentation rates for interventions and follow up, and of the recommended follow up time frames through education.

Conclusion

Mental health is finally being recognized as a key indicator of physical health, and primary care providers need to be skilled in the management of behavioral health disorders. Depression is one of the most common behavioral health disorders, affecting all stages of life. Because of depression's effect on physical, social, and overall health it justifiably deserves the utmost attention and care. Overall, depression management within this clinic is being performed appropriately, and the many barriers to care are being addressed. However, areas for improvement include documentation of behavioral health discussion and follow-up. Additionally, the time frame for follow up needs to decrease, especially for patients with severe

depression. Continued reassessment of their processes and implementation of improvements must continue to occur to provide the best care.

Appendix A. Chart Audit Tool

Exclusion Criteria: Past medical history of bipolar disorder/bipolar depression
-ICD-10 Codes: F31-F31.9
Age <18 or >64 years old

Inclusion Criteria: PHQ-9 score ≥ 10
Age 18-64

Gender:
Age:
Race:
Insurance:
Provider Type:

Information						**Comments**
PHQ-9	Score:		Date of Score:			
	Yes		**No**			
1st diagnosis of depression?						
Follow-Up documented/ordered?						
Pharmacotherapy Initiated/Adjusted/No Change/Declined/ Not Discussed?	I	A	NC	D	ND	
Behavioral Health Referral/Already Seeing/FM BH/Declined/Not Discussed?	R	AS	BH	D	ND	

Appendix B. Provider Survey

Provider Attitudes and Knowledge Regarding Management for Depression Survey/Questionnaire

Please indicate your answer for each question by placing a mark in the box that most resembles your perception or attitude as a provider:

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I feel confident in diagnosing depression					
2. I feel confident selecting appropriate pharmacotherapy for depression treatment					
3. It is my responsibility to treat and manage depressed patients					
4. It is rewarding to care for depressed patients					
5. Depressed patients are better off managed by a mental health specialist than family medicine					
6. It is difficult to differentiate between a patient presenting with unhappiness versus a clinical depressive disorder					
7. Depression can impact adherence to medical care for other conditions (medication, diet, exercise)					
8. Depression can impact the quality of life for individuals					
9. There are reliable and easy to follow algorithms to guide treatment and follow up for depression diagnosis.					
10. I feel comfortable with discussing depression with my patients					

For each statement, please indicate how often you see each as a barrier to your practice in managing depression:					
Barriers to Depression Management	Never	Some of the Time	Half of the Time	Most of the Time	Always
a. Patient is reluctant to accept a diagnosis of depression					
b. Patient is reluctant to utilize pharmacotherapy					
c. Patient is reluctant to be referred to mental health services					
d. Patient's other medical concerns are often more important					
e. My understanding or knowledge of diagnostic criteria for depression					
f. My understanding or knowledge of treatment for depression					
g. Personal limitations in clinical experience managing depression					
h. Lack of awareness of appropriate documentation location for treatment/follow-up					
i. Limited clinical time to obtain history regarding patient depression					
j. Limited clinical time for counseling/education					
k. Lack of access to mental health services available to patients					
l. Other:					

1. Please indicate your age group
    a. 24-30 years
    b. 31-40
    c. 41-50
    d. 51-60
    e. > 60
2. Please indicate the gender you identify with
    a. Male
    b. Female
    c. Other
3. Please indicate what type of provider you are
    a. MD/DO
    b. NP
    c. PA
4. What is your clinical experience in years: _____

Please describe any barriers to your practice related to depression screening, diagnosis and management that you experience:

Please describe any facilitators to your practice related to depression screening, diagnosis and management that you experience:

What suggestions do you have for the improvement of depression management in your practice?

Table 1. Summary of Patient Characteristics (N=115)

	Mean (SD) or n (%)
Age	40.89 (14.3)
Gender	
Male	36 (31.3%)
Female	77 (67.0%)
Transgender	2 (1.8%)
Race	
Caucasian	94 (81.7%)
African American	15 (13.0%)
Other	6 (5.2%)
Insurance	
None/Financial Assistance	8 (7%)
Private	44 (38.2%)
Public	60 (52.2%)
Other	3 (2.6%)
First Diagnosis of Depression?	
Yes	16 (13.9%)
No	99 (86.1%)
PHQ-9 Score	14.72 (3.9)

Table 2. Summary of Depression Management (N=115)

	Mean (SD) or n (%)
Provider Type	
MD/DO	74 (64.3%)
NP	41 (35.7%)
Pharmacotherapy	
Started	23 (20.0%)
Adjusted	30 (26.1%)
Declined	16 (13.9%)
No Change	34 (29.6%)
Not Discussed	12 (10.4%)
Behavioral Health	
Receiving	37 (32.2%)
Declined	20 (17.4%)
Referred	8 (7.0%)
FM BH	12 (10.4%)
Not Discussed	38 (33.0%)
Follow-Up	
Yes	67 (58.3%)
No	48 (41.8%)
Time Frame for Follow Up (in weeks)	6.48 (3.88)

Table 3. Comparison of PHQ-9 and Follow-Up

PHQ-9	**Mean**	**N**	**Standard Deviation**	**Recommended Follow-up**
10-14	7.23	39	4.34	4 weeks
15-19	4.94	17	2.46	2 weeks
≥20	6.20	10	3.88	1 week

Table 4. Comparison of Provider Type and Management (N=115)

Pharmacotherapy	**MD/DO**	**NP**	
Started	13 (17.6%)	10 (24.4%)	
Adjusted	20 (27.0%)	10 (24.4%)	
Declined	12 (16.2%)	4 (9.8%)	
No Change	20 (27.0%)	14 (34.1%)	
Not Discussed	9 (12.2%)	3 (7.3%)	
	Value	**df**	**Significance**
Pearson Chi-Square	2.522	4	.641
Likelihood Ratio	2.576	4	.631

Behavioral Health	**MD/DO**	**NP**	
Receiving	27 (36.5%)	27 (36.5%)	
Declined	13 (17.6%)	7 (17.1%)	
Referred	2 (2.7%)	6 (14.6%)	
FM BH	6 (8.1%)	6 (14.6%)	
Not Discussed	26 (35.1%)	12 (29.3%)	
	Value	**df**	**Significance**
Pearson Chi-Square	7.954	4	.093
Likelihood Ratio	7.710	4	.103

Table 5. Summary of Provider Survey Demographics (N=9)

Provider Demographics	Mean (SD) or n (%)
Age	
24-30	3 (33.3%)
31-40	3 (33.3%)
41-50	2 (22.2%)
51-60	1 (11.1%)
Gender	
Male	3 (33.3%)
Female	6 (66.7%)
Provider Type	
MD/DO	7 (77.8%)
NP	2 (22.2%)
Clinical Experience	7.5 (6.6)

Table 6. Provider Survey Perceptions and Attitudes (n=9)

Perceptions and Attitudes **Strongly Disagree (1)→Strongly Agree (5)**	**Mean (SD)**
Depressed patients better managed by specialist	3.12 (1.36)
Difficult to differentiate between unhappiness and depression	3.33 (1.22)
Algorithms for treatment and follow-up are available	3.78 (.667)
Comfortable discussing depression	4.56 (.527)
Confidence selecting pharmacotherapy	4.56 (.726)
Rewarding to care for depression	4.11 (.928)
Confidence diagnosing depression	4.67 (.707)
Responsibility to treat and manage depression	4.78 (.441)
Depression impacts adherence to medical care	5.00 (.000)
Depression impacts quality of life	5.00 (.000)

Table 7. Provider Survey Barriers (n=9)

Barriers **Never (1) →Always (5)**	**Mean (SD)**
Provider limitations in clinical experience	1.56 (.726)
Provider unaware of documentation location	1.75 (.886)
Provider understanding treatment	2.00 (1.27)
Provider understanding diagnostic criteria	2.00 (1.41)
Patient reluctance to diagnosis	2.11 (.333)
Limited time for depression history	2.33 (.707)
Patient reluctance to pharmacotherapy	2.44 (.527)
Limited time for counseling/education	2.56 (.882)
Patient reluctance to mental health services	3.00 (.707)
Medical concerns more important	3.00 (.866)
Lack of available mental health services	4.00 (1.12)

References

Akincigil A, and Matthews, E. (2017) National rates and patterns of depression screening in primary care: Results from 2012 and 2013. *Psychiatry Online*. Retrieved from: https://ps.psychiatryonline.org/doi/full/10.1176/appi.ps.201600096

American Psychological Association. (2017). Data on behavioral health in the united states. *Psychology help center.* Retrieved from: http://www.apa.org/helpcenter/data-behavioral-health.aspx

American Psychological Association. (2013). *Diagnostic and statistical manual of mental disorders.* Arlington, VA: American Psychiatric Publishing.

Angstman, K. B., DeJesus, R. S., & Williams, M. D. (2009). Initial implementation of a depression care manager model: an observational study of outpatient utilization in primary care clinics. Population Health Management, 12(5), 227-230.

Cameron C, Habert J, Anand L, Furtado M. (2014). Optimizing the management of depression: primary care experience. *Psychiatry Research.* https://doi.org/10.1016/S0165-1781(14)70005-8

Foundation for a Healthy Kentucky and Interact for Health (2017). Results from the 2016 Kentucky Health Issues Poll: Spotlight on Greater Lexington. Louisville, KY: Authors. Retrieved from: https://www.healthy-ky.org/res/images/resources/2017KHIP_LEX_FINAL_HiRes.pdf

Foundation for a Healthy Kentucky and Interact for Health (2017). Results from Kentucky health issues poll: Most Kentucky adults aware of mental health support services. Retrieved from: https://www.healthy-ky.org/res/images/resources/KHIP-depression-FINAL.pdf

Gallo J, Hwang S, Joo J, Bogner H, Morales K, Bruce M, Reynolds C. (2016). Multimorbidity, depression, and mortality in primary care: Randomized clinical trial of an evidenced

based depression care management program on mortality risk. *Journal of General Internal Medicine.* 31(4):380-6. doi: 10.1007/s11606-015-3524-y.

Greenberg, P.E., Fournier, A.A., Sisitsky, T., Pike, C.T., Kessler, R.C. (2015). The economic burden of adults with major depressive disorder in the United States (2005 and 2010). *Journal of Clinical Psychiatry. 76(2):155–162.* Retrieved from: http://www.psychiatrist.com/jcp/article/Pages/2015/v76n02/v76n0204.aspx

Healthmonix. (2017). 2017 MIPS measure #134: Preventive care and screening: Screening for clinical depression and follow-up plan. Retrieved from: http://healthmonix.com/mips_quality_measure/preventive-care-and-screening-screening-for-clinical-depression-and-follow-up-plan-measure-134/

Holst, A., Nejati, S., Björkelund, C., Eriksson, M. C. M., Hange, D., Kivi, M., . . . Petersson, E.-L. (2017). Patients' experiences of a computerised self-help program for treating depression – a qualitative study of Internet mediated cognitive behavioural therapy in primary care. Scandinavian Journal of Primary Health Care, 35(1), 46-53. doi:10.1080/02813432.2017.1288813

Lucock, M., Kirby, R., & Wainwright, N. (2011). A pragmatic randomized controlled trial of a guided self-help intervention versus a waiting list control in a routine primary care mental health service. British Journal of Clinical Psychology, 50(3), 298-309. doi:10.1348/014466510X520231

Maurer, DM. (2012). Screening for depression. *American family physician. 85(2):139-44.* Retrieved from: https://www.aafp.org/afp/2012/0115/p139.html

McCusker, J., Cole, M., Yaffe, M., Sussman, T., Lavoie, K. L., Strumpf, E., . . . de Raad, M. (2012). A feasibility study of a telephone-supported self-care intervention for depression

among adults with a comorbid chronic physical illness in primary care. Mental Health in Family Medicine, 9(4), 257-273.

Montano, D. E., & Kasprzyk, D. (2002). Theory of reasoned action and the theory of planned behavior. *Health behavior and health education* (3rd ed., pp. 67-95). San Franscio, CA: John Wiley & Sons.

National Institute of Mental Health. (2017). Major depression. *The National Institute of Mental Health Information Resource Center.* Retrieved from: https://www.nimh.nih.gov/health/statistics/major-depression.shtml

National Institute of Mental Health. (2016). Depression. *The National Institute of Mental Health Information Resource Center.* Retrieved from: https://www.nimh.nih.gov/health/topics/depression/index.shtml

National Institute of Mental Health. (2015). Major depression among adults. Retrieved from: https://www.nimh.nih.gov/health/statistics/prevalence/major-depression-among-adults.shtml

Parekh, R. (2017). What is depression? Retrieved from: https://www.psychiatry.org/patients-families/depression/what-is-depression

Reilly S, Planner C, Hann M, Reeves D, Nazareth I, Lester H. (2012). The role of primary care in service provision for people with severe mental illness in the united kingdom. *PLoS.* Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3352919/

SAMHSA, Center for Behavioral Health Statistics and Quality. (2016). National survey on drug use and health, 2015 and 2016. Retrieved from: https://www.samhsa.gov/data/sites/default/files/NSDUHsaePercents2016/NSDUHsaePercents2016.pdf

Tai-Seale, M., McGuire, T. G., & Zhang, W. (2007). Time Allocation in Primary Care Office Visits. Health Services Research, 42(5), 1871–1894. http://doi.org/10.1111/j.1475-6773.2006.00689.x

Trangle M, Gursky J, Haight R, Hardwig J, Hinnenkamp T, Kessler D, Mack N, Myszkowski M. (2016). Adult depression in primary care. *Institute for Clinical Systems Improvement (ICSI)*. https://www.icsi.org/wp-content/uploads/2019/01/Depr.pdf

UK Healthcare. (ND). Mission statement. https://ukhealthcare.uky.edu/about

USPSTF. (January 2016). Depression in adults: Screening. Retrieved from: https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/depression-in-adults-screening1?ds=1&s=depression

USPSTF. (February 2016). Depression in children and adolescents: Screening. Retrieved from: https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/depression-in-children-and-adolescents-screening1?ds=1&s=depression