Integrating Behavioral Health into Family Medicine: Improving Access to Specialty Care Using a Collaborative Care Model

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Integrating Behavioral Health into Family Medicine: Improving Access to Specialty Care for Medically Underserved Community Using a Collaborative Care Model

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Scholarly Project

May 5th, 2024

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Abstract

Primary care, an extensive of family medicine remains a key access point for patients entering the healthcare system. Accessing medical care and specialty psychiatric services is limited in rural communities. Patients often find exhaustive wait times, untimely referrals, and reliance on emergency services for crisis management. The primary care provider is able to help their community improve access to behavioral health care by using a collaborative approach. This quality improvement initiative used the framework produced by the AIMS Center at the University of Washington and adopted for use creating an 8-week intensive program in a family medical practice located in a medically underserved area in New Hampshire. This collaborative care model served nine participants. The results of this collaborative care model reflect the efficacy of using this integrated care models in primary care and support accessibility to specialty care. Participants reported improved symptoms of anxiety and depression and increased resiliency. Interventions optimized medical management for chronic health conditions including medication use and management, cognitive behavioral therapy and lifestyle modifications. Reported symptoms of depression, anxiety, and degree of resiliency to cope with stress by average score were tracked and used for analysis of patient outcomes. The results represent increased accessibility to specialty psychiatric care in less time than the national average, improved quality of life and psychological and medical stability.

Keywords: primary care, collaborative care, rural health, depression, anxiety, resilience
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Integrating Behavioral Health into Family Medicine: Improving Access to Specialty Care for Medically Underserved Community Using a Collaborative Care Model

Introduction

Problem Description

Primary care serves as the entry-point into the healthcare system for many patients and offers a wide variety of healthcare services including acute care, chronic disease management, preventative, and palliative care (AAFP, 2023). Behavioral health concerns are common conditions addressed by primary care providers (AAFP, 2021). The Center for Disease Control and Prevention (CDC)(2021) reports that 41% of all primary care visits involve addressing a behavioral health concern. The purpose of this quality improvement project is to integrate mental health services into primary care practice and evaluate their efficacy in meeting the needs of an underserved population.

There are community mental health centers in New Hampshire, designed to address behavioral health conditions and substance abuse disorders. Due to national and state-wide staff shortages and increased consumer demand, particularly following the COVID-19 pandemic, these services are strained and wait times for entry are lengthy. Family primary care providers are trusted and accessible to provide patient care and with an integrated care approach are capable of providing quality psychiatric care. With expert guidance provided by a psychiatric consultant and supported by a behavioral case manager, the primary care provider will be positioned to help this vulnerable population by using a collaborative care model for evaluation, assessment and treatment. Integrating behavioral health services into the primary care model has
been well-established to improve patient outcomes from a physical and psychological standpoint (Bailey, et al., 2019).

In rural areas in New Hampshire, access to specialty health care services is limited due to geographical constraints, provider shortages and economical influences. Populational health goals for New Hampshire of the Department of Health and Human Services (NHDHHS) (2022) include increasing access to primary care services in medically underserved areas and addressing the state-wide mental health crisis as the need for psychiatric care exceeds the current provider capacities. In New Hampshire, 92,510 people live in a community that does not have a mental health professional (NAMI, 2021). The family medical practice facilitating this quality improvement project will target the 17.1% (22 patients) of the current patient panel with clinical presentation for deteriorating mental health or on the waiting list for psychiatric consultation with outside professionals.

The national average waiting time for mental health services in 2021 was 40 days for adults and 35 days for children and adolescents (Yang et al., 2022). Locally, in Carroll County New Hampshire, there are two community mental health clinics with a reported average wait time of 21 days for access to licensed mental health provider and average of 11 weeks to see a practitioner (DHHS, 2023). Using a collaborative care model to integrate behavioral health services into the primary care setting will improve access to psychiatric care and is an evidence-based way to improve patient outcomes. Seeking specialty consultation by an expert offers the primary care provider advanced specialty knowledge and will translate into advanced clinical practice.

The collaborative care model (CoCM) originated in the early work of Wayne Katon and colleagues at the University of Washington and is “used with permission from the University of
In the 1990’s, Jurgen Unutzer, a Professor of Psychiatry and Behavioral Health Sciences at the University of Washington piloted the Improving Mood-Promoting Access to Collaborative Treatment (IMPACT) study, adding elements of the chronic care model in their design. The results demonstrated a 50% greater improvement in depression treatment outcomes in adults with significant patient and primary care satisfaction, reduction in overall healthcare costs and was aligned with the Institute of Health populational goals (IHI, 2008; Levine et al., 2005; Raney, 2015).

The behavioral health collaborative care model has consistently shown improved patient outcomes, increased access to mental health services and reduced health care costs in over 80 randomized controlled studies supporting its efficacy (AIMS, 2023; Reist et al., 2022). The CoCM team is centered around the patient and involves the primary care provider as the team leader, creating a behavioral health case manager position and contracting with a psychiatric consultant (Appendix A). The CoCM uses the team-based approach establishing evidence-based methods for intervention to provide effective behavioral health care for participants. Integrating behavioral health services into this family practice using the collaborative care model aligns with the organization’s mission statement of “Wakefield Family Medicine is committed to providing compassionate, accessible, patient-centered, quality family care for all ages” (2023).

Available Knowledge

A literature search was conducted using the University of New Hampshire library, database search of CINHAL and PubMed using keywords: primary care, mental health, collaborative care model, integration of behavioral health in primary care with Boolean terms: AND, OR. The collaborative care model as developed by the University of Washington: Advancing Integrated Mental Health Solutions Center has online support, education and
designated frameworks for successful integration (AIMS, 2023). Integrated medicine and the collaborative care model in behavioral health was adapted for use by the Substance Abuse and Mental Health Services Administrations (SAMHSA, 2019), the Agency for Healthcare Research and Quality Health Care Innovations (2020) and Dartmouth Hitchcock: Behavioral Health Integration into Adult Primary Care Model Guideline (2017).

Addressing psychiatric symptoms or behavioral health concerns was a component of 45% of all primary care visits in 2021 (AAFP, 2021; CDC, 2021). Highlighting the opportunity for family practitioners, American Academy of Family Physicians (2021) reports that up to 80% of people with mental health disorders will visit a primary care provider within one year. In 2017, the Substance Abuse and Mental Health Services Administration (SAMHSA) found that 1 in 5 adults in the U.S. had mental illness and only 43% receive services (Ahrnsbrak et al., 2017). In New Hampshire, people are three-times more likely to use out-of-network providers for psychiatric services which is significantly more expensive than affordable in-network primary care provider (NAMI, 2021). Several randomized controlled trials have demonstrated that successful integration of the collaborative care model has shown to improve access by delivering cost-effective services in the primary care setting (Kroenke & Unutzer, 2017; Reist et al., 2022).

Unaddressed behavioral health issues result in increased costs to the healthcare system through greater risk of chronic medical conditions, lost wages related to unmotivated workers and cost potential for productivity (Unutzer et al., 2013). Depression and other mental illnesses can be disabling and impact that person’s ability to function at a higher capacity due to poor stress management and frequent exacerbations of symptoms (Reist et al., 2022). Mental health disorders are the leading cause of disability worldwide (Goodrich et al., 2013; WHO, 2018). By improving mental health and physical health, translated into positive patient outcomes.
Americans have a 30% lifetime risk of depression; it’s estimated that 42% of those people will seek help and only 20% will receive it due to lack of access, excessive wait times and personal perceptions of mental illness (Staab et al., 2021; Unutzer, et al., 2023). The national average of patients diagnosed with depression is 41% in primary care and fewer than 15% are in remission (Goodrich et al., 2013; Baumeister & Hunter 2012; WHO, 2018). In 2020, the Substance Abuse and Mental Health Services Administration (SAMHSA) responded to this crisis with the introduction of integrating behavioral health with primary care resource centers.

In the largest randomized controlled trial focusing on depression by Cain (2007) reported that antidepressant therapy had similar patient outcomes for both primary care and psychiatric prescribers. Moreover, patients reported that they would prefer that their primary care provider prescribed (Keiu, 2021). There are many contributing factors and circumstances that lead to adverse mental health including social isolation, economic instability, genetic predisposition and/or exposure to trauma (Kieu, 2021). The CDC found that 41% of more than 5,000 surveyed in 2020 reported that their symptoms of anxiety and depression occurred during or continued from the COVID-19 pandemic (Czeisler et al., 2020).

In 2017, Medicare began making separate payments to providers who were supplying their patients with behavioral health services allowing billing procedures once per calendar month with adaptations in 2018 and 2021, in support of the psychiatric collaborative care model (CMS, 2021). This change in policy has given primary care providers an opportunity to work with psychiatrists in a collaborative effort to meet the evolving needs of the general population in cost-effective and efficient manner.

It is well-known that the mental health crisis has been a progressive wave over our nation for the past two decades. With the enactment of the U.S. Mental Health Parity and Addiction
Equity Act (MHPAEA) of 2008, the U.S. Patient Protection Act (2010) and the Affordable Care Act (2010), primary care providers can implement organizational change with a fiscal responsibility to better meet the mental health needs of our patients. Collaborative care models and practice reform reflect the innovations of healthcare systems, leaders, and stakeholders.

**Rationale**

The collaborative care model (CoCM) has been refined by the University of Washington as a method to address and treat common mental health disorders in the primary care setting. The Advancing Integrated Mental Health Solutions, University of Washington (2023) state that the providers that have specialty resources are more equipped to effectively treat patients and the patients are twice as likely to be seen in a timely manner (86 days vs. 614 days) using this model. This is a population-based health care strategy designed to identify, track, and monitor treatment progression to ensure that patient’s goals and clinical outcomes are met (AIMS, 2023). The CoCM is a team-based approach involving the primary care provider (PCP) and introducing a behavioral health case manager and psychiatric consultant for routine consultation, management and treatment recommendations (AIMS, 2023).

The collaborative care model has demonstrated efficacy and is an evidence-based model for integrating mental health services into primary care and improving patient outcomes (Reist, 2022) (see Appendix B for evidence-based components of the collaborative care model). Advanced practice nursing offers the patient and environment the perspective of whole-person care with competent, effective medical management (Reavy, 2016). Family nurse practitioners are positioned to gain advanced practice knowledge, promote interdisciplinary collaboration, using team-based leadership from this intervention. The behavioral health collaborative care
model is supported by a substantial body of evidence that demonstrates improved patient outcomes and increased access to psychological treatment services.

Chronic health conditions are common among patients with psychological illness and co-morbidities can contribute to mental illness (Goodrich et al., 2013). Patients often suffer from at least one co-morbidity, usually related to an unhealthy health behavior. An example of this is a patient suffering from chronic obstructive pulmonary disorder secondary to heavy tobacco use, related to an underlying substance abuse disorder- which is often associated with mental illness (Baumeister & Hutler, 2012; NIHM, 2021). Addressing the underlying mental health condition and consequential conditions of illness is an effective and strategic goal of the care team to improve the overall health of the individual, family, and community. The CoCM has been applied to more than 80 randomized controlled trials and results have supported the efficacy for patients and professionals when applied to multiple psychiatric conditions (Reist et al., 2022).

The Quadruple Aim sponsored by the American Psychological Association (2017) aims to achieve three interdependent goals: improve patient experience which will lead to better health, resulting in lower costs. This is based on a population-based framework with a focus on provider and patient satisfaction to reorient the healthcare system. The psychiatric CoCM is an evidenced-based model defined by the U.S. Community Preventative Services Task Force (2012) as a “multicomponent, healthcare system-level intervention that reorganizes the delivery of care so that care managers link PCPs more effectively with patient and consulting psychiatrists to improve evidence-based treatment of mental disorders”.

Escalating healthcare costs have prompted payers and healthcare providers to seek alternative methods for providing cost-effective, quality and accessible care. The medical costs for patients with chronic medical conditions and comorbid mental health disorders can be 2-3
times higher than those without (Levit et al., 2014; Melek, et al., 2014). Effective integration has the potential to save 26-48.3 billion in overall healthcare spending (Melek et al., 2014).

Depression is associated with a lower quality of life, chronic health conditions and higher mortality (Staab et al., 2021). Patients with depression are more likely to have medical co-morbidities including obesity, hypertension, COPD, hyperlipidemia, sleep disturbances, use of substances including tobacco and excessive alcohol use (Firth et al., 2019; Kieu, 2021). In 2019, the Lancet Psychiatry Commission reported that there is a link between physical health and mental health and the cardio-metabolic risk for those patients was up to two times higher.

Generalized anxiety disorder (GAD) is characterized by excessive worry, apprehensive expectation that are difficult to control and cause significant distress occurring more days than not for at least 6 months with associated symptoms of restlessness, fatigue, difficult concentrating, irritability, tension and sleep disturbances (APA, 2005; SAMHSA, 2016). Generalized anxiety disorders are among the most common mental illnesses diagnosed in primary care (Locke, Nell & Shultz, 2015). Primary care providers often rely on the use of generalized anxiety disorder scale (GAD-7) for identification of illness and monitoring associated symptoms. There are effective psychoactive drug regimens, cognitive behavioral therapy and psychotherapy treatment options for those affected and family medical practitioners in conjunction with a psychiatric consultant can help provide quality treatment.

Resiliency is the successful adaptation and swift recovery after experiencing life adversities, emotionally traumatic experiences, or significant sources of stress (APA, 2022). A dimension of mental health in the WHO’s definition of health explains that “health is a state of complete physical, mental and social well-being and not merely the absence of disease” (2002). Positive mental health approaches and resilience development are aligned with global health
initiatives. Resilience is built through positive influences and fostering a resilient climate (Bartley, 2006; Srivastava, 2011). Family practitioners can integrate the concept of resiliency and build on this emotional potential but addressing subjective well-being and perceived self-efficacy with use of the brief resiliency scale (Appendix I). According to Smith (2008) the brief resiliency scale is a reliable means of assessing resiliency or the ability to cope with life’s adversities.

**Evidence-Based Practice Model**

This quality improvement initiative is based on the theoretical framework of the Wagner’s Chronic Care Model (1996) that aims to transform the care of patients with chronic illness from a reactive approach to a proactive, population-based approach for the management and prevention of chronic illness (Wagner, 1996; Garland-Baird & Fraser, 2018). This framework recognizes that medical care should tend to the patient’s prioritized health concern which reflects the overreaching goal to address the underlying chronic health conditions. The three basic components of the CoCM model are based on the principles of population-based care, measurement-based care, and stepped-care (AIMS, 2023). Population-based care aims to use validated health screeners to identify targeted subgroups to initiate evidence-based interventions for designated health risks. Measurement-based care aims to facilitate the use and monitoring of validated screeners for early intervention and tracking progress through treatment. Stepped care aims to use a conceptual population health approach to improve health outcomes by designing intervention techniques based on the “5A Model” for application to specific patient problems (Hunter et al., 2017).

The 5A’s model developed by Whitlock, Orleans, Pender & Allen (2002) is a basic format that applies to any patient in a clinical setting by addressing the five component of: assess, advise, agree, assist, and arrange for assessment and intervention and is a patient-centered model
that helps integrate behavioral health into primary care and offers a personalized action plan (Hunter et al., 2017). The 5 A’s model of behavior change will be used for the evidence-based framework for guiding participants through the behavioral health intervention strategies. The 5 A’s model represents: assess, advise, agree, assist, and arrange used by the primary care provider in collaboration with the behavioral case manager and addresses specific tasks to define the nature of the problem.

This flexible patient-centered model produces personalized treatment plans, specific behavior change plans and is used by the entire healthcare team. The assess phase focuses on gathering relevant information on the problem and variables. The advise phase involves describing the options for intervention and expected outcomes. The agree phase gives patient’s the autonomy to choose their course of action. The assist phase involves learn new information, develop new skills, and participate in home-based therapies. The arrange phase is how the professionals: primary care provider, consulting psychiatrist and behavioral case manager will interview, intervene, and follow up with participant throughout the program (Hunter et al., 2017).

Specific Aims

The specific aim for this quality improvement project is to increase access to behavioral health services for established patients within a family medical practice located in a medically underserved community in New Hampshire. To increase accessibility to specialty psychiatric care, the primary care provider will perform initial and intermittent psychological, medical, and functional assessments that will be used for diagnosis and treatment planning. This individualized and specialized care plan will be executed and closely monitored by the primary care provider in conjunction with a psychiatric consultant.
Using a collaborative care model to integrate mental health services with primary care services will improve patient outcomes and address mental health disparities in our rural community. The initiative for this pilot program is a populational health strategy that focuses on general screening for mood disorders, identifying those affected, offering the team approach for treatment and continued monitoring (Reist et al., 2022). This pragmatic approach aims to integrate mental health services into the primary care setting as participants currently have an established relationship with the PCP. By maximizing interprofessional collaboration efforts between the primary care provider and a psychiatrist will increase the confidence of the family nurse practitioner in caring for this population.

The goals for this quality improvement project is to improve the psychological well-being of participants by improving their resiliency capabilities, reducing symptoms of depression and anxiety within the participant group in 8 weeks. Specific objectives for this initiative is to reduce symptoms of anxiety and depression in at least 50% of the participant group by 20% in 8 weeks and improve resiliency in 50% of the participant group by 15% by the end of the program. Performing comprehensive psychological, functional and physiological assessments will provide the foundation for creating an individualized treatment plan to meet these goals. Goals will be met by facilitating expert consultation with the mental health practitioner, ensuring close monitoring by the behavioral case manager and primary care provider will provide medical and counseling services. The CoCM is a team-based approach that offers support for the professionals, gives the patient additional resources, and will improve our relationships with specialists in our area.

This collaborative quality improvement project was conducted to determine if using interprofessional collaboration between the primary care provider and a psychiatric consultant,
with the help of a behavioral case manager will improve access to specialty care and result in improved patient outcomes. The team will create an initial Plan-Do-Study-Act (PDSA) cycle to gauge their level of improvement readiness and goal setting. This will be reviewed monthly to ensure adaptation and to make any adjustments as indicated (see Appendix C for the PDSA cycle). Through patient engagement and building on trusting relationships and this model increased patient participation in their health and assist in self-management of their illness.

**Methods**

The collaborative care model team consists of the primary care provider, a behavioral health case manager, a consulting psychiatrist, and the patient (see Appendix A). Measurement-based care can address treatment gaps, offer close monitoring for early detection of deterioration, and need for intervention (Reist et al., 2022). It also has implications for population-level health benefits with use of standardized tools for screening for mood disorders. There are limitations to this approach as it requires data collection, analysis and decision-making based on metrics; for the purpose of this proposal, the PHQ-9, GAD- 7 and BRS data will guide clinical practice. Implementation of CoCM requires practice change including interprofessional collaboration, billing procedures, population health objectives and motivational interviewing.

The practice setting for this quality improvement program is a rural family medical practice, Wakefield Family Medicine, located in Carroll County, New Hampshire. This area has been designated as a medically underserved area (MUA) (HRSA, 2022). Wakefield Family Medicine care team consists of one full-time family nurse practitioner, one half-time medical doctor, one medical assistant, and two office administrative assistants. The active patient caseload for the family nurse practitioner in 2023 was 2,309 (70.9%) of total patient panel of 3,253. Of this patient panel, 17.1% of patients have an active diagnosis of depression, anxiety,
bipolar disorder, PTSD, substance abuse disorder, insomnia or schizophrenia. 6.3% of patients are currently under the care of psychiatrist and 10.8% are awaiting specialty referral. Wakefield Family Medicine (WFM) is a private family medical practice serving Wakefield, New Hampshire and surrounding towns. In 2023, 38% of their overall patient census was diagnosed with generalized anxiety disorder (ICD-10 code: F41.1) and 18% were diagnosed with depression (ICD-10 code: F32.0-F33.3). This subpopulation is 69% female, between the ages of 14-64. Currently, 6% of patients with the above diagnosis codes attend routine psychiatric care and/or psychotherapy for behavioral health conditions. In 2022, WFM processed 210 specialty referrals for psychiatric services and 6% attended consultations, care or counseling. Limitations to accessing mental health services included insurance coverage and long wait times.

The target audience for this quality improvement project is the 10.8% (22 patients) awaiting specialty psychiatric referral and meet the criteria of being Medicare insured, commercially insured, residing in medically underserved area, requiring specialty behavioral health services and are currently an established patient at Wakefield Family Medicine.

This quality improvement pilot program had 9 participants. The stakeholders were the family nurse practitioner, behavioral case manager and psychiatric consultant. For educational purposes, a modification to this team will also include a practice mentor for clinical guidance in support of the primary care provider and behavioral case management. This role does not have direct interaction with the psychiatric consultant or participants however is available if indicated. This model will be financially supported by Wakefield Family Medicine, PLLC and this organization was responsible for all liabilities, billing and contracting. Participants were recruited without compensation and voluntarily signed their consent to participate. The behavioral health case manager and psychiatric consultant were monetarily compensated per patient case once
monthly and the primary care provider (FNP) will compensate by usual salary per organizational contracts. This proposal was submitted to the University of New Hampshire (UNH)- DNP committee for approval prior to interventional phase and the UNH Department of Nursing Quality Review committee determined that this project does not constitute additional review by the UNH Institutional Review Board for protection of human subjects (2023). Wakefield Family Medicine, PLLC determined it did not require IRB approval on their behalf and was designated as a quality improvement initiative.

Cost Benefit-Analysis

The CoCM model has an approved reimbursement schedule by Medicare, and it is expected that commercial payers will follow suit. The fee schedule is based on the 2019 Medicare Physician Fee Schedule, non-facility national payment amounts as published. The following cost-benefit analysis is based on a caseload of 9 participants. This model is a cost-effective strategy for primary care practices to integrate mental health services into their model (Goodrich et al., 2013). For this program to be implemented permanently integrated into the family medical practice would require an alignment of financial cost and benefits in consideration of employing a full-time behavioral case manager.

<table>
<thead>
<tr>
<th>Codes</th>
<th>Description</th>
<th>Payment Amount</th>
</tr>
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<tbody>
<tr>
<td>99492</td>
<td>Initial CoCM, paid for the first 70 minutes (30 minutes billing provider time)</td>
<td>$162.18</td>
</tr>
<tr>
<td>99493</td>
<td>Subsequent CoCM, paid monthly for the first 60 minutes (26 minutes billing provider time)</td>
<td>$129.38</td>
</tr>
<tr>
<td>99494</td>
<td>Each additional 30 minutes of care manager (13 minutes of billing provider time)</td>
<td>$67.03</td>
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</table>
### Monthly Cost

<p>| | | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Behavioral Health Case Manager</td>
<td>$20 per patient x 9 patients</td>
<td>$180</td>
</tr>
<tr>
<td>Psychiatric Consultant</td>
<td>$45 per patient x 9 patients</td>
<td>$405.00</td>
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### Monthly Revenue

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<tr>
<td>Initial Visit</td>
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<td>$1459.62</td>
</tr>
<tr>
<td>Subsequent Visit</td>
<td>$129.38 x 9 patients</td>
<td>$1164.42</td>
</tr>
<tr>
<td>Total Profit- Initial Visit</td>
<td>$1459.62 - $405 - $180</td>
<td>$847.62</td>
</tr>
<tr>
<td>Total Profit- Subsequent</td>
<td>$1164.42 - $405 - $180</td>
<td>$579.42</td>
</tr>
</tbody>
</table>

### Intervention

The psychiatric collaborative care model involves the primary care provider, a behavioral health manager and a psychiatric consultant. The primary care provider served as the team leader and was the billable provider throughout the program. Under CMS (2017) rule, primary care providers include physicians, nurse practitioners, physician assistants or certified nurse midwives. The role of the primary care provider was to identify patients, enroll them into the CoCM program, evaluate, and assess patients throughout the pilot program. Consenting participants met with their primary care provider for an initial consultation, and weekly for 8 weeks. The objectives of those visits were to gain a greater understanding of the patient’s condition with use of standardized screening tools for baseline and continued monitoring and to use motivational interviewing throughout the treatment process. In collaboration with the psychiatric consultant, their expert opinion was offered on diagnosis and treatment planning including medication management and use of therapies. This is a leadership role for the PCP and will require system-level redesign through organizational leadership, decision-making support and linking professionals for collaborative care (Goodrich et al., 2013). The behavioral health
case manager will be used as the primary communicator between the PCP, psychiatric consultant and participant. Participant data was collected, evaluated, and analyzed at week 1, week 4 and week 8 and post-intervention at week 10.

The psychiatric consultant was a private, licensed and board-certified psychiatric nurse practitioner and DNP additionally credentialed in substance abuse and contracted through Wakefield Family Medicine, PLLC. The psychiatric consultant was given the participant’s medical and mental health history with specific concerns that need to be addressed, summary of clinical presentation, screening tool scores and interpretation (see Appendix E for the psychological, functional, and medical assessment). The psychiatric consultant advised the primary care provider of recommendations using evidence-based knowledge. The psychiatric consultant typically does not meet directly with the participant. However, if a participant presented with continued regression or rapid deterioration, a prompt specialty referral for direct services was offered. The billing primary care provider has final decision-making and is responsible for prescribing privileges.

The behavioral health case manager for this quality improvement initiative was a medical doctor with extensive medical experience. The Center for Medicaid Services does not specify formal education or specialized training requirements for this position but does recommend a licensed social worker (CMS, 2021). The behavioral health case manager worked closely with the primary care provider and psychiatric consultant, facilitating communication between parties, provided biweekly counseling services, and forwarded updates, concerns and suggested modifications to the treatment plan appropriately.

In collaboration with the psychiatric consultant, the primary care provider will treat participants with psychoactive drug regimen and intensify chronic disease management with
medication use if indicated. Using the Behavioral Health Intervention (BHI) Toolkit developed by Hunter et al. (2017), complimentary interventions will be deployed based on the functional assessment analysis which will effectively address a wide variety of symptoms that impair functioning. Incorporating coping strategies including relaxation training, mindfulness, goal setting, motivational interviewing, problem solving, self-monitoring, behavioral analysis, stimulus control and assertive communication will help augment therapy for greater health outcomes. Each of these behavioral modification trainings were found to be effective and provided the foundation for decreasing barriers to change and increasing motivation for home-based practice (Hunter et al., 2017).

**Study of the Intervention**

The CoCM quality improvement project had nine participants. The participants were established patients at this family medical practice. Potential participants were contacted by telephone by their PCP office to discuss enrollment. Participants gave initial verbal consent for participation and written consent was obtained at the initial visit; participation was only allowed if explicit written consent was obtained. Participants met the criteria of being Medicare or commercially insured, previously diagnosed or presenting with behavioral health concerns, awaiting specialty referral for direct psychiatric care, residing in medically underserved areas. Participants were selected if they demonstrated suboptimal treatment outcomes, require greater diagnostics and or recently experienced recurrent acute exacerbations of underlying psychiatric conditions.

Participants provided written consent for participation in the program and were given explicit explanation of expectations, benefits, and schedule (see Appendix D). Participants provided written consent to disclose all private medical information to participating providers
and allowed for anonymous data collection by the case manager and PCP. Participants provided written consent for billing procedures which include copays and Medicare Part B benefits and other deductibles still applied. All participant’s identifying information was decoded for anonymity. All private, protected, or sensitive information including medical, psychiatric, substance use, and medication history was protected by censorship, EHR safeguards and manually de-identified prior to distribution. Private health records were maintained using a secure server through Wakefield Family Medicine and shared electronically through a HIPPA-compliant fax system or encrypted secure email. Participant records remain confidential with the primary care provider with use of the EMR system, Practice Fusion.

The CoCM model requires an initial 70-minute primary care office visit (case manager time spent included) which involves comprehensive assessment, reviewing their current state of health, screening scores, creating, and implementing recommendations after establishing baseline participant data. The behavioral case manager will be introduced at this time. An initial psychosocial evaluation will be collected from the participant that includes family history, eating and sleeping habits, substance use history, past and present mental and health history (Bailey, et al., 2019). The care plan will be created in collaboration with the behavioral health case manager, psychiatric consultant and primary care provider. Seeking expert knowledge in the areas and indications for diagnostics, pharmaceutical regimens, and cognitive behavioral therapy support.

At the initial consultation with the primary care provider, participants completed a PHQ-9 depression screening, GAD-7 anxiety screening, MDQ mood disorder screening, brief resilience score (BRS), the tobacco, alcohol, prescription medications and other substance (TAPS) tool-Part 1 for substance abuse screening, adverse childhood experience questionnaire for adults (ACES) for trauma screening and the PCL-5 to screen for post-traumatic stress disorder. The
primary care provider will discuss the results of these scores with the participant, record scores for all screening tools and will track the scores of the PHQ-9 depression screening, GAD-7 and resiliency scale at week 1, week 4, week 8 and week 10 (post- intervention) to monitor patient stability and measure outcomes.

The subsequent follow-up appointments with the primary care provider and psychiatric consultant occurred at week 4 and week 8 with intermittent communication to relay modifications and progress reporting as indicated. The collaborative care model for billing purposes requires a once-monthly 60-minute visit with the primary care provider. Participants were scheduled for biweekly counseling services with the primary care provider, in collaboration with the behavioral case manager. The goals for these in-office or telehealth visits were to use motivation interviewing techniques and review medication tolerance, adherence, reinforce education and address weekly content in the cognitive behavioral therapy workbook (see Appendix Q for areas of study). Data collected will be recorded on excel and using JMP for statistical analysis, data will be displayed by bar graphs and categorical data tables. At the close of the program, participants will return to routine primary care with modifications to the traditional model of care. If indicated, participants with progressive or worsening mental health will be referred to a psychiatric specialist and psychotherapist for direct care. Wakefield Family Medicine, PLLC facilitated these specialty referrals following the last in-office CoCM PCP visit for 3 participants.

**Measures**

Integrating behavioral health services into primary care follows the set of measures designed by the Institute for Healthcare Improvement (2021) to examine results by outcome measures, process measures and balancing measures. Quantitative measures of the validated
rating tools will be used to demonstrate participant participation and symptom evolution. Qualitative measures of psychiatric conditions, medical conditions, correlating co-morbidities and overall resiliency will be tracked, analyzed, and displayed to demonstrate participant outcomes.

The Patient Health Questionnaire (PHQ)-9 depression scale (see Appendix F for example) is a validated screening tool to detect depression and a meta-analysis conducted by Smithson & Pignone (2017) confirmed that this is the appropriate tool for primary care. This instrument is widely used in identifying, diagnosing, and determining severity of depression and will be used for ongoing assessment through progression of program (Ford et al., 2020). The PHQ-9 incorporates DSM-IV diagnostic criteria, this tool rates the frequency of symptoms, the presence and duration of suicidal ideation and assigns the weight to the degree to which depressive symptoms affect the patient’s level of functioning (Kroenke, Spitzer & Williams (2001).

The Generalized Anxiety Disorder (GAD)-7 screener (see Appendix H for example) is a validated screening tool for identifying and reporting symptoms of anxiety (Johnson, et al., 2019). This is a commonly used tool used in primary care. The Brief Resiliency Scale (BRS) (see Appendix I for example) developed by Smith et al. (2008) will be used to track participants’ perception of their ability to recover from setbacks. The PCL-5 was developed by Weathers et al. (2013) used by the National Center for PTSD (2018) that uses a twenty-question review of symptoms related to post-traumatic stress disorder (see Appendix J for example). The tobacco, alcohol, prescription medications, and other substance (TAPS) tool, Part 1, will be used to evaluate substance use and was adapted by the National Institutes of Health (2017) (see Appendix K for example). The mood disorder questionnaire (MDQ) is used to determine if
symptoms of bipolar disorder are present and provides initial screening for this disorder (Hirschfeld et al., 2000) (see Appendix L for example).

Relevant social history including family dynamics and lifestyle were discussed. This is an important aspect to understanding the participant’s environment and identifying influencing factors. The total number of participants that started the program and continued to participate throughout the 8-week program was collected. The scope of psychological disorders seen in this participant group was defined and correlated with medical co-morbidities and is displayed on Table 4.

Analysis

Baseline participant characteristics including sex, age, race, education level and location were collected and are displayed on Table 2 to reflect details of participant group. A compilation of the psychiatric diagnosis list was recorded and displayed in a categorical table. This represents the morbidity rate and occurrence rate of psychiatric illness within this cohort. A compilation of medical co-morbidities including obesity, prediabetes, essential hypertension, seizure disorders was recorded and displayed on categorical table. Correlation studies were used to analyze the correlation between psychiatric illness and medical co-morbidities. Statistical descriptions of the PHQ 9, GAD- 7 and resiliency scale were used for continuous monitoring the process. This demonstrated improvement in psychological symptoms with the interventional techniques implemented in this quality improvement initiative. Analysis of the interventional techniques used was conducted to display and correlate psychological diagnosis with chosen therapeutic interventions.
The outcomes of this quality improvement project are to increase access to mental health services for patients residing in a rural area. The intervention of using an integrated care with a family medical practitioner and a psychiatric consultant created a plan for behavioral modification therapy and improved the participant’s reported symptoms of depression and anxiety. The study of this intervention demonstrated positive patient outcomes, enhanced interdisciplinary collaboration, provider confidence and patient-participant psychological stability. Collaborative care models have demonstrated efficacy in clinical practice and have improved primary care provider confidence in managing psychiatric conditions, effective communication, and experience in cognitive behavioral therapy techniques. Using the CoCM can lead to better clinical outcomes, greater patient and provider satisfaction and reduce health care costs (AIMS, 2023).

**Ethical Considerations**

Integrated primary care behavioral health services is a recent innovation for the healthcare system and organizations alike. There can be limitations to the guidance provided by ethical boards as circumstances and content that uniquely applies to integrated health require special attention. Given the different professional and ethical backgrounds of the involved healthcare professionals, expectations and culture-of-standards should be addressed. There are limited studies to address the ethical issues involved in integrated care model (Hunter et al., 2017). Considerations for the healthcare team to address include recognizing racial and ethnic disparities that are contributing factors, agreement to provide high quality, safe, compassionate collaborative care and use evidence-based knowledge to help this vulnerable population.

Confidentiality, HIPPA and privacy standards apply and there will be a HIPPA and confidentiality, non-disclosure agreement made between Wakefield Family Medicine, PLLC, the
organization and the primary care provider and psychiatric consultant. Transmitting and sharing sensitive health information through secured networks, encrypted email and private telephone conferencing is adequate for maintaining HIPPA compliance (Vemuri & Dunn, 2017). Integrated behavioral health care affects the patient’s experience and there is a difference in professional expectations between providers and patients (Gibb et al., 2021). Aligning the expectations among the participants and healthcare providers is essential for building relationships and making a meaningful impact.

Results

In the recruitment period of this quality improvement program, 14 participants met the eligibility criteria and consented to participation (Table 1). Participant demographics of age, sex, race, highest level of education and location are sorted by designation, distribution, range, average and relevance (Table 2). The program had a dropout rate of 4 participants in the first week and a total of 9 participants completed the 8-week collaborative care program. Dropout rates were contributed to apprehension of change, transportation and medical decompensation leading to hospitalization.

Table 1

*Eligibility, Enrollment and Participation*

<table>
<thead>
<tr>
<th>Eligible- Met Criteria</th>
<th>Enrolled- Written Consent Received</th>
<th>Drop-Out Number</th>
<th>Total Participates</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>14</td>
<td>4</td>
<td>9</td>
</tr>
</tbody>
</table>
In the evolution of this study, the family practitioner made modifications based on specific areas of concern and based individualized care plans on clinical presentation (see Table 3 for interventional evolution of study). Based on the initial psychological and medical assessment, specialty referrals were processed to address chronic illness that contributed to mental health including pain management and neurology. A modification to the initial consultation included using the ACES screening tool and acknowledging the significance of childhood trauma on adult mental health. An additional safety screening for suicide awareness and including a suicide prevention plan with professional training was another modification to this initiative with clinical implications.

Table 3

**Behavioral Health Occurrence Rates from Participant Group**
### Table 4

**Interventional Evolution of Study**

<table>
<thead>
<tr>
<th>Dated Week</th>
<th>Activity</th>
<th>Objective</th>
<th>Intervention</th>
<th>Modifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1: 12/01/23-12/08/23</td>
<td>Medical and Psychiatric History and Physical-Initial CoCM Visit</td>
<td>Eligibility, Enrollment, Written Consent, Initial Screenings, Participant Demographics, Addressing co-morbidities, Baseline lab studies.</td>
<td>Assessment and Evaluation</td>
<td>Addressed individualized treatment goal setting. Initiated specialty referrals.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>Each participant was seen by PCP for 70-minute initial consultation and complete H&amp;P. Introduction to case management.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Initial Consultation Dates: 12/05-12/09/23</strong></td>
<td>Specialty Consultation</td>
<td>Discuss clinical presentation, symptomology, medical and psychiatric H&amp;P, discuss initial treatment planning including use of medications.</td>
<td>Evaluation, Treatment Planning, Care Coordination</td>
<td>Added ACES Screening Tool</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>PCP and consulting psychiatrist met for 20-30 minutes per participate consultation by secure, HIPPA compliant email and in-person. Evaluation and diagnosis defined and interpreted screening tools. Clinical impression and DSM-5-TR manual referenced for diagnosis. Initial treatment plan including psychiatric medication use established and PCP implemented.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 2: 12/08-12/15/23</td>
<td>Treatment and Care Planning</td>
<td>Development and Implementation of Medical and Behavioral Health Care Plan</td>
<td>Psychiatric Treatment Planning Personal Action Plan: Assess, Advice, Arrange, Agree, Assist and Arrange</td>
<td>Created medical treatment plan than aligned with physical needs and personal goals.</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>Each participate was seen by PCP for treatment planning and initiated use of therapies including diagnosis, individualized medical treatment plan for addressing co-morbidities, interpretation of screening tools and lab results, initiated use of psychiatric medications, initiated use of 7-week cognitive behavioral therapy workbook, addressed lifestyle modifications for nutrition, exercise and sleep hygiene.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week</td>
<td>Dates</td>
<td>Type</td>
<td>Services and Procedures</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-------</td>
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</tr>
<tr>
<td>Week 3: 12/15-12/22/23</td>
<td>In-Office and Virtual Counseling Session with PCP and BH Case Manager</td>
<td>Behavioral Health Counseling</td>
<td>Continuity of Care, Patient Education and Reinforcement Personal Action Plan: Advise and Assist</td>
<td>Created personalized weekly goals with step-by-step instructions for success, follow up appointments scheduled with reminders.</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>Discussed strategies to change health behaviors, reviewed medication tolerance, efficacy, provide reinforcement of CBT workbook, review weekly planning for nutrition, exercise and sleep hygiene, goal setting.</td>
<td></td>
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</tr>
<tr>
<td>Week 4: 12/22-01/02/24</td>
<td>PCP- In Office Visit Subsequent Month CoCM Visit</td>
<td>Review and track progress of treatment efficacy, collecting symptomology data, completion of clinical notes on participant progress and address persistent needs.</td>
<td>Assess</td>
<td>Primary care evaluation for medical stability. Psychological evaluation of current state and medication use.</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>Each participant was seen for a subsequent 60 minute in office visit with primary care provider. Medication adherence, tolerance and efficacy was reviewed, discussed strategies for optimizing results and symptom relief. Addressed adjunct therapy progression in self-driven cognitive behavioral therapy, nutrition, exercise, and sleep hygiene. Repeated PHQ-9, GAD-7 and BRS validated screening tools were administered and collected.</td>
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</tr>
<tr>
<td>Subsequent Consultation Dates: 12/28/23-01/02/24</td>
<td>Collaborative Care Visit with PCP and Consulting Psychiatrist</td>
<td>Reviewed and discussed participant clinical presentation, reported symptoms, tolerance, and efficacy of medications. Collaborative decision making on adjustments to therapy.</td>
<td>Advise</td>
<td>Medication therapy. Incremental adjustments to dosages made as indicated.</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>Specialty consultation with consulting psychiatrist via secured email on week 4 progress and participant state of well-being. Collaborative decision making on adjustments to therapy and scheduled PCP follow up with participant to review.</td>
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</tr>
<tr>
<td>Week 5: 01/03-1/12/24</td>
<td>In-Office OR Virtual Counseling Session with PCP</td>
<td>Provide case management and counseling services.</td>
<td>Agree, Assist, Arrange</td>
<td>Added use of telehealth services due inclement weather</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>Each participant was seen by primary care provider for 30-minute visit to review tolerance and efficacy of medications, reinforcement for CBT workbook, lifestyle modifications and strategies to reach previously established goals.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Week 6: 01/12-01/19/24</td>
<td>In-Office and Virtual Counseling Session with PCP</td>
<td>Provide case management and counseling services.</td>
<td>Agree, Assist, Arrange</td>
<td>Added use of telehealth services due to participant illness</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>Each participant was seen by primary care provider for 30-minute visit to review tolerance and efficacy of medications, reinforcement for CBT workbook, lifestyle modifications and strategies to reach previously established goals.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week 7: 01/19-01/26/24</td>
<td>In-Office Counseling Session with PCP</td>
<td>Reviewed end goals</td>
<td>Assess, Arrange</td>
<td>Started specialty referral process for continuity of care as indicated.</td>
</tr>
<tr>
<td>------------------------</td>
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<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>Each participant was seen by primary care provider for 30-minute visit to review tolerance and efficacy of medications, reinforcement for CBT workbook, lifestyle modifications and strategies to reach previously established goals. Discussed and created “hand-off” plan for those seeking specialty referral following the end of the program for continuity of care.</td>
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</tr>
<tr>
<td>Week 8: 01/26-02/09/24</td>
<td>In-Office PCP Visit Final CoCM Visit</td>
<td>Final data collection of screening tools, continuity of care, patient satisfaction</td>
<td>Assess, Advise, Agree, Assist, Arrange</td>
<td>Added patient satisfaction discussion and memorialized accomplishment for completing program with token of appreciation.</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>Final assessment for each participant, 60 min. PCP in office visit. Made collaborative agreement for psychiatric nurse practitioner to continue care and referred patients to counseling and therapy as indicated. A follow up plan and treatment goal setting was created for each participant for 1-mon, 3-mon and 6-mon for continued care in the primary care setting.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final Consultation Dates: 01/29-02/12-2024</td>
<td>Final Collaborative Care Visit with PCP and Consulting Psychiatrist Subsequent month CoCM Visit</td>
<td>Summarized participant medical and psychological presentation, current state of health, medication use, goals for optimization and developed follow up plan.</td>
<td>Advise</td>
<td>Added a 2-week telehealth visit to each participant’s follow up plan to review the impression and discuss any changes following the consultation. Administered post-programming PHQ-9, GAD-7 and BRS screening tools to track progress.</td>
</tr>
<tr>
<td><strong>Summary</strong></td>
<td>Specialty consultation with consulting psychiatrist via secured email on week 8 progress and participant state of well-being, treatment goals and anticipatory care. Collaborative decision making for specialty referrals.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follow Up in Primary Care Setting</td>
<td>Following the final CoCM visit, each participant was given a 2-week telehealth visit, 1 month and 3 month in-office visit with primary care provider for continued care. Specialty referrals to counseling, therapy and psychiatry were processed for 55% of the participant group.</td>
<td></td>
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</tbody>
</table>

**Process Measures and Outcomes**

The specific aim for this quality improvement initiative study was to use a populational health strategy to increase access to specialty psychiatric care by using the collaborative care model for those residing in a medically underserved area. The main objectives for this program
were to decrease symptoms of depression and anxiety and improve overall resiliency capabilities in response to stress. The location of this study was a family medical practice located in a medically underserved area in Wakefield, New Hampshire. At the start of this quality improvement project, 22 currently established patients at this practice were awaiting referral to psychiatric services. Of this group, 2 patients had confirmed appointments from a prior referral and 4 were ineligible for the program as they were under the age of 18. All 16 eligible participants were offered enrollment and 14 total participants initially enrolled with written consent to join the program. There was a drop-out rate of 4 participants. This program served 9 total participants as displayed on Table 1.

Integrating behavioral health services into the primary care setting increased access to specialty care for this family medical practice. The average wait time for an eligible adult to see a healthcare provider with prescriptive authority and behavioral case manager was 6.9 days from initial request. There were 83 total in-office or telehealth patient encounters and 27 total specialty consultations performed during the program.

The objectives for this collaborative care program were to improve the mental wellbeing and psychological stability of the participants and specifically to improve depression symptoms in 50% of the cohort group by 20% by the end of the program, using the PHQ-9 validated screening tool to monitor depression symptoms at baseline and every 4 weeks, adding one 2-week post-program analysis. The data for this measure was applied to a bar chart to show the average reported depression symptoms and progression over a total of 10-week period. 88.8% of the participant group reported improved symptoms of depression, exceeding the goal of 50%. On average, depressive symptoms were reduced by 46.1%, exceeding the goal of 20% improvement in 8 weeks by 26.1% (Table 5). Key areas of the improvement in self-reported depression
symptoms based the PHQ-9 tool were (over the last 2 weeks, how often have you been bothered by any of the following problems?) Question 1: “little interest or pleasure in doing things” and Question 3: “trouble falling asleep, staying asleep or sleeping too much” (Spitzer, Williams & Kroenke, 2001). See Appendix G for scoring and interpretation of the PHQ-9 questionnaire. Statistical description of the data for PHQ-9 scores are displayed on Table 6 and inferential analysis of a paired T-test was used for pre- and post- intervention comparison.

Another objective for this collaborative care quality improvement initiative was to improve the symptoms of anxiety and specifically to reduce anxiety symptoms in 50% of the participant group by 20% by the end of the program. Study results revealed 88.8% of the participant group reported improved symptoms of anxiety by an average of 35.9%, exceeding the goal of 20% improvement in 8 weeks by 15.9% (Table 9). Data tracking used the GAD-7 validated screening tool to monitor anxiety symptoms at baseline and monthly, adding one 2-week post-program assessment. The data for this measure was applied to an average bar chart to show the average reported anxiety symptoms and progression over a total of 10-week period. Inferential statistics procedure was applied to the PHQ-9 scores, GAD-7 scores, and BRS scores to draw conclusions about the population and measure the before and after results. Key findings of improvement from the GAD-7 self-reported symptomology were (over the last two weeks, how often have you been bothered by the following problems?) Question 1: “feeling nervous, anxious or on edge” and Question 6: “becoming easily annoyed or irritable” (Spitzer et al., 1999).

Following psychological evaluation, 66.6% of the participant group met the diagnostic criteria from the DSM-5, ICD-10 code: F41.0 for generalized anxiety disorder. Generalized
anxiety disorder was the highest occurring psychiatric disorder affecting the participant group, 100% of participants reported mild to severe symptoms of anxiety.

Table 5

*Average Patient Health Questionnaire (PHQ-9) Progressive Analysis*

![Average PHQ-9 Depression Scores](image1)

Table 6

*Paired T Test – PHQ-9 Scores Pre and Post Intervention*

![Paired T Test](image2)
Table 7

*Average Generalized Anxiety Disorder Screener (GAD-7) Progressive Analysis*

![Graph showing average GAD-7 anxiety scores over weeks: Week 1 (12), Week 4 (10), Week 8 (8), Post-Program (6).](image)

Table 8

*Paired T Test - GAD-7 Scores Pre and Post Intervention*

![Graph showing difference in GAD-7 scores pre and post intervention with statistical details: t = 2.7027, df = 8, p = 0.0270.](image)

*Mean Difference: -5.5556, Std Error: 2.05556, Upper 95%: -0.8154, Lower 95%: -10.296, Correlation: 0.63203.*
An overarching goal for this collaborative care quality improvement initiative was to improve the psychological wellbeing of participants by improving their coping abilities, degree of resilience to stress, specifically aimed to improve resiliency in 50% of the cohort group by 15% in the 8-week timeframe. The results of this study revealed that the average reported resiliency was increased by 7.2% in 66.6% of the group. The results failed to meet the expectations of a 15% increase in resiliency, however greater than 50% of the participant group did report improvement. Key findings of improvement based on the brief resiliency scale were seen in Question 5: “I usually come through difficult times with little trouble”; 44.4% agreed with this statement by the end of the program. Strategies were discussed for coping and stress management and participants shared responsibility for longitudinal resiliency with self-management and motivation.

Table 9

*Average Brief Resiliency Scale (BRS) Progressive Analysis*
Table 10

**Paired T Test- BRS Scores Pre and Post Intervention**

![Paired T Test Chart]

Table 11

**Co-Morbidities: Chronic Medical Conditions**

<table>
<thead>
<tr>
<th>Chronic Medical Condition</th>
<th>Gastroesophageal Reflux</th>
<th>Hyperlipidemia</th>
<th>Hypertension</th>
<th>Hypothyroidism</th>
<th>Migraine Headache</th>
<th>Obesity</th>
<th>Prediabetes</th>
<th>Seizure Disorder</th>
<th>Substance Use Disorder</th>
<th>Type 2 Diabetes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic Pain Syndrome</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>9.7%</td>
<td>9.7%</td>
<td>16.1%</td>
<td>9.7%</td>
<td>3.2%</td>
<td>9.7%</td>
<td>22.6%</td>
<td>3.2%</td>
<td>3.2%</td>
<td>9.7%</td>
</tr>
</tbody>
</table>

There was a correlation between obesity and mental illness in this case study. Based on initial medical exam results at week 1, 44.4% were obese (BMI 30 and above), 22.2% were overweight (BMI 25-29.9) and 22.2% were normal (BMI 18.5-24.9) (CDC, 2024). From the initial medical exam in week 1, the average BMI was 33.34 and following the intervention, on repeat exam at week 8, the average BMI was 29.2 (Table 12). 100% of the participant group
experienced weight loss with an average weight loss of 7.4 lbs. among the participant group after the intervention.

Chronic disease management with medical optimization of care using current practice guidelines were sought and implemented. Clinical guidelines and target health goals with specific criteria were used including medication indications and need for specialty care. Medical conditions that were targeted are displayed on Table 11. The American Diabetes Association 2023 Standards of Care provided provider support for prevention, patient education and clinical guidelines for medication use in treatment of prediabetes and type 2 diabetes (ADA, 2023). The participants in this group with an elevated HbA1c (greater than the normal value 5.7%) diagnosed with prediabetes (HbA1c value 5.7%-6.4%) and type 2 diabetic (HbA1c value >6.4%) experienced an overall reduction in Hba1c by 1.9% (Table 13).

Participants were asked to identify three goals (aside from our mutual goals of improved access, depression, anxiety symptoms and overall resiliency) that they would like to accomplish with this program. The three most common answers were weight loss, improved sleep and starting an exercise regimen. Based on these collective responses, interventions based on nutrition, exercise and sleep hygiene were generated. BMI measurements were used for pre and post intervention analysis. Due to the high occurrence rate of obesity in this participant group, intensive counseling was provided with emphasis on healthy dietary habits and exercise, reduced alcohol intake and sleep hygiene (see Appendices N, O, R).
Table 12

*Average BMI Value Pre and Post Intervention*

![Average BMI Value Pre and Post Intervention](image)

Table 13

*Average Hemoglobin A1c % Value Pre and Post Intervention*

![Average HbA1c % Value Pre and Post Intervention](image)
Contextual Elements

Contextual elements that affected the intervention or health outcomes are displayed on Appendix O. Cognitive behavioral therapy (CBT) is a short-term focused treatment with strong empirical evidence with multiple randomized controlled studies that supports use. CBT aims to help the patient develop awareness and change the way patients think about their life experiences. CBT is a recommended critical component of treatment for mental illness and can complement medication therapy, or be used without medication, both methods have proven positive patient outcomes (CIMH, 2022). The primary care provider has developed a trusting relationship with their patient and this relationship sets the foundation for integrating this treatment approach. At the initial consultation with participant and primary care provider, participants were given a clear treatment plan, established autonomy, illness objectives and structured treatment plan with weekly self-driven CBT therapy homework. The CBT workbook was kept private however the weekly chapter aims, strategies and reflections were discussed in counseling sessions with the primary care provider.

Contextual conditions that influence healthcare improvement involve integrating theoretical understanding and stakeholder input with empirical research findings. Research was conducted aimed to identify and understand the role of the context during the improvement planning, implementation, sustainability, and transferability phases to distil new knowledge to the design and development of future collaborative care models. Using a stepwise approach to assessing and reporting relevant context, identifying contextual factors based on theory, local history and the perspectives of multiple stakeholders at the beginning of the project. Collecting and analyzing contextual data at multiple time points during the study including reporting relevant contextual factors and how they affected important processes and outcomes (AHRQ,
Contextual elements that affected the intervention of this project are displayed on Table 14.

Cognitive behavioral therapy is a pragmatic and problem-solution oriented approach to treating behavioral health conditions based on the information processing model and learning therapy (SPRC, 2022). A key component of CBT is individual case formulation as this functional assessment synthesizes the patient’s biopsychosocial history and explains current symptoms, accounting for perpetuating and protective factors that influence how one person’s thinks and perceives their experiences (SPRC, 2022). In this quality improvement initiative, participants were given a copy of “Retrain your brain: Cognitive Behavioral Therapy in 7 Weeks” by Dr. Seth Gillihan and assigned one chapter per week during the program. The treatment modalities that were used for this quality improvement project were categorized as cognitive restructuring, behavioral activation, exposure, contingency management, stimulus control, skill deficit remediation and psychoeducation.

A large-scale comparative cohort study of safety planning interventions coupled with structured follow up reduced the risk of suicidal behavior by 50% and increased the odds of treatment engagement (Brown, et al., 2018). Suicide prevention and treatment planning start with screening for suicide. All participants were given the PHQ-9 validated depression screening tool on 4 different occasions which offered an opportunity for the care team to assess the risk of suicide among the participant group. The PHQ 9 depression screener incorporates the DSV-IV diagnostic criteria for depression and the presence and duration of suicide ideation. Based on continuous patient monitoring using validated tools, 3 participants were identified as at risk for suicide by self-reporting that they had “thoughts that you would be better off dead or of hurting yourself in some way” (Table 15) which triggered an action plan (see Appendix P).
Table 14

Contextual Elements

Contextual Elements Affecting Health Outcomes

Health Outcomes

- Psychological Stability and Mental Wellbeing
  - Cognitive Behavioral Therapy
  - Psychoactive Drug Use

Health Factors

- Chronic Medical Conditions
  - Medical Management

- Psychiatric Illness
  - Severity of Illness, Diagnosis, Treatment
  - Medical Diagnosis, Treatment

- Clinical Care
  - Evidence-based Care Models

- Quality of Care
  - Nutrition, Exercise, Sleep, Substance Use

- Physical Factors

Environmental Factors

- Social and Economic Influences
  - Housing, Income, Disability
  - Family and friends, community, and spiritual resources

- Support

Behavioral Health

- Willingness to change
  - Positive psychology

- Participation and self-management
  - Self-efficacy, perseverance
Chronic sleep disorders including insomnia can reduce life expectancy and increase risk of cardiovascular events, compromised immunity, obesity and can also be a symptom of other psychiatric disorders such as depression and anxiety (AASM, 2022). Understanding the precipitating and influencing factors contributing to poor sleep is the essential first step in improving sleep. As recommended by the American Academy of Sleep Hygiene (2022) sleep issues were addressed during the intervention with cognitive behavioral therapy, sleep hygiene modifications (see Appendix N), use of medications if indicated and mindfulness-based interventions.

Sleep disorders and disturbed sleep patterns are commonly seen in patients with psychiatric illnesses and must be present as a somatic symptom to meet DSM-5 diagnostic criteria for depression (Tolentino & Schmidt, 2018). Insomnia or sleep disorders can present as a symptom or contributing factor in the severity of disease (Chopra & Winkleman, 2023). Sleep
disorders are a complex issue for many patients and disturbed sleep negatively affects the disease burden and impairs quality of life and increases the risk of suicide among this population (Chopra & Winkleman, 2023). Chronic sleep issues and mental health are linked, poor sleep contributes to the onset, recurrence, and maintenance of mental health disorders (Scott et al., 2021). Additional assessment for sleep-related disorders such as obstructive sleep apnea was performed, and testing was ordered by the primary care provider if indicated.

The American Psychological Association (2017) expresses the importance of using evidenced-based interventions in conjunction with standard practice guidelines in the treatment of mental health-related issues. The overreaching goal to improve symptoms of anxiety and depression and functional improvements were affected by chosen intervention based on empirical evidence and their compatibility with integrating behavioral health into primary care and the self-management model of care (Hunter et al., 2017; Zhang et al., 2021). The 5 A’s framework was used for treatment planning and chosen interventions were developed based on clinical presentation, symptomology, and medical co-morbid conditions (Hunter et al., 2017).

Table 16

**Unexpected Cost Analysis**

<table>
<thead>
<tr>
<th>Unexpected Cost</th>
<th>Total Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mediterranean Cookbook and Nutritional Guide</td>
<td>$80.91</td>
</tr>
<tr>
<td>Cognitive Behavioral Workbook</td>
<td>$169.99</td>
</tr>
<tr>
<td>Paper products and Printed Materials</td>
<td>$36.99</td>
</tr>
<tr>
<td>Postage and Mailers</td>
<td>$21.33</td>
</tr>
<tr>
<td>Total</td>
<td>$309.22</td>
</tr>
</tbody>
</table>
Discussion

Summary

This program was aimed to increase access to specialty care using a collaborative care model and transform a primary care practice into an integrated healthcare provider. The integrated care model demonstrated significant benefits for the healthcare professionals and stakeholders with interprofessional relationships and participants had improved emotional and physical health. The innovative and revolutionary concept of integration has been influential in recent changes to traditional models of care. This quality improvement initiative was productive in improving patient access, accentuating use of evidenced-based practices and supporting elaborate interventions.

Limitations

A contextual limitation for this quality improvement initiative was the need for a participant registry for data tracking and monitoring. The University of Washington AIMS Center (2023) has developed a caseload tracker for continuous patient monitoring and in reflection, this would have been a useful tool. Due to the cost of use the funding organization used convention means for collecting, tracking, and analyzing scores. For future integration and for higher participant volumes, a data tracker should be incorporated into the cost-benefit analysis. The role of the behavioral case manager was another limitation for this program. The role of the behavioral case manager would be best suited for a trained mental health professional such as a licensed social worker. The role and responsibilities of the behavioral case manager were undertaken by the primary care provider and practice mentor for quality and control purposes.
Integrated primary care and use of the collaborative care model require adjustments to the
typical conventional model of psychological assessment and the structured primary care visit
requiring specialized training for healthcare professionals. The primary care provider
participating in this initiative did complete 1 AMA: Collaborative Care for Primary Care
Providers and 1 AMA: Suicide Safer Care with the American Psychiatric Association for training
(2024). Incorporation of specialized training should be sought by all healthcare professionals
using an integrated healthcare approach.

There were generalizable limitations in data collection with a small sample size and
limited data points in measuring depression, anxiety and resilience symptoms based on use of the
validated screening tools. In future studies, data reporting should be conducted at more frequent
intervals over a longer period for accurate predictions.

Conclusions

The integration of behavioral health services into this family medical practice was an
effective measure for increasing access to specialty care with the use of the collaborative care
model. Participants had access to behavioral health services in less than 14 days. Implementation
of integrated health care has societal benefits and longitudinal cost reduction for the healthcare
system (Hine, Howell & Yonkers, 2008). The interventions of psychoactive drug use, chronic
disease management with adjunct therapies focused on cognitive behavioral therapy, nutrition,
exercise and sleep hygiene improved participant’s reported symptoms of depression and anxiety
and increased their self-reported resilience to future adverse life events. Primary care providers
are poised to provide accessible and quality treatments for a variety of mental health conditions.
The implications for practice from this quality improvement initiative were increased use of mood disorders screening tools for diagnosis and treatment planning and enhanced awareness for suicide prevention. Suicide prevention involves screening, assessment, risk formulation and prevention plans and the family medical practice is a key location for implementation. Provider confidence in medication and disease management improved through this experience and continued interprofessional relationships were established.

Integrated care models support family practitioners in seeking advanced training and improved confidence in assessing, treating, and counseling patients with mental illness. Using this comprehensive approach creates a synergistic relationship among primary care providers, psychiatric consultants, and patients by working as a team to improve the quality of their lives. Introducing specialty care services into family medicine provides a unique opportunity for patients to access comprehensive and coordinated health care that addresses the psychological conditions and physiological conditions to promote whole-person wellness.

Other Information

Funding

Wakefield Family Medicine, PLLC was the source of funding for this quality improvement initiative. This organization was responsible for consulting fees, professional liabilities, office use, scheduling software, EMR, data tracking software and electronic communications throughout the program. Wakefield Family Medicine is the employer of the primary care provider and contractual entity with the agreement with the psychiatric consultant. This organization did not have a role in the design, interpretation or reporting features of the collaborative care program.
References


American Psychological Association (2017). The quadruple aim: The value of psychological
services in healthcare. Retrieved from: The quadruple aim: The value of psychological services in health care (apa.org)


Dartmouth Hitchcock Knowledge Map (2017). *Behavioral health integration into adult primary care model guideline*. Retrieved from: [Behavioral Health Integration into Adult Primary Care Model Guideline](dartmouth-hitchcock.org)


Hirschfeld, R., Williams, J., Spitzer, R., et al. (2000). Development and validation of a screening


Kroenke, Spitzer & Williams (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16(9), 606-6013.


Appendix A: Collaborative Care Model Communication

How the Psychiatric Collaborative Model Works

Primary Care Provider

Behavioral Health Care Manager

Patient

Psychiatric Consultant

Registry

Frequent Contact ↔ Infrequent Contact ←--→


Retrieved from: AIMS Center | Advancing Integrated Mental Health Solutions in Integrated Care (uw.edu)
Appendix B: Main Components of the Collaborative Care Model

Federal, State, Licensing Participation with CMS

Organizational Support
PCP participation, leadership, staff training, investment, coordination, financial and performance tracking

Healthcare Delivery Redesign
Team-based Approach Case Management

Clinical Information System
Data Tracking-EHR

Links to CoCM Team and Community Resources

Providers
Decision Support
Psychiatric Consultant

Patients
Self-Management
Active participation
Appendix C: Plan-Do-Study-Act Cycle- Phase 1

**ACT**
- Understand barriers to patient care, assessment, communication and adjust for success.
- Describe modifications that are needed to improve team-based approach.
- Create and implement a personal treatment plan with each participant and continue to monitor and track progress using evidence-based rating tools, motivational interviewing and aspects of cognitive behavioral therapy to improve overall resiliency.

**PLAN: Phase 1**
- Observation: Access to psychiatric services in rural areas is limited. Many patients present to their primary care provider to address mental health concerns.
- The PCP is reliable, accessible, and capable of conducting a patient assessment for psychological disorders.
- 8 week Pilot Program to Integrate Behavioral Health Services into the Primary Care Setting

**STUDY**
- Gather relevant patient data by in-person office visits, validated screening tools to assess, understand and intervene on current mental health issues.
- Track patient outcome data to guide clinical practice.
- Use interprofessional collaboration and effective communication in confidential patient consultation.

**DO**
- The PCP can provide improved patient outcomes by using validated screening tools for assessment and collaborating with a consulting psychiatrist for diagnosis and treatment planning in collaboration with a behavioral case manager for greater communication and patient monitoring.
Appendix D: Written Consent Form

Integrating Behavioral Health into Primary Using the Collaborative Care Model: Pilot Program

University of New Hampshire, Nursing
Wakefield Family Medicine, PLLC

Written Consent

I, ___________________________ (print name) consent to participate in this 8-week pilot program which includes participation in the initial, 4 week subsequent and 8 week subsequent visit. I consent to my health records including substance use, alcohol use, mental health and medical records be shared privately with the consulting psychiatrist for screening, evaluation and treatment purposes. I consent to insurance billing services using the Psychiatric Collaborative Care Model CoCM as benefited by Medicare.

__________________________________________________________________________
Signature

__________________________________________________________________________
Date

__________________________________________________________________________ (Printed Name)
Appendix E: Psychological, Functional and Medical Initial Assessment

Psychological, Functional and Medical Assessment
Initial Consultation: Health Summary and Needs Assessment

PCP Health Summary with Participant Report of Current Complaints
- Primary care impression, relevant health factors and areas of concern
- Patient report of health complaints, history and areas of concern

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Medical History</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Medical History with diagnoses and severity of disease</td>
</tr>
<tr>
<td>Sex</td>
<td>Current Medication Regimen</td>
</tr>
<tr>
<td>Race</td>
<td>Drug Allergies</td>
</tr>
<tr>
<td>Highest Level of Education</td>
<td>Health Goals</td>
</tr>
<tr>
<td>Location (rural vs. urban)</td>
<td></td>
</tr>
</tbody>
</table>

Behavioral Health History

<table>
<thead>
<tr>
<th>Psychiatric Diagnoses</th>
<th>Treatment Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Medication Regimen</td>
<td>Diagnosis, Patient Education</td>
</tr>
<tr>
<td>Previous Medication Failures</td>
<td>Medication Management</td>
</tr>
<tr>
<td>Mental Health Goals</td>
<td>Chronic Disease Management</td>
</tr>
<tr>
<td></td>
<td>CBT, Nutrition, Exercise, Sleep</td>
</tr>
</tbody>
</table>

Results and Interpretation of Validated Screening Tools
- Original copies of screening tools provided for review of specific answers.
- Total and average scores per participant documented in clinical notes.

<table>
<thead>
<tr>
<th>Validated Screening Tool</th>
<th>Purpose</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHQ-9 Patient Health Questionnaire</td>
<td>Depression Symptom Rating, Suicide Screening*</td>
<td>Severity of condition, target areas for counseling, need for suicide prevention</td>
</tr>
<tr>
<td>GAD-7 Generalized Anxiety Disorder</td>
<td>Anxiety Symptom Rating</td>
<td>Severity of condition, target areas for counseling</td>
</tr>
<tr>
<td>ACES</td>
<td>Childhood Trauma Screening</td>
<td>High ACES scores are often associated with mental illness and substance abuse</td>
</tr>
<tr>
<td>PCL-5</td>
<td>Post Traumatic Stress Disorder</td>
<td>High PCL-5 scores are often associated with mental illness and substance abuse</td>
</tr>
<tr>
<td>MDQ</td>
<td>Mood disorder and bipolar disorder screening</td>
<td></td>
</tr>
<tr>
<td>BRS</td>
<td>Brief Resiliency Scale</td>
<td>Self-reported degree of resilience to recovering from adverse events</td>
</tr>
<tr>
<td>TAPS- Part 1</td>
<td>Alcohol, tobacco and drug use screening</td>
<td>Substance Abuse Screening, need for intervention</td>
</tr>
</tbody>
</table>
# Appendix F: Patient Health Questionnaire (PHQ-9) Validated Rating Tool

## Patient Health Questionnaire-9 (PHQ-9)

**Over the last 2 weeks**, how often have you been bothered by any of the following problems?

(Use "√" to indicate your answer)

<table>
<thead>
<tr>
<th>Problem</th>
<th>Not at all</th>
<th>Several days</th>
<th>More than half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Little interest or pleasure in doing things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Feeling down, depressed, or hopeless</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Trouble falling or staying asleep, or sleeping too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Feeling tired or having little energy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Poor appetite or overeating</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Trouble concentrating on things, such as reading the newspaper or watching television</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. Thoughts that you would be better off dead or of hurting yourself in some way</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

**For Office Coding**

\[0 + \_\_\_ + \_\_\_ + \_\_\_ + \_\_\_\]

\[= \text{Total Score: } \_\_\_\_\]

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

<table>
<thead>
<tr>
<th>Not difficult at all</th>
<th>Somewhat difficult</th>
<th>Very difficult</th>
<th>Extremely difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

Developed by Drs. Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke and colleagues, with an educational grant from Pfizer Inc. No permission required to reproduce, translate, display or distribute.
Appendix G: The Patient Health Questionnaire (PHQ-9) Scoring

The Patient Health Questionnaire (PHQ-9) Scoring

Use of the PHQ-9 to Make a Tentative Depression Diagnosis:
The clinician should rule out physical causes of depression, normal bereavement and a history of a manic/hypomanic episode

Step 1: Questions 1 and 2
Need one or both of the first two questions endorsed as a “2” or a “3”
(2 = “More than half the days” or 3 = “Nearly every day”)

Step 2: Questions 1 through 9
Need a total of five or more boxes endorsed within the shaded area of the form to arrive at the total symptom count. (Questions 1-8 must be endorsed as a “2” or a “3”; Question 9 must be endorsed as “1” a “2” or a “3”)

Step 3: Question 10
This question must be endorsed as “Somewhat difficult” or “Very difficult” or “Extremely difficult”

Use of the PHQ-9 for Treatment Selection and Monitoring

Step 1
A depression diagnosis that warrants treatment or a treatment change, needs at least one of the first two questions endorsed as positive (”more than half the days” or “nearly every day”) in the past two weeks. In addition, the tenth question, about difficulty at work or home or getting along with others should be answered at least “somewhat difficult”

Step 2
Add the total points for each of the columns 2-4 separately
(Column 1 = Several days; Column 2 = More than half the days; Column 3 = Nearly every day. Add the totals for each of the three columns together. This is the Total Score
The Total Score = the Severity Score

Step 3
Review the Severity Score using the following TABLE.

<table>
<thead>
<tr>
<th>PHQ-9 Score</th>
<th>Provisional Diagnosis</th>
<th>Treatment Recommendation</th>
<th>Patient Preferences should be considered</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-9</td>
<td>Minimal Symptoms*</td>
<td>Support, educate to call if worse, return in one month</td>
<td></td>
</tr>
<tr>
<td>10-14</td>
<td>Minor depression ++</td>
<td>Support, watchful waiting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dysthymia*</td>
<td>Antidepressant or psychotherapy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Major Depression, mild</td>
<td>Antidepressant or psychotherapy</td>
<td></td>
</tr>
<tr>
<td>15-19</td>
<td>Major depression, moderately severe</td>
<td>Antidepressant or psychotherapy</td>
<td></td>
</tr>
<tr>
<td>&gt;20</td>
<td>Major Depression, severe</td>
<td>Antidepressant and psychotherapy (especially if not improved on monotherapy)</td>
<td></td>
</tr>
</tbody>
</table>

* If symptoms present > two years, then probable chronic depression which warrants antidepressants or psychotherapy (ask: “In the past 2 years have you felt depressed or sad most days, even if you felt okay sometimes?”)

** If symptoms present ≥ one month or severe functional impairment, consider active treatment

Kroenke, Spitzer & Williams (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine, 16*(9), 606-6013.
Appendix H: Generalized Anxiety Disorder (GAD-7) Validated Rating Tool

GAD-7 Anxiety

<table>
<thead>
<tr>
<th>Over the last two weeks, how often have you been bothered by the following problems?</th>
<th>Not at all</th>
<th>Several days</th>
<th>More than half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Feeling nervous, anxious, or on edge</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Not being able to stop or control worrying</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Worrying too much about different things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Trouble relaxing</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Being so restless that it is hard to sit still</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Becoming easily annoyed or irritable</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Feeling afraid, as if something awful might happen</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Column totals  

If you checked any problems, how difficult have they made it for you to do your work, take care of things at home, or get along with other people?

<table>
<thead>
<tr>
<th>Not difficult at all</th>
<th>Somewhat difficult</th>
<th>Very difficult</th>
<th>Extremely difficult</th>
</tr>
</thead>
</table>

Total score

Source: Primary Care Evaluation of Mental Disorders Patient Health Questionnaire (PRIME-MD-PHQ). The PHQ was developed by Dr. Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke, and colleagues. For research information, contact Dr. Spitzer at jspitzer@columbia.edu. PRIME-MD2 is a trademark of Pfizer Inc. Copyright 1999 Pfizer Inc. All rights reserved. Reproduced with permission.

Scoring GAD-7 Anxiety Severity

This is calculated by assigning scores of 0, 1, 2, and 3 to the response categories, respectively, of "not at all," "several days," "more than half the days," and "nearly every day." GAD-7 total score for the seven items ranges from 0 to 21.

- 0—4: minimal anxiety
- 5—9: mild anxiety
- 10—14: moderate anxiety
- 15—21: severe anxiety
Appendix I: Brief Resilience Scale (BRS) Validated Rating Tool

Brief Resilience Scale (BRS)

<table>
<thead>
<tr>
<th>Respond to each statement below by circling one answer per row.</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRS 1 I tend to bounce back quickly after hard times.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>BRS 2 I have a hard time making it through stressful events.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>BRS 3 It does not take me long to recover from a stressful event.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>BRS 4 It is hard for me to snap back when something bad happens.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>BRS 5 I usually come through difficult times with little trouble.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>BRS 6 I tend to take a long time to get over setbacks in my life.</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

**Scoring:** Add the value (1-5) of your responses for all six items, creating a range from 6-30. Divide the sum by the total number of questions answered (6) for your final score.

**Total score:** _____ / 6

**My score:** _____ (average)

<table>
<thead>
<tr>
<th>BRS Score</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00 - 2.99</td>
<td>Low resilience</td>
</tr>
<tr>
<td>3.00 - 4.30</td>
<td>Normal resilience</td>
</tr>
<tr>
<td>4.31 - 5.00</td>
<td>High resilience</td>
</tr>
</tbody>
</table>

Appendix J: PCL-5- Post-Traumatic-Stress-Disorder Screening Tool

**PCL-5**

Instructions: Below is a list of problems that people sometimes have in response to a very stressful experience. Keeping your worst event in mind, please read each problem carefully and then select one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

Your worst event:

<table>
<thead>
<tr>
<th>In the past month, how much were you bothered by:</th>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Repeated, disturbing, and unwanted memories of the stressful experience?</td>
<td>0  ○</td>
<td>1 ○</td>
<td>2 ○</td>
<td>3 ○</td>
<td>4 ○</td>
</tr>
<tr>
<td>2. Repeated, disturbing dreams of the stressful experience?</td>
<td>0 ○</td>
<td>1 ○</td>
<td>2 ○</td>
<td>3 ○</td>
<td>4 ○</td>
</tr>
<tr>
<td>3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?</td>
<td>0 ○</td>
<td>1 ○</td>
<td>2 ○</td>
<td>3 ○</td>
<td>4 ○</td>
</tr>
<tr>
<td>4. Feeling very upset when something reminded you of the stressful experience?</td>
<td>0 ○</td>
<td>1 ○</td>
<td>2 ○</td>
<td>3 ○</td>
<td>4 ○</td>
</tr>
<tr>
<td>5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?</td>
<td>0 ○</td>
<td>1 ○</td>
<td>2 ○</td>
<td>3 ○</td>
<td>4 ○</td>
</tr>
<tr>
<td>6. Avoiding memories, thoughts, or feelings related to the stressful experience?</td>
<td>0 ○</td>
<td>1 ○</td>
<td>2 ○</td>
<td>3 ○</td>
<td>4 ○</td>
</tr>
<tr>
<td>7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?</td>
<td>0 ○</td>
<td>1 ○</td>
<td>2 ○</td>
<td>3 ○</td>
<td>4 ○</td>
</tr>
<tr>
<td>8. Trouble remembering important parts of the stressful experience?</td>
<td>0 ○</td>
<td>1 ○</td>
<td>2 ○</td>
<td>3 ○</td>
<td>4 ○</td>
</tr>
<tr>
<td>9. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?</td>
<td>0 ○</td>
<td>1 ○</td>
<td>2 ○</td>
<td>3 ○</td>
<td>4 ○</td>
</tr>
<tr>
<td>10. Blaming yourself or someone else for the stressful experience or what happened after it?</td>
<td>0 ○</td>
<td>1 ○</td>
<td>2 ○</td>
<td>3 ○</td>
<td>4 ○</td>
</tr>
<tr>
<td>11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?</td>
<td>0 ○</td>
<td>1 ○</td>
<td>2 ○</td>
<td>3 ○</td>
<td>4 ○</td>
</tr>
<tr>
<td>12. Loss of interest in activities that you used to enjoy?</td>
<td>0 ○</td>
<td>1 ○</td>
<td>2 ○</td>
<td>3 ○</td>
<td>4 ○</td>
</tr>
<tr>
<td>13. Feeling distant or cut off from other people?</td>
<td>0 ○</td>
<td>1 ○</td>
<td>2 ○</td>
<td>3 ○</td>
<td>4 ○</td>
</tr>
<tr>
<td>14. Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?</td>
<td>0 ○</td>
<td>1 ○</td>
<td>2 ○</td>
<td>3 ○</td>
<td>4 ○</td>
</tr>
<tr>
<td>15. Irritable behavior, angry outbursts, or acting aggressively?</td>
<td>0 ○</td>
<td>1 ○</td>
<td>2 ○</td>
<td>3 ○</td>
<td>4 ○</td>
</tr>
<tr>
<td>16. Taking too many risks or doing things that could cause you harm?</td>
<td>0 ○</td>
<td>1 ○</td>
<td>2 ○</td>
<td>3 ○</td>
<td>4 ○</td>
</tr>
<tr>
<td>17. Being “superalert” or watchful or on guard?</td>
<td>0 ○</td>
<td>1 ○</td>
<td>2 ○</td>
<td>3 ○</td>
<td>4 ○</td>
</tr>
<tr>
<td>18. Feeling jumpy or easily startled?</td>
<td>0 ○</td>
<td>1 ○</td>
<td>2 ○</td>
<td>3 ○</td>
<td>4 ○</td>
</tr>
<tr>
<td>19. Having difficulty concentrating?</td>
<td>0 ○</td>
<td>1 ○</td>
<td>2 ○</td>
<td>3 ○</td>
<td>4 ○</td>
</tr>
<tr>
<td>20. Trouble falling or staying asleep?</td>
<td>0 ○</td>
<td>1 ○</td>
<td>2 ○</td>
<td>3 ○</td>
<td>4 ○</td>
</tr>
</tbody>
</table>


[PTSD Checklist for DSM-5 (PCL-5) - Fillable Form (va.gov)](https://www.va.gov)
Appendix K: TAPS – Part 1: Substance Abuse Screening Tool


Tobacco, Alcohol, Prescription medication, and other Substance use (TAPS) Tool

(nih.gov)
Appendix L: Mood Disorder Questionnaire (MDQ) Validated Screening Tool

**Mood Disorder Questionnaire (MDQ)**

Name: ___________________________ Date: ___________________________

**Instructions:** Check [✓] the answer that best applies to you. Please answer each question as best you can.

1. Has there ever been a period of time when you were not your usual self and...

   - ...you felt so good or so hyper that other people thought you were not your normal self or you were so hyper that you got into trouble? [ ] Yes [ ] No
   - ...you were so irritable that you shouted at people or started fights or arguments? [ ] Yes [ ] No
   - ...you felt much more self-confident than usual? [ ] Yes [ ] No
   - ...you got much less sleep than usual and found you didn’t really miss it? [ ] Yes [ ] No
   - ...you were much more talkative or spoke faster than usual? [ ] Yes [ ] No
   - ...thoughts raced through your head or you couldn’t slow your mind down? [ ] Yes [ ] No
   - ...you were so easily distracted by things around you that you had trouble concentrating or staying on track? [ ] Yes [ ] No
   - ...you had much more energy than usual? [ ] Yes [ ] No
   - ...you were much more active or did many more things than usual? [ ] Yes [ ] No
   - ...you were much more social or outgoing than usual, for example, you telephoned friends in the middle of the night? [ ] Yes [ ] No
   - ...you were much more interested in sex than usual? [ ] Yes [ ] No
   - ...you did things that were unusual for you or that other people might have thought were excessive, foolish, or risky? [ ] Yes [ ] No
   - ...spending money got you or your family in trouble? [ ] Yes [ ] No

2. If you checked YES to more than one of the above, have several of these ever happened during the same period of time? Please check 1 response only.

   [ ] Yes [ ] No

3. How much of a problem did any of these cause you — like being able to work; having family, money, or legal troubles; getting into arguments or fights? Please check 1 response only.

   - No problem [ ]
   - Minor problem [ ]
   - Moderate problem [ ]
   - Serious problem [ ]

4. Have any of your blood relatives (i.e., children, siblings, parents, grandparents, aunts, uncles) had manic-depressive illness or bipolar disorder? [ ] Yes [ ] No

5. Has a health professional ever told you that you have manic-depressive illness or bipolar disorder? [ ] Yes [ ] No

This questionnaire should be used as a starting point. It is not a substitute for a full medical evaluation. Bipolar disorder is a complex illness, and an accurate, thorough diagnosis can only be made through a personal evaluation by your doctor.

Appendix M: Adverse Childhood Experience Questionnaire for Adults

Adverse Childhood Experience Questionnaire for Adults
California Surgeon General’s Clinical Advisory Committee

Our relationships and experiences—even those in childhood—can affect our health and well-being. Difficult childhood experiences are very common. Please tell us whether you have had any of the experiences listed below, as they may be affecting your health today or may affect your health in the future. This information will help you and your provider better understand how to work together to support your health and well-being.

Instructions: Below is a list of 10 categories of Adverse Childhood Experiences (ACEs). From the list below, please place a checkmark next to each ACE category that you experienced prior to your 18th birthday. Then, please add up the number of categories of ACEs you experienced and put the total number at the bottom.

1. Did you feel that you didn’t have enough to eat, had to wear dirty clothes, or had no one to protect or take care of you? [ ]

2. Did you lose a parent through divorce, abandonment, death, or other reason? [ ]

3. Did you live with anyone who was depressed, mentally ill, or attempted suicide? [ ]

4. Did you live with anyone who had a problem with drinking or using drugs, including prescription drugs? [ ]

5. Did your parents or adults in your home ever hit, punch, beat, or threaten to harm each other? [ ]

6. Did you live with anyone who went to jail or prison? [ ]

7. Did a parent or adult in your home ever swear at you, insult you, or put you down? [ ]

8. Did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way? [ ]

9. Did you feel that no one in your family loved you or thought you were special? [ ]

10. Did you experience unwanted sexual contact (such as fondling or oral/anal/vaginal intercourse/penetration)? [ ]

Your ACE score is the total number of checked responses [ ]

Do you believe that these experiences have affected your health? [ ] Not Much [ ] Some [ ] A Lot

Experiences in childhood are just one part of a person’s life story. There are many ways to heal throughout one’s life.


Adverse Childhood Experience Questionnaire for Adults (acesaware.org)
Appendix N: Sleep Hygiene Checklist

Sleep Hygiene Checklist and Tips for Better Sleep

Healthy sleep is important for physical and mental health. Good sleep hygiene habits can help improve your quality of sleep.

**Prioritize Sleep**

Try to get at least 7 hours of sleep per 24 hours.

**Avoid all Electronics Before Bed**

Bright lights, engaging applications and potential for emotional triggers can stall your brain from winding down and preparing for sleep.

**Napping**

If you are sleep deprived, taking a power nap (30 min. or less) may be helpful. Avoid daytime napping and rely on continuous sleep throughout the night.

**Schedule**

Keep a fixed sleep-wake time to promote a healthy sleep schedule.

**Diet Changes**

Avoid using caffeine, alcohol, nicotine or other stimulants at least 4 hours before bed.

**Relaxation and Mindfulness**

Avoid stimulating activities, try stretching, dim lighting, calm music, breathing exercises, heat.

**Journaling and Reading**

Consider making a worry-list, list of things to address tomorrow or writing about your feelings and thoughts in a private journal.

**Sleep Environment**

Make sure your bedroom is quiet, dark, at the right temperature, remove distractions, use white noise if desired and only use your bed for sleep. If you can’t fall asleep within 20 minutes, rise from your bed, do something boring or relaxing and then try again.

**Professional Help**

Consult with your doctor about your sleep, review indications to test for sleep apnea or need for specialty referral.

Adapted from: Rith-Najaeian, L. (2024) *Sleep Hygiene Checklist REVISED C.*

[Sleep Hygiene Checklist Revised_C.pdf (harvard.edu)](harvard.edu)
Appendix O: American Heart Association: 10-minute workout anywhere

10-minute Workout Anywhere

Boost your heart rate and brain power with this quick home workout. For a digital version of this worksheet, visit heart.org/handyfile.

Do each exercise at your own pace for 30 seconds with 30 seconds of rest between exercises (such as high knees, march in place, jog in place), listed in order.

Try These Tips

Weight(s) can be small dumbbells, kettlebells, or anything heavy you may have at home, like a purse, water bottle or gallon jug. Backpack or book. Or make your own adjustable weight by loading a small tote bag with magazines or books.

Stabilize yourself-revealed by holding or touching a wall, desk or stationary (non-rolling) chair. As you get stronger, lift your balance by letting go of the support.

*Please speak with your health provider before starting an exercise program and with a fitness professional for adaptations that best meet your individual needs.

Shoulder Rolls
Activity: Standing or sitting with feet hip-width apart, slowly roll both shoulders forward, up, back and down. Reverse direction.
Add Intensity: Hold hand weights down at sides.

Squats/Chair
Activity: Standing with feet hip-width apart, keeping back straight, bend knees and hips as if to sit down in a chair with arms out in front of you. For squats, straighten back up and repeat, for chair pose, hold in "seated" position.
Add Intensity: Hold one arm overhead or hold weight(s) at chest or shoulders.

Calf Raises
Activity: Standing or sitting with feet hip-width apart, keep legs straight but not locked as you slowly lift heel and rise to toe-to-toe position, then lower back to floor.
Add Intensity: Do one leg at a time while keeping raised foot at ankle or knees. Do at least 10 repetitions before switching to other side.

Side Bends
Activity: Standing or sitting with feet hip-width apart and hands on hips or overhead, bend to one side and return to standing. Do at least 10 repetitions before switching to other side.
Add Intensity: Hold a weight down at your side (on working side), at chest level or overhead.

True Taps
Activity: Standing or sitting with feet hip-width apart, lift knee to waist height, extend and top toe on floor in front of you. Lift knee again and return to standing. Alternate sides.
Add Intensity: Top toe on the edge of a washbasin, chair or desk instead of the floor.

Pushups/Plank
Activity: Standing with feet hip-width apart, place hands shoulder-width apart on stable surface such as wall, desk edge or stationary (non-rolling) chair. Walk feet out behind you until body and legs are at a straight line and then lift your body up to full pushup position.
Add Intensity: Lift one leg behind you and hold during pushups or plank. Repeat for other leg.

Neck Stretch
Activity: Standing or sitting with feet hip-width apart and shoulders down and back, look straight ahead and tilt one forward shoulder until you feel the stretch. Hold for about 10 seconds. Repeat to other side and forward.
Add Intensity: With hand on top of head in each position, apply light pressure to increase stretch.

Leg Lifts
Activity: Sitting at the front edge of a chair with feet flat on the floor, straighten one leg out in front of you and hold in place for a few seconds. Return feet to floor and repeat with other leg.
Add Intensity: Instead of sitting on chair, support your weight with your hands.

Thigh/Glute Squeeze
Activity: Sitting at the front edge of a chair with feet flat on the floor, squeeze glutes and thighs together and hold for at least 10 seconds.
Add Intensity: Hold a book or other study item between your knees without using your hands.

Forward Bend
Activity: Sitting at the front edge of a chair with feet flat on the floor, hold forward with chest to thighs and head dropped forward. Return and take a few deep breaths.
Add Intensity: Do forward bend in standing position with knees slightly bent.

Learn more ways to Move More at heart.org/HealthyforGood


Try the 10-Minute Home Workout | American Heart Association
Appendix P: Suicide Safety Plan

### Appendix Q: Cognitive Behavioral Therapy Plan and Highlights

<table>
<thead>
<tr>
<th>Weekly Progression</th>
<th>Area of Study</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Consultation</td>
<td>Psychoanalysis differences between Freudian understanding of the mind and CBT approach emphasizing the power of thoughts that drives our emotions and actions.</td>
<td>Getting familiar with cognitive behavioral therapy and benefits of use, understanding anxiety and depression</td>
</tr>
<tr>
<td>Week 1</td>
<td>Understanding the challenges, barriers to change</td>
<td>Setting goals</td>
</tr>
<tr>
<td>Week 2</td>
<td>Identifying areas for change, addressing specific behaviors, treatment approach of behavioral activation.</td>
<td>Reviewing treatment plan and goals</td>
</tr>
<tr>
<td>Week 3</td>
<td>Seeking where the value in major areas of your life and strategies to support each value.</td>
<td>Identifying thought patterns</td>
</tr>
<tr>
<td>Week 4</td>
<td>Planning activities, completing goals and making adjustments to align with goals.</td>
<td>Breaking negative thought patterns</td>
</tr>
<tr>
<td>Week 5</td>
<td>Planning enjoyable and important activities, structured planning for productivity.</td>
<td>Time and task management</td>
</tr>
<tr>
<td>Week 6</td>
<td>Pushing through avoidance, stress management, sleep and overcoming fears through exposure, challenging validity of fears and resilience.</td>
<td>Facing Adversity</td>
</tr>
<tr>
<td>Week 7</td>
<td>Regaining health and function, continued effort for practice.</td>
<td>Reflections</td>
</tr>
</tbody>
</table>

Appendix R: Mediterranean Diet and Nutritional Planning

## Mediterranean Diet

Choosing a diet similar to one eaten by people living around the Mediterranean Sea may lower the risk of cardiovascular disease and have additional health benefits. The diet is mostly plant-based with high amounts of fresh vegetables, fruits, nuts, dried beans, olive oil, and fish. Follow these tips to eat the Mediterranean way!

<table>
<thead>
<tr>
<th>Food/Food Group</th>
<th>Recommended Intake*</th>
<th>Tips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetables</td>
<td>4 or more servings each day (one portion each day should be raw vegetables)</td>
<td>A serving is 1 cup raw or 1/2 cup cooked vegetables. Eat a variety of colors and textures.</td>
</tr>
<tr>
<td>Fruits</td>
<td>3 or more servings each day</td>
<td>Make fruit your dessert</td>
</tr>
<tr>
<td>Grains</td>
<td>4 or more servings each day</td>
<td>Choose mostly whole grains. 1 serving = 1 slice bread or 1/2 cup cooked oatmeal</td>
</tr>
<tr>
<td>Fats/Oils</td>
<td>Olive Oil: 4 Tablespoons or more each day</td>
<td>Choose extra virgin olive oil (EVOO) and use in salad dressings and cooking; choose avocado or natural peanut butter instead of butter or margarine</td>
</tr>
<tr>
<td>Dried Beans/Nuts/Seeds</td>
<td>Nuts/Seeds: 3 or more servings each week Beans/Legumes: 3 or more servings each week</td>
<td>1 ounce or 1 serving = 23 almonds or 14 walnut halves; 1 serving of beans = 1/2 cup</td>
</tr>
<tr>
<td>Fish and Seafood</td>
<td>2-3 times each week</td>
<td>Choose salmon, sardines, and tuna which are rich in Omega-3 fatty acids</td>
</tr>
<tr>
<td>Herbs and Spices</td>
<td>Use daily</td>
<td>Season foods with herbs, garlic, onions and spices instead of salt</td>
</tr>
<tr>
<td>Yogurt/Cheese/Egg Poultry</td>
<td>Choose daily to weekly</td>
<td>Choose low-fat yogurt and cheeses; choose skinless chicken or turkey in place of red meat</td>
</tr>
<tr>
<td>Alcohol/Wine</td>
<td>Men: 1-2 glasses each day Women: 1 glass each day</td>
<td>Always ask your medical team if alcohol is ok for you to consume.</td>
</tr>
</tbody>
</table>

*Serving sizes should be individualized to meet energy and nutrient needs.

* Red meats, processed meats, and sweets should be limited