Improving Depression Screening Completion Rates for Medicare Patients in a Primary Care Setting

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IMPROVING DEPRESSION SCREENING COMPLETION RATES FOR MEDICARE PATIENTS IN A PRIMARY CARE SETTING

by

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EVIDENCE-BASED PRACTICE PROJECT REPORT

Submitted to the College of Nursing and Health Professions of Valparaiso University, Valparaiso, Indiana in partial fulfillment of the requirements For the degree of

DOCTOR OF NURSING PRACTICE

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DEDICATION

This project is dedicated to anyone who has ever struggled with depression or been affected by a loved one who has battled with depression. Although this EBP project is focused on the Medicare and older adult population, it is my own personal belief that the format of this project can be applied to numerous populations. As a provider, I will do my best to be especially vigilant in identifying patients struggling with mental health conditions, and helping those patients in any way I can.

To the providers, nurses, and medical professionals who chose to specialize in mental health care and treatment, like my mother, thank you for everything that you do.
ACKNOWLEDGMENTS

It is important that I acknowledge those who made the completion of this project, as well as the completion of my DNP degree from Valparaiso University, possible.

First, I must thank my wife, Tannes Haluska, for working incredibly hard throughout my time in the program to support myself and our growing family. Our family started with two cats, then three cats, then four cats, and we will be adding a child soon. I would not have been able to complete this project or program without her help and support, and I consider myself extremely lucky every single day to be her husband.

Next, I must thank the rest of my support system. Ashley Milcarek and Blake Hansen are the friends I never knew I needed. To say that I leaned on Ashley and Blake throughout this project and program would be a tremendous understatement. Their help and support made this project possible and I cannot wait to watch our careers grow and develop. Also, I must thank my mother, Catherine R. Haluska, who just completed her degree and is now a practicing mental health nurse practitioner. Watching my mother persevere throughout her own program all while maintaining a 4.0 GPA was extremely motivating and although I certainly did not maintain a 4.0 GPA, I like to think that we motivated each other to do better and accomplish our goals. My mother and I will be coworkers (again) with NorthShore Health Centers.

There were many people that made this project possible. To the Community Health Systems staff, thank you for allowing me to complete my project in your wonderful organization. To Nancy Hoehn, thank you so much for all of your help and support, and I hope you enjoy your next stage in life! To Connie Ramirez, thank you for allowing me to precept with you all while being patient and extremely helpful to help me grow as a provider.

Lastly, this project was certainly not possible at all without the help and support of my project advisor, Dr. Julie Brandy. Her knowledge, advice, and support truly shaped the format of this project and paper from beginning to end, and I cannot thank her enough.
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ABSTRACT

The United States Preventative Services Task Force recommends screening the general adult population for depression (Siu et al., 2016). Despite increasing clinical practice guidelines recommending depression screening, only 40-50% of depressed older adults are recognized and treated (Phoh et al., 2017). The purpose of this evidence-based practice (EBP) project was to implement a medical assistant (MA) depression screening protocol, using the PHQ-9 and staff education, to improve depression screening completion rates in Medicare patients in a primary care setting. An exhaustive literature search of eight databases yielded 14 pieces of evidence that made recommendations for best practice. The evidence was appraised using appropriate tools and found to be sufficient for addressing the proposed clinical question. The evidence suggested that screening rates would experience the most improvement when using an MA screening protocol, using the PHQ-9, during patient check-in (Campbell et al., 2021; Gorman et al., 2021; Maust et al., 2017; Siniscalchi et al., 2020) and staff education (Costantini et al., 2021; Gorman et al., 2021; Heinz et al., 2021; Siniscalchi et al., 2020; Sinnema et al., 2018). Convenience sampling was used in this EBP project. Eligible patients included Medicare patients, 18 years and older, presenting for a scheduled appointment and due for an annual depression screening. Because of the large population size, random sampling was used for data analysis. The baseline group consisted of 130 patients, and the intervention group consisted of 128 patients. Following staff education, the clinic implemented an MA depression screening protocol using the PHQ-9 depression questionnaire during patient rooming. Key stakeholders included the project site facilitator and office manager, five clinic providers, the clinic’s MAs and administrative assistants, the patient population, and the organization’s human resources department. A Chi-Square Test of Independence was used to compare pre- and post-intervention depression screening completion rates, by provider, over a three-month data collection period. The primary outcome of this EBP project was increased depression screening completion rates for eligible patients following project implementation. Depression screening rates rose from 50% at baseline to 64% for the post-intervention group. A statistically significant ($p = .023$) higher percentage of people in the post-intervention group than in the pre-intervention (or baseline) group were screened for depression ($x^2 (1) = 5.203, p < .05$). These findings indicate that staff education and an MA depression screening protocol, using the PHQ-9 tool, are effective for improving depression screening rates in older adults. Further research is needed to assess the effect of increased depression screening compliance on overall depression recognition and response to treatment, as well as health outcomes, in Medicare patients in primary care.

Keywords: Depression, older adult, Medicare, screening, medical assistant, MA
CHAPTER 1
INTRODUCTION

Background

Evidence-based practice (EBP) enhances the quality of healthcare, improves patient outcomes, empowers providers and healthcare workers, and can reduce overall healthcare costs (Melnyk & Fineout-Overholt, 2019). The purpose of this EBP project was to use evidence-based interventions to improve practice in a primary care clinic. The population of focus for this EBP project was Medicare patients and the triggering issue were the poor depression screening completion rates experienced by this population in primary care (Pfoh et al., 2017). Depression and Medicare are key terms that were used throughout this EBP project. The following section is intended to define key terms, provide background data supporting the need for the project, and clearly state the purpose of the project.

Medicare is a federal health insurance program for Americans 65 years and older, people under 65 years of age with certain disabilities, and people of all ages with End-Stage Renal Disease (Centers for Medicare and Medicaid Services, 2021b). Most of the Medicare patients served by the project site used in this EBP project qualified for Medicare because of age rather than certain disability or renal disease; therefore, the term “older adults” is a common term that was used during background literature search. There are four parts to Medicare coverage: Part A is for hospital insurance, Part B is for medical insurance (things not covered by hospital insurance), Part C is the advantage plan, and Plan D is prescription drug coverage. Medicare is never intended to pay for 100% of medical bills (Indiana Department of Insurance, n.d.). Because medical bills are not intended to be fully covered, preventative services are important to prevent unnecessary expenses, and universal depression screening has been shown to reduce overall costs when compared to standard care, or relying on the provider to identify and diagnose
depressive patients (Jiao et al., 2017). Medicare Part B covers one depression screening per year (Medicare.gov, n.d.).

Mental Health America (n.d.-a) describes depression as a mental health condition that causes patients to lose pleasure from daily life, and the condition can worsen other chronic conditions and/or lead to suicide. The adverse effects associated with depression contribute to increased healthcare costs. Causes for depression include biological causes (neurotransmitter imbalances), medication causes (side effects), cognitive changes, genetic origins (family history), and situational causes (Mental Health America, n.d.-a). In older adults (i.e., adults 65 years and older), depression is often linked to co-occurring chronic illnesses, like heart disease or arthritis, and most patients (approximately 58%) believe that developing depression is “normal” (Mental Health America, n.d.-b). Widowhood, or loss of loved ones, is also a risk factor for depression in older adults (Mental Health America, n.d.-b). Because the population 60 years or older is expected to increase from 900 million to 2 billion between 2015 and 2050, caring for the older adult population and being familiar with their mental health risk factors will become increasingly relevant to all healthcare providers (World Health Organization, 2017).

Tolentino and Schmidt (2018) explain that a diagnosis of depression requires five or more symptoms, including depressed mood or anhedonia, as indicated by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). Depression is treatable when screened for and diagnosed; however, screening rates for depression in older adults in primary care settings remain inadequate (Mental Health America, n.d.-b). To increase screening rates and improve health outcomes in the older adult population, Accountable Care Organizations (ACOs) have developed in partnership with the Centers for Medicare and Medicaid Services (CMS). ACOs are groups of healthcare providers and organizations who voluntarily work together to provide high-quality care to Medicare patients. When an ACO succeeds in “spending health care dollars more wisely, the ACO will share in the savings it achieves for the Medicare program” (Centers for
Medicare and Medicaid Services, 2021a). In summary, ACOs are reimbursed for acting proactively, providing preventative care services, and ultimately saving healthcare costs.

The United States Preventative Services Task Force (USPSTF) provides recommendations regarding the effectiveness of specific preventative care services based on an assessment of the benefits and harms of the service (Siu et al., 2016). The USPSTF acknowledges that clinical decisions often require more input than evidence alone, like costs; therefore, the recommendations are meant to influence and guide practice while still allowing for individualized and personalized care. The USPSTF recommends depression screening for all adults (18 years and older) with adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up (Siu et al., 2016). To screen for depression, the USPSTF recommends using any commonly used screening instrument, screening all previously non-screened patients, and using clinical judgement when deciding to rescreen patients (Siu et al., 2016). Further, Kaiser Permanente (2021) recommends screening all adults annually and whenever depression is suspected.

**Data Supporting Need for the Project**

Depression is a problem for the older adult population that often goes unrecognized (Pfoh et al., 2017). There are various reasons why depression screening is inadequate in this population, such as staff difficulty incorporating the screening into clinic workflow (Akincigil & Matthews, 2017). Siu et al. (2016) explains that influential evidence-based organizations, like the USPSTF, recommend depression screening for the older adult population. Also, depressive symptoms in older adults are associated with poorer health outcomes and increased mortality rates when compared to older adults without depression (Shah et al., 2018). Lastly, relying on provider identification alone is not effective for depression screening and identification, as 42.2% of depressed patients will only report physical symptoms to their primary care provider making it harder to distinguish between a patient with and without depressive symptoms (Heinz et al.,
In summary, there is great need for a project that increases depression screening adherence for older adults in primary care.

**Global, National, Regional, and State Data**

“More than two million of the 34 million Americans age 65 and older suffer from some form of depression” (Mental Health America, n.d.-b). America’s Health Rankings (2022) list an average U.S. value of 14.2% of adults aged 65 and older having depression, with Illinois having the lowest rate (8.2%) and Washington having the highest rate of depression (20.0%). In 2020, 16.0% of adults 65 and older had depression in Indiana, which was nearly 2% higher than the national average (America’s Health Rankings, 2022). Similarly, the World Health Organization (2017) explains that 7% of the general older population experiences unipolar depression, and the depression is responsible for 5.7% of years lived with disability (YLDs) in adults 60 years and older. In contrast, the CDC (2021) estimates major depression rates as low as 1-5% for older adults in the community; however, the rates rise to 13.5% for those requiring home healthcare.

Methodist Hospitals Southlake Campus (n.d.) performed a survey focused on the health of the community in 2016. The survey was completed by 1025 adults in the organization’s primary service area, including Highland, IN; Schererville, IN; St. John, IN; Cedar Lake, IN; Merrillville, IN; and other cities also served by the project site used in this EBP project. Of the population surveyed, 136 participants were 65 years and older (14.6%) and 24.3% of participants 65 years and older reported being diagnosed with depression, which would correlate to approximately 33 adults in the identified population (Methodist Hospitals Southlake Campus, n.d.). Although the survey did not reach every individual in the population being affected by this project, a preliminary depression rate of 24.3% in older adults in Northwest Indiana would be almost 10% higher than the state average. Therefore, increasing depression screening for older adults in Northwest Indiana is especially important.

**Recommendations**
As stated by Siu et al. (2016), the USPSTF recommends screening for depression in the general adult population once adequate systems are in place to ensure that diagnosis is accurate, treatment is effective, and follow-up is appropriate. The recommendation is a grade “B” recommendation, which means that there is high certainty that the net benefit is moderate. The USPSTF found that depression screening in the general adult population will improve clinical outcomes, decrease clinical morbidity, and “the magnitude of harms of screening for depression in adults is small to none” (Siu et al., 2016, p. 380). Although the USPSTF does not offer information regarding a time frame for the frequency of screening, other boards, like the Kaiser Permanente (2021), recommend screening all adults annually and whenever depression is suspected.

Disparities

Despite clinical practice guidelines recommending depression screening, national depression screening rates remain low (Akincigil & Matthews, 2017; Rhee et al., 2018; Shah et al., 2018). Specifically, Akincigil and Matthews (2017) found that of 33,365 primary care visits from 2012-2013, only 4.3% of private insurance or Medicare visits included depression screening, 4% of visits for patients 65 years and older included depression screening, and 1-2% of primary care patients overall in the United States were screened for depression. Furthermore, depression detection rates are estimated to be as low as 36.4% and particularly poor among males, African Americans, and older adults (Akincigil & Matthews, 2017). Spanish-speaking patients also experience lower than usual depression screening rates (Murillo et al., 2019).

Consequences of Poor Screening

Detecting depression and initiating treatment early is important because depressive symptoms in older adults are associated with poorer health outcomes, suicide, and mortality (Shah et al., 2018). It is estimated that half of patients who completed suicide attempts visited their primary care provider in the month preceding the event (Akincigil & Matthews, 2017; Shah et al., 2018). Had depression screening been completed using the PHQ-9, it is possible that the
suicide could have been prevented by detecting depression, or suicidal thoughts, and acting on the organizational protocol.

**Reasons for Poor Screening**

Shah et al. (2018) found that older adults tend to seek mental health treatment later and at lower rates than other age groups, possibly related to misconceptions regarding depression and/or stigma. Providers argue that time is among the biggest barriers to mental health screening (Shah et al., 2018), as incorporating the screening into the existing clinical workflow can be difficult (Akincigil & Matthews, 2017). Also, critics of depression screening argue that the intervention is simply not cost-effective (Rhee et al., 2018). Lastly, the current healthcare crisis (increasing patient demands and lack of staffing) is a factor for poor depression screening rates (N. Hoehn, personal communication, July 6, 2022).

**Rationale**

It is estimated that one sixth of older adults experience depression, but only 40-50% of those patients are recognized and treated (Pfoh et al., 2017). With increasing quality incentives being implemented for CMS patients and ACOs (Pfoh et al., 2017), an increasing amount of primary care clinics are focused on increasing depression screening. Incorporating the screening into care should not be difficult, as smoking screening (also recommended by the USPSTF) has been easily incorporated into practice and tends to occur much more frequently in Medicare patients, though smoking screening has been implemented for a longer period (Pfoh et al., 2017).

Shah et al. (2018) found most older adults are now receiving mental health services in primary care, and that 93.6% of older adult patients were willing to be screened for depression even if they did not feel depressed. Regardless of how patients or providers may feel about depression screening, the USPSTF recommends the intervention and the consequences of not screening have been clearly illustrated.

**Clinical Agency Data**
Prior to project implementation, the clinic used medical assistants (MAs) to screen patients with the PHQ-9 depression screening tool during patient rooming. However, the timing of the screening was irregular. MAs would often leave the depression screening tool in the room for the patient to fill out. Consequently, some visits would result in screening being completed by the patient following the provider visit or a total lack of screening completion. Also, providers were prompted to screen patients for depression with Best Practice Advisories (BPAs) in the patients’ electronic health record (EHR), and providers were also required to acknowledge the results of the patient screening by entering a “DOT” phrase in the patient’s EHR (N. Hoehn, personal communication, July 5, 2022). If the provider did not acknowledge the screening, then the screening was not recorded for measurement. Lastly, the clinic used a PHQ-9 cut-off score of “5” to “9”, with “5” indicating a need for further evaluation and “9” indicating depression. The clinic used the following plan following a positive screening: further assessment and evaluation to confirm diagnosis and determine danger risks for the patient or others, creation of an individualized treatment plan in collaboration with the patient, and referral to emergency care if the patient is found to be a danger to self or others (N. Hoehn, personal communication, June 27, 2022). The provider would refer to psychiatry if necessary (immediate attention required or lack of improvement following treatment), but referrals were not ordered universally.

The clinical site being used for this project was very committed to increasing depression screening rates for Medicare patients. Although the project was originally focused on the diabetic population, the project was shifted to Medicare patients following communication with the office manager (N. Hoehn, personal communication, June 8, 2022). Baseline clinic data was obtained from March 2022 to May 2022. Baseline data was initially obtained by the project manager on June 8, 2022, for data analysis as well as verification of the issue and need for this EBP project. Additional baseline data was obtained by the project manager on October 14, 2022, for use in Chapter 3 (T. Behrens, personal communication, October 14, 2022). The provided baseline data was the most current data when it was retrieved. The organization did not measure attributed
patients monthly at the time baseline data was obtained (T. Behrens, personal communication, June 26, 2022). As of May 2022, annual attributed patients for each provider were calculated as 702, 64, 283, 330, and 495, respectively (see figure 1.1). In March 2022, depression screening rates were low across the five clinic providers with an average of 18.2% of applicable patients being screened. The clinic discussed the issue with MAs and office staff, but practice was otherwise not changed. In result, the clinic experienced slightly increased screening rates in April 2022 (22.4%) and May 2022 (28.2%). Reasons reported for decreased completion rates include decreased staffing, increased workload, and time constraints (N. Hoehn, personal communication, July 5, 2022).

**Figure 1.1**

*Total Number of Patients Attributed by Provider for March – May 2022*

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<th>Provider 1</th>
<th>Provider 2</th>
<th>Provider 3</th>
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<th>Provider 5</th>
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<tr>
<td>May 2022</td>
<td>702</td>
<td>64</td>
<td>283</td>
<td>330</td>
<td>495</td>
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**Purpose of the Evidence-Based Practice Project**

**Purpose Statement and PICOT Question**

The purpose of this EBP project was to improve depression screening rates for Medicare patients in a primary care clinic. To increase depression screening rates, this EBP project used evidence-based interventions identified following an exhaustive literature search process and evidence appraisal. Specifically, this project aimed to address the following PICOT question: In Medicare patients in a primary care setting, is an MA depression screening protocol using the PHQ-9, coupled with staff education, more effective than standard care for improving depression screening completion rates after three months?

**EBP Project Description**

To increase depression screening in Medicare patients in the primary care clinic being used for this EBP project, MAs administered the PHQ-9 depression screening tool during patient
rooming. Patient rooming, at the project site, is when the medical assistant records and documents patient vital signs, reviews the patient’s chief complaint, and verifies and updates the patient’s medical history. Patient rooming was the most efficacious time for patient screening, as compared to check-in, because this was when the MA was most involved with the patient and clinic workflow would be least affected. The clinic continued using a PHQ-9 cut-off score of “5” to “9” as well as further evaluation by the primary care provider, creation of an individualized treatment plan, and referral to emergency care if needed following a positive screening score.

Prior to implementation, MAs and provider staff were educated on depression rates among the older adult population, how to administer the PHQ-9, the importance of depression screening in this population, and what most-current evidence recommended following a positive screening. Because this was already a measured focus for the clinic, patients were not recruited for this EBP project. Rather, screening rate measurement was continued for a 3-month implementation period following education and explanation of the new practice, and then compared to the baseline clinic data obtained from March – May 2022. Further information regarding the project description and clinic background information will be provided in the following chapter.
CHAPTER 2
EBP MODEL AND REVIEW OF LITERATURE
Evidence-based Practice Model

This section provides an overview of the EBP model that was used throughout this project, the exhaustive literature search that was performed, the quality appraisal tools used to critically appraise the evidence selected for synthesis, the synthesis of the literature, and the construction of best practice as evidenced by the literature.

Overview of EBP Model

The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care (i.e., Iowa Model) was designed to provide guidance to healthcare providers when making decisions regarding clinical and/or administrative practices that ultimately affect healthcare outcomes by providing guidance on the steps that need to be taken. Because this EBP project involved evidence-based organizational changes that were shown to improve healthcare outcomes (depression screening completion rates), the model was selected for inclusion into this project. The model was initially developed in the early 1990s by a team of nurses from the University of Iowa Hospitals and Clinics (UIHC), and the model was based off Roger’s 1983 theory (The Iowa Model Collaborative, 2017). Roger’s 1983 theory described the goal of education as creating a fully functioning person, and she listed student-initiated learning and boundless curiosity as characteristics of learning, as opposed to simply absorbing and regurgitating facts (Coulter, 1990). Although the model was only created 30 years ago, a team, consisting of former authors and key stakeholders, was formed in 2012 to assess the need for model revision. Consequently, the model is constantly being revised and updated to ensure that it remains relevant and applicable to nursing, but the steps and outline remain the same. For example, the model was recently updated to include expansions to the piloting, implementation, and patient engagement aspects of the model, but the overall structure of the model remained
the same (The Iowa Model Collaborative, 2017). Lastly, there are numerous feedback loops in this model to ensure that final implementation of selected changes is successful.

Implementation of the Iowa Model includes several steps. The first step in the model challenges the user with identifying triggering issues or opportunities to improve practice. Next, the user is tasked with stating the question or purpose for the use of the model. Key elements that must be included in the purpose statement include the issue identified, the population of focus, the pilot area, the intervention being used, a comparison to evaluate the impact of the intervention, and the desired outcome (Melnyk & Fineout-Overholt, 2019). Following the purpose statement, the user should form a team consisting of stakeholders, organization leaders, clinicians, and anyone else that may be affected by the project. Then, the literature search begins. The user should assemble, appraise, and synthesize a body of evidence to ensure that there is reason for the practice change, the intervention is evidence-based, and overall evidence is sufficient to move onto implementation. Before the intervention is implemented, the user should first design and pilot the practice change. Practicing the intervention in a controlled environment will allow the team to identify modifications that will assist in project success prior to full-time implementation. Lastly, the user will identify and sustain the practice change and then disseminate results.

When used correctly, the Iowa Model can guide steps that need to be taken to ensure successful implementation of a practice or organizational change that will ultimately affect healthcare outcomes (Melnyk & Fineout-Overholt, 2019). This EBP project was focused on implementing evidence-based interventions to improve depression screening completion rates for Medicare patients in a primary care setting. The implementation of the intervention required an organizational and practice change; therefore, a model focused on assisting organization change was most appropriate for inclusion in the project. The Iowa Model was selected for this EBP project because it allowed the proposed practice change the best opportunity for successful and sustained implementation.
Application of the Iowa Model

The Iowa Model has been widely used when guiding practice changes. Since 2001, there have been nearly 4,000 requests for permission to use the model from all 50 states and 130 countries because it has “stood the test of time as a pragmatic guide for the EBP process” (The Iowa Model Collaborative, 2017, p. 175). The current EBP project was not the first time the Iowa Model was used to improve depression screening. Yackel et al. (2010) used the Iowa Model to develop a practice guideline for depression screening in an Army primary care clinic. Prior to practice change, the military family practice clinic, a U.S. Army infantry post located in Hawaii, lacked a systematic method for screening family of deployed soldiers for depression and nurses were not participating in the depression screening process. Consequently, only females (during well-woman visits) were screened for depression (Yackel et al., 2010). The model assisted the clinic in creating an algorithm for nurses to use when screening patients for depression. Prior to implementation, the clinic diagnosed approximately 100 patients per month with depression while serving approximately 175 patients per day. However, one year following implementation, the clinic was diagnosing approximately 140 patients per month with depression (Yackel et al., 2010). Although this project’s clinic site was not an Army site, the model was clearly effective in assisting healthcare providers improve depression screening completion rates.

The Iowa Model was an obvious choice for inclusion into this EBP project focused on increasing depression screening completion rates in Medicare patients in a primary care setting. Although the design and implementation of the project will be discussed in future chapters, the beginning steps of the model will be discussed here.

Initially, this EBP project was going to be focused on increasing depression screening rates for diabetic patients. The stakeholders assembled for this EBP project consisted of the organization’s human resources department (who was required for project approval), the clinic’s office manager, the participating healthcare providers, the clinic’s MAs and administrative assistants, and the patient population. Prior to any discussion with the project manager, the
human resources (HR) department for the organization was required to approve the project. Because the project was still in its initial stages, this process was lengthy and constantly changing. Once the project was discussed with the clinic manager, it became clear that depression screening rates for Medicare patients was a more significant priority for the clinic than depression screening for diabetic patients (N. Hoehn, personal communication, June 8, 2022). The clinic is an affordable care organization (ACO). ACOs receive shared savings from the Medicare program when they succeed in “delivery high-quality care and spending health care dollars more wisely” (Centers for Medicare and Medicaid Services, 2021a). In result, the project shifted focus to increasing depression screening rates for Medicare patients in the clinic.

Considering different issues that are “topic priorities” for the organization is a key component of the Iowa Model. Melnyk & Fineout-Overholt (2019) explain that choosing an issue prioritized by the organization “can aid in obtaining support from senior leadership and other disciplines as well as in obtaining the resources necessary to carry out the practice change” (p. 391). Thus, it was decided that the project would now focus on increasing depression screening completion rates for Medicare patients in the clinic. Evidence was then appraised and synthesized, and the literature clearly demonstrated a need for increased depression screening compliance in the older adult population as well as different methods for improving the screening rate (see Appendix A). Once it became evident that the literature supported the need for the project and provided evidence for intervention implementation, collaborating with the office manager and other stakeholders to design the project could begin.

**Strengths and Limitations of the Iowa Model**

Major steps included in the Iowa Model include identifying trigger issues, forming a team, and ensuring that the project is a priority for the setting and organization (Iowa Model Collaborative, 2017). These steps were heavily explored and exemplified throughout the early stages of this EBP project. The model provided an easy framework to follow and assisted in more easily collaborating and implementing the EBP project.
The major limitation when using the Iowa Model in this EBP project was the model’s focus on piloting the practice change. Melnyk and Fineout-Overholt (2019) describe the trial process as “essential for identifying issues before instituting in the pilot area or larger rollout/scale-up” (p. 392). The time allotted for this EBP project did not allow for adequate trial or piloting of the intervention. Had more time been allowed, the piloting of the project could have identified errors or areas of improvement earlier and improved final intervention implementation. Staff satisfaction and feedback was measured and discussed in Chapters 4 and 5.

**Literature Search**

**Sources Examined for Relevant Evidence**

A comprehensive search of the literature was performed using the following databases: Joanna Briggs Institute (JBI), Cochrane Library, Turning Research into Practice (TRIP), U.S. Preventative Services Task Force (USPSTF), Cumulative Index to Nursing and Allied Health Literature (CINAHL), MEDLINE with Full Text, PsycInfo, and the Centers for Disease Control and Prevention (CDC). Valparaiso University’s Health Sciences Librarian aided in developing key words to use to better narrow down the data and reveal relevant pieces of evidence. Medical subject headings (MeSH) were used when applicable, and the Boolean system was used along with consistent search limiters to maintain consistency throughout the databases. Prior to meeting with the librarian, initial searches were focused on Medicare populations, depression screening, and interventions for improving depression screening outcomes. However, after meeting with the librarian the Medicare search was broadened to better represent the affected population. The combination of terms that revealed the best results included depress* AND screen* AND “older adult” OR “geriatric” OR “elderly” OR “senior” AND “primary care” OR “primary healthcare” OR “primary health care” OR “family practice” (see Appendix B).

Limiters used during the search included the English language, being published from 2017-2022 in scholarly (peer-reviewed) journals, ages 65 years and older, mental health conditions, and USA guidelines. Abstracts were considered for article reading if they met the
inclusion criteria and included the search terms. Exclusion criteria included articles published prior to 2017, articles not written in the English language, pieces of evidence focusing on mental health conditions other than depression, articles focused strictly on the treatment of depression, articles focusing on settings not generalizable to primary care (inpatient or acute care settings) or settings not generalizable to the clinic setting being used for this EBP project (other countries), and articles focused on other age populations (adolescents, pregnant women, etc.). The exclusion criteria were necessary to keep this EBP project focused on the Medicare patient population and to find interventions that would be applicable and efficacious when applied to the selected clinic setting.

Once results were narrowed down, selected articles were obtained, read, appraised, and evaluated for relevance and generalizability. Results were removed if they met the exclusion criteria following reading. After exhaustive evaluation of the data, 14 pieces of evidence were selected for inclusion in synthesis of literature and the construction of best practice.

Figure 2

PRISMA Chart
Levels of Evidence

The Melnyk and Fineout-Overholt (2019) hierarchy of evidence table was used to level the evidence gathered for this EBP project. The selected hierarchy of evidence is an appropriate ranking system when addressing intervention questions, like the question proposed by this EBP paper (Melnyk & Fineout-Overholt, 2019). The evidence table ranks evidence from “Level I” evidence to “Level VII” evidence, with “Level I” evidence being the highest level attainable. Because the selected hierarchy of evidence table was focused on addressing intervention questions, levels of evidence were determined by the confidence they could provide clinicians. For example, Melnyk and Fineout-Overholt (2019) describe the importance of obtaining higher levels of evidence because the results are more likely to accurately represent a real-life situation; therefore, providers can more confidently assume that the intervention will produce the same effects when applied to their own patient population of interest. In contrast, a lower level of evidence would not offer as much assurance for the provider and the intervention would have to be used with caution rather than confidence.

For this EBP project, there were 14 total pieces of evidence used for the literature review and construction of best practice. Five pieces of evidence were deemed to be “Level I”, one piece of evidence was found to be “Level II”, there was one “Level III” piece of evidence, six
pieces of “Level VI” evidence, and one piece of “Level VII” was used. The “Level I” pieces of evidence consisted of systematic reviews and clinical practice guidelines that focused on depression screening recommendations and tools applicable to the population of focus. Although lower on the evidence hierarchy, the “Level VI” pieces of evidence (two quality improvement [QI] studies, two descriptive cross-sectional studies, a qualitative study, and a quasi-experimental study) provided the most evidence describing and exploring interventions for increasing depression screening rates for older adults in primary care and how to implement best practice; therefore, six pieces of this level of evidence were used. The lone “Level VII” piece of evidence was an integrative review not meeting the criteria for a systematic review, obtained from the JBI Database.

Analysis and Appraisal of Relevant Evidence

An assortment of different evidence-based instruments was used to appraise the quality of the evidence used for this EBP project. The tools used during this project were the Appraisal of Guidelines for Research & Evaluation II (AGREE II) tool, various Critical Appraisal Skill Checklist (CASP) tools, and the applicable Melnyk and Fineout-Overholt Rapid Critical Appraisal Questions. The combination of tools was necessary because not all tools are applicable to all study types and/or levels of evidence.

Three pieces of evidence were considered clinical practice guidelines; therefore, those sources were appraised using the AGREE II tool. In 2003, the AGREE II Instrument was developed by a group of international guideline developers and researchers with the objective of assessing the quality of clinical practice guidelines. Now, the tool is also used to provide a “methodologic strategy” for developing guidelines and informing how information should be reported in guidelines (AGREE Next Steps Consortium, 2009). There is no other appropriate tool for appraising clinical practice guidelines. The bulk of the evidence was appraised using the differing CASP tools. The CASP tools used for randomized controlled trials (RCTs) and systematic reviews were piloted by health care providers and originally based on the Journal of
the American Medical Association (JAMA) ‘Users’ guides to the medical literature; however, newer checklists (like the other tools used in this project) were developed and piloted by a group of experts (CASP, 2018a). Each of the CASP tools consists of 11 questions that assist in evaluating the piece of evidence by considering the results of the evidence, determining if the results are valid, and deciding if the results can be replicable locally (CASP, 2018a). The CASP tools do not offer an objective grading of the evidence, like a score or rating. Rather, the CASP tools were developed to assist the user in making an educated decision and to be “part of a workshop setting” (CASP, 2018a, p. 1). Using the CASP source for most of the evidence helped maintain consistency when appraising the evidence. Therefore, the inclusion of the CASP tools was appropriate despite their lack of a firm recommendation. Lastly, two pieces of evidence were appraised using the Melnyk and Fineout-Overholt Rapid Critical Appraisal Questions for EBP QI Projects and one study was appraised using the Melnyk and Fineout-Overholt Rapid Critical Appraisal Questions for Literature Review. Although these rapid appraisal tools are more appropriate for experienced users, there were no other accessible or appropriate options for appraisal of these lower pieces of evidence; therefore, usage of the tool was necessary.

When strictly looking at the level of evidence, some of the evidence selected for this EBP project could be considered lower levels of evidence as evaluated by the Melnyk and Fineout-Overholt (2019) hierarchy of evidence table. However, further appraisal demonstrated the articles selected were relevant and applicable to the selected clinic setting and project. Therefore, the selected QI projects and expert opinion pieces were used in the synthesis of literature and construction of best practice.

Table 2.1

Appraisal of Evidence

<table>
<thead>
<tr>
<th>Author/yr</th>
<th>Database(s)</th>
<th>Level of Evidence/Type</th>
<th>Quality/Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>Database</td>
<td>Type of Study</td>
<td>Checklist</td>
</tr>
<tr>
<td>-----------</td>
<td>----------</td>
<td>---------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Campbell et al. (2021)</td>
<td>MEDLINE with Full Text</td>
<td>VI/Quality Improvement</td>
<td>92/160 Melnyk &amp; Fineout-Overholt Rapid Critical Appraisal Questions for EBP QI Projects Consider evidence with caution</td>
</tr>
<tr>
<td>Costantini et al. (2021)</td>
<td>PsycInfo</td>
<td>I/Systematic Review</td>
<td>Strong/CASP Systematic Review Checklist</td>
</tr>
<tr>
<td>Gorman et al. (2021)</td>
<td>CINAHL</td>
<td>III/Nonrandomized Controlled Study</td>
<td>Sufficient/CASP Case Control Study Checklist</td>
</tr>
<tr>
<td>Heinz et al. (2021)</td>
<td>MEDLINE with Full Text</td>
<td>VI/Qualitative Study</td>
<td>Strong/CASP Qualitative Studies Checklist</td>
</tr>
<tr>
<td>JBI Recommended Practice (2019)</td>
<td>JBI</td>
<td>VII/Clinical Practice Guideline</td>
<td>AGREE II D1 = 66.7%; D2 = 37.9%; D3 = 0%; D4 = 13.3%; D5 = 47.6%; D6 = 16.7%; Overall = 4/7 = 50% Would recommend the guideline with modifications</td>
</tr>
<tr>
<td>Kaiser Permanente (2021)</td>
<td>TRIP</td>
<td>I/Clinical Practice Guideline</td>
<td>AGREE II D1 = 83.3%; D2 = 77.8%; D3 = 38.9%; D4 = 76.7%; D5 = 76.2%; D6 = 41.7%; Overall = 6/7 = 83.3% Would recommend the guideline</td>
</tr>
<tr>
<td>Lizarondo (2021)</td>
<td>JBI</td>
<td>VII/Integrative Review</td>
<td>Sufficient/Melnyk &amp; Fineout-Overholt Rapid Critical Appraisal Questions for Literature Review Tool Would recommend article for use within a body of evidence</td>
</tr>
<tr>
<td>Maust et al. (2017)</td>
<td>CINAHL</td>
<td>VI/Descriptive Cross-Sectional Study</td>
<td>Sufficient/CASP Case Control Study Checklist</td>
</tr>
<tr>
<td>Rhee et al. (2017)</td>
<td>CINAHL</td>
<td>VI/Descriptive Cross-Sectional Study</td>
<td>Sufficient/CASP Case Control Study Checklist</td>
</tr>
<tr>
<td>Siniscalchi et al. (2020)</td>
<td>CINAHL</td>
<td>VI/Quality Improvement</td>
<td>98/160 Melnyk &amp; Fineout-Overholt Rapid Critical Appraisal Questions for EBP QI Projects Consider evidence with caution</td>
</tr>
<tr>
<td>Sinnema et al. (2018)</td>
<td>MEDLINE with Full Text</td>
<td>II/RCT</td>
<td>Sufficient/CASP Randomized Controlled Trial Checklist</td>
</tr>
<tr>
<td>Smith et al. (2021)</td>
<td>Cochrane Database of Systemic Reviews</td>
<td>I/Systematic Review</td>
<td>Strong/CASP Systematic Review Checklist</td>
</tr>
</tbody>
</table>
University of Michigan Health System. (2021) - TRIP I/Clinical Practice Guideline
AGREE II
D1 = 94.4%; D2 = 72.2%; D3 = 88.9%; D4 = 80%; D5 = 83.3%; D6 = 75%; Overall = 7/7 = 100%
Would recommend the guideline

Construction of Evidence-based Practice

Synthesis of Critically Appraised Literature

Current evidence demonstrated numerous ways to increase depression screening for adults in primary care settings (Campbell et al., 2021; Gorman et al., 2021; Siniscalchi et al., 2020). The results either included older adults or were generalizable to the older adult population. First, one must decide what screening tool to use (Costantini et al., 2021) and how and when to use the screening tool (Gorman et al., 2021; Siniscalchi et al., 2020). Next, the staff should be educated on depression and depression screening prior to implementation of the screening tool. Research has demonstrated that providers who could confidentiality identify depressive symptoms were more likely to recognize depressive patients in practice (Sinnema et al., 2018). Finally, patients who are found to have depression should be cared for appropriately (University of Michigan Health System, 2021). To comply with current clinical practice guidelines, like the USPSTF (2016) guidelines, depression screening in older adults in primary care needs to be increased.

Screening

The importance of depression screening for older adults in primary care settings has been established, yet compliance rates remain low. To improve depression screening rates and outcomes, the evidence suggests using validated depression screening tools (JBI Recommended Best Practice, 2021) educating staff (Gorman et al., 2021; Sinnema et al., 2018), and using collaborative care models following the screening (University of Michigan Health System, 2021).

Screening Tool.
Most guidelines, like the JBI Recommended Best Practice (2021), recommend using any validated screening tool when screening for depression in the older adult population. The University of Michigan Health System (2021) lists the following validated screening tools as appropriate: the PHQ-2, PHQ-9, Edinburgh Postnatal Depression Scale, Quick Inventory of Depressive Symptomatology Self-Report, and the Geriatric Depressions Scale. The literature clearly favors the PHQ-9, as most evidence appraised for this EBP project utilized the questionnaire (Campbell et al., 2021; Gorman et al., 2021; Maust et al., 2017; Siniscalchi et al., 2020). The clear favoritism of the PHQ-9 is likely because the questionnaire is among the most widely used depression screening tools; however, the tool is also effective (see Appendix C). When using a cut-off score of 10, the results are “highly suggestive of depressive disorder” (Kaiser Permanente, 2021, p. 4) and the tool is as maximized operative characteristics (Costantini et al., 2021; University of Michigan Health System, 2021). If using the PHQ-2, the evidence suggests using a score of “3” or more (Gorman et al., 2021; Siniscalchi et al., 2020) or using a score of either “2” or “3” to either question to indicate the need for further evaluation and progression into the PHQ-9 (Kaiser Permanente, 2021). Siniscalchi et al. (2020) found when using a score of 3 or greater on the PHQ-2, the questionnaire has been shown to have 83% sensitivity and 92% specificity for detecting major depression. Likewise, Chen et al. (2010) demonstrated a sensitivity of 0.85 or higher and a sensitivity of 0.75 or higher when using a cut-off score of 10 on the PHQ-9 in patients 60 years and older, and results were confirmed following diagnostic interview using a Mental Health Professional blind to the preliminary PHQ-9 results (as stated in Costantini et al., 2021).

**Screening Method.**

Like the screening tool recommendations, current guidelines offer broad recommendations for the frequency of depression screening in the older adult population in primary care. Kaiser Permanente (2021) recommends screening adults for depression annually and when suspected by the healthcare professional. As far as when to screen the patient during
the visit, patient check-in was shown to be effective for increasing depression screening rates (Gorman et al., 2021; Siniscalchi et al., 2020). Siniscalchi et al. (2020) were able to screen 1145 patients out of the 1200 population (95.4%) following the implementation of depression screening during check-in and improve overall depression screening rates by 10% in a University of Texas Southwestern Medical Center (UTSW), Department of Family and Community Medicine clinic (see Appendix A).

Using a medical assistant (MA) protocol was also shown to be effective in increasing depression screening rates for adults in primary care. Gorman et al. (2021) demonstrated favorable results when applying the MA protocol to a population of 21,377 adults in an adult internal medicine and pediatrics practice. Although Medicare patients were still less likely to be screened, overall depression screening rates rose from an 18% baseline (when using physician-only depression screening) to 57% following implementation ($p < 0.0001$) when MAs verbally administered the PHQ-2 (Gorman et al., 2021).

The method of screening utilized by Gorman et al. (2021) was a two-stage screening method. The MA would first screen the patient using the PHQ-2, and then the PHQ-9 would be administered if the patient screened positive. This method of screening was found to be efficient and cost-effective when compared to other methods of screening, like using the PHQ-9 only (Costantini et al., 2021; Jiao et al., 2017). Jiao et al. (2017) performed microsimulations on hypothetical adult patients (aged 20-70 from New York City, NY) to examine costs of universal screening methods, screening methods followed by collaborative care, and the various methods of screening (see Appendix A).

**Screening Reminders.**

Using best-practice advisories (BPAs) in the patients’ electronic health records (EHRs) was also shown to increase depression screening adherence (Campbell et al., 2021; Gorman et al., 2021). Campbell et al. (2021) performed a study on 424 home-bound patients from Houston, using the PHQ-9 and BPAs to inform healthcare providers when depression screening was
required for a patient. Whether the reminder was indicative of a positive PHQ-2, or a positive PHQ-9, depression screening rates increased by as much as 20% following implementation of the reminders/advisories (Campbell et al., 2021).

**Education**

Education was shown to be important for all staff tasked with increasing depression screening completion rates (Costantini et al., 2021; Gorman et al., 2021; Heinz et al., 2021; Siniscalchi et al., 2020; Sinnema et al., 2018). The education could be focused on the general practitioners (GPs) or providers, the medical assistants and check-in staff, or provided to all the available staff. General staff education should include depression education, the need for depression screening, standard measures for diagnosing depression and grading severity, how to treat depression, and when to refer the depressive patient (Heinz et al., 2017; Siniscalchi et al., 2020). The importance of provider education cannot be understated because primary care providers will provide all care for most depressive patients (University of Michigan Health System, 2021), patient complaints are not always specific to depression and/or mental health (Heinz et al., 2021; Sinnema et al., 2018; University of Michigan Health System, 2021), and confident providers are more likely to identify and diagnose depressive patients (Sinnema et al., 2018). Broad awareness programs and/or education focused on increasing provider confidence can be effective in improving depression screening completion rates (Heinz et al., 2021; Sinnema et al., 2018).

The staff should also be educated on topics specific to the project. For example, Gorman et al. (2021) made sure that MAs were educated on how to properly administer the PHQ-2 prior to project implementation. Incorrect implementation will not be helpful in improving the care that depressive patients receive, and it can also negatively affect the data obtained throughout the EBP project.

**Collaborative Care**
Patients found to have mild-moderate depressive disorder should be referred to a collaborative care model, which includes a care manager, a psychiatrist, and the primary care provider because the collaborative care model was found to be more efficacious than “usual care” in the treatment of depression (University of Michigan Health Systems, 2021, p. 38).

**Strengths and Limitations**

The increased responsibility associated with depression screening and care can be a burden for healthcare providers. Evidence has shown that provider satisfaction decreased significantly following implementation of universal screening during check-in. More specifically, 8 providers (40%) completed post-survey and felt that depression screening was less important following implementation of universal depression screening ($P = 0.002$) (Siniscalchi et al., 2020). Also, screening with the PHQ-9 alone was not shown to be cost-effective when compared to two-stage screening or usual care alone (Jiao et al., 2017). However, there are many benefits to increasing depressions screening completion rates for older adults in primary care. First, when done correctly, the screening can prove to be cost-effective when compared to usual care or allowing providers to identify and screen depressive patients (Jiao et al., 2017). A potential reason for this cost-effectiveness is the decrease in unnecessary antidepressant prescriptions associated with increased depressive screening (Maust et al., 2017; Rhee et al., 2017). Studies show that up to 29% of older adults are prescribed an antidepressant despite not qualifying as having minor depression when eventually screened (Maust et al., 2017). Also, depression screening has been shown to improve depression remission rates (Lizarondo, 2021; Siniscalchi et al., 2020). Next, depression screening can lead to other interventions, like health education or stress management that non-screened patients do not experience ($p < 0.001$) and initiate further screening for other conditions that would otherwise not have been found, like dementia or delirium (Lizarondo, 2021; Rhee et al., 2017). Lastly, Siniscalchi et al. (2020) found that staff education and increased depression screening rates can improve staff comfort with discussion mental health subjects with patients ($P = .044$)
**Recommendation for Best Practice**

The evidence suggests that depression screening rates for older adults in primary care will experience the most increase when implemented using an MA protocol during patient check-in. Also, staff education and referrals to collaborative care teams following positive screening are considered best practice. BPAs can also be used to increase depression screening adherence. Therefore, providing staff education, implementing BPAs in the patients’ EHR to remind providers on when to screen patients and when to evaluate positive-screening patients, implementing an MA protocol to screen patients during check-in using the PHQ-9 tool, and properly referring patients collaborative care following positive screening is considered best practice. The best practice recommendations found during literature search helped create the implementation plan used during this EBP project.

An additional literature search was completed after data were analyzed to assess for any new findings that had been published since the initial literature search. Additional search findings are discussed in Chapter 5.
CHAPTER 3

IMPLEMENTATION OF PRACTICE CHANGE

Information regarding the project site and participants, intervention, proposed outcomes, comparison data, and project timeline will be discussed in this section. Also, an explanation of how this EBP project manager protected human subjects is provided.

This project aimed to address the following PICOT question: In Medicare patients in a primary care setting, is an MA depression screening protocol using the PHQ-9, coupled with staff education, more effective than standard care for improving depression screening completion rates after three months? The implemented practice change included provider and MA staff education and an MA protocol for depression screening Medicare patients during patient rooming using the PHQ-9. Depression screening completion rates were measured, by provider, for a three-month baseline period and a three-month implementation period, and then data were analyzed and compared.

Participants and Setting

This EBP project was completed in a family practice clinic in Northwest Indiana. Key stakeholders included the office manager, four physicians and one nurse practitioner, the clinic’s medical assistants and administrative assistants, the patient population, and the organization’s human resources department. Although MAs were responsible for screening patients for depression prior to project implementation, there was a lack of protocol for depression screening which resulted in poor compliance. Recruitment was not necessary for this EBP project, as the measured outcome was already being tracked by the clinic and organization prior to the project. The sampling type used for this EBP project was convenience sampling. Systematic random sampling was used for data analysis. Data analysis is discussed in Chapter 4. Inclusion criteria included Medicare patients, 18 years or older, presenting for a scheduled appointment, and due for an annual depression screening. Providers and MAs were able to determine who was due for
an annual depression screening prior to the visit because of best practice advisory reminders in the patient’s EHR. Once a patient was found to be eligible for the annual depression screening, MAs made note on the daily schedule so that the screening tool would be prepared and accessible prior to patient rooming (N. Hoehn, personal communication, July 26, 2022). This process occurred prior to, and during, project implementation. Patients were excluded if they were not insured through Medicare, under 18 years of age, mentally unable to complete the PHQ-9 questionnaire, not due for depression screening or if screening was otherwise not applicable, or if screening was refused. Exclusion criteria were necessary to ensure accurate population representation, ethical practice, and to allow for accurate findings and data comparison.

**Pre-Intervention Group Characteristics**

The pre-intervention depression screening completion rates were calculated, by provider, monthly. Provider acknowledgment of the screening in the patient’s EHR was necessary for recording. Therefore, provider inclusion was important for project success. Five providers (four physicians and one nurse practitioner) agreed to participate in this EBP project. Their PHQ-9 depression screening rates for Medicare patients were already being recorded prior to the project implementation. This information was used as baseline data comparison with post-intervention data. The clinic has a sixth provider, a physician, but baseline data were not available for the provider; therefore, the sixth provider was excluded from this project. Provider demographic information was collected on June 26, 2022 (N. Hoehn, personal communication, June 26, 2022). Of the providers included in this study, three were male and two were female (see Figure 3.1). Further provider background demographic information is displayed below. Specific provider information was kept confidential throughout this writing to protect participant privacy.

**Figure 3.1**
Provider Demographics: Gender

Figure 3.2

Provider Demographics: Type

Figure 3.3

Provider Demographics: First Year in Practice
Patient baseline demographic information was obtained on August 1, 2022 (T. Behrens, personal communication, August 1, 2022) and again on October 10, 2022 (T. Behrens, personal communication, October 10, 2022). The baseline patient demographic information was the most-current attribution data at the time it was obtained, and it was sent and analyzed using a password-secured Microsoft Excel spreadsheet (T. Behrens, personal communication, August 1, 2022). Overall, the baseline patient demographic data accounted for 1946 attributed patients across all the clinic providers. Because of the large sample size, it was decided that using a systematic random sample of 130 subjects would be appropriate for data analysis (J. Brandy, personal communication, October 17, 2022). The sample was determined by selecting every 15th subject. If the subject selected was “excluded”, then the next eligible subject was used for the sample. Of the sample used, 69 (53.1%) of the patients were female and 61 (46.9%) were male. The patient ages ranged from 42 years of age to 99 years of age, with a mean age of 74 years and a standard deviation of 8.502. Most of the patients were between the ages of 65 and 74 years (see Figure 3.2). Similarly, nearly all the patients in the baseline demographic data analysis were White (96.9%), but other races served by the clinic providers included Black or
African American, American Indian and Alaska Native, Asian, and “other” (see Figure 3.3). The attributed patients, by provider, are displayed in Figure 3.4. Overall, exactly 50% (n = 65) of the baseline random sample was screened for depression and 50% of the sample was not screened despite being due for depression screening in the clinic. Reasons for “exclusion” are discussed in Chapter 4.

**Figure 3.4**

*Patient Demographics: Age*

![Pie chart showing age distribution](image)

**Figure 3.5**

*Patient Demographics: Race*
**Figure 3.6**

**Patient Demographics: Provider**

The interventions utilized during this EBP project included staff education and an MA depression screening protocol. An educational presentation was prepared by the project.
manager by synthesizing current, evidence-based, educational resources and providing detailed background and project information. The depression screening protocol was developed using best-practice recommendations in collaboration with the project site facilitator and clinic MAs.

Following the Iowa Model, a triggering issue (poor depression screening completion rates) was identified by the project manager in the Spring of 2022 and verified in collaboration with the project manager on June 8, 2022. Next, a primary objective of increasing depression screening completion rates in a primary care setting was developed. Project preparation officially began on April 30, 2022, with the beginning of key stakeholder and team formation. Key stakeholders for this EBP project included: the project manager, the project advisor, the project site facilitator, the organization’s human resources (HR) department, the organization’s Clinical Quality Analyst, the participating providers, the office MAs and administrative staff, and the patient population. The project manager briefly discussed the preliminary project objective and description with the project site facilitator during the April discussion, and the project manager was referred to the organization’s HR department for organization approval before continuing. Discussions between the project manager and HR began on May 2, 2022 (T. Hurubean, personal communication, May 2, 2022). Collaboration with HR was necessary to ensure ethical practice and the discussion continued via email until June 2, 2022, when the project was officially approved (T. Hurubean, personal communication, June 2, 2022). During the discussions with HR, collaboration between the project manager and project advisor began, and it was concluded that the diabetic population was an appropriate population of focus (J. Brandy, personal communication, May 26, 2022). Evidence was explored to verify that the triggering issue was relevant to the identified population and documented in the literature, then evidence collection and appraisal began. Following project approval, discussions with the project site facilitator resumed and it was determined that the Medicare population was a more significant priority for the project site (N. Hoehn, personal communication, June 8, 2022). Consequently, the population of focus shifted from diabetic patients to Medicare patients in the primary care setting. Following
the change in the population of focus, a body of evidence was assembled and appraised to ensure that there was sufficient evidence and need for improving depression screening rates in the Medicare population in primary care and evidence-based interventions for increasing depression screening rates in the population were generalizable and effective. Once the evidence was synthesized and best practice was apparent, implementation plans (including interventions and a timeline) began with the project site facilitator.

The project site was intensely devoted to increasing PHQ-9 depression screening completion rates in Medicare patients. Because this EBP project was focused on utilizing current evidence to increase screening rates, and not a research project comparing experimental interventions or otherwise altering medical care, IRB approval and patient recruitment were not necessary. Research focuses on answering questions that do not already have answers, where this EBP project used current and established evidence-based interventions to improve practice (Melnyk & Fineout-Overholt, 2019). Once a project is deemed exempt from IRB approval, the IRB will not review recruitment materials (Iowa State University Institutional Review Board, 2016). This EBP project utilized convenience sampling by recording patients attending their already-scheduled visits. No patient recruitment was performed in this EBP project. Patient recruitment is helpful in representing the target population to allow for relevant and generalizable results (Axén et al., 2021). Because this project was not conducting research, and the evidence-based practice recommendations found through literature search and appraisal were generalizable and relevant to the target population used in this EBP project, patient recruitment was not necessary. Rather, the providers provided the comparison data by comparing screening rates, overall and by provider, for the three-month periods using pre- and post-intervention data.

Baseline data were initially obtained from the project site facilitator for data analysis and validation of the triggering issue on June 8, 2022 (N. Hoehn, personal communication, June 8, 2022). Further data were collected during project manager and project site facilitator meetings on July 5, 2022, and July 26, 2022. Other topics discussed during the meetings included best
practice recommendations, staff education, a staff meeting, current site cut-off scores for PHQ-9 depression screening, current site plans or protocols following a positive patient screening, and the need for additional patient baseline demographic information to allow for more accurate post-implementation data analysis and comparison. It was decided, in collaboration with the project site facilitator, that an MA depression screening protocol using the PHQ-9 during rooming, as well as staff education, would be the intervention used in this project (N. Hoehn, personal communication, July 26, 2022). As discussed, current evidence demonstrates how screening during patient check-in is more effective for increasing depression screening rates than standard care (Gorman et al., 2021; Siniscalchi et al., 2020). Although this EBP project did not screen during patient check-in, the clinic MAs already took and documented patient vital signs, reviewed the patient’s chief complaint, and reviewed and updated the patient’s medical history during patient rooming. Patient rooming in the project site was found to be similar to patient check-in, as described in the literature (Gorman et al., 2021; Siniscalchi et al., 2020). Therefore, it was agreed that implementing an MA screening protocol during patient rooming, rather than check-in, was more efficacious for this EBP project. Because provider acknowledgement, via “DOT” phrase in the patient’s EHR, was necessary to record that the depression screening had been completed, the MAs were also instructed to confirm screening completion with the provider for all eligible patients.

The project site facilitator provided further detail regarding the patient demographics and clinic protocols on July 26, 2022. Not all requested patient demographic information (gender, age, and race) was readily available to the project site facilitator. Consequently, the project site facilitator provided the project manager with an email for the organization’s Clinical Quality Analyst to assist the project manager with data retrieval and obtaining patient demographic information. The project manager emailed the Clinical Quality Analyst on July 26, 2022, and received the patient demographic data used for baseline comparison on August 1, 2022 (T. Behrens, personal communication, August 1, 2022) and again on October 14, 2022 (T. Behrens,
personal communication, October, 14, 2022). Implementation plans and procedures, the project timeline, and an official start date of September 1, 2022, were agreed upon by all key stakeholders on July 26, 2022 (N. Hoehn, personal communication, July 26, 2022). The start date was selected because the clinic measured PHQ-9 completion scores by month. Therefore, beginning on the first of a month and recording for three full months allowed for the most accurate data recording and comparison.

An educational presentation was prepared by the project manager because staff education was recommended as best practice (Siniscalchi et al., 2020). The project site facilitator was provided with the educational presentation on August 24, 2022. The project site facilitator sent the education to all staff providers and MAs, via email, following review of the presentation. The educational presentation was created by following best practice recommendations and synthesizing available evidence-based provider resources (see Appendix D). The education included a brief description of the project being implemented and was sent to staff prior to September 2022 so that questions could be answered by the project site facilitator and project manager prior to data collection. Staff feedback and satisfaction was important to ensure that the intervention is continued following project implementation, so it was decided that the project manager would prepare a questionnaire assessing implementation and staff feedback during a meeting in September 2022 (N. Hoehn, personal communication, September 15, 2022). The questionnaire was distributed to medical assistant staff on January 25, 2023, and collected by the project manager following staff completion (see Appendix E).

**Comparison**

The main objective of this EBP project was to improve depression screening completion rates. Consequently, PHQ-9 depression screening completion rates were compared pre- and post-intervention overall and by provider. Project site baseline data were obtained from March 2022 to May 2022. Post-intervention data were collected from September 1, 2022, to November 30, 2022. PHQ-9 depression screening completion rates were measured for each clinic provider
during the baseline period and then compared to results post-implementation. Prior to implementation, overall PHQ-9 depression screening completion rates were 50% for the months of March 2022 to May 2022.

**Outcomes**

The PHQ-9 depression screening rates were measured, by provider, for a three-month post-implementation period. The screening rates were displayed as a percentage, and the percentage was found by dividing the number of patients screened by the total number of attributed (or eligible) patients for each provider once the random sample was selected.

The proposed primary outcome for this EBP project was increased depression screening completion rates for Medicare patients in a primary care setting following project implementation. For the primary outcome, the PHQ-9 depression screening rates were compared pre- and post-intervention using a random sample of 130 subjects at baseline and 128 subjects post-intervention. Initially, a paired $t$-test was the planned statistical test for this EBP project. However, after conversation with one of the project advisors, it was determined that the Wilcoxon Signed Rank Test was a more appropriate choice because of the smaller sample size (providers) being compared pre- and post-intervention (C. Cavinder, personal communication, July 27, 2022). Finally, it was decided that completion rates would simply be compared for clinical significance, with the option of using additional analysis, such as the paired-$t$ test, to better illustrate the significance of the obtained data. The Chi-Square Test for Independence was finally agreed upon as the best statistical test to compare results for significance following a meeting with the project advisor in late-January 2023 (J. Brandy, personal communication, January 24, 2023).

Also, staff feedback and satisfaction were measured via feedback survey and those results will be discussed in Chapter 4 and Chapter 5.

**Time**

This project’s timeline is presented in Appendix F. This EBP project utilized convenience sampling by screening the patients that came in for scheduled visits. Therefore, recruiting for this
EBP project was not necessary. Office providers and MAs were emailed an educational presentation, prepared by the project manager, on August 24, 2022. Following the staff education and initial implementation, a meeting with the office manager and office MAs took place on September 29, 2022. During the meeting, staff feedback questionnaires were collected. The project site began implementation of the screening protocol on September 1, 2022, and data were recorded until November 30, 2022. Post-intervention data were collected on November 28, 2022. A three-month post-implementation data collection period was used to more accurately compare to the three-month baseline data obtained prior to project implementation.

**Protection of Human Subjects**

Protecting the human subjects throughout this project was always a priority. The project site’s organizational human resources department was involved prior to planning the intervention. Approval was required by human resources prior to any communication or collaboration with the project site facilitator to ensure the project was ethical and efficacious. Also, Valparaiso University’s Doctor of Nursing Practice curriculum requires online ethics training through the Collaborative Institutional Training Initiative (CITI) program. The project manager completed the mandatory CITI education and training on April 13, 2022 (see Appendix G). The site facilitator confirmed that this project did not require IRB approval on July 5, 2022 (N. Hoehn, personal communication, July 5, 2022). Regardless, Valparaiso University required project managers to complete a Human Subjects Research Determination questionnaire with the purpose of determining whether the project required Institutional Review Board (IRB) approval or if the project was exempt. The questionnaire was completed on July 13, 2022, and the project was not found to require IRB approval (see Appendix H). Patient identifying information was never used during data collection for this project. When data were obtained, it was sent only using an encrypted spreadsheet that required a passcode prior to opening. Data was then transferred into a statistical document where all potential patient identifiers, such as birth dates or initials, were omitted from the document.
CHAPTER 4

FINDINGS

This chapter presents the results of the data analysis performed for the primary outcome of this EBP project. Staff satisfaction and feedback were measured using both quantitative and qualitative survey methods. Demographic information for the comparison group is discussed, and key project findings are also discussed in this chapter. Baseline group demographics were discussed in Chapter 3.

Overall, depression screening completion rates were higher for the intervention group than the baseline group following implementation of this EBP project. Chi-Square Testing for Independence was used to determine if the change in screening rates was statistically significant. Staff satisfaction and feedback were measured using descriptive and frequency statistics.

Participants

Overall, post-intervention demographic data was very similar to pre-intervention demographic data. Age representation, race distribution, and provider distribution were nearly identical for post-intervention data when compared to pre-intervention data. The post-intervention group initially contained 1933 subjects. A sixth clinic provider accounted for 21 patients, but these patients were omitted related to the provider not participating in pre-intervention data collection. Consequently, a population of 1912 subjects was initially considered. Following random sample selection, a sample of 128 subjects were used to post-intervention data collection (as compared to 130 subjects in pre-intervention data collection). To maintain consistency with the baseline group, the interventional group sample was determined by selecting every 15th subject. As discussed in Chapter 3, the initial group population included nearly 2000 subjects. Therefore, it was determined that a random sample of 130 subjects was most appropriate for data analysis in this EBP project. The random sample was selected using stratified random sampling. Stratified
random sampling, in this EBP project, included randomizing the entire population in the data analysis spreadsheet and then selecting every 15\textsuperscript{th} subject until the sample was completed. If the subject selected was “excluded”, then the next eligible subject was used for the sample. A subject may be “excluded” if they had a previous history of depression, if they were unable to complete the required screening, or if they were attributed to the excluded provider (Provider Six). Of the intervention group sample, 58 (45.3\%) of the patients were female and 70 (54.7\%) were male. The patient ages ranged from 43 years of age to 100 years of age, with a mean age of 74 years and a standard deviation of 7.958. Over half of the patients (52\%) were between the ages of 65 and 74 years (see Figure 4.2). Like the baseline group, nearly all the patients in the intervention group sample were White (98.4\%), with only a small percentage of patients identifying as Black or African American, American Indian and Alaska Native, Asian, or “other”. The attributed patients, by provider, are displayed in Figure 4.3.

**Figure 4.1**

*Patient Demographics: Age*

![Pie chart showing patient demographics by age group for the comparison group and baseline data.]

**Figure 4.2**

*Patient Demographics: Race*
Patient Demographics: Provider

Changes in Outcomes

The PICOT question guiding this project was: In Medicare patients in a primary care setting (P), is an MA depression screening protocol using the PHQ-9 (I), coupled with staff education, more effective than standard care (C) for improving depression screening completion rates (O) after three months (T)?

The primary outcome of this project was to increase depression screening rates for Medicare patients in a primary care setting. This was determined by comparing screening rates for a post-intervention group (i.e., “intervention group”) to a baseline group.

Statistical Testing and Significance
Statistical Package for Social Sciences 28 (SPSS28) was used to complete necessary data analysis. Because the primary outcome of this project used nominal data, and compared pre- and post-intervention groups, a Chi-Square Test for Independence was used to determine if the change in screening rates was significant. More specifically, a significant finding, using the Chi-Square Test for Independence, would indicate that the screening rates were dependent upon the groups they were representing. Therefore, a statistically significant increase in intervention data from baseline data would imply that the intervention provided a statistically significant change in the rate of depression screening.

**Findings**

Depression screening rates were found to be 50% for the baseline data collection period. Following intervention implementation, depression screening rates rose to 64% for the three month interventional data collection period. A Chi-Square Test of Independence was run to ensure that the screening rates were dependent upon the group they represented. If the screening rates were found to be dependent upon the group they represented (i.e., independent of each other), one could conclude that the results were reflective of their group and the increase in depression screening rates was statistically significant. If the screening rates were found to be independent of their group (pre-/post-intervention); however, this would lower statistical significance and raise reasonable suspicion that the increase in screening rates were a result of chance.

**Table 4.1**

*Comparison Data for Primary Outcome*

<table>
<thead>
<tr>
<th>Group</th>
<th>Number of Eligible Patients</th>
<th>Number of Eligible Patients Screened</th>
<th>Screening Rate</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline (Pre-Intervention)</td>
<td>130</td>
<td>65</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>Intervention (Post-Implementation)</td>
<td>128</td>
<td>82</td>
<td>64%</td>
<td>+14%</td>
</tr>
</tbody>
</table>
**Primary Outcome**

**Depression Screening Rates.** A statistically significant \((p = .023)\) higher percentage of people in the post-intervention group than in the pre-intervention (or baseline) group were screened for depression \((x^2 (1) = 5.203, \ p < .05)\).

**Staff Satisfaction and Feedback**

Staff satisfaction and feedback were collected via a feedback survey created by the project manager (see Appendix E). Overall, five surveys were distributed and only three surveys were returned to the project manager. Staff satisfaction was measured with three questions using a 5-point Likert style format. The possible answers included “Strongly Agree”, “Agree”, “Neither Agree or Disagree”, “Disagree”, and “Strongly Disagree”. The questions aimed to understand if the intervention fit into existing clinic workflow, if the staff noticed a difference in screening completion rates following project implementation, and if the staff believed that the Medicare population would benefit from the current EBP project. To analyze the feedback results, the answers were given number rankings (“Strongly Disagree” = 1, “Strongly Agree” = 5) and results were analyzed for descriptive data.

**Table 4.2**

**Satisfaction Survey Results**

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Mean (SD)</th>
<th>Median</th>
<th>Mode</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>“The screening, using the PHQ—9, fit into existing clinic workflow (you were able to find time to complete the screening).”</td>
<td>4.6667 (.57735)</td>
<td>5.0000</td>
<td>5.00</td>
<td>4.00-5.00</td>
</tr>
<tr>
<td>“You have noticed a difference in screening”</td>
<td>2.6667 (.57735)</td>
<td>3.0000</td>
<td>3.00</td>
<td>2.00-3.00</td>
</tr>
</tbody>
</table>
completion rates following implementation of this project.”

| “The Medicare population will benefit from this project.” | 3.0000 (2.00000) | 3.0000 | 1.00a | 1.00-5.00 |

a. Multiple modes exist. The smallest value is shown.

There were five open-ended, qualitative, questions to end the survey. Statements from the MA staff were generally supportive of depression screening in the older adult and/or Medicare population. One participant stated, “yes – especially for Medicare patients as they age,” and another added “losing friends/family” is an important reason why these populations should be adequately screened for depression. One of the open-ended questions asked for reasons why depression screening does not occur for all eligible Medicare patients. Some of the responses regarding the lack of complete depression screening for the Medicare population included “some patients come weekly” and “some patients are already treated for anxiety/depression”. One response spoke to patient resistance, saying “patients don’t want to complete them because they say ‘it doesn’t have anything to do with why they are here’”. When asked what they would change regarding the depression screening process, participants added “change the scoring system (answers),” and “the way the answers are scored”. Finally, one participant said, “maybe just verbally ask the questions” when asked what should be changed about this current EBP project.

Overall, the primary outcome of this project was to increase depressions screening rates for Medicare patients in the primary care setting. A statistically significant increase in depressions screening rates was found when comparing the intervention group to the baseline group. Staff generally agreed that the screening method fit into existing clinical workflow but did not believe that they noticed a difference in patient depression screening completion rates. Staff neither agreed nor disagreed as to whether the Medicare population would benefit from this EBP project.
CHAPTER 5
DISCUSSION

The PICOT question guiding this EBP project was: In Medicare patients in a primary care setting (P), is an MA depression screening protocol using the PHQ-9 (I), coupled with staff education, more effective than standard care (C) for improving depression screening completion rates (O) after three months (T)? An MA depression screening protocol using the PHQ-9, coupled with staff education, was implemented in a primary care setting. Depression screening rates were measured for eligible Medicare patients over a three month period following intervention implementation and compared to screening rates from a baseline three month period. The primary outcome of this project was to increase depression screening rates for Medicare patients in a primary care setting.

The findings of the statistical data analysis were displayed in Chapter 4. This chapter will focus on explaining the findings, as well describing the strengths and limitations of this EBP project. Also, relevance of the EBP model that was selected to guide this EBP project (The Iowa Model) will be evaluated, and future recommendations for nursing practice and research will be discussed in this chapter.

Explanation of Findings

Primary Outcome

Depression Screening Rates. The data analysis for this EBP project, using the Chi-Square Test of Independence, demonstrated a statistically significant difference between the pre- and post-intervention depression screening rates ($p = .023$). This means that the null hypothesis could be rejected. If accepted, the null hypothesis for this EBP project would assert that the two variables, group (pre- and post-intervention) and depression screening rate, would be independent of each other. Because the null hypothesis was rejected in this EBP project, the two variables are associated with each other – the depression screening rates were directly tied
to the groups they represented and the increase in depression screening rates was statistically significant.

The use of a validated depression screening tool was supported as best practice (JBI Recommended Best Practice, 2021). Similarly, educating staff was shown to improve depression screening rate outcomes in the literature (Gorman et al., 2021; Sinnema et al., 2018). The findings of this EBP project are consistent with current evidence and literature (Costantini et al., 2021; Gorman et al., 2021; Heinz et al., 2021; Siniscalchi et al., 2020; Sinnema et al., 2018). Gorman et al. (2021) increased depression screening rates from 18% (baseline) to 57% ($p < 0.0001$) following implementation of an MA screening protocol, and these results were found in an internal medicine and pediatric setting.

This EBP project used staff education, a validated depression screening tool, and an MA depression screening protocol during patient rooming to improve depression screening rates. The overall structure and implementation of this EBP project was guided by current evidence and literature (Costantini et al., 2021; Gorman et al., 2021; Heinz et al., 2021; Siniscalchi et al., 2020; Sinnema et al., 2018). Depression screening rate outcomes were like the outcomes displayed in literature despite being applied to a different population and/or setting. Because this EBP project utilized a screening protocol, the project could likely be applied to many different populations. For example, Blackstone et al. (2022) applied a universal depression screening protocol at five different family medicine settings in Virginia, with clinic sizes ranging from 2500 patients to 11,000 patients. Overall, depression screening rates increased following implementation of a universal screening protocol, further showing that depression screening protocols can be effective for increasing depressions screening rates. However, certain populations still experienced lower depression screening rates than other populations. Adults aged 18-44 years were less likely to be screened than older adults (Blackstone et al., 2022). Further information regarding the additional literature search completed following data analysis for this EBP project will be discussed in the following sections.
**Staff Satisfaction**

Staff satisfaction and feedback were collected using a feedback survey. Results of the survey collection were discussed in Chapter 4. Overall, respondents felt that the screening fit into existing workflow. In contrast, there was disagreement amongst respondents regarding noticing a difference in screening completion rates following project implementation as well as the belief that the Medicare population benefited from this project (see Table 4.2).

There were many clinic staff members affected by the implementation of this project, including providers and MAs. MAs were primarily the staff most affected by this project, as the duty of screening the patients and informing the providers was their responsibility. Although five surveys were distributed to clinic MAs, only three surveys were completed and returned. The small sample size did not allow for adequate representation, nor did it allow for accurate data analysis. For example, one survey item (“The Medicare population will benefit from this project.”) ranged from 1.00 (Strongly Disagree) - 5.00 (Strongly Agree), with a mean of 3.00 (Neither Agree or Disagree). Increasing representation and response completion would have allowed for more accurate data analysis. The surveys were initially planned to be dispersed by the office manager and collected at a staff meeting. Plans were changed when it was found that the office manager was beginning retirement planning. Consequently, the project manager distributed surveys following project implementation, which may have decreased staff willingness to complete the surveys.

**Additional Literature Search**

An additional extensive literature search was completed following data analysis to assess if any new findings were published since project implementation. The Joanna Briggs Institute EBP Database offered one new evidence summary, published in September 2022, but the article was focused on managing behavioral symptoms in the acute hospital setting. Similarly, the Cochrane Library did not reveal any new reviews, and most relevant trials were focused on management or treatment of the older adult with mental illness as opposed to
screening the general older adult population. The TRIP Medical Database had one new USA guideline, but it was focused on screening children and adolescents rather than the older adult.

The USPSTF last provided updates regarding their depression screening guidelines in September 2022. The most recent draft recommendation statement, as of March 5, 2022, continued to recommend depression screening in the adult population, including pregnant persons, postpartum persons, and older adults (U.S. Preventative Services Task Force, 2022). The recommendation was given a grade “B” level of recommendation, as was the previous recommendation. Information regarding this recommendation was provided in Chapter 1. Although the most recent recommendation was a draft, and it was not a finalized recommendation, it appears as though the new recommendation will be relatively unchanged from the 2016 recommendation used throughout this EBP project. At the time of this writing, there were no new updates regarding depression screening in the older adult population provided by the USPSTF.

Lindsay and Decker (2022) performed a study utilizing and implementing reminders for depression screening, screening using the PHQ-9 tool, and a treatment algorithm in a primary care clinic. A significant (P < .000) increase in depression screening and treatment rates was found following implementation and data analysis using the chi-squared test. Similarly, Blackstone et al. (2022) found an increase in overall depression screening rates in a primary care setting following universal screening implementation; however, some populations were still less likely to be screened, like ages 18-44 years.

Strengths and Limitations of the DNP Project

Strengths

Depression screening rates increased following project implementation. As discussed in Chapters 1 and 2, consequences of poor depression screening include poorer health outcomes, suicide, and mortality (Shah et al., 2018). This project contributed to reducing the number of older adult patients experiencing poorer health outcomes because of poor depression screening for
the project site. Increasing depression screening rates was always the primary goal of this EBP project because of the consequences associated with poor depression screening in the older adult population.

The ability of the intervention to fit into existing clinical workflow was a major contributor to the success of this project. All staff respondents strongly agreed that the screening intervention fit into existing clinical workflow. Not only did the ease of implementation contribute to the success of this project, but it also increases likelihood for sustainability as well as generalizability.

**Limitations**

There were several limitations associated with this EBP project. First, although follow-up and referral to collaborative care are recommended as best practice, this project did not focus on management or treatment of the depressed patient. This project was focused strictly on increasing depression screening rates, but there is more work needed to assess the effectiveness of increasing depression screening rates in terms of the overall care depressive patient receives. More information regarding the need for further research will be discussed in the following sections. Also, the lack of time allowed for a pilot implementation may have affected the overall effectiveness of the intervention. Feedback could have been collected from staff following pilot implementation, which would have allowed for changes to be made to the project design prior to final implementation. Further, the poor response rate for the staff feedback questionnaire was also a weakness of this EBP project. Had every MA returned a feedback questionnaire, this would have allowed for increased representation and feedback that could assist future users or project managers with implementation of a similar project. Lastly, the timing of this EBP project at the project site was a limitation. The project site began experiencing effects of staff turnover, including the office manager, prior to project completion. Although the project implementation period was concluded, and data analysis was unaffected, this limited feedback and sustainability of the project. Sustainability will be discussed in the following section.
Sustainability

This EBP project design can be easily implemented at most primary care settings because of the ease of implementation. The main interventions used were staff education and an MA depression screening protocol during patient check-in, and these interventions can likely be altered or personalized to match the day-to-day operations of most outpatient clinic settings. Also, the interventions fit into preexisting clinical workflow well.

As for the project site used in this EBP project, key stakeholders, including the office manager and representatives from human resources, were sent an email from the project manager on February 17, 2023, discussing the results of the project. Specifically, key stakeholders were sent a brief message containing the results of data analysis, and they were asked if continuing the intervention used in this EBP project was something that they might consider continuing or implementing in other settings (K. Haluska, personal communication, February 17, 2023). The key stakeholders did not respond. Consequently, the intervention and project design used during the project are likely not going to be sustained long-term, especially if there is additional staff turnover following conclusion of the project.

The project site facilitator, the office manager and a key stakeholder throughout the planning and implementation of this project, began her exit from the project site in early-Spring 2023. The EBP project was already performing data analysis, so this exit did not affect the results or implementation of the project; however, it may have affected the overall sustainability of the project, at least for the project site that was used throughout the project. While managing most of the day-to-day operations in the clinic, the office manager was also managing all the MAs. Therefore, depending on how the new manager chooses to run day-to-day operations, the project design may be left behind because of unfortunate timing. Regardless, the staff feedback questionnaires collected and analyzed as part of this EBP project helped provide valuable information that can be used in future iterations of the project. For example, future sites willing to implement a similar project design can use the feedback given throughout the course of this
project in the planning of their own project and/or intervention. Having a “pilot” implementation is part of the Iowa Model that was used to guide the implementation of this project. Further information will be provided in the following section.

A recommendation for future projects would be to begin discussing sustainability at the beginning of the project, like discharge information is often discussed during hospital admission. Planning ahead could be helpful in better allowing for project sustainability or anticipating potential disruptors, such as organizational changes or staff turnover. Also, future projects should be sure to include a pilot trial of the intervention so that staff feedback is included and appropriate changes can be made prior to project final implementation.

**Relevance for EBP Model**

As discussed in Chapter 2, the Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care was used throughout the planning and implementation of this EBP project. There are several steps used throughout the model. First, the user is tasked with identifying triggering issues and opportunities to improve practice. Next, the user is challenged with stating the question or purpose for the use of the model. Following identification of the purpose of the model’s use, the user is tasked with creating a team of stakeholders and others that may be affected by the project. The model also discusses the importance of a literature search followed by designing and piloting the practice change. Finally, the user is to identify and sustain the practice change and then disseminate the results of the project.

The Iowa Model was very helpful throughout the planning of this EBP project. The model provided a clear and easy-to-follow manual for beginning the project and preparing for implementation. The triggering issue (the poor depression screening rates) was the first step in this project, as it is the first step in the Iowa Model. Similarly, the PICOT question was developed, and a team of stakeholders was formed by the project manager.

There were aspects of the Iowa Model that were not applicable for this EBP project. Piloting the practice change is one of the more important aspects of the Iowa Model. Piloting the
practice change allows the user to identify rooms for improvement to ensure the final implementation is as efficacious and effective as possible. However, there was simply not enough time to pilot the change in this EBP project. Consequently, the project manager was unable to incorporate staff feedback into the final implementation of the project.

Many of the aspects and steps of the Iowa Model were applicable to implementation of this EBP project. The Iowa Model makes it clear that the triggering issue and purpose of the project should be a priority for the stakeholders and project site. In this project, it was initially considered that the population of focus would be the diabetic population. However, following discussion with the project site facilitator, it was decided that the Medicare and older adult populations were more of a focus for the organization and project site. Other aspects of the Iowa Model, like disseminating the results of the project, were also applicable to this EBP project. However, the model places an emphasis on piloting the change, and piloting of the design was not applicable for this EBP project. Should the project be repeated in the future, the project would benefit from either allowing extra time to incorporate piloting of the practice change, or by choosing a more applicable model given the time constraints associated with the project.

Recommendations for the Future

Research

Further research is essential to ensure the intervention used and results found during this EBP project are effective and beneficial to the overall health of older adults with depression. For example, further research is needed to assess the importance and effectiveness of increasing depression screening rates in older adults. Are increased depression screening rates associated with better health outcomes? Do older adults who screen positive for depression experience better treatment and remission rates than older adults who are not screened for depression? These are questions that need to be answered to better illustrate the effectiveness and need for the current EBP project. Also, research should be performed utilizing a similar project design in other populations, such as adolescents or adults with different chronic conditions. Depression is
not unique to any one group of people; therefore, improving the screening and treatment of any person with depression should be a priority for research moving forward.

**Education**

Education was a key component of this EBP project. Educating staff, including MAs and providers from the clinical site, was important to ensuring project success and improving depression screening rates for the clinic.

Best evidence supported using education as an intervention to improve depression screening rates (Costantini et al., 2021; Gorman et al., 2021; Heinz et al., 2021; Siniscalchi et al., 2020; Sinnema et al., 2018), but education of the clinical staff, or the staff implementing the project, should be an important part of any EBP project. The staff should be instructed on what the project is, why the project is being implemented, and how to best implement the project to obtain the best results and decrease confusion. In this EBP, it was especially important to educate clinical staff on the importance of depression screening in the identified population. However, staff still did not believe that the project benefited the Medicare population. Depression screening was already recommended in the identified population; however, screening rates were low at baseline. Depression can have many side effects when left unfound and untreated. Medical professionals need to be educated on the potential effects a lack of effort, or a lack of attention to clinical practice guidelines, can have on a population. Graduate nursing students, and nursing students in general, can benefit from this education in hopes of creating better screening habits and a sense of urgency as a new nurse or provider, as compared to a seasoned medical professional with habits that would need to be changed.

**Conclusion**

Depression is a mental health condition that can cause patients to lose pleasure from daily life, worsen other chronic conditions, and/or lead to suicide if not found and treated (Mental Health America, n.d.-a). Despite the USPSTF recommending depression screening in the general adult population, and the Kaiser Permanente recommending annual screening and
screening patients whenever depression is suspected, depression screening rates in the older adult population remain inadequate. More specifically, in the older adult population, the population most often represented by Medicare, depression is a problem that often goes unrecognized (Pfoh et al., 2017).

The clinical site being used for this EBP project determined that there was a problem with the depression screening rates in their Medicare population. Depression screening rates were low and inadequate across all providers caring for Medicare patients in the clinical site prior to project implementation. This EBP project was designed to increase depression screening rates for Medicare patients in the clinical site, a primary care setting. More specifically, this EBP project was designed to answer the PICOT question: In Medicare patients in a primary care setting (P), is an MA depression screening protocol using the PHQ-9 (I), coupled with staff education, more effective than standard care (C) for improving depression screening completion rates (O) after three months (T)?

The clinical site being used for this EBP project experienced a statistically significant increase in depression screening rates for Medicare patients following project implementation. The findings experienced by this EBP project were consistent with the outcomes and findings reported in literature. Also, the screening protocol used in this EBP project was found to be easily inserted into existing clinical workflow. With greater time allowances and minor changes to the interventions used in this EBP project, this project design can be easily implemented in most outpatient settings to increase depression screening for older adults in primary care. Further research is needed to assess the overall effectiveness of this intervention in improving the care and management of older adults with depression, as well as the generalizability of this project design in other settings and populations.
REFERENCES


BIOGRAPHICAL MATERIAL

Kenneth J. Haluska began his health care journey as a junior in high school when he began shadowing his mother, a pediatric nurse, at St. Mary’s Hospital in Hobart, Indiana. Convinced nursing was his calling, he started nursing school in 2015 and earned his Bachelor of Science in Nursing (BSN) degree in 2019 from Indiana University Northwest in Gary, Indiana. He worked as a medical-surgical nurse at Community Hospital in Munster, Indiana for two years, where he loved watching his patients get better. Mr. Haluska thoroughly enjoyed making his patients feel cared for and getting to know them. He has always had a goal of becoming a nurse practitioner because of his ability to develop rapport with patients, gain their trust, and positively impact their health while creating healthy habits for the future. He started the Doctor of Nursing Practice Program at Valparaiso University in August 2020, where he has since become a member of the Society of Nurses in Advanced Practice (SNAP), the Coalition of Advanced Practice Registered Nurses of Indiana (CAPNI), and Sigma Theta Tau (Zeta Epsilon Chapter). He plans on presenting his poster from this EBP project at the Sigma Theta Tau Biennial Conference in San Antonio, Texas, in November later this year. Mr. Haluska enjoys working with all kinds of patients, and he is especially passionate about improving mental health care and access. However, all it took was a day of clinical during his pediatric rotation and his future was decided - caring for the pediatric population is where his journey began and where his journey will continue. Kenneth has accepted an offer from NorthShore Health Centers to work as a Nurse Practitioner in Pediatrics in Porter County, Indiana following graduation in May 2023. Like Mr. Haluska, NorthShore Health Centers have a goal of providing “comprehensive and quality healthcare, without exclusion, to everyone, every time.”
ACRONYM LIST

ACO: Accountable Care Organization
AGREE II: Appraisal of Guidelines for Research & Evaluation II
BPA: Best Practice Advisory
CASP: Critical Appraisal Skill Checklist
CDC: Centers for Disease Control and Prevention
CINAHL: Cumulative Index to Nursing and Allied Health Literature
CITI: Collaborative Institutional Training Initiative
CMS: Centers for Medicare and Medicaid Services
DSM-5: Diagnostic and Statistical Manual of Mental Disorders (5th edition)
EBP: Evidence-based Practice
EHR: Electronic Health Record
HR: Human Resources
IRB: Institutional Review Board
JAMA: Journal of the American Medical Association
JBI: Joanna Briggs Institute
MA: Medical Assistant
NP: Nurse Practitioner
PHQ: Patient Health Questionnaire
QI: Quality Improvement
RCT: Randomized Controlled Trial
TRIP: Turning Research into Practice
UIHC: University of Iowa Hospitals and Clinics
USPSTF: United States Preventative Services Task Force
UTSW: University of Texas Southwestern Medical Center
YLD: Years Lived with Disability
## APPENDIX A

### Evidence Table

<table>
<thead>
<tr>
<th>Lead Author/ Year/Quality</th>
<th>Purpose/ Design/Sample</th>
<th>Interventions</th>
<th>Measurement/ Outcomes</th>
<th>Results/ Findings</th>
<th>Strengths/ Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costantini et al. (2021)</td>
<td>Systematic review of literature “…to determine the clinical utility of the PHQ-9 as a screening tool for major depressive disorder within the primary care setting” (p. 474)</td>
<td>PHQ-9 depression screening tool</td>
<td>Diagnostic accuracy of the PHQ-9: sensitivity and specificity of the PHQ-9, positive predictive values, negative predictive values, and PHQ-9 cut-off scores</td>
<td>Sensitivity ranged from 0.37-0.87, specificity ranged from 0.43-0.99, positive predictive value ranged from 0.09-0.92, negative predictive value ranged from 0.8-1, and cut-off scores ranged from 5-15 but overall, a cut-off score of 10 was “…most represented among the reviewed studies” (p. 480)</td>
<td>Limitations: Lack of a meta-analysis, potential for overestimation of the tool related to inclusion of patients with current diagnoses and/or undergoing treatment modalities, lack of longitudinal studies, and lack of generalizability related to provider heterogeneity.</td>
</tr>
</tbody>
</table>

42 studies: 40 cross-sectional studies; 1 prospective cohort study; and 1 prospective, focus-group, and cross-sectional design. Studies took place between 1997-2017 and had a total sample size of 35,464 patients
| JBI Recommended Practice (2019) | Recommended best practice for health assessment of the older person | Health assessment | N/a | Recommended best practice for health assessment of an older person includes patient details, advance care planning, allergies, drug intolerances, medications, lifestyle, vaccinations, vital signs, pain assessment, neurological and cognitive evaluation (including mood assessment and use of a validated screening tool for depression), vision and hearing assessment, physical function assessment, comprehensive physical assessment, assessment of the personality profile, and summary of the assessment and plan of care. | Sample size, and the systematic approach used/ | Limitations: No reference or acknowledgment of resources/evidence used for recommendations, no information on how/why to implement the assessment recommendations, and very limited detail overall. Strengths: Reputable sources, clear instructions for health assessment |
| Kaiser Permanente (2021) | Clinical practice guideline: recommendations for Depression screening and treatment. | Depression severity measured by PHQ-9 or PHQ-9A: 20-27 = severe | Adults should be screened annually and when depression is | Limitations: Lack of information |
| **Smith et al. (2021)** | Systematic review of literature with the objective of determining “the effectiveness of health-service or patient-oriented interventions designed to improve outcomes in people” | Professional interventions (education), financial interventions (incentives), organizational interventions (changes to care delivery), | Patient clinical or mental health outcomes, patient-reported outcomes, utilization of health services, patient behavior, provider behavior, provider and recipient acceptance, and economic outcomes | Interventions focused on risk factor management were more likely to have greater effect. In studies focused on PHQ-9 depression scores, the mean score of the intervention group ranged from -5.93 to 0.60 | Limitations: Interventions are not described in detail and the review is not exclusive to depression. |
| University of Michigan Health System. (2021) | Clinical practice guideline: recommendations adolescents and adults to improve early recognition of depression, improve patient education, recommend first-line treatments, identity when a referral is necessary, and explain the differences for treatments in different age groups or genders. | Depression screening and treatment. Treatment included: exercise, light therapy, supplements, pharmacotherapies, evidence-based psychotherapy (cognitive behavioral therapy, interpersonal therapy, behavioral | Depression severity measured by PHQ-9: mild depression meets criteria for MDD and typically has a PHQ-9 score of 15 or less without vegetative symptoms, suicidal ideation, or significant functional impairment; moderate-severe depression typically has a PHQ-9 score of 15-19 with increased symptoms and impairment; severe depression typically has a PHQ-9 score of 20 or greater with significant | in mean difference from the control group. The CI was 95% | Strengths: Appraisal was near-perfect, resources are accessible, all aspects of the literature search are displayed, reputable source, and clearly demonstrates the importance of screening for and treating depression in those with multimorbidity. | Limitations: The information is not specific to older adults, the organization is not a government entity or board, and most of the information is focused on treatment modalities. | Strengths: Treatment options are extremely
<table>
<thead>
<tr>
<th>Reference</th>
<th>Activation, system of psychotherapy, acceptance and commitment therapy, and short-term psychodynamic psychotherapy, collaborative care, and referrals to psychiatric care</th>
<th>Symptomology or impairment.</th>
<th>PHQ-9 acceptable to determining severity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level II Evidence</td>
<td>Treatment phases include acute treatment (12 weeks), continuation treatment (9-12 months), and maintenance treatment.</td>
<td>Referral to a collaborative care model should be considered in patients with mild-moderate depressive disorder</td>
<td></td>
</tr>
<tr>
<td>Sinnema et al. (2018)</td>
<td>Depression is not a “normal” part of aging but it can occur more frequently in those 60 years or older and last longer as a result of increased chronic conditions, increased debility, loss of close acquaintances, and/or financial difficulties.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary analysis of data obtained for a randomized controlled trial with the aim to “examine whether these factors are associated with training and feedback for GPs compared against GP training and feedback followed by GP recognition of anxiety and/or depression as documented in patient medical records 6 months before and after patient completion of the questionnaire, GP</td>
<td>GPs recognized anxiety or depression in 36% of patients. Patients most likely to be recognized included those reporting a need for care, those with high distress scores, and Limitations: Limitations using medical records, self-reported questionnaire determined.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>the recognition of anxiety and depression in general practice” (p. 2)</td>
<td>tailored interventions</td>
<td>attitudes regarding anxiety and depression</td>
<td>those under 55 years old. Recognition is largely determined by outside factors.</td>
</tr>
<tr>
<td>Population included 46 GPs in 23 different general practices. Patients were 18 years or older visiting the GPs between September 2010 and June 2011. Total of 444 patients were included following positive depression/anxiety screening</td>
<td>RCT aimed to determine clinical and cost effectiveness of tailored interventions to improve compliance with screening guidelines</td>
<td>No association between somatization and recognition was found</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>GPs that could confidently identify depression/anxiety were more likely to recognize anxious and/or depressed patients.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>“Educational efforts should concentrate on increasing GPs’ confidence in the ability to identify symptoms of distress, anxiety and depression, as part of care according to guidelines” (p. 8)</td>
<td></td>
</tr>
<tr>
<td>Gorman et al. (2021)</td>
<td>Nonrandomized controlled, quasi-experimental study performed between</td>
<td>Population-wide depression screening</td>
<td>Depression screening rates (using the PHQ-2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>18% baseline (physician-only screening) rose to 57% following MA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Limitations: Single-center study reduces generalizability, eligibility, and lack of information on false-positive recognitions.</td>
</tr>
</tbody>
</table>

**Level III Evidence**
September 2016 and August 2018. The purpose was to evaluate if an MA protocol for depression screening would increase rates overall and if the protocol would decrease disparities when compared with physician-only screening. Total of 45,157 visits by 21,377 patients were included.

| Campbell et al. (2021) | Quality improvement study using a conceptual model for guiding Electronic | 5-step conceptual model: identify and select | Goal of 90% screening completion was set (previous baseline was 3% completion) | PHQ-9 depression screening rates rose from 3% to 23% following 90 days of implementation | Limitations: Large reliance on IT department to screening not taking place in the EHR may have been missed, and other demographic data (patient characteristics) were not available for analysis. Strengths: High level of evidence supporting findings, findings were found throughout all demographics, and the study is applicable to primary care settings where MAs room and check-in patients.

| Level VI Evidence | protocol implementation \( (p < 0.0001) \) | Demographic differences in depression screening rates were “inverted or reduced” (p. 695) | Demographic differences in depression screening rates were “inverted or reduced” (p. 695) | Demographic differences in depression screening rates were “inverted or reduced” (p. 695) |
Health Record-based quality measure selection and implementation" (p. 1080)

424 primary care patients were followed from the Harris Health House Call Program, a primary medical care and palliative care program for homebound patients in the Houston area.

<table>
<thead>
<tr>
<th>Measure for development, define measurement criteria, validate criteria, improve recording, and improve the clinical processes</th>
<th>Out of 60 patients, 52 were properly screened using the PHQ-9 (12 = true positive and 40 = true negative) and 8 were improperly screened (6 = false positive and 2 = false negative) related to neurological factors or language barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression screening (using the PHQ-9) was added into the EHR for easy reminders and provider access</td>
<td>Strengths: Clearly demonstrated the effect incorporating tools or reminders into the EHR can have on depression screening, incorporated provider education, assisted the organization in meeting goals and abiding by clinical practice guidelines, easily repeatable, and high generalizability</td>
</tr>
<tr>
<td>Providers were educated about the importance of performing depression screening and how to utilize the PHQ-9 in the EHR</td>
<td>facilitate EHR changes, PHQ-9 results manually counted, and “difficult” ability to properly exclude ineligible patients</td>
</tr>
<tr>
<td>Study</td>
<td>Design</td>
</tr>
<tr>
<td>-------</td>
<td>--------</td>
</tr>
<tr>
<td>Heinz et al. (2021)</td>
<td>Cross-sectional epidemiological study investigating depression stigma, complaints to the GP, and the diagnosis and treatment of depression in German primary care settings</td>
</tr>
<tr>
<td>Jiao et al. (2017)</td>
<td>Clinical prediction study. Microsimulations were performed on hypothetical adult patients, aged 20-70, from New York City, NY, to compare the cost-effectiveness of depression screening using the PHQ-2 and PHQ-9; “collaborative care” (patient education, two-session with Markov model to assess cost-effectiveness of interventions</td>
</tr>
<tr>
<td>Maust et al. (2017)</td>
<td>Prescription of an antidepressant medication</td>
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<td>-------------------</td>
<td>-----------------------------------------------</td>
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<tr>
<td>Descriptive study examining a population of patients enrolled in an NIH-sponsored randomized controlled trial.</td>
<td></td>
</tr>
<tr>
<td>Population for this study included 231 participants, aged 55 years and older, who received a new antidepressant prescription during the RCT after not previously being on an antidepressant medication. The medication had to be</td>
<td></td>
</tr>
</tbody>
</table>

Prescription of an antidepressant medication

Research assistants conducted baseline evaluations of the study population (using the Structured Clinical Interview for DSM-IV) within 10 days of receiving an antidepressant

The PHQ-9 and 24-item Hamilton Depression Rating Scale were used to measure patient depression severity

100 patients were diagnosed with MDD, 63 patients were found to have minor depression, and 68 patients did not qualify as having minor depression.

Most patients did not qualify as having MDD, and 29% did not even qualify as having minor depression

Limitations: Decreased generalizability related to the use of just three clinical sites, limited information regarding the provider's thought process prior to medication prescription, and the baseline data was completed up to 10 days following...
<table>
<thead>
<tr>
<th>Rhee et al. (2017)</th>
<th>Descriptive cross-sectional study using data from 2010-2012 National Ambulatory Medical Care Survey (NAMCS) to examine “whether or not depression screening has potential effects on diagnosing and treating mood disorders among older adults who made office-based primary care outpatient visits” (p. 102)</th>
<th>Depression screening and prescription of antidepressant medications</th>
<th>Diagnosis of mood disorders, antidepressant prescriptions, and &quot;potentially inappropriate antidepressant prescriptions&quot; were the main outcomes of interest (p. 102)</th>
<th>Patients with more chronic conditions, more medication prescriptions, and more &quot;preventative care&quot; visits (rather than for an acute illness) were more likely to be screened for depression. 86.7% of screened visits had 2+ chronic conditions (71.0% of patients not screened) <em>(p &lt; 0.001)</em> 76.8% of patients screened had 3+ meds prescribed (67.5% of patients not screened) <em>(p = 0.038)</em></th>
<th>Limitations: NAMCS data only allows three diagnoses per visit – mood disorders could have been missed, the course and outcome of treatments were not assessed, and the descriptive design does not allow for causation. Strengths: Provides evidence that depression screening is effective in...</th>
</tr>
</thead>
<tbody>
<tr>
<td>prescribed for depression, or depression and a comorbid condition. The RCT took place across three primary care settings: one in New York City, NY and two in southeastern Michigan.</td>
<td>prescription. Evaluation data was then reviewed by a clinical psychologist to determine if a diagnosis of MDD was applicable. Depression screening</td>
<td></td>
<td></td>
<td>medication prescription</td>
<td>Strengths: Results reflect those of current literature and the primary care setting increases relevance.</td>
</tr>
</tbody>
</table>
| Siniscalchi et al. (2020) | Quality improvement project with the purpose of improving “identification and management of depression in adult patients, 18 years and older, at the University of Texas Southwestern Medical Center (UTSW), Department of Family and Community Medicine” (p. 2) | VitalSign6 software web-based application to administer depression screening (using the PHQ-2 and PHQ-9) during patient check-in | Provider satisfaction was measured using CDRCC Likert-type scale survey. Follow-ups and treatment options were tracked for patients who screened positive. Screening rates were measured pre- and post-intervention. | 56% of staff completed the post-survey. The difference in physician satisfaction was statistically significant ($P = .002$) with lower satisfaction following the intervention implementation. However, staff reported a positive significant ($P = .044$) difference in their comfort levels discussing mental health with patients. Patient depression remission rates improved from 0% to 23.1% post-intervention. Depression screening rates improved from 85% to over 95%, with 89% of positive-screening patients being diagnosed with depression. | Limitations: Single clinical site decreases generalizability, high attrition rate, no clear inclusion/exclusion criteria, and the factor of federal financial incentives was not accounted for. Strengths: Depression screening rates increased, staff felt more comfortable discussing mental health with patients following the intervention, and the results...
<table>
<thead>
<tr>
<th>Level VII Evidence</th>
</tr>
</thead>
</table>
| **Lizarondo (2021)** | JBI Evidence Summary answering the question of: “What is the best available evidence on how to recognize and differentiate between depression, dementia, and delirium in older people?” 4 references provided (2012, 2018, 2019, and 2020) including a moderate-quality Health assessment, depression screening | Confusion assessment method used for delirium screening  
Montreal Cognitive Assessment or Mini Mental State Examination used for cognitive impairment assessment  
Hamilton Depression Rating Scale was used to assess depressive symptoms, but the PHQ-2 was described as being useful in the outpatient setting | Best practice recommendations: Healthcare providers caring for older people should be knowledgeable about the clinical features of delirium, dementia, and depression; a careful history and exam can be used to assist in differential diagnosis; psychometrically sound instruments can assist in differentiating between the conditions in older patients. |
| | reflect the growing body of evidence supporting VitalSign6 as an adjunct for depression screening in primary care | **Limitations**: Low level of evidence and low levels of evidence used for recommendatio n, lack of information regarding evidence search process or bias, overall lack of detail | **Strengths**: Details how to
### Depression, Delirium, and Dementia

Depression, delirium, and dementia can present in older adults with similar signs/symptoms. Depression is a “broad diagnosis” composed of low mood and/or loss of interest in most activities lasting 6 weeks to several months/years if untreated. Delirium presents as acute confusion generally lasts hours to days. Dementia is a progressive decline in cognition and memory.

Early detection of depression and initiation of treatment can improve functional outcomes and reduce mortality. Tools are provided for assessment, helpful for the provider’s assessment.

| Case report and high-quality texts/opinion papers | Depression, delirium, and dementia can present in older adults with similar signs/symptoms. Depression is a “broad diagnosis” composed of low mood and/or loss of interest in most activities lasting 6 weeks to several months/years if untreated. Delirium presents as acute confusion generally lasts hours to days. Dementia is a progressive decline in cognition and memory. Early detection of depression and initiation of treatment can improve functional outcomes and reduce mortality. Tools are provided for assessment, helpful for the provider’s assessment. | Differentiate between the diagnoses, tools are provided for assessment, helpful for the provider’s assessment. |
## Appendix B

### Literature Search Grid

<table>
<thead>
<tr>
<th>Database/Resource Searched</th>
<th>Keywords/Phrases Used</th>
<th>Limiters Used</th>
<th>Number of Results from Search</th>
<th>Number of Pieces of Evidence Selected for Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joanna Briggs Institute EBP Database</td>
<td>depress* AND screen* AND “older adult” OR geriatric OR elderly</td>
<td>2017-2022</td>
<td>86</td>
<td>2</td>
</tr>
<tr>
<td>Cochrane Library</td>
<td>depress* AND screen* AND “older adult” OR geriatric OR elderly</td>
<td>2017-2022 Publication Date</td>
<td>Reviews: 5 Trials: 331</td>
<td>1</td>
</tr>
<tr>
<td>Trip Medical Database (Turning Research into Practice)</td>
<td>title: depression AND screen* AND (adult OR older OR elder* OR geriatric* OR senior)</td>
<td>2017-2022, USA Guidelines</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>U.S. Preventative Services Task Force (USPSTF)</td>
<td>depress*</td>
<td>Status: Published, Category: Mental Health Conditions and Substance Abuse, Age Group: Adult and Senior, Type of Preventative Service: Screening</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>CINAHL</td>
<td>(MH “Depression”) AND screen* AND “primary care” OR “primary health care” OR “primary healthcare” OR “family practice”</td>
<td>2017-2022, English Language, Scholarly (Peer Reviewed) Journals, Aged: 65+ years</td>
<td>85</td>
<td>4</td>
</tr>
<tr>
<td>MEDLINE with Full Text (via EBSCO)</td>
<td>(MM “Depression”) AND screen* AND “primary care” OR “primary health care” OR “primary healthcare” OR “family practice”</td>
<td>2017-2022, English Language, Scholarly (Peer Reviewed) Journals, Aged: 65+ years</td>
<td>92</td>
<td>4</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>----</td>
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</tr>
<tr>
<td>PsycInfo</td>
<td>MM “Major Depression” OR MM “Depression (Emotion)” AND screen* AND “primary care” OR “primary health care” OR “primary healthcare” OR “family practice”</td>
<td>2017-2022, English, Scholarly (Peer Reviewed) Journals, Aged (65 yrs &amp; older)</td>
<td>65</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>List the Title of the Article/Piece of Evidence where the References/Citations were Chased From</strong></th>
<th><strong>Number of Pieces Searched</strong></th>
<th><strong>Number of New Pieces of “Chased” Evidence Selected for Use</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pieces of Evidence where Citations where “Chased” from. May include: Systematic reviews, evidence summaries, guidelines, journal articles, etc.</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td></td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td></td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>N/A</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>List the Title of each of the Journal(s) that were “Hand Searched”</strong></th>
<th><strong>List the Years/Time Frame that was Searchsed</strong></th>
<th><strong>Number of Pieces Evaluated</strong></th>
<th><strong>Number of New Pieces from “Hand Searching” Selected for Use</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pieces of Evidence selected that were “Hand Searched” from the table of contents of specific journals.</td>
<td>Centers for Disease Control and Prevention</td>
<td>2017-2022</td>
<td>0</td>
</tr>
<tr>
<td>Total Number of pieces of Evidence Identified for Further Use:</td>
<td>14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX C

PHQ-9 Depression Screening 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></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 + __ + __ + __ = 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?

- Not difficult at all
- Somewhat difficult
- Very difficult
- Extremely difficult

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 D

Educational Staff Presentation
Improving Depression Screening Rates for Medicare Patients in a Primary Care Setting

Evidence-Based Project Report
Kenneth J. Haluska, BSN, RN
College of Nursing and Health Professions
Valparaiso University

The Need for this EBP Project – Depression and ACOs

- Depression often unrecognized in older adults
  - 1/6 of older adults experience depression
- Recommendations
  - United States Preventative Services Task Force (USPSTF) grade "B" recommendation
  - Kaiser Permanente recommends annually screening and whenever depression is suspected
  - Medicare covers one depression screening per year
  - Medicare shares savings with accountable care organizations (ACOs) when an ACO succeeds in “spending health care dollars more wisely...”
  - Universal depression screening shown to reduce overall costs

Objectives

- Illustrate need for evidence-based project (EBP)
  - Including local and clinic data
  - First half of presentation
- Discuss literature search process and best practice synthesis
- Provide education as indicated by best practice recommendation

The Need for this EBP Project – Screening Disparities

- Disparities
  - Detection rates especially low in African Americans, males, Spanish-speaking patients, and older adults
  - In 25,505 primary visits from 2012-2013, only 4% of elder adult visits included depression screening
  - Consequences of Poor Screening
    - Poorer health outcomes, suicide, and mortality
  - Rationales for Poor Screening
    - OA tend to seek mental health treatment later and at lower rates than other groups
    - Providers blame lack of time
    - Staff blames difficulty incorporating into workflow
    - Critics blame cost-effectiveness
The Need for this EBP Project - Data

- "More than two million of the 34 million Americans age 65 and older suffer from some form of depression"
- Average U.S. value of 14.2% of adults 65 years and older
- Indiana rate of 16.6% in 2018
- Methodist Hospitals Survey on the Health of the Community
  - Highland, IN; Schererville, IN; St. John, IN; Merrillville, IN; and other locations served by the clinical site
  - 136 participants 65 years and older (14.6%)
  - 24.3% of older adult participants reported being diagnosed with depression

The Need for this EBP Project – Clinic Information

- MA screened patients for depression using the PHQ-9 during nursing
  - Interventions
    - Nursing
    - BHS in patient EHR
    - Unit preference
  - "EHR" phrase in acknowledgment results in BHS
  - Lack of knowledge results in lack of process
  - Clinic very focused on increasing screening (PHQ-9)

Synthesis of Literature

Screening
- PHQ-2 and PHQ-9
- Annually and whenever suspected
- EMR protocol
  - Two-stage
  - EMR

Education
- General practitioners, MA, administrative assistants
- Should cover the need for depression screening, standard measures for interpretation results, how to respond to screening to patients, the importance of asking questions, how to address confidentiality concerns, and what to do following a positive screening

Collaborative Care
- Collaborative management including a care manager, a psychiatrist, and the primary care provider

Best Practice Recommendation

- MA depression screening protocol during patient check-in
  - Using the PHQ-2 and PHQ-9
- Staff education
  - Current depression rates in older adults, how to administer the PHQ-9, importance of depression screening in older adults, and what to do following a positive screening
- Referral to collaborative care following a positive screening
- BPAs used for staff reminders
**Purpose and PICOT for this EBP Project**

- **Goal:** To improve depression screening rates for Medicare patients in a primary care clinic
- **PICOT:** In Medicare patients in a primary care setting, is an MA depression screening protocol using the PHQ-9, coupled with staff education, more effective than standard care for improving depression screening completion rates after three months

**Purpose of Education**

- **UpToDate:** “All staff should understand why depression screening is important...”
- **Most patients will only report physical complaints**
  - GPs recognize depression or anxiety in as low as 36% of patients
- **Confidence increases depression detection**

**Brief Project Description**

- **Goal:** To improve depression screening rates for Medicare patients in a primary care clinic
- **Medical assistant (MA) depression screening protocol, using the PHQ-9, during patient check-in**
- **Annual visits**
- **Comparison of baseline data (March – May 2022) to three-month trial period data**
- **No IRB approval necessary**

**How to Administer the PHQ-9**

- **Two-question depression screening or interview approach**
  - 42.2% of depressed patients report only physical symptoms
- **PHQ-9**
  - Can be used to quantify depression severity and monitor response to treatment
  - Have patients fill out PHQ-9
  - Staff can assist patient in completing tool if necessary
  - Staff should score the questionnaire
  - Generally, cut-off score of 10 and/or a positive answer to question 9 (suicidal symptoms)
- **Annually**
For This Project

- “DOT” phrase acknowledgement necessary for recording following a positive screening
- MAs to confirm the screening was completed and recorded with the provider
- Focused on annual screening

Diagnosis

- Diagnosis should not be made solely off PHQ-9
- Tolentino and Schmidt (2018) explain that a diagnosis of depression requires five or more symptoms, including depressed mood or anhedonia, as indicated by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5).
- DSM-5 most up-to-date resource

Example:

Table 1. DSM-5 TR Criteria for Major Depressive Disorder

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>At least five of the following symptoms should be present, one of which must be either depressed mood or loss of interest or pleasure.</td>
</tr>
<tr>
<td>1</td>
<td>Depressed mood or loss of interest or pleasure.</td>
</tr>
<tr>
<td>2</td>
<td>Significant weight loss or gain or appetite changes.</td>
</tr>
<tr>
<td>3</td>
<td>Insomnia or hypersomnia.</td>
</tr>
<tr>
<td>4</td>
<td>Psychomotor agitation or retardation.</td>
</tr>
<tr>
<td>5</td>
<td>Fatigue or loss of energy.</td>
</tr>
<tr>
<td>6</td>
<td>Feelings of guilt or worthlessness.</td>
</tr>
<tr>
<td>7</td>
<td>Thoughts of death or suicide.</td>
</tr>
</tbody>
</table>

The PHQ-9

Items to Consider in Patient Discussion
**Education Optimization**

1. “Depression is a medical illness, not a character defect or weakness.
2. Recovery is the rule, not the exception.
3. Treatments are effective and many options are available.
4. The aim of treatment is complete remission and staying well, not just masking symptoms.
5. Patients and families should be aware and alert for early signs and symptoms of depression, and seek help right away, since there is risk of recurrence.”

**Collaborative Care**

- “Trained care managers who assess patient symptoms at baseline and follow-up, using a standardized instrument, and who assess treatment adherence”
  - Involves direct coordination between mental health specialists and the primary care team.

**Recommended Treatment Plans**

- Consider early dementia, lower dosing and longer tapering periods, and non-medication treatments in adults 60 years or older.
- “For patients with mild to moderate depression, consider referral to collaborative care. It is superior to usual care.” (p. 2)
- Patient education and exercise
- Mild episodes
  - Medication or Psychotherapy
- Moderate-severe
  - Combination therapy

**Recommended Treatment Plans: First Visit**
Recommended Treatment Plans: Second Visit

MDD Interview
- AANP resource
- Psychiatric Mental Health Nurse Practitioner
- Screening, diagnosis, PHQ-9 interpretation, treatment plan, and follow-up
  - https://www.youtube.com/watch?v=_Z_x75HRGU&t=10s

Common Medications

Table 2. Antidepressants Commonly Used in the Treatment of MDD

<table>
<thead>
<tr>
<th>Class</th>
<th>Drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sertraline, escitalopram, fluoxetine, fluvoxamine, paroxetine, citalopram, vilazodone*</td>
<td></td>
</tr>
<tr>
<td>MAOIs</td>
<td>Selegiline, tranylcypromine</td>
</tr>
<tr>
<td>TCAs</td>
<td>Amoxapine, desipramine, doxepin, imipramine, nortriptyline, protriptyline</td>
</tr>
</tbody>
</table>

References
APPENDIX E

Staff Feedback Questionnaire

Improving Depression Screening Completion Rates for Medicare Patients
Medical Assistant Project Implementation Feedback Survey

First, I want to thank you for your participation in this evidence-based practice (EBP) project. This project would not be possible without you and your contributions! The purpose of this EBP project is to improve depression screening completion rates for Medicare patients in a primary care setting, and I hope that we will experience great results!

Please fill out this survey to reflect your thoughts on project implementation. Feedback will not be used in this project, but it will be included in the writing and can be extremely useful for future projects focusing on similar subjects or populations.

Results will be shared with Nancy Hoebn (Office Manager), so survey should remain anonymous. You do not need to place your name on the form.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The screening, using the PHQ-9, fit into existing clinic workflow (you were able to find time to complete the screening).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. You have noticed a difference in screening completion rates following implementation of this project.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. The Medicare population will benefit from this project.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional questions on next page.

Thank you!

Kenneth Haleska, BSN, RN
The following questions are regarding depression screening for Medicare/ACO patients:

5. What are some reasons why screening is not completed for all eligible patients?

6. Do you feel that depression screening is important for this population?

6a. Have your feelings changed following implementation of this EBP project?

7. If you could, what would you change about the current screening process?

8. If you could, what would you change about this EBP project?
## APPENDIX F

### Project Implementation Calendar

*Implementation Calendar*

<table>
<thead>
<tr>
<th>Month</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 2022</td>
<td><strong>Late-August:</strong> Educational presentation sent to providers and MAs via e-mail.</td>
</tr>
</tbody>
</table>
| September 2022 | **September 1:** Project Implementation.  
**September 29:** MA staff meeting, feedback collected.  
**Continue project implementation.** |
| October 2022 | **Continue project implementation.**                                    |
| November 2022| **November 30:** Data recording ends. Data analysis.                    |
APPENDIX G

CITI Program Completion

This is to certify that:

Kenneth Haluska

Has completed the following CITI Program course:

Group 1: Social Behavioral Educational Researchers
(Curriculum Group)
Group 1: Social Behavioral Educational Researchers
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Valparaiso University

Verify at www.citiprogram.org/verify?w406185cf-464d-4d90-9556-440153a485e6-48472123
COLLABORATIVE INSTITUTION:

COMPLETION COURSE

NOTE: Scores on the blackout report reflect to compete.

See separate Transcript Report for note about equiv scores.

- Name: Michael Hensley (ID: 111173)
- Institution: Valparaiso University (ID: 3762)
- Institution Email: Michael.Hensley@apex.com
- Institution Unit: College of Health and Human Services
- Phone: 219-663-2234

- Curriculum Group: Group 1: Social Behavioral Ed
- Course Learner Group: Same as Curriculum Group
- Stage: Stage 1 - Basic Course

- Record ID: 2473
- Completion Date: 14-Apr-2012
- Expiration Date: 14-Apr-2012
- Minimum Passing: 90
- Reported Score: 93

REQUIRED AND ELECTIVE MODULUS ONLY

- Harm and Ethical Principles - SHE (ID: 489)
- Deciding Research with Human Subjects - SHE (ID: 490)
- The Federal Regulations - SHE (ID: 520)
- Assessing Risk - SHE (ID: 523)
- Informed Consent - SHE (ID: 526)
- Privacy and Confidentiality - SHE (ID: 529)
- Research with Children - SHE (ID: 5807)

- Unsupervised Problems and Reporting Requirements for Social Work

To complete the Report, the learner identified above must identify a course above and have been a paid independent learner.

Verify at www.ctp.org 12/12/12-1125-31-4044-156

Collaborative Institutional Training Initiative (CITP Program)

Email: info@citp.org
Phone: 888-529-6829
Web: http://www.citp.org
NOTE: Score on this Transcript Report reflects the most recent completion, including quizzes and optional supplemental elements of the course. See Certificate for details. See separate Requirements Report for the requirements that were met.

- Name: Kirit Mankal (ID: 1111785)
- Institution Affiliation: University of California (ID: 31785)
- Institution Email: kmankal@ucsd.edu
- Institution Unit: Health and Human Services
- Phone: 2138782224

- Curriculum Group: Group 1: Social Behavioral Educational Researchers
- Course Learner Group: Same as Curriculum Group
- Stage: Stage 1 - Basic Course

- Record ID: 45472123
- Report Date: 14-Apr-2022
- Current Score: 100

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<thead>
<tr>
<th>REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES</th>
<th>MOST RECENT</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defining Research with Human Subjects - SBE (ID: 490)</td>
<td>14-Apr-2022</td>
<td>56/5</td>
</tr>
<tr>
<td>The Federal Regulations - SBE (ID: 662)</td>
<td>14-Apr-2022</td>
<td>56/5</td>
</tr>
<tr>
<td>Assessing Risk - SBE (ID: 603)</td>
<td>14-Apr-2022</td>
<td>56/5</td>
</tr>
<tr>
<td>Federal Consent - SBE (ID: 561)</td>
<td>14-Apr-2022</td>
<td>56/5</td>
</tr>
<tr>
<td>Privacy and Confidentiality - SBE (ID: 609)</td>
<td>14-Apr-2022</td>
<td>56/5</td>
</tr>
<tr>
<td>Research with Children - SBE (ID: 501)</td>
<td>14-Apr-2022</td>
<td>56/5</td>
</tr>
<tr>
<td>Understanding Problems and Reporting Requirements in Social and Behavioral Research (ID: 14923)</td>
<td>14-Apr-2022</td>
<td>56/5</td>
</tr>
<tr>
<td>History and Ethical Principles - SBE (ID: 490)</td>
<td>14-Apr-2022</td>
<td>56/5</td>
</tr>
</tbody>
</table>

For this Report to be valid, the learner identified above must have a valid association with the CITI Program subscribing institution identified above or have been a paid independent learner.

Visit: www.citi.org.org

Collaborative Institutional Training Initiative (CITI Program)
Email: support@citi.org
Phone: 866-629-6292
Web: www.citi.org
APPENDIX H

IRB Approval Exemption

**IRB Review Not Required**

The project you described does not meet the federal definition of "Research" that needs IRB review.

Based on your answers, your study does NOT require IRB review, and you may continue with your study without additional interaction with the IRB.

If you are a student, your faculty mentor is responsible for overseeing ethical conduct of your study. **YOU MAY ONLY BEGIN YOUR STUDY AFTER YOUR FACULTY MENTOR HAS APPROVED YOUR PROJECT. THE IRB WILL NOTIFY YOU ONCE THEY HAVE RECEIVED APPROVAL FROM YOUR FACULTY MENTOR.**

If you include an informed consent process in your study, do not say that this study has been reviewed by the IRB.